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Marine Sediment Sampling and Analysis

for

Former Robert E. Derecktor Shipyard
Naval Station Newport
Newport, Rhode Island

Engineering Field Activity Northeast
Naval Facilities Engineering Command

Contract Number N62472-03-D-0057
Contract Task Order 008

September 2005

TETRA TECH NUS, INC.

W5205327F

MARINE SEDIMENT SAMPLING AND ANALYSIS

FOR

FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT

Submitted to:
Engineering Field Activity Northeast
Environmental Branch (Code EV2)
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ABBREVIATIONS AND ACRONYMS

AVS	acid volatile sulfides
ASTM	American Society for Testing and Materials
bgs	below ground surface
BPRGs	baseline preliminary remediation goals
BN	benthic
CD	compact disk
COD	chemical oxygen demand
CNESS	chord-normalized expected species shared
DI	deionized
dGPS	Differential Global Positioning System
DIUF	deionized ultrafiltered
DO	dissolved oxygen
DQO	data quality objective
DUP	duplicate
EDD	electronic data deliverables
FB	field blank
FOL	Field Operations Leader
G&A	
GIS	Geographic Information System
IATA	International Air Transportation Association
ICOC	indicator constituents of concern
ID	identification
IDW	investigation-derived waste
LCS	laboratory control standard
LEL	lower explosive limit
LQAP	Laboratory Quality Assurance Plan
LTMP	Long-term monitoring Plan
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station
ND	not determined
NELAC	National Environmental Laboratory Accreditation Conference
NFESC	Naval Facilities Engineering Service Center
NOAA	National Oceanic and Atmospheric Administration
NORTHDIV	Northern Division
NR	not reported
NS&T	National Status and Trends
NSN	Naval Station Newport

ABBREVIATIONS AND ACRONYMS (cont.)

O&M	operation and maintenance
ORP	oxidation-reduction potential
OSI	organism-sediment index
PAH	polycyclic aromatic hydrocarbons
PARCC	precision, accuracy, representativeness, comparability, and completeness
PCB	polychlorinated biphenyls
PE	performance evaluation
PID	photoionization detector
PPE	personal protective equipment
ppt	parts per thousand
PRG	Preliminary Remediation Goals
PTW	potable water
PVC	polyvinyl chloride
PW	porewater
QA	quality assurance
QA/QC	quality assurance/quality control
QAO	quality assurance officer
QC	quality control
QL	quantitation limits
RCRA	Resource Conservation and Recovery Act
RIDEM	Rhode Island Department of Environmental Management
ROD	Record of Decision
RPD	relative percent difference or redox potential discontinuity
RPRGs	recommended preliminary remediation goals
SAIC	Science Applications International Corporation
SEM	simultaneously extractable metals
SLN	sample location number
SOP	standard operating procedure
SPI	sediment profile imaging
SVOC	semivolatile organic compound
TAL	target analyte list
TBD	to be determined
TCL	target compound list
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSA	Technical Systems Audit
TSD	treatment, storage, and disposal
U.S.	EPA United States Environmental Protection Agency
µg/kg	microgram per kilogram
VOA	volatile organic analysis
VOC	volatile organic compound

1.0 INTRODUCTION

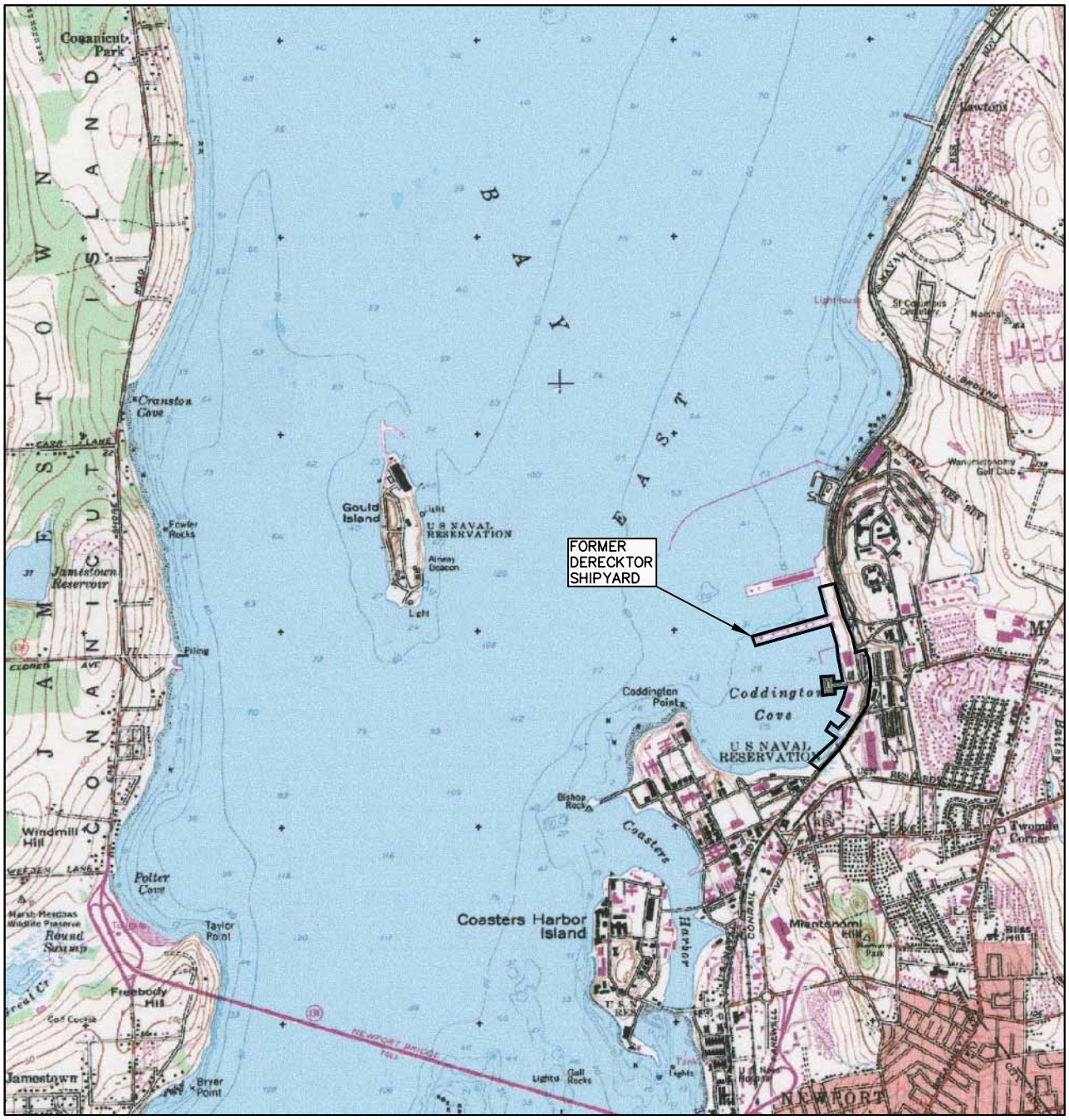
Under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62472-03-D-0057, Tetra Tech NUS Inc. (TtNUS) has completed a marine sediment investigation for the Former Robert E. Derecktor Shipyard – Site 19 (the site). This report has been prepared to describe the sampling and analysis program performed for marine sediment located adjacent to the Former Robert E. Derecktor Shipyard at the Naval Station Newport, (formerly known as the Naval Education and Training Center), in Newport, Rhode Island. The location of the site is presented on Figure 1-1.

Sediment sampling was conducted in August 2004 to better understand the nature of the contamination in the offshore marine sediments in Coddington Cove, Narragansett Bay, near the Former Robert E. Derecktor Shipyard site. Samples were collected to confirm the presence, concentration and distribution of contaminants previously found in this area, and to identify the source of hydrocarbon contaminants that are present prior to undertaking potential remedial actions at the site.

This effort was undertaken to update previous sediment data collected from Coddington Cove, which was reported in the Marine Ecological Risk Assessment (SAIC/URI, 1997) and used to evaluate remedial alternatives in the Feasibility Study (FS) for the Former Robert E. Derecktor Shipyard (TtNUS, 1999). As the Navy moves to update the FS, it is important to utilize data reflecting current conditions.

Data from this investigation were used to confirm the concentrations of contaminants in sediment, determine if changes have occurred in contaminant levels over time, and to confirm the extent of the area exceeding Recommended Preliminary Remediation Goals (RPRGs). The RPRGs are the sediment cleanup goals calculated in the FS (TtNUS, 1999). The RPRG values are the risk-based compliance standards for a potential remedial action.

This report includes five sections: this introduction; the site background, including a brief summary of existing data and the sampling and analysis program design; the field investigation; the findings of the investigation and lastly, the summary and conclusions from this study. Field data collection records are presented in Appendices A and B. Detailed data from analysis of samples are provided in Appendices C through E.



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15 MINUTE U.S.G.S. QUADRANGLE:
PRUDENCE ISLAND, RHODE ISLAND, 1955, PHOTOREVISED 1970 AND 1975

GRAPHIC SCALE
0 0.5 MILE 1 MILE

QUADRANGLE LOCATION

SITE LOCUS		FIGURE 1–1	
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD		TETRA TECH NUS, INC.	
NAVSTA NEWPORT, RHODE ISLAND		55 Jonspin Road Wilmington, MA 01887 (978)658–7899	
DRAWN BY: D.W. MACDOUGALL	REV.: 0		
CHECKED BY: L. SEYDEWITZ	DATE: SEPTEMBER 8, 2005		
SCALE: AS NOTED	ACAD NAME: DWG\1611\3523\FIG_1–1.DWG		

2.0 BACKGROUND INFORMATION

This section presents background information for the marine portions of former Robert E. Derecktor Shipyard site, including a site description, site history and a brief summary of previous investigations.

2.1 SITE LOCATION AND DESCRIPTION

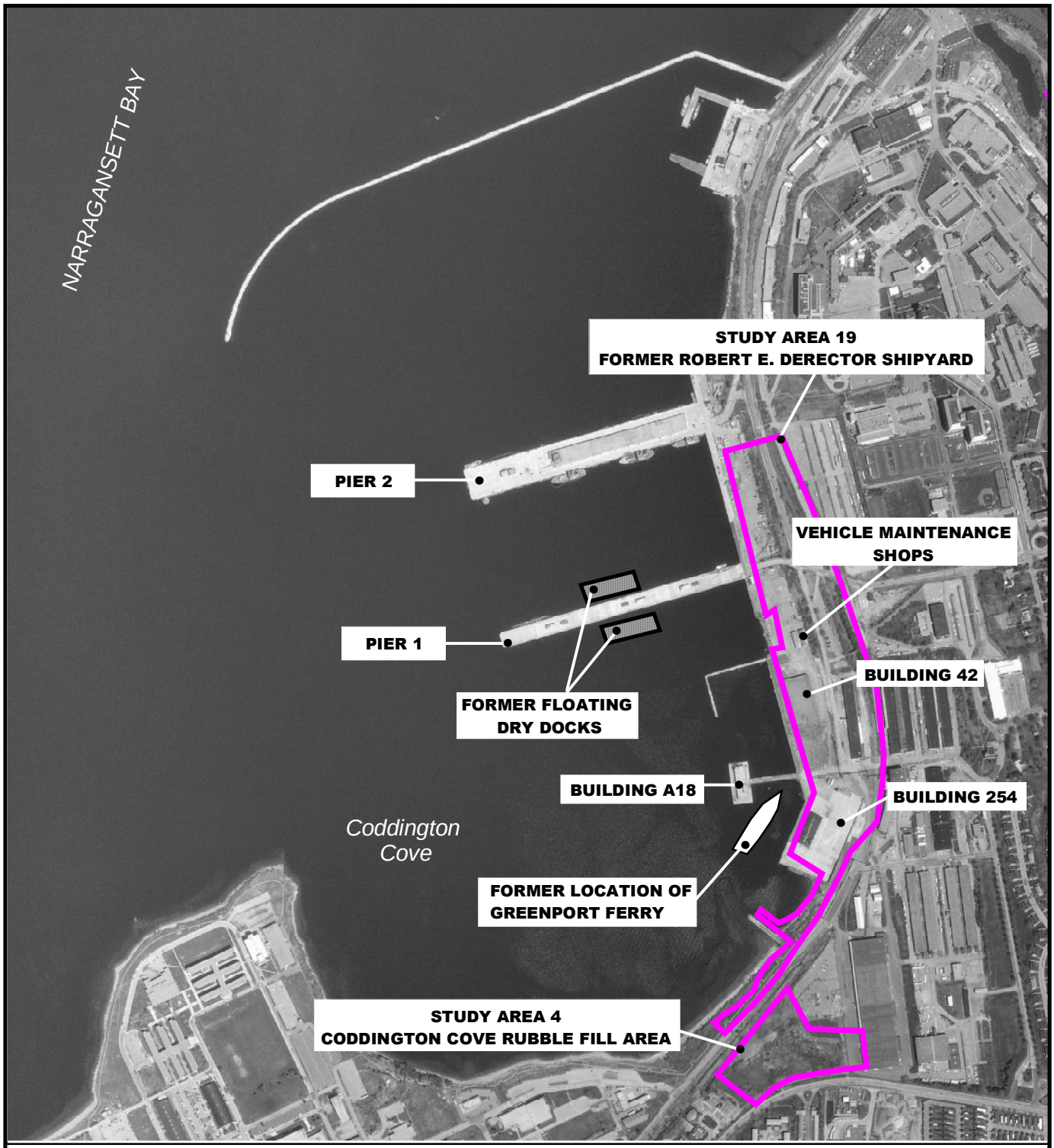
The NSN is located approximately 60 miles southwest of Boston, Massachusetts, and 25 miles south of Providence, Rhode Island. It occupies approximately 1,063 acres, with portions of the facility located in the City of Newport and Towns of Jamestown, Middletown, and Portsmouth, Rhode Island. The facility layout is long and narrow, following the western shoreline of Aquidneck Island for nearly 6 miles facing the east passage of Narragansett Bay.

The Robert E. Derecktor Shipyard Site is located on the shoreline of Coddington Cove at the central portion of the NSN (Figure 1-1). The site is comprised of approximately 41 acres of shoreline land and improvements (including Pier 1) in Coddington Cove. This area was leased to the Rhode Island Port Authority and Economic Development Corporation (RIPAEDC) by the Navy. RIPAEDC, in turn, leased this parcel to Robert E. Derecktor Shipyards of Rhode Island, Inc. (Derecktor). This lease commenced January 1, 1979, and ran until Derecktor filed for bankruptcy protection in January 1992. A figure showing the Coddington Cove study area is provided as Figure 2-1.

2.2 SITE HISTORY

The NSN facility has been in use by the Navy since the Civil War era. During World Wars I and II, military activities at the facility increased significantly and the base provided housing for many servicemen. In subsequent peacetime years, use of on-site facilities was slowly phased out until Newport became the headquarters of the Commander Cruiser-Destroyer Force Atlantic in 1962. In April 1973, the Shore Establishment Realignment (SER) Program resulted in the reorganization of naval forces, and activity again declined. This reorganization resulted in the Navy excessing 1,629 of its former 2,420 acres. Portions of the facility are currently leased by the Navy to the RIPAEDC. Some of these areas are, in turn, subleased to private enterprises.

NSN was listed on the US Environmental Protection Agency (EPA) National Priorities List (NPL) of abandoned or uncontrolled hazardous waste sites in November 1989. The NPL identifies those sites that pose a significant threat to the public health and the environment.



SOURCE:
1997 AERIAL PHOTOGRAPH, RHODE ISLAND DEPARTMENT OF ADMINISTRATION, DIVISION OF PLANNING

300 0 300 600 900 1200 Feet

N

POINTS OF INTEREST	FIGURE 2-1
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD	TETRA TECH NUS, INC.
NAVSTA NEWPORT - NEWPORT, RHODE ISLAND	55 JONSPIN ROAD WILMINGTON, MA 01887 (978)658-7899
DRAWN BY: L. SEYDEWITZ — DATE: FEBRUARY 22, 2005	
CHECKED BY: S. PARKER — FILE: G:\...\CTO 842\FormerDerecktor2004wp	

A Federal Facilities Interagency Agreement (FFA) for NSN was signed by the Navy, the State of Rhode Island, and the EPA on March 23, 1992. The FFA outlines response action requirements under the Installation Restoration Program (IRP) at NSN. The IRP is similar to the EPA's Superfund Program authorized under CERCLA in 1980, as amended by SARA in 1986. The FFA was developed, in part, to ensure that environmental impacts associated with past and present activities at NSN are thoroughly investigated and remediated, as necessary. While the Derecktor Shipyard site was not originally on the list of IRP sites in the FFA, it was added in 1994 as a “Study Area”.

The shoreline of Coddington Cove was acquired in 1940 for use as a Navy supply station. Prior to this time, the Coddington Cove area was farm land with few buildings. During World War II, the Coddington Cove area experienced major development, including construction of barracks, warehouse space, and hundreds of Quonset huts. Although naval activity diminished following the end of World War II, some construction at Coddington Cove continued. In 1955, Pier 1 was completed to replace pier space lost in 1954 during Hurricane Carol. The adjacent Pier 2 was added in 1957.

In 1962, Newport became headquarters to the Commander Cruiser-Destroyer Force Atlantic. Dozens of naval warships and auxiliary support ships were home-ported at Newport. A 1962 aerial photograph of the Coddington Cove area shows 18 naval warships moored at Pier 1.

During the lease period, Derecktor dismantled Buildings 40 and 41, removed them from their original location south of Building 42, and re-assembled them in four sections near Pier 1. These are referred to as Huts 1-4. Derecktor also constructed a large addition to Building 234, which was used as a setup area so that ships could be constructed inside.

The site was used by Derecktor to repair, maintain, and construct private and military ships. Repair and maintenance operations were concentrated around Pier 1. These operations largely consisted of sandblasting and painting, hull inspections, and other on-board ship repairs. Two floating dry docks were moored at Pier 1, and a large ferry, known as the Greenport Ferry, was moored between Buildings A18 and 234 for use as work space.

Derecktor also constructed new ships under contract to the US Coast Guard and the US Army. These ships had steel structures, and were used as cutters and tugboats. Construction included cutting and welding steel, sandblasting, priming and painting the structure, and assembling the ship. Ship assembly was primarily conducted in Building 234. Supporting the ship maintenance and construction operations were an engineering department (Buildings 6 and A-18), an electrical and pipe shop (Building 6), a vehicle maintenance shop (Huts 1 and 2), as well as small storage (Huts 3 and 4). Full detail on past

practices at Derecktor Shipyard are presented in the SASE report, prepared by Brown & Root Environmental, 1997.

2.3 PREVIOUS STUDIES AND ACTIONS, ON-SHORE

Because there was a possibility of hazardous materials releases at the site, and because the Derecktor corporation had filed for bankruptcy, the Navy performed a Preliminary Assessment (PA) of the site. This was completed in May 1993; the following conclusions were drawn:

- Shipyard operations generated large quantities of hazardous wastes, including waste oil, paints, solvents, thinners, concentrated bases, and other waste solids and liquids.
- Housekeeping practices and hazardous material handling practices at the facility were poor.
- Waste materials, including spent sandblast grit and oily liquids from the dry dock, were known to be disposed of on the property.
- Sand blast grit and metals-contaminated marine sediments are present around Pier 1.
- Releases of hazardous material are suspected in the waterfront areas and around Building 6.
- Interiors of Buildings 42, 234, 6, and 40 require cleaning prior to re-use.
- Numerous unlabeled 55-gallon drums containing unknown liquids were present.
- Asbestos-containing materials were suspected in some buildings.
- Releases to the ground surface at the site would most likely cause contaminants to pass to the marine environment through groundwater flow or via storm drain systems.

Based on these findings, in 1994 the Navy added the site to the FFA list as a Study Area (SA-19). In 1995 and 1996, more thorough investigations were conducted and environmental cleanup actions were performed. A Site Assessment Screening Evaluation (SASE) (B&R Environmental, 1997) was performed to identify and characterize contaminants in the on-shore portions of the site. A Marine Ecological Risk

Assessment (ERA) (SAIC/URI, 1997) was performed to characterize the risk posed by contaminants in the marine sediment to ecological receptors near the site. A Human Health Risk Assessment report (HHRA) (B&R Environmental, 1998) was prepared using data collected as a part of the ERA to identify increased risks to humans from the contaminants in the marine environment. Finally, a Feasibility Study (FS) was prepared to evaluate remedial alternatives for the marine portions of the site (B&R Environmental, 1999).

Between the publication of the PA report and the FS, other construction and site restoration activities occurred. Building 234 was removed in 1993, and the old transit shed was removed in 1997, leaving the slab foundations. Huts 3 and 4 were removed in 1993. Huts 1 and 2 were removed in 1997. The dry docks were removed from Pier 1 and the Greenport Ferry was removed in 1993. Building A-18 on the T-Wharf south of Pier 1 was demolished in 1997; the wharf piling has since deteriorated substantially.

NSN Public Works Department (PWD) performed a preliminary removal at the site in 1994 that consisted of removing remaining debris, surface cleaning grossly contaminated concrete, and closing and removing storage tanks.

In 1996, NSN PWD contracted a removal of sand blast grit that was present on the ground to the north and east of Building 42. OHM Corporation removed approximately 16,600 cubic yards of this material and covered the ground with a crushed stone/gravel mix. Sandblast grit was transported and disposed of at McAllister Point Landfill prior to cap construction.

In 1997, the soil berm located to the south of the site was removed and sorted. This material was found to contain excavated soils and debris from construction and expansion of Building 234. Some of this material was transported to Tank Farm Four for fill material in the cleaned and demolished fuel oil tanks. The remainder was disposed of at Rhode Island landfills.

Another removal action addressed soil contamination under Building 42 and to the northeast of Building 6. These removal actions and their objectives are described in the FS report (B&R Environmental, 1999).

2.4 PHYSICAL CHARACTERISTICS OF THE CODDINGTON COVE STUDY AREA

This section summarizes the physical and hydrological features of the Coddington Cove area. This information is based on the information gathered as a part of the SASE, the ERA, and supporting studies.

2.4.1 Regional Geology and Hydrogeology

The NSN site is located at the southeastern end of the Narragansett Basin. The rocks of the Narragansett Basin are non-marine sedimentary rocks of Pennsylvanian age. The bedrock at the NSN facility is almost entirely of the Rhode Island Formation. A few areas of thick conglomerates are present within the Rhode Island Formation. They consist of pebbles, cobbles, and boulders inter-bedded with sandstone and graywacke. Overlying the Pennsylvanian rocks of the Narragansett Basin are surficial deposits of Pleistocene sediments. These unconsolidated, glacial sediments range in thickness from 1 to 150 feet and consist of till, sand, gravel, and silt.

Many areas on Aquidneck Island, on which the NSN is located, obtain potable water from wells. Groundwater is obtained from the unconsolidated glacial till and outwash deposits, and from the underlying Pennsylvanian bedrock. The average depth to groundwater is 14 feet. In the NSN area, glacial till deposits are typically less than 20 feet thick. Well yields in these materials range from 1 to 120 gallons per minute. Although till is considered an unconsolidated deposit, the upper limit of this well yield is likely from an outwash deposit that is well sorted and stratified. Till wells typically yield a few hundred gallons of water per day or less than 1 gallon per minute. Bedrock well yields range from less than 1 to as much as 55 gallons per minute and are highly dependent on the presence of joints and fractures. Most groundwater is soft or moderately hard. In scattered locations, pumping has led to salt water intrusion.

2.4.2 Marine Hydrographics

A hydrographic survey was performed by the University of Rhode Island in 1995 to measure current velocity and water column profiling of conductivity, temperature, and depth to determine patterns of water circulation within the study area. This study evaluated the area during several different wind and tidal pattern cycles, but did not account for seasonal variation of wind patterns and effect of winter storms. The complete results are reported in the ERA (SAIC/URI, 1997).

The hydrographic surveys showed that the characteristic flow pattern occurs as a net counter-clockwise circulation within the interior of Coddington Cove. On average, maximum bottom velocities were found to be highest at the mouth of the cove and decreased in a counterclockwise manner following a general circulation pattern around the cove. Flow was such that, in general, the water column appeared well mixed vertically. High bottom velocities extending into the southeastern section of the cove were expected to prevent deposition of silt-sized particles, while the interior sections of the region between the piers and the northeastern region were generally sluggish and expected to be depositional zones (except nearshore and/or shallow areas that may be strongly affected by wave energy or propeller wash).

This study did not account for the localized disturbance of sediments from ship activity at the piers and bulkheads. It is recognized that propeller wash from ships maneuvering to and from the piers will disturb sediments in and around these areas, and that some of the sediments could become resuspended during such activity. Later data assessments summarized in the feasibility study were performed to identify expected areas of high energy and low energy, based on anticipated high traffic areas and on projected future use of the property. High energy areas are those areas of the cove where there is a possibility for deposited sediment to be resuspended either through natural wave action or shipping traffic. These include areas along the piers and bulkheads at the waterfront.

2.4.3 Geophysics and Bathymetry of Coddington Cove

Side-scan sonar, sub-bottom profiling sonar, and sediment vibracore surveys were undertaken to determine the characteristics of both surface and underlying sediments within the Derecktor Shipyard/Coddington Cove study area in 1995; this combination of techniques provides more complete information than surface and core samples alone. The complete results are reported in the ERA (SAIC/URI, 1997).

The results indicated that sediments in the Derecktor Shipyard/Coddington Cove study area were predominantly fine-grained at some stations (less than 40 percent sand content) and predominantly sandy (sand greater than 70 percent) at others. Surface sediments (upper six inches of bedded sediment) in Coddington Cove tended to be finer-grained (contained more silt and clay) than underlying sandy sediments, probably due to the significantly decreased bottom energy and increased likelihood of fine-grained sediment deposition resulting from construction of the Coddington Cove breakwater in 1957. A “sub-bottom reflector”, which is a second reflection of the sonar pulse reflected off something below the surface of the sediment, was observed in some of the geophysical profiles. These second reflectors may delineate different lithologic units (i.e. till or bedrock). In other locations, no strong sub-bottom reflectors were observed, indicating a likely uniform lithology vertically.

To attempt to locate any significant deposits of sandblast grit, a limited investigation focused on the pier areas, using vibracore techniques to determine sediment characteristics at depth. The analysis of these cores was performed by URI and is presented in Appendix D1 of the ERA report.

While some possible sandblast material was noted in some of the cores, no large deposits of this material were found during this investigation program. However, due to the observed presence of minor amounts of sandblast grit observed by the field crew, selected samples were analyzed by a laboratory. Petroleum odors were noted in cores collected at three locations near Pier 1.

The evaluation of the cores confirmed the findings of the geophysical investigation. From 10-foot penetrations, there was high sand content and a lower silt content north of and between the piers. There was a higher silt content southwest of Pier 1, as well as at locations adjacent to both sides of Pier 1.

2.5 NATURE AND EXTENT OF CONTAMINATION IN THE MARINE SEDIMENT

This section presents a summary of the results of the studies of the marine sediment within Coddington Cove between 1992 and 1996. Station locations discussed are presented on Figure 2-2. The methods and findings of the investigations are presented in greater detail in the marine ERA.

Surface sediment samples were collected from the 0-18 cm interval, and core sediments were collected from selected locations and depths, within 1 meter of the surface. In addition, elutriate was prepared from sediment and seawater collected at selected locations to evaluate contaminants in resuspended sediment. Elutriate samples were prepared using a 4:1 dilution of water to sediment.

Measurements of bulk sediment concentrations of nine metals were performed at 15 Coddington Cove stations and two reference locations as a part of the marine ecological risk assessment. These measurements were made to assess the degree of sediment contamination by trace metals and the potential availability/toxicity of the metals to biota. Ranges of concentrations (mg/kg dry wt.) observed at the site were as follows: arsenic - 3.0 to 12.5; cadmium - 0.1 to 1.5; chromium – 24 to 112; copper - 1.5 to 180; lead - 13 to 193; mercury - 0.02 to 1.1; nickel – 5 to 78; silver - 0.2 to 1.8; and zinc – 28 to 547.

Concentrations of organic contaminants at some subtidal stations in the Coddington Cove study area were found to exceed NOAA Effects Range-Low (ER-L) or Effects Range-Medium (ER-M) guidelines, indicating potential for adverse effects to ecological receptors. Concentrations of total PCBs at all stations except DSY-35 and DSY-41 exceeded the ER-L benchmark value, while total PCB concentrations at stations DSY-27, DSY-29, DSY-30, DSY-31, and DSY-32 also exceeded the ER-M benchmark value of 180 ug/kg.

Concentrations of total PAHs exceeded the ER-L benchmark of 4,022 ug/kg at approximately half of the Derecktor Shipyard/Coddington Cove stations, and the concentration of 46,400 ug/kg at station DSY-29 (field duplicate sample) exceeded the ER-M value.

Concentrations of tributyltin (TBT) reported as (ug tin per kg of sediment) exceeded 5 ug Sn/kg, a level considered indicative of a degraded ecological condition, at six stations (DSY-27, DSY-28, DSY-29,

Source:
1997 aerial photograph, Rhode Island Department of Administration, Division of Planning

300 0 300 600 900 1200 Feet

N

FORMER SEDIMENT SAMPLE STATIONS	FIGURE 2-2
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD	TETRA TECH NUS, INC.
NAVSTA NEWPORT - NEWPORT, RHODE ISLAND	55 JONSPIN ROAD WILMINGTON, MA 01887 (978)658-7899
DRAWN BY: L. SEYDEWITZ — DATE: FEBRUARY 22, 2005	
CHECKED BY: S. PARKER — G:\...\CTO 842\FormerDerecktor2004wp	

DSY-30, DSY-31, and DSY-36). TBT values ranged from non-detected (less than 1.0 ug Sn/kg) to 228 ug Sn/kg at station DSY-31. Concentrations of the pesticide p,p'-DDE exceeded the ER-L benchmark value of 2.2 ug/kg at five stations; overall values ranged from 0.1 ug/kg at stations DSY-35 and DSY-41 to slightly less than 7.0 ug/kg at stations DSY-27 and DSY-29 (including the field duplicate sample).

The mixtures of individual PCB congeners and PAH compounds in sediments in the Coddington Cove study area suggest certain substances as the main contributors of the contamination. The major PCB congeners were the 3- to 6-chlorine compounds (congeners 66, 101, 118, 153, and 138), which probably derived from Aroclor 1254, the major Aroclor formulation found in Narragansett Bay surface sediments. Major sources of PCBs to Narragansett Bay include rivers, combined sewer overflows/sewage discharges, and atmospheric deposition.

In general, it is presumed that the presence of these Aroclors in Coddington Cove sediments is a combination of bay-wide contamination and past industrial and shipping activities which included storage and transfer of PCB transformers at the site. However, the PCB composition at Coddington Cove station DSY-29 FD was different from that at the other stations, with congener 209 (decachlorobiphenyl) accounting for approximately 60 percent of the total congeners measured in the sample. Congener 206 was present in relatively large concentrations. This unique distribution of congeners is presumed to be indicative of the presence of a rare compound known in the chemical industry as "Deka". This compound is used as an ingredient in investment casting wax, used for casting molten steel and iron, possibly a result of past activities at Derecktor Shipyard.

Concentrations of four- and five-ring pyrogenic PAH compounds (fluoranthene, pyrene, and benzo(b,j,k)fluoranthene) were consistently the highest PAH concentrations observed at stations in the Derecktor Shipyard/Coddington Cove study area. Sources of these compounds include combustion products used in motor oil, atmospheric deposition, creosote/coal tar and asphalt from local activities, terrestrial runoff, and sewage effluent and overflows. There was no evidence of fresh (unweathered) fuel oil in any of the samples, as indicated by qualitative measurements of total petroleum hydrocarbons.

Analyses of elutriate samples showed the presence of PCBs, PAHs, and small amounts of p,p'-DDE. Elutriate from Station DSY-25 had the highest concentration of both total PAHs and total PCBs; in addition, several other stations showed elevated levels of one or both contaminants relative to reference station values (stations DSY-27, DSY-29, DSY-31 for PCBS; DSY-25, DSY-27, DSY-29, DSY-32, DSY-33, and DSY-40 for PAHs). Additionally, eight of the elutriate samples exceeded the EPA marine chronic criterion (30 ng/L) for total PCBs, including Jamestown Potter Cove reference station JPC-1.

2.6 ECOLOGICAL RISK ASSESSMENT

The marine ERA conducted by SAIC and URI, under contract to B&R Environmental, evaluated the ecological risks to the marine environment within Coddington Cove. It was presumed that contaminants in the sediments near the Derecktor site were present from activities formerly occurring at that site before and during the Derecktor Inc. lease. The conclusions of the marine ERA are summarized below. Detailed information on the methodology, results, and conclusions are presented in the ERA (SAIC/URI, 1997).

- Stations DYS-27 and DYS-29 were determined to pose a high probability of risk to fish, shellfish, and seabirds from shipyard-related contaminants including PCBs, PAHs, tributyltin, copper, lead, and zinc. Plausible exposure-response relationships were observed for benthic community structure possibly affected by PAHs in sediment, and indigenous mussel condition possibly affected by PCBs in sediment.

- Stations DSY-24, -25, -26, -28, -31, -33, -40, and -41, as well as the reference station CHC-1, were determined to pose an intermediate probability of risk to ecological receptors. Intermediate risk was assigned to these stations due to suggested but not quantifiable exposure response relationships. In general, the same receptors and COCs were observed at intermediate and high risk stations. However, in addition, elevated levels of PAHs were observed in mussels at stations DYS-25 and -26, north of the shipyard, and elevated tributyltin was present in sediment at station DYS-31. Seabirds may be at risk from PCBs in fish at station DYS-28.

2.7 FEASIBILITY STUDY AND PRGS

A feasibility study was prepared in 1998 and 1999 to evaluate remedial alternatives for marine sediments that pose an unacceptable risk to human and ecological receptors. The Feasibility Study identified risk based cleanup goals, compared them against available data for the sediment, identified viable remedial technologies for risk reduction and provided an analysis of several alternatives for remedial action.

To develop the PRGs, a process was used to select COCs and corresponding concentrations, that, when implemented as cleanup criteria, would address the areas of unacceptable risk. The PRGs were selected to be protective of each of the principal receptors at the site: Humans, aquatic organisms (exposed to both bedded sediment and suspended sediment), and avian aquatic predators.

Potential PRGs were calculated based on target acceptable risk values (1E-6 for human cancer risk, and 1.0 hazard index for non-carcinogens, and ecological hazard quotients of 1.0 or less). Potential PRGs were compared against existing sediment data, and it was found that all stations sampled exceeded one or more of these potential PRGs (FS Report, Appendix B), even those stations outside of Coddington Cove. It was immediately recognized that these potential PRGs could not be implemented as cleanup criteria. The resulting area was too large for any practical remedy, and data collected indicated that any confirmation samples would show exceedances also, resulting in an action that would never be completed.

In order to select an implementable action, the PRGs were refined and Recommended PRGs (RPRGs) were calculated using pathway specific adjustments to account for risk uncertainties as appropriate for the receptors. Using this approach, implementable remediation criteria were developed that targeted the site related COCs, and fit the site conceptual model. The RPRGs are provided in Table 2-1.

TABLE 2-1

SUMMARY OF MARINE SEDIMENT PRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT RHODE ISLAND

Analyte	Receptor	Potential PRG	Recommended PRG
Arsenic	Avian Predator	17.09 mg/kg	NR
Copper	Aquatic Resuspended Sediment	73.74 mg/kg	NR
Lead	Aquatic Resuspended Sediment	83.94 mg/kg	168.0 mg/kg
Silver	Avian Predator	2342 mg/kg	NR
Zinc	Avian Predator	118.0 mg/kg	NR
Benzo(a)pyrene	Human Health	53.92 ug/kg	539 ug/kg
HMW PAHs	Aquatic Bedded Sediment	6951.0 ug/kg	13903 ug/kg
Total PCBs	Avian Predator	92.82 ug/kg	1060 ug/kg
o,p'-DDE	Aquatic Resuspended Sediment	9.06 ug/kg	NR

Notes: NR- Not recommended for implementation
HMW PAHs – High molecular weight polycyclic aromatic hydrocarbons
Total PCBs – Sum of polychlorinated biphenyl congeners measured x 2

3.0 FIELD INVESTIGATIONS

Data for this sediment investigation were collected as described in the Draft Work Plan for Marine Sediment Sampling near the Former Derecktor Shipyard (TtNUS, July 2004). All sampling, quality control, and decontamination procedures, etc. described in the work plan were followed except as described in this section. A summary of the field investigation efforts is provided in this section.

The field activities for this program included the collection of 27 marine sediment samples (24 surface sediment and three subsurface sediment samples) as well as continuous automated turbidity monitoring at two pier locations. The sediment samples were collected from stations selected as follows:

- Six from offshore locations identified in the ERA as posing a high probability for risk to ecological receptors, to better define the area of sediments exceeding RPRGs as well as to determine contaminants of concern (COC) concentrations and the PAH pattern within those sediments.

- Six from the area between the piers, near the docked aircraft carriers, to determine COC concentrations and the PAH pattern within those sediments.

- One near a stormwater outfall, at the southern end of the study area adjacent to the site, to determine COC concentrations and the PAH pattern within those sediments.

- Two from the area north of Pier 2, to determine COC concentrations and the PAH pattern within those sediments.

- Two (one surface, one subsurface) from a new location at the seaward end of Pier 1 per RIDEM's request, to determine COC concentrations and the PAH pattern within those sediments.

- Four (two surface, two subsurface) from new locations at the landward end of Pier 1 per RIDEM's request, to determine COC concentrations and the PAH pattern within those sediments.

- A total of six samples from three separate reference locations including Castle Hill Cove, Cranston Cove and Potters Cove, to provide background sediment data for comparison to site data.

- One station at the end of Pier 2 was planned, but sediment could not be collected due to substrate present (lack of sediment).

Table 3-1 presents a list of sediment samples that were collected. Sample depths were selected to represent the sediment to which ecological exposures are likely to occur. The locations of the study area samples are presented on Figure 3-1 and the reference sample locations are presented on Figure 3-2. Sections 3.1 and 3.2 provide details of sediment sampling and analysis and turbidity monitoring conducted.

3.1 SEDIMENT SAMPLING

Marine sediment samples were collected from 24 locations and submitted for laboratory analysis. Samples were analyzed using a combination of methods: one group of samples was collected for standard analyses for comparison with the RPRGs for the site. The second group of samples was analyzed using forensic methods to provide expanded analyte lists. The samples analyzed through each method are summarized in Table 3-1.

Standard analysis of all sediment samples included TAL metals, PCB congeners, total organic carbon (TOC), PAHs by EPA method 8270C with selected ion monitoring (SIM), and simultaneously extracted metals/acid volatile sulfide (SEM/AVS). Standard analysis was conducted at Mitkem Analytical of Warwick Rhode Island. Replicate sediment samples from each station were analyzed using forensic type petroleum fingerprinting analysis. Forensic analyses were performed by the Woods Hole Group Laboratory, of Woods Hole, Massachusetts. Results are presented in Section 4 of this report.

QC samples, including three duplicates and associated blank samples were also collected. The analytical laboratories provided method blanks as required per the analytical methods.

The marine sediment sampling was conducted from an open work boat. The samples were collected using a ponar dredge to acquire surface sediment samples and by divers using core tubes for sediment greater than 6 inches depth. At all stations, samples were collected from the surface interval of 0 to 6 inches below sediment surface. At three stations two depth intervals were collected: 0 to 6 inches and 6 to 12 inches below the sediment surface. Only these two methods of collection were utilized during this sampling effort. These deeper intervals were collected per the request of RIDEM, to determine vertical extent of PAHs exceeding RPRGs. Each grab sample was collected, packaged and shipped to the selected laboratories as outlined in the work plan. Appendix A provides a copy of the field collection records.

Three samples were not collected as proposed in the work plan. Locations DSY-07, DSY-102 and DSY-JPC-02 did not have adequate sediment recovery, even after repeated attempts, for sample collection. Significant amount of shell fragments were present at these locations. An additional location, DSY-JPC-03, was sampled in Potters Cove as a replacement for JPC-02 (Figure 3-2).

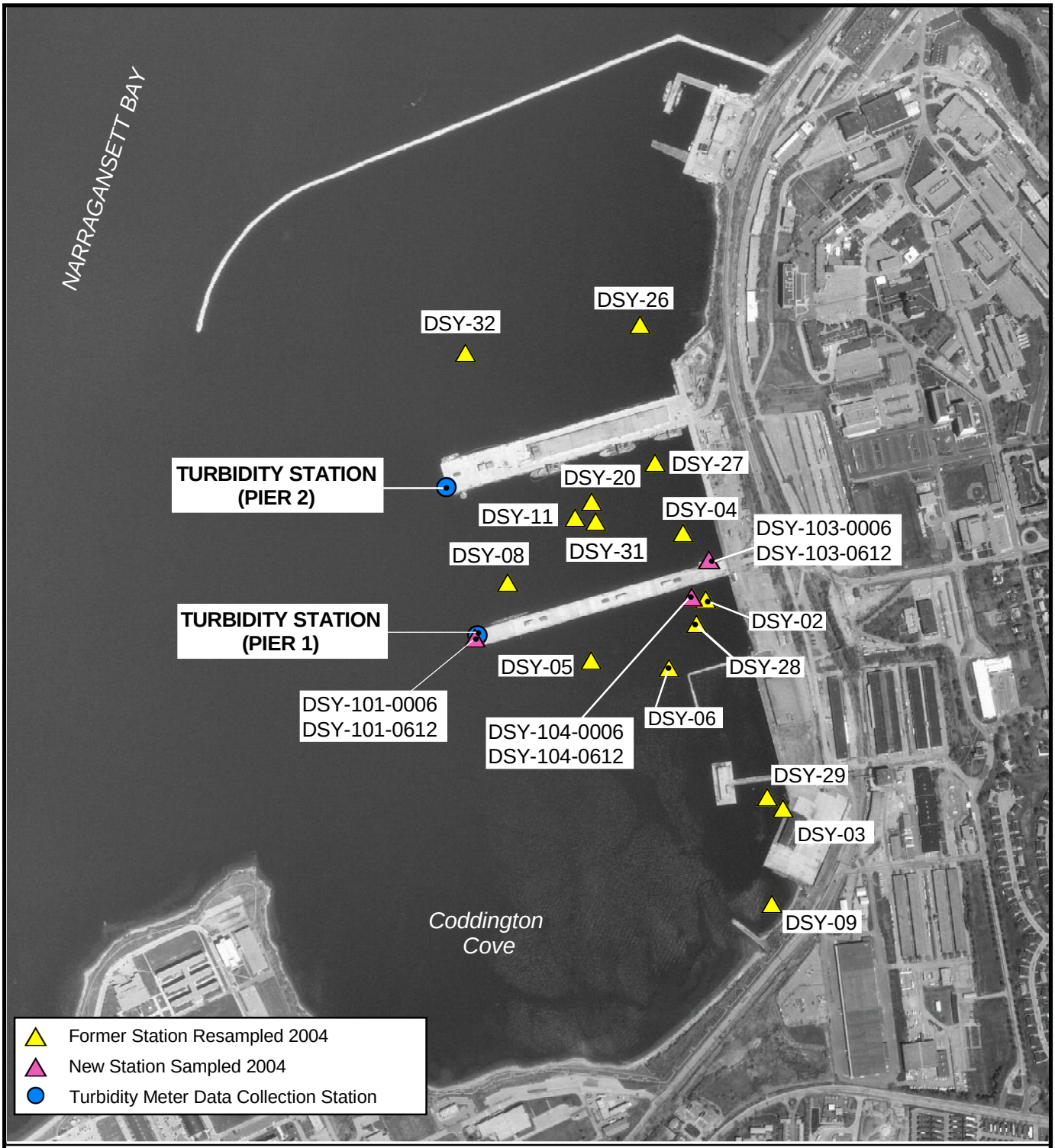
TABLE 3-1

SUMMARY OF MARINE SEDIMENT SAMPLES
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Station ID [1]	Description/ Selection Rationale	Sample Depth (inches)	Analysis Type	
			Standard	Forensic
DSY-02	Exceeded PRGs in FS [2]	0-6	X	X
DSY-03	Exceeded PRGs in FS [2]	0-6	X	X
DSY-20	Exceeded PRGs in FS [2]	0-6	X	X
DSY-27	Exceeded PRGs in FS [2]	0-6	X	X
DSY-28	Exceeded PRGs in FS [2]	0-6	X	X
DSY-29	Exceeded PRGs in FS [2]	0-6	X	X
DSY-04	Between Piers [3]	0-6	X	X
DSY-05	Between Piers [3]	0-6	X	X
DSY-06	Between Piers [3]	0-6	X	X
DSY-08	Between Piers [3]	0-6	X	X
DSY-11	Between Piers [3]	0-6	X	X
DSY-31	Between Piers [3]	0-6	X	X
DSY-07	Near stormwater outfall		Not Collected[6]	Not Collected[6]
DSY-09	Near stormwater outfall	0-6	X	X
DSY-26	Area north of Pier 2	0-6	X	X
DSY-32	Area north of Pier 2	0-6	X	X
DSY-101	New location end of Pier 1 [4]	0-6, 6-12	X, X	X, X
DSY-102	New location end of Pier 2 [4]		Not Collected[6]	Not Collected[6]
DSY-103	New location (north of Pier 1) [5]	0-6, 6-12	X, X	X, X
DSY-104	New location (south of Pier 1) [5]	0-6, 6-12	X, X	X, X
DSY-CHC-01	Castle Hill Cove – Reference Sta.	0-6	X	X
DSY-CHC-02	Castle Hill Cove – Reference Sta.	0-6	X	X
DSY-JCC-01	Cranston Cove – Reference Sta.	0-6	X	X
DSY-JCC--02	Cranston Cove – Reference Sta.	0-6	X	X
DSY-JPC-01	Potters Cove – Reference Sta.	0-6	X	X
DSY-JPC-02	Potters Cove – Reference Sta.		Not Collected[6]	Not Collected[6]
DSY-JPC-03	Potters Cove – Reference Sta.	0-6	X	X

Notes:

1 See the FS for sample point descriptions
2 Offshore location estimated to pose a high probability for ecological risk to ecological receptors
3 Area between piers, near docked aircraft carriers – sediment likely disturbed by ship traffic.
4 New locations located off seaward end of Piers per RIDEM request
5 New location at landward end of Pier 1 per RIDEM request
6 Samples not collected due to presence of hard substrate, no depositional sediment present



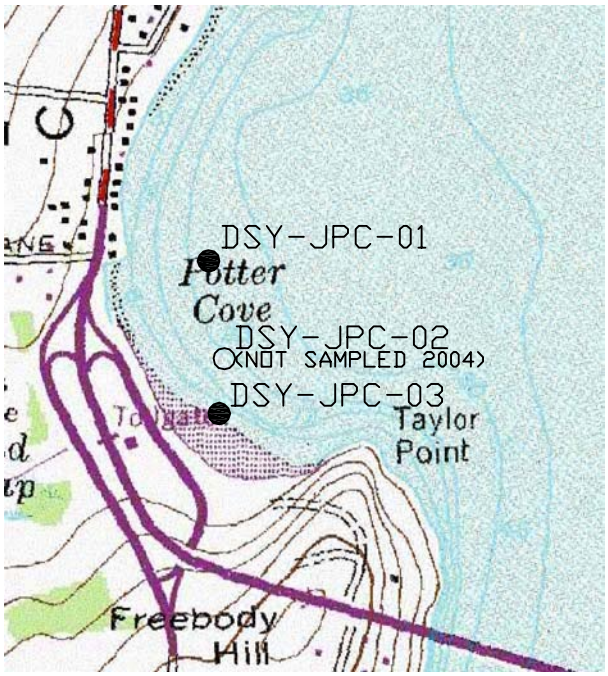
SOURCE:
1997 AERIAL PHOTOGRAPH, RHODE ISLAND DEPARTMENT OF ADMINISTRATION, DIVISION OF PLANNING

300 0 300 600 900 1200 Feet

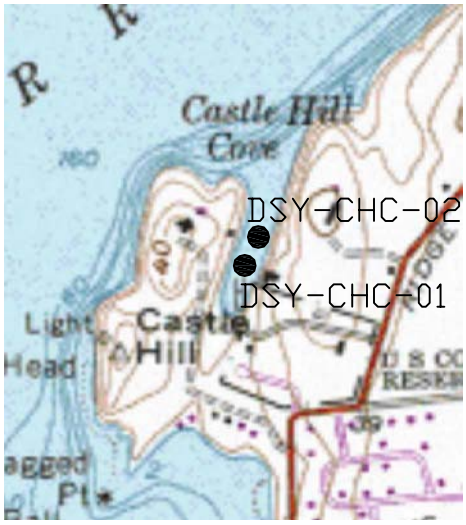
N

SEDIMENT SAMPLE STATIONS	FIGURE 3-1
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD	TETRA TECH NUS, INC.
NAVSTA NEWPORT - NEWPORT, RHODE ISLAND	55 JONSPIN ROAD WILMINGTON, MA 01887 (978)658-7899
DRAWN BY: L. SEYDEWITZ — DATE: FEBRUARY 22, 2005	
CHECKED BY: S. PARKER — FILE: G:\...\CTO 842\FormerDerecktor2004wp	

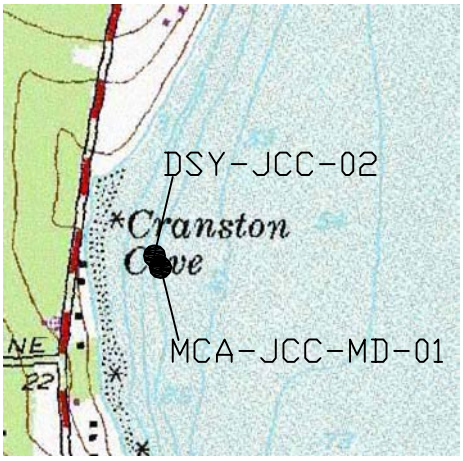
JAMESTOWN POTTER COVE (JPC)
REFERENCE AREA



CASTLE HILL COVE (CHC)
REFERENCE AREA



JAMESTOWN CRANSTON COVE (JCC)
REFERENCE AREA



SOURCE:

THE BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15 MINUTE U.S.G.S. QUADRANGLE:
PRUDENCE ISLAND, RHODE ISLAND, 1955, PHOTOREVISED 1970 AND 1975
AND NEWPORT, RHODE ISLAND, 1957, PHOTOREVISED 1970, PHOTOINSPECTED 1975

GRAPHIC SCALE
0' 1300'

REFERENCE SEDIMENT SAMPLE STATIONS		FIGURE 3-2	
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD		TETRA TECH NUS, INC.	
NAVSTA NEWPORT – NEWPORT, RHODE ISLAND		55 Jonspin Road Wilmington, MA 01887 (978)658-7899	
DRAWN BY: D.W. MACDOUGALL	REV.: 0		
CHECKED BY: L. SEYDEWITZ	DATE: SEPTEMBER 8, 2005		
SCALE: AS NOTED	ACAD NAME: DWG\1611\3523\FIG_3-2.DWG		

A real-time portable differential Global Positioning System (dGPS) was used to define longitudinal and latitudinal coordinates for each sampling location as described in the work plan. All stations that had previous sample data were located to within three meters of the former target coordinates using the dGPS. Station DSY-SD-08 was moved approximately 10 meters north of the previous station due to the presence of the aircraft carrier on the north side of Pier I. Differential GPS coordinates for each new station where samples were collected were recorded (+/- 1 meter) for input in to the NAVSTA EGIS system for the site. The sample stations were photographed for qualitative benthic evaluation. The water depth at each location was measured and corrected for the tide, to provide an approximate ground elevation. Appendix B presents the dGPS and water depth information.

3.2 CONTINUOUS AUTOMATED SURFACE WATER TURBIDITY MONITORING

A preliminary investigation of water turbidity near the sediment surface was conducted at two monitoring stations to determine if there are changes in suspended sediment levels, specifically in areas of ship activity. Monitoring stations were positioned at the off-shore ends of Piers 1 and 2 and the turbidity was continuously recorded every 15 minutes for 34 days using a YSI model 6920 data recorder.

The setup and calibration of the instruments were performed as outlined in the work plan with sensors placed within 12 inches of the sediment surface, protected by PVC casing attached to the pier pilings. The instruments were installed on August 27 and removed September 29, 2004. TtNUS conducted weekly inspections of the sensors and downloaded the data collected. During each cleaning event, the instruments were checked for functionality by field-checking with the Known standard. An 8-day data gap is present for the turbidity recording at Pier 2. The instrument stopped recording usable data on September 14 and was replaced on September 22. The data recorded during that period is not considered to be valid. A lesser data gap is present for the turbidity recording at Pier 1: No turbidity readings were recorded September 20 through September 22, though the instrument was inspected, checked, and determined to be working during that time.

The turbidity data were correlated with the recorded ship traffic in the area as reported by the Navy log, as well as to local weather data. All ship traffic in Coddington Cove during this time was arriving and departing from Pier 2. The “mothballed” aircraft carriers, present at Pier 1 since 1999, remained inactive during the test period. The turbidity recordings and the ship log, provided by the Navy of ship activity, are discussed in Section 4 of this report.

4.0 FINDINGS OF THE INVESTIGATION

The findings of the investigation are detailed below. Data from the laboratory standard analysis of sediments is presented in Appendix C. Data was validated by TtNUS under a Tier II process in accordance with USEPA Region I guidelines. Data was found to be acceptable for use as qualified (Appendix C1) The data tables for the continuous turbidity monitoring results are presented in Appendix D. A full report on the forensic analysis of the sediment samples collected is provided in Appendix E.

4.1 SEDIMENT

Sediments were analyzed using standard analytical methods (EPA method 8270C SIM for PAH), TAL metals, PCB congeners, TOC, SEM/AVS and forensic petroleum “fingerprinting” methods described in Section 3 and in the work plan.

The results from the standard analyses were compared with the data from previously collected samples from this area (1993 – 1995 and reported in 1995), and compared with the RPRGs calculated in the FS for the site. RPRGs are presented in Table 2-1 of this report.

Table 4-1 provides a summary of 2004 and previous results for 10 site COCs, compared to RPRGs. Figure 4-1 presents a comparison of the 2004 and previous results for the four COCs with RPRGs from stations located within Coddington Cove. A complete table of all sediment sample results showing historic results with data from this sample round is provided in Appendix C-2 of this report.

Generally, concentrations of contaminants in surface sediments show a decrease from the values reported in the ERA. Samples exceeding the RPRGs are primarily located along the shoreline and/or near the piers. Analytical results from samples collected further from shore do not show RPRG exceedances. Historically, the number of sample stations with contaminant exceedances was greater and these exceedances extended farther from shore. Three locations, DSY-27, DSY-28 and DSY-29 were sampled at three different depths in the past and had multiple contaminants with concentrations exceeding RPRGs in the mid and/or bottom depth samples. The analytical results from surface samples collected at DSY-27 and DSY-29 this round have one exceedance; there were no contaminant RPRG exceedances found in surface samples collected this round at DSY-28.

TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 1 OF 17

Sample Location			DSY-JPC-01				DSY-JPC-02 (not sampled 2004)		DSY-JPC-03 (replaces JPC-02)			
Sample Number			JPC-1-SUR	JPC-1-SUR-D	DSY-SD-JPC01-082604		JPC-2-SUR	JPC-2-SUR-D	DSY-SD-JPC03-082604		DSY-SD-DUP03-082604	
Date Sampled			10/19/1995	10/19/1995	8/26/2004		10/27/1995	10/27/1995	8/26/2004		8/26/2004	
Depth Sampled (feet)			0 - 0.5	0 - 0.5	0 - 0.5		0 - 0.5	0 - 0.5	0 - 0.5		0 - 0.5	
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment							FIELD DUPLICATE OF DSY-SD-JPC03-082604		FIELD DUPLICATE OF DSY-SD-JPC03-082604	
BENZO(A)PYRENE (UG/KG)	539	53.92	62.8722	NA	46	J	NA	NA	33	J	20	J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	365.1931	NA	413		NA	NA	286		179.1	
TOTAL PAH (UG/KG)			746	NA	456.2		NA	NA	305		192.1	
2,4'-DDE (UG/KG)		9.06	0.5455	NA		NA	NA	NA		NA		NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	18.9124	NA	16.4		NA	NA	0.829		0.796	
ARSENIC (MG/KG)		17.09	2.61	2.5	2.1	J	4.84	5.66	1.1	J	1.2	J
COPPER (MG/KG)		73.74	7.0	9.0	8.3	J	13.75	17.25	4.2	UJ	3.9	UJ
LEAD (MG/KG)	168	83.94	29.7	28.3	11.3	J	53.2	46.0	4.4	J	4.3	J
SILVER (MG/KG)		2342	0.1375	0.0625	J 0.11	U	0.2625	0.1625	0.12	U	0.12	U
ZINC (MG/KG)		118	58.0	36.25	33.0	J	79.25	63.75	18.8		18.5	J

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 2 OF 17

Sample Location			MCA-JCC-S-01	MCA-JCC-MD-01				
Sample Number			JCC-S1	JCC-D1-SUR	JCC-M1	JCC-D1-BOT	JCC-D1-MID	DSY-SD-CC01-082604
Date Sampled			8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995	8/26/2004
Depth Sampled (feet)			0 - 0.1	0 - 0.1	0 - 0.1	1.5 - 1.6	0.3 - 0.4	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment						
BENZO(A)PYRENE (UG/KG)	539	53.92	33.66	10.14	10.14	1.1865	3000	270 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	390.64	116.63	116.63	8.307	24703	2461
TOTAL PAH (UG/KG)			711.43	268.7505	224.99	50.0022	44598.95	2692.9
2,4'-DDE (UG/KG)		9.06	0.355	0.245	0.709	0.00	0.95	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	23.5386	15.3836	10.8382	4.3774	20.3913	5.89
ARSENIC (MG/KG)		17.09	0.65 J	2.01	0.65 J	0.65 J	0.65 J	2.6 J
COPPER (MG/KG)		73.74	7.518	1.875 J	1.875 J	1.875 J	1.875 J	8.6 J
LEAD (MG/KG)	168	83.94	28.4024	23.1756	23.1756	16.6	25.3	9.6 J
SILVER (MG/KG)		2342	0.065 J	0.15	0.3314	0.065 J	0.065 J	0.10 U
ZINC (MG/KG)		118	62.467	45.721	45.721	42.0	56.0	40.3 J

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 3 OF 17

Sample Location			**DSY-JCC-02**		**DSY-CHC-01**		**DSY-CHC-02**		**DSY-01**	**DSY-02**				
Sample Number			**DSY-SD-CC02-082604**		**DSY-SD-CH01-082604**		**DSY-SD-CH02-082604**		**DSY-1**	**DSY-2**		**DSY-SD-02-082504**		**DSY-SD-DUP01-082504**	
Date Sampled			**8/26/2004**		**8/26/2004**		**8/26/2004**		**11/3/1993**	**11/3/1993**		**8/25/2004**		**8/25/2004**	
Depth Sampled (feet)			**0 - 0.5**		**0 - 0.5**		**0 - 0.5**		**0 - 0.1**	**0 - 0.1**		**0 - 0.5**		**0 - 0.5**	
QC Identifier	**Derecktor Shipyard RPRG Sediment**	**Derecktor Shipyard PRG Sediment**										**FIELD DUPLICATE OF DSY-SD-02-082504**		**FIELD DUPLICATE OF DSY-SD-02-082504**	
BENZO(A)PYRENE (UG/KG)	539	53.92	42	J	470	J	60	J	163.83	3320		160	J	200	J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	384		3775		497.5		4013.39	63994.3		1392		1650	
TOTAL PAH (UG/KG)			426.3		4146.3		542.1		4382.58	66656.42		1519		1815	
2,4'-DDE (UG/KG)		9.06		NA		NA		NA	0.9781	5.7099			NA		NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	4.32		86.2		11.1		67.5772	209.0887		114		106	
ARSENIC (MG/KG)		17.09	1.9	J	8.9	J	4.3	J			NA	11.5	J	11.0	J
COPPER (MG/KG)		73.74	6.8	J	75.1	J	22.4	J	45.522	196.827		62.0	J	69.2	J
LEAD (MG/KG)	168	83.94	8.4	J	65.7	J	21.3	J	35.393	180.764		48.2	J	50.8	J
SILVER (MG/KG)		2342	0.10	U	0.22	U	0.13	U	0.5987	0.823		0.31	UJ	0.34	UJ
ZINC (MG/KG)		118	28.9	J	168		52.6	J	149.431	593.456		141	J	158	J

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 4 OF 17

Sample Location			DSY-03		DSY-04		DSY-05		
Sample Number			DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604
Date Sampled			11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004
Depth Sampled (feet)			0 - 0.1	0 - 0.5	0 - 0.1	0 - 0.5	0 - 0.1	0 - 0.5	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment						FIELD DUPLICATE OF DSY-SD-05-082604	FIELD DUPLICATE OF DSY-SD-05-082604
BENZO(A)PYRENE (UG/KG)	539	53.92	4710	1000	431.43	150 J	401.78	78 J	130 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	72956	9760	5531.95	1644	4525.58	584	1043
TOTAL PAH (UG/KG)			78812.04	11495	5922.49	1794	4818.286	633	1158
2,4'-DDE (UG/KG)		9.06	3.8079	NA	4.0305	NA	2.9225	NA	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	733.3312	349	194.56	198	105.4064	106	102
ARSENIC (MG/KG)		17.09	NA	13.5 J	NA	11.5 J	NA	9.8 J	10.6 J
COPPER (MG/KG)		73.74	262.344	150 J	62.843	63.7 J	52.291	63.9 J	59.8 J
LEAD (MG/KG)	168	83.94	201.061	114 J	51.348	50.4 J	43.296	46.5 J	46.2 J
SILVER (MG/KG)		2342	1.2668	0.26 UJ	13.776	0.27 UJ	2.3207	0.23 UJ	0.22 UJ
ZINC (MG/KG)		118	1231.421	377	189.526	171 J	173.311	125 J	117 J

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-06			DSY-07	DSY-08			DSY-09		
Sample Number			DSY-6	DSY-SD-06-082504		DSY-7	DSY-8	DSY-SD-08-082604		DSY-9	DSY-SD-09-082604	
Date Sampled			11/3/1993	8/25/2004		11/3/1993	11/3/1993	8/26/2004		11/3/1993	8/26/2004	
Depth Sampled (feet)			0 - 0.1	0 - 0.5		0 - 0.1	0 - 0.1	0 - 0.5		0 - 0.1	0 - 0.5	
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment										
BENZO(A)PYRENE (UG/KG)	539	53.92	488.3	370		301.91	480.98	190	J	49.13	46	J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	5336.06	2945		4197.97	5855.67	1525		616.58	378.5	
TOTAL PAH (UG/KG)			5667.65	3363		4504.57	6251.82	1685		647.09	410.4	
2,4'-DDE (UG/KG)		9.06	2.5852		NA	1.5433	2.0961		NA	0.381		NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	132.0812	498		73.3573	148.3893	179		28.1474	23.8	
ARSENIC (MG/KG)		17.09	NA	10.0	J	NA	NA	11.0	J	NA	3.2	J
COPPER (MG/KG)		73.74	57.769	55.7	J	27.93	76.006	51.9	J	3.988	18.3	J
LEAD (MG/KG)	168	83.94	48.579	49.9	J	31.699	50.604	46.5	J	14.856	29.1	J
SILVER (MG/KG)		2342	1.5936	0.20	UJ	5.4065	1.7387	0.25	UJ	0.7328	0.12	UJ
ZINC (MG/KG)		118	175.299	148	J	118.703	184.302	129	J	58.824	67.9	J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-10	DSY-11			DSY-12	DSY-13	DSY-14	DSY-15
Sample Number			DSY-10	DSY-11	DSY-SD-11-082604		DSY-12	DSY-13	DSY-14	DSY-15
Date Sampled			11/3/1993	11/3/1993	8/26/2004		11/3/1993	6/13/1994	6/13/1994	6/13/1994
Depth Sampled (feet)			0 - 0.1	0 - 0.1	0 - 0.5		0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment								
BENZO(A)PYRENE (UG/KG)	539	53.92	38.47	206.33	320	J	248.81	43.73	26.07	245.08
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	535.87	4991.43	2776		4493.61	872.66	435.52	3129.21
TOTAL PAH (UG/KG)			562.4	5519.08	3084		4997.88	993.63	500.84	3562.75
2,4'-DDE (UG/KG)		9.06	0.7402	8.7102	NA		2.4326	0.7479	0.418	1.5749
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	11.728	658.1613	385		176.009	22.3161	22.9766	54.835
ARSENIC (MG/KG)		17.09	NA	NA	11.6	J	NA	NA	NA	NA
COPPER (MG/KG)		73.74	12.469	81.459	74.5	J	53.865	18.093	7.746	18.606
LEAD (MG/KG)	168	83.94	22.132	46.082	65.6	J	45.99	35.2	28.9404	42.025
SILVER (MG/KG)		2342	0.5636	1.2244	0.23	U	1.5811	0.0638	0.0531	0.0533
ZINC (MG/KG)		118	63.84	1104.448	162		160.599	89.479	67.598	83.129

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	
Sample Number			DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604
Date Sampled			6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004
Depth Sampled (feet)			0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment						
BENZO(A)PYRENE (UG/KG)	539	53.92	11.76	310.59	1190	496.21	880.34	230 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	237.28	3417.68	12859.78	9211.87	20405.51	2048
TOTAL PAH (UG/KG)			285.49	3769.11	14126.13	10322.34	22059.61	2316
2,4'-DDE (UG/KG)		9.06	0.00	0.6533	4.3373	2.3874	6.2639	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	9.4	243.7826	292.7514	216.559	366.9521	202
ARSENIC (MG/KG)		17.09	NA	NA	NA	NA	NA	11.0 J
COPPER (MG/KG)		73.74	6.41	17.233	81.666	66.912	79.683	58.7 J
LEAD (MG/KG)	168	83.94	31.5291	32.9018	60.2299	57.8157	76.9119	47.9 J
SILVER (MG/KG)		2342	0.0473	0.0534	0.1591	0.4008	0.8837	0.24 UJ
ZINC (MG/KG)		118	48.315	71.286	163.324	139.453	157.727	158 J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-21	DSY-22	DSY-23	DSY-24	DSY-25	DSY-26	
Sample Number			DSY-21	DSY-22	DSY-23	DSY-24	DSY-25-SUR	DSY-26-SUR	DSY-SD-26-082604
Date Sampled			6/13/1994	6/13/1994	6/13/1994	6/13/1994	9/28/1995	10/19/1995	8/26/2004
Depth Sampled (feet)			0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.5	0 - 0.5	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment							
BENZO(A)PYRENE (UG/KG)	539	53.92	109.63	182.008	239.46	54.52	395.8064	434.2685	89 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	1923.4	3270.568	4408.67	1162.21	2343.5877	3031.3942	816
TOTAL PAH (UG/KG)			2156.3	3707.748	4959.69	1298.23	4940	5800	890.4
2,4'-DDE (UG/KG)		9.06	1.1765	2.5337	1.5831	0.2954	0.10	1.5221	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	92.3076	178.2045	150.1339	25.869	93.6121	98.2409	80.1
ARSENIC (MG/KG)		17.09	NA	NA	NA	NA	6.36	9.43	7.0 J
COPPER (MG/KG)		73.74	29.659	51.264	49.438	14.432	23.5	39.25	35.2 J
LEAD (MG/KG)	168	83.94	41.8304	52.5276	54.1921	39.1522	35.9	40.4	27.0 J
SILVER (MG/KG)		2342	0.0822	0.1222	0.1223	0.0553	0.2625	0.1875	0.13 U
ZINC (MG/KG)		118	174.732	142.782	140.573	98.084	110	101.5	74.1 J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-27							
Sample Number			DSY-27-SUR		DSY-V9-BOT		DSY-V9-MID		DSY-SD-27-082604	
Date Sampled			10/12/1995		1/11/1996		1/11/1996		8/26/2004	
Depth Sampled (feet)			0 - 0.5		1.3 - 1.5		0.3 - 0.7		0 - 0.5	
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment								
BENZO(A)PYRENE (UG/KG)	539	53.92	923.9997		235.6422		2380		530	
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	5526.7383		2075.2226		21497.2799		3796	
TOTAL PAH (UG/KG)			11000		3300		34723.9		4241.1	
2,4'-DDE (UG/KG)		9.06	65.2185		1.7655		23.2318			NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	3310		91.254		1380		2960	
ARSENIC (MG/KG)		17.09	11.6		11.38		10.32		13.2	J
COPPER (MG/KG)		73.74	166.25		2.5	J	1.5	J	442	
LEAD (MG/KG)	168	83.94	150.7		15.5		182		138	J
SILVER (MG/KG)		2342	0.6875		0.17		1.82		0.18	UJ
ZINC (MG/KG)		118	547.25		36.0		29.75		546	J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-28						
Sample Number			DSY-28-SUR	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504	
Date Sampled			10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004	
Depth Sampled (feet)			0 - 0.5	2.5 - 2.8	0.8 - 1.1	4.3 - 4.6	3.4 - 3.8	0 - 0.5	
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment							
BENZO(A)PYRENE (UG/KG)	539	53.92	377.4684	4130	697.5214	6.2333	0.00	220	J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	2210.2406	34320.7401	4116.0924	64.6812	19.2034	1656	
TOTAL PAH (UG/KG)			4810	64100	8170	96	25.432	1838	
2,4'-DDE (UG/KG)		9.06	1.6726	3.027	6.3366	0.3287	0.4694		NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	133.7077	203.8593	430.457	7.4336	16.7737	79.8	
ARSENIC (MG/KG)		17.09	8.68	9.66	9.5	8.59	4.85	11.8	J
COPPER (MG/KG)		73.74	71.75	132.5	179.5	18.25	168	60.1	J
LEAD (MG/KG)	168	83.94	77.7	192.6	148.4	12.8	16.1	51.3	J
SILVER (MG/KG)		2342	0.5125	1.0	0.96	0.16	0.15	0.32	UJ
ZINC (MG/KG)		118	169.25	327.75	455	71.25	466.5	142	J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-29				
Sample Number			DSY-29-SUR	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled			10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
Depth Sampled (feet)			0 - 0.5	0 - 0.5	1.4 - 1.8	0.5 - 0.9	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment					
BENZO(A)PYRENE (UG/KG)	539	53.92	2380	3200	9.529	1550.0409	1200
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	18467.4257	28222.8234	82.1203	11413.4112	10970
TOTAL PAH (UG/KG)			32800	46400	157	19600	12613
2,4'-DDE (UG/KG)		9.06	4.9571	4.7577	0.10	1.1214	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	546.3809	935.9907	2.854	81.4807	410
ARSENIC (MG/KG)		17.09	12.46	12.32	3.0	5.57	12.3 J
COPPER (MG/KG)		73.74	157.75	165	1.875 U	60.0	93.5 J
LEAD (MG/KG)	168	83.94	185.9	172.5	19.0	87.1	113 J
SILVER (MG/KG)		2342	0.7875	0.9875	0.065 U	0.61	0.27 UJ
ZINC (MG/KG)		118	392.75	403.25	34.5	130.5	252

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-30			DSY-31			
Sample Number			DSY-30-SUR	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604
Date Sampled			10/12/1995	11/16/1995	11/16/1995	10/12/1995	11/16/1995	11/16/1995	8/26/2004
Depth Sampled (feet)			0 - 0.5	2.2 - 2.6	0.6 - 0.9	0 - 0.5	3.3 - 3.6	1.5 - 1.8	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment							
BENZO(A)PYRENE (UG/KG)	539	53.92	811.8407	2.415	137.7264	420.8157	2.0163 J	147.0902	120
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	5594.3696	9.0553	846.8089	2408.6018	13.3997	743.8501	1055
TOTAL PAH (UG/KG)			11800	37.9	1710	5150	39	1640	1165
2,4'-DDE (UG/KG)		9.06	5.6635	0.10	0.4163	3.629	0.284	2.4482	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	315.2884	5.3362	12.9621	220.9876	3.1993	146.6901	130
ARSENIC (MG/KG)		17.09	10.3	6.07	5.45	10.22	5.49	9.04	10.9 J
COPPER (MG/KG)		73.74	81.25	1.875 U	9.75	80.75	1.875 U	36.75	58.9 J
LEAD (MG/KG)	168	83.94	80.0	21.7	34.9	81.0	29.9	52.7	47.9 J
SILVER (MG/KG)		2342	0.7375	0.065 U	0.14	0.5125	0.065 U	0.57	0.25 UJ
ZINC (MG/KG)		118	192.75	48.5	64.5	167	36.0	122.75	140 J

Notes:

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			**DSY-32**			**DSY-33**
Sample Number			**DSY-32-SUR**	**DSY-SD-32-082604**		**DSY-33-SUR**
Date Sampled			**9/28/1995**	**8/26/2004**		**9/28/1995**
Depth Sampled (feet)			**0 - 0.5**	**0 - 0.5**		**0 - 0.5**
QC Identifier	**Derecktor Shipyard RPRG Sediment**	**Derecktor Shipyard PRG Sediment**				
BENZO(A)PYRENE (UG/KG)	539	53.92	494.6919	250	J	67.8487
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	2897.783	2334		391.2466
TOTAL PAH (UG/KG)			5980	2566		879
2,4'-DDE (UG/KG)		9.06	0.26		NA	0.6334
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	200.912	102		39.9302
ARSENIC (MG/KG)		17.09	10.93	11.3	J	7.39
COPPER (MG/KG)		73.74	66.75	57.3	J	17.25
LEAD (MG/KG)	168	83.94	124.8	43.6	J	40.0
SILVER (MG/KG)		2342	0.8125	0.28	U	0.2375
ZINC (MG/KG)		118	201.25	111	J	72.25

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			DSY-34				DSY-35
Sample Number			DSY-34-SUR	DSY-34-MID	DSY-34-BOT	DSY-34-MID-D	DSY-35-SUR
Date Sampled			10/12/1995	11/16/1995	11/16/1995	11/16/1995	10/12/1995
Depth Sampled (feet)			0 - 0.5	0.7 - 1.0	2.3 - 2.6	0.7 - 1.0	0 - 0.5
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment					
BENZO(A)PYRENE (UG/KG)	539	53.92	147.6253	21.0301	2.415	NA	4.1449 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	860.3718	126.7275	7.3587	NA	25.1363
TOTAL PAH (UG/KG)			1930	299	41	NA	61.7
2,4'-DDE (UG/KG)		9.06	0.8958	0.6482	0.2723	NA	0.2583
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	64.5813	20.9327	4.9628	NA	6.6972
ARSENIC (MG/KG)		17.09	9.66	6.79	7.41	8.92	3.39
COPPER (MG/KG)		73.74	33.5	1.875 U	4.25	7.75	1.875 U
LEAD (MG/KG)	168	83.94	47.6	24.5	25.7	23.2	14.0
SILVER (MG/KG)		2342	0.2875	0.065 U	0.065 U	0.065 U	0.065 U
ZINC (MG/KG)		118	105.5	47.0	55.5	38.25	28.5

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TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
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Sample Location			**DSY-36**				**DSY-37**
Sample Number			**DSY-36-SUR**	**DSY-36-BOT**	**DSY-36-MID**	**DSY-36-BOT-D**	**DSY-37-SUR**
Date Sampled			**9/28/1995**	**11/16/1995**	**11/16/1995**	**11/16/1995**	**9/28/1995**
Depth Sampled (feet)			**0 - 0.5**	**3.0 - 3.3**	**1.3 - 1.6**	**3.0 - 3.3**	**0 - 0.5**
QC Identifier	**Derecktor Shipyard RPRG Sediment**	**Derecktor Shipyard PRG Sediment**					
BENZO(A)PYRENE (UG/KG)	539	53.92	319.4442	10.3104	432.4069	NA	163.8001
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	1703.2945	53.1417	2129.0725	NA	1115.872
TOTAL PAH (UG/KG)			3720	118	5010	NA	2250
2,4'-DDE (UG/KG)		9.06	0.2477	0.338	7.8661	NA	0.10
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	113.2718	4.1091	393.4579	NA	99.9017
ARSENIC (MG/KG)		17.09	11.21	4.11	7.79	4.56	7.41
COPPER (MG/KG)		73.74	54.0	1.875 U	104.5	4.0	27.0
LEAD (MG/KG)	168	83.94	78.8	33.5	112.5	20.9	56.9
SILVER (MG/KG)		2342	0.5625	0.065 U	1.54	0.065 U	0.3875
ZINC (MG/KG)		118	144.25	35.5	213.75	20.25	93.5

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

TABLE 4-1

ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 16 OF 17

Sample Location			DSY-38	DSY-39	DSY-40	DSY-41	DSY-SD-101	
Sample Number			DSY-38-SUR	DSY-39-SUR	DSY-40-SUR	DSY-41-SUR	DSY-SD-101-0006	DSY-SD-101-0612
Date Sampled			9/28/1995	10/12/1995	10/12/1995	10/12/1995	8/25/2004	8/25/2004
Depth Sampled (feet)			0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 1.0
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment						
BENZO(A)PYRENE (UG/KG)	539	53.92	119.8243	142.9988	316.6461	18.5537	270	420
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	843.8954	830.6092	3016.6921	143.5151	2541	4743
TOTAL PAH (UG/KG)			1750	1830	5390	291	2781.6	5101.3
2,4'-DDE (UG/KG)		9.06	0.10	0.7129	1.0651	0.3972	NA	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	59.3308	58.1578	84.1312	13.7532	307	410
ARSENIC (MG/KG)		17.09	8.94	7.58	6.79	11.43	9.4 J	8.2 J
COPPER (MG/KG)		73.74	28.0	20.0	29.75	9.25	55.9 J	66.8 J
LEAD (MG/KG)	168	83.94	62.2	54.0	42.1	17.0	40.7 J	49.0 J
SILVER (MG/KG)		2342	0.1625	0.2625	0.2125	0.065 U	0.42 J	0.50 J
ZINC (MG/KG)		118	109	97.25	100.25	47.25	144 J	178

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

TABLE 4-1

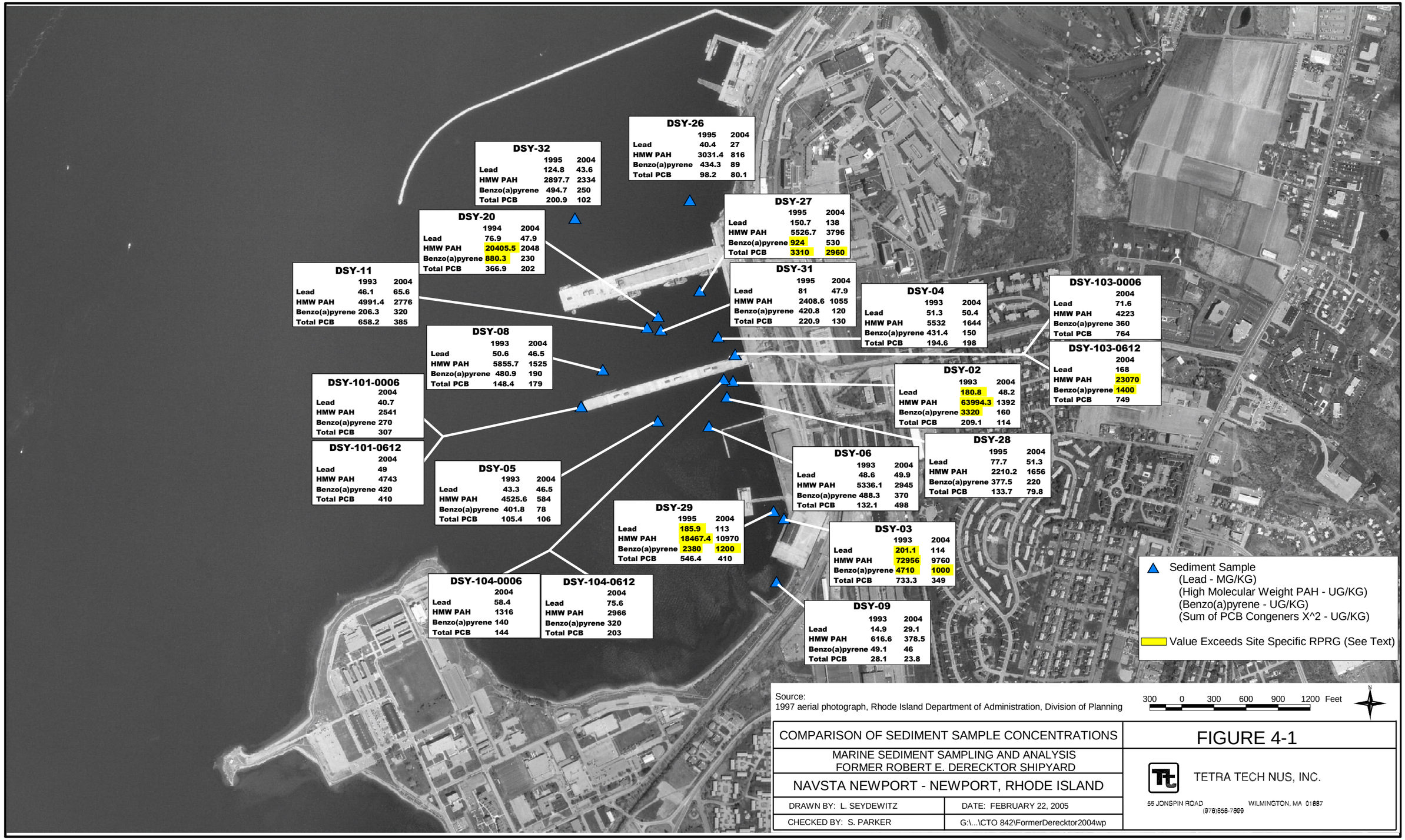
ANALYTICAL RESULTS COMPARED TO RPRGS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
PAGE 17 OF 17

Sample Location			DSY-SD-103		DSY-SD-104	
Sample Number			DSY-SD-103-0006	DSY-SD-103-0612	DSY-SD-104-0006	DSY-SD-104-0612
Date Sampled			8/25/2004	8/25/2004	8/25/2004	8/25/2004
Depth Sampled (feet)			0 - 0.5	0.5 - 1.0	0 - 0.5	0.5 - 1.0
QC Identifier	Derecktor Shipyard RPRG Sediment	Derecktor Shipyard PRG Sediment				
BENZO(A)PYRENE (UG/KG)	539	53.92	360	1400 *	140	320 J
HIGH MOLECULAR WEIGHT PAHS (UG/KG)	13903	6951	4223	23070	1316	2966
TOTAL PAH (UG/KG)			4448	24485	1427	3358
2,4'-DDE (UG/KG)		9.06	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2 (UG/KG)	1060	92.82	764	749	144	203
ARSENIC (MG/KG)		17.09	9.1 J	9.1 J	10.1 J	11.1 J
COPPER (MG/KG)		73.74	85.9 J	218	77.7 J	107 J
LEAD (MG/KG)	168	83.94	71.6 J	168 J	58.4 J	75.6 J
SILVER (MG/KG)		2342	0.22 UJ	0.64 J	0.28 UJ	0.29 UJ
ZINC (MG/KG)		118	200	401	166 J	205 J

Notes:

PRG - Refer to FS Report, Appendix B.
RPRG - Refer to FS Report, Appendix B.

Black Background - Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis



COMPARISON OF SEDIMENT SAMPLE CONCENTRATIONS	FIGURE 4-1
MARINE SEDIMENT SAMPLING AND ANALYSIS FORMER ROBERT E. DERECKTOR SHIPYARD	TETRA TECH NUS, INC.
NAVSTA NEWPORT - NEWPORT, RHODE ISLAND	55 JONSPIN ROAD WILMINGTON, MA 01887 (978)658-7899
DRAWN BY: L. SEYDEWITZ — DATE: FEBRUARY 22, 2005	
CHECKED BY: S. PARKER — G:\...\CTO 842\FormerDerecktor2004wp	

There are several possible reasons concentrations differ between sampling events, including changes to inputs of PAHs to sediment, natural attenuation processes, sediment movement due to ship traffic, seasonal or tidal currents, spatial heterogeneity of sediment, mixing of sediment and sediment deposition. URI reported in the ERA that sediment deposition was between 1 and 2 centimeters per year in Coddington Cove, based on analytical results of core samples collected.

AVS and SEM were measured in the sediment to determine bioavailability of metals present in the sediment. The presence of AVS has been found to bind metals in sedimentary environments and restrict them from being metabolized by the receptor organism. A ratio of SEM:AVS less than 1 indicates the presence of AVS that would thus restrict the metal from becoming available to benthic organisms. SEM:AVS ratios are presented in Appendix C. Ratios of >1 were observed for sediments at stations DSY-32 (399) DSY-26 (7.4), DSY-02 (10.7), DSY-28 (19.4), DSY-09 (1.9), and DSY-31 (1.2). Stations where SEM:AVS ratios were close, but below 1.0 included DSY-101, 103, 20, 27, 04, 11, and 06. Stations where SEM:AVS ratios were well below 1.0 included DSY-03, 05, 08, and 29. Reference stations provided SEM:AVS ratios of between 0.2 – 13. Using these results for evaluating PRGs, it was observed that the highest lead concentrations measured in surface sediments in 2004 were reported for Stations DSY-103 (168 mg/kg) DSY-27 (138 mg/kg), DSY-03 (114 mg/kg) and DSY-29 (113 mg/kg). All these stations have low SEM:AVS ratios, indicating the lead and other metals in those samples are not particularly bioavailable.

Total organic carbon was also measured in sediment samples collected (Appendix C). High levels of TOC indicate presence of natural organic materials (plant matter, etc) in the sediment which tend to bind with some organic contaminants. PCBs and long-chain hydrocarbons have the propensity to bind with sediments inhibiting their transport except with those sediment particles. This propensity favors smaller organic sediment particles, and not larger and smooth sand particles. Therefore, these PCB and PAH compounds tend to accumulate with mucky organic sediments and stay in place better than in locations where there are loose sands and gravels. Higher TOC was noted in the restricted areas of the site (Stations 29, 03, 02) and the reference areas (particularly Castle Hill Cove 01) than areas which are more subject to current flows (JPC Stations, DSY-09, 11, and 32). Sample descriptions presented in Appendix A show organic mucky sediments were found during sample collections around the carriers at Pier 1 (stations DSY-05, 04, 06, and 08) during the 2004 event, suggesting that the ships are restricting flow and causing silts to settle.

4.2 FORENSIC HYDROCARBON CHARACTERIZATION

A forensic hydrocarbon characterization (fingerprinting) of sediments was conducted on sediment samples collected during this effort. The results of these analyses were intended to help identify impacts

from historical activities near the site, versus other inputs (ambient sources, storm runoff, non-point discharges, current fuel use and boat traffic) near the Derecktor Shipyard study area. The forensic data evaluation compared the concentrations and compositions of petroleum and combustion residues in these sediments with those in six samples collected from background reference locations (Jamestown Cranston Cove, Jamestown Potter Cove, and Castle Hill Cove). A full report on these analyses is provided in Appendix E of this report. The summary of the findings interpreted from this characterization is provided in the following paragraphs.

The reference sediments contained varied hydrocarbon mixtures derived from petroleum (petrogenic), combustion (pyrogenic), and natural (diagenetic) origins. The dominant hydrocarbons consisted of weathered residual range petroleum mixed with plant waxes and pyrogenic PAHs. The concentration of the 16 EPA Priority Pollutant PAHs plus methyl naphthalene ranged from 220 ug/kg to 6,500 ug/kg. Sediments from Jamestown Cranston Cove contained the highest levels of plant waxes while Castle Hill Cove contained the highest levels of pyrogenic PAHs.

Sediment samples from the shallow cores at sampling locations DSY-SD-101 (total PAHs equal to 9,500 ug/kg in the 6” to 12” interval) and DSY-SD-103 (total PAHs from 11,000 ug/kg to 44,000 ug/kg in the first two 6” intervals, respectively) resembled the Castle Hill Cove reference sediments with slightly higher levels of pyrogenic 4- to 6-ring PAHs. The high level of anthracene relative to phenanthrene in these sediments was consistent with creosote used to treat marine pilings and other wooden structures.

Sediment samples collected from locations DSY-SD-03 and DSY-SD-29 also contained slightly higher pyrogenic 4- to 6-ring PAHs (total PAHs equal to 22,000 ug/kg to 15,000 ug/kg, respectively). These elevated PAHs are attributable to higher soot loadings from proximal storm drains, exhaust from ship engines, or local industry. The reader should note that this area receives storm water from a large storm drain outfall, originating from the Building 234 area, and Building 7, a heating plant.

The sediment sample from DSY-SD-09 contained levels of total PAHs consistent with background (total PAHs equal to 490 ug/kg to 700 ug/kg). However, compared to other Coddington Cove and background samples, this sediment contained slightly higher levels of hydrocarbons associated with middle to heavy residual range petroleum (e.g., slightly enriched petrogenic PAHs). This pattern was very similar to that at DSY-SD-06 (total PAHs equal to 3,600 ug/kg). DSY-SD-27 contained a mixture of combustion derived PAHs plus slightly higher levels of hydrocarbons consistent with middle distillate (e.g., marine diesel) (total PAHs equal to 7,900 ug/kg).

The remaining sediment samples were indistinguishable from the background reference samples based on hydrocarbons concentration and composition. These samples included DSY-SD-02, DSY-SD-04,

DSY-SD-05, DSY-SD-08, DSY-SD-11, DSY-SD-20, DSY-SD-28, DSY-SD-31, DSY-SD-32, DSY-SD-26, DSY-SD-1010006, DSY-SD-104-0006, and DSY-SD-104-0612.

4.3 CONTINUOUS AUTOMATED SURFACE WATER TURBIDITY MONITORING

Surface water turbidity levels were continuously recorded at two monitoring stations for approximately four weeks. The results were compared to the Navy's ship log and local precipitation records. Turbidity data, correlated with ship arrivals and departure times, are summarized on Figures 4-2 and 4-3. Figure 4-2 presents turbidity recorded at Pier 1 and Figure 4-3 presents turbidity recorded at Pier 2. The data is presented in Appendix D.

The data illustrates variations in the suspended sediment levels between Piers 1 and 2. Turbidity readings demonstrate minimal change in suspended sediment levels at Pier 1, and occasional large variations in suspended sediment at Pier 2.

The elevated turbidity readings do not directly coincide with ship movement. There are several instances when elevated turbidity values may coincide with ship movement as on September 7, 8, 14 and 24 (Figure 4-3). A high turbidity reading at Pier 2 on September 14 at approximately 1600 appears to correspond with the Juniper leaving this Pier and a relatively high turbidity reading recorded at Pier 1 at about the same time may further support the effect of this ship on suspended sediment levels. Other elevated turbidity readings do not correlate directly with ship movement records.

Weather may also impact the amount of suspended sediment present in an area. Precipitation of 2.65 inches in a 24 hour period on September 29 does appear to correspond to an increase in turbidity levels recorded on both sensors. However, this should result in a similar response in the sensors at both piers, which does not appear to be the case. This was the most significant rain event during the period of study. No other variations in turbidity correlated with an observed weather event.

The overall conclusion drawn from the turbidity monitoring is that variations in turbidity levels may be due to a combination of factors including ship movement and its effect of re-suspending sediment particles, increased wave activity due to storms and tidal and seasonal fluctuations in water levels and currents. Washing of the pier using a firehose to clean the deck of shell debris left from gulls was an observed practice by Navy employees working on Pier 2 during the study. Such an activity may also contribute to periodic increases in turbidity readings as the shells are washed over the end of the pier, near the recording sensor.

FIGURE 4-2
VESSEL ACTIVITY VERSUS TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004 PIER 1
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND

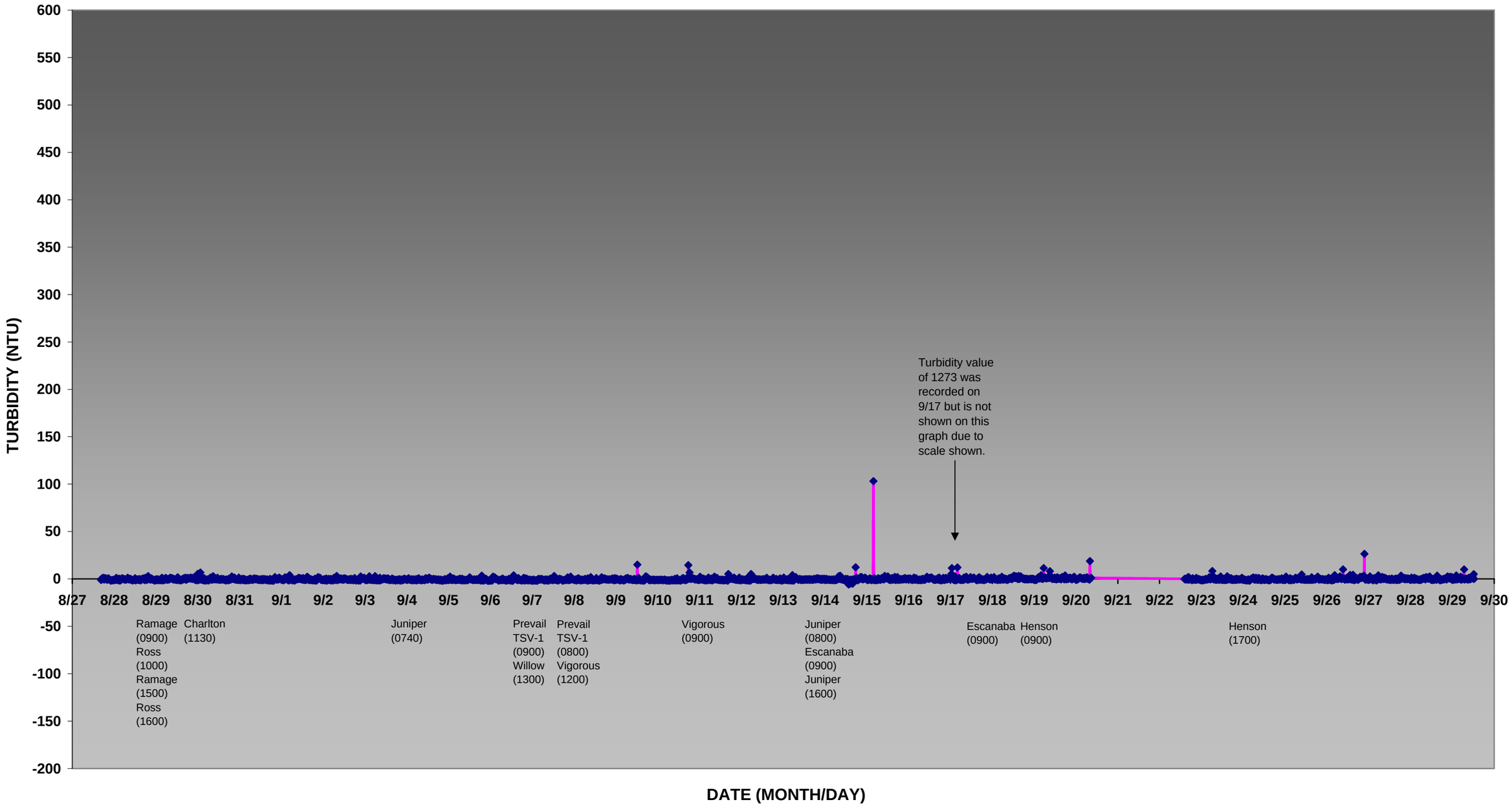
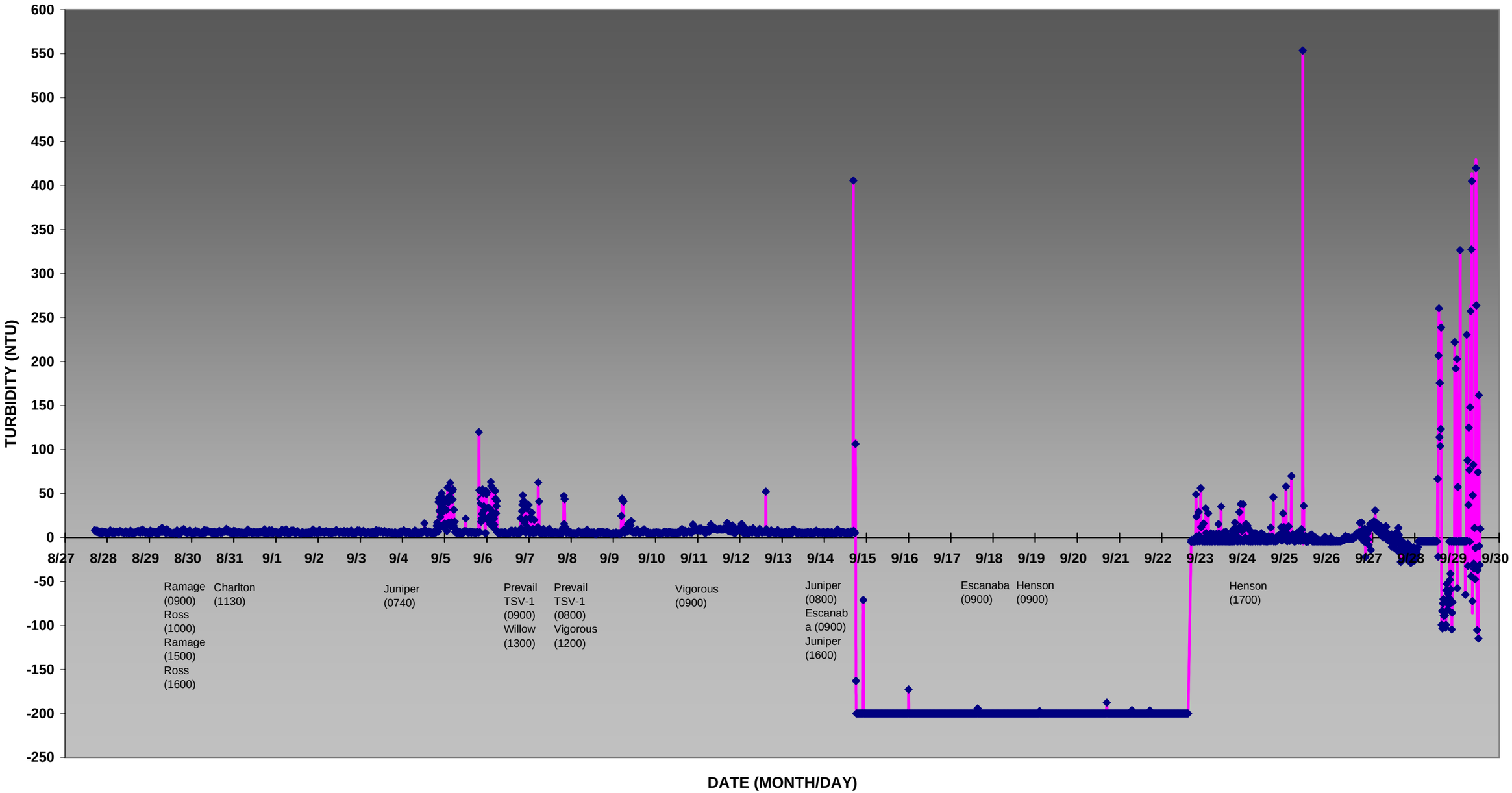


FIGURE 4-3
VESSEL ACTIVITY VERSUS TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004 PIER 2
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND



NOTE: THE SENSOR STOPPED WORKING SEPTEMBER 14. DATA COLLECTED BETWEEN SEPTEMBER 14 AND 22, WHEN THE SENSOR WAS REPLACED, IS NOT CONSIDERED TO BE VALID.

5.0 SUMMARY AND CONCLUSION

Surface sediment samples collected from Coddington Cove near the Former Derecktor Shipyard area in 2004 were compared to those collected in 1993 through 1995, and reported in the Ecological Risk Assessment for the site. While a number of contaminants still exceed RPRGs at some stations, sediment contaminant concentrations were notably lower in the 2004 data set than in previously collected data.

A forensic analysis of aliquots of the samples collected as a part of this effort found that the Coddington Cove sample stations generally contained hydrocarbon concentrations and compositions that were consistent with background. Slightly elevated PAH concentrations were observed near creosote treated wood pilings (DSY-103, Pier 1) and storm sewer outfalls (DSY-03 and DSY-29). Mixtures of background hydrocarbons and elevated levels of middle to heavy petroleum (relative to reference stations) were observed in three separate study area locations – Stations DSY-09, DSY-06, and DSY-27. Such petroleum residues are most likely attributable to fueling or other vessel related activities.

Contaminants detected in sediment support previous findings of contaminants exceeding RPRGs at Stations DSY-27 (PCBs), DSY-03/DSY-29 (PAHs). Elevated concentrations of fuel related PAHs were found near Pier 1 (DSY-101 and 104). PAH signatures from stations DSY-103 and DSY-101 were similar to those found at the Castle Hill Cove stations, and may be attributable to treated wood pilings.

Water turbidity was recorded within 1 foot of the cove bottom for a 34 day period at the seaward ends of Piers 1 and 2, and increased turbidity levels were compared with the Navy dockmasters log of ship arrivals and departures. While some correlation is possible, correlations of increased turbidity readings at depth and ship movements were not consistent for the period.

APPENDIX A

FIELD DATA SHEETS

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. CTO-006 1611-0522

Laboratory Name: MITKEM

Sampler Signatures

Date Shipped 8-27-04

Carrier LAB PICKUP

Airbill No.

No. of Coolers

Container Type	Container Type	Container Type	Container Type	Container Type
4 oz. AMB.	8 oz. AMB.	8 oz. AMB.	8 oz. AMB.	
Analysis	**Analysis**	**Analysis**	**Analysis**	**Analysis**
PAH BY HL-MS	PCB CONGENERS	AVS/SEM, TOC, TAL METALS	EXTRA VOLUME IF NEEDED	
Preservative	**Preservative**	**Preservative**	**Preservative**	**Preservative**
ICE	ICE	ICE	ICE	

Sample Number	Matrix	2004 Date/Time	Sample Location	Tag Number(s)	QC					
	SED.	8-26/0920	DSY-SD-29-082604	✓		✓	✓	✓		
		/1000	DSY-SD-05-082604	✓	DZ	✓	✓	✓		
		/1005	DSY-SD-DUP02-082604	✓	DZ	✓	✓	✓		
		/1025	DSY-SD-08-082604	✓		✓	✓	✓		
		/1040	DSY-SD-04-082604	✓		✓	✓	✓		
		/1110	DSY-SD-20-082604	✓		✓	✓	✓		
		/1130	DSY-SD-27-082604	✓		✓	✓	✓		
		/1150	DSY-SD-31-082604	✓		✓	✓	✓		
		/1210	DSY-SD-11-082604	✓		✓	✓	✓		
		/1240	DSY-SD-32-082604	✓		✓	✓	✓		
		/1305	DSY-SD-~~30~~ 34-082604	✓		✓	✓	✓	✓	KO entry error 10/12/04
	SED.	8-26/1350	DSY-SD-CC01-082604	✓		✓	✓	✓		

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
[signature]	8/27/04 0730	[signature]	YES NO	
Relinquished By: (Signature)	Date/Time	Received for Laboratory By:	Date/Time	

Tt NUS Form 0022

03033

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. CTO-008 1611-0577

Laboratory Name: MITKEM

Sampler Signatures: [signature]

Date Shipped: 8-27-04

Carrier: LAB PICKUP

Airbill No.

No. of Coolers

Sample Number	Matrix	2004 Date/Time	Sample Location	Tag Number(s)	QC	Container Type: 4oz AMB	Container Type: 8oz AMB	Container Type: 8oz AMB	Container Type: 1L poly	Container Type
						Analysis: PAH by HC-MS	Analysis: PCB Congeners	Analysis: ANS-SETM TOC; TAL METALS	Analysis: Metals	Analysis
						Preservative: ICE	Preservative: ICE	Preservative: ICE	Preservative: Nitric	Preservative
	SED	8-26/1410	DSY-SD-CH07-082604	✓		1	1	1		
	↓	/1440	DSY-SD-JPC01-082604	✓		1	1	1		
		/1515	DSY-SD-JPC03-082604	✓	D3	1	1	1		
		~~1545~~	DSY-SD-DUP03-082604	✓	D3	1	1	1		
	↓	↓ /1540	DSY-SD-CH01-082604	✓	MS/MSD	1-8oz.	2	2		
	SED	8-26/1600	DSY-SD-CH02-082604	✓		1	1	1		
	AQ	8-25 1627	DSY-SD-RB01-082504			1*	1*	—	1	

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
[signature]	8/27/04 1730	[signature]	YES NO	Use SD09 + CH01 for Lab QC * 1 Liter Amber
Relinquished By: (Signature)	Date/Time	Received for Laboratory By:	Date/Time	

Tt NUS Form 0022

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. CTO-008 1611-0522

Laboratory Name: MITKEM

Sampler Signatures: [signature]

Date Shipped: 8-27-04

Airbill No.:

Carrier: LAB PICKUP

No. of Coolers:

Container Type	Container Type	Container Type	Container Type	Container Type
4oz. AMB	8oz. AMB	8oz. AMB	8oz. AMB	
Analysis	Analysis	Analysis	Analysis	Analysis
PAH by GC-MS	PCB CONGONERS	TOC; AVS/SEM; TAL METALS	EXTRA VOLUME IF REQUIRED	
Preservative	Preservative	Preservative	Preservative	Preservative
ICE	ICE	ICE	ICE	

Sample Number	Matrix	2004 Date/Time	Sample Location	Tag Number(s)	QC	Preservative ICE	Preservative ICE	Preservative ICE	Preservative ICE	Preservative
	SED.	8-25/1220	DSY-SD-101-0006	✓		1	1	1		
		8-25/1230	DSY-SD-101-0612	✓		1	1	1		
		8-25/1400	DSY-SD-103-0006	✓		1	1	1		
		8-25/1405	DSY-SD-103-0612	✓		1	1	1		
		8-25/1430	DSY-SD-104-0006	✓		1	1	1		
*		8-25/1440	DSY-SD-104-0612	✓		1	1	1		
		8-25/1530	DSY-SD-02-082504	✓	D1	1	1	1		
		8-25/1540	DSY-SD-DUP01-082504	✓	D1	1	1	1		
		8-25/1550	DSY-SD-28-082504	✓		1	1	1	1	
		8-25/1615	DSY-SD-06-082504	✓		1	1	1		
		8-26/0845	DSY-SD-09-082604	✓	MS/MSD	1-8oz AMB	2	2		
	SED.	8-26/0910	DSY-SD-03-082604	✓		1	1	1		

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
[signature]	8/27/04 0730	[signature]	YES NO	SED = SEDIMENT.
Relinquished By: (Signature)	Date/Time	Received for Laboratory By:	Date/Time	* PETROLEUM ODOR

Tt NUS Form 0022

№ 03032

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody
Sediment Sampling

Case No.

Subcontract No.

Page 1 of 1

Project No. CTO 008 1611-0522

Laboratory Name: MITKEM

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/27/04

Carrier: Pickup

Airbill No.

No. of Coolers: 1

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Container Type: 1L poly	Container Type: 1L Amber	Container Type: 1L Amber	Container Type	Container Type
						Analysis: Metals	Analysis: PCB Long	Analysis: PAH	Analysis	Analysis
						Preservative: HNO3	Preservative	Preservative	Preservative	Preservative
	AQ	8/26 1930	DSY-SD-RB02-082604		RB	1	1	1		
	AQ	8/26 1950	DSY-SD-RB03-082604		RB	1	1	1		
	AQ	8/27 1030	DSY-SD-FB01-082704		FB	1	1	1		

KP

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/27/04 2:30	8-27-04 2:30	YES (circled) NO	FB = field blank (DUF)
Relinquished By: (Signature)	Date/Time	Received for Laboratory By:	Date/Time	

Tt NUS Form 0022

NS 03046

File ~~[illegible]~~ N1611 - 4.8

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. 1611 -0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped 8-30-04 Carrier FedEx

Airbill No. 8455 0072 7886 No. of Coolers 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber				

Analysis	Analysis	Analysis	Analysis	Analysis
Forensic PAH/TPH				

Sample Number	Matrix	2004 Date/Time	Sample Location	Tag Number(s)	QC	Preservative: Ice	Preservative	Preservative	Preservative	Preservative
	Sed	8/25 1220	DSY-SD-101-0006			1				
		1230	-101-0612			1				
		1400	-103-0006			1				
		1405	-103-0612			1				
		1430	-104-0006			1				
		1440	-104-0612			1				
		1530	-02-082504		D1	1				
		8/25 1540	-DUP01-082504		D1	1				
		8/25 1550	-28-082504			2				extra volume
		8/25 1615	-06-082504			1				
		8/26 0845	-09-082604		QC	2				extra volume
	Sed	8/26 0910	DSY-SD-03-082604			1				

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400		YES NO	Use DSY-SD-09-082604 for Lab QC
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	

Tt NUS Form 0022

NS 03047

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Page 2 of 3

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: [signature]

Date Shipped: 8/30/04

Carrier: Fed Ey

Airbill No.: 8455 0072 7886

No. of Coolers: 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber				

Analysis	Analysis	Analysis	Analysis	Analysis
Forensic TPH/PAH				

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Preservative: Ice	Preservative	Preservative	Preservative	Preservative
	Sed	8/26 0920	DSY-SD-29-082604			1				
		1000	-05-		D2	1				
		1005	-DUP02-		D2	1				
		1025	-08-			1				
		1040	-04-			1				
		1110	-20-			1				
		1130	-27-			1				
		1150	-31-			1				
		1210	-11-			1				
		1240	-32-			1				
		1305	-26 ~~36~~ RRP 10/12			1				
	Sed	8/26 1350	DSY-SD-CL01-082604			1				

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
[signature]	8/30/04 1400		YES NO	
Relinquished By: (Signature)	Date/Time	Received for Laboratory By:	Date/Time	

Tt NUS Form 0022

NO 03048

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/30/04

Carrier: FedEx

Airbill No: 8455 0072 7886

No. of Coolers: 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber		1 Liter Amber		
Analysis	**Analysis**	**Analysis**	**Analysis**	**Analysis**
Forensic PAH/TPH		Forensic PAH/TBH		
Preservative	**Preservative**	**Preservative**	**Preservative**	**Preservative**
Ice		Ice		

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Preservative	Preservative	Preservative	Preservative	Preservative
	Sed	8/26 1410	DSY-SD-CC02-082604			1				
		1440	JPC01-			1				
		1515	JPC03-			1				
		1526	DUP03			1				
		1540	CH01		QC	2		~~2~~ KTO		extra
	Sed	8/26 1600	CH02-082604			1		~~1~~ KTO		
	Ag	8/25 1627	RB01-082504		RB	ekman		1		
	Ag	8/26 1930	RB02-082604		RB	ponar		1	called S.M. 9/1/04	
	Ag	8/26 1950	RB03 082604		RB	ponar		1	Do Not Analyze	
	Ag	8/27 1030	DSY-SD-FB01-082704		FB	DIUF		1	SRP 9/1/04	
			KTO 8/30/04				30/4			

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400		YES NO	Use DSY-SD-09-082604 and DSY-SD-CH01-082604 for Lab QC
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	

Tt NUS Form 0022

№ 03049

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-02-0-01~~ DSY-SD-02-082504

Tetra Tech NUS Job No./PMS N1611- 0522
QC Information: DUP 01 (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER

Depth Sampled: 0-6" feet

Sample Date & Time: 8/25/2004 1530 hours (military) Dup. Time: 1540 hours

Sampler(s): T. Dorgan / K. O'Neill/ (circle appropriate)

Data Recorded By: (Signature)

Survey Meter/Monitor Reading: ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

DARK GRAY - BLACK MUCK : SILT - CLAY SIZE PARTICLES, SLIGHT H_2S ODOR.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-03-06~~ DSY-SD-03-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: _____ (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER _____

Depth Sampled: 0 - 6" feet

Sample Date & Time: 8/26/2004 0910 hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

DARK GRAY-BLACK FINE SANDY SILT. MOSTLY SILT TRACE CLAY, SAND IS FINE-MED GRAINED. H_2S ODOR, MUSSEL SHELL FRAGMENTS.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY 04~~ DSY-SD-04-082604
Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ——— (if applicable)

Sample Method: _PONAR (EKMAN) CORE SAMPLER_____

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1040 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW.

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

BLACK MUCK. MOSTLY SILT, TRACE CLAY, TRACE ~~EEL~~ PLANT FIBER BURIED IN SEDIMENT. H_2S ODOR STRONG.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-05-0-6"~~ DSY-SD-05-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: DUP-02 (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8 / 26/2004 1000 hours (military) Dup. Time: 1005 hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
_X_ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

DARK GRAY-BLACK MUCK. SILT-CLAY SIZE PARTICLES. TRACE MUSSEL SHELL FRAGMENT. ROCK CRAB CAUGHT IN GRAB. LT. GREEN COATING ON SURFACE, POSS. ALGAE or BACTERIA.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-06-0-6~~ DSY-SD-06-082504

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: _____ (if applicable)

Sample Method: _PONAR (EKMAN) CORE SAMPLER_____

Depth Sampled: 0 – 6" feet

Sample Date & Time: 8/25/2004 1615 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE PHOTO FOR BOTTOM TYPE

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

LT. GREEN SURFACE COATING POSS. ALGAE OR BACTERIA
DARK GRAY-BLACK MUCK. SILT-CLAY SIZE PARTI

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-07~~ DSY-SD-07-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ___ (if applicable)

Sample Method: _PONAR (EKMAN) CORE SAMPLER___

Depth Sampled: ___ feet

Sample Date & Time: 8/26/2004 ___ hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW + PHOTO'S.

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: NO SAMPLE TAKEN

5 ATTEMPTS WITH PONAR RESULTS IN A SM. QTY OF UNIFORM POORLY GRADED FINE SAND. ONLY PENETRATING < 1". SHELL FRAGMENTS, 1 BLADE EEL-GRASS NOTED + TRACE GLASS FRAGMENTS.

Tt NUS Form 0005A

Page ____

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-08-0-6"~~ DSY-SD-08-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: _____ (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER _____

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1025 hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) MUCK.

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: APPROX. 30 FT. FROM STERN OF SARATOGA (STARBOARD SIDE).
BLACK MUCK. MOSTLY SILT, TRACE CLAY, TRACE FINE SAND.
TRACE SHELL FRAG. SURFACE COATING LT. GREEN POSS. ALGAE OR BACTERIA.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-09-0-6D~~ DSY-SD-09-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: MS/MSD (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 0845 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
X Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite
Other MS/MSD

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE PHOTO'S & DESC. BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

MULT. GRAB'S W/ PONAR TO GET VOLUME FOR MS/MSD.
FINE UNIFORM POORLY GRADED FINE SAND, TRACE SILT. TRACE SHELL FRAGMENTS, GRAY COLOR, LT. GREEN ALGAE OR BACTERIA? ON SURFACE.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-11-0-6~~ DSY-SD-11-082604

Tetra Tech NUS Job No./PMS N1611-05~~5~~2
QC Information: ——— (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER ___

Depth Sampled: 0-6 feet

Sample Date & Time: 8/26/2004 1210 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

LT. GREEN SURFACE COATING (POSS. ALGAE OR BACTERIA), BLACK MUCK. MOSTLY SILT, TRACE CLAY. H_2S ODOR.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-20-0-6~~ DSY-SD-20-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ——— (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1110 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: WATER DEPTH = 33' @ 1120.

LT. GREEN @ SURFACE, BLACK BELOW. MUCK, MOSTLY SILT, TRACE CLAY, TRACE SHELL FRAGS. H_2S ODOR.

Tt NUS Form 0005A

Page ___ of ___

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

KO 10/12/04

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-36-0-6~~ DSY-SD-~~36~~ 26-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ——— (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1305 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: STILLWATER BASIN, CLOSER TOWARDS SHORE. BOTTOM HAS NOTICABLE SLOPE & IS COARSER-GRAINED. LT. BROWN GRAVELLY, SAND. MOSTLY F-MED C WELL GRADED SAND. TRACE SILT, TRACE CLAY. NO H_2S NOTED. TRACE SHELL FRAGMENTS MULTIPLE ARTHROPOD NOTED. GRAVEL WAS FINE SUBRANDED.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-27-0-6~~ DSY-SD-27-082604

Tetra Tech NUS Job No./PMS N1611- 8522
QC Information: ___ (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1130 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

1ST GRAB RECOVERED ~1' LONG METAL ANGLE IRON DEBRIS COVERED W/ SILT & BARNACLES, 2ND GRAB RECOVERED A MIX OF SHELL FRAGMENTS, BLACK SILT, BROKEN GLASS, A STARFISH. TRACE LONG SILKY HAIR-LIKE FIBERS NOTED. POSS. FIBERGLASS OR ASBESTOS.

NOTE: ANCHOR-CHAIN SEEN IN ~~DOWN~~ VIDEO NEAR SAMPLE STATION.

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-28-0-6~~ DSY-SD-28-082504

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ___ (if applicable)

Sample Method: _PONAR (EKMAN) CORE SAMPLER___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/25/2004 1550 hours (military) Dup. Time:___hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:
LT. GREEN SURFACE COATING - POSS ALGEA OR BACTERIA.
DARK GRAY-BLACK MUCK. SILT-~~GRA~~ CLAY SIZE PARTICLES
LIGH H_2S ODOR, VERY SOFT.

NOTE: 1 EXTRA 8 OZ. COLLECTED DUE TO HIGH MOIST. CONTENT

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-29-0-6~~ DSY-SD-29-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ___ (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 0920 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) MUCK - SILT & CLAY

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH:

DARK GRAY - BLACK MUCK. SILT & CLAY SIZE PARTICLES. TRACE MUSSEL SHELL FRAGMENTS. STRONG H_2S ODOR. VERY LOOSE.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-31-0-6"~~ DSY-SD-31-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ___ (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1150 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil	___ Trip Blank*
_x_ Sediment	___ Rinsate Blank*
___ Lagoon/Pond	___ Field Duplicate collected
X Grab	___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

1 GREEN SURFACE, BLACK BELOW, MUCK. MOSTLY SILT, TRACE CLAY. 1 CLAM NOTED. H_2S ODOR. NO SHEEN.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-32-0-6"~~ DSY-SD-32-082604

Tetra Tech NUS Job No./PMS N1611-~~0552~~ 0522
QC Information: ——— (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1240 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil	___ Trip Blank*
_x_ Sediment	___ Rinsate Blank*
___ Lagoon/Pond	___ Field Duplicate collected
_X_ Grab	___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: STILLWATER BASIN.

LT. GREEN COATING ON SURFACE. POSS ALGEA OR BACTERIA. BLACK SILT, TRACE CLAY, TRACE FINE SAND. LIGHT H_2S ODOR. VERY LOOSE & SOFT.

EXTRA 8 OZ. COLLECTED FOR VOLUME FOR LAB IN-CASE REQ.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-CC-01-0-(2)~~ DSY-SD-CC01-082604 Tetra Tech NUS Job No./PMS N1611-0527
QC Information: — (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-2" feet

Sample Date & Time: 8/26/2004 1350 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: 8-10 GRABS TO GET SUFFICIENT VOLUME.

GRAVELLY, SAND. MOSTLY F-C WELL GRADED SAND. SOME FINE-C SUBRANDED GRAVEL. TRACE SILT, TRACE SHELL FRAGS. 1 ARTHROPOD SWIMMING IN SAMPLE.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-CC-02~~ (VP) DSY-SD-CC02-082604

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ___ (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-2" feet

Sample Date & Time: 8/26/2004 1410 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: ~18 GRABS TO GET. MINIMAL VOLUME. ADJACENT TO MOORINGS

SAND. MOSTLY F-MED. SAND, TRACE F-C SUBANG.-SUBROUNDED GRAVEL. LT.-MED. BROWN, NO H_2S ODOR.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-JPC-01~~ DSY-SD-JPC01-082604
Tetra Tech NUS Job No./PMS N1611- ~~0552~~ 0522
QC Information: — (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER _____

Depth Sampled: 0-2" feet

Sample Date & Time: 8/26/2004 1440 hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

- ____ Soil
- x Sediment
- ____ Lagoon/Pond
- ____ Grab
- ____ Trip Blank*
- ____ Rinsate Blank*
- ____ Field Duplicate collected
- ____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: ~15-20 GRABS TO GET SUFFICIENT VOLUME

SAND. BROWN MOSTLY FINE-MEDIUM POORLY GRADED SAND.
TRACE SILT, TRACE SHELL FRAGMENTS, 1 HERMIT CRAB.
No H_2S odor.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-JPC-02~~ DSY-SD-JPC02-082604
Tetra Tech NUS Job No./PMS N1611-0522
QC Information: — (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER_____

Depth Sampled: SEE NOTES feet

Sample Date & Time: ___/___/2004 _____hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: _____ (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x__ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: DEPTH = 16' @ BOTTOM ALL SHELL'S
~~APPROX~~ 8-10 GRABS w/ BOTH PONAR & EKMAN = NOT ENOUGH SEDIMENT TO FILL 1 4 oz. JAR. ALL SHELL'S w/ ONLY TRACE DARK GRAY SILT. SHELL'S STACKED UPON SHELL'S.

NO SAMPLE TAKEN. MOVE TO NEW LOC.

JPC-03.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-JPC-03~~ (11) DSY-SD-JPC03-082604
Tetra Tech NUS Job No./PMS N1611-0522
QC Information: DUP-03 (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ____

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1515 hours (military) Dup. Time: 1520 hours

Sampler(s): T. Dorgan / K. O'Neill/ ____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ____ ppm

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- _x_ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- X Field Duplicate collected
- ___ Composite

Other ____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: APPROX. 8 GRABS TO GET

SAND. GRAY FINE-MED. POORLY GRADED SAND. TRACE SILT. NO SHELLS, NO H_2S.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD CH2 DSY-SD-CH01-082604
Sample ID: ~~DSY-CH-01~~ ~~DSY-CH-01~~ TD

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: MS/MSD (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1540 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) ___

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

BLACK MUCK. MOSTLY SILT, SOME CLAY, TRACE FINE SAND. TRACE SHELLS, ABUNDANT LEAVES (OAK) ON SURFACE, TRACE EEL-GRASS BLADES IN SED.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: DSY-CH-02 DSY-SD-CH02-082604

Tetra Tech NUS Job No./PMS N1611-0552
QC Information: ——— (if applicable)

Sample Method: (PONAR) EKMAN CORE SAMPLER ___

Depth Sampled: 0-6" feet

Sample Date & Time: 8/26/2004 1600 hours (military) Dup. Time: ___ hours

Sampler(s): T. Dorgan / K. O'Neill/ ___ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: ___ ppm

TYPE OF SAMPLE: (Check all that apply)

___ Soil
_x_ Sediment
___ Lagoon/Pond
___ Grab
___ Trip Blank*
___ Rinsate Blank*
___ Field Duplicate collected
___ Composite

Other ___

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SEE BELOW

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: EEL GRASS ROOTED INTO SURFACE
DARK GRAY-BLACK FINE SANDY SILT. MOSTLY SILT, SOME FINE POORLY GRADED SAND. TRACE SHELLS. H_2S ODOR.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD 1017
Sample ID: ~~DSY-105-0-6~~ DSY-SD-101-0006
~~DSY-105-6-12~~ DSY-SD-101-0612

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: _____ (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER

Depth Sampled: 0-6" 6"-12" feet

Sample Date & Time: 8/25/2004 1220-0-6" 1230-6-12" hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) SM. WOOD FRAG'S OYSTER SHELLS NOTED ON SED. BOTTOM.

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: WATER DEPTH = 31-32' @ 1200 HRS.

0-6"-DARK GRAY-BLACK SILT, TRACE OYSTER SHELL, H_2S ODOR.

6-12"-DARK GRAY-BLACK SILT, TRACE MED. SAND, H_2S ODOR - SMALL PLASTIC BEAD'S NOTED FROM 1ST GRAB, THAT FLOAT ON FREE WATER ONCE SED. DISTURBED. (WHITE-LT. BLUE)?

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: ~~DSY-102-0-6~~ DSY-SD-102-0006
~~DSY-102-6-12~~ DSY-SD-102-0612

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: _____ (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER

Depth Sampled: 0-6" 6-12" feet

Sample Date & Time: 8 / 25 /2004 ~~0-6-1300~~ ~~6-12-1305~~ hours (military)

Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) WIRE MESH, OLD SHELL FRAGMENTS, PIPE-WRAP DEBRIS. ON BOTTOM

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: WATER DEPTH = 30' @ 1245
NO SAMPLE TAKEN. ONLY MUSSEL & SHELL FRAGMENTS.
3 ATTEMPTS MADE W/ HAND-CORE BY DIVER. THEN 2 ATTEMPTS MADE W/ DREDGE SAMPLER. ONLY SHELL FRAGS RECOVERED.

Tt NUS Form 0005A

Page ___

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-103-0-6~~ DSY-SD-103-0006
~~DSY-103-6-12~~ DSY-SD-103-0612

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: ——— (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER

Depth Sampled: 0-6" 6-12" feet

Sample Date & Time: 8 / 25 /2004 0-6 = 1400 6-12 = 1405 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) BOTTOM = SOFT & FLUFFIER THAN 101 OR 102 LOCATIONS.

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	X
TAL METALS	X
TOC	X
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: WATER DEPTH = 30'

0-6" - DARK GRAY-BLACK SILT. TRACE MUSSEL & BARNACLE SHELL'S, RED-WORMS NOTED. H_2S ODOR.

6-12" - DARK GRAY-BLACK SILT. TRACE MUSSEL & BARNACLE SHELL FRAG'S, FINE-SHINY, ~~AGI~~ HAIR-LIKE FIBERS NOTED. POSS FIBERGLASS OR ASBESTOS.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: DERECKTOR SHIPYARD
Sample ID: ~~DSY-104-0-6D~~ DSY-SD-104-0006
~~DSY-104-6-12~~ DSY-SD-104-0612

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: — (if applicable)

Sample Method: ~~PONAR~~ ~~EKMAN~~ CORE SAMPLER

Depth Sampled: 0-6" & 6-12" feet

Sample Date & Time: 8/25/2004 0-6-1430 6-12-1440 hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: T. Dorgan (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil	____ Trip Blank*
_x_ Sediment	____ Rinsate Blank*
____ Lagoon/Pond	____ Field Duplicate collected
____ Grab	____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) GREEN ALGAE (THIN-LAYER) ON TOP OF BOTTOM. THEN VERY SOFT BOTTOM POSS. BACTERIA

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	
TOC	
PAH 8270C	
PCB Ccongeners	
Forensic TPH/PAH	

NOTES/SKETCH: DEEP SOFT SED. – VERY STRONG H_2S ODOR.
0-6" – DARK GREY-BLACK MUCKY SILT. VERY SOFT – NO SHELL FRAGS STRONG H_2S ODOR.

6-12" – DARK GRAY-BLACK – SLIGHT PETROLEUM SHEEN NOTED, STRONG H_2S ODOR, SILT. NO SHELLS NOTED.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: DSY-SD-FB01-082704

Tetra Tech NUS Job No./PMS N1611-_____
QC Information: Field Blank (if applicable)

Sample Method: _PONAR EKMAN CORE SAMPLER N/A

Depth Sampled: N/A feet

Sample Date & Time: 8/27/2004 1030 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / ~~K. O'Neill~~ / _____ (circle appropriate)

Data Recorded By: Kevin O'Neill (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x__ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	X
TOC	
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

FB = Diuf lot # 0406224.
Water
exp 4/2005

DIUF poured directly into some bottles.

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: DSY-SD-RB01-082504

Tetra Tech NUS Job No./PMS N1611-0522
QC Information: Equip Rinsate (if applicable)

Sample Method: _PONAR (EKMAN) CORE SAMPLER N/

Depth Sampled: N/A feet

Sample Date & Time: 8/25/2004 1627 hours (military) Dup. Time: _____ hours

Sampler(s): T. Dorgan / (K. O'Neill/) _____ (circle appropriate)

Data Recorded By: [signature] (Signature)

Survey Meter/Monitor Reading: N/A ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other _____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	X
TOC	
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

Rinsate DIUF Lot# 0406224

exp 4/2005

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: DSY-SD-RB02-082604

Tetra Tech NUS Job No./PMS N1611-_____
QC Information: Rinsate (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER_____

Depth Sampled: N/A feet

Sample Date & Time: 8/26/2004 1930 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: Kevin O'Neill (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	X
TOC	
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH: Ponar Rinsate

Diuf lot # 0406224
Exp 4/2005

Tt NUS Form 0005A

TETRA TECH NUS, INC.

SAMPLE LOG SHEET – SEDIMENT

Site Name: **DERECKTOR SHIPYARD**
Sample ID: DSY-SD-RB03-082604

Tetra Tech NUS Job No./PMS N1611-_____
QC Information: Equip Rinsate (if applicable)

Sample Method: PONAR EKMAN CORE SAMPLER_____

Depth Sampled: N/A feet

Sample Date & Time: 8/26/2004 1950 hours (military) Dup. Time:_____hours

Sampler(s): T. Dorgan / K. O'Neill/ _____ (circle appropriate)

Data Recorded By: Kevin O'Neill (Signature)

Survey Meter/Monitor Reading: _____ ppm

TYPE OF SAMPLE: (Check all that apply)

____ Soil
_x_ Sediment
____ Lagoon/Pond
____ Grab
____ Trip Blank*
____ Rinsate Blank*
____ Field Duplicate collected
____ Composite

Other_____

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) _____

*include DIUF lot # in "other"

ANALYSIS	Check
AVS/SEM	
TAL METALS	X
TOC	
PAH 8270C	X
PCB Ccongeners	X
Forensic TPH/PAH	X

NOTES/SKETCH:

Rinsate

DIW Lot # 04.0622Y
Exp. 4/2005

Tt NUS Form 0005A

APPENDIX B

GPS SURVEY DATA

Eyak Environmental Science, LLC

SEP 17
TETRA TECH
WILMINGTON

Stephen Parker
Tetra Tech NUS, Inc.
55 Jonspin Rd.
Wilmington, MA 01887-1020

Re: Newport Eelgrass, Sediment Sampling, and Turbidity Monitoring in the Marine Environment, Contract Number N62472-03-D-0057

September 15, 2004

Dear Steve,

Enclosed you will fine our data for the sediment sampling portion of this contract. The following documents are printed:

Sediment Sampling Summary Table
Tidal Data for Prudence Island (South End) as in Figure and Table forms
Field Notebook pages
Equipment Specifications for DGPS system

On the CD you will find all photos referred to in the Sediment Sampling Summary table as well as the table (xls) and Equipment Specifications (pdf). Please let us know if there is any other information that you need for this portion of the work. We are working on the eelgrass data analysis and will be forwarding as soon as it is complete.

Thank you,

Heidi Hertler

Heidi Hertler, Ph.D.

Alaska Office
P.O. Box 340
Cordova, Alaska 99574

Northeast Office
1024 E. Lancaster Ave.
Rosemont, PA 19010

Mid-Atlantic Office
12100 Sunset Hills Rd.
Suite 110
Reston, Virginia 20190

Data Export: Tides-Prudence Island, (south end)
Tide and Current Pro Version 2.5L (Nautical Software Inc.)

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
23-Aug-04	12:00a	2.8	12:10a	2.9	12:20a	3	12:30a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:40a	3.1	12:50a	3.2	1:00a	3.3	1:10a	3.3	98	2:21p	11:30p	1Q
23-Aug-04	1:20a	3.3	1:30a	3.4	1:40a	3.4	1:50a	3.4	98	2:21p	11:30p	1Q
23-Aug-04	2:00a	3.4	2:10a	3.3	2:20a	3.3	2:30a	3.2	98	2:21p	11:30p	1Q
23-Aug-04	2:40a	3.2	2:50a	3.1	3:00a	3	3:10a	2.9	98	2:21p	11:30p	1Q
23-Aug-04	3:20a	2.7	3:30a	2.6	3:40a	2.5	3:50a	2.3	98	2:21p	11:30p	1Q
23-Aug-04	4:00a	2.2	4:10a	2	4:20a	1.8	4:30a	1.7	98	2:21p	11:30p	1Q
23-Aug-04	4:40a	1.5	4:50a	1.3	5:00a	1.2	5:10a	1	98	2:21p	11:30p	1Q
23-Aug-04	5:20a	0.9	5:30a	0.8	5:40a	0.7	5:50a	0.6	98	2:21p	11:30p	1Q
23-Aug-04	6:00a	0.5	6:10a	0.4	6:20a	0.3	6:30a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	6:40a	0.3	6:50a	0.3	7:00a	0.3	7:10a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	7:20a	0.3	7:30a	0.4	7:40a	0.4	7:50a	0.5	98	2:21p	11:30p	1Q
23-Aug-04	8:00a	0.5	8:10a	0.6	8:20a	0.7	8:30a	0.8	98	2:21p	11:30p	1Q
23-Aug-04	8:40a	0.9	8:50a	1	9:00a	1.1	9:10a	1.2	98	2:21p	11:30p	1Q
23-Aug-04	9:20a	1.3	9:30a	1.4	9:40a	1.5	9:50a	1.6	98	2:21p	11:30p	1Q
23-Aug-04	10:00a	1.8	10:10a	1.9	10:20a	2	10:30a	2.1	98	2:21p	11:30p	1Q
23-Aug-04	10:40a	2.2	10:50a	2.4	11:00a	2.5	11:10a	2.6	98	2:21p	11:30p	1Q
23-Aug-04	11:20a	2.7	11:30a	2.8	11:40a	2.9	11:50a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:00p	3.2	12:10p	3.3	12:20p	3.4	12:30p	3.5	98	2:21p	11:30p	1Q
23-Aug-04	12:40p	3.6	12:50p	3.7	1:00p	3.8	1:10p	3.9	98	2:21p	11:30p	1Q
23-Aug-04	1:20p	4	1:30p	4.1	1:40p	4.1	1:50p	4.2	98	2:21p	11:30p	1Q
23-Aug-04	2:00p	4.2	2:10p	4.3	2:20p	4.3	2:30p	4.3	98	2:21p	11:30p	1Q
23-Aug-04	2:40p	4.3	2:50p	4.2	3:00p	4.2	3:10p	4.1	98	2:21p	11:30p	1Q
23-Aug-04	3:20p	4	3:30p	3.9	3:40p	3.8	3:50p	3.7	98	2:21p	11:30p	1Q
23-Aug-04	4:00p	3.6	4:10p	3.4	4:20p	3.2	4:30p	3.1	98	2:21p	11:30p	1Q
23-Aug-04	4:40p	2.9	4:50p	2.7	5:00p	2.5	5:10p	2.4	98	2:21p	11:30p	1Q
23-Aug-04	5:20p	2.2	5:30p	2	5:40p	1.8	5:50p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	6:00p	1.5	6:10p	1.4	6:20p	1.3	6:30p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	6:40p	1	6:50p	0.9	7:00p	0.9	7:10p	0.8	98	2:21p	11:30p	1Q
23-Aug-04	7:20p	0.7	7:30p	0.7	7:40p	0.7	7:50p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:00p	0.7	8:10p	0.7	8:20p	0.7	8:30p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:40p	0.8	8:50p	0.8	9:00p	0.8	9:10p	0.9	98	2:21p	11:30p	1Q
23-Aug-04	9:20p	0.9	9:30p	1	9:40p	1	9:50p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	10:00p	1.2	10:10p	1.2	10:20p	1.3	10:30p	1.4	98	2:21p	11:30p	1Q
23-Aug-04	10:40p	1.5	10:50p	1.5	11:00p	1.6	11:10p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	11:20p	1.8	11:30p	1.9	11:40p	1.9	11:50p	2	98	2:21p	11:30p	1Q
24-Aug-04	12:00a	2.1	12:10a	2.2	12:20a	2.3	12:30a	2.4	111	3:35p	12:20a	
24-Aug-04	12:40a	2.5	12:50a	2.6	1:00a	2.7	1:10a	2.8	111	3:35p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
24-Aug-04	1:20a	2.8	1:30a	2.9	1:40a	3	1:50a	3.1	111	3:35p	12:20a	
24-Aug-04	2:00a	3.1	2:10a	3.2	2:20a	3.2	2:30a	3.3	111	3:35p	12:20a	
24-Aug-04	2:40a	3.3	2:50a	3.3	3:00a	3.3	3:10a	3.3	111	3:35p	12:20a	
24-Aug-04	3:20a	3.3	3:30a	3.2	3:40a	3.1	3:50a	3.1	111	3:35p	12:20a	
24-Aug-04	4:00a	3	4:10a	2.9	4:20a	2.8	4:30a	2.6	111	3:35p	12:20a	
24-Aug-04	4:40a	2.5	4:50a	2.3	5:00a	2.2	5:10a	2	111	3:35p	12:20a	
24-Aug-04	5:20a	1.9	5:30a	1.7	5:40a	1.5	5:50a	1.4	111	3:35p	12:20a	
24-Aug-04	6:00a	1.3	6:10a	1.1	6:20a	1	6:30a	0.9	111	3:35p	12:20a	
24-Aug-04	6:40a	0.8	6:50a	0.7	7:00a	0.6	7:10a	0.5	111	3:35p	12:20a	
24-Aug-04	7:20a	0.5	7:30a	0.4	7:40a	0.4	7:50a	0.4	111	3:35p	12:20a	
24-Aug-04	8:00a	0.4	8:10a	0.4	8:20a	0.4	8:30a	0.4	111	3:35p	12:20a	
24-Aug-04	8:40a	0.5	8:50a	0.5	9:00a	0.6	9:10a	0.6	111	3:35p	12:20a	
24-Aug-04	9:20a	0.7	9:30a	0.8	9:40a	0.9	9:50a	1	111	3:35p	12:20a	
24-Aug-04	10:00a	1	10:10a	1.1	10:20a	1.2	10:30a	1.3	111	3:35p	12:20a	
24-Aug-04	10:40a	1.4	10:50a	1.5	11:00a	1.7	11:10a	1.8	111	3:35p	12:20a	
24-Aug-04	11:20a	1.9	11:30a	2	11:40a	2.1	11:50a	2.2	111	3:35p	12:20a	
24-Aug-04	12:00p	2.4	12:10p	2.5	12:20p	2.6	12:30p	2.7	111	3:35p	12:20a	
24-Aug-04	12:40p	2.8	12:50p	3	1:00p	3.1	1:10p	3.2	111	3:35p	12:20a	
24-Aug-04	1:20p	3.4	1:30p	3.5	1:40p	3.6	1:50p	3.7	111	3:35p	12:20a	
24-Aug-04	2:00p	3.8	2:10p	3.9	2:20p	4	2:30p	4.1	111	3:35p	12:20a	
24-Aug-04	2:40p	4.2	2:50p	4.3	3:00p	4.3	3:10p	4.3	111	3:35p	12:20a	
24-Aug-04	3:20p	4.4	3:30p	4.4	3:40p	4.4	3:50p	4.3	111	3:35p	12:20a	
24-Aug-04	4:00p	4.3	4:10p	4.2	4:20p	4.2	4:30p	4.1	111	3:35p	12:20a	
24-Aug-04	4:40p	4	4:50p	3.8	5:00p	3.7	5:10p	3.6	111	3:35p	12:20a	
24-Aug-04	5:20p	3.4	5:30p	3.2	5:40p	3.1	5:50p	2.9	111	3:35p	12:20a	
24-Aug-04	6:00p	2.7	6:10p	2.5	6:20p	2.3	6:30p	2.2	111	3:35p	12:20a	
24-Aug-04	6:40p	2	6:50p	1.8	7:00p	1.7	7:10p	1.5	111	3:35p	12:20a	
24-Aug-04	7:20p	1.4	7:30p	1.3	7:40p	1.2	7:50p	1.1	111	3:35p	12:20a	
24-Aug-04	8:00p	1	8:10p	0.9	8:20p	0.8	8:30p	0.8	111	3:35p	12:20a	
24-Aug-04	8:40p	0.7	8:50p	0.7	9:00p	0.7	9:10p	0.7	111	3:35p	12:20a	
24-Aug-04	9:20p	0.7	9:30p	0.7	9:40p	0.7	9:50p	0.7	111	3:35p	12:20a	
24-Aug-04	10:00p	0.7	10:10p	0.8	10:20p	0.8	10:30p	0.8	111	3:35p	12:20a	
24-Aug-04	10:40p	0.9	10:50p	0.9	11:00p	1	11:10p	1	111	3:35p	12:20a	
24-Aug-04	11:20p	1.1	11:30p	1.2	11:40p	1.2	11:50p	1.3	111	3:35p	12:20a	
25-Aug-05	12:00a	1.4	12:10a	1.5	12:20a	1.6	12:30a	1.6	125	4:44p	12:20a	
25-Aug-05	12:40a	1.7	12:50a	1.8	1:00a	1.9	1:10a	2	125	4:44p	12:20a	
25-Aug-05	1:20a	2.1	1:30a	2.2	1:40a	2.4	1:50a	2.5	125	4:44p	12:20a	
25-Aug-05	2:00a	2.6	2:10a	2.7	2:20a	2.8	2:30a	2.9	125	4:44p	12:20a	
25-Aug-05	2:40a	3	2:50a	3.1	3:00a	3.1	3:10a	3.2	125	4:44p	12:20a	
25-Aug-05	3:20a	3.3	3:30a	3.3	3:40a	3.4	3:50a	3.4	125	4:44p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
25-Aug-05	4:00a	3.4	4:10a	3.4	4:20a	3.4	4:30a	3.3	125	4:44p	12:20a	
25-Aug-05	4:40a	3.3	4:50a	3.2	5:00a	3.1	5:10a	3	125	4:44p	12:20a	
25-Aug-05	5:20a	2.9	5:30a	2.8	5:40a	2.6	5:50a	2.5	125	4:44p	12:20a	
25-Aug-05	6:00a	2.3	6:10a	2.2	6:20a	2	6:30a	1.9	125	4:44p	12:20a	
25-Aug-05	6:40a	1.7	6:50a	1.5	7:00a	1.4	7:10a	1.3	125	4:44p	12:20a	
25-Aug-05	7:20a	1.1	7:30a	1	7:40a	0.9	7:50a	0.8	125	4:44p	12:20a	
25-Aug-05	8:00a	0.7	8:10a	0.6	8:20a	0.5	8:30a	0.5	125	4:44p	12:20a	
25-Aug-05	8:40a	0.4	8:50a	0.4	9:00a	0.4	9:10a	0.4	125	4:44p	12:20a	
25-Aug-05	9:20a	0.4	9:30a	0.4	9:40a	0.4	9:50a	0.5	125	4:44p	12:20a	
25-Aug-05	10:00a	0.5	10:10a	0.5	10:20a	0.6	10:30a	0.7	125	4:44p	12:20a	
25-Aug-05	10:40a	0.7	10:50a	0.8	11:00a	0.9	11:10a	1	125	4:44p	12:20a	
25-Aug-05	11:20a	1	11:30a	1.1	11:40a	1.2	11:50a	1.3	125	4:44p	12:20a	
25-Aug-05	12:00p	1.4	12:10p	1.5	12:20p	1.7	12:30p	1.8	125	4:44p	12:20a	
25-Aug-05	12:40p	1.9	12:50p	2	1:00p	2.2	1:10p	2.3	125	4:44p	12:20a	
25-Aug-05	1:20p	2.4	1:30p	2.6	1:40p	2.7	1:50p	2.9	125	4:44p	12:20a	
25-Aug-05	2:00p	3	2:10p	3.2	2:20p	3.3	2:30p	3.5	125	4:44p	12:20a	
25-Aug-05	2:40p	3.6	2:50p	3.7	3:00p	3.9	3:10p	4	125	4:44p	12:20a	
25-Aug-05	3:20p	4.1	3:30p	4.2	3:40p	4.3	3:50p	4.4	125	4:44p	12:20a	
25-Aug-05	4:00p	4.4	4:10p	4.5	4:20p	4.5	4:30p	4.5	125	4:44p	12:20a	
25-Aug-05	4:40p	4.5	4:50p	4.5	5:00p	4.5	5:10p	4.4	125	4:44p	12:20a	
25-Aug-05	5:20p	4.4	5:30p	4.3	5:40p	4.2	5:50p	4	125	4:44p	12:20a	
25-Aug-05	6:00p	3.9	6:10p	3.7	6:20p	3.6	6:30p	3.4	125	4:44p	12:20a	
25-Aug-05	6:40p	3.2	6:50p	3	7:00p	2.8	7:10p	2.7	125	4:44p	12:20a	
25-Aug-05	7:20p	2.5	7:30p	2.3	7:40p	2.1	7:50p	1.9	125	4:44p	12:20a	
25-Aug-05	8:00p	1.8	8:10p	1.6	8:20p	1.5	8:30p	1.3	125	4:44p	12:20a	
25-Aug-05	8:40p	1.2	8:50p	1.1	9:00p	1	9:10p	0.9	125	4:44p	12:20a	
25-Aug-05	9:20p	0.8	9:30p	0.7	9:40p	0.7	9:50p	0.6	125	4:44p	12:20a	
25-Aug-05	10:00p	0.6	10:10p	0.5	10:20p	0.5	10:30p	0.5	125	4:44p	12:20a	
25-Aug-05	10:40p	0.5	10:50p	0.5	11:00p	0.5	11:10p	0.5	125	4:44p	12:20a	
25-Aug-05	11:20p	0.6	11:30p	0.6	11:40p	0.6	11:50p	0.7	125	4:44p	12:20a	
26-Aug-04	12:00a	0.7	12:10a	0.8	12:20a	0.8	12:30a	0.9	138	5:43p	1:22a	
26-Aug-04	12:40a	1	12:50a	1.1	1:00a	1.2	1:10a	1.2	138	5:43p	1:22a	
26-Aug-04	1:20a	1.3	1:30a	1.5	1:40a	1.6	1:50a	1.7	138	5:43p	1:22a	
26-Aug-04	2:00a	1.8	2:10a	1.9	2:20a	2.1	2:30a	2.2	138	5:43p	1:22a	
26-Aug-04	2:40a	2.3	2:50a	2.5	3:00a	2.6	3:10a	2.7	138	5:43p	1:22a	
26-Aug-04	3:20a	2.9	3:30a	3	3:40a	3.1	3:50a	3.2	138	5:43p	1:22a	
26-Aug-04	4:00a	3.3	4:10a	3.4	4:20a	3.5	4:30a	3.5	138	5:43p	1:22a	
26-Aug-04	4:40a	3.6	4:50a	3.6	5:00a	3.6	5:10a	3.6	138	5:43p	1:22a	
26-Aug-04	5:20a	3.6	5:30a	3.6	5:40a	3.5	5:50a	3.5	138	5:43p	1:22a	
26-Aug-04	6:00a	3.4	6:10a	3.3	6:20a	3.1	6:30a	3	138	5:43p	1:22a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
26-Aug-04	6:40a	2.9	6:50a	2.7	7:00a	2.6	7:10a	2.4	138	5:43p	1:22a	
26-Aug-04	7:20a	2.2	7:30a	2.1	7:40a	1.9	7:50a	1.7	138	5:43p	1:22a	
26-Aug-04	8:00a	1.6	8:10a	1.4	8:20a	1.2	8:30a	1.1	138	5:43p	1:22a	
26-Aug-04	8:40a	1	8:50a	0.8	9:00a	0.7	9:10a	0.6	138	5:43p	1:22a	
26-Aug-04	9:20a	0.5	9:30a	0.5	9:40a	0.4	9:50a	0.4	138	5:43p	1:22a	
26-Aug-04	10:00a	0.3	10:10a	0.3	10:20a	0.3	10:30a	0.3	138	5:43p	1:22a	
26-Aug-04	10:40a	0.3	10:50a	0.3	11:00a	0.3	11:10a	0.3	138	5:43p	1:22a	
26-Aug-04	11:20a	0.4	11:30a	0.4	11:40a	0.5	11:50a	0.5	138	5:43p	1:22a	
26-Aug-04	12:00p	0.6	12:10p	0.7	12:20p	0.8	12:30p	0.9	138	5:43p	1:22a	
26-Aug-04	12:40p	1	12:50p	1.1	1:00p	1.2	1:10p	1.3	138	5:43p	1:22a	
26-Aug-04	1:20p	1.4	1:30p	1.6	1:40p	1.7	1:50p	1.8	138	5:43p	1:22a	
26-Aug-04	2:00p	2	2:10p	2.2	2:20p	2.3	2:30p	2.5	138	5:43p	1:22a	
26-Aug-04	2:40p	2.6	2:50p	2.8	3:00p	3	3:10p	3.2	138	5:43p	1:22a	
26-Aug-04	3:20p	3.3	3:30p	3.5	3:40p	3.7	3:50p	3.8	138	5:43p	1:22a	
26-Aug-04	4:00p	4	4:10p	4.1	4:20p	4.2	4:30p	4.4	138	5:43p	1:22a	
26-Aug-04	4:40p	4.5	4:50p	4.6	5:00p	4.6	5:10p	4.7	138	5:43p	1:22a	
26-Aug-04	5:20p	4.7	5:30p	4.8	5:40p	4.8	5:50p	4.7	138	5:43p	1:22a	
26-Aug-04	6:00p	4.7	6:10p	4.6	6:20p	4.6	6:30p	4.5	138	5:43p	1:22a	
26-Aug-04	6:40p	4.3	6:50p	4.2	7:00p	4.1	7:10p	3.9	138	5:43p	1:22a	
26-Aug-04	7:20p	3.7	7:30p	3.5	7:40p	3.3	7:50p	3.1	138	5:43p	1:22a	
26-Aug-04	8:00p	2.9	8:10p	2.7	8:20p	2.5	8:30p	2.3	138	5:43p	1:22a	
26-Aug-04	8:40p	2.1	8:50p	1.9	9:00p	1.7	9:10p	1.6	138	5:43p	1:22a	
26-Aug-04	9:20p	1.4	9:30p	1.2	9:40p	1.1	9:50p	1	138	5:43p	1:22a	
26-Aug-04	10:00p	0.8	10:10p	0.7	10:20p	0.6	10:30p	0.6	138	5:43p	1:22a	
26-Aug-04	10:40p	0.5	10:50p	0.4	11:00p	0.4	11:10p	0.3	138	5:43p	1:22a	
26-Aug-04	11:20p	0.3	11:30p	0.3	11:40p	0.2	11:50p	0.2	138	5:43p	1:22a	
27-Aug-04	12:00a	0.3	12:10a	0.3	12:20a	0.3	12:30a	0.3	152	6:30p	2:35a	
27-Aug-04	12:40a	0.4	12:50a	0.4	1:00a	0.5	1:10a	0.5	152	6:30p	2:35a	
27-Aug-04	1:20a	0.6	1:30a	0.7	1:40a	0.8	1:50a	0.9	152	6:30p	2:35a	
27-Aug-04	2:00a	1	2:10a	1.1	2:20a	1.2	2:30a	1.4	152	6:30p	2:35a	
27-Aug-04	2:40a	1.5	2:50a	1.7	3:00a	1.8	3:10a	2	152	6:30p	2:35a	
27-Aug-04	3:20a	2.1	3:30a	2.3	3:40a	2.5	3:50a	2.6	152	6:30p	2:35a	
27-Aug-04	4:00a	2.8	4:10a	2.9	4:20a	3.1	4:30a	3.2	152	6:30p	2:35a	
27-Aug-04	4:40a	3.4	4:50a	3.5	5:00a	3.6	5:10a	3.7	152	6:30p	2:35a	
27-Aug-04	5:20a	3.8	5:30a	3.9	5:40a	3.9	5:50a	3.9	152	6:30p	2:35a	
27-Aug-04	6:00a	4	6:10a	4	6:20a	3.9	6:30a	3.9	152	6:30p	2:35a	
27-Aug-04	6:40a	3.8	6:50a	3.8	7:00a	3.7	7:10a	3.5	152	6:30p	2:35a	
27-Aug-04	7:20a	3.4	7:30a	3.3	7:40a	3.1	7:50a	2.9	152	6:30p	2:35a	
27-Aug-04	8:00a	2.8	8:10a	2.6	8:20a	2.4	8:30a	2.2	152	6:30p	2:35a	
27-Aug-04	8:40a	2	8:50a	1.8	9:00a	1.6	9:10a	1.4	152	6:30p	2:35a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
27-Aug-04	9:20a	1.3	9:30a	1.1	9:40a	0.9	9:50a	0.8	152	6:30p	2:35a	
27-Aug-04	10:00a	0.7	10:10a	0.6	10:20a	0.5	10:30a	0.4	152	6:30p	2:35a	
27-Aug-04	10:40a	0.3	10:50a	0.2	11:00a	0.2	11:10a	0.1	152	6:30p	2:35a	
27-Aug-04	11:20a	0.1	11:30a	0.1	11:40a	0	11:50a	0.1	152	6:30p	2:35a	
27-Aug-04	12:00p	0.1	12:10p	0.1	12:20p	0.1	12:30p	0.2	152	6:30p	2:35a	
27-Aug-04	12:40p	0.2	12:50p	0.3	1:00p	0.3	1:10p	0.4	152	6:30p	2:35a	
27-Aug-04	1:20p	0.5	1:30p	0.6	1:40p	0.7	1:50p	0.8	152	6:30p	2:35a	
27-Aug-04	2:00p	1	2:10p	1.1	2:20p	1.2	2:30p	1.4	152	6:30p	2:35a	
27-Aug-04	2:40p	1.6	2:50p	1.7	3:00p	1.9	3:10p	2.1	152	6:30p	2:35a	
27-Aug-04	3:20p	2.3	3:30p	2.5	3:40p	2.7	3:50p	2.9	152	6:30p	2:35a	
27-Aug-04	4:00p	3	4:10p	3.2	4:20p	3.4	4:30p	3.6	152	6:30p	2:35a	
27-Aug-04	4:40p	3.8	4:50p	4	5:00p	4.1	5:10p	4.3	152	6:30p	2:35a	
27-Aug-04	5:20p	4.4	5:30p	4.6	5:40p	4.7	5:50p	4.8	152	6:30p	2:35a	
27-Aug-04	6:00p	4.8	6:10p	4.9	6:20p	4.9	6:30p	5	152	6:30p	2:35a	
27-Aug-04	6:40p	5	6:50p	4.9	7:00p	4.9	7:10p	4.8	152	6:30p	2:35a	
27-Aug-04	7:20p	4.7	7:30p	4.6	7:40p	4.5	7:50p	4.3	152	6:30p	2:35a	
27-Aug-04	8:00p	4.1	8:10p	3.9	8:20p	3.8	8:30p	3.5	152	6:30p	2:35a	
27-Aug-04	8:40p	3.3	8:50p	3.1	9:00p	2.9	9:10p	2.7	152	6:30p	2:35a	
27-Aug-04	9:20p	2.5	9:30p	2.2	9:40p	2	9:50p	1.8	152	6:30p	2:35a	
27-Aug-04	10:00p	1.6	10:10p	1.4	10:20p	1.2	10:30p	1	152	6:30p	2:35a	
27-Aug-04	10:40p	0.9	10:50p	0.8	11:00p	0.6	11:10p	0.5	152	6:30p	2:35a	
27-Aug-04	11:20p	0.4	11:30p	0.3	11:40p	0.2	11:50p	0.1	152	6:30p	2:35a	

Data Export: Tides-Prudence Island, (south end)
Tide and Current Pro Version 2.5L (Nautical Software Inc.)

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
23-Aug-04	12:00a	2.8	12:10a	2.9	12:20a	3	12:30a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:40a	3.1	12:50a	3.2	1:00a	3.3	1:10a	3.3	98	2:21p	11:30p	1Q
23-Aug-04	1:20a	3.3	1:30a	3.4	1:40a	3.4	1:50a	3.4	98	2:21p	11:30p	1Q
23-Aug-04	2:00a	3.4	2:10a	3.3	2:20a	3.3	2:30a	3.2	98	2:21p	11:30p	1Q
23-Aug-04	2:40a	3.2	2:50a	3.1	3:00a	3	3:10a	2.9	98	2:21p	11:30p	1Q
23-Aug-04	3:20a	2.7	3:30a	2.6	3:40a	2.5	3:50a	2.3	98	2:21p	11:30p	1Q
23-Aug-04	4:00a	2.2	4:10a	2	4:20a	1.8	4:30a	1.7	98	2:21p	11:30p	1Q
23-Aug-04	4:40a	1.5	4:50a	1.3	5:00a	1.2	5:10a	1	98	2:21p	11:30p	1Q
23-Aug-04	5:20a	0.9	5:30a	0.8	5:40a	0.7	5:50a	0.6	98	2:21p	11:30p	1Q
23-Aug-04	6:00a	0.5	6:10a	0.4	6:20a	0.3	6:30a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	6:40a	0.3	6:50a	0.3	7:00a	0.3	7:10a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	7:20a	0.3	7:30a	0.4	7:40a	0.4	7:50a	0.5	98	2:21p	11:30p	1Q
23-Aug-04	8:00a	0.5	8:10a	0.6	8:20a	0.7	8:30a	0.8	98	2:21p	11:30p	1Q
23-Aug-04	8:40a	0.9	8:50a	1	9:00a	1.1	9:10a	1.2	98	2:21p	11:30p	1Q
23-Aug-04	9:20a	1.3	9:30a	1.4	9:40a	1.5	9:50a	1.6	98	2:21p	11:30p	1Q
23-Aug-04	10:00a	1.8	10:10a	1.9	10:20a	2	10:30a	2.1	98	2:21p	11:30p	1Q
23-Aug-04	10:40a	2.2	10:50a	2.4	11:00a	2.5	11:10a	2.6	98	2:21p	11:30p	1Q
23-Aug-04	11:20a	2.7	11:30a	2.8	11:40a	2.9	11:50a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:00p	3.2	12:10p	3.3	12:20p	3.4	12:30p	3.5	98	2:21p	11:30p	1Q
23-Aug-04	12:40p	3.6	12:50p	3.7	1:00p	3.8	1:10p	3.9	98	2:21p	11:30p	1Q
23-Aug-04	1:20p	4	1:30p	4.1	1:40p	4.1	1:50p	4.2	98	2:21p	11:30p	1Q
23-Aug-04	2:00p	4.2	2:10p	4.3	2:20p	4.3	2:30p	4.3	98	2:21p	11:30p	1Q
23-Aug-04	2:40p	4.3	2:50p	4.2	3:00p	4.2	3:10p	4.1	98	2:21p	11:30p	1Q
23-Aug-04	3:20p	4	3:30p	3.9	3:40p	3.8	3:50p	3.7	98	2:21p	11:30p	1Q
23-Aug-04	4:00p	3.6	4:10p	3.4	4:20p	3.2	4:30p	3.1	98	2:21p	11:30p	1Q
23-Aug-04	4:40p	2.9	4:50p	2.7	5:00p	2.5	5:10p	2.4	98	2:21p	11:30p	1Q
23-Aug-04	5:20p	2.2	5:30p	2	5:40p	1.8	5:50p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	6:00p	1.5	6:10p	1.4	6:20p	1.3	6:30p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	6:40p	1	6:50p	0.9	7:00p	0.9	7:10p	0.8	98	2:21p	11:30p	1Q
23-Aug-04	7:20p	0.7	7:30p	0.7	7:40p	0.7	7:50p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:00p	0.7	8:10p	0.7	8:20p	0.7	8:30p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:40p	0.8	8:50p	0.8	9:00p	0.8	9:10p	0.9	98	2:21p	11:30p	1Q
23-Aug-04	9:20p	0.9	9:30p	1	9:40p	1	9:50p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	10:00p	1.2	10:10p	1.2	10:20p	1.3	10:30p	1.4	98	2:21p	11:30p	1Q
23-Aug-04	10:40p	1.5	10:50p	1.5	11:00p	1.6	11:10p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	11:20p	1.8	11:30p	1.9	11:40p	1.9	11:50p	2	98	2:21p	11:30p	1Q
24-Aug-04	12:00a	2.1	12:10a	2.2	12:20a	2.3	12:30a	2.4	111	3:35p	12:20a	
24-Aug-04	12:40a	2.5	12:50a	2.6	1:00a	2.7	1:10a	2.8	111	3:35p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
24-Aug-04	1:20a	2.8	1:30a	2.9	1:40a	3	1:50a	3.1	111	3:35p	12:20a	
24-Aug-04	2:00a	3.1	2:10a	3.2	2:20a	3.2	2:30a	3.3	111	3:35p	12:20a	
24-Aug-04	2:40a	3.3	2:50a	3.3	3:00a	3.3	3:10a	3.3	111	3:35p	12:20a	
24-Aug-04	3:20a	3.3	3:30a	3.2	3:40a	3.1	3:50a	3.1	111	3:35p	12:20a	
24-Aug-04	4:00a	3	4:10a	2.9	4:20a	2.8	4:30a	2.6	111	3:35p	12:20a	
24-Aug-04	4:40a	2.5	4:50a	2.3	5:00a	2.2	5:10a	2	111	3:35p	12:20a	
24-Aug-04	5:20a	1.9	5:30a	1.7	5:40a	1.5	5:50a	1.4	111	3:35p	12:20a	
24-Aug-04	6:00a	1.3	6:10a	1.1	6:20a	1	6:30a	0.9	111	3:35p	12:20a	
24-Aug-04	6:40a	0.8	6:50a	0.7	7:00a	0.6	7:10a	0.5	111	3:35p	12:20a	
24-Aug-04	7:20a	0.5	7:30a	0.4	7:40a	0.4	7:50a	0.4	111	3:35p	12:20a	
24-Aug-04	8:00a	0.4	8:10a	0.4	8:20a	0.4	8:30a	0.4	111	3:35p	12:20a	
24-Aug-04	8:40a	0.5	8:50a	0.5	9:00a	0.6	9:10a	0.6	111	3:35p	12:20a	
24-Aug-04	9:20a	0.7	9:30a	0.8	9:40a	0.9	9:50a	1	111	3:35p	12:20a	
24-Aug-04	10:00a	1	10:10a	1.1	10:20a	1.2	10:30a	1.3	111	3:35p	12:20a	
24-Aug-04	10:40a	1.4	10:50a	1.5	11:00a	1.7	11:10a	1.8	111	3:35p	12:20a	
24-Aug-04	11:20a	1.9	11:30a	2	11:40a	2.1	11:50a	2.2	111	3:35p	12:20a	
24-Aug-04	12:00p	2.4	12:10p	2.5	12:20p	2.6	12:30p	2.7	111	3:35p	12:20a	
24-Aug-04	12:40p	2.8	12:50p	3	1:00p	3.1	1:10p	3.2	111	3:35p	12:20a	
24-Aug-04	1:20p	3.4	1:30p	3.5	1:40p	3.6	1:50p	3.7	111	3:35p	12:20a	
24-Aug-04	2:00p	3.8	2:10p	3.9	2:20p	4	2:30p	4.1	111	3:35p	12:20a	
24-Aug-04	2:40p	4.2	2:50p	4.3	3:00p	4.3	3:10p	4.3	111	3:35p	12:20a	
24-Aug-04	3:20p	4.4	3:30p	4.4	3:40p	4.4	3:50p	4.3	111	3:35p	12:20a	
24-Aug-04	4:00p	4.3	4:10p	4.2	4:20p	4.2	4:30p	4.1	111	3:35p	12:20a	
24-Aug-04	4:40p	4	4:50p	3.8	5:00p	3.7	5:10p	3.6	111	3:35p	12:20a	
24-Aug-04	5:20p	3.4	5:30p	3.2	5:40p	3.1	5:50p	2.9	111	3:35p	12:20a	
24-Aug-04	6:00p	2.7	6:10p	2.5	6:20p	2.3	6:30p	2.2	111	3:35p	12:20a	
24-Aug-04	6:40p	2	6:50p	1.8	7:00p	1.7	7:10p	1.5	111	3:35p	12:20a	
24-Aug-04	7:20p	1.4	7:30p	1.3	7:40p	1.2	7:50p	1.1	111	3:35p	12:20a	
24-Aug-04	8:00p	1	8:10p	0.9	8:20p	0.8	8:30p	0.8	111	3:35p	12:20a	
24-Aug-04	8:40p	0.7	8:50p	0.7	9:00p	0.7	9:10p	0.7	111	3:35p	12:20a	
24-Aug-04	9:20p	0.7	9:30p	0.7	9:40p	0.7	9:50p	0.7	111	3:35p	12:20a	
24-Aug-04	10:00p	0.7	10:10p	0.8	10:20p	0.8	10:30p	0.8	111	3:35p	12:20a	
24-Aug-04	10:40p	0.9	10:50p	0.9	11:00p	1	11:10p	1	111	3:35p	12:20a	
24-Aug-04	11:20p	1.1	11:30p	1.2	11:40p	1.2	11:50p	1.3	111	3:35p	12:20a	
25-Aug-05	12:00a	1.4	12:10a	1.5	12:20a	1.6	12:30a	1.6	125	4:44p	12:20a	
25-Aug-05	12:40a	1.7	12:50a	1.8	1:00a	1.9	1:10a	2	125	4:44p	12:20a	
25-Aug-05	1:20a	2.1	1:30a	2.2	1:40a	2.4	1:50a	2.5	125	4:44p	12:20a	
25-Aug-05	2:00a	2.6	2:10a	2.7	2:20a	2.8	2:30a	2.9	125	4:44p	12:20a	
25-Aug-05	2:40a	3	2:50a	3.1	3:00a	3.1	3:10a	3.2	125	4:44p	12:20a	
25-Aug-05	3:20a	3.3	3:30a	3.3	3:40a	3.4	3:50a	3.4	125	4:44p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
25-Aug-05	4:00a	3.4	4:10a	3.4	4:20a	3.4	4:30a	3.3	125	4:44p	12:20a	
25-Aug-05	4:40a	3.3	4:50a	3.2	5:00a	3.1	5:10a	3	125	4:44p	12:20a	
25-Aug-05	5:20a	2.9	5:30a	2.8	5:40a	2.6	5:50a	2.5	125	4:44p	12:20a	
25-Aug-05	6:00a	2.3	6:10a	2.2	6:20a	2	6:30a	1.9	125	4:44p	12:20a	
25-Aug-05	6:40a	1.7	6:50a	1.5	7:00a	1.4	7:10a	1.3	125	4:44p	12:20a	
25-Aug-05	7:20a	1.1	7:30a	1	7:40a	0.9	7:50a	0.8	125	4:44p	12:20a	
25-Aug-05	8:00a	0.7	8:10a	0.6	8:20a	0.5	8:30a	0.5	125	4:44p	12:20a	
25-Aug-05	8:40a	0.4	8:50a	0.4	9:00a	0.4	9:10a	0.4	125	4:44p	12:20a	
25-Aug-05	9:20a	0.4	9:30a	0.4	9:40a	0.4	9:50a	0.5	125	4:44p	12:20a	
25-Aug-05	10:00a	0.5	10:10a	0.5	10:20a	0.6	10:30a	0.7	125	4:44p	12:20a	
25-Aug-05	10:40a	0.7	10:50a	0.8	11:00a	0.9	11:10a	1	125	4:44p	12:20a	
25-Aug-05	11:20a	1	11:30a	1.1	11:40a	1.2	11:50a	1.3	125	4:44p	12:20a	
25-Aug-05	12:00p	1.4	12:10p	1.5	12:20p	1.7	12:30p	1.8	125	4:44p	12:20a	
25-Aug-05	12:40p	1.9	12:50p	2	1:00p	2.2	1:10p	2.3	125	4:44p	12:20a	
25-Aug-05	1:20p	2.4	1:30p	2.6	1:40p	2.7	1:50p	2.9	125	4:44p	12:20a	
25-Aug-05	2:00p	3	2:10p	3.2	2:20p	3.3	2:30p	3.5	125	4:44p	12:20a	
25-Aug-05	2:40p	3.6	2:50p	3.7	3:00p	3.9	3:10p	4	125	4:44p	12:20a	
25-Aug-05	3:20p	4.1	3:30p	4.2	3:40p	4.3	3:50p	4.4	125	4:44p	12:20a	
25-Aug-05	4:00p	4.4	4:10p	4.5	4:20p	4.5	4:30p	4.5	125	4:44p	12:20a	
25-Aug-05	4:40p	4.5	4:50p	4.5	5:00p	4.5	5:10p	4.4	125	4:44p	12:20a	
25-Aug-05	5:20p	4.4	5:30p	4.3	5:40p	4.2	5:50p	4	125	4:44p	12:20a	
25-Aug-05	6:00p	3.9	6:10p	3.7	6:20p	3.6	6:30p	3.4	125	4:44p	12:20a	
25-Aug-05	6:40p	3.2	6:50p	3	7:00p	2.8	7:10p	2.7	125	4:44p	12:20a	
25-Aug-05	7:20p	2.5	7:30p	2.3	7:40p	2.1	7:50p	1.9	125	4:44p	12:20a	
25-Aug-05	8:00p	1.8	8:10p	1.6	8:20p	1.5	8:30p	1.3	125	4:44p	12:20a	
25-Aug-05	8:40p	1.2	8:50p	1.1	9:00p	1	9:10p	0.9	125	4:44p	12:20a	
25-Aug-05	9:20p	0.8	9:30p	0.7	9:40p	0.7	9:50p	0.6	125	4:44p	12:20a	
25-Aug-05	10:00p	0.6	10:10p	0.5	10:20p	0.5	10:30p	0.5	125	4:44p	12:20a	
25-Aug-05	10:40p	0.5	10:50p	0.5	11:00p	0.5	11:10p	0.5	125	4:44p	12:20a	
25-Aug-05	11:20p	0.6	11:30p	0.6	11:40p	0.6	11:50p	0.7	125	4:44p	12:20a	
26-Aug-04	12:00a	0.7	12:10a	0.8	12:20a	0.8	12:30a	0.9	138	5:43p	1:22a	
26-Aug-04	12:40a	1	12:50a	1.1	1:00a	1.2	1:10a	1.2	138	5:43p	1:22a	
26-Aug-04	1:20a	1.3	1:30a	1.5	1:40a	1.6	1:50a	1.7	138	5:43p	1:22a	
26-Aug-04	2:00a	1.8	2:10a	1.9	2:20a	2.1	2:30a	2.2	138	5:43p	1:22a	
26-Aug-04	2:40a	2.3	2:50a	2.5	3:00a	2.6	3:10a	2.7	138	5:43p	1:22a	
26-Aug-04	3:20a	2.9	3:30a	3	3:40a	3.1	3:50a	3.2	138	5:43p	1:22a	
26-Aug-04	4:00a	3.3	4:10a	3.4	4:20a	3.5	4:30a	3.5	138	5:43p	1:22a	
26-Aug-04	4:40a	3.6	4:50a	3.6	5:00a	3.6	5:10a	3.6	138	5:43p	1:22a	
26-Aug-04	5:20a	3.6	5:30a	3.6	5:40a	3.5	5:50a	3.5	138	5:43p	1:22a	
26-Aug-04	6:00a	3.4	6:10a	3.3	6:20a	3.1	6:30a	3	138	5:43p	1:22a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
26-Aug-04	6:40a	2.9	6:50a	2.7	7:00a	2.6	7:10a	2.4	138	5:43p	1:22a	
26-Aug-04	7:20a	2.2	7:30a	2.1	7:40a	1.9	7:50a	1.7	138	5:43p	1:22a	
26-Aug-04	8:00a	1.6	8:10a	1.4	8:20a	1.2	8:30a	1.1	138	5:43p	1:22a	
26-Aug-04	8:40a	1	8:50a	0.8	9:00a	0.7	9:10a	0.6	138	5:43p	1:22a	
26-Aug-04	9:20a	0.5	9:30a	0.5	9:40a	0.4	9:50a	0.4	138	5:43p	1:22a	
26-Aug-04	10:00a	0.3	10:10a	0.3	10:20a	0.3	10:30a	0.3	138	5:43p	1:22a	
26-Aug-04	10:40a	0.3	10:50a	0.3	11:00a	0.3	11:10a	0.3	138	5:43p	1:22a	
26-Aug-04	11:20a	0.4	11:30a	0.4	11:40a	0.5	11:50a	0.5	138	5:43p	1:22a	
26-Aug-04	12:00p	0.6	12:10p	0.7	12:20p	0.8	12:30p	0.9	138	5:43p	1:22a	
26-Aug-04	12:40p	1	12:50p	1.1	1:00p	1.2	1:10p	1.3	138	5:43p	1:22a	
26-Aug-04	1:20p	1.4	1:30p	1.6	1:40p	1.7	1:50p	1.8	138	5:43p	1:22a	
26-Aug-04	2:00p	2	2:10p	2.2	2:20p	2.3	2:30p	2.5	138	5:43p	1:22a	
26-Aug-04	2:40p	2.6	2:50p	2.8	3:00p	3	3:10p	3.2	138	5:43p	1:22a	
26-Aug-04	3:20p	3.3	3:30p	3.5	3:40p	3.7	3:50p	3.8	138	5:43p	1:22a	
26-Aug-04	4:00p	4	4:10p	4.1	4:20p	4.2	4:30p	4.4	138	5:43p	1:22a	
26-Aug-04	4:40p	4.5	4:50p	4.6	5:00p	4.6	5:10p	4.7	138	5:43p	1:22a	
26-Aug-04	5:20p	4.7	5:30p	4.8	5:40p	4.8	5:50p	4.7	138	5:43p	1:22a	
26-Aug-04	6:00p	4.7	6:10p	4.6	6:20p	4.6	6:30p	4.5	138	5:43p	1:22a	
26-Aug-04	6:40p	4.3	6:50p	4.2	7:00p	4.1	7:10p	3.9	138	5:43p	1:22a	
26-Aug-04	7:20p	3.7	7:30p	3.5	7:40p	3.3	7:50p	3.1	138	5:43p	1:22a	
26-Aug-04	8:00p	2.9	8:10p	2.7	8:20p	2.5	8:30p	2.3	138	5:43p	1:22a	
26-Aug-04	8:40p	2.1	8:50p	1.9	9:00p	1.7	9:10p	1.6	138	5:43p	1:22a	
26-Aug-04	9:20p	1.4	9:30p	1.2	9:40p	1.1	9:50p	1	138	5:43p	1:22a	
26-Aug-04	10:00p	0.8	10:10p	0.7	10:20p	0.6	10:30p	0.6	138	5:43p	1:22a	
26-Aug-04	10:40p	0.5	10:50p	0.4	11:00p	0.4	11:10p	0.3	138	5:43p	1:22a	
26-Aug-04	11:20p	0.3	11:30p	0.3	11:40p	0.2	11:50p	0.2	138	5:43p	1:22a	
27-Aug-04	12:00a	0.3	12:10a	0.3	12:20a	0.3	12:30a	0.3	152	6:30p	2:35a	
27-Aug-04	12:40a	0.4	12:50a	0.4	1:00a	0.5	1:10a	0.5	152	6:30p	2:35a	
27-Aug-04	1:20a	0.6	1:30a	0.7	1:40a	0.8	1:50a	0.9	152	6:30p	2:35a	
27-Aug-04	2:00a	1	2:10a	1.1	2:20a	1.2	2:30a	1.4	152	6:30p	2:35a	
27-Aug-04	2:40a	1.5	2:50a	1.7	3:00a	1.8	3:10a	2	152	6:30p	2:35a	
27-Aug-04	3:20a	2.1	3:30a	2.3	3:40a	2.5	3:50a	2.6	152	6:30p	2:35a	
27-Aug-04	4:00a	2.8	4:10a	2.9	4:20a	3.1	4:30a	3.2	152	6:30p	2:35a	
27-Aug-04	4:40a	3.4	4:50a	3.5	5:00a	3.6	5:10a	3.7	152	6:30p	2:35a	
27-Aug-04	5:20a	3.8	5:30a	3.9	5:40a	3.9	5:50a	3.9	152	6:30p	2:35a	
27-Aug-04	6:00a	4	6:10a	4	6:20a	3.9	6:30a	3.9	152	6:30p	2:35a	
27-Aug-04	6:40a	3.8	6:50a	3.8	7:00a	3.7	7:10a	3.5	152	6:30p	2:35a	
27-Aug-04	7:20a	3.4	7:30a	3.3	7:40a	3.1	7:50a	2.9	152	6:30p	2:35a	
27-Aug-04	8:00a	2.8	8:10a	2.6	8:20a	2.4	8:30a	2.2	152	6:30p	2:35a	
27-Aug-04	8:40a	2	8:50a	1.8	9:00a	1.6	9:10a	1.4	152	6:30p	2:35a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
27-Aug-04	9:20a	1.3	9:30a	1.1	9:40a	0.9	9:50a	0.8	152	6:30p	2:35a	
27-Aug-04	10:00a	0.7	10:10a	0.6	10:20a	0.5	10:30a	0.4	152	6:30p	2:35a	
27-Aug-04	10:40a	0.3	10:50a	0.2	11:00a	0.2	11:10a	0.1	152	6:30p	2:35a	
27-Aug-04	11:20a	0.1	11:30a	0.1	11:40a	0	11:50a	0.1	152	6:30p	2:35a	
27-Aug-04	12:00p	0.1	12:10p	0.1	12:20p	0.1	12:30p	0.2	152	6:30p	2:35a	
27-Aug-04	12:40p	0.2	12:50p	0.3	1:00p	0.3	1:10p	0.4	152	6:30p	2:35a	
27-Aug-04	1:20p	0.5	1:30p	0.6	1:40p	0.7	1:50p	0.8	152	6:30p	2:35a	
27-Aug-04	2:00p	1	2:10p	1.1	2:20p	1.2	2:30p	1.4	152	6:30p	2:35a	
27-Aug-04	2:40p	1.6	2:50p	1.7	3:00p	1.9	3:10p	2.1	152	6:30p	2:35a	
27-Aug-04	3:20p	2.3	3:30p	2.5	3:40p	2.7	3:50p	2.9	152	6:30p	2:35a	
27-Aug-04	4:00p	3	4:10p	3.2	4:20p	3.4	4:30p	3.6	152	6:30p	2:35a	
27-Aug-04	4:40p	3.8	4:50p	4	5:00p	4.1	5:10p	4.3	152	6:30p	2:35a	
27-Aug-04	5:20p	4.4	5:30p	4.6	5:40p	4.7	5:50p	4.8	152	6:30p	2:35a	
27-Aug-04	6:00p	4.8	6:10p	4.9	6:20p	4.9	6:30p	5	152	6:30p	2:35a	
27-Aug-04	6:40p	5	6:50p	4.9	7:00p	4.9	7:10p	4.8	152	6:30p	2:35a	
27-Aug-04	7:20p	4.7	7:30p	4.6	7:40p	4.5	7:50p	4.3	152	6:30p	2:35a	
27-Aug-04	8:00p	4.1	8:10p	3.9	8:20p	3.8	8:30p	3.5	152	6:30p	2:35a	
27-Aug-04	8:40p	3.3	8:50p	3.1	9:00p	2.9	9:10p	2.7	152	6:30p	2:35a	
27-Aug-04	9:20p	2.5	9:30p	2.2	9:40p	2	9:50p	1.8	152	6:30p	2:35a	
27-Aug-04	10:00p	1.6	10:10p	1.4	10:20p	1.2	10:30p	1	152	6:30p	2:35a	
27-Aug-04	10:40p	0.9	10:50p	0.8	11:00p	0.6	11:10p	0.5	152	6:30p	2:35a	
27-Aug-04	11:20p	0.4	11:30p	0.3	11:40p	0.2	11:50p	0.1	152	6:30p	2:35a	

Data Export: Tides-Prudence Island, (south end)
Tide and Current Pro Version 2.5L (Nautical Software Inc.)

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
23-Aug-04	12:00a	2.8	12:10a	2.9	12:20a	3	12:30a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:40a	3.1	12:50a	3.2	1:00a	3.3	1:10a	3.3	98	2:21p	11:30p	1Q
23-Aug-04	1:20a	3.3	1:30a	3.4	1:40a	3.4	1:50a	3.4	98	2:21p	11:30p	1Q
23-Aug-04	2:00a	3.4	2:10a	3.3	2:20a	3.3	2:30a	3.2	98	2:21p	11:30p	1Q
23-Aug-04	2:40a	3.2	2:50a	3.1	3:00a	3	3:10a	2.9	98	2:21p	11:30p	1Q
23-Aug-04	3:20a	2.7	3:30a	2.6	3:40a	2.5	3:50a	2.3	98	2:21p	11:30p	1Q
23-Aug-04	4:00a	2.2	4:10a	2	4:20a	1.8	4:30a	1.7	98	2:21p	11:30p	1Q
23-Aug-04	4:40a	1.5	4:50a	1.3	5:00a	1.2	5:10a	1	98	2:21p	11:30p	1Q
23-Aug-04	5:20a	0.9	5:30a	0.8	5:40a	0.7	5:50a	0.6	98	2:21p	11:30p	1Q
23-Aug-04	6:00a	0.5	6:10a	0.4	6:20a	0.3	6:30a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	6:40a	0.3	6:50a	0.3	7:00a	0.3	7:10a	0.3	98	2:21p	11:30p	1Q
23-Aug-04	7:20a	0.3	7:30a	0.4	7:40a	0.4	7:50a	0.5	98	2:21p	11:30p	1Q
23-Aug-04	8:00a	0.5	8:10a	0.6	8:20a	0.7	8:30a	0.8	98	2:21p	11:30p	1Q
23-Aug-04	8:40a	0.9	8:50a	1	9:00a	1.1	9:10a	1.2	98	2:21p	11:30p	1Q
23-Aug-04	9:20a	1.3	9:30a	1.4	9:40a	1.5	9:50a	1.6	98	2:21p	11:30p	1Q
23-Aug-04	10:00a	1.8	10:10a	1.9	10:20a	2	10:30a	2.1	98	2:21p	11:30p	1Q
23-Aug-04	10:40a	2.2	10:50a	2.4	11:00a	2.5	11:10a	2.6	98	2:21p	11:30p	1Q
23-Aug-04	11:20a	2.7	11:30a	2.8	11:40a	2.9	11:50a	3.1	98	2:21p	11:30p	1Q
23-Aug-04	12:00p	3.2	12:10p	3.3	12:20p	3.4	12:30p	3.5	98	2:21p	11:30p	1Q
23-Aug-04	12:40p	3.6	12:50p	3.7	1:00p	3.8	1:10p	3.9	98	2:21p	11:30p	1Q
23-Aug-04	1:20p	4	1:30p	4.1	1:40p	4.1	1:50p	4.2	98	2:21p	11:30p	1Q
23-Aug-04	2:00p	4.2	2:10p	4.3	2:20p	4.3	2:30p	4.3	98	2:21p	11:30p	1Q
23-Aug-04	2:40p	4.3	2:50p	4.2	3:00p	4.2	3:10p	4.1	98	2:21p	11:30p	1Q
23-Aug-04	3:20p	4	3:30p	3.9	3:40p	3.8	3:50p	3.7	98	2:21p	11:30p	1Q
23-Aug-04	4:00p	3.6	4:10p	3.4	4:20p	3.2	4:30p	3.1	98	2:21p	11:30p	1Q
23-Aug-04	4:40p	2.9	4:50p	2.7	5:00p	2.5	5:10p	2.4	98	2:21p	11:30p	1Q
23-Aug-04	5:20p	2.2	5:30p	2	5:40p	1.8	5:50p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	6:00p	1.5	6:10p	1.4	6:20p	1.3	6:30p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	6:40p	1	6:50p	0.9	7:00p	0.9	7:10p	0.8	98	2:21p	11:30p	1Q
23-Aug-04	7:20p	0.7	7:30p	0.7	7:40p	0.7	7:50p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:00p	0.7	8:10p	0.7	8:20p	0.7	8:30p	0.7	98	2:21p	11:30p	1Q
23-Aug-04	8:40p	0.8	8:50p	0.8	9:00p	0.8	9:10p	0.9	98	2:21p	11:30p	1Q
23-Aug-04	9:20p	0.9	9:30p	1	9:40p	1	9:50p	1.1	98	2:21p	11:30p	1Q
23-Aug-04	10:00p	1.2	10:10p	1.2	10:20p	1.3	10:30p	1.4	98	2:21p	11:30p	1Q
23-Aug-04	10:40p	1.5	10:50p	1.5	11:00p	1.6	11:10p	1.7	98	2:21p	11:30p	1Q
23-Aug-04	11:20p	1.8	11:30p	1.9	11:40p	1.9	11:50p	2	98	2:21p	11:30p	1Q
24-Aug-04	12:00a	2.1	12:10a	2.2	12:20a	2.3	12:30a	2.4	111	3:35p	12:20a	
24-Aug-04	12:40a	2.5	12:50a	2.6	1:00a	2.7	1:10a	2.8	111	3:35p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
24-Aug-04	1:20a	2.8	1:30a	2.9	1:40a	3	1:50a	3.1	111	3:35p	12:20a	
24-Aug-04	2:00a	3.1	2:10a	3.2	2:20a	3.2	2:30a	3.3	111	3:35p	12:20a	
24-Aug-04	2:40a	3.3	2:50a	3.3	3:00a	3.3	3:10a	3.3	111	3:35p	12:20a	
24-Aug-04	3:20a	3.3	3:30a	3.2	3:40a	3.1	3:50a	3.1	111	3:35p	12:20a	
24-Aug-04	4:00a	3	4:10a	2.9	4:20a	2.8	4:30a	2.6	111	3:35p	12:20a	
24-Aug-04	4:40a	2.5	4:50a	2.3	5:00a	2.2	5:10a	2	111	3:35p	12:20a	
24-Aug-04	5:20a	1.9	5:30a	1.7	5:40a	1.5	5:50a	1.4	111	3:35p	12:20a	
24-Aug-04	6:00a	1.3	6:10a	1.1	6:20a	1	6:30a	0.9	111	3:35p	12:20a	
24-Aug-04	6:40a	0.8	6:50a	0.7	7:00a	0.6	7:10a	0.5	111	3:35p	12:20a	
24-Aug-04	7:20a	0.5	7:30a	0.4	7:40a	0.4	7:50a	0.4	111	3:35p	12:20a	
24-Aug-04	8:00a	0.4	8:10a	0.4	8:20a	0.4	8:30a	0.4	111	3:35p	12:20a	
24-Aug-04	8:40a	0.5	8:50a	0.5	9:00a	0.6	9:10a	0.6	111	3:35p	12:20a	
24-Aug-04	9:20a	0.7	9:30a	0.8	9:40a	0.9	9:50a	1	111	3:35p	12:20a	
24-Aug-04	10:00a	1	10:10a	1.1	10:20a	1.2	10:30a	1.3	111	3:35p	12:20a	
24-Aug-04	10:40a	1.4	10:50a	1.5	11:00a	1.7	11:10a	1.8	111	3:35p	12:20a	
24-Aug-04	11:20a	1.9	11:30a	2	11:40a	2.1	11:50a	2.2	111	3:35p	12:20a	
24-Aug-04	12:00p	2.4	12:10p	2.5	12:20p	2.6	12:30p	2.7	111	3:35p	12:20a	
24-Aug-04	12:40p	2.8	12:50p	3	1:00p	3.1	1:10p	3.2	111	3:35p	12:20a	
24-Aug-04	1:20p	3.4	1:30p	3.5	1:40p	3.6	1:50p	3.7	111	3:35p	12:20a	
24-Aug-04	2:00p	3.8	2:10p	3.9	2:20p	4	2:30p	4.1	111	3:35p	12:20a	
24-Aug-04	2:40p	4.2	2:50p	4.3	3:00p	4.3	3:10p	4.3	111	3:35p	12:20a	
24-Aug-04	3:20p	4.4	3:30p	4.4	3:40p	4.4	3:50p	4.3	111	3:35p	12:20a	
24-Aug-04	4:00p	4.3	4:10p	4.2	4:20p	4.2	4:30p	4.1	111	3:35p	12:20a	
24-Aug-04	4:40p	4	4:50p	3.8	5:00p	3.7	5:10p	3.6	111	3:35p	12:20a	
24-Aug-04	5:20p	3.4	5:30p	3.2	5:40p	3.1	5:50p	2.9	111	3:35p	12:20a	
24-Aug-04	6:00p	2.7	6:10p	2.5	6:20p	2.3	6:30p	2.2	111	3:35p	12:20a	
24-Aug-04	6:40p	2	6:50p	1.8	7:00p	1.7	7:10p	1.5	111	3:35p	12:20a	
24-Aug-04	7:20p	1.4	7:30p	1.3	7:40p	1.2	7:50p	1.1	111	3:35p	12:20a	
24-Aug-04	8:00p	1	8:10p	0.9	8:20p	0.8	8:30p	0.8	111	3:35p	12:20a	
24-Aug-04	8:40p	0.7	8:50p	0.7	9:00p	0.7	9:10p	0.7	111	3:35p	12:20a	
24-Aug-04	9:20p	0.7	9:30p	0.7	9:40p	0.7	9:50p	0.7	111	3:35p	12:20a	
24-Aug-04	10:00p	0.7	10:10p	0.8	10:20p	0.8	10:30p	0.8	111	3:35p	12:20a	
24-Aug-04	10:40p	0.9	10:50p	0.9	11:00p	1	11:10p	1	111	3:35p	12:20a	
24-Aug-04	11:20p	1.1	11:30p	1.2	11:40p	1.2	11:50p	1.3	111	3:35p	12:20a	
25-Aug-05	12:00a	1.4	12:10a	1.5	12:20a	1.6	12:30a	1.6	125	4:44p	12:20a	
25-Aug-05	12:40a	1.7	12:50a	1.8	1:00a	1.9	1:10a	2	125	4:44p	12:20a	
25-Aug-05	1:20a	2.1	1:30a	2.2	1:40a	2.4	1:50a	2.5	125	4:44p	12:20a	
25-Aug-05	2:00a	2.6	2:10a	2.7	2:20a	2.8	2:30a	2.9	125	4:44p	12:20a	
25-Aug-05	2:40a	3	2:50a	3.1	3:00a	3.1	3:10a	3.2	125	4:44p	12:20a	
25-Aug-05	3:20a	3.3	3:30a	3.3	3:40a	3.4	3:50a	3.4	125	4:44p	12:20a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
25-Aug-05	4:00a	3.4	4:10a	3.4	4:20a	3.4	4:30a	3.3	125	4:44p	12:20a	
25-Aug-05	4:40a	3.3	4:50a	3.2	5:00a	3.1	5:10a	3	125	4:44p	12:20a	
25-Aug-05	5:20a	2.9	5:30a	2.8	5:40a	2.6	5:50a	2.5	125	4:44p	12:20a	
25-Aug-05	6:00a	2.3	6:10a	2.2	6:20a	2	6:30a	1.9	125	4:44p	12:20a	
25-Aug-05	6:40a	1.7	6:50a	1.5	7:00a	1.4	7:10a	1.3	125	4:44p	12:20a	
25-Aug-05	7:20a	1.1	7:30a	1	7:40a	0.9	7:50a	0.8	125	4:44p	12:20a	
25-Aug-05	8:00a	0.7	8:10a	0.6	8:20a	0.5	8:30a	0.5	125	4:44p	12:20a	
25-Aug-05	8:40a	0.4	8:50a	0.4	9:00a	0.4	9:10a	0.4	125	4:44p	12:20a	
25-Aug-05	9:20a	0.4	9:30a	0.4	9:40a	0.4	9:50a	0.5	125	4:44p	12:20a	
25-Aug-05	10:00a	0.5	10:10a	0.5	10:20a	0.6	10:30a	0.7	125	4:44p	12:20a	
25-Aug-05	10:40a	0.7	10:50a	0.8	11:00a	0.9	11:10a	1	125	4:44p	12:20a	
25-Aug-05	11:20a	1	11:30a	1.1	11:40a	1.2	11:50a	1.3	125	4:44p	12:20a	
25-Aug-05	12:00p	1.4	12:10p	1.5	12:20p	1.7	12:30p	1.8	125	4:44p	12:20a	
25-Aug-05	12:40p	1.9	12:50p	2	1:00p	2.2	1:10p	2.3	125	4:44p	12:20a	
25-Aug-05	1:20p	2.4	1:30p	2.6	1:40p	2.7	1:50p	2.9	125	4:44p	12:20a	
25-Aug-05	2:00p	3	2:10p	3.2	2:20p	3.3	2:30p	3.5	125	4:44p	12:20a	
25-Aug-05	2:40p	3.6	2:50p	3.7	3:00p	3.9	3:10p	4	125	4:44p	12:20a	
25-Aug-05	3:20p	4.1	3:30p	4.2	3:40p	4.3	3:50p	4.4	125	4:44p	12:20a	
25-Aug-05	4:00p	4.4	4:10p	4.5	4:20p	4.5	4:30p	4.5	125	4:44p	12:20a	
25-Aug-05	4:40p	4.5	4:50p	4.5	5:00p	4.5	5:10p	4.4	125	4:44p	12:20a	
25-Aug-05	5:20p	4.4	5:30p	4.3	5:40p	4.2	5:50p	4	125	4:44p	12:20a	
25-Aug-05	6:00p	3.9	6:10p	3.7	6:20p	3.6	6:30p	3.4	125	4:44p	12:20a	
25-Aug-05	6:40p	3.2	6:50p	3	7:00p	2.8	7:10p	2.7	125	4:44p	12:20a	
25-Aug-05	7:20p	2.5	7:30p	2.3	7:40p	2.1	7:50p	1.9	125	4:44p	12:20a	
25-Aug-05	8:00p	1.8	8:10p	1.6	8:20p	1.5	8:30p	1.3	125	4:44p	12:20a	
25-Aug-05	8:40p	1.2	8:50p	1.1	9:00p	1	9:10p	0.9	125	4:44p	12:20a	
25-Aug-05	9:20p	0.8	9:30p	0.7	9:40p	0.7	9:50p	0.6	125	4:44p	12:20a	
25-Aug-05	10:00p	0.6	10:10p	0.5	10:20p	0.5	10:30p	0.5	125	4:44p	12:20a	
25-Aug-05	10:40p	0.5	10:50p	0.5	11:00p	0.5	11:10p	0.5	125	4:44p	12:20a	
25-Aug-05	11:20p	0.6	11:30p	0.6	11:40p	0.6	11:50p	0.7	125	4:44p	12:20a	
26-Aug-04	12:00a	0.7	12:10a	0.8	12:20a	0.8	12:30a	0.9	138	5:43p	1:22a	
26-Aug-04	12:40a	1	12:50a	1.1	1:00a	1.2	1:10a	1.2	138	5:43p	1:22a	
26-Aug-04	1:20a	1.3	1:30a	1.5	1:40a	1.6	1:50a	1.7	138	5:43p	1:22a	
26-Aug-04	2:00a	1.8	2:10a	1.9	2:20a	2.1	2:30a	2.2	138	5:43p	1:22a	
26-Aug-04	2:40a	2.3	2:50a	2.5	3:00a	2.6	3:10a	2.7	138	5:43p	1:22a	
26-Aug-04	3:20a	2.9	3:30a	3	3:40a	3.1	3:50a	3.2	138	5:43p	1:22a	
26-Aug-04	4:00a	3.3	4:10a	3.4	4:20a	3.5	4:30a	3.5	138	5:43p	1:22a	
26-Aug-04	4:40a	3.6	4:50a	3.6	5:00a	3.6	5:10a	3.6	138	5:43p	1:22a	
26-Aug-04	5:20a	3.6	5:30a	3.6	5:40a	3.5	5:50a	3.5	138	5:43p	1:22a	
26-Aug-04	6:00a	3.4	6:10a	3.3	6:20a	3.1	6:30a	3	138	5:43p	1:22a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
26-Aug-04	6:40a	2.9	6:50a	2.7	7:00a	2.6	7:10a	2.4	138	5:43p	1:22a	
26-Aug-04	7:20a	2.2	7:30a	2.1	7:40a	1.9	7:50a	1.7	138	5:43p	1:22a	
26-Aug-04	8:00a	1.6	8:10a	1.4	8:20a	1.2	8:30a	1.1	138	5:43p	1:22a	
26-Aug-04	8:40a	1	8:50a	0.8	9:00a	0.7	9:10a	0.6	138	5:43p	1:22a	
26-Aug-04	9:20a	0.5	9:30a	0.5	9:40a	0.4	9:50a	0.4	138	5:43p	1:22a	
26-Aug-04	10:00a	0.3	10:10a	0.3	10:20a	0.3	10:30a	0.3	138	5:43p	1:22a	
26-Aug-04	10:40a	0.3	10:50a	0.3	11:00a	0.3	11:10a	0.3	138	5:43p	1:22a	
26-Aug-04	11:20a	0.4	11:30a	0.4	11:40a	0.5	11:50a	0.5	138	5:43p	1:22a	
26-Aug-04	12:00p	0.6	12:10p	0.7	12:20p	0.8	12:30p	0.9	138	5:43p	1:22a	
26-Aug-04	12:40p	1	12:50p	1.1	1:00p	1.2	1:10p	1.3	138	5:43p	1:22a	
26-Aug-04	1:20p	1.4	1:30p	1.6	1:40p	1.7	1:50p	1.8	138	5:43p	1:22a	
26-Aug-04	2:00p	2	2:10p	2.2	2:20p	2.3	2:30p	2.5	138	5:43p	1:22a	
26-Aug-04	2:40p	2.6	2:50p	2.8	3:00p	3	3:10p	3.2	138	5:43p	1:22a	
26-Aug-04	3:20p	3.3	3:30p	3.5	3:40p	3.7	3:50p	3.8	138	5:43p	1:22a	
26-Aug-04	4:00p	4	4:10p	4.1	4:20p	4.2	4:30p	4.4	138	5:43p	1:22a	
26-Aug-04	4:40p	4.5	4:50p	4.6	5:00p	4.6	5:10p	4.7	138	5:43p	1:22a	
26-Aug-04	5:20p	4.7	5:30p	4.8	5:40p	4.8	5:50p	4.7	138	5:43p	1:22a	
26-Aug-04	6:00p	4.7	6:10p	4.6	6:20p	4.6	6:30p	4.5	138	5:43p	1:22a	
26-Aug-04	6:40p	4.3	6:50p	4.2	7:00p	4.1	7:10p	3.9	138	5:43p	1:22a	
26-Aug-04	7:20p	3.7	7:30p	3.5	7:40p	3.3	7:50p	3.1	138	5:43p	1:22a	
26-Aug-04	8:00p	2.9	8:10p	2.7	8:20p	2.5	8:30p	2.3	138	5:43p	1:22a	
26-Aug-04	8:40p	2.1	8:50p	1.9	9:00p	1.7	9:10p	1.6	138	5:43p	1:22a	
26-Aug-04	9:20p	1.4	9:30p	1.2	9:40p	1.1	9:50p	1	138	5:43p	1:22a	
26-Aug-04	10:00p	0.8	10:10p	0.7	10:20p	0.6	10:30p	0.6	138	5:43p	1:22a	
26-Aug-04	10:40p	0.5	10:50p	0.4	11:00p	0.4	11:10p	0.3	138	5:43p	1:22a	
26-Aug-04	11:20p	0.3	11:30p	0.3	11:40p	0.2	11:50p	0.2	138	5:43p	1:22a	
27-Aug-04	12:00a	0.3	12:10a	0.3	12:20a	0.3	12:30a	0.3	152	6:30p	2:35a	
27-Aug-04	12:40a	0.4	12:50a	0.4	1:00a	0.5	1:10a	0.5	152	6:30p	2:35a	
27-Aug-04	1:20a	0.6	1:30a	0.7	1:40a	0.8	1:50a	0.9	152	6:30p	2:35a	
27-Aug-04	2:00a	1	2:10a	1.1	2:20a	1.2	2:30a	1.4	152	6:30p	2:35a	
27-Aug-04	2:40a	1.5	2:50a	1.7	3:00a	1.8	3:10a	2	152	6:30p	2:35a	
27-Aug-04	3:20a	2.1	3:30a	2.3	3:40a	2.5	3:50a	2.6	152	6:30p	2:35a	
27-Aug-04	4:00a	2.8	4:10a	2.9	4:20a	3.1	4:30a	3.2	152	6:30p	2:35a	
27-Aug-04	4:40a	3.4	4:50a	3.5	5:00a	3.6	5:10a	3.7	152	6:30p	2:35a	
27-Aug-04	5:20a	3.8	5:30a	3.9	5:40a	3.9	5:50a	3.9	152	6:30p	2:35a	
27-Aug-04	6:00a	4	6:10a	4	6:20a	3.9	6:30a	3.9	152	6:30p	2:35a	
27-Aug-04	6:40a	3.8	6:50a	3.8	7:00a	3.7	7:10a	3.5	152	6:30p	2:35a	
27-Aug-04	7:20a	3.4	7:30a	3.3	7:40a	3.1	7:50a	2.9	152	6:30p	2:35a	
27-Aug-04	8:00a	2.8	8:10a	2.6	8:20a	2.4	8:30a	2.2	152	6:30p	2:35a	
27-Aug-04	8:40a	2	8:50a	1.8	9:00a	1.6	9:10a	1.4	152	6:30p	2:35a	

Date	Time	Value	Time	Value	Time	Value	Time	Value	Moon Phase	Moonrise	Moonset	Moon Quarter
27-Aug-04	9:20a	1.3	9:30a	1.1	9:40a	0.9	9:50a	0.8	152	6:30p	2:35a	
27-Aug-04	10:00a	0.7	10:10a	0.6	10:20a	0.5	10:30a	0.4	152	6:30p	2:35a	
27-Aug-04	10:40a	0.3	10:50a	0.2	11:00a	0.2	11:10a	0.1	152	6:30p	2:35a	
27-Aug-04	11:20a	0.1	11:30a	0.1	11:40a	0	11:50a	0.1	152	6:30p	2:35a	
27-Aug-04	12:00p	0.1	12:10p	0.1	12:20p	0.1	12:30p	0.2	152	6:30p	2:35a	
27-Aug-04	12:40p	0.2	12:50p	0.3	1:00p	0.3	1:10p	0.4	152	6:30p	2:35a	
27-Aug-04	1:20p	0.5	1:30p	0.6	1:40p	0.7	1:50p	0.8	152	6:30p	2:35a	
27-Aug-04	2:00p	1	2:10p	1.1	2:20p	1.2	2:30p	1.4	152	6:30p	2:35a	
27-Aug-04	2:40p	1.6	2:50p	1.7	3:00p	1.9	3:10p	2.1	152	6:30p	2:35a	
27-Aug-04	3:20p	2.3	3:30p	2.5	3:40p	2.7	3:50p	2.9	152	6:30p	2:35a	
27-Aug-04	4:00p	3	4:10p	3.2	4:20p	3.4	4:30p	3.6	152	6:30p	2:35a	
27-Aug-04	4:40p	3.8	4:50p	4	5:00p	4.1	5:10p	4.3	152	6:30p	2:35a	
27-Aug-04	5:20p	4.4	5:30p	4.6	5:40p	4.7	5:50p	4.8	152	6:30p	2:35a	
27-Aug-04	6:00p	4.8	6:10p	4.9	6:20p	4.9	6:30p	5	152	6:30p	2:35a	
27-Aug-04	6:40p	5	6:50p	4.9	7:00p	4.9	7:10p	4.8	152	6:30p	2:35a	
27-Aug-04	7:20p	4.7	7:30p	4.6	7:40p	4.5	7:50p	4.3	152	6:30p	2:35a	
27-Aug-04	8:00p	4.1	8:10p	3.9	8:20p	3.8	8:30p	3.5	152	6:30p	2:35a	
27-Aug-04	8:40p	3.3	8:50p	3.1	9:00p	2.9	9:10p	2.7	152	6:30p	2:35a	
27-Aug-04	9:20p	2.5	9:30p	2.2	9:40p	2	9:50p	1.8	152	6:30p	2:35a	
27-Aug-04	10:00p	1.6	10:10p	1.4	10:20p	1.2	10:30p	1	152	6:30p	2:35a	
27-Aug-04	10:40p	0.9	10:50p	0.8	11:00p	0.6	11:10p	0.5	152	6:30p	2:35a	
27-Aug-04	11:20p	0.4	11:30p	0.3	11:40p	0.2	11:50p	0.1	152	6:30p	2:35a	

Tides-Prudence Island, (south end)

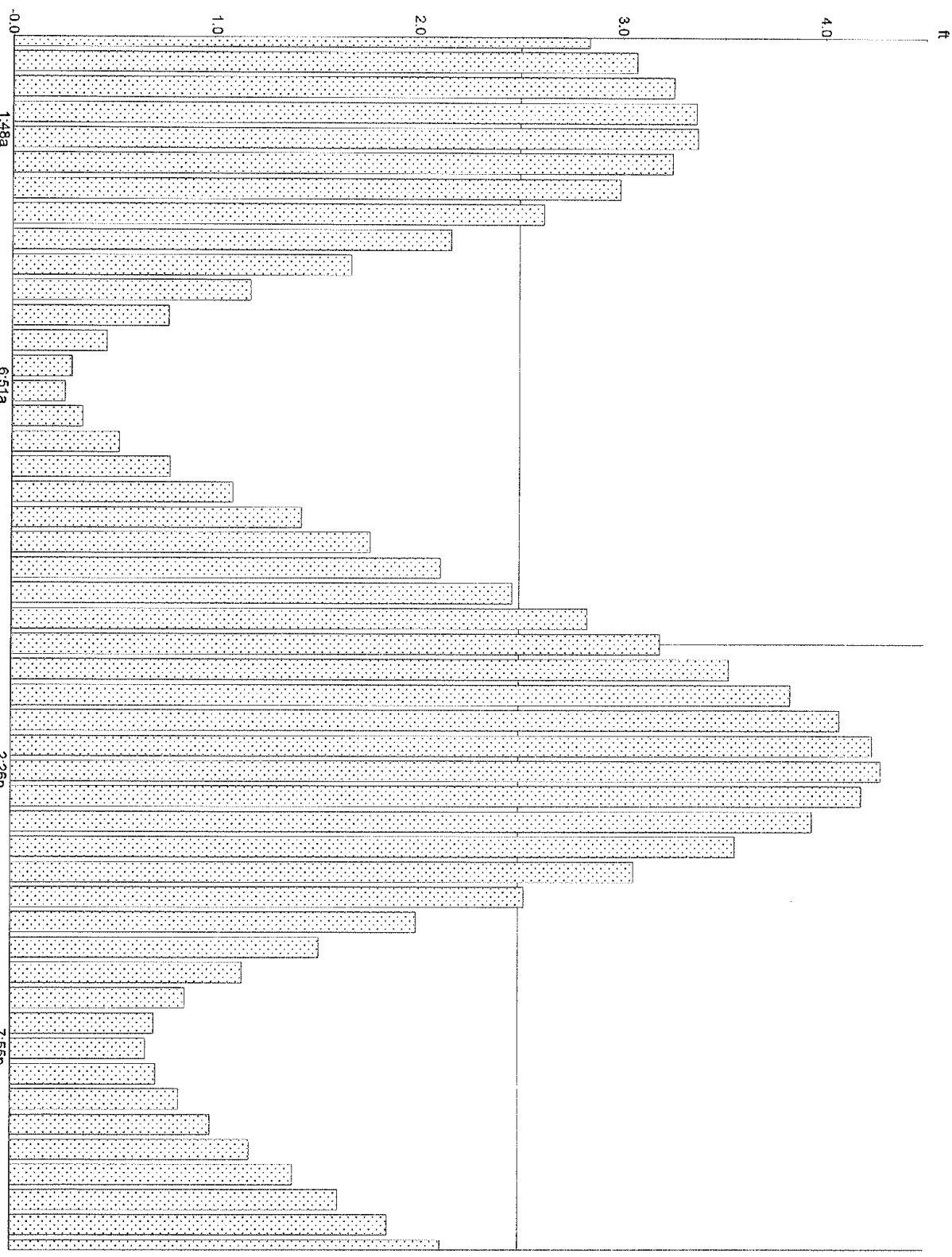
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Monday, August 23, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
1:48a	3.4 ft	High
6:51a	0.3 ft	Low
2:26p	4.3 ft	High
7:55p	0.7 ft	Low

(EDT)	Tide
12:00a	2.8 ft
12:30a	3.1 ft
1:00a	3.3 ft
1:30a	3.4 ft
2:00a	3.4 ft
2:30a	3.2 ft
3:00a	3.0 ft
3:30a	2.6 ft
4:00a	2.2 ft
4:30a	1.7 ft
5:00a	1.2 ft
5:30a	0.8 ft
6:00a	0.5 ft
6:30a	0.3 ft
7:00a	0.3 ft
7:30a	0.4 ft
8:00a	0.5 ft
8:30a	0.8 ft
9:00a	1.1 ft
9:30a	1.4 ft
10:00a	1.8 ft
10:30a	2.1 ft
11:00a	2.5 ft
11:30a	2.8 ft
12:00p	3.2 ft
12:30p	3.5 ft
1:00p	3.8 ft
1:30p	4.1 ft
2:00p	4.2 ft
2:30p	4.3 ft
3:00p	4.2 ft
3:30p	3.9 ft
4:00p	3.6 ft
4:30p	3.1 ft
5:00p	2.5 ft
5:30p	2.0 ft
6:00p	1.5 ft
6:30p	1.1 ft
7:00p	0.9 ft
7:30p	0.7 ft
8:00p	0.7 ft
8:30p	0.7 ft
9:00p	0.8 ft
9:30p	1.0 ft
10:00p	1.2 ft
10:30p	1.4 ft
11:00p	1.6 ft
11:30p	1.9 ft
12:00a	2.1 ft



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Tides-Prudence Island, (south end)

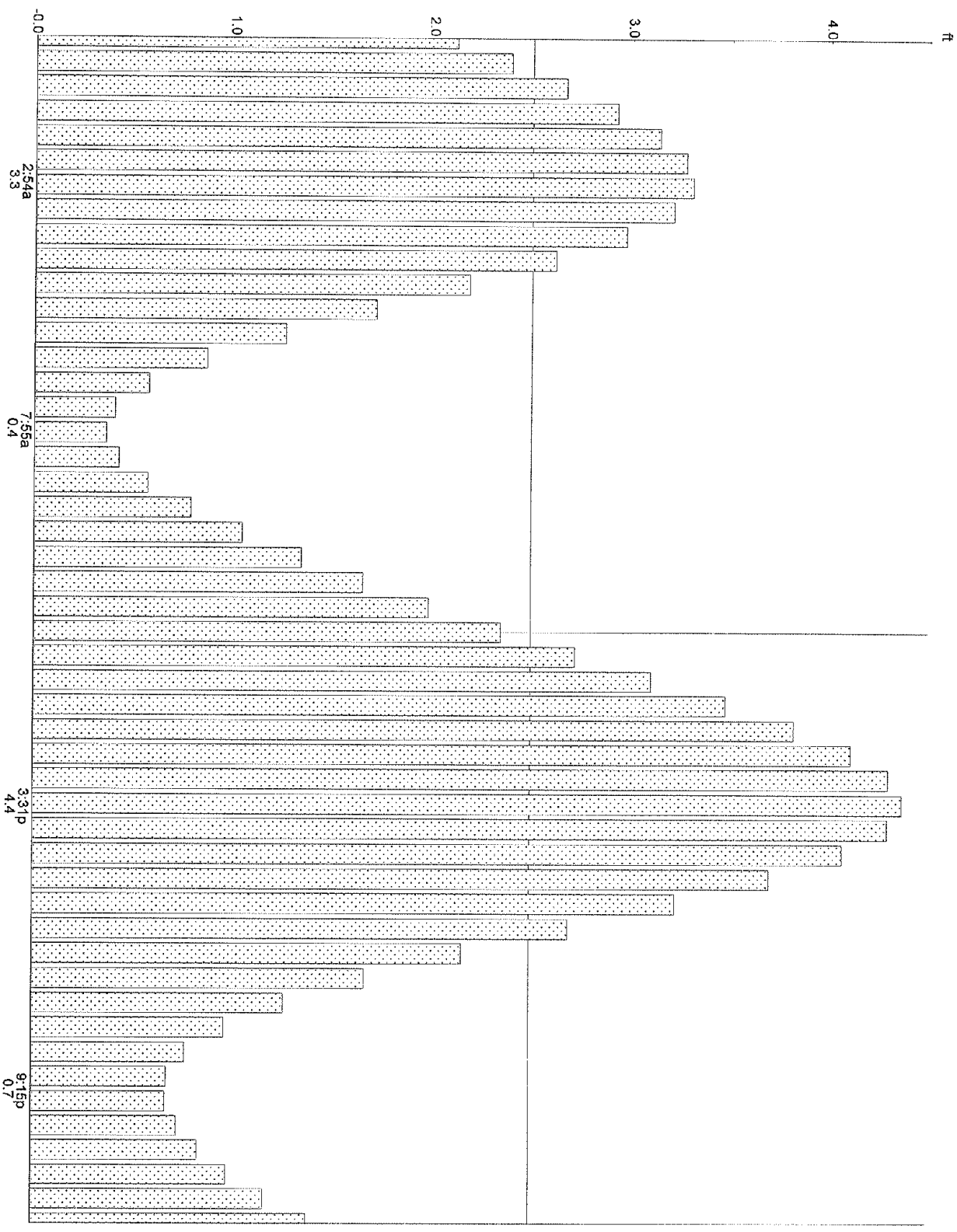
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Tuesday, August 24, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
2:54a	3.3 ft	High
7:55a	0.4 ft	Low
3:31p	4.4 ft	High
9:15p	0.7 ft	Low

(EDT)	Tide
12:00a	2.1 ft
12:30a	2.4 ft
1:00a	2.7 ft
1:30a	2.9 ft
2:00a	3.1 ft
2:30a	3.3 ft
3:00a	3.3 ft
3:30a	3.2 ft
4:00a	3.0 ft
4:30a	2.6 ft
5:00a	2.2 ft
5:30a	1.7 ft
6:00a	1.3 ft
6:30a	0.9 ft
7:00a	0.6 ft
7:30a	0.4 ft
8:00a	0.4 ft
8:30a	0.4 ft
9:00a	0.6 ft
9:30a	0.8 ft
10:00a	1.0 ft
10:30a	1.3 ft
11:00a	1.7 ft
11:30a	2.0 ft
12:00p	2.4 ft
12:30p	2.7 ft
1:00p	3.1 ft
1:30p	3.5 ft
2:00p	3.8 ft
2:30p	4.1 ft
3:00p	4.3 ft
3:30p	4.4 ft
4:00p	4.3 ft
4:30p	4.1 ft
5:00p	3.7 ft
5:30p	3.2 ft
6:00p	2.7 ft
6:30p	2.2 ft
7:00p	1.7 ft
7:30p	1.3 ft
8:00p	1.0 ft
8:30p	0.8 ft
9:00p	0.7 ft
9:30p	0.7 ft
10:00p	0.7 ft
10:30p	0.8 ft
11:00p	1.0 ft
11:30p	1.2 ft
12:00a	1.4 ft



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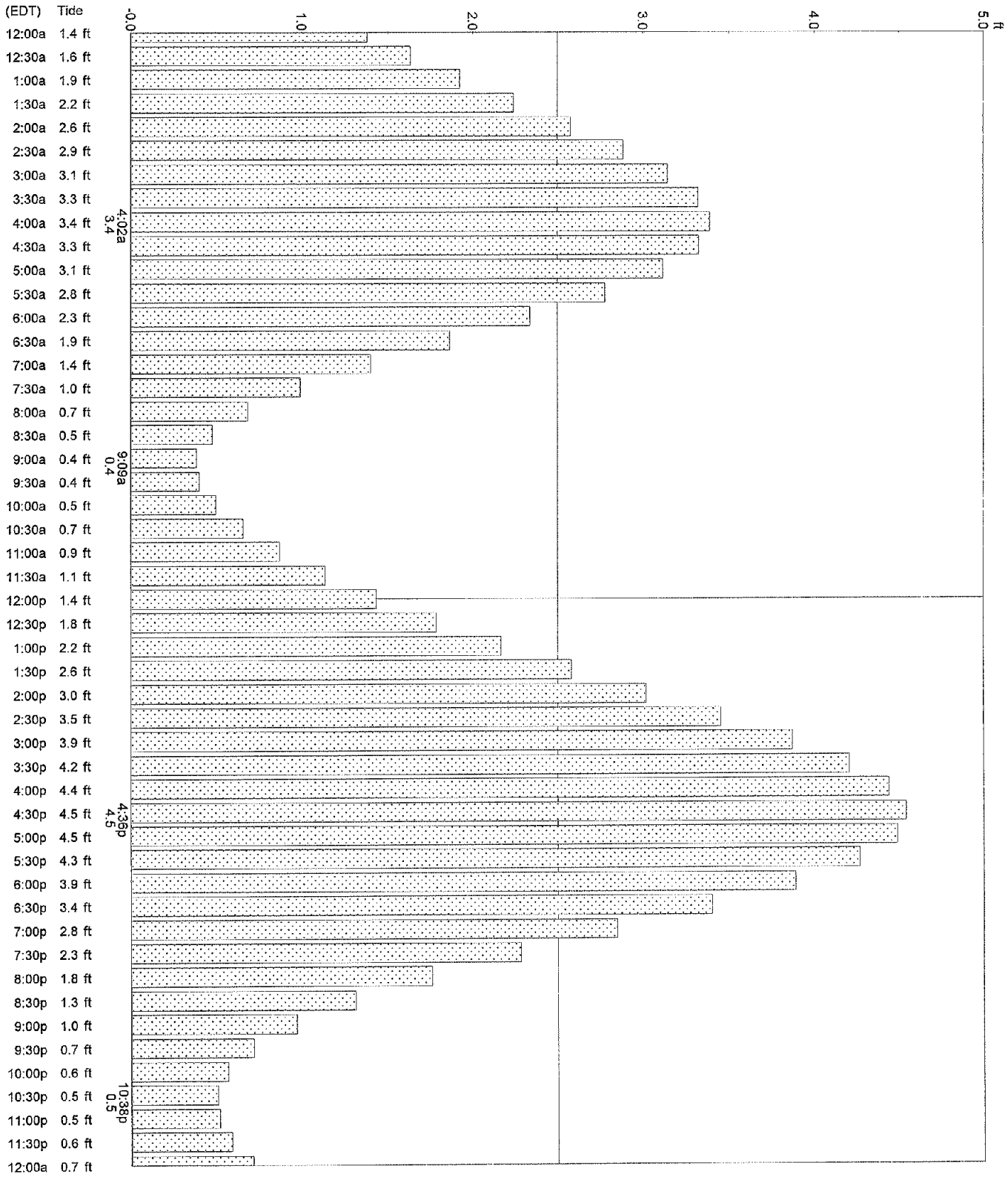
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Wednesday, August 25, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
4:02a	3.4 ft	High
9:09a	0.4 ft	Low
4:36p	4.5 ft	High
10:38p	0.5 ft	Low



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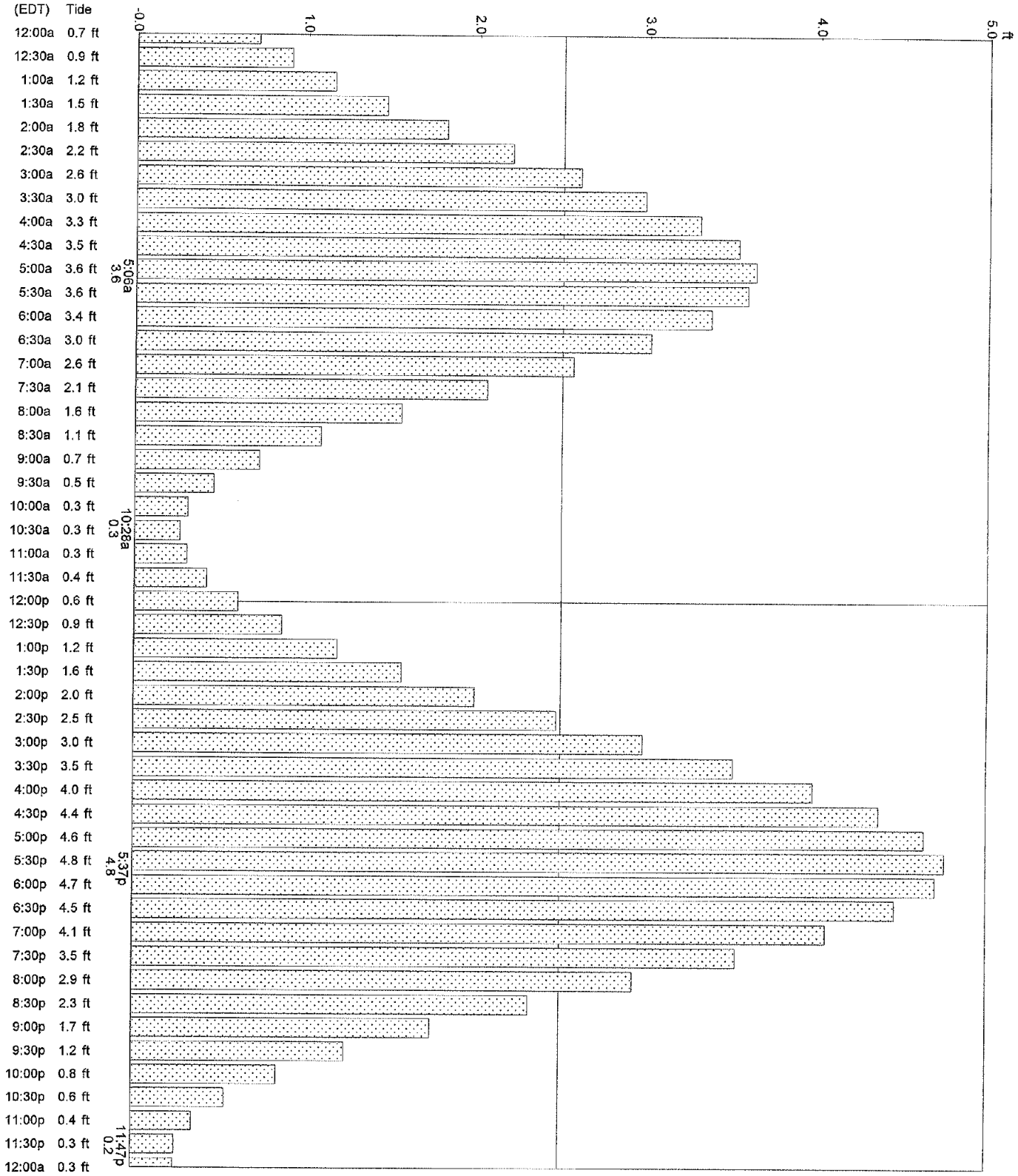
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Thursday, August 26, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
5:06a	3.6 ft	High
10:28a	0.3 ft	Low
5:37p	4.8 ft	High
11:47p	0.2 ft	Low



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Tides-Prudence Island, (south end)

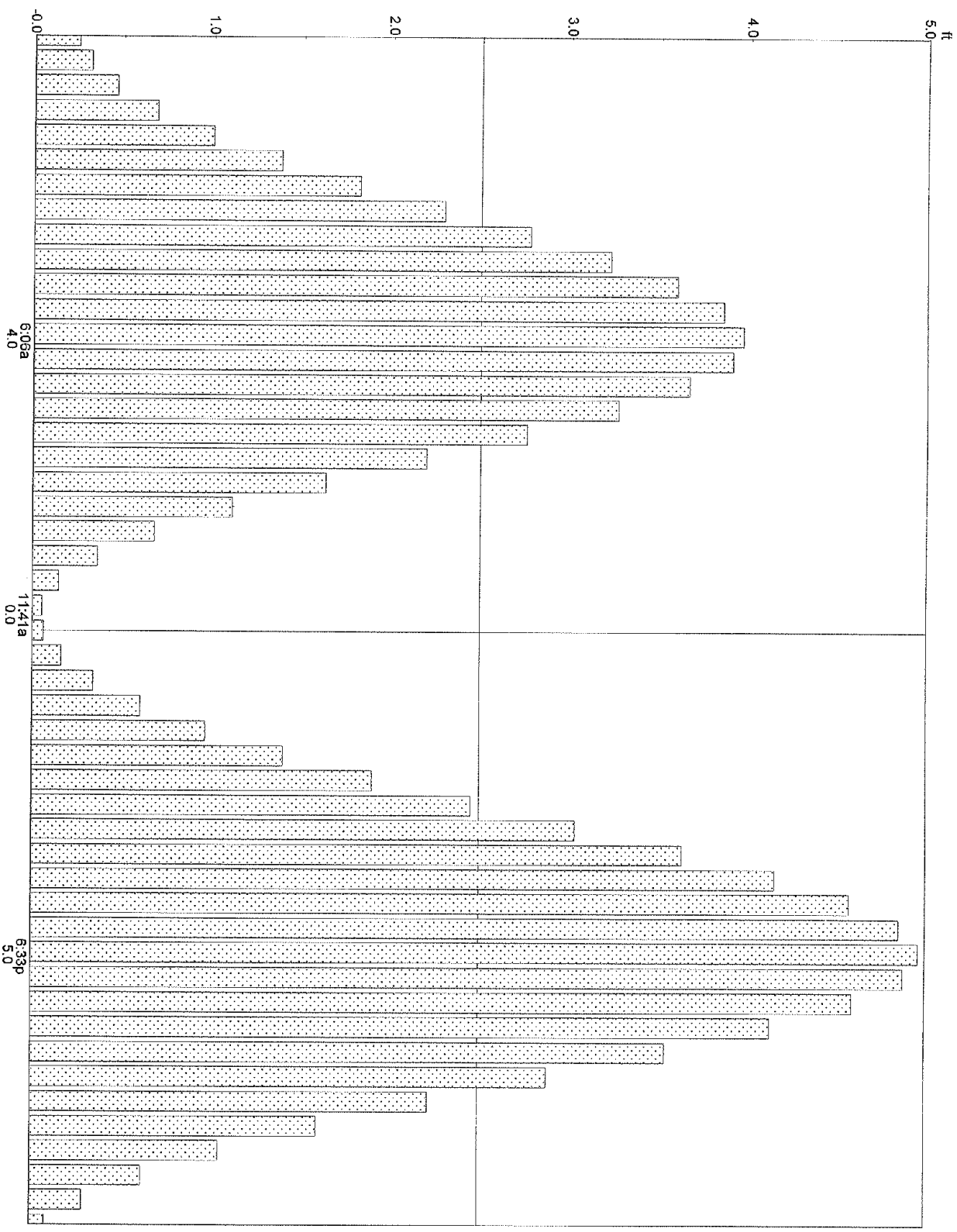
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Friday, August 27, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
6:06a	4.0 ft	High
11:41a	0.0 ft	Low
6:33p	5.0 ft	High

(EDT)	Tide
12:00a	0.3 ft
12:30a	0.3 ft
1:00a	0.5 ft
1:30a	0.7 ft
2:00a	1.0 ft
2:30a	1.4 ft
3:00a	1.8 ft
3:30a	2.3 ft
4:00a	2.8 ft
4:30a	3.2 ft
5:00a	3.6 ft
5:30a	3.9 ft
6:00a	4.0 ft
6:30a	3.9 ft
7:00a	3.7 ft
7:30a	3.3 ft
8:00a	2.8 ft
8:30a	2.2 ft
9:00a	1.6 ft
9:30a	1.1 ft
10:00a	0.7 ft
10:30a	0.4 ft
11:00a	0.2 ft
11:30a	0.1 ft
12:00p	0.1 ft
12:30p	0.2 ft
1:00p	0.3 ft
1:30p	0.6 ft
2:00p	1.0 ft
2:30p	1.4 ft
3:00p	1.9 ft
3:30p	2.5 ft
4:00p	3.0 ft
4:30p	3.6 ft
5:00p	4.1 ft
5:30p	4.6 ft
6:00p	4.8 ft
6:30p	5.0 ft
7:00p	4.9 ft
7:30p	4.6 ft
8:00p	4.1 ft
8:30p	3.5 ft
9:00p	2.9 ft
9:30p	2.2 ft
10:00p	1.6 ft
10:30p	1.0 ft
11:00p	0.6 ft
11:30p	0.3 ft
12:00a	0.1 ft



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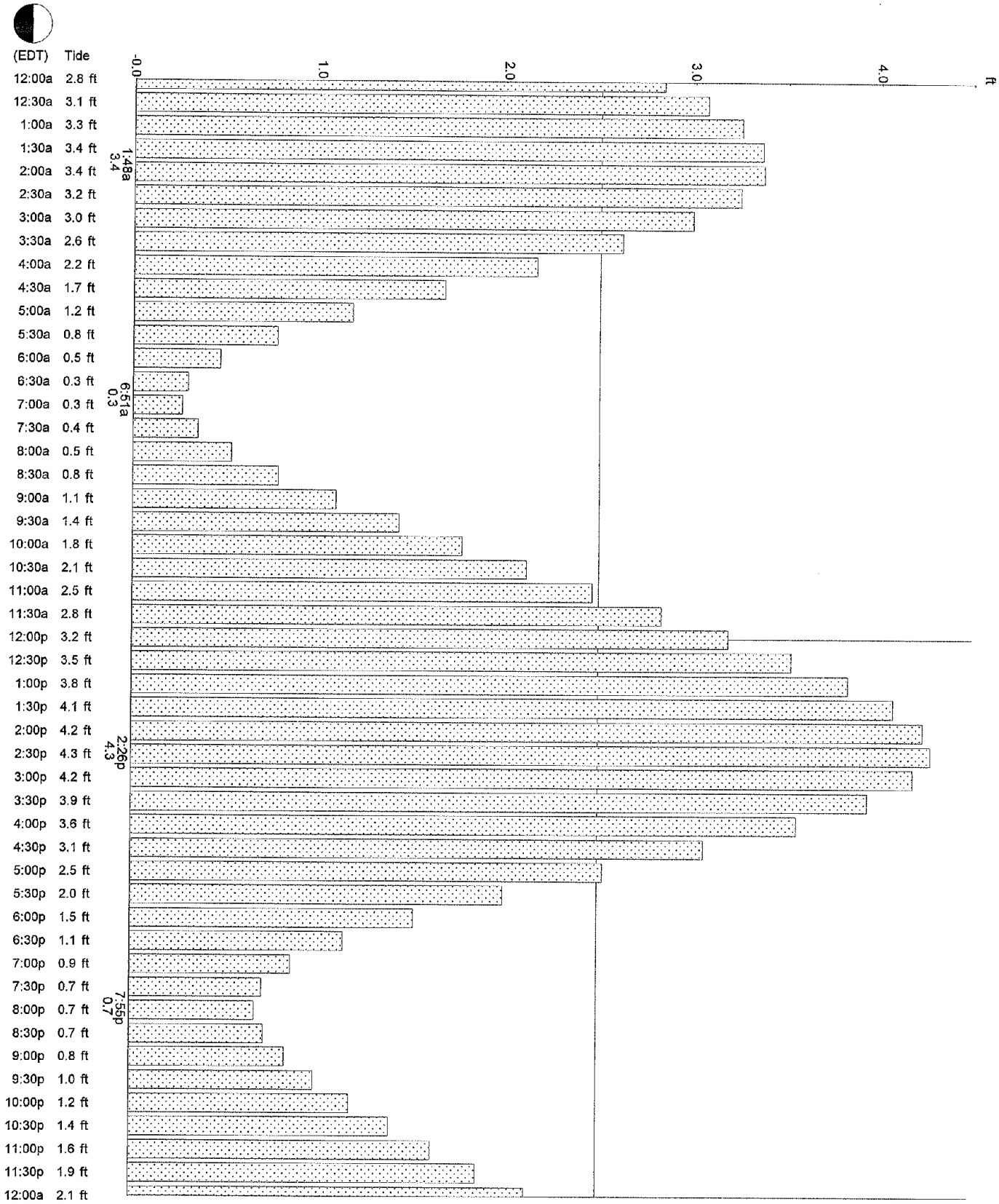
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Monday, August 23, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
1:48a	3.4 ft	High
6:51a	0.3 ft	Low
2:26p	4.3 ft	High
7:55p	0.7 ft	Low



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Tides-Prudence Island, (south end)

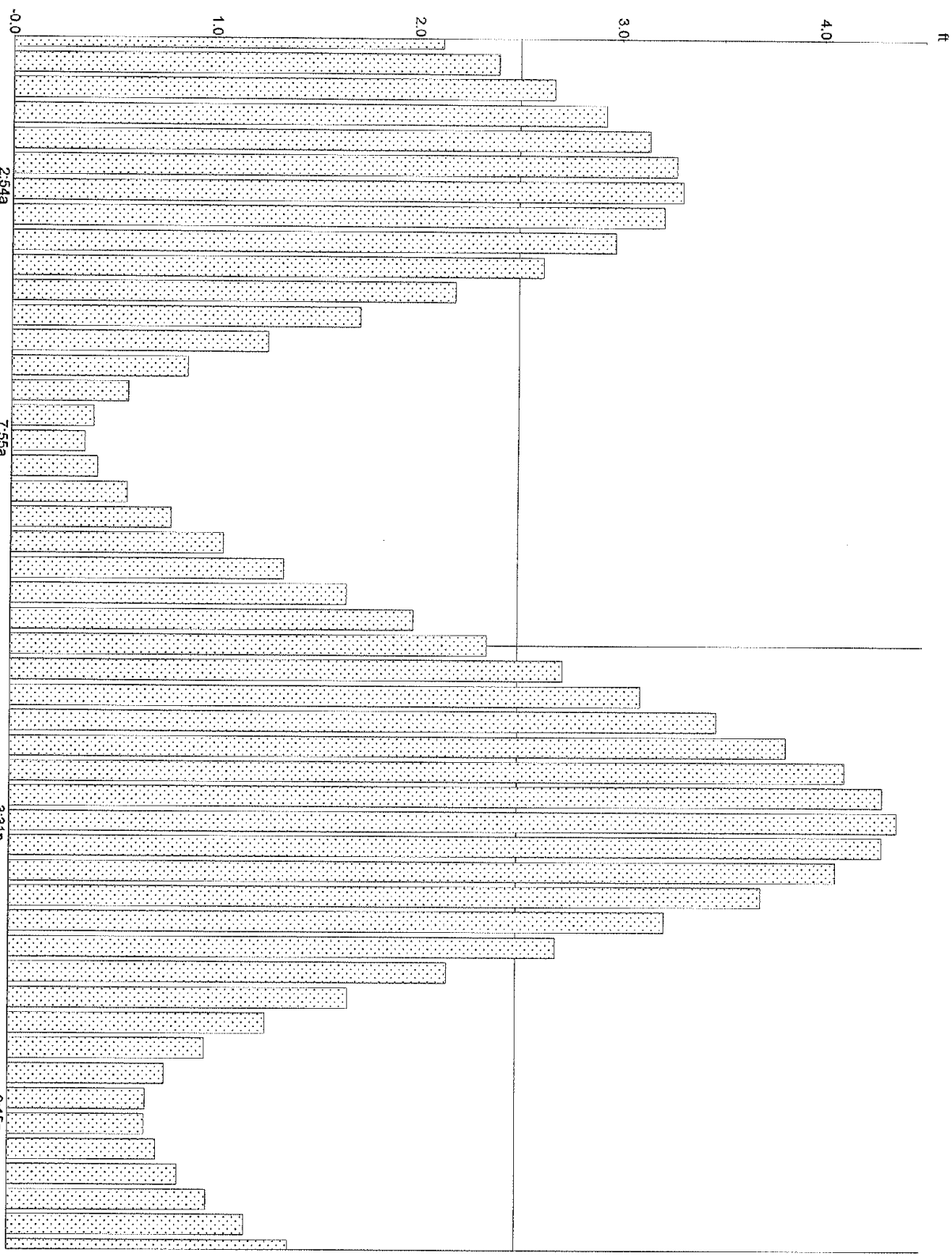
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Tuesday, August 24, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
2:54a	3.3 ft	High
7:55a	0.4 ft	Low
3:31p	4.4 ft	High
9:15p	0.7 ft	Low

(EDT)	Tide
12:00a	2.1 ft
12:30a	2.4 ft
1:00a	2.7 ft
1:30a	2.9 ft
2:00a	3.1 ft
2:30a	3.3 ft
3:00a	3.3 ft
3:30a	3.2 ft
4:00a	3.0 ft
4:30a	2.6 ft
5:00a	2.2 ft
5:30a	1.7 ft
6:00a	1.3 ft
6:30a	0.9 ft
7:00a	0.6 ft
7:30a	0.4 ft
8:00a	0.4 ft
8:30a	0.4 ft
9:00a	0.6 ft
9:30a	0.8 ft
10:00a	1.0 ft
10:30a	1.3 ft
11:00a	1.7 ft
11:30a	2.0 ft
12:00p	2.4 ft
12:30p	2.7 ft
1:00p	3.1 ft
1:30p	3.5 ft
2:00p	3.8 ft
2:30p	4.1 ft
3:00p	4.3 ft
3:30p	4.4 ft
4:00p	4.3 ft
4:30p	4.1 ft
5:00p	3.7 ft
5:30p	3.2 ft
6:00p	2.7 ft
6:30p	2.2 ft
7:00p	1.7 ft
7:30p	1.3 ft
8:00p	1.0 ft
8:30p	0.8 ft
9:00p	0.7 ft
9:30p	0.7 ft
10:00p	0.7 ft
10:30p	0.8 ft
11:00p	1.0 ft
11:30p	1.2 ft
12:00a	1.4 ft



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Tides-Prudence Island, (south end)

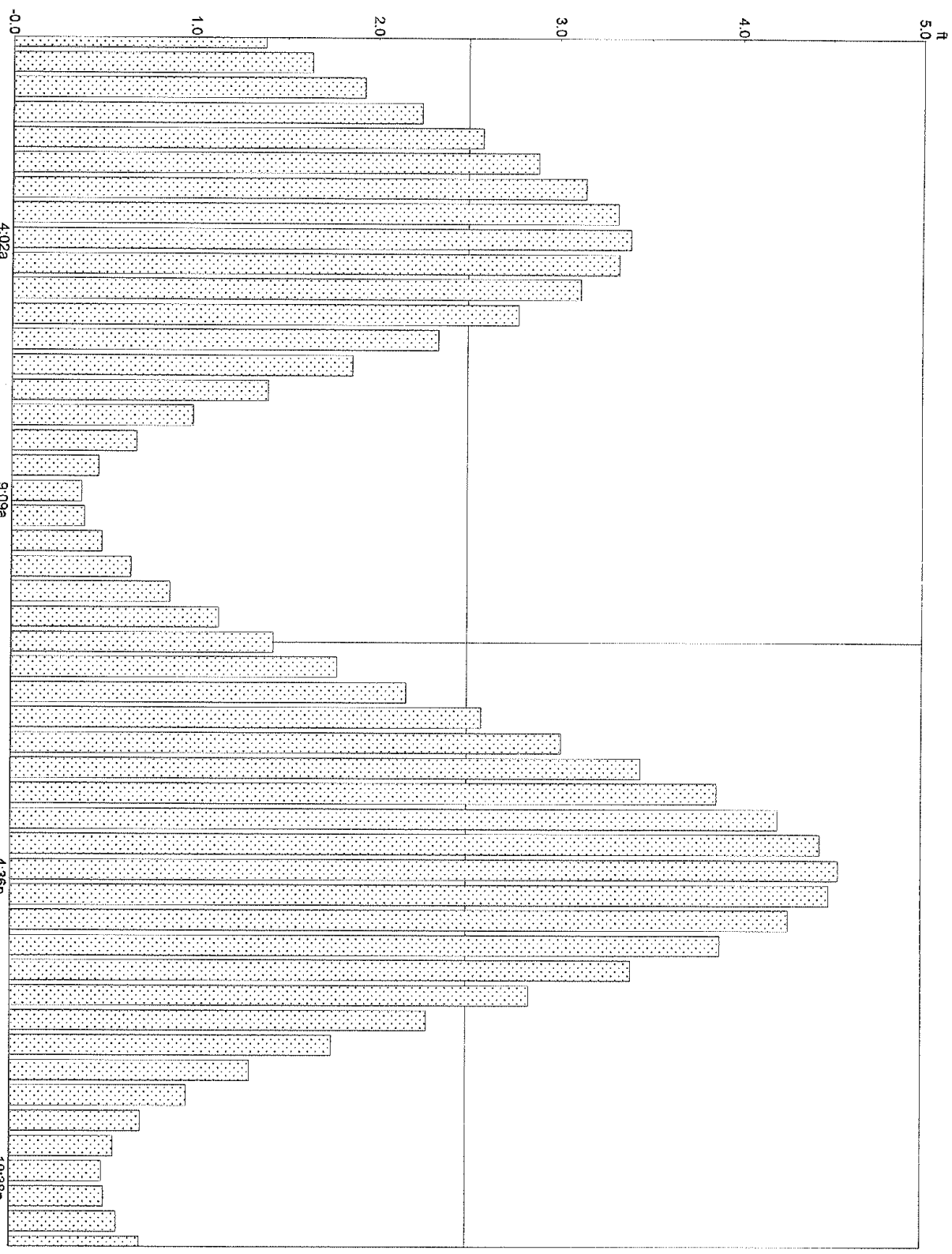
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Wednesday, August 25, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
4:02a	3.4 ft	High
9:09a	0.4 ft	Low
4:36p	4.5 ft	High
10:38p	0.5 ft	Low

(EDT)	Tide
12:00a	1.4 ft
12:30a	1.6 ft
1:00a	1.9 ft
1:30a	2.2 ft
2:00a	2.6 ft
2:30a	2.9 ft
3:00a	3.1 ft
3:30a	3.3 ft
4:00a	3.4 ft
4:30a	3.3 ft
5:00a	3.1 ft
5:30a	2.8 ft
6:00a	2.3 ft
6:30a	1.9 ft
7:00a	1.4 ft
7:30a	1.0 ft
8:00a	0.7 ft
8:30a	0.5 ft
9:00a	0.4 ft
9:30a	0.4 ft
10:00a	0.5 ft
10:30a	0.7 ft
11:00a	0.9 ft
11:30a	1.1 ft
12:00p	1.4 ft
12:30p	1.8 ft
1:00p	2.2 ft
1:30p	2.6 ft
2:00p	3.0 ft
2:30p	3.5 ft
3:00p	3.9 ft
3:30p	4.2 ft
4:00p	4.4 ft
4:30p	4.5 ft
5:00p	4.5 ft
5:30p	4.3 ft
6:00p	3.9 ft
6:30p	3.4 ft
7:00p	2.8 ft
7:30p	2.3 ft
8:00p	1.8 ft
8:30p	1.3 ft
9:00p	1.0 ft
9:30p	0.7 ft
10:00p	0.6 ft
10:30p	0.5 ft
11:00p	0.5 ft
11:30p	0.6 ft
12:00a	0.7 ft



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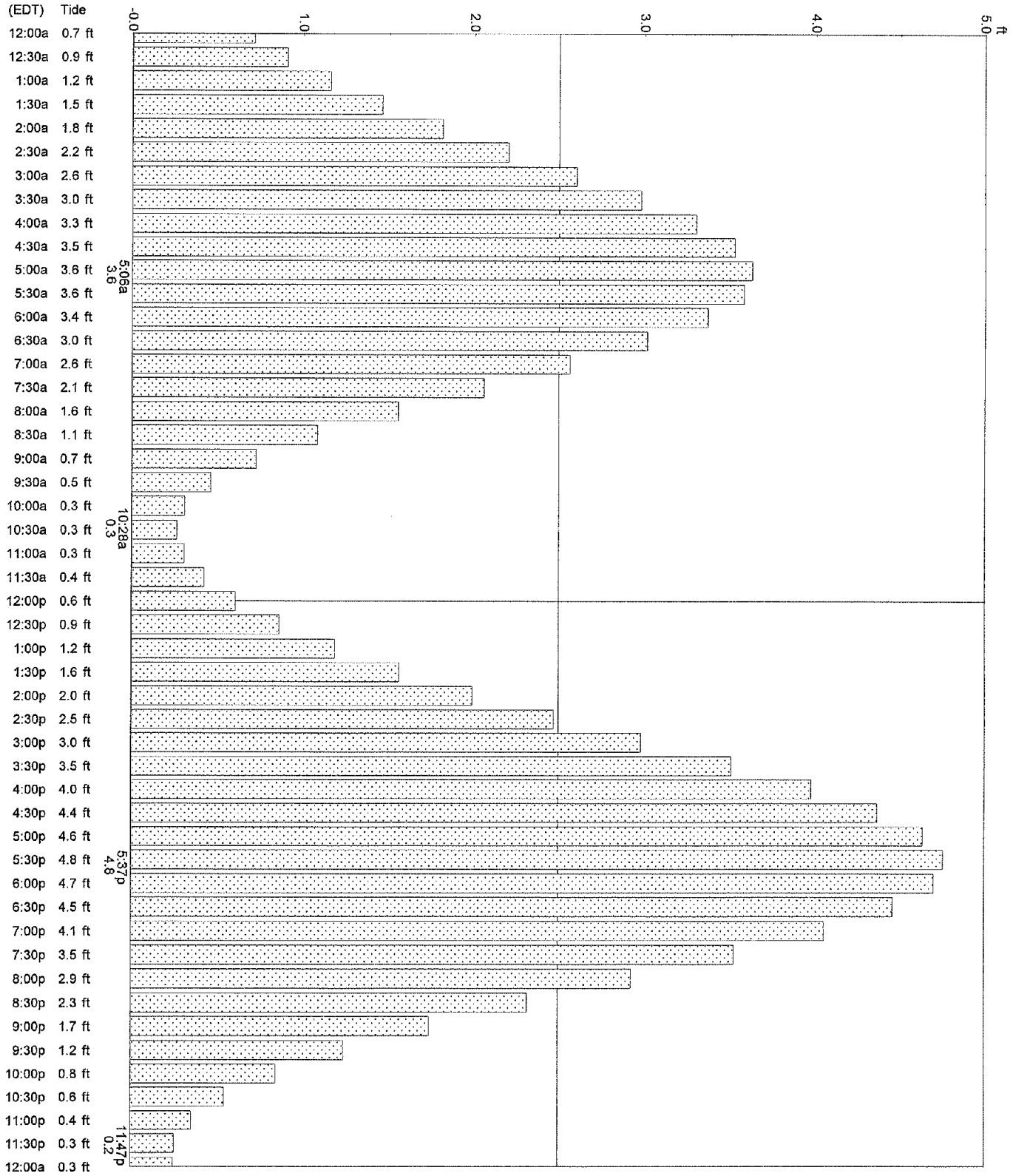
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Thursday, August 26, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
5:06a	3.6 ft	High
10:28a	0.3 ft	Low
5:37p	4.8 ft	High
11:47p	0.2 ft	Low



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Tides-Prudence Island, (south end)

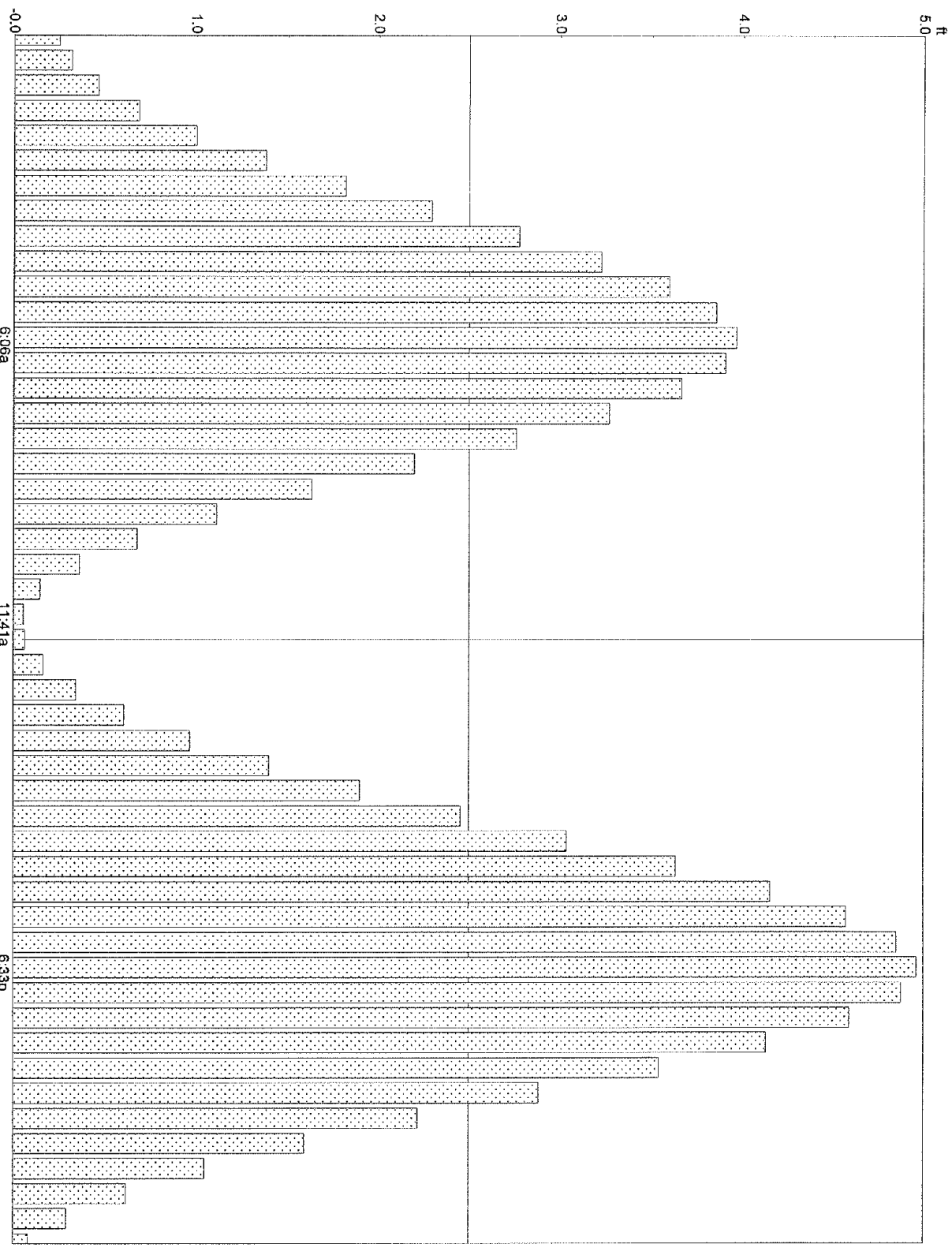
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Friday, August 27, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
6:06a	4.0 ft	High
11:41a	0.0 ft	Low
6:33p	5.0 ft	High

(EDT)	Tide
12:00a	0.3 ft
12:30a	0.3 ft
1:00a	0.5 ft
1:30a	0.7 ft
2:00a	1.0 ft
2:30a	1.4 ft
3:00a	1.8 ft
3:30a	2.3 ft
4:00a	2.8 ft
4:30a	3.2 ft
5:00a	3.6 ft
5:30a	3.9 ft
6:00a	4.0 ft
6:30a	3.9 ft
7:00a	3.7 ft
7:30a	3.3 ft
8:00a	2.8 ft
8:30a	2.2 ft
9:00a	1.6 ft
9:30a	1.1 ft
10:00a	0.7 ft
10:30a	0.4 ft
11:00a	0.2 ft
11:30a	0.1 ft
12:00p	0.1 ft
12:30p	0.2 ft
1:00p	0.3 ft
1:30p	0.6 ft
2:00p	1.0 ft
2:30p	1.4 ft
3:00p	1.9 ft
3:30p	2.5 ft
4:00p	3.0 ft
4:30p	3.6 ft
5:00p	4.1 ft
5:30p	4.6 ft
6:00p	4.8 ft
6:30p	5.0 ft
7:00p	4.9 ft
7:30p	4.6 ft
8:00p	4.1 ft
8:30p	3.5 ft
9:00p	2.9 ft
9:30p	2.2 ft
10:00p	1.6 ft
10:30p	1.0 ft
11:00p	0.6 ft
11:30p	0.3 ft
12:00a	0.1 ft



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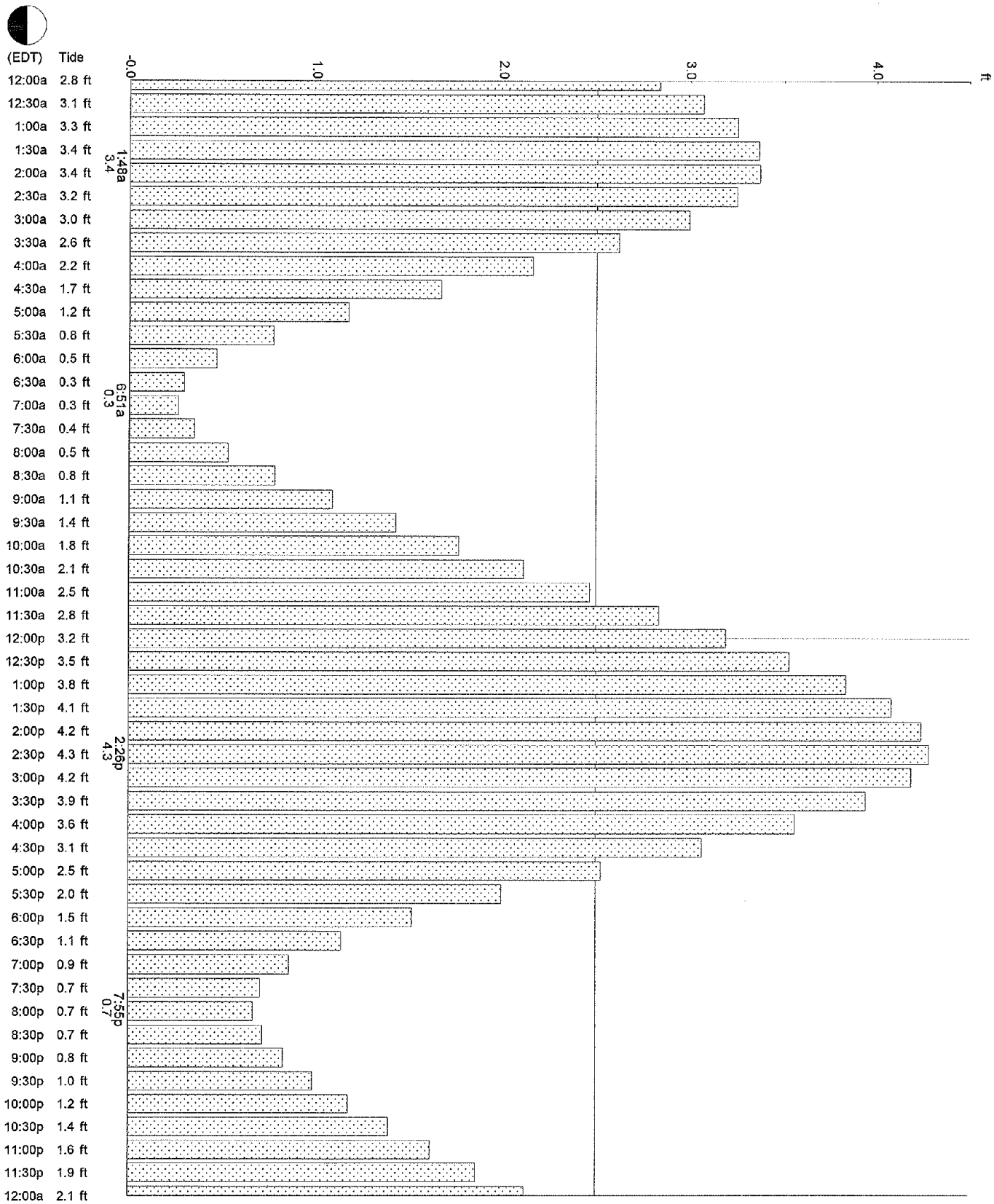
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Monday, August 23, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
1:48a	3.4 ft	High
6:51a	0.3 ft	Low
2:26p	4.3 ft	High
7:55p	0.7 ft	Low



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Tides-Prudence Island, (south end)

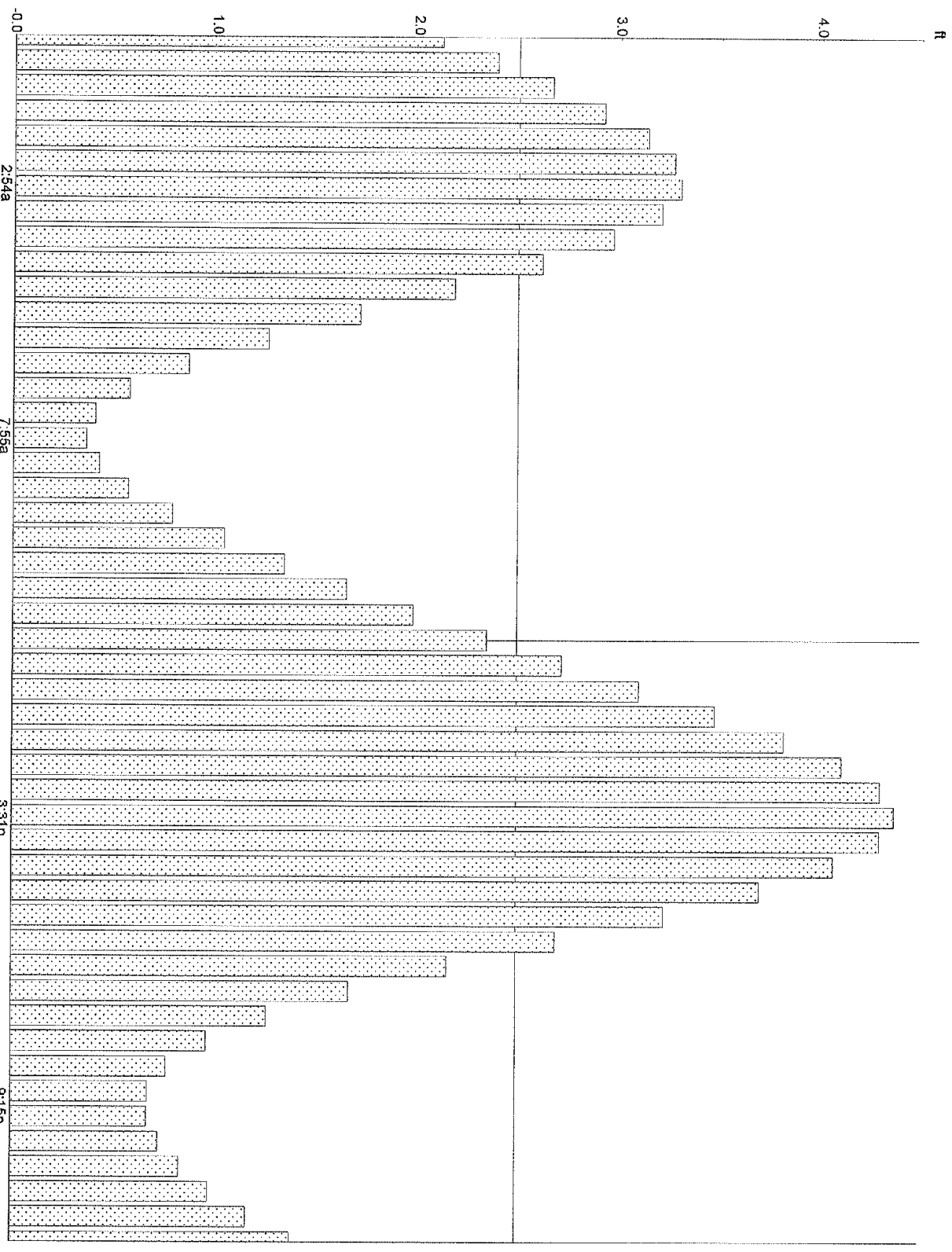
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Tuesday, August 24, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
2:54a	3.3 ft	High
7:55a	0.4 ft	Low
3:31p	4.4 ft	High
9:15p	0.7 ft	Low

(EDT)	Tide
12:00a	2.1 ft
12:30a	2.4 ft
1:00a	2.7 ft
1:30a	2.9 ft
2:00a	3.1 ft
2:30a	3.3 ft
3:00a	3.3 ft
3:30a	3.2 ft
4:00a	3.0 ft
4:30a	2.6 ft
5:00a	2.2 ft
5:30a	1.7 ft
6:00a	1.3 ft
6:30a	0.9 ft
7:00a	0.6 ft
7:30a	0.4 ft
8:00a	0.4 ft
8:30a	0.4 ft
9:00a	0.6 ft
9:30a	0.8 ft
10:00a	1.0 ft
10:30a	1.3 ft
11:00a	1.7 ft
11:30a	2.0 ft
12:00p	2.4 ft
12:30p	2.7 ft
1:00p	3.1 ft
1:30p	3.5 ft
2:00p	3.8 ft
2:30p	4.1 ft
3:00p	4.3 ft
3:30p	4.4 ft
4:00p	4.3 ft
4:30p	4.1 ft
5:00p	3.7 ft
5:30p	3.2 ft
6:00p	2.7 ft
6:30p	2.2 ft
7:00p	1.7 ft
7:30p	1.3 ft
8:00p	1.0 ft
8:30p	0.8 ft
9:00p	0.7 ft
9:30p	0.7 ft
10:00p	0.7 ft
10:30p	0.8 ft
11:00p	1.0 ft
11:30p	1.2 ft
12:00a	1.4 ft



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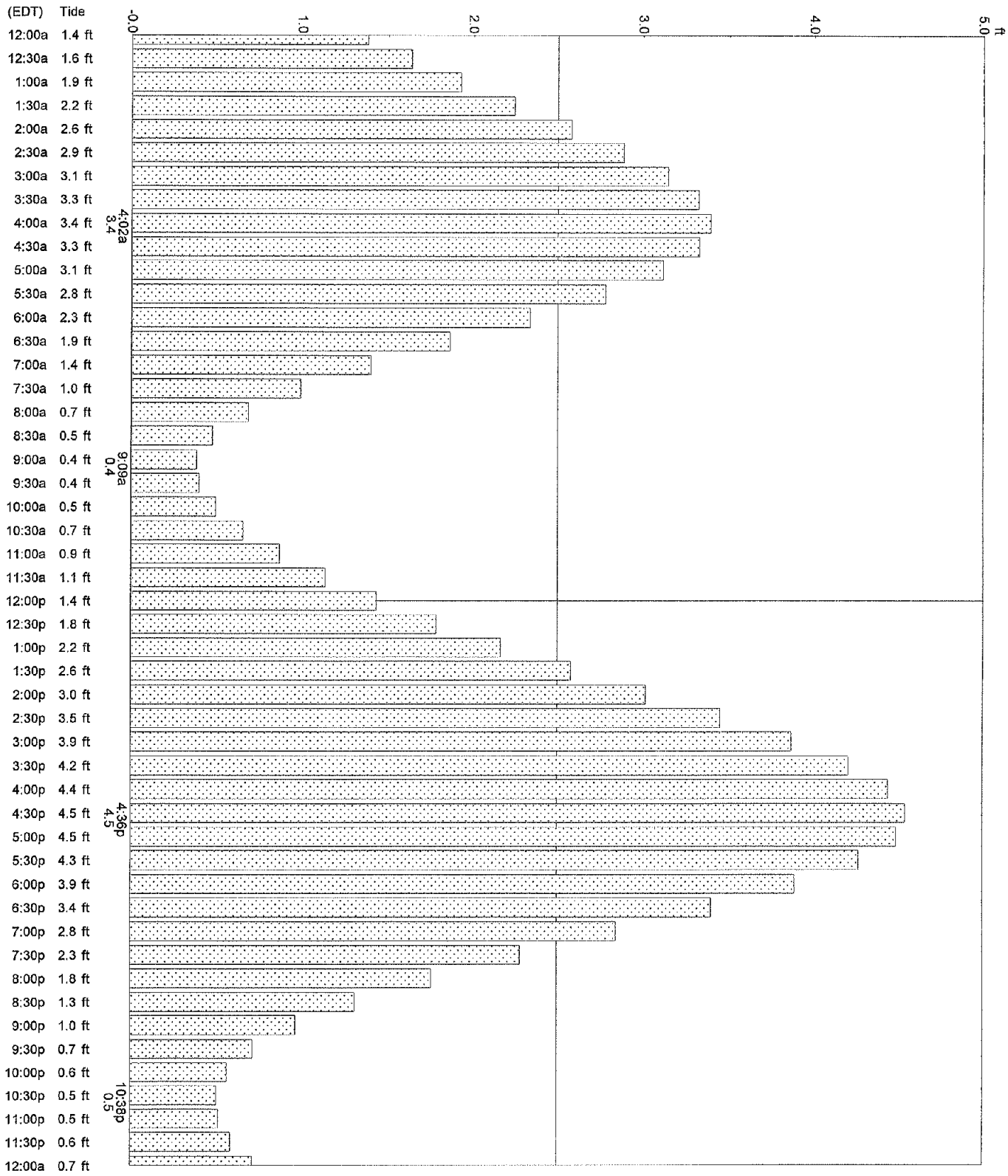
Tides-Prudence Island, (south end)

based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Wednesday, August 25, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
4:02a	3.4 ft	High
9:09a	0.4 ft	Low
4:36p	4.5 ft	High
10:38p	0.5 ft	Low



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Tides-Prudence Island, (south end)

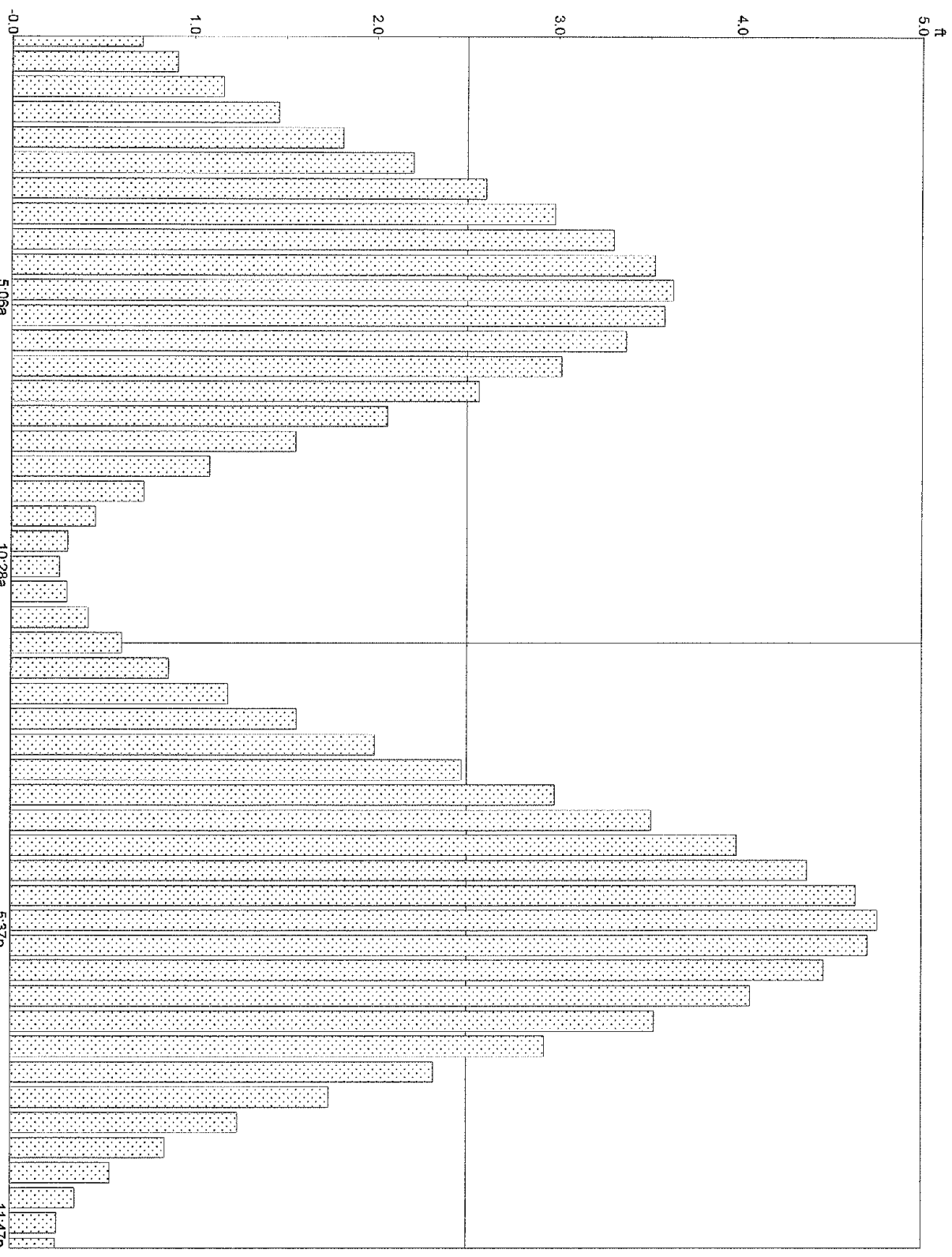
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Thursday, August 26, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows		
5:06a	3.6 ft	High
10:28a	0.3 ft	Low
5:37p	4.8 ft	High
11:47p	0.2 ft	Low

(EDT)	Tide
12:00a	0.7 ft
12:30a	0.9 ft
1:00a	1.2 ft
1:30a	1.5 ft
2:00a	1.8 ft
2:30a	2.2 ft
3:00a	2.6 ft
3:30a	3.0 ft
4:00a	3.3 ft
4:30a	3.5 ft
5:00a	3.6 ft
5:30a	3.6 ft
6:00a	3.4 ft
6:30a	3.0 ft
7:00a	2.6 ft
7:30a	2.1 ft
8:00a	1.6 ft
8:30a	1.1 ft
9:00a	0.7 ft
9:30a	0.5 ft
10:00a	0.3 ft
10:30a	0.3 ft
11:00a	0.3 ft
11:30a	0.4 ft
12:00p	0.6 ft
12:30p	0.9 ft
1:00p	1.2 ft
1:30p	1.6 ft
2:00p	2.0 ft
2:30p	2.5 ft
3:00p	3.0 ft
3:30p	3.5 ft
4:00p	4.0 ft
4:30p	4.4 ft
5:00p	4.6 ft
5:30p	4.8 ft
6:00p	4.7 ft
6:30p	4.5 ft
7:00p	4.1 ft
7:30p	3.5 ft
8:00p	2.9 ft
8:30p	2.3 ft
9:00p	1.7 ft
9:30p	1.2 ft
10:00p	0.8 ft
10:30p	0.6 ft
11:00p	0.4 ft
11:30p	0.3 ft
12:00a	0.3 ft



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Tides-Prudence Island, (south end)

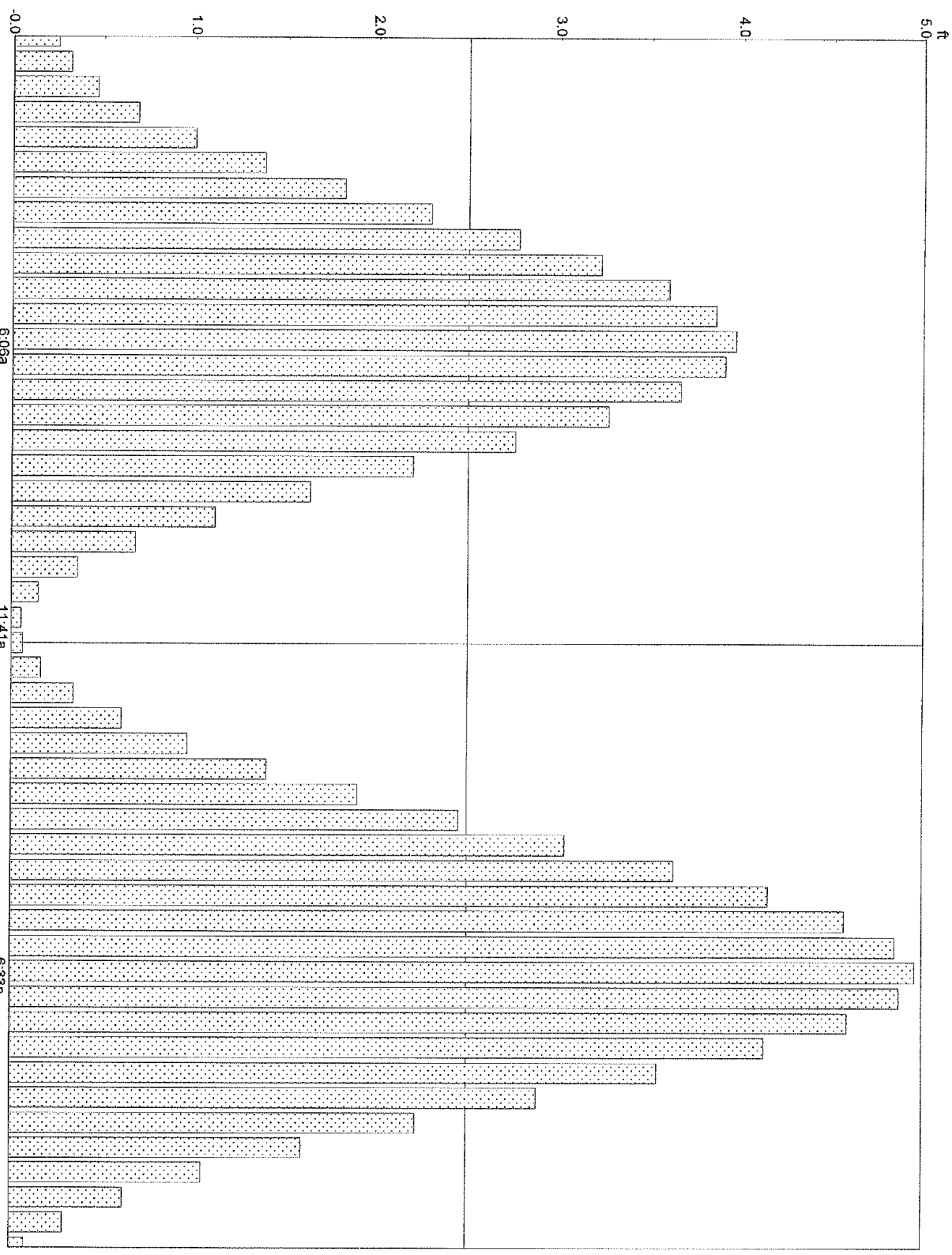
based on Newport Rhode Island (NOAA)
41° 35 N 71° 19 W

Friday, August 27, 2004

Average Tides	
Mean Range:	3.8 ft
MHWS	4.8 ft
Mean Tide:	2.0 ft

Daily Highs & Lows	
6:06a	4.0 ft High
11:41a	0.0 ft Low
6:33p	5.0 ft High

(EDT)	Tide
12:00a	0.3 ft
12:30a	0.3 ft
1:00a	0.5 ft
1:30a	0.7 ft
2:00a	1.0 ft
2:30a	1.4 ft
3:00a	1.8 ft
3:30a	2.3 ft
4:00a	2.8 ft
4:30a	3.2 ft
5:00a	3.6 ft
5:30a	3.9 ft
6:00a	4.0 ft
6:30a	3.9 ft
7:00a	3.7 ft
7:30a	3.3 ft
8:00a	2.8 ft
8:30a	2.2 ft
9:00a	1.6 ft
9:30a	1.1 ft
10:00a	0.7 ft
10:30a	0.4 ft
11:00a	0.2 ft
11:30a	0.1 ft
12:00p	0.1 ft
12:30p	0.2 ft
1:00p	0.3 ft
1:30p	0.6 ft
2:00p	1.0 ft
2:30p	1.4 ft
3:00p	1.9 ft
3:30p	2.5 ft
4:00p	3.0 ft
4:30p	3.6 ft
5:00p	4.1 ft
5:30p	4.6 ft
6:00p	4.8 ft
6:30p	5.0 ft
7:00p	4.9 ft
7:30p	4.6 ft
8:00p	4.1 ft
8:30p	3.5 ft
9:00p	2.9 ft
9:30p	2.2 ft
10:00p	1.6 ft
10:30p	1.0 ft
11:00p	0.6 ft
11:30p	0.3 ft
12:00a	0.1 ft



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Project Newport Eelgrass Notebook No. 15 X

Continued from Page

1/25/04 Sediment Sampling.

10:30 ~~noon~~ - Picked up Kevin O'Neal and Tracy Dooper from TetraTech NUS.

11:00 - Departed dock

11:30 - Navy Marina.

* Diver used for sed collection of 101, 102, 103, 104

Station	Time	Depth	Weather
DSY101SD	11:45	38.9	clear/calm.

Bottom Photo # Video - 40, 41, 42, 43, 44
Surface Photo # TT NUS
also S: Sec next day.

Flood tide

DSY102SD	12:40	32.8	clear/calm

Bottom Photo # video - 79, 80, 81 → next day also S: Sec
Surface Photo # TTNUS

Flood tide

DSY103SD	13:30	~~38.2~~ 32.2	clear/calm

Bottom Photo-Video 51, 52, 53 (next day) also S: Sec
Surface Photo TTNUS
Flood tide

DSY104SD	14:10	38.2	clear/calm

Bottom Photo - Video 16, 17
Surface Photo TTNUS
Flood tide

Continued on Page

Read and Understood By

Project Newport Eelgrass Notebook No. 15
Continued from Page 49

8/25/04 Sediment Sampling

Station	Time	Depth	Weather	Photo #
DSY104SD	15:05	38.2	c/c	Video only.
DSP02SD	15:14	38.1	c/c	video bottom 109 surface
DSP28SD	15:40	38.3	c/c	video bottom 113, 114, 115 surface
DSP06SD	16:04	~~29.7~~ 31.1	c/c	video bottom 117, 118

Video mass labled as

16:40 Arrived back at dock.

For Diving sites Tetra Tech NUS photographed the sample on the surface.

Continued on Page

Read and Understood By

8/26/04 Sediment Sampling
clear calm, wind S/SW at ~ 0-5 knots (8 AM)

Station	Time	Depth	Video Start	Surf Sed Time	Photo #
Y07SD	8:15	8.8	8:13	8:23	126, 127, 128
Y09SD	8:37	2.5	8:32	8:42	134, 135
Y03SD	9:04	13.3	9:00	9:08	140, 141
Y29SD	9:20	14.1	9:18	9:25	143, 144
Y05SD	9:46	36.3	9:50	9:50	147, 149, 150

- This is site was located under camp (Navy ship)
- Site moved ~150 ft S of location to where accurate GPS location could be got
- Photo 150 of Combined grab 1 ; 2

Y01SD	~~10:02~~	34	10:09	Video Only	

- this site sampled 8/25/04

Y08SD	10:27	40.4	10:18	10:29	152, 153

- Site located ~ 50 ft south of site

Y04SD	10:43	35.3	10:38	10:46	156, 157
Y103SD	~~10:52~~	35	10:52	Video Only	
Y20SD	11:10	36.8	11:04	11:11	159, 160

* Time = Sed grab time

Continued on Page

Read and Understood By

[illegible] 8/26/04

Project New Port Eelgrass Notebook No. 15 X
Continued from Page 51

8/26/04 Sediment Sampling

Station	Time	Depth	Video start	Surf Sed Time	Photo #
DSY27SD	11:22	33.7	11:18	11:23	161-165

- first grab sample produced a large metal object
- 2nd grab included star fish
- 3rd grab included small shell fragments

DSY31SD	11:52	38.4	11:49	11:54	166, 167
DSY11SD	12:03	39.2	12:03	12:08	169, 170
DSY102SD	—	—	12:20	Video Only	
DSY32SD	12:34	40.2	12:31	12:38	175, 176
DSY26SD	13:05	31.5	12:58	13:08	178, 179, 180

- photo 178 of first grab
- combined sample 179, 180

Wind ~ 5-10 knots from South (13:15)

DSYJCC01SD	13:38	23.9	13:34	13:54	See below

- sample 1 - photos 190, 191, ~~192~~
- sample 1 + 2 grab - photo 192
- sample 1 - 3 grabs - photo 193
- sample 1 - 5 grabs - photo 195
- homogenized sample 197, 198

* Time = Sed grab time

Continued on Page

Read and Understood By

[illegible] 8/26/04

Project: Newport Eelgrass 52 Notebook No. 15 X

8/26/04 Sediment sampling

Station	Time	Depth	Video Start	Soft Sed Time	Photo #
DSYJCC02SD	14:00	22.5	13:57	14:14	199
SYJPC01SD	14:28	24.5	14:26	14:44	202, 203 209, 210
- Potters Cove					
SYJPC02SD	14:57	17.5	14:53	14:56	211
- all shell, no sample collected					
SYJPC03SD	15:08	6.8	15:16	~~15:13~~ 15:07	214
SYCHC01SD	15:39	16.3	15:43	15:42	215 216
- Photo 220, 221 of Sample #1					220, 221
- Photo 224, 225 of Sample #2					224, 225
SYCHC02SD	15:54	11.8	15:47	15:48	226 227
- eelgrass in this area.					

Continued on Page

Read and Understood by

[illegible]

Newport Eelgrass 15 X

1/25/04 Sediment Sampling.

10:30 - Picked up Kevin O'Neal and Tracy Doege from TetraTech NUS.

11:00 - Departed dock

11:30 - Navy Marina.

* Divers used for sed collection of 101, 102, 103, 104

Station	Time	Depth	Weather
DSY101SD	11:45	38.9	clear/calm.

Bottom Photo # Video - 40, 41, 42, 43, 44
Surface Photo # TT NUS
also 5: See next day.

Flood tide

DSY102SD	12:40	32.8	clear/calm

Bottom Photo # video - 79, 80, 81 → next day also 5: See
Surface Photo # TTNUS

Flood tide

DSY103SD	13:30	~~32.2~~ 32.2	clear/calm

Bottom Photo-Video 51, 52, 53 (next day) also 5: See
Surface Photo TTNUS

Flood tide

DSY104SD	14:10	38.2	clear/calm

Bottom Photo - Video 16, 17
Surface Photo TTNUS

Flood tide

Newport Edgartown 15
49

8/25/04 Sediment Sampling

Station	Time	Depth	Weather	Photo #
DSY104SD	15:05	38.2	c/c	Video only.
DSP02SD	15:14	38.1	c/c	video bottom 109 surface
DSP28SD	15:40	38.3	c/c	video bottom 113, 114, 115 surface
DSP06SD	16:04	~~29.7~~ 31.1	c/c	video bottom 117, 118

Video mass labled as

16:40 Arrived back at dock.

For Diving sites Tetra Tech NUS photographed the sample on the surface.

Newport Eelgrass 15 X
50

8/26/04 Sediment Sampling
clear calm, wind S/SW at ~ 0-5 knots (8 AM)

Station	Time	Depth	Video Start	Surf Sed Time	Photo #
Y07SD	8:15	8.8	8:13	8:23	126, 127, 128
Y09SD	8:37	2.5	8:32	8:42	134, 139
Y03SD	9:04	13.3	9:00	9:08	140, 141
Y29SD	9:20	14.1	9:18	9:25	143, 144
Y05SD	9:46	36.3	9:50	9:50	147, 149, 150

- This ~~is~~ site was located under carrier (Navy ship)
- Site moved ~150 ft S of location to where accurate GPS location could be got
- Photo 150 of Combined grab 1 : 2

Y01SD	~~10:08~~	34	10:09	Video Only	

- this site sampled 8/25/04

Y08SD	10:27	40.4	10:18	10:29	152, 153

- Site located ~ 50 ft south of site

Y04SD	10:43	35.3	10:38	10:46	156, 157
Y10SD	~~10:52~~	35	10:52	Video Only	
Y20SD	11:10	36.8	11:04	11:11	159, 160

* Time = Sed grab time

[illegible] 8/26/04

New Port Eelgrass
S1

15

5/26/04 Sediment Sampling

Station	Time	Depth	Video start	Surf Sed Time	Photo #
SY27SD	11:22	33.7	11:18	11:23	161-165

- first grab sample produced a large metal object
- 2nd grab included star fish
- 3rd grab included small shell fragments

SY31SD	11:52	38.7	11:49	11:54	166, 167
SY11SD	12:037	39.2	12:03	12:08	169, 170
SY102SD	—	—	12:20	Video Only	
SY32SD	12:34	40.2	12:31	12:38	175, 176
SY26SD	13:05	31.5	12:58	13:08	178, 179, 180

- photo 178 of first grab
- combined sample 179, 180

Wind ~ 5-10 knots from South (13:15)

SY1JCC01SD	13:38	23.9	13:34	13:54	See below

- sample 1 - photos 190, 191, ~~192~~
- sample 1 + 2 grab - photo 192
- sample 1 - 3 grabs - photo 193
- sample 1 - 5 grabs - photo 195
- homogenized sample 197, 198

* Time = Sed grab time

[illegible] 8/26/04

Newport Eelgrass
S2

15

8/26/04 Sediment Sampling

Station	Time	Depth	Video Start	Surf Sed Time	Photo #
DSYTC02SD	14:00	22.5	13:57	14:14	199
BYJPC01SD	14:28	24.5	14:26	14:44	202, 203, 209, 210
- Potters Cove					
BYJPC02SD	14:57	17.5	14:53	14:56	211
- all shell, no sample collected					
BYJPC03SD	15:08	6.8	15:16	~~15:13~~ 15:07	214, 215, 216
BYCHC01SD	15:39	16.3	15:43	15:42	220, 221, 224, 225
- Photo 220, 221 of Sample #1					
- Photo 224, 225 of Sample #2					
BYCHC02SD	15:54	11.8	15:47	15:48	226, 227
- eelgrass in this area.					

Newport Eelgrass 15 X

1/25/04 Sediment Sampling.

10:30 - Picked up Kevin O'Neal and Tracy Doerp from TetraTech NUS.

11:00 - Departed dock

11:30 - Navy Marina.

* Diver used for sed collection of 101, 102, 103, 104

Station	Time	Depth	Weather
DSY101SD	11:45	38.9	clear/calm.

Bottom Photo # Video - 40, 41, 42, 43, 44 also 5: See next day.
Surface Photo # TT NUS

Flood tide

DSY102SD	12:40	32.8	clear/calm

Bottom Photo # video - 79, 80, 81 → next day also 5: See
Surface Photo # TTNUS

Flood tide

DSY103SD	13:30	~~38.2~~ 32.2	clear/calm

Bottom Photo-Video 51, 52, 53 (next day) also 5: See
Surface Photo TTNUS

Flood tide

DSY104SD	14:10	38.2	clear/calm

Bottom Photo - Video 16, 17
Surface Photo TTNUS

Flood tide

Newport Eelgrass 15 A
49

8/25/04 Sediment Sampling

Station	Time	Depth	Weather	Photo #
DSY104SD	15:05	38.2	c/c	Video only.
DSP02SD	15:14	38.1	c/c	video bottom 109 surface
DSP28SD	15:40	38.3	c/c	video bottom 113, 114, 115 surface
DSP06SD	16:04	~~29.7~~ 31.1	c/c	video bottom 117, 118

Video mass labeled as

16:40 Arrived back at dock.

For Diving sites Tetra Tech NUS photographed the sample on the surface

Newport Eelgrass 15 x

8/26/04 Sediment Sampling
clear calm, wind S/SE at ~ 0-5knots (8 AM)

Station	Time	Depth	Video Start	Surf Sed Time	Photo #
Y075D	8:15	8.8	8:13	8:23	126, 127, 128
Y095D	8:37	2.5	8:32	8:42	134, 135
Y035D	9:04	13.3	9:00	9:08	140, 141
Y295D	9:20	14.1	9:18	9:25	143, 144
Y055D	9:46	36.3	9:50	9:50	147, 149, 150

- This site was located under camp (Navy ship)
- Site moved ~150 ft S of location to where accurate GPS location could be got
- Photo 150 of combined grab 1 : 2

Y015D	~~10:08~~	34	10:09	Video Only	

- this site sampled 8/25/04

Y085D	10:27	40.4	10:18	10:29	152, 153

- Site located ~ 50 ft south of site

Y45D	10:43	35.3	10:38	10:46	156, 157
Y105D	10:52	35	10:52	Video Only	
Y205D	11:10	36.8	11:04	11:11	159, 160

* Time = Sed grab time

[illegible] 8/27/04

New Port Eelgrass
S1

15

1/26/04 Sediment Sampling

Station	Time	Depth	Video start	Surf Sed Time	Photo #
SY27SD	11:22	33.7	11:18	11:23	161-165

- first grab sample produced a large metal object
- 2nd grab included star fish
- 3rd grab included small shell fragments

SY31SD	11:52	38.7	11:49	11:54	166, 167
SY11SD	12:037	39.2	12:03	12:08	169, 170
SY102SD	–	–	12:20	Video Only	
SY32SD	12:34	40.2	12:31	12:38	175, 176
SY26SD	13:05	31.5	12:58	13:08	178, 179, 180

- photo 178 of first grab
- combined sample 179, 180

Wind ~ 5-10 knots from South (13.15)

SY1JCC01SD	13:38	23.9	13:34	13:54	See below

- sample 1 – photos 190, 191, ~~192~~
- sample 1 + 2 grab - photo 192
- sample 1 - 3 grabs - photo 193
- sample 1 - 5 grabs - photo 195
- homogenized sample 197, 198

* Time = Sed grab time

[illegible] 8/2/04

Newport Eelgrass
52

15

8/26/04 Sediment Sampling

Station	Time	Depth	Video Start	Soft Sed Time	Photo #
DSHTC002SD	14:00	22.5	13:57	14:14	199
BYJPC01SD	14:28	24.5	14:26	14:44	202, 203, 209, 210
- Potters Cove					
BYJPC02SD	14:57	17.5	14:53	14:56	211
- all shell, no sample collected					
BYJPC03SD	15:08	6.8	15:16	~~15:13~~ 15:07	214, 215
BYCHC01SD	15:39	16.3	15:43	15:42	216
- Photo 220, 221 of Sample #1					220, 221
- Photo 224, 225 of Sample #2					224, 225
BYCHC02SD	15:54	11.8	15:47	15:48	226, 227
- eelgrass in this area.					

ProBeacon

Marine Radiobeacon MSK Receiver

Key features and benefits

- **High noise immunity**
- **Rapid signal aquisition**
- **Automatic and manual modes**
- **FFT signal analysis**

Differential GPS correction data broadcast from marine radiobeacons provides GPS users with the improved accuracy of DGPS without setting up and maintaining a reference station. Depending on the DGPS receiver being used in conjuction with the ProBeacon™, the combination can provide position and navigation accuracies of less than a meter to land surveyors, dredge operators, resource management agencies, crop dusters, and many others operating on land, offshore or in the air. Anyone within the range of a radiobeacon, whose application requires real-time positions, time, or velocity can benefit from this form of DGPS.

Differential GPS using MSK radiobeacon broadcasts.

RTCM and IALA complaint

The International Association of Lighthouse Authorities (IALA), the U.S. Coast Guard and the Radio Technical Commission for Maritime Services (RTCM) have developed standards for the broadcast of DGPS correction data for public access.

All digital design

Obtaining the highest levels of DGPS performance requires a superior MSK receiver. Trimble's ProBeacon is an all-digital design, proven in independent testing to have the best overall performance, even under conditions of low signal strength and/or high noise levels. This all-digital design facilitates rapid signal acquisition and superior tracking capabilities. In addition, the ProBeacon signal processing is based upon a proprietary (patented) "noise cancellation" technique utilizing multiple channels to further improve data reception by rejecting the "impulsive" type of noise commonly found in this frequency band.

The ProBeacon also utilizes advanced logic, working in conjunction with the DGPS receiver to select the most appropriate beacon. The ProBeacon constantly monitors Message Error Ratio, switching to a different beacon if the signal degrades. By utilizing the broadcast beacon almanacs and receiving the position data from the DGPS receiver, the ProBeacon switches to the nearest beacon to maintain the highest accuracy possible.

H-field loop antenna

These features, combined with an advanced, high sensitivity H-field antenna, ensure that the DGPS user realizes the best performance under all conditions.

Trimble

ProBeacon

Marine Radiobeacon MSK Receiver

DESCRIPTION

Differential GPS (DGPS) is the most accurate long range form of GPS for surveying, positioning and navigation. GPS receivers that are differential capable use the correction data to counter the effects of Selective Availability, errors induced by the ionosphere and troposphere and other correlated errors that degrade the GPS solution. The ProBeacon is designed to provide this correction data in the RTCM SC-104 standard format to any compatible DGPS receiver, using standard RS-232 and RS-422 serial connections. Accuracy will depend on the type of DGPS receiver utilized. Trimble offers several GPS receivers with DGPS capability designed to meet all types of application requirements.

PERFORMANCE CHARACTERISTICS

General

Frequency range	283.5 kHz to 325.0 kHz
Channel spacing	500 Hz
MSK modulation	25, 50, 100 & 200 bits/second
Signal strength	10 µV/meter minimum
Dynamic range	100 dB
Channel selectivity	60 dB @ 500 Hz offset
Frequency offset	10 ppm maximum (200 bits/second) 40 ppm maximum (100, 50 & 25 bits/second)
3rd order intercept	+15 dBm @ RF input (min. AGC setting)

PHYSICAL CHARACTERISTICS

Receiver

Size	5.6″ W x 2.7″ H x 7.5″ D (14.2 cm x 6.9 cm x 19.0 cm)
Weight	2.5 lbs. (1.1 kg)
Power consumption	3.5 watts
Voltage	10 to 32 volts DC
Operating temperature	–20°C to +60°C
Humidity	95% non-condensing

Antenna

Dimensions	5.8″ D x 4.5″ H (14.7 cm x 11.4 cm)
Weight	1.4 lbs. (0.63 kg)
Operating temp	–30°C to +65°C
Humidity	100% – fully sealed
Cable length	50 ft. (15 meters)

FEATURES

Automatic

The ProBeacon serves as a stand-alone receiver of DGPS correction data. Once on, it automatically selects and tracks the best differential beacon in your area. If you lose reception of a differential beacon, the ProBeacon automatically switches to another beacon for continuous DGPS coverage.

Manual

Manual mode allows the operator to select a specific beacon, to pre-program a list of preferred beacons, and to request signal levels, SNR data, PLL offsets, RTCM message errors, and tracking history.

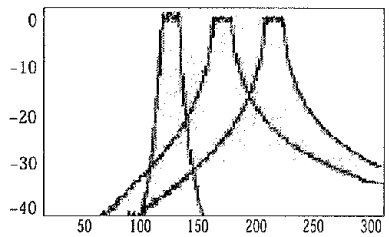
Fast acquisition

The ProBeacon uses a proprietary spectral search algorithm which enables exceptionally fast identification and acquisition of differential beacons under all operating conditions.

Jamming immunity

Only a subset of all marine radiobeacons will be differential beacons. The ProBeacon is able to track a weaker differential beacon signal in the presence of multiple jamming signals from nearby standard radiobeacons.

Normalized Frequency



Integrity monitoring

The ProBeacon continuously monitors the integrity of incoming RTCM messages. If it observes parity errors, the ProBeacon will automatically switch to an adjacent beacon to ensure RTCM data integrity.

Noise immunity

Using advanced digital signal processing, the ProBeacon reliably tracks even in the presence of heavy atmospheric noise (e.g. lightning). Using algorithms based on a proprietary (patented) noise cancellation technique, the ProBeacon realizes improved performance in the presence of impulsive noise. As shown in the above figure, the signal channel plus two additional channels are monitored by the MSK receiver. These two noise-only, or pilot, channels facilitate noise reduction as the output from all the channels is highly correlated. Reduction in noise in the signal channel improves the performance of the ProBeacon in all operating environments.

Almanac monitoring

Each differential beacon broadcasts an almanac message with the identity (frequency, data rate, etc.) for adjacent differential beacons. The ProBeacon uses this message to accelerate the switch between beacons. This minimizes the interruption in DGPS data when you lose reception of a beacon.

Dual serial ports

The ProBeacon offers two bi-directional serial ports and multiple baud rates (1200, 2400, 4800, 9600). Both RS-232 and RS-422 are supported. One port supports modem operation, allowing remote control of the ProBeacon

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THE GPS SOLUTION

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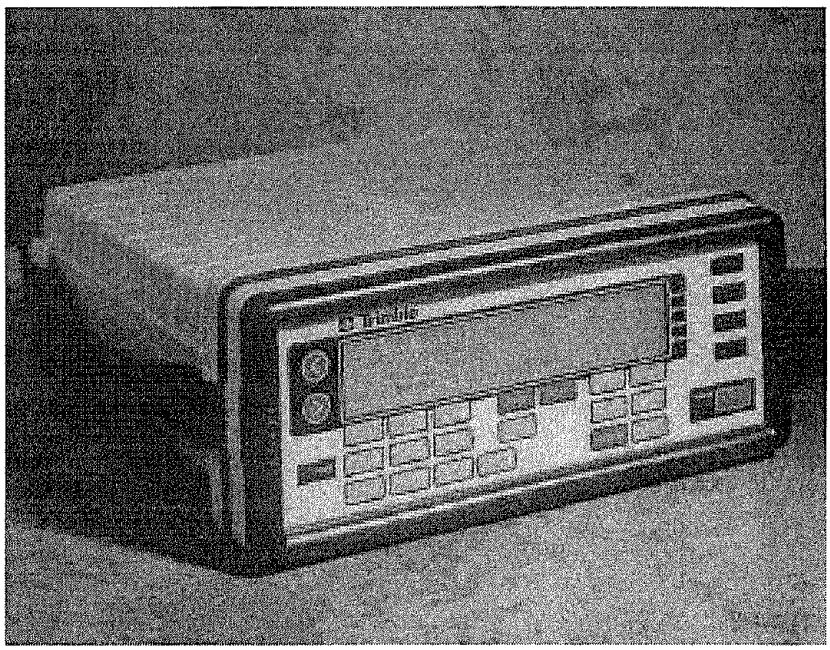
4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

Key features and benefits

- **Sub 0.5 meter accuracy**
- **Real time QA/QC**
- **Everest Multipath Rejection Technology**
- **Super-trak Signal Processing Technology**



The 4000RSi™ Reference Surveyor receiver and 4000DSi™ Differential Surveyor receiver incorporate the latest in GPS technology, offering true, real-time positioning accuracy better than 0.5 meter. Based on Trimble's advanced Maxwell processing technology, these DGPS receivers provide the highest level of accuracy even when operating in the most challenging conditions.

The 4000RSi receiver operates as an autonomous reference station, generating DGPS corrections in the RTCM SC-104 standard format for transmission to mobile GPS receivers.

The 4000DSi receiver is designed to use DGPS corrections in the RTCM SC-104 standard format broadcast by the 4000RSi receiver. The 4000DSi's standard NMEA-0183 messages, navigation firmware, data, and 1PPS outputs allow for optimal flexibility for system integration and interfacing with other instruments.

The signal processing of the two receivers incorporates Trimble's Super-trak™ technology. This technology enhances low power satellite signal acquisition, improves signal tracking capabilities under less than ideal conditions and provides increased immunity to signal jamming from radio frequency interference (RFI). These improvements are derived from integrating complex RF circuitry onto a single chip and by using state-of-the-art Surface Acoustic Wave filter technology.

Super-trak technology increases productivity and facilitates continual operations in demanding environments, such as ports, harbors, along riverbanks and near RFI sources that would normally interfere with satellite signals.

The 4000RSi and 4000DSi receivers also incorporate Trimble's latest advance in multipath rejection through enhanced signal processing: the patented EVEREST™ Multipath Rejection Technology. This technology eliminates multipath error before the receiver calculates GPS measurements. When combined with Trimble's advanced carrier-aided filtering and smoothing techniques applied to exceptionally low noise C/A code measurements, the result is real-time positioning accuracy on the order of a few decimeters.

The two receivers are ideal for hydrographic and navigation systems, vessel tracking, dynamic positioning systems, dredging, and other dynamic positioning and navigation applications. Both receivers feature nine channels of continuous satellite tracking (12 channels optional); a lightweight, rugged, weatherproof housing; and low power consumption for extending the field operation time from batteries.

During operation, both receivers can output binary and ASCII data for archiving or post-mission analysis. In addition, the 4000RSi receiver can operate as a mobile receiver with the same features, functionality and options as the 4000DSi receiver. For optimum DGPS performance, combine the receivers with any of Trimble's data communication systems and QA/QC firmware to ensure the integrity of positioning accuracy.

Trimble

4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

4000 RSI FEATURES

- RTCM Input
- RTCM Output; filtered and carrier-smoothed RTCM differential corrections (version 1.0 and 2.X) (4000RSi)
- EVEREST Multipath Rejection Technology
- Super-trak Signal Processing Technology
- Better than 0.5 meter DGPS accuracy using 4000RSi receiver corrections
- 0.5 second measurement rate
- Weighted-least squares solution
- Autonomous operation - automatic mode restoration after power-cycle
- Data integrity provision
- 2 RS-232 I/O ports with flow control for data recording and data link (4 RS-232/422 on rack mount)
- Triple DC input
- Low power; lightweight; portable; environmentally protected
- 1 PPS output; NMEA-0183 outputs
- L1 geodetic antenna; 30m antenna cable (4000RSi)
- Compact Dome antenna; 30m antenna cable (4000Dsi)
- 1-year warranty
- Firmware upgrades via serial port

OPTIONS AND ACCESSORIES

- Firmware update service - 1 and 4 year
- Extended hardware warranty
- L1 Carrier Phase
- 12 L1 channels
- L1/L2 Carrier Phase (rackmount)
- 12 L1/L2 channels (rackmount)
- Internal Memory for datalogging
- Event Marker input (requires memory option)
- QA/QC feature
- Rackmount Version
- 4 serial I/O ports (standard on rackmount)
- L1 and L1/L2 Geodetic antennas
- 30m antenna cable extension, with in-line amplifier
- Office Support Module: OSM II (CE Marked)
- Receiver transport case
- TRIMTALK™ Series radio links
- ProBeacon™ MSK receiver
- LEMO to dual BNC sockets adapter

PHYSICAL CHARACTERISTICS

Receiver

Size	9.8" W x 11.0" D x 4.0" H (portable) (24.8cm X 28.0cm x 10.2cm) 16.8" W x 16.0" D x 5.25" H (rackmount) (42.7cm x 40.6cm x 13.3cm)
Weight	6 lbs (2.7kg) (portable), 15 lbs. (6.8kg) (rackmount) 0.5 lbs (0.2kg) compact dome antenna 5.7 lbs (2.6kg) L1 geodetic antenna
Power	Nominal 10.5-35 VDC, 7 Watts (portable) 100, 120, 220, 240 VAC, 40 Watts (rack mount) DC: 10-36 Volts, 30 Watts
Operating temperature	-20°C to +55°C (portable), 0°C to +50°C (rack mount)
Storage temperature	-30°C to +75°C (portable) -20°C to +60°C (rack mount)
Humidity	100%, fully sealed, buoyant (portable) 95%, non-condensing (rack mount)

Geodetic Antenna

Size	16" D x 3.5" H
Weight	5.7 lbs.
Operating temperature	-40°C to +65°C
Storage temperature	-55°C to +75°C
Humidity	100%, fully sealed

Interface

Keyboard	Alphanumeric, function and softkey entry
Display	Backlit LCD, four lines of forty alphanumeric characters; Large, easy-to-read– 2.8mm x 4.9mm; Viewing area: 32 cm²; adjustable backlight and viewing angle
Serial Ports	Port 1 and 3: up to 57600 bps, software flow control Port 2 and 4: up to 57600 bps, hardware/software flow control RS-232 / RS-422 user configurable (rack mount)
Data recording	RTCM and GPS data available via serial port
Remote control	Trimble Data Collector Interface
Antenna	External, LEMO socket connector (portable), N-Type Socket connector (rack mount)
RTCM Messages	Types 1, 2, 3, 6, 9, 16; Version 1.0 and 2.X
1 PPS	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
Event Marker	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
NMEA-0183	ALM, BWC, GGA, GLL, GRS, GSA, GST, GSV, RMB, RMC, VTG, WPL, ZDA

PERFORMANCE CHARACTERISTICS

Signal Processing	Multibit Super-trak technology; Maxwell architecture with EVEREST Multipath Rejection Technology; very low noise C/A code processing
Tracking (Standard)	9 channels L1 C/A code and carrier
(Optional)	12 L1, 12 L1 + 12 L2; C/A, P and/or cross-correlation code and carrier (rack mount)
Startup time	< 2 minutes after cold start
Measurement rate	0.5 second per independent measurement
Accuracy	Typically better than 0.5 m RMS: assumes at least 5 satellites, PDOP less than 4, and using 4000RSi corrections.
RTCM Corrections	4000RSi corrections can be applied to all differential-equipped RTCM compatible GPS receivers.

ORDERING INFORMATION

4000RSi Reference Surveyor	P/N 29443-75
4000RSi Reference Surveyor pair	P/N 29561-00
4000DSi Differential Surveyor	P/N 29443-70
4000RSi Reference Surveyor Rackmount	P/N 26541-80

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THE GPS SOLUTION

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ProBeacon

Marine Radiobeacon MSK Receiver

Key features and benefits

- **High noise immunity**
- **Rapid signal aquisition**
- **Automatic and manual modes**
- **FFT signal analysis**

Differential GPS correction data broadcast from marine radiobeacons provides GPS users with the improved accuracy of DGPS without setting up and maintaining a reference station. Depending on the DGPS receiver being used in conjuction with the ProBeacon™, the combination can provide position and navigation accuracies of less than a meter to land surveyors, dredge operators, resource management agencies, crop dusters, and many others operating on land, offshore or in the air. Anyone within the range of a radiobeacon, whose application requires real-time positions, time, or velocity can benefit from this form of DGPS.

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The International Association of Lighthouse Authorities (IALA), the U.S. Coast Guard and the Radio Technical Commission for Maritime Services (RTCM) have developed standards for the broadcast of DGPS correction data for public access.

All digital design

Obtaining the highest levels of DGPS performance requires a superior MSK receiver. Trimble's ProBeacon is an all-digital design, proven in independent testing to have the best overall performance, even under conditions of low signal strength and/or high noise levels. This all-digital design facilitates rapid signal acquisition and superior tracking capabilities. In addition, the ProBeacon signal processing is based upon a proprietary (patented) "noise cancellation" technique utilizing multiple channels to further improve data reception by rejecting the "impulsive" type of noise commonly found in this frequency band.

The ProBeacon also utilizes advanced logic, working in conjunction with the DGPS receiver to select the most appropriate beacon. The ProBeacon constantly monitors Message Error Ratio, switching to a different beacon if the signal degrades. By utilizing the broadcast beacon almanacs and receiving the position data from the DGPS receiver, the ProBeacon switches to the nearest beacon to maintain the highest accuracy possible.

H-field loop antenna

These features, combined with an advanced, high sensitivity H-field antenna, ensure that the DGPS user realizes the best performance under all conditions.

Trimble

ProBeacon

Marine Radiobeacon MSK Receiver

DESCRIPTION

Differential GPS (DGPS) is the most accurate long range form of GPS for surveying, positioning and navigation. GPS receivers that are differential capable use the correction data to counter the effects of Selective Availability, errors induced by the ionosphere and troposphere and other correlated errors that degrade the GPS solution. The ProBeacon is designed to provide this correction data in the RTCM SC-104 standard format to any compatible DGPS receiver, using standard RS-232 and RS-422 serial connections. Accuracy will depend on the type of DGPS receiver utilized. Trimble offers several GPS receivers with DGPS capability designed to meet all types of application requirements.

PERFORMANCE CHARACTERISTICS

General

Frequency range	283.5 kHz to 325.0 kHz
Channel spacing	500 Hz
MSK modulation	25, 50, 100 & 200 bits/second
Signal strength	10 µV/meter minimum
Dynamic range	100 dB
Channel selectivity	60 dB @ 500 Hz offset
Frequency offset	10 ppm maximum (200 bits/second) 40 ppm maximum (100, 50 & 25 bits/second)
3rd order intercept	+15 dBm @ RF input (min. AGC setting)

PHYSICAL CHARACTERISTICS

Receiver

Size	5.6″ W x 2.7″ H x 7.5″ D (14.2 cm x 6.9 cm x 19.0 cm)
Weight	2.5 lbs. (1.1 kg)
Power consumption	3.5 watts
Voltage	10 to 32 volts DC
Operating temperature	−20°C to +60°C
Humidity	95% non-condensing

Antenna

Dimensions	5.8″ D x 4.5″ H (14.7 cm x 11.4 cm)
Weight	1.4 lbs. (0.63 kg)
Operating temp	−30°C to +65°C
Humidity	100% – fully sealed
Cable length	50 ft. (15 meters)

FEATURES

Automatic

The ProBeacon serves as a stand-alone receiver of DGPS correction data. Once on, it automatically selects and tracks the best differential beacon in your area. If you lose reception of a differential beacon, the ProBeacon automatically switches to another beacon for continuous DGPS coverage.

Manual

Manual mode allows the operator to select a specific beacon, to pre-program a list of preferred beacons, and to request signal levels, SNR data, PLL offsets, RTCM message errors, and tracking history.

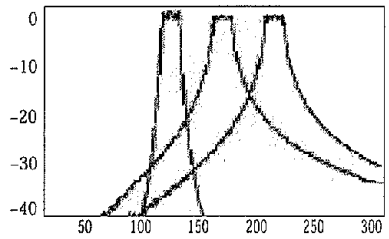
Fast acquisition

The ProBeacon uses a proprietary spectral search algorithm which enables exceptionally fast identification and acquisition of differential beacons under all operating conditions.

Jamming immunity

Only a subset of all marine radiobeacons will be differential beacons. The ProBeacon is able to track a weaker differential beacon signal in the presence of multiple jamming signals from nearby standard radiobeacons.

Normalized Frequency



Integrity monitoring

The ProBeacon continuously monitors the integrity of incoming RTCM messages. If it observes parity errors, the ProBeacon will automatically switch to an adjacent beacon to ensure RTCM data integrity.

Noise immunity

Using advanced digital signal processing, the ProBeacon reliably tracks even in the presence of heavy atmospheric noise (e.g. lightning). Using algorithms based on a proprietary (patented) noise cancellation technique, the ProBeacon realizes improved performance in the presence of impulsive noise. As shown in the above figure, the signal channel plus two additional channels are monitored by the MSK receiver. These two noise-only, or pilot, channels facilitate noise reduction as the output from all the channels is highly correlated. Reduction in noise in the signal channel improves the performance of the ProBeacon in all operating environments.

Almanac monitoring

Each differential beacon broadcasts an almanac message with the identity (frequency, data rate, etc.) for adjacent differential beacons. The ProBeacon uses this message to accelerate the switch between beacons. This minimizes the interruption in DGPS data when you lose reception of a beacon.

Dual serial ports

The ProBeacon offers two bi-directional serial ports and multiple baud rates (1200, 2400, 4800, 9600). Both RS-232 and RS-422 are supported. One port supports modem operation, allowing remote control of the ProBeacon

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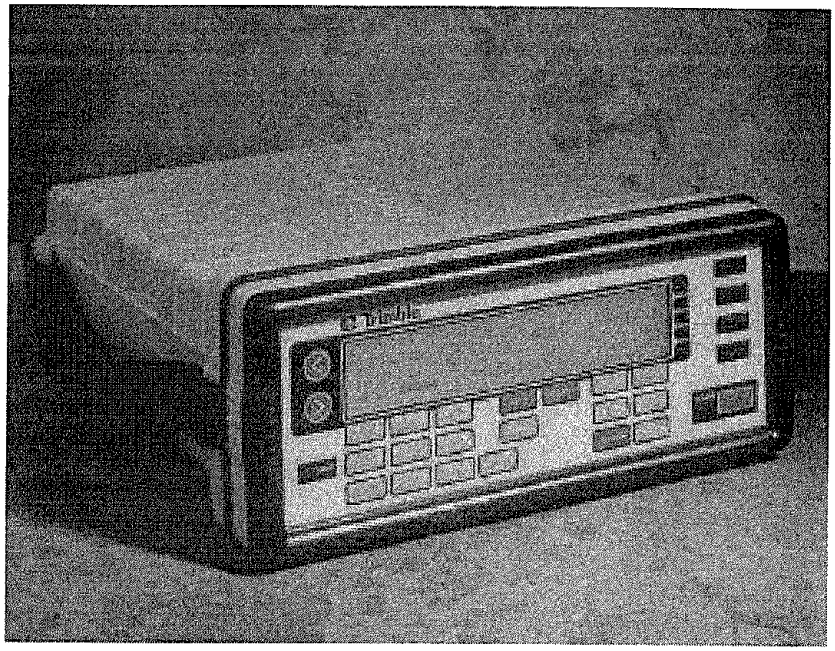
4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

Key features and benefits

- **Sub 0.5 meter accuracy**
- **Real time QA/QC**
- **Everest Multipath Rejection Technology**
- **Super-trak Signal Processing Technology**



The 4000RSi™ Reference Surveyor receiver and 4000DSi™ Differential Surveyor receiver incorporate the latest in GPS technology, offering true, real-time positioning accuracy better than 0.5 meter. Based on Trimble's advanced Maxwell processing technology, these DGPS receivers provide the highest level of accuracy even when operating in the most challenging conditions.

The 4000RSi receiver operates as an autonomous reference station, generating DGPS corrections in the RTCM SC-104 standard format for transmission to mobile GPS receivers.

The 4000DSi receiver is designed to use DGPS corrections in the RTCM SC-104 standard format broadcast by the 4000RSi receiver. The 4000DSi's standard NMEA-0183 messages, navigation firmware, data, and 1PPS outputs allow for optimal flexibility for system integration and interfacing with other instruments.

The signal processing of the two reeivers incorporates Trimble's Super-trak™ technology. This technology enhances low power satellite signal acquisition, improves signal tracking capabilities under less than ideal conditions and provides increased immunity to signal jamming from radio frequency interference (RFI). These improvements are derived from integrating complex RF circuitry onto a single chip and by using state-of-the-art Surface Acoustic Wave filter technology.

Super-trak technology increases productivity and facilitates continual operations in demanding environments, such as ports, harbors, along river-banks and near RFI sources that would normally interfere with satellite signals.

The 4000RSi and 4000DSi receivers also incorporate Trimble's latest advance in multipath rejection through enhanced signal processing: the patented EVEREST™ Multipath Rejection Technology. This technology eliminates multipath error before the receiver calculates GPS measurements. When combined with Trimble's advanced carrier-aided filtering and smoothing techniques applied to exceptionally low noise C/A code measurements, the result is real-time positioning accuracy on the order of a few decimeters.

The two receivers are ideal for hydrographic and navigation systems, vessel tracking, dynamic positioning systems, dredging, and other dynamic positioning and navigation applications. Both receivers feature nine channels of continuous satellite tracking (12 channels optional); a lightweight, rugged, weatherproof housing; and low power consumption for extending the field operation time from batteries.

During operation, both receivers can output binary and ASCII data for archiving or post-mission analysis. In addition, the 4000RSi receiver can operate as a mobile receiver with the same features, functionality and options as the 4000DSi receiver. For optimum DGPS performance, combine the receivers with any of Trimble's data communication systems and QA/QC firmware to ensure the integrity of positioning accuracy.

Trimble

4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

4000 RSI FEATURES

- RTCM Input
- RTCM Output; filtered and carrier-smoothed RTCM differential corrections (version 1.0 and 2.X) (4000RSi)
- EVEREST Multipath Rejection Technology
- Super-trak Signal Processing Technology
- Better than 0.5 meter DGPS accuracy using 4000RSi receiver corrections
- 0.5 second measurement rate
- Weighted-least squares solution
- Autonomous operation - automatic mode restoration after power-cycle
- Data integrity provision
- 2 RS-232 I/O ports with flow control for data recording and data link (4 RS-232/422 on rack mount)
- Triple DC input
- Low power; lightweight; portable; environmentally protected
- 1 PPS output; NMEA-0183 outputs
- L1 geodetic antenna; 30m antenna cable (4000RSi)
- Compact Dome antenna; 30m antenna cable (4000Dsi)
- 1-year warranty
- Firmware upgrades via serial port

OPTIONS AND ACCESSORIES

- Firmware update service - 1 and 4 year
- Extended hardware warranty
- L1 Carrier Phase
- 12 L1 channels
- L1/L2 Carrier Phase (rackmount)
- 12 L1/L2 channels (rackmount)
- Internal Memory for datalogging
- Event Marker input (requires memory option)
- QA/QC feature
- Rackmount Version
- 4 serial I/O ports (standard on rackmount)
- L1 and L1/L2 Geodetic antennas
- 30m antenna cable extension, with in-line amplifier
- Office Support Module: OSM II (CE Marked)
- Receiver transport case
- TRIMTALK™ Series radio links
- ProBeacon™ MSK receiver
- LEMO to dual BNC sockets adapter

PHYSICAL CHARACTERISTICS

Receiver

Size	9.8" W x 11.0" D x 4.0" H (portable) (24.8cm X 28.0cm x 10.2cm) 16.8" W x 16.0" D x 5.25" H (rackmount) (42.7cm x 40.6cm x 13.3cm)
Weight	6 lbs (2.7kg) (portable), 15 lbs. (6.8kg) (rackmount) 0.5 lbs (0.2kg) compact dome antenna 5.7 lbs (2.6kg) L1 geodetic antenna
Power	Nominal 10.5-35 VDC, 7 Watts (portable) 100, 120, 220, 240 VAC, 40 Watts (rack mount) DC: 10-36 Volts, 30 Watts
Operating temperature	-20°C to +55°C (portable), 0°C to +50°C (rack mount)
Storage temperature	-30°C to +75°C (portable) -20°C to +60°C (rack mount)
Humidity	100%, fully sealed, buoyant (portable) 95%, non-condensing (rack mount)

Geodetic Antenna

Size	16" D x 3.5" H
Weight	5.7 lbs.
Operating temperature	-40°C to +65°C
Storage temperature	-55°C to +75°C
Humidity	100%, fully sealed

Interface

Keyboard	Alphanumeric, function and softkey entry
Display	Backlit LCD, four lines of forty alphanumeric characters; Large, easy-to-read– 2.8mm x 4.9mm; Viewing area: 32 cm²; adjustable backlight and viewing angle
Serial Ports	Port 1 and 3: up to 57600 bps, software flow control Port 2 and 4: up to 57600 bps, hardware/software flow control RS-232 / RS-422 user configurable (rack mount)
Data recording	RTCM and GPS data available via serial port
Remote control	Trimble Data Collector Interface
Antenna	External, LEMO socket connector (portable), N-Type Socket connector (rack mount)
RTCM Messages	Types 1, 2, 3, 6, 9, 16; Version 1.0 and 2.X
1 PPS	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
Event Marker	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
NMEA-0183	ALM, BWC, GGA, GLL, GRS, GSA, GST, GSV, RMB, RMC, VTG, WPL, ZDA

PERFORMANCE CHARACTERISTICS

Signal Processing	Multibit Super-trak technology; Maxwell architecture with EVEREST Multipath Rejection Technology; very low noise C/A code processing
Tracking (Standard)	9 channels L1 C/A code and carrier
(Optional)	12 L1, 12 L1 + 12 L2; C/A, P and/or cross-correlation code and carrier (rack mount)
Startup time	< 2 minutes after cold start
Measurement rate	0.5 second per independent measurement
Accuracy	Typically better than 0.5 m RMS: assumes at least 5 satellites, PDOP less than 4, and using 4000RSi corrections.
RTCM Corrections	4000RSi corrections can be applied to all differential-equipped RTCM compatible GPS receivers.

ORDERING INFORMATION

4000RSi Reference Surveyor	P/N 29443-75
4000RSi Reference Surveyor pair	P/N 29561-00
4000DSi Differential Surveyor	P/N 29443-70
4000RSi Reference Surveyor Rackmount	P/N 26541-80

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ProBeacon

Marine Radiobeacon MSK Receiver

Key features and benefits

- **High noise immunity**
- **Rapid signal aquisition**
- **Automatic and manual modes**
- **FFT signal analysis**

Differential GPS correction data broadcast from marine radiobeacons provides GPS users with the improved accuracy of DGPS without setting up and maintaining a reference station. Depending on the DGPS receiver being used in conjuction with the ProBeacon™, the combination can provide position and navigation accuracies of less than a meter to land surveyors, dredge operators, resource management agencies, crop dusters, and many others operating on land, offshore or in the air. Anyone within the range of a radiobeacon, whose application requires real-time positions, time, or velocity can benefit from this form of DGPS.

Differential GPS using MSK radiobeacon broadcasts.

RTCM and IALA complaint

The International Association of Lighthouse Authorities (IALA), the U.S. Coast Guard and the Radio Technical Commission for Maritime Services (RTCM) have developed standards for the broadcast of DGPS correction data for public access.

All digital design

Obtaining the highest levels of DGPS performance requires a superior MSK receiver. Trimble's ProBeacon is an all-digital design, proven in independent testing to have the best overall performance, even under conditions of low signal strength and/or high noise levels. This all-digital design facilitates rapid signal acquisition and superior tracking capabilities. In addition, the ProBeacon signal processing is based upon a proprietary (patented) "noise cancellation" technique utilizing multiple channels to further improve data reception by rejecting the "impulsive" type of noise commonly found in this frequency band.

The ProBeacon also utilizes advanced logic, working in conjunction with the DGPS receiver to select the most appropriate beacon. The ProBeacon constantly monitors Message Error Ratio, switching to a different beacon if the signal degrades. By utilizing the broadcast beacon almanacs and receiving the position data from the DGPS receiver, the ProBeacon switches to the nearest beacon to maintain the highest accuracy possible.

H-field loop antenna

These features, combined with an advanced, high sensitivity H-field antenna, ensure that the DGPS user realizes the best performance under all conditions.

Trimble

ProBeacon

Marine Radiobeacon MSK Receiver

DESCRIPTION

Differential GPS (DGPS) is the most accurate long range form of GPS for surveying, positioning and navigation. GPS receivers that are differential capable use the correction data to counter the effects of Selective Availability, errors induced by the ionosphere and troposphere and other correlated errors that degrade the GPS solution. The ProBeacon is designed to provide this correction data in the RTCM SC-104 standard format to any compatible DGPS receiver, using standard RS-232 and RS-422 serial connections. Accuracy will depend on the type of DGPS receiver utilized. Trimble offers several GPS receivers with DGPS capability designed to meet all types of application requirements.

PERFORMANCE CHARACTERISTICS

General

Frequency range	283.5 kHz to 325.0 kHz
Channel spacing	500 Hz
MSK modulation	25, 50, 100 & 200 bits/second
Signal strength	10 µV/meter minimum
Dynamic range	100 dB
Channel selectivity	60 dB @ 500 Hz offset
Frequency offset	10 ppm maximum (200 bits/second)
	40 ppm maximum (100, 50 & 25 bits/second)
3rd order intercept	+15 dBm @ RF input (min. AGC setting)

PHYSICAL CHARACTERISTICS

Receiver

Size	5.6″ W x 2.7″ H x 7.5″ D
	(14.2 cm x 6.9 cm x 19.0 cm)
Weight	2.5 lbs. (1.1 kg)
Power consumption	3.5 watts
Voltage	10 to 32 volts DC
Operating temperature	-20°C to +60°C
Humidity	95% non-condensing

Antenna

Dimensions	5.8″ D x 4.5″ H (14.7 cm x 11.4 cm)
Weight	1.4 lbs. (0.63 kg)
Operating temp	-30°C to +65°C
Humidity	100% – fully sealed
Cable length	50 ft. (15 meters)

FEATURES

Automatic

The ProBeacon serves as a stand-alone receiver of DGPS correction data. Once on, it automatically selects and tracks the best differential beacon in your area. If you lose reception of a differential beacon, the ProBeacon automatically switches to another beacon for continuous DGPS coverage.

Manual

Manual mode allows the operator to select a specific beacon, to pre-program a list of preferred beacons, and to request signal levels, SNR data, PLL offsets, RTCM message errors, and tracking history.

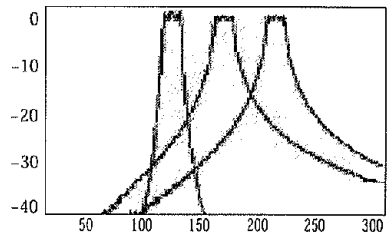
Fast acquisition

The ProBeacon uses a proprietary spectral search algorithm which enables exceptionally fast identification and acquisition of differential beacons under all operating conditions.

Jamming immunity

Only a subset of all marine radiobeacons will be differential beacons. The ProBeacon is able to track a weaker differential beacon signal in the presence of multiple jamming signals from nearby standard radiobeacons.

Normalized Frequency



Integrity monitoring

The ProBeacon continuously monitors the integrity of incoming RTCM messages. If it observes parity errors, the ProBeacon will automatically switch to an adjacent beacon to ensure RTCM data integrity.

Noise immunity

Using advanced digital signal processing, the ProBeacon reliably tracks even in the presence of heavy atmospheric noise (e.g. lightning). Using algorithms based on a proprietary (patented) noise cancellation technique, the ProBeacon realizes improved performance in the presence of impulsive noise. As shown in the above figure, the signal channel plus two additional channels are monitored by the MSK receiver. These two noise-only, or pilot, channels facilitate noise reduction as the output from all the channels is highly correlated. Reduction in noise in the signal channel improves the performance of the ProBeacon in all operating environments.

Almanac monitoring

Each differential beacon broadcasts an almanac message with the identity (frequency, data rate, etc.) for adjacent differential beacons. The ProBeacon uses this message to accelerate the switch between beacons. This minimizes the interruption in DGPS data when you lose reception of a beacon.

Dual serial ports

The ProBeacon offers two bi-directional serial ports and multiple baud rates (1200, 2400, 4800, 9600). Both RS-232 and RS-422 are supported. One port supports modem operation, allowing remote control of the ProBeacon

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4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

Key features and benefits

- **Sub 0.5 meter accuracy**
- **Real time QA/QC**
- **Everest Multipath Rejection Technology**
- **Super-trak Signal Processing Technology**

The 4000RSi™ Reference Surveyor receiver and 4000DSi™ Differential Surveyor receiver incorporate the latest in GPS technology, offering true, real-time positioning accuracy better than 0.5 meter. Based on Trimble's advanced Maxwell processing technology, these DGPS receivers provide the highest level of accuracy even when operating in the most challenging conditions.

The 4000RSi receiver operates as an autonomous reference station, generating DGPS corrections in the RTCM SC-104 standard format for transmission to mobile GPS receivers.

The 4000DSi receiver is designed to use DGPS corrections in the RTCM SC-104 standard format broadcast by the 4000RSi receiver. The 4000DSi's standard NMEA-0183 messages, navigation firmware, data, and 1PPS outputs allow for optimal flexibility for system integration and interfacing with other instruments.

The signal processing of the two receivers incorporates Trimble's Super-trak™ technology. This technology enhances low power satellite signal acquisition, improves signal tracking capabilities under less than ideal conditions and provides increased immunity to signal jamming from radio frequency interference (RFI). These improvements are derived from integrating complex RF circuitry onto a single chip and by using state-of-the-art Surface Acoustic Wave filter technology.

Super-trak technology increases productivity and facilitates continual operations in demanding environments, such as ports, harbors, along riverbanks and near RFI sources that would normally interfere with satellite signals.

The 4000RSi and 4000DSi receivers also incorporate Trimble's latest advance in multipath rejection through enhanced signal processing: the patented EVEREST™ Multipath Rejection Technology. This technology eliminates multipath error before the receiver calculates GPS measurements. When combined with Trimble's advanced carrier-aided filtering and smoothing techniques applied to exceptionally low noise C/A code measurements, the result is real-time positioning accuracy on the order of a few decimeters.

The two receivers are ideal for hydrographic and navigation systems, vessel tracking, dynamic positioning systems, dredging, and other dynamic positioning and navigation applications. Both receivers feature nine channels of continuous satellite tracking (12 channels optional); a lightweight, rugged, weatherproof housing; and low power consumption for extending the field operation time from batteries.

During operation, both receivers can output binary and ASCII data for archiving or post-mission analysis. In addition, the 4000RSi receiver can operate as a mobile receiver with the same features, functionality and options as the 4000DSi receiver. For optimum DGPS performance, combine the receivers with any of Trimble's data communication systems and QA/QC firmware to ensure the integrity of positioning accuracy.

Trimble

4000RSi & 4000DSi

DGPS Reference Surveyor and Differential Surveyor

4000 RSI FEATURES

- RTCM Input
- RTCM Output; filtered and carrier-smoothed RTCM differential corrections (version 1.0 and 2.X) (4000RSi)
- EVEREST Multipath Rejection Technology
- Super-trak Signal Processing Technology
- Better than 0.5 meter DGPS accuracy using 4000RSi receiver corrections
- 0.5 second measurement rate
- Weighted-least squares solution
- Autonomous operation - automatic mode restoration after power-cycle
- Data integrity provision
- 2 RS-232 I/O ports with flow control for data recording and data link (4 RS-232/422 on rack mount)
- Triple DC input
- Low power; lightweight; portable; environmentally protected
- 1 PPS output; NMEA-0183 outputs
- L1 geodetic antenna; 30m antenna cable (4000RSi)
- Compact Dome antenna; 30m antenna cable (4000Dsi)
- 1-year warranty
- Firmware upgrades via serial port

OPTIONS AND ACCESSORIES

- Firmware update service - 1 and 4 year
- Extended hardware warranty
- L1 Carrier Phase
- 12 L1 channels
- L1/L2 Carrier Phase (rackmount)
- 12 L1/L2 channels (rackmount)
- Internal Memory for datalogging
- Event Marker input (requires memory option)
- QA/QC feature
- Rackmount Version
- 4 serial I/O ports (standard on rackmount)
- L1 and L1/L2 Geodetic antennas
- 30m antenna cable extension, with in-line amplifier
- Office Support Module: OSM II (CE Marked)
- Receiver transport case
- TRIMTALK™ Series radio links
- ProBeacon™ MSK receiver
- LEMO to dual BNC sockets adapter

PHYSICAL CHARACTERISTICS

Receiver

Size	9.8" W x 11.0" D x 4.0" H (portable) (24.8cm X 28.0cm x 10.2cm) 16.8" W x 16.0" D x 5.25" H (rackmount) (42.7cm x 40.6cm x 13.3cm)
Weight	6 lbs (2.7kg) (portable), 15 lbs. (6.8kg) (rackmount) 0.5 lbs (0.2kg) compact dome antenna 5.7 lbs (2.6kg) L1 geodetic antenna
Power	Nominal 10.5-35 VDC, 7 Watts (portable) 100, 120, 220, 240 VAC, 40 Watts (rack mount) DC: 10-36 Volts, 30 Watts
Operating temperature	-20°C to +55°C (portable), 0°C to +50°C (rack mount)
Storage temperature	-30°C to +75°C (portable) -20°C to +60°C (rack mount)
Humidity	100%, fully sealed, buoyant (portable) 95%, non-condensing (rack mount)

Geodetic Antenna

Size	16" D x 3.5" H
Weight	5.7 lbs.
Operating temperature	-40°C to +65°C
Storage temperature	-55°C to +75°C
Humidity	100%, fully sealed

Interface

Keyboard	Alphanumeric, function and softkey entry
Display	Backlit LCD, four lines of forty alphanumeric characters; Large, easy-to-read– 2.8mm x 4.9mm; Viewing area: 32 cm²; adjustable backlight and viewing angle
Serial Ports	Port 1 and 3: up to 57600 bps, software flow control Port 2 and 4: up to 57600 bps, hardware/software flow control RS-232 / RS-422 user configurable (rack mount)
Data recording	RTCM and GPS data available via serial port
Remote control	Trimble Data Collector Interface
Antenna	External, LEMO socket connector (portable), N-Type Socket connector (rack mount)
RTCM Messages	Types 1, 2, 3, 6, 9, 16; Version 1.0 and 2.X
1 PPS	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
Event Marker	LEMO 7-pin, adapter to BNC available (portable) BNC socket (rack mount)
NMEA-0183	ALM, BWC, GGA, GLL, GRS, GSA, GST, GSV, RMB, RMC, VTG, WPL, ZDA

PERFORMANCE CHARACTERISTICS

Signal Processing	Multibit Super-trak technology; Maxwell architecture with EVEREST Multipath Rejection Technology; very low noise C/A code processing
Tracking (Standard)	9 channels L1 C/A code and carrier
(Optional)	12 L1, 12 L1 + 12 L2; C/A, P and/or cross-correlation code and carrier (rack mount)
Startup time	< 2 minutes after cold start
Measurement rate	0.5 second per independent measurement
Accuracy	Typically better than 0.5 m RMS: assumes at least 5 satellites, PDOP less than 4, and using 4000RSi corrections.
RTCM Corrections	4000RSi corrections can be applied to all differential-equipped RTCM compatible GPS receivers.

ORDERING INFORMATION

4000RSi Reference Surveyor	P/N 29443-75
4000RSi Reference Surveyor pair	P/N 29561-00
4000DSi Differential Surveyor	P/N 29443-70
4000RSi Reference Surveyor Rackmount	P/N 26541-80

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Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera		Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-02 SD	379187.9	161970.0	SD02a	379189.2	161969.5	15:24	08/25/04	38.1	Flood	125	DSY02SD bottom.bmp	Simrad OE9030	DSY02SD surface	SeaLife DC310	Start	PH02a	379187.8	161972.3	
			SD02b	379187.2	161967.9	15:27	08/25/04		Flood	125					End	PH02b	379192.6	161976.5	
DSY-03 SD	379663.5	160683.0	SD03a	379664.5	160683.0	9:04	08/26/04	13.3	Ebb	138	DSY03SD bottom.bmp	Simrad OE9030	DSY03SD surface.jpg	SeaLife DC310	Start	PH03a	379665.3	160683.9	
			SD03b	379664.5	160683.3	9:06	08/26/04		Ebb	138					End	PH03b	379666.2	160681.8	
			SD03c	379663.2	160681.8	9:06	08/26/04		Ebb	138									
DSY-20 SD	378488.5	162571.5	SD20a	378488.5	162573.1	11:10	08/26/04	36.8	Flood	138	DSY20SD bottom,bpm	Simrad OE9030	DSY20SD surface.jpg	SeaLife DC310	Start	PH20a	378488.1	162570.2	
															End	PH20b	378487.2	162575.2	
DSY-27 SD	378879.6	162811.2	SD27a	378877.6	162811.2	11:22	08/26/04	33.7	Flood	138	DSY27SD bottom.bmp	Simrad OE9030	DSY27SD surface.jpg	SeaLife DC310	Start	PH27a	378878.8	162811.6	
			SD27b	378881.0	162811.8	11:24	08/26/04		Flood	138					End	PH27b	378875.3	162814.0	
			SD27c	378875.6	162813.9	11:25	08/26/04		Flood	138									
			SD27d	378874.0	162812.9	11:28	08/26/04		Flood	138									
DSY-28 SD	379127.5	161822.4	SD28a	379132.1	161820.0	15:47	08/25/04	38.3	Flood	125	DSY28SD bottom.bmp	Simrad OE9030	DSY28SD surface.jpg	SeaLife DC310	Start	PH28a	379130.3	161819.0	
															End	PH28b	379125.1	161826.2	
DSY-29 SD	379569.0	160754.6	SD29a	379568.3	160754.5	9:20	08/26/04	14.1	Ebb	138	DSY29SD bottom.bmp	Simrad OE9030	DSY29SD surface.jpg	SeaLife DC310	Start	PH29a	379566.4	160756.0	
			SD29b	379570.0	160754.2	9:21	08/26/04		Ebb	138					End	PH29b	379567.7	160754.9	
DSY-04 SD	379048.0	162375.7	SD04a	379049.6	162380.3	10:43	08/26/04	35.3	Flood	138	DSY04SD bottom.bmp	Simrad OE9030	SDY04SD surface.jpg	SeaLife DC310	Start	PH04a	379048.9	162376.7	
															End	PH04b	379044.1	162376.8	
DSY-05 SD	378502.4	161746.2	SD05a	378484.9	161595.6	9:46	08/26/04	36.3	Ebb	138	DSY05SD bottom.bmp	Simrad OE9030	DSY05SD surface.jpg	SeaLife DC310	Start	PH05a	378480.7	161596.1	location moved - carrier
			SD05b	378480.0	161598.7	9:49	08/26/04		Ebb	138					End	PH05b	378478.7	161595.4	
			SD05c	378478.1	161598.7	9:50	08/26/04		Ebb	138									
			SH05d	378480.5	161599.5	9:52	08/26/04		Ebb	138									
			SD05e	378483.1	161598.5	9:55	08/26/04		Ebb	138									
			SD05f	378480.0	161596.1	9:57	08/26/04		Ebb	138									
			SD05g	378480.7	161596.5	10:01	08/26/04		Ebb	138									
DSY-06 SD	378964.1	161550.3	SD06a	378964.6	161547.4	16:09	08/25/04	31.1	Flood	138	DSY06SD bottom.bmp	Simrad OE9030	SDY06SD surface.jpg	SeaLife DC310	Start	PH06a	378965.5	161553.4	mislabeled
															End	PH06b	378963.8	161554.7	
															Start	PH06c	378960.5	161557.3	labeled correctly
															End	PH06d	378963.3	161552.4	
DSY-08 SD	377956.9	161998.0	SD08a	377971.8	162072.7	10:27	08/26/04	40.4	Ebb	138	DSY08SD bottom.bmp	Simrad OE9030	DSY08SD surface.jpg	SeaLife DC310	Start	PH08a	377969.0	162071.2	location moved - carrier
															End	PH08b	377971.5	162077.4	
DSY-11 SD	378390.5	162473.6	SD11a	378386.0	162470.7	12:07	08/26/04	39.2	Flood	138	DSY11SD bottom.bmp	Simrad OE9030	DSY11SD surface.jpg	SeaLife DC310	Start	PH11a	378390.6	162474.8	
															End	PH11b	378387.3	162473.7	
DSY-31 SD	378512.5	162447.1	SD31a	378513.5	162446.6	11:52	08/26/04	38.4	Flood	138	DSY31SD bottom.bmp	Simrad OE9030	DSY31SD surface.jpg	SeaLife DC310	Start	PH31a	378513.1	162444.8	
															End	PH31b	378509.4	162448.9	
DSY-07 SD	379173.9	160123.5	SD07a	379172.6	160123.8	8:15	08/26/04	8.8	Ebb	138	SDY07SD bottom.bmp	Simrad OE9030	DSY07SD surface.jpg	SeaLife DC310	Start	PH07a	379175.7	160126.9	
															End	PH07b	379178.0	160124.4	
DSY-09 SD	379593.6	160095.5	SD09a	379595.4	160094.5	8:37	08/26/04	2.5	Ebb	138	DSY09SD bottom.bmp	Simrad OE9030	DSY09SD surface.jpg	SeaLife DC310	Start	PH09a	379598.0	160093.2	
															End	PH09b	379593.6	160095.8	
DSY-26 SD	378785.6	163661.1	SD26a	378784.8	163658.3	13:05	08/26/04	31.5	Flood	138	DSY26SD bottom.bmp	Simrad OE9030	DSY26SD surfac.jpg	SeaLife DC310	Start	PH26a	378784.2	163658.7	
			SD26b	378785.6	163662.3	13:05	08/26/04		Flood	138					End	PH26b	378780.3	163662.1	
			SD26c	378781.0	163660.5	13:07	08/26/04		Flood	138									
DSY-32 SD	377710.3	163484.0	SD32a	377711.2	163488.0	12:34	08/26/04	40.2	Flood	138	DSY32SD bottom.bmp	Simrad OE9030	SDY32SD surface.jpg	SeaLife DC310	Start	PH32a	377709.5	163487.5	
			SD32b	377710.7	163487.6	12:36	08/26/04		Flood	138					End	PH32b	377709.6	163489.5	
DSY-101 SD	377770.6	161728.2	SD101a	377769.9	161729.0	11:42	08/25/04	38.9	Flood	125	DSY101SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start	PH101a	377768.7	161725.5	
															End	PH101b	377771.3	161729.2	

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera	Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-102 SD	377576.1	162709.1	SD102a	377575.5	162709.2	12:44	08/25/04	32.8	Flood	125	DSY102SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start PH102a	377575.4	162711.2	
															End PH102b	377575.4	162714.5	
DSY-103 SD	379205.4	162222.7	SD103a	379208.9	162214.2	13:31	08/25/04	32.2	Flood	125	DSY103SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH103a	379211.9	162214.8	
															End PH103b	379209.1	162215.2	
DSY-104 SD	378897.4	161963.3	SD104a	379101.8	161985.3	14:13	08/25/04	38.2	Flood	125	DSY104SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH104a	379098.2	161983.6	
															End PH104b	379104.0	161986.2	
DSY-JCC-01 SD	365509.5	166468.1	JCC01a	365508.6	166467.2	13:38	08/26/04	23.9	Flood	138	DSYJCC01SD bottom.bpm	Simrad OE9030	DSYJCC01SD surface.jpg	SeaLife DC310	Start PHJCC01a	365506.1	166464.9	
			JCC01b	365508.0	166465.5	13:40	08/26/04		Flood	138					End PHJCC01b	365513.5	166464.2	
			JCC01c	365505.9	166467.2	13:41	08/26/04		Flood	138								
			JCC01d	365508.1	166463.2	13:43	08/26/04		Flood	138								
			JCC01e	365509.5	166471.6	13:44	08/26/04		Flood	138								
			JCC01f	365509.3	166469.4	13:46	08/26/04		Flood	138								
			JCC01g	365508.4	166460.5	13:47	08/26/04		Flood	138								
			JCC01h	365511.2	166466.8	13:50	08/26/04		Flood	138								
			JCC01I	365505.0	166466.6	13:52	08/26/04		Flood	138								
DSY-JCC-02 SD	365468.9	166544.2	JCC02a	365467.4	166544.9	14:00	08/26/04	22.5	Flood	138	DSYJCC02SD bottom.bmp	Simrad OE9030	DSYJCC02SD surface.jpg	SeaLife DC310	Start PHJCC02a	365470.6	166540.3	
			JCC02b	365472.7	166544.8	14:02	08/26/04		Flood	138					End PHJCC02b	365469.4	166547.5	
			JCC02c	365466.6	166543.8	14:04	08/26/04		Flood	138								
			JCC02d	365465.8	166543.8	14:06	08/26/04		Flood	138								
			JCC02e	365470.5	166544.9	14:07	08/26/04		Flood	138								
DSY-JPC-01 SD	365399.7	157083.9	JPC01a	365401.8	157083.8	14:28	08/26/04	24.5	Flood	138	DSYJPC01SD bottom.bmp	Simrad OE9030	DSYJPC01SD surface.jpg	SeaLife DC310	Start PHJPC01a	365403.6	157083.1	
			JPC01b	365400.1	157085.5	14:30	08/26/04		Flood	138					End PHJPC01b	365399.8	157084.5	
			JPC01c	365400.1	157081.1	14:31	08/26/04		Flood	138								
			JPC01d	365398.6	157082.1	14:33	08/26/04		Flood	138								
			JPC01e	365404.5	157084.0	14:36	08/26/04		Flood	138								
			JPC01f	365402.1	157085.0	14:44	08/26/04		Flood	138								
DSY-JPC-02 SD	365508.3	156422.8	JPC02a	365506.7	156423.7	14:57	08/26/04	17.5	Flood	138	DSYJPC02SD bottom.bmp	Simrad OE9030	DSYJPC02SD surface.jpg	SeaLife DC310	Start PHJPC02a	365505.3	156423.7	
			JPC02b	365503.8	156423.6	14:58	08/26/04		Flood	138					End PHJPC02b	365503.5	156422.8	
			JPC02c	365501.0	156422.7	15:00	08/26/04		Flood	138								
			JPC02d	365506.1	156425.0	15:03	08/26/04		Flood	138								
DSY-JPC-03 SD	added location		JCP03a	365473.7	156051.0	15:08	08/26/04	6.8	Flood	138	DSYJPC03SD bottom.bmp	Simrad OE9030	DSYJPC03SD surfac.jpg	SeaLife DC310	Start PHJPC03a	365476.0	156049.2	
			JCP03b	365472.1	156050.3	15:08	08/26/04		Flood	138					End PHJPC03b	365471.8	156051.4	
			JPC03c	365475.8	156051.2	15:10	08/26/04		Flood	138								
			JPC03d	365472.2	156048.4	15:11	08/26/04		Flood	138								
			JPC03e	365475.0	156051.2	15:12	08/26/04		Flood	138								
			JPC03f	365475.1	156054.0	15:14	08/26/04		Flood	138								
DSY-CHC-01 SD	TBA	TBA	CHC01a	366619.9	138507.3	15:39	08/26/04	16.3	Flood	138	DSYCHC)!SD bottom.bmp	Simrad OE9030	DSYCHC01SD surface.jpg	SeaLife DC310	Start PHCHC01a	366621.3	138516.4	
			CHC01b	366619.5	138509.4	15:40	08/26/04		Flood	138					End PHCHC01b	366623.0	138509.5	
DSY-CHC-02 SD	TBA	TBA	CHC02a	366713.2	138700.2	15:54	08/26/04	11.8	Flood	138	DSYCHC02SD bottom.bmp	Simrad OE9030	DSYCHC02SD surface.jpg	SeaLife DC310	Start PHCHC02a	366708.5	138701.9	
			CHC02b	366708.1	138700.0	15:59	08/26/04		Flood	138					End PHCHC02b	366706.9	138702.6	
			CHC02c	366708.8	138704.6	16:01	08/26/04		Flood	138								

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera		Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-02 SD	379187.9	161970.0	SD02a	379189.2	161969.5	15:24	08/25/04	38.1	Flood	125	DSY02SD bottom.bmp	Simrad OE9030	DSY02SD surface	SeaLife DC310	Start	PH02a	379187.8	161972.3	
			SD02b	379187.2	161967.9	15:27	08/25/04		Flood	125					End	PH02b	379192.6	161976.5	
DSY-03 SD	379663.5	160683.0	SD03a	379664.5	160683.0	9:04	08/26/04	13.3	Ebb	138	DSY03SD bottom.bmp	Simrad OE9030	DSY03SD surface.jpg	SeaLife DC310	Start	PH03a	379665.3	160683.9	
			SD03b	379664.5	160683.3	9:06	08/26/04		Ebb	138					End	PH03b	379666.2	160681.8	
			SD03c	379663.2	160681.8	9:06	08/26/04		Ebb	138									
DSY-20 SD	378488.5	162571.5	SD20a	378488.5	162573.1	11:10	08/26/04	36.8	Flood	138	DSY20SD bottom,bpm	Simrad OE9030	DSY20SD surface.jpg	SeaLife DC310	Start	PH20a	378488.1	162570.2	
															End	PH20b	378487.2	162575.2	
DSY-27 SD	378879.6	162811.2	SD27a	378877.6	162811.2	11:22	08/26/04	33.7	Flood	138	DSY27SD bottom.bmp	Simrad OE9030	DSY27SD surface.jpg	SeaLife DC310	Start	PH27a	378878.8	162811.6	
			SD27b	378881.0	162811.8	11:24	08/26/04		Flood	138					End	PH27b	378875.3	162814.0	
			SD27c	378875.6	162813.9	11:25	08/26/04		Flood	138									
			SD27d	378874.0	162812.9	11:28	08/26/04		Flood	138									
DSY-28 SD	379127.5	161822.4	SD28a	379132.1	161820.0	15:47	08/25/04	38.3	Flood	125	DSY28SD bottom.bmp	Simrad OE9030	DSY28SD surface.jpg	SeaLife DC310	Start	PH28a	379130.3	161819.0	
															End	PH28b	379125.1	161826.2	
DSY-29 SD	379569.0	160754.6	SD29a	379568.3	160754.5	9:20	08/26/04	14.1	Ebb	138	DSY29SD bottom.bmp	Simrad OE9030	DSY29SD surface.jpg	SeaLife DC310	Start	PH29a	379566.4	160756.0	
			SD29b	379570.0	160754.2	9:21	08/26/04		Ebb	138					End	PH29b	379567.7	160754.9	
DSY-04 SD	379048.0	162375.7	SD04a	379049.6	162380.3	10:43	08/26/04	35.3	Flood	138	DSY04SD bottom.bmp	Simrad OE9030	SDY04SD surface.jpg	SeaLife DC310	Start	PH04a	379048.9	162376.7	
															End	PH04b	379044.1	162376.8	
DSY-05 SD	378502.4	161746.2	SD05a	378484.9	161595.6	9:46	08/26/04	36.3	Ebb	138	DSY05SD bottom.bmp	Simrad OE9030	DSY05SD surface.jpg	SeaLife DC310	Start	PH05a	378480.7	161596.1	location moved - carrier
			SD05b	378480.0	161598.7	9:49	08/26/04		Ebb	138					End	PH05b	378478.7	161595.4	
			SD05c	378478.1	161598.7	9:50	08/26/04		Ebb	138									
			SH05d	378480.5	161599.5	9:52	08/26/04		Ebb	138									
			SD05e	378483.1	161598.5	9:55	08/26/04		Ebb	138									
			SD05f	378480.0	161596.1	9:57	08/26/04		Ebb	138									
			SD05g	378480.7	161596.5	10:01	08/26/04		Ebb	138									
DSY-06 SD	378964.1	161550.3	SD06a	378964.6	161547.4	16:09	08/25/04	31.1	Flood	138	DSY06SD bottom.bmp	Simrad OE9030	SDY06SD surface.jpg	SeaLife DC310	Start	PH06a	378965.5	161553.4	mislabeled
															End	PH06b	378963.8	161554.7	
															Start	PH06c	378960.5	161557.3	labeled correctly
															End	PH06d	378963.3	161552.4	
DSY-08 SD	377956.9	161998.0	SD08a	377971.8	162072.7	10:27	08/26/04	40.4	Ebb	138	DSY08SD bottom.bmp	Simrad OE9030	DSY08SD surface.jpg	SeaLife DC310	Start	PH08a	377969.0	162071.2	location moved - carrier
															End	PH08b	377971.5	162077.4	
DSY-11 SD	378390.5	162473.6	SD11a	378386.0	162470.7	12:07	08/26/04	39.2	Flood	138	DSY11SD bottom.bmp	Simrad OE9030	DSY11SD surface.jpg	SeaLife DC310	Start	PH11a	378390.6	162474.8	
															End	PH11b	378387.3	162473.7	
DSY-31 SD	378512.5	162447.1	SD31a	378513.5	162446.6	11:52	08/26/04	38.4	Flood	138	DSY31SD bottom.bmp	Simrad OE9030	DSY31SD surface.jpg	SeaLife DC310	Start	PH31a	378513.1	162444.8	
															End	PH31b	378509.4	162448.9	
DSY-07 SD	379173.9	160123.5	SD07a	379172.6	160123.8	8:15	08/26/04	8.8	Ebb	138	SDY07SD bottom.bmp	Simrad OE9030	DSY07SD surface.jpg	SeaLife DC310	Start	PH07a	379175.7	160126.9	
															End	PH07b	379178.0	160124.4	
DSY-09 SD	379593.6	160095.5	SD09a	379595.4	160094.5	8:37	08/26/04	2.5	Ebb	138	DSY09SD bottom.bmp	Simrad OE9030	DSY09SD surface.jpg	SeaLife DC310	Start	PH09a	379598.0	160093.2	
															End	PH09b	379593.6	160095.8	
DSY-26 SD	378785.6	163661.1	SD26a	378784.8	163658.3	13:05	08/26/04	31.5	Flood	138	DSY26SD bottom.bmp	Simrad OE9030	DSY26SD surfac.jpg	SeaLife DC310	Start	PH26a	378784.2	163658.7	
			SD26b	378785.6	163662.3	13:05	08/26/04		Flood	138					End	PH26b	378780.3	163662.1	
			SD26c	378781.0	163660.5	13:07	08/26/04		Flood	138									
DSY-32 SD	377710.3	163484.0	SD32a	377711.2	163488.0	12:34	08/26/04	40.2	Flood	138	DSY32SD bottom.bmp	Simrad OE9030	SDY32SD surface.jpg	SeaLife DC310	Start	PH32a	377709.5	163487.5	
			SD32b	377710.7	163487.6	12:36	08/26/04		Flood	138					End	PH32b	377709.6	163489.5	
DSY-101 SD	377770.6	161728.2	SD101a	377769.9	161729.0	11:42	08/25/04	38.9	Flood	125	DSY101SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start	PH101a	377768.7	161725.5	
															End	PH101b	377771.3	161729.2	

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera	Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-102 SD	377576.1	162709.1	SD102a	377575.5	162709.2	12:44	08/25/04	32.8	Flood	125	DSY102SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start PH102a	377575.4	162711.2	
															End PH102b	377575.4	162714.5	
DSY-103 SD	379205.4	162222.7	SD103a	379208.9	162214.2	13:31	08/25/04	32.2	Flood	125	DSY103SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH103a	379211.9	162214.8	
															End PH103b	379209.1	162215.2	
DSY-104 SD	378897.4	161963.3	SD104a	379101.8	161985.3	14:13	08/25/04	38.2	Flood	125	DSY104SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH104a	379098.2	161983.6	
															End PH104b	379104.0	161986.2	
DSY-JCC-01 SD	365509.5	166468.1	JCC01a	365508.6	166467.2	13:38	08/26/04	23.9	Flood	138	DSYJCC01SD bottom.bpm	Simrad OE9030	DSYJCC01SD surface.jpg	SeaLife DC310	Start PHJCC01a	365506.1	166464.9	
			JCC01b	365508.0	166465.5	13:40	08/26/04		Flood	138					End PHJCC01b	365513.5	166464.2	
			JCC01c	365505.9	166467.2	13:41	08/26/04		Flood	138								
			JCC01d	365508.1	166463.2	13:43	08/26/04		Flood	138								
			JCC01e	365509.5	166471.6	13:44	08/26/04		Flood	138								
			JCC01f	365509.3	166469.4	13:46	08/26/04		Flood	138								
			JCC01g	365508.4	166460.5	13:47	08/26/04		Flood	138								
			JCC01h	365511.2	166466.8	13:50	08/26/04		Flood	138								
			JCC01I	365505.0	166466.6	13:52	08/26/04		Flood	138								
DSY-JCC-02 SD	365468.9	166544.2	JCC02a	365467.4	166544.9	14:00	08/26/04	22.5	Flood	138	DSYJCC02SD bottom.bmp	Simrad OE9030	DSYJCC02SD surface.jpg	SeaLife DC310	Start PHJCC02a	365470.6	166540.3	
			JCC02b	365472.7	166544.8	14:02	08/26/04		Flood	138					End PHJCC02b	365469.4	166547.5	
			JCC02c	365466.6	166543.8	14:04	08/26/04		Flood	138								
			JCC02d	365465.8	166543.8	14:06	08/26/04		Flood	138								
			JCC02e	365470.5	166544.9	14:07	08/26/04		Flood	138								
DSY-JPC-01 SD	365399.7	157083.9	JPC01a	365401.8	157083.8	14:28	08/26/04	24.5	Flood	138	DSYJPC01SD bottom.bmp	Simrad OE9030	DSYJPC01SD surface.jpg	SeaLife DC310	Start PHJPC01a	365403.6	157083.1	
			JPC01b	365400.1	157085.5	14:30	08/26/04		Flood	138					End PHJPC01b	365399.8	157084.5	
			JPC01c	365400.1	157081.1	14:31	08/26/04		Flood	138								
			JPC01d	365398.6	157082.1	14:33	08/26/04		Flood	138								
			JPC01e	365404.5	157084.0	14:36	08/26/04		Flood	138								
			JPC01f	365402.1	157085.0	14:44	08/26/04		Flood	138								
DSY-JPC-02 SD	365508.3	156422.8	JPC02a	365506.7	156423.7	14:57	08/26/04	17.5	Flood	138	DSYJPC02SD bottom.bmp	Simrad OE9030	DSYJPC02SD surface.jpg	SeaLife DC310	Start PHJPC02a	365505.3	156423.7	
			JPC02b	365503.8	156423.6	14:58	08/26/04		Flood	138					End PHJPC02b	365503.5	156422.8	
			JPC02c	365501.0	156422.7	15:00	08/26/04		Flood	138								
			JPC02d	365506.1	156425.0	15:03	08/26/04		Flood	138								
DSY-JPC-03 SD	added location		JCP03a	365473.7	156051.0	15:08	08/26/04	6.8	Flood	138	DSYJPC03SD bottom.bmp	Simrad OE9030	DSYJPC03SD surfac.jpg	SeaLife DC310	Start PHJPC03a	365476.0	156049.2	
			JCP03b	365472.1	156050.3	15:08	08/26/04		Flood	138					End PHJPC03b	365471.8	156051.4	
			JPC03c	365475.8	156051.2	15:10	08/26/04		Flood	138								
			JPC03d	365472.2	156048.4	15:11	08/26/04		Flood	138								
			JPC03e	365475.0	156051.2	15:12	08/26/04		Flood	138								
			JPC03f	365475.1	156054.0	15:14	08/26/04		Flood	138								
DSY-CHC-01 SD	TBA	TBA	CHC01a	366619.9	138507.3	15:39	08/26/04	16.3	Flood	138	DSYCHC)!SD bottom.bmp	Simrad OE9030	DSYCHC01SD surface.jpg	SeaLife DC310	Start PHCHC01a	366621.3	138516.4	
			CHC01b	366619.5	138509.4	15:40	08/26/04		Flood	138					End PHCHC01b	366623.0	138509.5	
DSY-CHC-02 SD	TBA	TBA	CHC02a	366713.2	138700.2	15:54	08/26/04	11.8	Flood	138	DSYCHC02SD bottom.bmp	Simrad OE9030	DSYCHC02SD surface.jpg	SeaLife DC310	Start PHCHC02a	366708.5	138701.9	
			CHC02b	366708.1	138700.0	15:59	08/26/04		Flood	138					End PHCHC02b	366706.9	138702.6	
			CHC02c	366708.8	138704.6	16:01	08/26/04		Flood	138								

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera		Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-02 SD	379187.9	161970.0	SD02a	379189.2	161969.5	15:24	08/25/04	38.1	Flood	125	DSY02SD bottom.bmp	Simrad OE9030	DSY02SD surface	SeaLife DC310	Start	PH02a	379187.8	161972.3	
			SD02b	379187.2	161967.9	15:27	08/25/04		Flood	125					End	PH02b	379192.6	161976.5	
DSY-03 SD	379663.5	160683.0	SD03a	379664.5	160683.0	9:04	08/26/04	13.3	Ebb	138	DSY03SD bottom.bmp	Simrad OE9030	DSY03SD surface.jpg	SeaLife DC310	Start	PH03a	379665.3	160683.9	
			SD03b	379664.5	160683.3	9:06	08/26/04		Ebb	138					End	PH03b	379666.2	160681.8	
			SD03c	379663.2	160681.8	9:06	08/26/04		Ebb	138									
DSY-20 SD	378488.5	162571.5	SD20a	378488.5	162573.1	11:10	08/26/04	36.8	Flood	138	DSY20SD bottom,bpm	Simrad OE9030	DSY20SD surface.jpg	SeaLife DC310	Start	PH20a	378488.1	162570.2	
															End	PH20b	378487.2	162575.2	
DSY-27 SD	378879.6	162811.2	SD27a	378877.6	162811.2	11:22	08/26/04	33.7	Flood	138	DSY27SD bottom.bmp	Simrad OE9030	DSY27SD surface.jpg	SeaLife DC310	Start	PH27a	378878.8	162811.6	
			SD27b	378881.0	162811.8	11:24	08/26/04		Flood	138					End	PH27b	378875.3	162814.0	
			SD27c	378875.6	162813.9	11:25	08/26/04		Flood	138									
			SD27d	378874.0	162812.9	11:28	08/26/04		Flood	138									
DSY-28 SD	379127.5	161822.4	SD28a	379132.1	161820.0	15:47	08/25/04	38.3	Flood	125	DSY28SD bottom.bmp	Simrad OE9030	DSY28SD surface.jpg	SeaLife DC310	Start	PH28a	379130.3	161819.0	
															End	PH28b	379125.1	161826.2	
DSY-29 SD	379569.0	160754.6	SD29a	379568.3	160754.5	9:20	08/26/04	14.1	Ebb	138	DSY29SD bottom.bmp	Simrad OE9030	DSY29SD surface.jpg	SeaLife DC310	Start	PH29a	379566.4	160756.0	
			SD29b	379570.0	160754.2	9:21	08/26/04		Ebb	138					End	PH29b	379567.7	160754.9	
DSY-04 SD	379048.0	162375.7	SD04a	379049.6	162380.3	10:43	08/26/04	35.3	Flood	138	DSY04SD bottom.bmp	Simrad OE9030	SDY04SD surface.jpg	SeaLife DC310	Start	PH04a	379048.9	162376.7	
															End	PH04b	379044.1	162376.8	
DSY-05 SD	378502.4	161746.2	SD05a	378484.9	161595.6	9:46	08/26/04	36.3	Ebb	138	DSY05SD bottom.bmp	Simrad OE9030	DSY05SD surface.jpg	SeaLife DC310	Start	PH05a	378480.7	161596.1	location moved - carrier
			SD05b	378480.0	161598.7	9:49	08/26/04		Ebb	138					End	PH05b	378478.7	161595.4	
			SD05c	378478.1	161598.7	9:50	08/26/04		Ebb	138									
			SH05d	378480.5	161599.5	9:52	08/26/04		Ebb	138									
			SD05e	378483.1	161598.5	9:55	08/26/04		Ebb	138									
			SD05f	378480.0	161596.1	9:57	08/26/04		Ebb	138									
			SD05g	378480.7	161596.5	10:01	08/26/04		Ebb	138									
DSY-06 SD	378964.1	161550.3	SD06a	378964.6	161547.4	16:09	08/25/04	31.1	Flood	138	DSY06SD bottom.bmp	Simrad OE9030	SDY06SD surface.jpg	SeaLife DC310	Start	PH06a	378965.5	161553.4	mislabeled
															End	PH06b	378963.8	161554.7	
															Start	PH06c	378960.5	161557.3	labeled correctly
															End	PH06d	378963.3	161552.4	
DSY-08 SD	377956.9	161998.0	SD08a	377971.8	162072.7	10:27	08/26/04	40.4	Ebb	138	DSY08SD bottom.bmp	Simrad OE9030	DSY08SD surface.jpg	SeaLife DC310	Start	PH08a	377969.0	162071.2	location moved - carrier
															End	PH08b	377971.5	162077.4	
DSY-11 SD	378390.5	162473.6	SD11a	378386.0	162470.7	12:07	08/26/04	39.2	Flood	138	DSY11SD bottom.bmp	Simrad OE9030	DSY11SD surface.jpg	SeaLife DC310	Start	PH11a	378390.6	162474.8	
															End	PH11b	378387.3	162473.7	
DSY-31 SD	378512.5	162447.1	SD31a	378513.5	162446.6	11:52	08/26/04	38.4	Flood	138	DSY31SD bottom.bmp	Simrad OE9030	DSY31SD surface.jpg	SeaLife DC310	Start	PH31a	378513.1	162444.8	
															End	PH31b	378509.4	162448.9	
DSY-07 SD	379173.9	160123.5	SD07a	379172.6	160123.8	8:15	08/26/04	8.8	Ebb	138	SDY07SD bottom.bmp	Simrad OE9030	DSY07SD surface.jpg	SeaLife DC310	Start	PH07a	379175.7	160126.9	
															End	PH07b	379178.0	160124.4	
DSY-09 SD	379593.6	160095.5	SD09a	379595.4	160094.5	8:37	08/26/04	2.5	Ebb	138	DSY09SD bottom.bmp	Simrad OE9030	DSY09SD surface.jpg	SeaLife DC310	Start	PH09a	379598.0	160093.2	
															End	PH09b	379593.6	160095.8	
DSY-26 SD	378785.6	163661.1	SD26a	378784.8	163658.3	13:05	08/26/04	31.5	Flood	138	DSY26SD bottom.bmp	Simrad OE9030	DSY26SD surfac.jpg	SeaLife DC310	Start	PH26a	378784.2	163658.7	
			SD26b	378785.6	163662.3	13:05	08/26/04		Flood	138					End	PH26b	378780.3	163662.1	
			SD26c	378781.0	163660.5	13:07	08/26/04		Flood	138									
DSY-32 SD	377710.3	163484.0	SD32a	377711.2	163488.0	12:34	08/26/04	40.2	Flood	138	DSY32SD bottom.bmp	Simrad OE9030	SDY32SD surface.jpg	SeaLife DC310	Start	PH32a	377709.5	163487.5	
			SD32b	377710.7	163487.6	12:36	08/26/04		Flood	138					End	PH32b	377709.6	163489.5	
DSY-101 SD	377770.6	161728.2	SD101a	377769.9	161729.0	11:42	08/25/04	38.9	Flood	125	DSY101SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start	PH101a	377768.7	161725.5	
															End	PH101b	377771.3	161729.2	

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera	Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-102 SD	377576.1	162709.1	SD102a	377575.5	162709.2	12:44	08/25/04	32.8	Flood	125	DSY102SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start PH102a	377575.4	162711.2	
															End PH102b	377575.4	162714.5	
DSY-103 SD	379205.4	162222.7	SD103a	379208.9	162214.2	13:31	08/25/04	32.2	Flood	125	DSY103SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH103a	379211.9	162214.8	
															End PH103b	379209.1	162215.2	
DSY-104 SD	378897.4	161963.3	SD104a	379101.8	161985.3	14:13	08/25/04	38.2	Flood	125	DSY104SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH104a	379098.2	161983.6	
															End PH104b	379104.0	161986.2	
DSY-JCC-01 SD	365509.5	166468.1	JCC01a	365508.6	166467.2	13:38	08/26/04	23.9	Flood	138	DSYJCC01SD bottom.bpm	Simrad OE9030	DSYJCC01SD surface.jpg	SeaLife DC310	Start PHJCC01a	365506.1	166464.9	
			JCC01b	365508.0	166465.5	13:40	08/26/04		Flood	138					End PHJCC01b	365513.5	166464.2	
			JCC01c	365505.9	166467.2	13:41	08/26/04		Flood	138								
			JCC01d	365508.1	166463.2	13:43	08/26/04		Flood	138								
			JCC01e	365509.5	166471.6	13:44	08/26/04		Flood	138								
			JCC01f	365509.3	166469.4	13:46	08/26/04		Flood	138								
			JCC01g	365508.4	166460.5	13:47	08/26/04		Flood	138								
			JCC01h	365511.2	166466.8	13:50	08/26/04		Flood	138								
			JCC01l	365505.0	166466.6	13:52	08/26/04		Flood	138								
DSY-JCC-02 SD	365468.9	166544.2	JCC02a	365467.4	166544.9	14:00	08/26/04	22.5	Flood	138	DSYJCC02SD bottom.bmp	Simrad OE9030	DSYJCC02SD surface.jpg	SeaLife DC310	Start PHJCC02a	365470.6	166540.3	
			JCC02b	365472.7	166544.8	14:02	08/26/04		Flood	138					End PHJCC02b	365469.4	166547.5	
			JCC02c	365466.6	166543.8	14:04	08/26/04		Flood	138								
			JCC02d	365465.8	166543.8	14:06	08/26/04		Flood	138								
			JCC02e	365470.5	166544.9	14:07	08/26/04		Flood	138								
DSY-JPC-01 SD	365399.7	157083.9	JPC01a	365401.8	157083.8	14:28	08/26/04	24.5	Flood	138	DSYJPC01SD bottom.bmp	Simrad OE9030	DSYJPC01SD surface.jpg	SeaLife DC310	Start PHJPC01a	365403.6	157083.1	
			JPC01b	365400.1	157085.5	14:30	08/26/04		Flood	138					End PHJPC01b	365399.8	157084.5	
			JPC01c	365400.1	157081.1	14:31	08/26/04		Flood	138								
			JPC01d	365398.6	157082.1	14:33	08/26/04		Flood	138								
			JPC01e	365404.5	157084.0	14:36	08/26/04		Flood	138								
			JPC01f	365402.1	157085.0	14:44	08/26/04		Flood	138								
DSY-JPC-02 SD	365508.3	156422.8	JPC02a	365506.7	156423.7	14:57	08/26/04	17.5	Flood	138	DSYJPC02SD bottom.bmp	Simrad OE9030	DSYJPC02SD surface.jpg	SeaLife DC310	Start PHJPC02a	365505.3	156423.7	
			JPC02b	365503.8	156423.6	14:58	08/26/04		Flood	138					End PHJPC02b	365503.5	156422.8	
			JPC02c	365501.0	156422.7	15:00	08/26/04		Flood	138								
			JPC02d	365506.1	156425.0	15:03	08/26/04		Flood	138								
DSY-JPC-03 SD	added location		JCP03a	365473.7	156051.0	15:08	08/26/04	6.8	Flood	138	DSYJPC03SD bottom.bmp	Simrad OE9030	DSYJPC03SD surfac.jpg	SeaLife DC310	Start PHJPC03a	365476.0	156049.2	
			JCP03b	365472.1	156050.3	15:08	08/26/04		Flood	138					End PHJPC03b	365471.8	156051.4	
			JPC03c	365475.8	156051.2	15:10	08/26/04		Flood	138								
			JPC03d	365472.2	156048.4	15:11	08/26/04		Flood	138								
			JPC03e	365475.0	156051.2	15:12	08/26/04		Flood	138								
			JPC03f	365475.1	156054.0	15:14	08/26/04		Flood	138								
DSY-CHC-01 SD	TBA	TBA	CHC01a	366619.9	138507.3	15:39	08/26/04	16.3	Flood	138	DSYCHC)!SD bottom.bmp	Simrad OE9030	DSYCHC01SD surface.jpg	SeaLife DC310	Start PHCHC01a	366621.3	138516.4	
			CHC01b	366619.5	138509.4	15:40	08/26/04		Flood	138					End PHCHC01b	366623.0	138509.5	
DSY-CHC-02 SD	TBA	TBA	CHC02a	366713.2	138700.2	15:54	08/26/04	11.8	Flood	138	DSYCHC02SD bottom.bmp	Simrad OE9030	DSYCHC02SD surface.jpg	SeaLife DC310	Start PHCHC02a	366708.5	138701.9	
			CHC02b	366708.1	138700.0	15:59	08/26/04		Flood	138					End PHCHC02b	366706.9	138702.6	
			CHC02c	366708.8	138704.6	16.01	08/26/04		Flood	138								

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera		Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-02 SD	379187.9	161970.0	SD02a	379189.2	161969.5	15:24	08/25/04	38.1	Flood	125	DSY02SD bottom.bmp	Simrad OE9030	DSY02SD surface	SeaLife DC310	Start	PH02a	379187.8	161972.3	
			SD02b	379187.2	161967.9	15:27	08/25/04		Flood	125					End	PH02b	379192.6	161976.5	
DSY-03 SD	379663.5	160683.0	SD03a	379664.5	160683.0	9:04	08/26/04	13.3	Ebb	138	DSY03SD bottom.bmp	Simrad OE9030	DSY03SD surface.jpg	SeaLife DC310	Start	PH03a	379665.3	160683.9	
			SD03b	379664.5	160683.3	9:06	08/26/04		Ebb	138					End	PH03b	379666.2	160681.8	
			SD03c	379663.2	160681.8	9:06	08/26/04		Ebb	138									
DSY-20 SD	378488.5	162571.5	SD20a	378488.5	162573.1	11:10	08/26/04	36.8	Flood	138	DSY20SD bottom,bpm	Simrad OE9030	DSY20SD surface.jpg	SeaLife DC310	Start	PH20a	378488.1	162570.2	
															End	PH20b	378487.2	162575.2	
DSY-27 SD	378879.6	162811.2	SD27a	378877.6	162811.2	11:22	08/26/04	33.7	Flood	138	DSY27SD bottom.bmp	Simrad OE9030	DSY27SD surface.jpg	SeaLife DC310	Start	PH27a	378878.8	162811.6	
			SD27b	378881.0	162811.8	11:24	08/26/04		Flood	138					End	PH27b	378875.3	162814.0	
			SD27c	378875.6	162813.9	11:25	08/26/04		Flood	138									
			SD27d	378874.0	162812.9	11:28	08/26/04		Flood	138									
DSY-28 SD	379127.5	161822.4	SD28a	379132.1	161820.0	15:47	08/25/04	38.3	Flood	125	DSY28SD bottom.bmp	Simrad OE9030	DSY28SD surface.jpg	SeaLife DC310	Start	PH28a	379130.3	161819.0	
															End	PH28b	379125.1	161826.2	
DSY-29 SD	379569.0	160754.6	SD29a	379568.3	160754.5	9:20	08/26/04	14.1	Ebb	138	DSY29SD bottom.bmp	Simrad OE9030	DSY29SD surface.jpg	SeaLife DC310	Start	PH29a	379566.4	160756.0	
			SD29b	379570.0	160754.2	9:21	08/26/04		Ebb	138					End	PH29b	379567.7	160754.9	
DSY-04 SD	379048.0	162375.7	SD04a	379049.6	162380.3	10:43	08/26/04	35.3	Flood	138	DSY04SD bottom.bmp	Simrad OE9030	SDY04SD surface.jpg	SeaLife DC310	Start	PH04a	379048.9	162376.7	
															End	PH04b	379044.1	162376.8	
DSY-05 SD	378502.4	161746.2	SD05a	378484.9	161595.6	9:46	08/26/04	36.3	Ebb	138	DSY05SD bottom.bmp	Simrad OE9030	DSY05SD surface.jpg	SeaLife DC310	Start	PH05a	378480.7	161596.1	location moved - carrier
			SD05b	378480.0	161598.7	9:49	08/26/04		Ebb	138					End	PH05b	378478.7	161595.4	
			SD05c	378478.1	161598.7	9:50	08/26/04		Ebb	138									
			SH05d	378480.5	161599.5	9:52	08/26/04		Ebb	138									
			SD05e	378483.1	161598.5	9:55	08/26/04		Ebb	138									
			SD05f	378480.0	161596.1	9:57	08/26/04		Ebb	138									
			SD05g	378480.7	161596.5	10:01	08/26/04		Ebb	138									
DSY-06 SD	378964.1	161550.3	SD06a	378964.6	161547.4	16:09	08/25/04	31.1	Flood	138	DSY06SD bottom.bmp	Simrad OE9030	SDY06SD surface.jpg	SeaLife DC310	Start	PH06a	378965.5	161553.4	mislabeled
															End	PH06b	378963.8	161554.7	
															Start	PH06c	378960.5	161557.3	labeled correctly
															End	PH06d	378963.3	161552.4	
DSY-08 SD	377956.9	161998.0	SD08a	377971.8	162072.7	10:27	08/26/04	40.4	Ebb	138	DSY08SD bottom.bmp	Simrad OE9030	DSY08SD surface.jpg	SeaLife DC310	Start	PH08a	377969.0	162071.2	location moved - carrier
															End	PH08b	377971.5	162077.4	
DSY-11 SD	378390.5	162473.6	SD11a	378386.0	162470.7	12:07	08/26/04	39.2	Flood	138	DSY11SD bottom.bmp	Simrad OE9030	DSY11SD surface.jpg	SeaLife DC310	Start	PH11a	378390.6	162474.8	
															End	PH11b	378387.3	162473.7	
DSY-31 SD	378512.5	162447.1	SD31a	378513.5	162446.6	11:52	08/26/04	38.4	Flood	138	DSY31SD bottom.bmp	Simrad OE9030	DSY31SD surface.jpg	SeaLife DC310	Start	PH31a	378513.1	162444.8	
															End	PH31b	378509.4	162448.9	
DSY-07 SD	379173.9	160123.5	SD07a	379172.6	160123.8	8:15	08/26/04	8.8	Ebb	138	SDY07SD bottom.bmp	Simrad OE9030	DSY07SD surface.jpg	SeaLife DC310	Start	PH07a	379175.7	160126.9	
															End	PH07b	379178.0	160124.4	
DSY-09 SD	379593.6	160095.5	SD09a	379595.4	160094.5	8:37	08/26/04	2.5	Ebb	138	DSY09SD bottom.bmp	Simrad OE9030	DSY09SD surface.jpg	SeaLife DC310	Start	PH09a	379598.0	160093.2	
															End	PH09b	379593.6	160095.8	
DSY-26 SD	378785.6	163661.1	SD26a	378784.8	163658.3	13:05	08/26/04	31.5	Flood	138	DSY26SD bottom.bmp	Simrad OE9030	DSY26SD surfac.jpg	SeaLife DC310	Start	PH26a	378784.2	163658.7	
			SD26b	378785.6	163662.3	13:05	08/26/04		Flood	138					End	PH26b	378780.3	163662.1	
			SD26c	378781.0	163660.5	13:07	08/26/04		Flood	138									
DSY-32 SD	377710.3	163484.0	SD32a	377711.2	163488.0	12:34	08/26/04	40.2	Flood	138	DSY32SD bottom.bmp	Simrad OE9030	SDY32SD surface.jpg	SeaLife DC310	Start	PH32a	377709.5	163487.5	
			SD32b	377710.7	163487.6	12:36	08/26/04		Flood	138					End	PH32b	377709.6	163489.5	
DSY-101 SD	377770.6	161728.2	SD101a	377769.9	161729.0	11:42	08/25/04	38.9	Flood	125	DSY101SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start	PH101a	377768.7	161725.5	
															End	PH101b	377771.3	161729.2	

Sediment Sampling Locations

Station	Proposed Easting (ft)	Proposed Northing (ft)	Grab Sampling Attempts	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Time (EDT)	Date	Depth (feet)	Tide Stage	Moon Phase	Photo Bottom	Camera	Surface	Camera	Photo Video Clip	RI State Plane (NAD83,ft) Easting (ft)	RI State Plane (NAD83,ft) Northing (ft)	Misc Notes
DSY-102 SD	377576.1	162709.1	SD102a	377575.5	162709.2	12:44	08/25/04	32.8	Flood	125	DSY102SD bottom.jpg	Sea and Sea	Tetra Tech NUS		Start PH102a	377575.4	162711.2	
															End PH102b	377575.4	162714.5	
DSY-103 SD	379205.4	162222.7	SD103a	379208.9	162214.2	13:31	08/25/04	32.2	Flood	125	DSY103SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH103a	379211.9	162214.8	
															End PH103b	379209.1	162215.2	
DSY-104 SD	378897.4	161963.3	SD104a	379101.8	161985.3	14:13	08/25/04	38.2	Flood	125	DSY104SD bottom.bmp	Simrad OE9030	Tetra Tech NUS		Start PH104a	379098.2	161983.6	
															End PH104b	379104.0	161986.2	
DSY-JCC-01 SD	365509.5	166468.1	JCC01a	365508.6	166467.2	13:38	08/26/04	23.9	Flood	138	DSYJCC01SD bottom.bpm	Simrad OE9030	DSYJCC01SD surface.jpg	SeaLife DC310	Start PHJCC01a	365506.1	166464.9	
			JCC01b	365508.0	166465.5	13:40	08/26/04		Flood	138					End PHJCC01b	365513.5	166464.2	
			JCC01c	365505.9	166467.2	13:41	08/26/04		Flood	138								
			JCC01d	365508.1	166463.2	13:43	08/26/04		Flood	138								
			JCC01e	365509.5	166471.6	13:44	08/26/04		Flood	138								
			JCC01f	365509.3	166469.4	13:46	08/26/04		Flood	138								
			JCC01g	365508.4	166460.5	13:47	08/26/04		Flood	138								
			JCC01h	365511.2	166466.8	13:50	08/26/04		Flood	138								
			JCC01I	365505.0	166466.6	13:52	08/26/04		Flood	138								
DSY-JCC-02 SD	365468.9	166544.2	JCC02a	365467.4	166544.9	14:00	08/26/04	22.5	Flood	138	DSYJCC02SD bottom.bmp	Simrad OE9030	DSYJCC02SD surface.jpg	SeaLife DC310	Start PHJCC02a	365470.6	166540.3	
			JCC02b	365472.7	166544.8	14:02	08/26/04		Flood	138					End PHJCC02b	365469.4	166547.5	
			JCC02c	365466.6	166543.8	14:04	08/26/04		Flood	138								
			JCC02d	365465.8	166543.8	14:06	08/26/04		Flood	138								
			JCC02e	365470.5	166544.9	14:07	08/26/04		Flood	138								
DSY-JPC-01 SD	365399.7	157083.9	JPC01a	365401.8	157083.8	14:28	08/26/04	24.5	Flood	138	DSYJPC01SD bottom.bmp	Simrad OE9030	DSYJPC01SD surface.jpg	SeaLife DC310	Start PHJPC01a	365403.6	157083.1	
			JPC01b	365400.1	157085.5	14:30	08/26/04		Flood	138					End PHJPC01b	365399.8	157084.5	
			JPC01c	365400.1	157081.1	14:31	08/26/04		Flood	138								
			JPC01d	365398.6	157082.1	14:33	08/26/04		Flood	138								
			JPC01e	365404.5	157084.0	14:36	08/26/04		Flood	138								
			JPC01f	365402.1	157085.0	14:44	08/26/04		Flood	138								
DSY-JPC-02 SD	365508.3	156422.8	JPC02a	365506.7	156423.7	14:57	08/26/04	17.5	Flood	138	DSYJPC02SD bottom.bmp	Simrad OE9030	DSYJPC02SD surface.jpg	SeaLife DC310	Start PHJPC02a	365505.3	156423.7	
			JPC02b	365503.8	156423.6	14:58	08/26/04		Flood	138					End PHJPC02b	365503.5	156422.8	
			JPC02c	365501.0	156422.7	15:00	08/26/04		Flood	138								
			JPC02d	365506.1	156425.0	15:03	08/26/04		Flood	138								
DSY-JPC-03 SD	added location		JCP03a	365473.7	156051.0	15:08	08/26/04	6.8	Flood	138	DSYJPC03SD bottom.bmp	Simrad OE9030	DSYJPC03SD surfac.jpg	SeaLife DC310	Start PHJPC03a	365476.0	156049.2	
			JCP03b	365472.1	156050.3	15:08	08/26/04		Flood	138					End PHJPC03b	365471.8	156051.4	
			JPC03c	365475.8	156051.2	15:10	08/26/04		Flood	138								
			JPC03d	365472.2	156048.4	15:11	08/26/04		Flood	138								
			JPC03e	365475.0	156051.2	15:12	08/26/04		Flood	138								
			JPC03f	365475.1	156054.0	15:14	08/26/04		Flood	138								
DSY-CHC-01 SD	TBA	TBA	CHC01a	366619.9	138507.3	15:39	08/26/04	16.3	Flood	138	DSYCHC)!SD bottom.bmp	Simrad OE9030	DSYCHC01SD surface.jpg	SeaLife DC310	Start PHCHC01a	366621.3	138516.4	
			CHC01b	366619.5	138509.4	15:40	08/26/04		Flood	138					End PHCHC01b	366623.0	138509.5	
DSY-CHC-02 SD	TBA	TBA	CHC02a	366713.2	138700.2	15:54	08/26/04	11.8	Flood	138	DSYCHC02SD bottom.bmp	Simrad OE9030	DSYCHC02SD surface.jpg	SeaLife DC310	Start PHCHC02a	366708.5	138701.9	
			CHC02b	366708.1	138700.0	15:59	08/26/04		Flood	138					End PHCHC02b	366706.9	138702.6	
			CHC02c	366708.8	138704.6	16:01	08/26/04		Flood	138								

APPENDIX C

SEDIMENT ANALYTICAL RESULTS

APPENDIX C1

SEDIMENT ANALYTICAL RESULTS – MITKEM LABORATORIES

TETRA TECH NUS, INC.

INTERNAL CORRESPONDENCE

C-NAVY-10-04-1775W

Date: October 29, 2004

c: File N1611-D-4.10

To: Steve Parker

From: Ann Franke AF

Subject: Tier II Inorganic Data Validation
Mitkem Corporation SDG C1043
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

TAL Metals/Acid Volatile Sulfide/Simultaneously Extractable Metals/ Total Organic Carbon:

10/Sediments/ DSY-SD-11-082604, DSY-SD-26-082604, DSY-SD-32-082604, DSY-SD-CC01-082604, DSY-SD-CC02-082604, DSY-SD-CH01-082604, DSY-SD-CH02-082604, DSY-SD-DUP03-082604, DSY-SD-JPC01-082604, DSY-SD-JPC03-082604
(Field Duplicate Pair: DSY-SD-JPC03-082604/ DSY-SD-DUP03-082604)

3/Rinsate Blanks/ DSY-SD-RB01-082504, DSY-SD-RB02-082604, DSY-SD-RB03-082604

1/Field Blank/ DSY-SD-FB01-082704

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the TAL metals, acid volatile sulfide/simultaneously extractable metals (AVS/SEM), and total organic carbon (TOC) data from sediment samples collected at the Former Robert E. Derecktor Shipyard on August 25, 26, and 27, 2004. The TAL metals analysis was performed according to SW-846 Methods 6010B/7470A. The AVS/SEM analysis was performed according to the EPA Draft Analytical Method for Determination of Acid Volatile Sulfide in Sediment, and the TOC analysis was performed by the Lloyd Kahn Method for Determination of Total Organic Carbon in Sediment. The Tier II data validation was performed according to the Region I, EPA-NE Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, modified February 1989.

The data were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- Field and Laboratory Blank Analyses
- ICP Interference Check Sample Results
- Matrix Spike Recoveries
- Laboratory Duplicate Results
- Laboratory Control Sample Results
- Field Duplicate Precision
- ICP Serial Dilution Results
- * Detection Limits
- NA Sample Quantitation

Σ SEM/AVS <1, so a few metals is not expected

NA – Parameter not evaluated for Tier II level data validation.

* - All quality control criteria were met for this parameter.

Data Completeness

The laboratory was contacted on October 20, 2004, about a missing metals preparation logbook page and a missing initial calibration curve for TOC. In addition, an incorrect reporting limit was used for the SEM mercury results (reported in umole/g), and the field blank was reported with an error in the station location. A revised PDF file on a compact disk with the corrected SEM mercury results was received at TtNUS on October 28, 2004. The missing TOC data, metals preparation logbook page, and revised forms with the correct field blank station location were reported in a revised PDF file on a compact disk for SDG C1041, received at TtNUS on October 28, 2004.

The project manager requested that the sample ID number for sediment sample DSY-SD-36-082604 be changed to DSY-SD-26-082604.

The TAL metals data (reported in mg/kg) are reported down to the IDL. The AVS/SEM data (reported in umole/g) are reported down to the laboratory's reporting limit.

The laboratory reported results for AVS (sulfide), results for each of the SEM metals, and the SEM/AVS ratio. The total SEM results were calculated by the data validator and included in the AVS/SEM Data Summary Table. For samples in which blank actions were taken, the SEM/AVS ratio was recalculated by the data validator to reflect the change of the positive result to a non-detected value.

The AVS result for sample DSY-32-082604 is non-detected, which would result in a zero value in the SEM/AVS ratio denominator. The data validator calculated the SEM/AVS ratio for this sample using the non-detected (U) value instead of zero.

Field and Laboratory Blank Analyses

TAL Metals

The field and laboratory blank analyses were used to calculate the maximum concentrations and action levels of the following contaminants affecting the sediment samples in the TAL metals analysis:

Analyte	Maximum Concentration (µg/L)	Action Level (mg/kg)
Antimony	14.2	3.6
Copper	20.44	5.1

The action levels in the table above are based on an assumption of 100 percent solids and 1 gram of sample analyzed. The action level for each sample is different, based on the actual percent solids and amount of sample analyzed.

The positive results below the action level for antimony and copper were changed to non-detected values in the sediment samples due to laboratory blank contamination.

The laboratory blank analyses were used to calculate the maximum concentrations and action levels of the following contaminants affecting the field blank samples in the TAL metals analysis:

Analyte	Maximum Concentration (µg/L)	Action Level (µg/L)
Barium	10.9	54.5
Cadmium	-0.52	2.6
Copper	10.3	51.7
Iron	3.7	18.5
Manganese	1.7	8.5
Potassium	77.9	390
Sodium	54.5	273
Zinc	-20.6	103

The positive results below the action level for barium, copper, iron, manganese, potassium, and sodium were changed to non-detected values in the field blank samples due to laboratory blank contamination. In addition, the non-detected cadmium and zinc results are estimated (UJ) in the field blank samples due to negative instrument drift as evidenced by the negative laboratory blank results. The results may be biased low.

SEM

The laboratory blank analyses were used to calculate the maximum concentration and action level of the following contaminant affecting the sediment samples in the SEM analysis:

Analyte	Maximum Concentration (µg/L)	Action Level (umole/g)
Copper	40.36	63.5

The action level in the table above is based on an assumption of 100 percent solids and 10 grams of sample analyzed. The action level for each sample is different, based on the actual percent solids and amount of sample analyzed.

The positive copper results below the action level were changed to non-detected values in the sediment samples due to laboratory blank contamination.

<u>ICP Interference Check Sample Results</u>

TAL Metals

The following results were qualified in the affected samples due to positive or negative ICP interference attributed to the high concentration of iron and/or calcium in the TAL metals sediment samples:

Analyte	Action*	Affected samples
Antimony	Reject	11-082604, 26-082604, 32-082604, CC01-082604, CC02-082604, CH01-082604, CH02-082604, JPC01-082604
Arsenic	J+	All samples

Analyte	Action*	Affected samples
Barium	J+	All samples
Cadmium	UJ – NDs	All samples
Chromium	J+	26-082604, 32-082604, CC01-082604, CC02-082604, CH01-082604, CH02-082604, DUP03-082604, JPC01-082604, JPC03-082604
Cobalt	J+	All samples
Copper	J+	All samples
Lead	J+	All samples
Nickel	J+	All samples
Thallium	J+	All samples
Zinc	J+	26-082604, 32-082604, CC01-082604, CC02-082604, CH02-082604, DUP03-082604, JPC01-082604

* - Cadmium results may be biased low. Other analyte results may be biased high (J+) or false positive (Reject).

The positive arsenic, barium, chromium, cobalt, copper, lead, nickel, thallium, and zinc results are estimated (J) in the affected samples listed in the table above due to positive ICP interference attributed to iron and/or calcium. The results may be biased high. The positive antimony results in the affected samples are rejected (R) because the reported concentrations may be due entirely (≥ 80%) to positive iron and/or calcium ICP interference. These results may be false positive. The non-detected cadmium results are estimated (UJ) in all samples due to negative ICP interference attributed to iron and/or calcium. The results may be biased low or false negative.

Matrix Spike Recoveries

TAL Metals

The result of the TAL metals matrix spike analysis of sediment sample CH01-082604 was below the 75 percent recovery criterion for antimony. The non-detected antimony results are estimated (UJ) in the sediment samples. The results may be biased low.

Laboratory Duplicate Results

SEM

The RPD for nickel was greater than the 35 percent QC criterion for sediment samples, and the absolute difference was greater than 2x the laboratory reporting limit, in the SEM laboratory duplicate analysis of sample CH01-082604. The positive and non-detected nickel results are estimated (J, UJ) in the SEM sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

AVS

The RPD for sulfide was greater than the 35 percent QC criterion for sediment samples in the AVS laboratory duplicate analysis of sample CH01-082604. The positive sulfide results are estimated (J) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

Laboratory Control Sample Results

SEM

The results in the SEM laboratory control sample analyses were above the control windows for copper and zinc. The positive copper and zinc results are estimated (J) in the SEM sediment samples. The results may be biased high.

Field Duplicate Precision

AVS

The RPD for sulfide was greater than the 50 percent QC criterion for sediment samples, and the absolute difference was greater than 4x the laboratory reporting limit, in AVS field duplicate pair JPC03-082604/DUP03-082604. The positive and non-detected sulfide results are estimated (J, UJ) in the sediment samples due to poor field duplicate precision. The bias is undetermined.

ICP Serial Dilution Results

SEM

The percent difference (%D) for nickel was above the 15 percent QC criterion for analyte concentrations greater than 50x IDL before dilution in the SEM ICP serial dilution analysis. The positive and non-detected nickel results are qualified as estimated (J, UJ) in the sediment samples. As the initial sample result was less than the diluted sample result, the data may be biased low.

Overall Assessment

The data are acceptable for use as qualified. Positive sample results changed to non-detected values due to blank contamination are treated as positive results for qualification purposes. The estimation of these non-detected values is reported in the data summary table as (UJ).

TAL Metals

The positive results below the action level for antimony and copper were changed to non-detected values in the TAL metals sediment samples due to laboratory blank contamination. The positive results below the action level for barium, copper, iron, manganese, potassium, and sodium were changed to non-detected values in the field blank samples due to laboratory blank contamination. In addition, the non-detected cadmium and zinc results are estimated (UJ) in the field blank samples due to negative instrument drift as evidenced by the negative laboratory blank results. The results may be biased low.

The positive arsenic, barium, chromium, cobalt, copper, lead, nickel, thallium, and zinc results are estimated (J) in the affected samples listed in the table above due to positive ICP interference attributed to iron and/or calcium. The results may be biased high. The positive antimony results in the affected samples are rejected (R) because the reported concentrations may be due entirely (≥ 80%) to positive iron and/or calcium ICP interference. These results may be false positive. The non-detected cadmium results are estimated (UJ) in all samples due to negative ICP interference attributed to iron and/or calcium. The results may be biased low or false negative.

The non-detected antimony results are estimated (UJ) in the sediment samples due to the low matrix spike recovery. The results may be biased low.

The positive results < 2x IDL are estimated (J) due to uncertainty near the IDL.

SEM

The positive copper results below the action level were changed to non-detected values in the SEM sediment samples due to laboratory blank contamination.

The positive SEM copper and zinc results are estimated (J) in the sediment samples due to high laboratory control sample results. The results may be biased high.

The positive and non-detected SEM nickel results are estimated (J, UJ) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined. The positive and non-detected SEM nickel results are also qualified as estimated (J, UJ) in the sediment samples due to a sample matrix suppressing effect detected in the ICP serial dilution analysis. The results may be biased low.

AVS

The positive and non-detected sulfide results are estimated (J, UJ) in the sediment samples due to poor laboratory duplicate and field duplicate precision. The bias is undetermined.

TOC

The TOC data are accepted without qualification.

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604		DSY-SD-CH01-082604	
Station Location	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604		DSY-SD-CH01-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted												
Date Analyzed												
Dilution Factor	1		1		1		1		1		1	
Percent Solids	43.0		68.0		35.0		78.0		78.0		41.0	
QC Identifier	None		None		None		None		None		None	
Aluminum	10900		7400		12700		4820		4350		11300	
Antimony		R		R		R		R		R		R
Arsenic	11.6	J	7.0	J	11.3	J	2.6	J	1.9	J	8.9	J
Barium	33.0	J	16.8	J	35.5	J	8.8	J	8.2	J	39.9	J
Beryllium	0.97		0.56		1.1		0.32		0.28		0.90	
Cadmium	0.023	UJ	0.013	UJ	0.028	UJ	0.010	UJ	0.010	UJ	0.022	UJ
Calcium	29300		3150		23500		1520		1490		4310	
Chromium	44.4		22.2	J	42.4	J	12.1	J	10.2	J	30.3	J
Cobalt	6.6	J	5.7	J	7.4	J	3.5	J	3.1	J	7.4	J
Copper	74.5	J	35.2	J	57.3	J	8.6	J	6.8	J	75.1	J
Iron	21300		17600		23400		8910		7900		19700	
Lead	65.6	J	27.0	J	43.6	J	9.6	J	8.4	J	65.7	J
Magnesium	6660		4030		7970		2700		2400		6620	
Manganese	234		161		233		89.9		88.1		191	
Mercury	1.1		0.060		0.27		0.036		0.031		0.26	
Nickel	17.6	J	15.3	J	17.7	J	7.2	J	6.2	J	16.4	J
Potassium	3270		1530		4140		888		777		2780	
Selenium	0.46	U	0.25	U	0.56	U	0.21	U	0.21	U	0.43	U
Silver	0.23	U	0.13	U	0.28	U	0.10	U	0.10	U	0.22	U
Sodium	14400		6500		20000		3000		2960		14700	
Thallium	1.9	J	1.2	J	2.0	J	0.66	J	0.59	J	1.6	J
Vanadium	38.2		24.7		41.5		12.1		10.4		33.2	
Zinc	162		74.1	J	111	J	40.3	J	28.9	J	168	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604		DSY-SD-JPC03-082604	
Station Location	DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604		DSY-SD-JPC03-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted								
Date Analyzed								
Dilution Factor	1		1		1		1	
Percent Solids	70.0		75.0		75.0		76.0	
QC Identifier	None		Field Dup. DSY-SD-JPC03-082604		None		Field Dup. DSY-SD-JPC03-082604	
Aluminum	7990		3400		4240		3440	
Antimony		R	0.18	UJ		R	0.18	UJ
Arsenic	4.3	J	1.2	J	2.1	J	1.1	J
Barium	17.2	J	7.6	J	10.3	J	6.5	J
Beryllium	0.40		0.18		0.29		0.18	
Cadmium	0.013	UJ	0.012	UJ	0.011	UJ	0.012	UJ
Calcium	5940		483		1880		559	
Chromium	13.8	J	6.9	J	10.7	J	6.8	J
Cobalt	5.4	J	2.1	J	3.0	J	2.1	J
Copper	22.4	J	3.9	UJ	8.3	J	4.2	UJ
Iron	13900		6050		7800		6110	
Lead	21.3	J	4.3	J	11.3	J	4.4	J
Magnesium	4450		1940		2460		1940	
Manganese	125		65.9		98.6		68.0	
Mercury	0.13		0.0089	J	0.014	J	0.022	
Nickel	10.7	J	4.8	J	6.2	J	4.7	J
Potassium	1010		495		859		480	
Selenium	0.27	U	0.24	U	0.22	U	0.25	U
Silver	0.13	U	0.12	U	0.11	U	0.12	U
Sodium	4450		3150		3590		2870	
Thallium	0.95	J	0.35	J	0.57	J	0.43	J
Vanadium	17.1		6.3		10.2		6.3	
Zinc	52.6	J	18.5	J	33.0	J	18.8	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Aqueous TAL Metal Analysis By SW6010B/7470A (ug/l)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-FB01-082704		DSY-SD-RB01-082504		DSY-SD-RB02-082604		DSY-SD-RB03-082604	
Station Location	DSY-SD-FB01-082704		DSY-SD-RB01-082504		DSY-SD-RB02-082604		DSY-SD-RB03-082604	
Date Sampled	8/27/04		8/25/04		8/26/04		8/26/04	
Date Extracted								
Date Analyzed								
Dilution Factor	1		1		1		1	
Percent Solids								
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
Aluminum	6.0	U	6.0	U	6.0	U	6.0	U
Antimony	3.0	U	3.0	U	3.0	U	3.0	U
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U
Barium	8.5	U	6.8	U	7.4	U	5.4	U
Beryllium	0.30	U	0.30	U	0.30	U	0.30	U
Cadmium	0.20	UJ	0.20	UJ	0.20	UJ	0.20	UJ
Calcium	74	U	74	U	74	U	74	U
Chromium	0.40	U	0.40	U	5.1		0.40	U
Cobalt	0.30	U	0.30	U	0.30	U	0.30	U
Copper	3.7	U	9.2	U	7.7	U	6.9	U
Iron	73.0		3.0	U	12.4	U	3.0	U
Lead	2.0	U	2.0	U	2.0	U	2.0	U
Magnesium	6.0	U	6.0	U	150		6.0	U
Manganese	0.50	U	0.89	UJ	0.50	U	0.50	U
Mercury	0.061	U	0.057	U	0.062	U	0.065	U
Nickel	0.50	U	0.50	U	0.50	U	0.50	U
Potassium	58	U	58	U	79.3	UJ	58	U
Selenium	4.0	U	4.0	U	4.0	U	4.0	U
Silver	2.0	U	2.0	U	2.0	U	2.0	U
Sodium	66.0	UJ	108	U	1440		113	U
Thallium	3.0	U	3.0	U	3.0	U	3.0	U
Vanadium	0.70	U	0.70	U	0.70	U	0.70	U
Zinc	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604	
Station Location	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/2/2004		9/2/2004		9/2/2004		9/2/2004		9/2/2004	
Date Analyzed										
Dilution Factor										
Percent Solids	43.0		68.0		35.0		78.0		78.0	
QC Identifier	None		None		None		None		None	
Cadmium	0.0068		0.00161	U	0.00315	U	0.00142	U	0.00142	U
Chromium	0.2000		0.0862		0.2221		0.0432		0.0413	
Copper	0.5185	J	0.2553	J	2.2047	J	0.0518	UJ	0.0417	UJ
Lead	0.2498		0.0950		0.1938		0.0341		0.0342	
Mercury	0.000055	U	0.000036	U	0.000071	U	0.000032	U	0.000032	U
Nickel	0.1200	J	0.0753	J	6.8560	J	0.02727	UJ	0.02717	UJ
Zinc	1.8409	J	0.6044	J	1.0738	J	0.3796	J	0.2466	J
Total Simultaneously Extractable Metals	2.9360		1.1162		10.5504		0.4569		0.3221	
Acid Volatile Sulfide	3.0763	J	0.1514	J	0.02644	UJ	0.0351	J	0.0894	J
SEM/AVS Ratio	0.9544		7.3725		399		13.0171		3.6029	

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-CH01-082604		DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604	
Station Location	DSY-SD-CH01-082604		DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/2/2004		9/2/2004		9/2/2004		9/2/2004	
Date Analyzed								
Dilution Factor								
Percent Solids	41.0		70.0		75.0		75.0	
QC Identifier	None		None		Field Dup. DSY-SD-JPC03-082604		None	
Cadmium	0.0052		0.00152	U	0.00146	U	0.00146	U
Chromium	0.0876		0.0405		0.0218		0.0509	
Copper	0.3235	J	0.2145	J	0.0173	UJ	0.0536	UJ
Lead	0.2463		0.0832		0.0130		0.0388	
Mercury	0.000060	U	0.000034	U	0.000033	U	0.000033	U
Nickel	0.0526	J	0.3448	J	0.02795	UJ	0.02789	UJ
Zinc	1.6158	J	0.3794	J	0.1044	J	0.2817	J
Total Simultaneously Extractable Metals	2.3310		1.0624		0.1392		0.3714	
Acid Volatile Sulfide	8.1566	J	1.6083	J	0.0548	J	0.1959	J
SEM/AVS Ratio	0.2858		0.6606		2.5401		1.8959	

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	DSY-SD-JPC03-082604	
Station Location	DSY-SD-JPC03-082604	
Date Sampled	8/26/04	
Date Extracted	9/2/2004	
Date Analyzed		
Dilution Factor		
Percent Solids	76.0	
QC Identifier	Field Dup. DSY-SD-JPC03-082604	
Cadmium	0.00141	U
Chromium	0.0228	
Copper	0.0187	UJ
Lead	0.0140	
Mercury	0.000032	U
Nickel	0.02702	UJ
Zinc	0.1126	J
Total Simultaneously Extractable Metals	0.1494	
Acid Volatile Sulfide	0.7471	J
SEM/AVS Ratio	0.2000	

Sediment Total Organic Carbon Analysis By Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

Sample Number	11-082604		26-082604		32-082604		CC01-082604		CC02-082604		CH01-082604	
Station Location	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604		DSY-SD-CH01-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted												
Date Analyzed	9/4/2004		9/4/2004		9/4/2004		9/4/2004		9/4/2004		9/4/2004	
Dilution Factor	1		1		1		1		1		1	
Percent Solids	43.0		68.0		35.0		78.0		78.0		41.0	
QC Identifier	None		None		None		None		None		None	
Total Organic Carbon	16000		2900		130		5500		4600		35000	

J - Quantitation approximate

Sediment Total Organic Carbon Analysis By Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

Sample Number	CH02-082604		DUP03-082604		JPC01-082604		JPC03-082604	
Station Location	DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604		DSY-SD-JPC03-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted								
Date Analyzed	9/4/2004		9/4/2004		9/4/2004		9/4/2004	
Dilution Factor	1		1		1		1	
Percent Solids	70.0		75.0		75.0		76.0	
QC Identifier	None		Field Dup. DSY-SD-JPC03-082604		None		Field Dup. DSY-SD-JPC03-082604	
Total Organic Carbon	7600		4800		5400		3100	

TETRA TECH NUS, INC.

INTERNAL CORRESPONDENCE

C-NAVY-10-04-1776W

Date: October 29, 2004

c: File N1611-D-4.10

To: Steve Parker

From: Ann Franke AF

Subject: Tier II Inorganic Data Validation
Mitkem Corporation SDG C1041
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

TAL Metals/Acid Volatile Sulfide/Simultaneously Extractable Metals/Total Organic Carbon:

20/Sediments/ DSY-SD-02-082504, DSY-SD-03-082604, DSY-SD-04-082604, DSY-SD-05-082604, DSY-SD-06-082504, DSY-SD-08-082604, DSY-SD-09-082604, DSY-SD-101-0006, DSY-SD-101-0612, DSY-SD-103-0006, DSY-SD-103-0612, DSY-SD-104-0006, DSY-SD-104-0612, DSY-SD-20-082604, DSY-SD-27-082604, DSY-SD-28-082504, DSY-SD-29-082604, DSY-SD-31-082604, DSY-SD-DUP01-082504, DSY-SD-DUP02-082604
(Field Duplicate Pairs: DSY-SD-02-082504/DSY-SD-DUP01-082504 and DSY-SD-05-082604/ DSY-SD-DUP02-082604)

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the TAL metals, acid volatile sulfide/simultaneously extractable metals (AVS/SEM), and total organic carbon (TOC) data from sediment samples collected at the Former Robert E. Derecktor Shipyard on August 25 and 26, 2004. The TAL metals analysis was performed according to SW-846 Methods 6010B/7470A. The AVS/SEM analysis was performed according to the EPA Draft Analytical Method for Determination of Acid Volatile Sulfide in Sediment, and the TOC analysis was performed by the Lloyd Kahn Method for Determination of Total Organic Carbon in Sediment. The Tier II data validation was performed according to the Region I, EPA-NE Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, modified February 1989.

The data were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- Field and Laboratory Blank Analyses
- ICP Interference Check Sample Results
- Matrix Spike/Matrix Spike Duplicate Results
- Laboratory Duplicate Results
- Laboratory Control Sample Results
- Field Duplicate Precision
- * ICP Serial Dilution Results
- * Detection Limits
- NA Sample Quantitation

NA – Parameter not evaluated for Tier II level data validation.

* - All quality control criteria were met for this parameter.

Data Completeness

The laboratory was contacted on October 20, 2004, about a missing initial calibration curve for TOC. In addition, an incorrect reporting limit was used for the SEM mercury results (reported in umole/g). A revised PDF file on a compact disk with the missing TOC data and corrected SEM mercury results was received at TtNUS on October 28, 2004.

The TAL metals ICP serial dilution analysis was only performed for potassium, silver, and sodium. Therefore, the results for the remaining ICP metals are not evaluated based on this parameter.

The TAL metals data (reported in mg/kg) are reported down to the IDL. The AVS/SEM data (reported in umole/g) are reported down to the laboratory's reporting limit.

The laboratory reported results for AVS (sulfide), results for each of the SEM metals, and the SEM/AVS ratio. The total SEM results were calculated by the data validator and included in the SEM/AVS Data Summary Table. For samples in which blank actions were taken, the SEM/AVS ratio was recalculated by the data validator to reflect the change of the positive result to a non-detected value.

Calibration Verification

TAL Metals

The continuing calibration verification results were above the 110 percent QC criterion for cadmium and zinc. The positive results for cadmium and zinc are qualified as estimated (J) in the affected TAL metals samples in the table below. The results may be biased high.

Analyte	Affected Samples
Cadmium	03-082604, 04-082604, 05-082604, 08-082604, 20-082604, 27-082604, 29-082604, 31-082604, DUP02-082604
Zinc	04-082604, 20-082604, 27-082604, 31-082604

Field and Laboratory Blank Analyses

TAL Metals

The field and laboratory blank analyses were used to calculate the maximum concentrations and action levels of the following contaminants affecting the sediment samples in the TAL metals analysis:

Analyte	Maximum Concentration (µg/L)	Action Level (mg/kg)
Antimony	8.5	2.1
Cadmium	-0.88	0.22
Selenium	4.4	1.1
Silver	-16.7	4.2
Thallium	9.3	2.3

The action levels in the table above are based on an assumption of 100 percent solids and 1 gram of sample analyzed. The action level for each sample is different, based on the actual percent solids and amount of soil sample analyzed.

The positive results below the action level for antimony, selenium, and thallium were changed to non-detected values in the sediment samples due to laboratory blank contamination. In addition, the positive cadmium and silver results below the action level and the non-detected silver results are estimated (J, UJ) in the sediment samples due to negative instrument drift as evidenced by the negative laboratory blank results. The results may be biased low.

SEM

The laboratory blank analyses were used to calculate the maximum concentration and action level of the following contaminant associated with SEM sediment samples 02-082504, 06-082504, 101-0006, 101-0612, 103-0006, 103-0612, 104-0006, 104-0612, 28-082504, DUP01-082504:

Analyte	Maximum Concentration (µg/L)	Action Level (umole/g)
Nickel	17.3	0.01096

The laboratory blank analyses were used to calculate the maximum concentrations and action levels of the following contaminants associated with SEM sediment samples 03-082604, 04-082604, 05-082604, 08-082604, 09-082604, 20-082604, 27-082604, 29-082604, 31-082604, DUP02-082604:

Analyte	Maximum Concentration (µg/L)	Action Level (umole/g)
Chromium	76.6	0.1846
Copper	101	0.1984
Nickel	344	0.2144

The action levels in the tables above are based on an assumption of 100 percent solids and 10 grams of sample analyzed. The action level for each sample is different, based on the actual percent solids and amount of soil sample analyzed.

The positive results below the action level for chromium, copper, and nickel were changed to non-detected values in the affected SEM sediment samples due to laboratory blank contamination.

<u>ICP Interference Check Sample Results</u>

TAL Metals

The following results were qualified in the affected samples due to positive or negative ICP interference attributed to the high concentration of iron and/or calcium in the TAL metals sediment samples:

Analyte	Action*	Affected samples
Arsenic	J+	All samples
Barium	J+	09-082604, 103-0612, 27-082604
Cadmium	J+	All samples

Analyte	Action*	Affected samples
Chromium	J+	03-082604, 09-082604, 27-082604, 29-082604
Cobalt	J+	All samples
Copper	J+	02-082504, 03-082604, 04-082604, 05-082604, 06-082504, 08-082604, 09-082604, 101-0006, 101-0612, 103-0006, 104-0006, 104-0612, 20-082604, 28-082504, 29-082604, 31-082604, DUP01-082504, DUP02-082604
Lead	J+	All samples
Nickel	J+	All samples
Potassium	J+	03-082604, 04-082604, 06-082504, 09-082604, 101-0006, 101-0612, 103-0006, 103-0612, 104-0612, 27-082604, 29-082604
Selenium	Reject+	03-082604, 06-082504, 09-082604, 101-0006, 103-0612, 104-0612, 28-082504, 31-082604
Silver	J+, UJ-NDs	All samples
Sodium	J+	03-082604, 103-0612
Thallium	J+	02-082504, 03-082604, 04-082604, 05-082604, 06-082504, 08-082604, 101-0006, 101-0612, 103-0006, 103-0612, 104-0006, 104-0612, 20-082604, 28-082504, 29-082604, 31-082604, DUP01-082504, DUP02-082604
	Reject+	09-082604, 27-082604
Zinc	J+	02-082504, 04-082604, 05-082604, 06-082504, 08-082604, 09-082604, 101-0006, 104-0006, 104-0612, 20-082604, 28-082504, 31-082604, DUP01-082504, DUP02-082604

* - Cadmium, silver, and zinc results may be biased low. Other analyte results may be biased high.

The positive arsenic, barium, chromium, cobalt, copper, lead, nickel, potassium, sodium, and thallium results are estimated (J) in the affected samples listed in the table above due to positive ICP interference attributed to iron and/or calcium. The results may be biased high. The positive selenium and thallium results in the affected samples are rejected (R) because the reported concentrations may be due entirely (≥ 80%) to positive iron and/or calcium ICP interference. These results may be false positive. The positive and non-detected silver results are estimated (J, UJ), and the positive cadmium and zinc results are estimated (J) in the affected samples due to negative ICP interference attributed to iron and/or calcium. The results may be biased low or false negative.

Matrix Spike Recoveries

TAL Metals

The result of the TAL metals matrix spike analysis of sediment sample 09-082604 was below the 75 percent recovery criterion for antimony. The positive and non-detected antimony results are estimated (J, UJ) in the sediment samples. The results may be biased low.

SEM

The result of the SEM matrix spike analysis of sediment sample 09-082604 was below the 75 percent recovery criterion for copper and mercury, and below 30 percent for nickel. The non-detected mercury results are estimated (UJ), and the positive copper and nickel results are estimated (J) in the SEM

sediment samples. The results may be biased low. The non-detected nickel result in sample 31-082604 is rejected (R) due to the very low matrix spike recovery. The result may be false negative.

Laboratory Duplicate Results

TAL Metals

The relative percent difference (RPD) for calcium was greater than the 35 percent QC criterion for sediment samples in the TAL metals laboratory duplicate analysis of sample 09-032604 The positive calcium results are estimated (J) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

SEM

The RPDs for copper and nickel were greater than the 35 percent QC criterion for sediment samples, and the absolute differences were greater than 2x the laboratory reporting limits, in the SEM laboratory duplicate analysis of sample 09-032604 The positive copper and nickel results are estimated (J) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

Laboratory Control Sample Results

SEM

The results in the SEM laboratory control sample analyses were above the control windows for copper and zinc. The positive copper and zinc results are estimated (J) in the sediment samples. The results may be biased high.

AVS

The sulfide percent recovery in the AVS laboratory control sample analysis was above the 105 percent QC criterion. The positive sulfide results are estimated (J) in the sediment samples. The results may be biased high.

Field Duplicate Precision

SEM

The relative percent difference (RPD) for nickel was greater than the 50 percent QC criterion for sediment samples in field duplicate pair 05-082604/DUP02-082604. The positive nickel results are estimated (J) in the SEM sediment samples due to poor field duplicate precision. The bias is undetermined.

AVS

The RPDs for sulfide were greater than the 50 percent QC criterion for sediment samples in AVS field duplicate pairs 02-082504/DUP01-082504 and 05-082604/DUP02-082604. The positive sulfide results are estimated (J) in the sediment samples due to poor field duplicate precision. The bias is undetermined.

Overall Assessment

The data are acceptable for use as qualified. Positive sample results changed to non-detected values due to blank contamination are treated as positive results for qualification purposes. The estimation of these non-detected values is reported in the data summary table as (UJ).

TAL Metals

The positive results for cadmium and zinc are qualified as estimated (J) in the affected TAL metals sediment samples. The results may be biased high.

The positive results below the action level for antimony, selenium, and thallium were changed to non-detected values in the sediment samples due to laboratory blank contamination. In addition, the positive cadmium and silver results below the action level and the non-detected silver results are estimated (J, UJ) in the sediment samples due to negative instrument drift as evidenced by the negative laboratory blank results. The results may be biased low.

The positive arsenic, barium, chromium, cobalt, copper, lead, nickel, potassium, sodium, and thallium results are estimated (J) in the affected samples due to positive ICP interference attributed to iron and/or calcium. The results may be biased high. The positive selenium and thallium results in the affected samples are rejected (R) because the reported concentrations may be due entirely to positive iron and/or calcium ICP interference. These results may be false positive. The positive and non-detected silver results are estimated (J, UJ), and the positive cadmium and zinc results are estimated (J) in the affected samples due to negative ICP interference attributed to iron and/or calcium. The results may be biased low or false negative.

The positive and non-detected antimony results are estimated (J, UJ) in the sediment samples due to the low matrix spike recovery. The results may be biased low.

The positive calcium results are estimated (J) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

SEM

The positive results below the action level for SEM chromium, copper, and nickel were changed to non-detected values in the affected sediment samples due to laboratory blank contamination.

The non-detected mercury results are estimated (UJ), and the positive copper and nickel results are estimated (J) in the SEM sediment samples due to the low matrix spike recoveries. The results may be biased low. The non-detected nickel result in sample 31-082604 is rejected (R) due to the very low matrix spike recovery. The result may be false negative.

The positive SEM copper and nickel results are estimated (J) in the sediment samples due to poor laboratory duplicate precision. The bias is undetermined.

The positive copper and zinc results are estimated (J) in the sediment samples due to high laboratory control sample results. The results may be biased high.

The positive nickel results are estimated (J) in the SEM sediment samples due to poor field duplicate precision. The bias is undetermined.

AVS

The positive sulfide results are estimated (J) in the sediment samples due to the poor matrix spike recovery. The results may be biased low.

The positive sulfide results are estimated (J) in the sediment samples due to the high laboratory control sample recovery. The results may be biased high.

The positive sulfide results are estimated (J) in the sediment samples due to poor field duplicate precision. The bias is undetermined.

TOC

The TOC data are accepted without qualification.

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Station Location	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Date Sampled	8/25/04		8/26/04		8/26/04		8/26/04		8/25/04	
Date Extracted										
Date Analyzed										
Dilution Factor	1		1		1		1		1	
Percent Solids	30.0		37.0		35.0		38.0		42.0	
QC Identifier	Field Dup. DSY-SD-02-082504		None		None		Field Dup. DSY-SD-05-082604		None	
Aluminum	13300		16700		12100		11800		10700	
Antimony	0.58	UJ	0.76	UJ	0.61	J	0.35	UJ	0.30	UJ
Arsenic	11.5	J	13.5	J	11.5	J	9.8	J	10.0	J
Barium	42.1		123		36.2		33.1		29.6	
Beryllium	1.2		1.6		1.1		1.1		0.91	
Cadmium	0.52	J	2.7	J	0.63	J	0.43	J	0.52	J
Calcium	11400	J	7710	J	14700	J	24300	J	7540	J
Chromium	44.0		51.7	J	42.9		40.5		39.4	
Cobalt	7.6	J	10.0	J	7.3	J	6.9	J	6.8	J
Copper	62.0	J	150	J	63.7	J	63.9	J	55.7	J
Iron	25400		34400		25400		23200		21500	
Lead	48.2	J	114	J	50.4	J	46.5	J	49.9	J
Magnesium	11000		7120		8440		7630		6630	
Manganese	271		250		251		262		228	
Mercury	0.21		0.27		0.25		0.27		0.33	
Nickel	19.2	J	38.5	J	18.5	J	17.0	J	17.1	J
Potassium	4240		3340	J	3890	J	3690		3050	J
Selenium	0.62	U		R	0.54	U	0.47	U		R
Silver	0.31	UJ	0.26	UJ	0.27	UJ	0.23	UJ	0.20	UJ
Sodium	25200		17100	J	20500		17500		14700	
Thallium	1.7	UJ	2.4	UJ	1.9	UJ	1.8	UJ	1.4	UJ
Vanadium	47.3		53.6		41.7		39.9		36.1	
Zinc	141	J	377		171	J	125	J	148	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006		DSY-SD-103-0612	
Station Location	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006		DSY-SD-103-0612	
Date Sampled	8/26/04		8/26/04		8/25/04		8/25/04		8/25/04		8/25/04	
Date Extracted												
Date Analyzed												
Dilution Factor	1		1		1		1		1		1	
Percent Solids	39.0		73.0		53.0		52.0		39.0		47.0	
QC Identifier	None		None		None		None		None		None	
Aluminum	12000		6050		11500		10400		10200		10400	
Antimony	0.38	UJ	0.19	UJ	0.58	UJ	1.9	UJ	0.48	UJ	0.85	UJ
Arsenic	11.0	J	3.2	J	9.4	J	8.2	J	9.1	J	9.1	J
Barium	37.5		7.2	J	36.9		34.5		36.2		22.5	J
Beryllium	1.1		0.22		0.98		0.85		0.93		0.75	
Cadmium	0.42	J	0.13	J	0.87	J	1.2	J	0.57	J	0.93	J
Calcium	8130	J	3180	J	6690	J	9570	J	27500	J	7550	J
Chromium	41.3		13.1	J	41.4		47.3		40.1		56.1	
Cobalt	7.4	J	4.4	J	8.4	J	7.8	J	6.8	J	7.8	J
Copper	51.9	J	18.3	J	55.9	J	66.8	J	85.9	J	218	
Iron	24000		13900		21100		19600		22900		24400	
Lead	46.5	J	29.1	J	40.7	J	49.0	J	71.6	J	168	J
Magnesium	7730		2810		6600		6220		6840		5170	
Manganese	256		102		313		299		225		206	
Mercury	0.37		0.026	J	0.21		0.62		0.28		0.55	
Nickel	17.9	J	12.6	J	20.3	J	24.3	J	20.8	J	24.5	J
Potassium	3830		493	J	3250	J	2810	J	2910	J	2070	J
Selenium	0.50	U		R		R	0.35	U	0.43	U	0.41	R
Silver	0.25	UJ	0.12	UJ	0.42	J	0.50	J	0.22	UJ	0.64	J
Sodium	16400		3850		9470		9890		13200		3480	J
Thallium	1.8	UJ		R	1.9	UJ	1.5	UJ	1.6	UJ	1.8	UJ
Vanadium	40.7		14.3		35.9		36.3		40.6		39.3	
Zinc	129	J	67.9	J	144	J	178		200		401	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-104-0006		DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604		DSY-SD-28-082504		DSY-SD-29-082604	
Station Location	DSY-SD-104-0006		DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604		DSY-SD-28-082504		DSY-SD-29-082604	
Date Sampled	8/25/04		8/25/04		8/26/04		8/26/04		8/25/04		8/26/04	
Date Extracted												
Date Analyzed												
Dilution Factor	1		1		1		1		1		1	
Percent Solids	31.0		33.0		36.0		48.0		30.0		34.0	
QC Identifier	None		None		None		None		None		None	
Aluminum	13700		15500		12500		10800		13400		13000	
Antimony	0.42	UJ	0.43	UJ	0.37	UJ	2.8	UJ	0.48	UJ	0.41	UJ
Arsenic	10.1	J	11.1	J	11.0	J	13.2	J	11.8	J	12.3	J
Barium	41.2		48.1		40.6		31.2	J	39.0		48.2	
Beryllium	1.2		1.4		1.1		0.71		1.2		1.0	
Cadmium	0.55	J	0.68	J	0.54	J	0.92	J	0.48	J	1.1	J
Calcium	14100	J	9130	J	8300	J	137000	J	9170	J	11000	J
Chromium	50.1		58.1		43.2		49.2	J	46.0		46.1	J
Cobalt	8.2	J	9.2	J	7.5	J	4.8	J	8.1	J	8.4	J
Copper	77.7	J	107	J	58.7	J	442		60.1	J	93.5	J
Iron	27600		30600		24400		23400		26700		30500	
Lead	58.4	J	75.6	J	47.9	J	138	J	51.3	J	113	J
Magnesium	9120		9670		8150		5040		9310		7820	
Manganese	289		325		253		209		278		251	
Mercury	0.27		0.39		0.23		0.31		0.17		0.27	
Nickel	21.8	J	24.2	J	18.4	J	14.0	J	19.9	J	24.2	J
Potassium	4430		4730	J	3920		2370	J	4360		3420	J
Selenium	0.57	U		R	0.49	U	0.37	U		R	0.54	U
Silver	0.28	UJ	0.29	UJ	0.24	UJ	0.18	UJ	0.32	UJ	0.27	UJ
Sodium	22400		20900		18800		13000		24300		20800	
Thallium	2.1	UJ	2.1	UJ	1.8	UJ		R	1.7	UJ	1.9	UJ
Vanadium	48.6		54.6		42.0		36.8		45.6		49.4	
Zinc	166	J	205	J	158	J	546	J	142	J	252	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Sediment TAL Metal Analysis By SW6010B/7471A (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-31-082604		DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Station Location	DSY-SD-31-082604		DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Date Sampled	8/26/04		8/25/04		8/26/04	
Date Extracted						
Date Analyzed						
Dilution Factor	1		1		1	
Percent Solids	37.0		28.0		40.0	
QC Identifier	None		Field Dup. DSY-SD-02-082504		Field Dup. DSY-SD-05-082604	
Aluminum	12800		13200		10900	
Antimony	0.37	UJ	0.51	UJ	0.33	UJ
Arsenic	10.9	J	11.0	J	10.6	J
Barium	35.2		40.0		30.7	
Beryllium	1.2		1.2		1.0	
Cadmium	0.53	J	0.43	J	0.42	J
Calcium	8330	J	10600	J	18800	J
Chromium	44.3		45.1		38.3	
Cobalt	7.5	J	8.0	J	6.6	J
Copper	58.9	J	69.2	J	59.8	J
Iron	24800		25600		22200	
Lead	47.9	J	50.8	J	46.2	J
Magnesium	8250		10700		7230	
Manganese	264		268		236	
Mercury	0.23		0.38		0.21	
Nickel	18.3	J	20.3	J	16.2	J
Potassium	4000		4360		3520	
Selenium	1.4	R	0.67	U	0.44	U
Silver	0.25	UJ	0.34	UJ	0.22	UJ
Sodium	18600		26700		16700	
Thallium	2.0	UJ	1.8	UJ	1.5	UJ
Vanadium	42.9		47.0		37.0	
Zinc	140	J	158	J	117	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Station Location	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Date Sampled	8/25/04		8/26/04		8/26/04		8/26/04		8/25/04	
Date Extracted	9/3/2004		9/8/2004		9/8/2004		9/8/2004		9/3/2004	
Date Analyzed										
Dilution Factor	1		1		1		1		1	
Percent Solids	30.0		37.0		35.0		38.0		42.0	
QC Identifier	Field Dup. DSY-SD-02-082504		None		None		Field Dup. DSY-SD-05-082604		None	
Cadmium	0.00363	U	0.0071		0.0039		0.00277	U	0.0052	
Chromium	0.1865		0.2052	U	0.4753	U	0.2660	U	0.1820	
Copper	0.4488	J	0.5791	J	0.4783	UJ	0.5401	J	0.7510	J
Lead	0.1878		0.3544		0.2409		0.2140		0.2680	
Mercury	0.000081	UJ	0.000066	UJ	0.000067	UJ	0.000062	UJ	0.000058	UJ
Nickel	0.0811	UJ	1.2860	UJ	0.4091	UJ	0.0780	UJ	0.3381	J
Zinc	1.2046	J	3.5622	J	2.4910	J	1.2877	J	2.2304	J
Total Simultaneously Extractable Metals	2.0277		4.5028		2.7358		2.0418		3.7747	
Acid Volatile Sulfide	0.1892	J	75.2023	J	11.4438	J	80.3209	J	6.5229	J
SEM/AVS Ratio	10.7172		0.0599		0.2391		0.0254		0.5787	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006		DSY-SD-103-0612	
Station Location	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006		DSY-SD-103-0612	
Date Sampled	8/26/04		8/26/04		8/25/04		8/25/04		8/25/04		8/25/04	
Date Extracted	9/8/2004		9/8/2004		9/3/2004		9/3/2004		9/3/2004		9/3/2004	
Date Analyzed												
Dilution Factor	1		1		1		1		1		1	
Percent Solids	39.0		73.0		53.0		52.0		39.0		47.0	
QC Identifier	None		None		None		None		None		None	
Cadmium	0.00276	U	0.0015	U	0.0060		0.0045		0.0034		0.0096	
Chromium	0.1797	U	0.0534	U	0.1832		0.2811		0.2149		0.2838	
Copper	0.4101	UJ	0.3631	J	0.4020	J	0.1769	J	0.4125	J	0.1964	J
Lead	0.1965		0.1259		0.1641		0.2582		0.3391		0.5016	
Mercury	0.000062	UJ	0.000034	UJ	0.000045	UJ	0.000047	UJ	0.000062	UJ	0.000052	UJ
Nickel	0.4177	UJ	1.1955	J	0.0746	J	0.0622	UJ	0.1099	J	0.4483	J
Zinc	1.4462	J	0.5762	J	1.2674	J	1.8857	J	2.0934	J	9.4661	J
Total Simultaneously Extractable Metals	1.6427		2.2607		2.0973		2.6064		3.1732		10.9058	
Acid Volatile Sulfide	15.8906	J	1.2031	J	8.7213	J	17.0062	J	55.1061	J	52.0081	J
SEM/AVS Ratio	0.1034		1.8791		0.2405		0.1533		0.0576		0.2097	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-104-0006		DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604		DSY-SD-28-082504		DSY-SD-29-082604	
Station Location	DSY-SD-104-0006		DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604		DSY-SD-28-082504		DSY-SD-29-082604	
Date Sampled	8/25/04		8/25/04		8/26/04		8/26/04		8/25/04		8/26/04	
Date Extracted	9/3/2004		9/3/2004		9/8/2004		9/8/2004		9/3/2004		9/8/2004	
Date Analyzed												
Dilution Factor	1		1		1		1		1		1	
Percent Solids	31.0		33.0		36.0		48.0		30.0		34.0	
QC Identifier	None		None		None		None		None		None	
Cadmium	0.0511		0.00335	U	0.00286	U	0.0033		0.00366	U	0.0064	
Chromium	0.2624		0.2376		0.2286	U	0.4708		0.1897		0.2102	U
Copper	2.9733	J	0.5068	J	0.5176	J	0.9555	J	0.4884	J	0.6664	J
Lead	0.2389		0.3107		0.2081		0.4534		0.2198		0.4281	
Mercury	0.000079	UJ	0.000075	UJ	0.000064	UJ	0.000051	UJ	0.000082	UJ	0.000073	UJ
Nickel	3.2936	J	0.1248	J	0.8757	UJ	0.0968	UJ	0.0722	UJ	1.4396	UJ
Zinc	4.3403	J	1.9630	J	1.3452	J	9.1431	J	1.2696	J	2.5860	J
Total Simultaneously Extractable Metals	11.1596		3.1429		2.0709		11.0261		2.1675		3.6869	
Acid Volatile Sulfide	72.1943	J	51.9070	J	2.4862	J	21.9848	J	0.1117	J	70.1675	J
SEM/AVS Ratio	0.1546		0.0605		0.8330		0.5015		19.4047		0.0525	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Aqueous Acid Volatile Sulfides/Simultaneously Extractable Metals Analysis by Draft EPA Method (umole/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-31-082604		DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Station Location	DSY-SD-31-082604		DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Date Sampled	8/26/04		8/25/04		8/26/04	
Date Extracted	9/8/2004		9/3/2004		9/8/2004	
Date Analyzed						
Dilution Factor	1		1		1	
Percent Solids	37.0		28.0		40.0	
QC Identifier	None		Field Dup. DSY-SD-02-082504		Field Dup. DSY-SD-05-082604	
Cadmium	0.00289	U	0.00394	U	0.00266	U
Chromium	0.1718	U	0.1882		0.1690	U
Copper	0.0535	UJ	0.4918	J	0.5274	J
Lead	0.1593		0.2134		0.1863	
Mercury	0.000065	UJ	0.000088	UJ	0.000060	UJ
Nickel		R	0.0819	UJ	0.6757	UJ
Zinc	1.1674	J	1.3598	J	1.0436	J
Total Simultaneously Extractable Metals	1.3267		2.2532		1.7573	
Acid Volatile Sulfide	0.5027	J	12.4186	J	33.9942	J
SEM/AVS Ratio	2.6391		0.1814		0.0517	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected

Sediment Total Organic Carbon Analysis by Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Station Location	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Date Sampled	8/25/04		8/26/04		8/26/04		8/26/04		8/25/04	
Date Extracted										
Date Analyzed	9/4/04		9/4/04		9/4/04		9/4/04		9/4/04	
Dilution Factor	1		1		1		1		1	
Percent Solids	30.0		37.0		35.0		38.0		42.0	
QC Identifier	Field Dup. DSY-SD-02-082504		None		None		Field Dup. DSY-SD-05-082604		None	
Total Organic Carbon	31000		25000		26000		25000		22000	

Sediment Total Organic Carbon Analysis by Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-08-082604	DSY-SD-09-082604	DSY-SD-101-0006	DSY-SD-101-0612	DSY-SD-103-0006	DSY-SD-103-0612	DSY-SD-104-0006
Station Location	DSY-SD-08-082604	DSY-SD-09-082604	DSY-SD-101-0006	DSY-SD-101-0612	DSY-SD-103-0006	DSY-SD-103-0612	DSY-SD-104-0006
Date Sampled	8/26/04	8/26/04	8/25/04	8/25/04	8/25/04	8/25/04	8/25/04
Date Extracted							
Date Analyzed	9/4/04	9/4/04	9/4/04	9/4/04	9/4/04	9/4/04	9/4/04
Dilution Factor	1	1	1	1	1	1	1
Percent Solids	39.0	73.0	53.0	52.0	39.0	47.0	31.0
QC Identifier	None	None	None	None	None	None	None
Total Organic Carbon	22000	4100	18000	17000	32000	22000	26000

Sediment Total Organic Carbon Analysis by Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-104-0612	DSY-SD-20-082604	DSY-SD-27-082604	DSY-SD-28-082504	DSY-SD-29-082604	DSY-SD-31-082604
Station Location	DSY-SD-104-0612	DSY-SD-20-082604	DSY-SD-27-082604	DSY-SD-28-082504	DSY-SD-29-082604	DSY-SD-31-082604
Date Sampled	8/25/04	8/26/04	8/26/04	8/25/04	8/26/04	8/26/04
Date Extracted						
Date Analyzed	9/4/04	9/4/04	9/4/04	9/4/04	9/4/04	9/4/04
Dilution Factor	1	1	1	1	1	1
Percent Solids	33.0	36.0	48.0	30.0	34.0	37.0
QC Identifier	None	None	None	None	None	None
Total Organic Carbon	23000	18000	15000	24000	32000	28000

Sediment Total Organic Carbon Analysis by Lloyd Kahn Method (mg/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Station Location	DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Date Sampled	8/25/04		8/26/04	
Date Extracted				
Date Analyzed	9/4/04		9/4/04	
Dilution Factor	1		1	
Percent Solids	28.0		40.0	
QC Identifier	Field Dup. DSY-SD-02-082504		Field Dup. DSY-SD-05-082604	
Total Organic Carbon	26000		23000	

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INTERNAL CORRESPONDENCE

C-NAVY-10-04-1770W

Date: October 21, 2004

c: File N1611-D-4.1

To: Steve Parker

From: Dan Wielandt

Subject: Tier II Organic Data Review, Project DSY, SDG C1041
Mitkem Corporation
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

PCB Congeners:
20/Sediments/ DSY-SD-02-082504, DSY-SD-03-082604, DSY-SD-04-082604, DSY-SD-05-082604, DSY-SD-06-082504, DSY-SD-08-082604, DSY-SD-09-082604, DSY-SD-101-0006, DSY-SD-101-0612, DSY-SD-103-0006, DSY-SD-103-0612, DSY-SD-104-0006, DSY-SD-104-0612, DSY-SD-20-082604, DSY-SD-27-082604, DSY-SD-28-082504, DSY-SD-29-082604, DSY-SD-31-082604, DSY-SD-DUP01-082504, DSY-SD-DUP02-082604
(Field Duplicate Pairs DSY-SD-02-082504/ DSY-SD-DUP01-082504 and DSY-SD-05-082604/ DSY-SD-DUP02-082604)

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the polychlorinated biphenyls (PCB) congener data from sediment samples collected at the Former Robert E. Derecktor Shipyard site on August, 25 and 26, 2004. The sediment samples were analyzed for the NOAA list of PCB congeners following the Method 1668A by high resolution gas chromatography/high resolution mass spectroscopy (HRGC/HRMS). The PCB congener data validation was performed in accordance with the method requirements and the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996.

The data were evaluated based on the following parameters:

	• Overall Evaluation of Data and Potential Usability Issues
*	• Data Completeness
*	• Preservation and Technical Holding Times
*	• Initial and Continuing Calibrations
*	• Window Defining Solution
*	• Chromatographic Resolution
*	• Instrument Sensitivity Check
*	• Initial Precision & Recovery
	• Blanks
*	• Internal & Clean-up Standards Recovery
*	• Recovery Standard Areas
NA	• Matrix Spike/Matrix Spike Duplicate
*	• Laboratory Control Sample/Laboratory Control Sample Duplicate

* • Field Duplicates
• Target Compound Identification
• Compound Quantitation and Reported Quantitation Limits
* • System Performance

* All criteria were met for this parameter.

Blanks

The positive PCB 8, PCB 18, PCB 44 and PCB 52 results in all sediment samples are qualified (EB) due to possible field contamination detected in the rinsate and/or field blanks. The positive results may be biased high or false positive.

Target Compound Identification

The laboratory qualified the results with a "Q" – estimated maximum possible concentration, when the compound qualification did not meet the qualitative criteria to identify the congener such as: ion ratios, retention time, and co-maximization criteria. The affected PCB congener results are qualified (J) in the data summary tables. The bias is undetermined.

Compound Quantitation and Reported Quantitation Limits

The laboratory qualified the results with a "C" to indicate the coelution with an isomer. The affected PCB congener results are qualified (J) in the data summary tables. The results may be biased high.

The positive PCB 66 congener result in sample DSY-SD-104-0612 is estimated (J) due to ion suppression. The result may be biased low.

The positive PCB 209 congener result in sample DSY-SD-03-082604 is estimated (J) because the result exceeded the upper calibration range. The bias is undetermined.

System Performance

The data set was qualified due to field blank contamination, compound identification and isomer coelution, ion suppression and a result exceeding the calibration range.

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

Sample Number	02-082504, C1041-07B		03-082604, C1041-12B		04-082604, C1041-17B		05-082604, C1041-14B		06-082504, C1041-10B	
Station Location	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Date Sampled	8/25/04		8/26/04		8/26/04		8/26/04		8/25/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/23/2004		9/23/2004		9/23/2004		9/23/2004		9/23/2004	
Dilution Factor	1		1		5		1		5	
Percent Solids	28.0		38.0		33.0		38.0		41.0	
QC Identifier	Field Dup. DSY-SD-02-082504		None		None		Field Dup. DSY-SD-05-082604		None	
PCB 8 (BZ)	0.440	EB	0.260	EB	0.801	EB	0.376	EB	0.872	JEB
PCB 18 (BZ)	0.213	JEB	0.191	JEB	0.551	JEB	0.171	JEB	1.18	JEB
PCB 28 (BZ)	1.07	J	1.02	J	2.08	J	1.05	J	2.52	J
PCB 44 (BZ)	1.21	JEB	1.17	JEB	3.76	JEB	0.902	JEB	6.51	JEB
PCB 52 (BZ)	2.17	EB	1.96	EB	7.10	EB	1.24	EB	12.6	EB
PCB 66 (BZ)	2.01		2.25		4.90		1.99		8.13	
PCB 101 (BZ)	5.87	J	7.90	J	11.6	J	4.23	J	34.2	J
PCB 105 (BZ)	1.79		2.89		3.62		1.21		10.7	
PCB 118 (BZ)	5.31		7.41		12.2		4.17		28.5	
PCB 128 (BZ)	1.54	J	3.15	J	2.74	J	1.26	J	7.33	J
PCB 138 (BZ)	10.3	J	24.3	J	16.0	J	9.67	J	45.9	J
PCB 153 (BZ)	10.2	J	22.2	J	14.2	J	10	J	37.2	J
PCB 170 (BZ)	1.74		5.27		2.43		2.24		7.21	
PCB 180 (BZ)	4.2	J	12.7	J	5.95	J	5.4	J	18.4	J
PCB 187 (BZ)	4.23		8.18		5.03		4.62		15	
PCB 195 (BZ)	0.584		1.56		0.886		0.808		2.62	
PCB 206 (BZ)	1.41		5.59		1.74		1.36		3.67	
PCB 209 (BZ)	2.76		66.3	J	3.28	J	2.40		6.51	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

Sample Number	08-082604, C1041-16B		09-082604, C1041-11B		101-0006, C1041-01B		101-0612, C1041-02B		103-0006, C1041-03B	
Station Location	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006	
Date Sampled	8/26/04		8/26/04		8/25/04		8/25/04		8/25/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/23/2004		9/23/2004		9/22/2004		9/22/2004		9/23/2004	
Dilution Factor	1		1		5		5		10	
Percent Solids	38.0		69.0		53.0		52.0		43.0	
QC Identifier	None		None		None		None		None	
PCB 8 (BZ)	0.465	EB	0.0190	JEB	3.48	EB	2.48	EB	7.91	JEB
PCB 18 (BZ)	0.313	JEB	0.0169	JEB	5.86	JEB	4.65	JEB	7.39	JEB
PCB 28 (BZ)	1.31	J	0.0892	J	15.1	J	12.0	J	12.8	J
PCB 44 (BZ)	3.14	JEB	0.166	JEB	14.2	JEB	13.6	JEB	21.2	JEB
PCB 52 (BZ)	7.22	EB	0.243	EB	13.9	EB	19.0	EB	40.3	EB
PCB 66 (BZ)	3.02		0.336		17.9		15.0		18.6	
PCB 101 (BZ)	13.1	J	1.10	J	13.1	J	24.6	J	55.8	J
PCB 105 (BZ)	4.17		0.611		3.76		7.29		20.9	
PCB 118 (BZ)	11.1		1.31		10.4		19.2		50.9	
PCB 128 (BZ)	2.4	J	0.463	J	2.41	J	4.32	J	9.27	J
PCB 138 (BZ)	15.5	J	2.70	J	16.4	J	28.6	J	54.1	J
PCB 153 (BZ)	13.5	J	1.90	J	15.1	J	23.5	J	40.4	J
PCB 170 (BZ)	2.09		0.545		2.85		4.43		6.94	
PCB 180 (BZ)	4.2	J	1.21	J	7.78	J	11.1	J	16.3	J
PCB 187 (BZ)	3.94		0.709		7.34		8.55		11.8	
PCB 195 (BZ)	0.530		0.126		0.947	J	1.42		1.72	J
PCB 206 (BZ)	1.27		0.129		1.28		1.86		2.74	
PCB 209 (BZ)	2.30		0.241		1.69		3.36		3.03	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

Sample Number	103-0612, C1041-04B		104-0006, C1041-05B		104-0612, C1041-06B		20-082604, C1041-18B		27-082604, C1041-19B	
Station Location	DSY-SD-103-0612		DSY-SD-104-0006		DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604	
Date Sampled	8/25/04		8/25/04		8/25/04		8/26/04		8/26/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/23/2004		9/23/2004		9/23/2004		9/23/2004		9/24/2004	
Dilution Factor	10		1		1		1		10	
Percent Solids	45.0		30.0		38.0		37.0		46.0	
QC Identifier	None		None		None		None		None	
PCB 8 (BZ)	11.8	JEB	0.431	JEB	0.885	EB	0.696	EB	1.85	JEB
PCB 18 (BZ)	5.15	JEB	0.244	JEB	0.810	JEB	0.437	JEB	1.39	JEB
PCB 28 (BZ)	11.2	J	1.25	J	1.92	J	1.69	J	3.46	J
PCB 44 (BZ)	17.9	JEB	1.67	JEB	4.00	JEB	3.47	JEB	15.6	JEB
PCB 52 (BZ)	32.0	EB	3.09	EB	6.62	EB	7.67	EB	38.2	EB
PCB 66 (BZ)	17.6		2.68		4.22		4.27		25.2	
PCB 101 (BZ)	52.9	J	7.38	J	12.5	J	15.0	J	227	J
PCB 105 (BZ)	20.1		2.37		3.41		4.38		110	
PCB 118 (BZ)	46.9		7.07		9.76		12.8		293	
PCB 128 (BZ)	9.81	J	1.84	J	2.51	J	2.84	J	65.4	J
PCB 138 (BZ)	57.7	J	12.4	J	17.1	J	17.6	J	370	J
PCB 153 (BZ)	43.1	J	11.1	J	15.8	J	14.3	J	226	J
PCB 170 (BZ)	7.08		2.30		3.15		2.26		32.3	
PCB 180 (BZ)	18.3	J	5.50	J	7.25	J	4.88	J	43.5	J
PCB 187 (BZ)	13.1		4.60		6.18		4.30		20.3	
PCB 195 (BZ)	2.28		0.603		0.857		0.661		1.62	J
PCB 206 (BZ)	3.94		1.58		1.56		1.41		1.72	J
PCB 209 (BZ)	3.49		6.05		3.03		2.15		1.77	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

Sample Number	28-082504, C1041-09B		29-082604, C1041-13B		31-082604, C1041-20B		DUP01-082504, C1041-08B		DUP02-082604, C1041-15B	
Station Location	DSY-SD-28-082504		DSY-SD-29-082604		DSY-SD-31-082604		DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Date Sampled	8/25/04		8/26/04		8/26/04		8/25/04		8/26/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/23/2004		9/23/2004		9/24/2004		9/23/2004		9/23/2004	
Dilution Factor	1		5		1		1		1	
Percent Solids	40.0		33.0		33.0		27.0		37.0	
QC Identifier	None		None		None		Field Dup. DSY-SD-02-082504		Field Dup. DSY-SD-05-082604	
PCB 8 (BZ)	0.228	EB	0.424	JEB	0.582	EB	0.416	JEB	0.354	JEB
PCB 18 (BZ)	0.231	JEB	0.233	JEB	0.346	JEB	0.229	JEB	0.171	JEB
PCB 28 (BZ)	1.47	J	1.16	J	1.48	J	1.09	J	1.08	J
PCB 44 (BZ)	1.80	JEB	1.74	JEB	1.93	JEB	1.07	JEB	0.97	JEB
PCB 52 (BZ)	1.76	EB	3.34	EB	3.67	EB	1.62	EB	1.43	EB
PCB 66 (BZ)	1.64		2.90		3.11		2.07		2.09	
PCB 101 (BZ)	3.63	J	9.60	J	7.43	J	4.77	J	4.26	J
PCB 105 (BZ)	1.25		3.66		2.69		1.49		1.25	
PCB 118 (BZ)	4.22		9.71		8.29		4.73		4.36	
PCB 128 (BZ)	1.01	J	3.16	J	1.83	J	1.32	J	1.26	J
PCB 138 (BZ)	6.86	J	21.9	J	11.2	J	9.41	J	9.44	J
PCB 153 (BZ)	7.25	J	19.8	J	9.84	J	9.08	J	9.57	J
PCB 170 (BZ)	0.844		4.15		1.75		1.73		1.97	
PCB 180 (BZ)	2.11	J	10.2	J	3.81	J	4.11	J	4.42	J
PCB 187 (BZ)	2.40		9.28		3.32		4.21		4.22	
PCB 195 (BZ)	0.228		1.43		0.486		0.585		0.628	
PCB 206 (BZ)	1.33		7.85		1.27		1.45		1.38	
PCB 209 (BZ)	1.66		94.3		2.17		3.49		2.30	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

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INTERNAL CORRESPONDENCE

C-NAVY-10-04-1767W

Date: October 21, 2004

c: File N1611-D-4.1

To: Steve Parker

From: Dan Wielandt DW

Subject: Tier II Organic Data Review, Project DSY, SDG C1043
Mitkem Corporation
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

PAH:

10/Sediments/ DSY-SD-11-082604, DSY-SD-26-082604, DSY-SD-32-082604, DSY-SD-CC01-082604, DSY-SD-CC02-082604, DSY-SD-CH01-082604, DSY-SD-CH02-09-082604, DSY-SD-DUP03-082604, DSY-SD-JPC01-082604, DSY-SD-JPC03-0006 (Field Duplicate Pair DSY-SD-JPC03-082604/ DSY-SD-DUP03-082604)

3/Rinstate Blanks/ DSY-SD-RB01-082504, DSY-SD-RB02-082604, DSY-SD-RB03-082604

1/Field Blank/ DSY-SD-FB01-082704`

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the polycyclic aromatic hydrocarbons (PAHs) data from sediment samples collected at the Former Robert E. Derecktor Shipyard site on August, 25 and 26, 2004. The sediment samples were analyzed for PAHs following the USEPA SW-846 Method 8270C by Selected Ion Monitoring (SIM). The PAH data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996.

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- Initial and Continuing Calibrations
- * Blanks
- * Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- Field Duplicates
- * Target Compound Identification
- * Compound Quantitation and Reported Quantitation Limits

* System Performance

* All criteria were met for this parameter.

Data Completeness

The laboratory was contacted on October 14, 2004 to request that the sample ID for field blank DSY-SD-FB01-082704 be corrected. The laboratory submitted the correction.

The project manager requested that the sample id for sediment sample DSY-SD-36-082604 be changed to DSY-SD-26-082604.

Initial and Continuing Calibrations

The following table summarizes the PAH compound that failed to meet the initial calibration (IC) criterion of %RSD < 30:

	Action		Affected Samples
Compound	(+)	NDs	
Dibenzo(a,h)anthracene	J	UJ	All samples

Internal Standards

All sediment samples had low recoveries of the internal standards chrysene-d_{12} and/or perylene- d_{12}. These samples were not reanalyzed by the laboratory. The positive and non-detected results for the PAHs associated with these internal standards in the affected samples are estimated (J, UJ). The results may be biased low or false negative.

Matrix Spike/Matrix Spike Duplicate

The following table summarizes the PAH matrix spiking recoveries that did not meet QC limits in the matrix spike and matrix spike duplicate analysis of sample CH01-082604:

CH01-082604					
Compound	MS %REC	MSD %REC	QC Limits	Action	
				(+)	ND
Pyrene	158		45 – 135	J	
Benzo(k)fluoranthene	155		45 – 135	J	

Field Duplicates

The positive benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(g,h,i)perylene results in the field duplicate pair JPC03-082604/DUP03-082604 are estimated (J) due to poor field duplicate precision. The bias is undetermined.

System Performance

The data set was qualified due to calibration variability, low internal standard recovery, high matrix spike recovery, and poor field duplicate precision.

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	11-082604		26-082604		32-082604		CC01-082604		CC02-082604		CH01-082604	
Station Location	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604		DSY-SD-CH01-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/2/2004		9/2/2004		9/2/2004		9/2/2004		9/2/2004		9/2/2004	
Date Analyzed	9/29/2004		9/29/2004		9/29/2004		9/29/2004		9/29/2004		9/28/2004	
Dilution Factor	1		1		1		1		1		1	
Percent Solids	43.0		68.0		35.0		78.0		78.0		41.0	
QC Identifier	None		None		None		None		None		None	
Naphthalene	15		4.8	U	13		7.1		4.2	U	9.3	
2-Methylnaphthalene	11		4.8	U	9.4	U	4.2	U	4.2	U	8.0	U
Acenaphthylene	20		5.2		24		19		4.5		85	
Acenaphthene	10		4.8	U	10		5.8		4.2	U	11	
Fluorene	22		8.2		22		11		4.2	U	21	
Phenanthrene	160		40		110		130		29		160	
Anthracene	70		21		53		59		8.8		85	
Fluoranthene	220		120		280		560	*	69		430	
Pyrene	680		120		410		540	*	80		570	J
Benzo(a)anthracene	240		77		200		240		35		360	
Chrysene	320		110		270		190		35		430	
Benzo(b)fluoranthene	620	J	170	J	530	J	360	J	74	J	870	*
Benzo(k)fluoranthene	160	J	71	J	190	J	130	J	22	J	260	J
Benzo(a)pyrene	320	J	89	J	250	J	270	J	42	J	470	J
Indeno(1,2,3-cd)pyrene	89	J	24	J	82	J	77	J	13	J	130	J
Dibenzo(a,h)anthracene	28	J	8.0	J	22	J	19	J	4.2	UJ	55	J
Benzo(g,h,i)perylene	99	J	27	J	100	J	75	J	14	J	200	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	CH02-082604		DUP03-082604		JPC01-082604		JPC03-082604	
Station Location	DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604		DSY-SD-JPC03-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/2/2004		9/2/2004		9/2/2004		9/2/2004	
Date Analyzed	9/29/2004		9/28/2004		9/29/2004		9/29/2004	
Dilution Factor	1		1		1		1	
Percent Solids	70.0		75.0		75.0		76.0	
QC Identifier	None		Field Dup. DSY-SD-JPC03-082604		None		Field Dup. DSY-SD-JPC03-082604	
Naphthalene	4.7	U	4.4	U	4.4	U	4.3	U
2-Methylnaphthalene	4.7	U	4.4	U	4.4	U	4.3	U
Acenaphthylene	8.0		4.4	U	5.6		4.3	U
Acenaphthene	4.7	U	4.4	U	4.4	U	4.3	U
Fluorene	4.7	U	4.4	U	4.4	U	4.3	U
Phenanthrene	28		13		30		19	
Anthracene	8.6		4.4	U	7.6		4.3	U
Fluoranthene	63		32		73		47	
Pyrene	85		34		81		53	
Benzo(a)anthracene	39		14		33		23	
Chrysene	58		20		40		30	
Benzo(b)fluoranthene	110	J	36	J	83	J	61	J
Benzo(k)fluoranthene	33	J	10	J	26	J	18	J
Benzo(a)pyrene	60	J	20	J	46	J	33	J
Indeno(1,2,3-cd)pyrene	18	J	6.5	J	15	J	10	J
Dibenzo(a,h)anthracene	6.5	J	4.4	UJ	4.4	UJ	4.3	UJ
Benzo(g,h,i)perylene	25	J	6.6	J	16	J	11	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Aqueous Low Concentration PAH (SIM) Analysis By OLM04.1B (ug/l)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	FB01-082704		RB01-082504		RB02-082604		RB03-082604	
Station Location	DSY-SD-FB01-082704		DSY-SD-RB01-082504		DSY-SD-RB02-082604		DSY-SD-RB03-082604	
Date Sampled	8/27/04		8/25/04		8/26/04		8/26/04	
Date Extracted	9/1/2004		9/1/2004		9/1/2004		9/1/2004	
Date Analyzed	9/28/2004		9/28/2004		9/28/2004		9/28/2004	
Dilution Factor	1		1		1		1	
Percent Solids								
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
Naphthalene	0.10	U	0.10	U	0.10	U	0.10	U
2-Methylnaphthalene	0.10	U	0.10	U	0.10	U	0.10	U
Acenaphthylene	0.10	U	0.10	U	0.10	U	0.10	U
Acenaphthene	0.10	U	0.10	U	0.10	U	0.10	U
Fluorene	0.10	U	0.10	U	0.10	U	0.10	U
Phenanthrene	0.10	U	0.10	U	0.10	U	0.10	U
Anthracene	0.10	U	0.10	U	0.10	U	0.10	U
Fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U
Pyrene	0.10	U	0.10	U	0.10	U	0.10	U
Benzo(a)anthracene	0.10	U	0.10	U	0.10	U	0.10	U
Chrysene	0.10	U	0.10	U	0.10	U	0.10	U
Benzo(b)fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U
Benzo(k)fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U
Benzo(a)pyrene	0.10	U	0.10	U	0.10	U	0.10	U
Indeno(1,2,3-cd)pyrene	0.10	U	0.10	U	0.10	U	0.10	U
Dibenzo(a,h)anthracene	0.10	UJ	0.10	UJ	0.10	UJ	0.10	UJ
Benzo(g,h,i)perylene	0.10	U	0.10	U	0.10	U	0.10	U

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

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INTERNAL CORRESPONDENCE

C-NAVY-10-04-1768W

Date: October 21, 2004

c: File N1611-D-4.1

To: Steve Parker

From: Dan Wielandt

Subject: Tier II Organic Data Review, Project DSY, SDG C1041
Mitkem Corporation
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

PAH:
20/Sediments/ DSY-SD-02-082504, DSY-SD-03-082604, DSY-SD-04-082604, DSY-SD-05-082604, DSY-SD-06-082504, DSY-SD-08-082604, DSY-SD-09-082604, DSY-SD-101-0006, DSY-SD-101-0612, DSY-SD-103-0006, DSY-SD-103-0612, DSY-SD-104-0006, DSY-SD-104-0612, DSY-SD-20-082604, DSY-SD-27-082604, DSY-SD-28-082504, DSY-SD-29-082604, DSY-SD-31-082604, DSY-SD-DUP01-082504, DSY-SD-DUP02-082604
(Field Duplicate Pairs DSY-SD-02-082504/ DSY-SD-DUP01-082504 and DSY-SD-05-082604/ DSY-SD-DUP02-082604)

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the polycyclic aromatic hydrocarbons (PAHs) data from sediment samples collected at the Former Robert E. Derecktor Shipyard site on August, 25 and 26, 2004. The sediment samples were analyzed for PAHs following the USEPA SW-846 Method 8270C by Selected Ion Monitoring (SIM). The PAH data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996.

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- * Data Completeness
- Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- Initial and Continuing Calibrations
- * Blanks
- * Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- * Laboratory Control Sample/Laboratory Control Sample Duplicate
- Field Duplicates
- * Target Compound Identification
- * Compound Quantitation and Reported Quantitation Limits
- * System Performance

* All criteria were met for this parameter.

Preservation and Technical Holding Times

Several sediment samples, which had surrogate recoveries below the QC limits and low internal standard recoveries, were re-extracted beyond the analytical extraction holding time. The results for the following samples the results are estimated (J, UJ) due to exceeded analytical extraction holding times: 08-0082604, 104-0612, and 20-082604. The results may be biased low or false negative.

Initial and Continuing Calibrations

The following table summarizes the PAH compounds that failed to meet the initial calibration (IC) criterion of %RSD < 30 and continuing calibration (CC) criterion of %D < 25:

	Action		Affected Samples
Compound	(+)	NDs	
Dibenzo(a,h)anthracene	J		03-082604, 08-082604, 20-082604, 27-082604, 29-082604, 31-082604, 104-0612
Phenanthrene	J		

Internal Standards

The following samples had low recoveries of the internal standard chrysene-d_{12} and/or perylene- d_{12}: 02-082504, 04-082604, 05-082604, 09-082604, 28-082504, DUP01-082504, and DUP02-082604. These samples were not reanalyzed by the laboratory. The positive and non-detected results in the affected samples are estimated (J, UJ). The results may be biased low or false negative.

Matrix Spike/Matrix Spike Duplicate

The following tables summarize the PAH matrix spiking recoveries that did not meet QC limits in the matrix spike and matrix spike duplicate analysis of sample 09-082604:

09-082604					
Compound	MS %REC	MSD %REC	QC Limits	Action	
				(+)	ND
Fluoranthene	23	36	45 – 135	J	
Pyrene		143	45 – 135	J	

Field Duplicates

The positive acenaphthylene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene results in the field duplicate pair 05-082604/DUP02-082604 are estimated (J) due to poor field duplicate precision. The bias is undetermined.

System Performance

Several samples were extracted outside of the extraction holding time due to low surrogate recoveries and low internal standard recoveries. The results may be biased low or false negative. The data set was also qualified due to calibration variability, low matrix spike recovery, and poor field duplicate precision.

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	02-082504		03-082604		04-082604		05-082604		06-082504	
Station Location	DSY-SD-02-082504		DSY-SD-03-082604		DSY-SD-04-082604		DSY-SD-05-082604		DSY-SD-06-082504	
Date Sampled	8/25/04		8/26/04		8/26/04		8/26/04		8/25/04	
Date Extracted	8/31/2004		8/31/2004		8/31/2004		8/31/2004		8/31/2004	
Date Analyzed	9/23/2004		9/27/2004		9/23/2004		9/23/2004		9/23/2004	
Dilution Factor	1		4		1		1		1	
Percent Solids	30.0		37.0		35.0		38.0		42.0	
QC Identifier	Field Dup. DSY-SD-02-082504		None		None		Field Dup. DSY-SD-05-082604		None	
Naphthalene	11	U	41		9.4	U	8.7	U	16	
2-Methylnaphthalene	11	U	35	U	9.4	U	8.7	U	15	
Acenaphthylene	22		54		18		10	J	39	
Acenaphthene	11	U	120		9.4	U	8.7	U	25	
Fluorene	15		140		11		8.7	U	31	
Phenanthrene	61		1100	J	76		28	J	230	
Anthracene	29		280		45		11	J	62	
Fluoranthene	120		1700		200		34	J	260	
Pyrene	360	J	1800		430	J	140	J	800	
Benzo(a)anthracene	110	J	1000		150	J	47	J	240	
Chrysene	130	J	1100		180	J	56	J	220	
Benzo(b)fluoranthene	260	J	1700		280	J	110	J	560	
Benzo(k)fluoranthene	75	J	420		110	J	36	J	170	
Benzo(a)pyrene	160	J	1000		150	J	78	J	370	
Indeno(1,2,3-cd)pyrene	73	J	440		61	J	33	J	120	
Dibenzo(a,h)anthracene	20	J	140	J	18	J	15	J	35	
Benzo(g,h,i)perylene	84	J	460		65	J	35	J	170	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	08-082604		09-082604		101-0006		101-0612		103-0006		103-0612		104-0006	
Station Location	DSY-SD-08-082604		DSY-SD-09-082604		DSY-SD-101-0006		DSY-SD-101-0612		DSY-SD-103-0006		DSY-SD-103-0612		DSY-SD-104-0006	
Date Sampled	8/26/04		8/26/04		8/25/04		8/25/04		8/25/04		8/25/04		8/25/04	
Date Extracted	9/25/2004		8/31/2004		8/31/2004		8/31/2004		8/31/2004		8/31/2004		8/31/2004	
Date Analyzed	9/27/2004		9/23/2004		9/23/2004		9/23/2004		9/23/2004		9/23/2004		9/23/2004	
Dilution Factor	1		1		1		1		1		1		1	
Percent Solids	39.0		73.0		53.0		52.0		39.0		47.0		31.0	
QC Identifier	None		None		None		None		None		None		None	
Naphthalene	8.5	UJ	4.5	U	10		12		8.5	U	48		11	U
2-Methylnaphthalene	8.5	UJ	4.5	U	9.6		9.5		8.5	U	28		11	U
Acenaphthylene	32	J	4.5	U	44		63		33		89		18	
Acenaphthene	8.5	UJ	4.5	U	8.0		9.8		10		170		11	U
Fluorene	12	J	4.5	U	15		21		16		110		11	U
Phenanthrene	74	J	23		100		150		84		500		63	
Anthracene	42	J	8.9		54		93		82		470		30	
Fluoranthene	200	J	47	J	300		290		460		7300	*	130	
Pyrene	270	J	71	J	670	*	2000	*	1500	*	6300	*	290	
Benzo(a)anthracene	130	J	34	J	230		340		500		2000	*	140	
Chrysene	170	J	37	J	240		380		330		2100	*	140	
Benzo(b)fluoranthene	300	J	71	J	420		740	*	560		2200	*	250	
Benzo(k)fluoranthene	88	J	16	J	160		230		210		850	*	64	
Benzo(a)pyrene	190	J	46	J	270		420		360		1400	*	140	
Indeno(1,2,3-cd)pyrene	77	J	22	J	110		150		130		380		64	
Dibenzo(a,h)anthracene	20	J	9.5	J	31		43		43		120		20	
Benzo(g,h,i)perylene	80	J	25	J	110		150		130		420		78	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	104-0612		20-082604		27-082604		28-082504		29-082604		31-082604	
Station Location	DSY-SD-104-0612		DSY-SD-20-082604		DSY-SD-27-082604		DSY-SD-28-082504		DSY-SD-29-082604		DSY-SD-31-082604	
Date Sampled	8/25/04		8/26/04		8/26/04		8/25/04		8/26/04		8/26/04	
Date Extracted	9/25/2004		9/25/2004		8/31/2004		8/31/2004		8/31/2004		8/31/2004	
Date Analyzed	9/27/2004		9/27/2004		9/27/2004		9/23/2004		9/27/2004		9/27/2004	
Dilution Factor	1		1		1		1		4		1	
Percent Solids	33.0		36.0		48.0		30.0		34.0		37.0	
QC Identifier	None		None		None		None		None		None	
Naphthalene	12	J	9.1	UJ	10		12		39	U	8.8	U
2-Methylnaphthalene	10	UJ	9.1	UJ	8.1		11	U	39	U	8.8	U
Acenaphthylene	45	J	34	J	61		27		73		19	
Acenaphthene	14	J	11	J	15		11	U	120		8.8	U
Fluorene	23	J	19	J	31		18		130		10	
Phenanthrene	200	J	150	J	190	J	87		1000	J	54	J
Anthracene	98	J	54	J	130		38		320		27	
Fluoranthene	380	J	250	J	380		160		2000		130	
Pyrene	620	J	350	J	480		350		2100		180	
Benzo(a)anthracene	290	J	200	J	410		140		1200		91	
Chrysene	330	J	260	J	560		180		1300		150	
Benzo(b)fluoranthene	530	J	410	J	740	*	290	J	1400		200	
Benzo(k)fluoranthene	200	J	140	J	320		110	J	630		63	
Benzo(a)pyrene	320	J	230	J	530		220	J	1200		120	
Indeno(1,2,3-cd)pyrene	120	J	86	J	160		85	J	470		52	
Dibenzo(a,h)anthracene	36	J	29	J	56	J	24	J	160	J	14	J
Benzo(g,h,i)perylene	140	J	93	J	160		97	J	510		55	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis

Sediment Low Concentration PAH (SIM) Analysis By 8270C (ug/kg)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1041

EPA Sample Number	DUP01-082504		DUP02-082604	
Station Location	DSY-SD-DUP01-082504		DSY-SD-DUP02-082604	
Date Sampled	8/25/04		8/26/04	
Date Extracted	8/31/2004		8/31/2004	
Date Analyzed	9/23/2004		9/23/2004	
Dilution Factor	1		1	
Percent Solids	28.0		40.0	
QC Identifier	Field Dup. DSY-SD-02-082504		Field Dup. DSY-SD-05-082604	
Naphthalene	12	U	8.2	U
2-Methylnaphthalene	12	U	8.2	U
Acenaphthylene	30		19	
Acenaphthene	12	U	8.2	U
Fluorene	17		10	
Phenanthrene	82		61	
Anthracene	36		25	
Fluoranthene	150		90	
Pyrene	440	J	250	J
Benzo(a)anthracene	150	J	92	J
Chrysene	150	J	100	J
Benzo(b)fluoranthene	260	J	190	J
Benzo(k)fluoranthene	110	J	67	J
Benzo(a)pyrene	200	J	130	J
Indeno(1,2,3-cd)pyrene	81	J	52	J
Dibenzo(a,h)anthracene	23	J	18	J
Benzo(g,h,i)perylene	86	J	54	J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis

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INTERNAL CORRESPONDENCE

C-NAVY-10-04-1769W

Date: October 21, 2004

c: File N1611-D-4.1

To: Steve Parker

From: Dan Wielandt

Subject: Tier II Organic Data Review, Project DSY, SDG C1043
Mitkem Corporation
CTO 008, Former Robert E. Derecktor Shipyard, Newport, Rhode Island

PCB Congeners:

10/Sediments/ DSY-SD-11-082604, DSY-SD-26-082604, DSY-SD-32-082604, DSY-SD-CC01-082604, DSY-SD-CC02-082504, DSY-SD-CH01-082604, DSY-SD-CH02-09-082604, DSY-SD-DUP03-082604, DSY-SD-JPC01-082604, DSY-SD-JPC03-0006 (Field Duplicate Pair DSY-SD-JPC03-082604/ DSY-SD-DUP03-082604)

3/Rinstate Blanks/ DSY-SD-RB01-082504, DSY-SD-RB02-082604, DSY-SD-RB03-082604

1/Field Blank/ DSY-SD-FB01-082704

A Tier II data validation was performed by Tetra Tech NUS, Inc. (TtNUS) on the polychlorinated biphenyls (PCB) congener data from sediment samples collected at the Former Robert E. Derecktor Shipyard site on August, 25 and 26, 2004. The sediment samples were analyzed for the NOAA list of PCB congeners following the Method 1668A by high resolution gas chromatography/high resolution mass spectroscopy (HRGC/HRMS). The PCB congener data validation was performed in accordance with the method requirements and the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996.

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- * Preservation and Technical Holding Times
- * Initial and Continuing Calibrations
- * Window Defining Solution
- * Chromatographic Resolution
- * Instrument Sensitivity Check
- * Initial Precision & Recovery
- Blanks
- * Internal & Clean-up Standards Recovery
- * Recovery Standard Areas
- NA Matrix Spike/Matrix Spike Duplicate

* • Laboratory Control Sample/Laboratory Control Sample Duplicate
* • Field Duplicates
• Target Compound Identification
• Compound Quantitation and Reported Quantitation Limits
* • System Performance

* All criteria were met for this parameter.

Data Completeness

The project manager requested that the station location for sediment sample listed on the chain-of-custody form, analyzed, and reported as DSY-SD-36-082604 be changed to DSY-SD-26-082604. The new sample number DSY-SD-26-082604 will appear in the summary tables and in the data base.

Blanks

The positive PCB 8, PCB 18, PCB 28, PCB 44 and PCB 52 results in all sediment samples except for DSY-SD-DUP03-082604 and DSY-SD-JPC03-082604 are qualified (EB) due to possible field contamination detected in the rinsate and/or field blanks. The positive results may be biased high or false positive.

Target Compound Identification

The laboratory qualified the results with a "Q" – estimated maximum possible concentration, when the compound qualification did not meet the qualitative criteria to identify the congener such as: ion ratios, retention time, and co-maximization criteria. The affected PCB congener results are qualified (J) in the data summary tables. The bias is undetermined.

Compound Quantitation and Reported Quantitation Limits

The laboratory qualified the results with a "C" to indicate the coelution with an isomer. The affected PCB congener results are qualified (J) in the data summary tables. The results may be biased high.

System Performance

The data set was qualified due to field blank contamination, compound identification and isomer coelution..

Tables: Data Summary Tables

Enclosures: Data Validation Worksheets

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

Sample Number	11-082604, C1043-01B		26-082604, C1043-03B		32-082604, C1043-02B		CC01-082604, C1043-04B		CC02-082604, C1043-05B	
Station Location	DSY-SD-11-082604		DSY-SD-26-082604		DSY-SD-32-082604		DSY-SD-CC01-082604		DSY-SD-CC02-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/24/2004		9/24/2004		9/24/2004		9/24/2004		9/24/2004	
Dilution Factor	5		1		5		1		1	
Percent Solids	44.0		70.0		33.0		79.0		71.0	
QC Identifier	None		None		None		None		None	
PCB 8 (BZ)	1.68	EB	0.192	EB	0.483	JEB	0.0343	JEB	0.0341	JEB
PCB 18 (BZ)	1.57	JEB	0.135	JEB	0.165	JEB	0.00829	JEB	0.0108	JEB
PCB 28 (BZ)	3.94	JEB	0.38	JEB	1.21	JEB	0.0747	JEB	0.0624	JEB
PCB 44 (BZ)	8.1	JEB	1.65	JEB	1.4	JEB	0.0502	JEB	0.0441	JEB
PCB 52 (BZ)	16.5	EB	4.36	EB	2.19	EB	0.0548	JEB	0.0492	EB
PCB 66 (BZ)	8.1		1.21		2.7		0.124		0.0913	
PCB 101 (BZ)	24.6	J	6.46	J	4.8	J	0.196	J	0.138	J
PCB 105 (BZ)	8.93		2.46		1.7		0.0795		0.055	
PCB 118 (BZ)	23.8		5.95		5.71		0.241		0.179	
PCB 128 (BZ)	5.47	J	1.29	J	1.45	J	0.0678	J	0.0462	J
PCB 138 (BZ)	31.8	J	7.21	J	8.66	J	0.506	J	0.342	J
PCB 153 (BZ)	25.2	J	4.88	J	8.18	J	0.524	J	0.372	J
PCB 170 (BZ)	5.03		0.717		1.56		0.112		0.0795	
PCB 180 (BZ)	11.9	J	1.38	J	3.53	J	0.255	J	0.184	J
PCB 187 (BZ)	8.46		0.912		3.39		0.231		0.165	
PCB 195 (BZ)	1.62		0.123	J	0.409	J	0.0336		0.0267	J
PCB 206 (BZ)	2.64		0.321		1.32		0.134		0.109	
PCB 209 (BZ)	3.34		0.44		1.99		0.221		0.171	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

Sample Number	CH01-082604, C1043-09B		CH02-082604, C1043-10B		DUP03-082604, C1043-08B		JPC01-082604, C1043-06B	
Station Location	DSY-SD-CH01-082604		DSY-SD-CH02-082604		DSY-SD-DUP03-082604		DSY-SD-JPC01-082604	
Date Sampled	8/26/04		8/26/04		8/26/04		8/26/04	
Date Extracted	9/17/2004		9/17/2004		9/17/2004		9/17/2004	
Date Analyzed	9/24/2004		9/24/2004		9/24/2004		9/24/2004	
Dilution Factor	1		1		5		1	
Percent Solids	38.0		66.0		77.0		71.0	
QC Identifier	None		None		Field Dup. DSY-SD-JPC03-082604		None	
PCB 8 (BZ)	0.261	EB	0.0348	JEB	0.0571	U	0.0439	JEB
PCB 18 (BZ)	0.223	JEB	0.0141	JEB	0.016	U	0.00931	JEB
PCB 28 (BZ)	1.56	JEB	0.0902	JEB	0.0071	U	0.0743	JEB
PCB 44 (BZ)	1.77	JEB	0.0782	JEB	0.0127	U	0.358	JEB
PCB 52 (BZ)	1.9	EB	0.114	EB	0.0135	U	0.931	EB
PCB 66 (BZ)	1.72		0.152		0.0196	J	0.285	
PCB 101 (BZ)	4.19	J	0.284	J	0.0359	J	1.2	J
PCB 105 (BZ)	1.62		0.135		0.0129	J	0.417	
PCB 118 (BZ)	5.2		0.372		0.0436	J	0.978	
PCB 128 (BZ)	1.09	J	0.105	J	0.0106	U	0.252	J
PCB 138 (BZ)	7.32	J	0.639	J	0.0936	J	1.44	J
PCB 153 (BZ)	7.39	J	0.637	J	0.100	J	1.13	J
PCB 170 (BZ)	0.882		0.0982		0.0105	U	0.165	
PCB 180 (BZ)	2.24	J	0.257	J	0.0463	J	0.317	J
PCB 187 (BZ)	2.34		0.296		0.0462	J	0.277	
PCB 195 (BZ)	0.215		0.0380		0.0109	U	0.0337	J
PCB 206 (BZ)	1.42		1.4		0.0099	U	0.107	J
PCB 209 (BZ)	1.78		0.785		0.0123	U	0.183	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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Sediment PCB Congener Analysis By 1668A (ng/g)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

Sample Number	JPC03-082604, C1043-07B	
Station Location	DSY-SD-JPC03-082604	
Date Sampled	8/26/04	
Date Extracted	9/17/2004	
Date Analyzed	9/24/2004	
Dilution Factor	5	
Percent Solids	75.0	
QC Identifier	Field Dup. DSY-SD-JPC03-082604	
PCB 8 (BZ)	0.123	U
PCB 18 (BZ)	0.0311	U
PCB 28 (BZ)	0.0138	U
PCB 44 (BZ)	0.0312	U
PCB 52 (BZ)	0.0332	U
PCB 66 (BZ)	0.0412	J
PCB 101 (BZ)	0.0177	U
PCB 105 (BZ)	0.0109	U
PCB 118 (BZ)	0.0474	J
PCB 128 (BZ)	0.0181	U
PCB 138 (BZ)	0.0949	J
PCB 153 (BZ)	0.124	J
PCB 170 (BZ)	0.0155	U
PCB 180 (BZ)	0.0563	J
PCB 187 (BZ)	0.0509	J
PCB 195 (BZ)	0.0160	U
PCB 206 (BZ)	0.0145	U
PCB 209 (BZ)	0.0138	U

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution analysis; R - Rejected; EB - Equipment Blank contamination

Aqueous PCB Congener Analysis By 1668A (ng/l)
Site: CTO 008, Former Robert E. Derecktor Shipyard
Case: DSY; SDG: C1043

EPA Sample Number	FB01-082604, C1043-14A		RB01-082504, C1043-11A		RB02-082604, C1043-12A		RB03-082604, C1043-13A	
Station Location	DSY-SD-FB01-082704		DSY-SD-RB01-082504		DSY-SD-RB02-082604		DSY-SD-RB03-082604	
Date Sampled	8/27/04		8/25/04		8/26/04		8/26/04	
Date Extracted	9/7/2004		9/7/2004		9/7/2004		9/7/2004	
Date Analyzed	9/15/2004		9/15/2004		9/15/2004		9/15/2004	
Dilution Factor	1		1		1		1	
Percent Solids								
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank	
PCB 8 (BZ)	0.0596	U	0.0853	J	0.0931	J	0.0637	J
PCB 18 (BZ)	0.0238	U	0.0190	U	0.0161	U	0.0223	J
PCB 28 (BZ)	0.0268	J	0.0227	J	0.0213	J	0.0191	J
PCB 44 (BZ)	0.0145	U	0.0134	U	0.0103	U	0.0236	J
PCB 52 (BZ)	0.0264	J	0.022	J	0.015	J	0.0154	J
PCB 66 (BZ)	0.0111	U	0.0102	U	0.00785	U	0.00642	U
PCB 101 (BZ)	0.0158	U	0.0133	U	0.0105	U	0.00817	U
PCB 105 (BZ)	0.00846	U	0.00714	U	0.00520	U	0.00449	U
PCB 118 (BZ)	0.00727	U	0.00626	U	0.00499	U	0.00380	U
PCB 128 (BZ)	0.0135	U	0.0120	U	0.00905	U	0.00728	U
PCB 138 (BZ)	0.0139	U	0.0123	U	0.00929	U	0.00747	U
PCB 153 (BZ)	0.0122	U	0.0108	U	0.00816	U	0.00656	U
PCB 170 (BZ)	0.0148	U	0.0133	U	0.00972	U	0.00789	U
PCB 180 (BZ)	0.0109	U	0.0108	U	0.00781	U	0.00664	U
PCB 187 (BZ)	0.0148	U	0.0138	U	0.0101	U	0.00834	U
PCB 195 (BZ)	0.0159	U	0.0149	U	0.0102	U	0.00886	U
PCB 206 (BZ)	0.0143	U	0.0113	U	0.00888	U	0.00715	U
PCB 209 (BZ)	0.0138	U	0.0139	U	0.00776	U	0.00680	U

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
Semivolatile Organic Analysis (UG/KG)									
1,1-BIPHENYL	1.3451	NA	NA	NA	NA	NA	NA	NA	NA
1-METHYLNAPHTHALENE	2.5806 J	NA	NA	NA	NA	NA	NA	NA	NA
1-METHYLPHENANTHRENE	9.4928	NA	NA	NA	NA	NA	NA	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	1.4564	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DIMETHYLNAPHTHALENE	6.1762	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	3.83 J	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	1.4241	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	10.6569	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	21.2143	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	45.0965	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	62.8722	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	53.1865	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	37.278	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	124.8111	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	49.9146	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	10.1029	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	99.2789	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	4.5637	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	365.1931	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	34.5814	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	90.8034	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	5.4	NA	NA	NA	NA	NA	NA	NA	NA
PERYLENE	19.271	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	43.7144	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	97.9279	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	746	NA	NA	NA	NA	NA	NA	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)									
2-METHYLNAPHTHALENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	5.6	NA	NA	NA	NA

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MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
ANTHRACENE	NA	NA	NA	NA	7.6	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	33	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	46 J	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	83 J	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	16 J	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	26 J	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	40	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	4.4 UJ	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	73	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	413	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	15 J	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	43.2	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	30	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	81	NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	456.2	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)									
2,4'-DDE	0.5455	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2862	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	0.10	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	0.080	NA	NA	NA	NA	NA	NA	NA	NA
MIREX	0.10	NA	NA	NA	NA	NA	NA	NA	NA
PCB Analysis (UG/KG)									
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	0.00931 JEB	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	0.0439 JEB	NA	NA	NA	NA
PCB-101	0.822	NA	NA	NA	1.2 J	NA	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	0.1837	NA	NA	NA	0.417	NA	NA	NA	NA
PCB-118	0.5703	NA	NA	NA	0.978	NA	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	0.2543	NA	NA	NA	0.252 J	NA	NA	NA	NA
PCB-138	0.9656	NA	NA	NA	1.44 J	NA	NA	NA	NA
PCB-153	0.9797	NA	NA	NA	1.13 J	NA	NA	NA	NA
PCB-170	0.342	NA	NA	NA	0.165	NA	NA	NA	NA
PCB-18	0.1503	NA	NA	NA	NA	NA	NA	NA	NA

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R - Rejected; NA - Not Analyzed; * - From dilution analysis

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
PCB-180	0.5502	NA	NA	NA	0.317 J	NA	NA	NA	NA
PCB-187	0.4659	NA	NA	NA	0.277	NA	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.2177	NA	NA	NA	0.0337 J	NA	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.7117	NA	NA	NA	0.107 J	NA	NA	NA	NA
PCB-209	0.751	NA	NA	NA	0.183	NA	NA	NA	NA
PCB-28	0.3285	NA	NA	NA	0.0743 JEB	NA	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.6077	NA	NA	NA	0.358 JEB	NA	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	1.1141	NA	NA	NA	0.931 EB	NA	NA	NA	NA
PCB-66	0.331	NA	NA	NA	0.285	NA	NA	NA	NA
PCB-8	0.055	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	18.9124	NA	NA	NA	16.4	NA	NA	NA	NA
TAL Metal Analysis (MG/KG)									
ALUMINUM	27475	NA	NA	20423.25	4240	30460	NA	NA	26535
ANTIMONY	NA	NA	NA	NA	R	NA	NA	NA	NA
ARSENIC	2.61	NA	NA	2.5	2.1 J	4.84	NA	NA	5.66
BARIUM	NA	NA	NA	NA	10.3 J	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	0.29	NA	NA	NA	NA
CADMIUM	0.29 J	NA	NA	0.13 J	0.011 UJ	0.17 J	NA	NA	0.13 J
CALCIUM	NA	NA	NA	NA	1880	NA	NA	NA	NA
CHROMIUM	36.5	NA	NA	30.5	10.7 J	49.0	NA	NA	43.75
COBALT	NA	NA	NA	NA	3.0 J	NA	NA	NA	NA
COPPER	7.0	NA	NA	9.0	8.3 J	13.75	NA	NA	17.25
IRON	18091.5	NA	NA	16837.25	7800	18616.5	NA	NA	19103.5
LEAD	29.7	NA	NA	28.3	11.3 J	53.2	NA	NA	46.0
MAGNESIUM	NA	NA	NA	NA	2460	NA	NA	NA	NA
MANGANESE	293.5	NA	NA	253.5	98.6	284.25	NA	NA	256
MERCURY	0.2445	NA	NA	0.13	0.014 J	0.106	NA	NA	0.13
NICKEL	14.25	NA	NA	11.25	6.2 J	14.0	NA	NA	14.75
POTASSIUM	NA	NA	NA	NA	859	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	0.22 U	NA	NA	NA	NA
SILVER	0.1375	NA	NA	0.0625 J	0.11 U	0.2625	NA	NA	0.1625
SODIUM	NA	NA	NA	NA	3590	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
THALLIUM	NA	NA	NA	NA	0.57 J	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	10.2	NA	NA	NA	NA
ZINC	58.0	NA	NA	36.25	33.0 J	79.25	NA	NA	63.75
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)									
CADMIUM	NA	NA	NA	NA	0.1300 B	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	2.600	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	3.400 *	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	8.000	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	0.002300 B	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	1.100 BE	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	18.40	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)									
CADMIUM	NA	NA	NA	NA	0.001460 U	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	0.05090	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	0.05360 UJ	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	0.03880	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	0.00003300 U	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	0.02789 UJ	NA	NA	NA	NA
SEM/AVS RATIO	-1.1934	0.3785	0.7266	NA	1.8959	0.1444	1.1926	0.8944	NA
SULFIDE	NA	NA	NA	NA	0.1959 J	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	0.3714	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	0.2817 J	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)									
DIBUTYLTIN	0.50	NA	NA	NA	NA	0.50	NA	NA	NA
MONOBUTYLTIN	0.50	NA	NA	NA	NA	0.50	NA	NA	NA
TETRABUTYLTIN	0.50	NA	NA	NA	NA	0.37 J	NA	NA	NA
TRIBUTYLTIN	0.28 J	NA	NA	NA	NA	0.41 J	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)									
CARBON	NA	NA	NA	NA	5400	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	NA	NA	2.98	NA	0.781	NA	1.42	NA	0.2393	NA
1-METHYLNAPHTHALENE	NA	NA	2.38	NA	0.3	NA	0.3	NA	3.255 U	NA
1-METHYLPHENANTHRENE	NA	NA	5.51	NA	8.258	NA	10.4	NA	0.2126	NA
2,3,5-TRIMETHYLNAPHTHALENE	NA	NA	1.24	NA	0.7037	NA	1.02	NA	0.54 U	NA
2,6-DIMETHYLNAPHTHALENE	NA	NA	8.38	NA	2.1089	NA	4.96	NA	3.6	NA
2-METHYLNAPHTHALENE	NA	NA	5.7	NA	1.63	NA	1.63	NA	5.3 U	NA
ACENAPHTHENE	NA	NA	3.1	NA	0.958	NA	1.01	NA	0.398	NA
ACENAPHTHYLENE	NA	NA	4.62	NA	3.2244	NA	4.17	NA	0.77 U	NA
ANTHRACENE	NA	NA	19.54	NA	6.27	NA	6.27	NA	0.4234	NA
BENZO(A)ANTHRACENE	NA	NA	44.55	NA	10.43	NA	10.43	NA	0.4941	NA
BENZO(A)PYRENE	NA	NA	33.66	NA	10.14	NA	10.14	NA	1.1865	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	64.81	NA	70.6566	NA	19.95	NA	3.5037	NA
BENZO(E)PYRENE	NA	NA	26.99	NA	9.92	NA	9.92	NA	1.4628	NA
BENZO(G,H,I)PERYLENE	NA	NA	62.33	NA	16.01	NA	16.01	NA	1.279	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	36.25	NA	10.24	NA	10.24	NA	0.6097	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	9.7	NA	0.76	NA	0.76	NA	0.0954	NA
FLUORANTHENE	NA	NA	136.49	NA	43.2	NA	43.2	NA	2.6609	NA
FLUORENE	NA	NA	3.54	NA	0.18	NA	0.18	NA	1.34 U	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	390.64	NA	116.63	NA	116.63	NA	8.307	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	44.17	NA	8.41	NA	8.41	NA	0.9539	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	82.13	NA	27.4524	NA	28.45	NA	9.9683	NA
NAPHTHALENE	NA	NA	9.12	NA	1.92	NA	1.92	NA	0.3674	NA
PERYLENE	NA	NA	19.87	NA	7.52	NA	7.52	NA	16.6805	NA
PHENANTHRENE	NA	NA	36.51	NA	13.27	NA	13.27	NA	1.3695	NA
PYRENE	NA	NA	129.99	NA	41.86	NA	41.86	NA	3.2604	NA
TOTAL PAHS	NA	NA	711.43	NA	268.7505	NA	224.99	NA	50.0022	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA

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MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
ANTHRACENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	23	14	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	33 J	20 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	61 J	36 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	11 J	6.6 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	18 J	10 J	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	30	20	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	4.3 UJ	4.4 UJ	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	47	32	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	286	179.1	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 J	6.5 J	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	19	13	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	19	13	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	53	34	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAH	305	192.1	NA	NA	NA	NA	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	NA	NA	0.355	NA	0.245	NA	0.709	NA	0.00	NA
4,4'-DDE	NA	NA	0.721	NA	0.479	NA	0.384	NA	0.025 U	NA
ALDRIN	NA	NA	0.10 U	NA	0.10 U	NA	0.00 U	NA	0.00	NA
HEXACHLOROBENZENE	NA	NA	0.080 U	NA	0.338	NA	0.080 U	NA	0.080 U	NA
MIREX	NA	NA	0.10 U	NA	0.10 U	NA	0.10	NA	0.10 U	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	0.0311 U	0.016 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	0.123 U	0.0571 U	NA	NA	NA	NA	NA	NA	NA	NA
PCB-101	0.0177 U	0.0359 J	0.442	NA	0.323	NA	0.104	NA	0.323	NA
PCB-104	NA	NA	0.0826	NA	0.2049	NA	0.050 U	NA	0.050 B	NA
PCB-105	0.0109 U	0.0129 J	0.357	NA	0.0992	NA	0.035 U	NA	0.035 U	NA
PCB-118	0.0474 J	0.0436 J	0.68	NA	0.552	NA	0.15 U	NA	0.1189	NA
PCB-126	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.0606	NA
PCB-128	0.0181 U	0.0106 U	0.193	NA	0.0716	NA	0.035 U	NA	0.0798	NA
PCB-138	0.0949 J	0.0936 J	1.162	NA	0.483	NA	0.235	NA	0.13	NA
PCB-153	0.124 J	0.10 J	1.211	NA	0.67	NA	0.216	NA	0.1727	NA
PCB-170	0.0155 U	0.0105 U	0.556	NA	0.465	NA	1.863	NA	0.035 U	NA
PCB-18	NA	NA	0.015 U	NA	0.18	NA	0.015 U	NA	0.015 U	NA

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MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
PCB-180	0.0563 J	0.0463 J	0.882	NA	0.577	NA	0.696	NA	0.0825	NA
PCB-187	0.0509 J	0.0462 J	0.402	NA	0.124	NA	0.531	NA	0.0575	NA
PCB-188	NA	NA	0.0866	NA	0.025 U	NA	0.025 U	NA	0.0685	NA
PCB-195	0.016 U	0.0109 U	0.367	NA	0.227	NA	0.208	NA	0.020 U	NA
PCB-201	NA	NA	0.010 U	NA	0.234	NA	0.0521	NA	0.010 B	NA
PCB-206	0.0145 U	0.0099 U	0.595	NA	0.374	NA	0.188	NA	0.015 U	NA
PCB-209	0.0138 U	0.0123 U	0.294	NA	0.161	NA	0.117	NA	0.0577	NA
PCB-28	0.0138 U	0.0071 U	0.0050 U	NA	0.0766	NA	0.0050 U	NA	0.0050 U	NA
PCB-29	NA	NA	0.050 U	NA	0.050 U	NA	0.050 U	NA	0.050 B	NA
PCB-44	0.0312 U	0.0127 U	0.0681	NA	0.0863	NA	0.030 U	NA	0.030 U	NA
PCB-50	NA	NA	0.035 U	NA	0.035 U	NA	0.035 U	NA	0.035 B	NA
PCB-52	0.0332 U	0.0135 U	0.33	NA	0.164	NA	0.115 U	NA	0.115 U	NA
PCB-66	0.0412 J	0.0196 J	0.545	NA	0.529	NA	0.153	NA	0.1119	NA
PCB-8	NA	NA	0.484	NA	0.0759	NA	0.055 U	NA	0.055 U	NA
PCB-87	NA	NA	0.155	NA	0.103	NA	0.10 U	NA	0.0834	NA
SUM OF PCB CONGENERS X 2	0.829	0.796	23.5386	NA	15.3836	NA	10.8382	NA	4.3774	NA
TAL Metal Analysis (MG/KG)										
ALUMINUM	3440	3400	45200	NA	45100	NA	45100	NA	22108	NA
ANTIMONY	0.18 UJ	0.18 UJ	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	1.1 J	1.2 J	0.65 J	NA	2.01	NA	0.65 J	NA	0.65 J	NA
BARIUM	6.5 J	7.6 J	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	0.18	0.18	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	0.012 UJ	0.012 UJ	0.65 J	NA	0.65 J	NA	0.65 J	NA	0.65 J	NA
CALCIUM	559	483	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	6.8 J	6.9 J	38.148	NA	27.7	NA	31.011	NA	31.25	NA
COBALT	2.1 J	2.1 J	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	4.2 UJ	3.9 UJ	7.518	NA	1.875 J	NA	1.875 J	NA	1.875 J	NA
IRON	6110	6050	28400	NA	21200	NA	30600	NA	21466.75	NA
LEAD	4.4 J	4.3 J	28.4024	NA	23.1756	NA	23.1756	NA	16.6	NA
MAGNESIUM	1940	1940	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	68.0	65.9	861.86	NA	625.07	NA	1018.4	NA	372.5	NA
MERCURY	0.022	0.0089 J	0.10 J	NA	0.10 J	NA	0.10 J	NA	0.015 J	NA
NICKEL	4.7 J	4.8 J	16.6548	NA	10.5675	NA	14.0248	NA	12.75	NA
POTASSIUM	480	495	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	0.25 U	0.24 U	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	0.12 U	0.12 U	0.065 J	NA	0.15	NA	0.3314	NA	0.065 J	NA
SODIUM	2870	3150	NA	NA	NA	NA	NA	NA	NA	NA

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NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
THALLIUM	0.43 J	0.35 J	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	6.3	6.3	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	18.8	18.5 J	62.467	NA	45.721	NA	45.721	NA	42.0	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	0.08500 B	0.07100 B	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	1.200	1.100	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	1.200 *	1.100 *	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	2.900	2.700	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.001500 U	0.001600 U	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	0.8000 BE	0.5500 BE	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	7.400	6.800	NA	NA	NA	NA	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	0.001410 U	0.001460 U	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	0.02280	0.02180	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	0.01870 UJ	0.01730 UJ	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	0.01400	0.01300	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.00003200 U	0.00003300 U	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	0.02702 UJ	0.02795 UJ	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS RATIO	0.2000	2.5401	-5.5925	3.0425	1.8905	2.1505	1.289	1.849	0.3618	0.4118
SULFIDE	0.7471 J	0.05480 J	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	0.1494	0.1392	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	0.1126 J	0.1044 J	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	NA	NA	2.3	NA	0.50 U	NA	0.50 U	NA	NA	NA
MONOBUTYLTIN	NA	NA	0.50 U	NA	0.50 U	NA	0.16	NA	NA	NA
TETRABUTYLTIN	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	NA
TRIBUTYLTIN	NA	NA	4.8	NA	0.50 U	NA	0.50 U	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	3100	4800	NA	NA	NA	NA	NA	NA	NA	NA

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NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.00	NA	NA	NA	NA	NA	5.01	12.81	NA	NA
1-METHYLNAPHTHALENE	39.42	NA	NA	NA	NA	NA	6.84	0.5	NA	NA
1-METHYLPHENANTHRENE	995	NA	NA	NA	NA	NA	27.68	367.9	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	116	NA	NA	NA	NA	NA	2.36	10.1	NA	NA
2,6-DIMETHYLNAPHTHALENE	171	NA	NA	NA	NA	NA	6.56	7.55	NA	NA
2-METHYLNAPHTHALENE	30.53	NA	NA	NA	NA	NA	0.00	2.47	NA	NA
ACENAPHTHENE	109	NA	NA	NA	NA	NA	18.26	63.47	NA	NA
ACENAPHTHYLENE	296	NA	NA	NA	NA	NA	58.86	426.7	NA	NA
ANTHRACENE	2370	NA	NA	NA	NA	NA	200.62	1330	NA	NA
BENZO(A)ANTHRACENE	3420	NA	NA	NA	NA	NA	165.97	7380	NA	NA
BENZO(A)PYRENE	3000	NA	NA	NA	NA	NA	163.83	3320	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	357.91	10100	NA	NA
BENZO(B+K)FLUORANTHENE	4740	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1700	NA	NA	NA	NA	NA	272.63	5140	NA	NA
BENZO(G,H,I)PERYLENE	1570	NA	NA	NA	NA	NA	97.41	2070	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	223.5	2070	NA	NA
CHRYSENE	2650	NA	NA	NA	NA	NA	405.57	4980	NA	NA
DIBENZO(A,H)ANTHRACENE	283	NA	NA	NA	NA	NA	21.2	784.3	NA	NA
FLUORANTHENE	8190	NA	NA	NA	NA	NA	1050	12000	NA	NA
FLUORENE	597	NA	NA	NA	NA	NA	42.73	438.65	NA	NA
HIGH MOLECULAR WEIGHT PAHS	24703	NA	NA	NA	NA	NA	4013.39	63994.3	NA	NA
INDENO(1,2,3-CD)PYRENE	1550	NA	NA	NA	NA	NA	99.85	1720	NA	NA
LOW MOLECULAR WEIGHT PAHS	8020.53	NA	NA	NA	NA	NA	369.19	2662.12	NA	NA
NAPHTHALENE	328	NA	NA	NA	NA	NA	0.27	1.97	NA	NA
PERYLENE	994	NA	NA	NA	NA	NA	57.17	1050	NA	NA
PHENANTHRENE	4290	NA	NA	NA	NA	NA	304.79	3990	NA	NA
PYRENE	7160	NA	NA	NA	NA	NA	793.56	9390	NA	NA
TOTAL PAHS	44598.95	NA	NA	NA	NA	NA	4382.58	66656.42	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	4.2 U	4.2 U	8.0 U	4.7 U	NA	NA	11 U	12 U
ACENAPHTHENE	NA	NA	5.8	4.2 U	11	4.7 U	NA	NA	11 U	12 U
ACENAPHTHYLENE	NA	NA	19	4.5	85	8.0	NA	NA	22	30

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
ANTHRACENE	NA	NA	59	8.8	85	8.6	NA	NA	29	36
BENZO(A)ANTHRACENE	NA	NA	240	35	360	39	NA	NA	110 J	150 J
BENZO(A)PYRENE	NA	NA	270 J	42 J	470 J	60 J	NA	NA	160 J	200 J
BENZO(B)FLUORANTHENE	NA	NA	360 J	74 J	870 *	110 J	NA	NA	260 J	260 J
BENZO(G,H,I)PERYLENE	NA	NA	75 J	14 J	200 J	25 J	NA	NA	84 J	86 J
BENZO(K)FLUORANTHENE	NA	NA	130 J	22 J	260 J	33 J	NA	NA	75 J	110 J
CHRYSENE	NA	NA	190	35	430	58	NA	NA	130 J	150 J
DIBENZO(A,H)ANTHRACENE	NA	NA	19 J	4.2 UJ	55 J	6.5 J	NA	NA	20 J	23 J
FLUORANTHENE	NA	NA	560 *	69	430	63	NA	NA	120	150
FLUORENE	NA	NA	11	4.2 U	21	4.7 U	NA	NA	15	17
HIGH MOLECULAR WEIGHT PAHS	NA	NA	2461	384	3775	497.5	NA	NA	1392	1650
INDENO(1,2,3-CD)PYRENE	NA	NA	77 J	13 J	130 J	18 J	NA	NA	73 J	81 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	231.9	42.3	371.3	44.6	NA	NA	127	165
NAPHTHALENE	NA	NA	7.1	4.2 U	9.3	4.7 U	NA	NA	11 U	12 U
PHENANTHRENE	NA	NA	130	29	160	28	NA	NA	61	82
PYRENE	NA	NA	540 *	80	570 J	85	NA	NA	360 J	440 J
TOTAL PAH	NA	NA	2692.9	426.3	4146.3	542.1	NA	NA	1519	1815
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	0.95	NA	NA	NA	NA	NA	0.9781	5.7099	NA	NA
4,4'-DDE	0.30	NA	NA	NA	NA	NA	0.1845	3.1257	NA	NA
ALDRIN	0.00	NA	NA	NA	NA	NA	0.00	0.0554	NA	NA
HEXACHLOROBENZENE	0.080 U	NA	NA	NA	NA	NA	0.00	0.2432	NA	NA
MIREX	0.10 U	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	0.00829 JEB	0.0108 JEB	0.223 JEB	0.0141 JEB	NA	NA	0.213 JEB	0.229 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	0.0343 JEB	0.0341 JEB	0.261 EB	0.0348 JEB	NA	NA	0.44 EB	0.416 JEB
PCB-101	0.907	NA	0.196 J	0.138 J	4.19 J	0.284 J	NA	NA	5.87 J	4.77 J
PCB-104	0.6488	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	0.2762	NA	0.0795	0.055	1.62	0.135	NA	NA	1.79	1.49
PCB-118	0.319	NA	0.241	0.179	5.2	0.372	NA	NA	5.31	4.73
PCB-126	0.1744	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	0.2017	NA	0.0678 J	0.0462 J	1.09 J	0.105 J	NA	NA	1.54 J	1.32 J
PCB-138	0.4422	NA	0.506 J	0.342 J	7.32 J	0.639 J	NA	NA	10.3 J	9.41 J
PCB-153	0.50	NA	0.524 J	0.372 J	7.39 J	0.637 J	NA	NA	10.2 J	9.08 J
PCB-170	0.0689	NA	0.112	0.0795	0.882	0.0982	NA	NA	1.74	1.73
PCB-18	0.3285	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
PCB-180	0.335	NA	0.255 J	0.184 J	2.24 J	0.257 J	NA	NA	4.2 J	4.11 J
PCB-187	0.2988	NA	0.231	0.165	2.34	0.296	NA	NA	4.23	4.21
PCB-188	0.363	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.020 U	NA	0.0336	0.0267 J	0.215	0.038	NA	NA	0.584	0.585
PCB-201	0.1074	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.5197	NA	0.134	0.109	1.42	1.4	NA	NA	1.41	1.45
PCB-209	0.6515	NA	0.221	0.171	1.78	0.785	NA	NA	2.76	3.49
PCB-28	0.1293	NA	0.0747 JEB	0.0624 JEB	1.56 JEB	0.0902 JEB	NA	NA	1.07 J	1.09 J
PCB-29	0.5787	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.79	NA	0.0502 JEB	0.0441 JEB	1.77 JEB	0.0782 JEB	NA	NA	1.21 JEB	1.07 JEB
PCB-50	0.1354	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	1.3751	NA	0.0548 JEB	0.0492 EB	1.9 EB	0.114 EB	NA	NA	2.17 EB	1.62 EB
PCB-66	0.4376	NA	0.124	0.0913	1.72	0.152	NA	NA	2.01	2.07
PCB-8	0.055 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	0.1863	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	20.3913	NA	5.89	4.32	86.2	11.1	67.5772	209.0887	114	106
TAL Metal Analysis (MG/KG)										
ALUMINUM	24684.5	NA	4820	4350	11300	7990	NA	NA	13300	13200
ANTIMONY	NA	NA	R	R	R	R	NA	NA	0.58 UJ	0.51 UJ
ARSENIC	0.65 J	NA	2.6 J	1.9 J	8.9 J	4.3 J	NA	NA	11.5 J	11.0 J
BARIUM	NA	NA	8.8 J	8.2 J	39.9 J	17.2 J	NA	NA	42.1	40.0
BERYLLIUM	NA	NA	0.32	0.28	0.90	0.40	NA	NA	1.2	1.2
CADMIUM	0.65 J	NA	0.010 UJ	0.010 UJ	0.022 UJ	0.013 UJ	0.201	0.154	0.52 J	0.43 J
CALCIUM	NA	NA	1520	1490	4310	5940	NA	NA	11400 J	10600 J
CHROMIUM	33.75	NA	12.1 J	10.2 J	30.3 J	13.8 J	95.992	152.206	44.0	45.1
COBALT	NA	NA	3.5 J	3.1 J	7.4 J	5.4 J	NA	NA	7.6 J	8.0 J
COPPER	1.875 J	NA	8.6 J	6.8 J	75.1 J	22.4 J	45.522	196.827	62.0 J	69.2 J
IRON	22408.25	NA	8910	7900	19700	13900	NA	NA	25400	25600
LEAD	25.3	NA	9.6 J	8.4 J	65.7 J	21.3 J	35.393	180.764	48.2 J	50.8 J
MAGNESIUM	NA	NA	2700	2400	6620	4450	NA	NA	11000	10700
MANGANESE	314	NA	89.9	88.1	191	125	NA	NA	271	268
MERCURY	0.10 J	NA	0.036	0.031	0.26	0.13	NA	NA	0.21	0.38
NICKEL	34.5	NA	7.2 J	6.2 J	16.4 J	10.7 J	38.595	85.275	19.2 J	20.3 J
POTASSIUM	NA	NA	888	777	2780	1010	NA	NA	4240	4360
SELENIUM	NA	NA	0.21 U	0.21 U	0.43 U	0.27 U	NA	NA	0.62 U	0.67 U
SILVER	0.065 J	NA	0.10 U	0.10 U	0.22 U	0.13 U	0.5987	0.823	0.31 UJ	0.34 UJ
SODIUM	NA	NA	3000	2960	14700	4450	NA	NA	25200	26700

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
THALLIUM	NA	NA	0.66 J	0.59 J	1.6 J	0.95 J	NA	NA	1.7 UJ	1.8 UJ
VANADIUM	NA	NA	12.1	10.4	33.2	17.1	NA	NA	47.3	47.0
ZINC	56.0	NA	40.3 J	28.9 J	168	52.6 J	149.431	593.456	141 J	158 J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	NA	NA	0.06200 B	0.06900 B	0.5900	0.1600 B	NA	NA	0.2700 B	0.3000 B
CHROMIUM	NA	NA	2.200	2.100	4.600	2.100	NA	NA	9.700	9.800
COPPER	NA	NA	3.300 *	2.600 *	20.50 *	13.60 *	NA	NA	28.50 N*	31.20 N*
LEAD	NA	NA	7.100	7.100	51.00	17.20	NA	NA	38.90	44.20
MERCURY	NA	NA	0.001500 U	0.003800 B	0.002900 U	0.001700 B	NA	NA	0.001600 UN	0.001800 UN
NICKEL	NA	NA	0.9600 BE	1.100 BE	3.100 BE	20.20 E	NA	NA	4.800 N*	4.800 N*
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	6.100	400.0
ZINC	NA	NA	24.80	16.10	106.0	24.80	NA	NA	78.80	88.90
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	NA	NA	0.001420 U	0.001420 U	0.005200	0.001520 U	NA	NA	0.003630 U	0.003940 U
CHROMIUM	NA	NA	0.04320	0.04130	0.08760	0.04050	NA	NA	0.1865	0.1882
COPPER	NA	NA	0.05180 UJ	0.04170 UJ	0.3235 J	0.2145 J	NA	NA	0.4488 J	0.4918 J
LEAD	NA	NA	0.03410	0.03420	0.2463	0.08320	NA	NA	0.1878	0.2134
MERCURY	NA	NA	0.00003200 U	0.00003200 U	0.00006000 U	0.00003400 U	NA	NA	0.00008100 UJ	0.00008800 UJ
NICKEL	NA	NA	0.02727 UJ	0.02717 UJ	0.05260 J	0.3448 J	NA	NA	0.08110 UJ	0.08190 UJ
SEM/AVS RATIO	0.4059	0.5359	13.0171	3.6029	0.2858	0.6606	NA	NA	10.7172	0.1814
SULFIDE	NA	NA	0.03510 J	0.08940 J	8.1566 J	1.6083 J	NA	NA	0.1892 J	12.4186 J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	0.4569	0.3221	2.331	1.0624	NA	NA	2.0277	2.2532
ZINC	NA	NA	0.3796 J	0.2466 J	1.6158 J	0.3794 J	NA	NA	1.2046 J	1.3598 J
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
MONOBUTYLTIN	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRABUTYLTIN	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	6.82	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	NA	NA	5500	4600	35000	7600	2.06	1.3	31000	26000

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	40.77	NA	0.62	NA	11.03	NA	NA	8.9	NA	1.66
1-METHYLNAPHTHALENE	9.71	NA	0.00	NA	1.748	NA	NA	0.00	NA	3.47
1-METHYLPHENANTHRENE	440.82	NA	15.4	NA	42.658	NA	NA	14.03	NA	34.59
2,3,5-TRIMETHYLNAPHTHALENE	51.69	NA	0.00	NA	10.33	NA	NA	3.91	NA	4.02
2,6-DIMETHYLNAPHTHALENE	23.04	NA	0.00	NA	3.35	NA	NA	0.00	NA	1.79
2-METHYLNAPHTHALENE	8.22	NA	0.00	NA	4.74	NA	NA	0.00	NA	0.00
ACENAPHTHENE	192.85	NA	0.00	NA	12.7	NA	NA	18.16	NA	18.28
ACENAPHTHYLENE	867.22	NA	89.27	NA	26.56	NA	NA	24.65	NA	28.05
ANTHRACENE	3360	NA	260.1	NA	128.88	NA	NA	203.05	NA	161.16
BENZO(A)ANTHRACENE	10600	NA	413.96	NA	377.73	NA	NA	404.69	NA	277.05
BENZO(A)PYRENE	4710	NA	431.43	NA	401.78	NA	NA	488.3	NA	301.91
BENZO(B)FLUORANTHENE	9230	NA	646.47	NA	683.27	NA	NA	800.63	NA	398.98
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	5600	NA	443.44	NA	403.67	NA	NA	451.78	NA	303.12
BENZO(G,H,I)PERYLENE	3060	NA	272.12	NA	313.41	NA	NA	355.15	NA	232.62
BENZO(K)FLUORANTHENE	1980	NA	488.58	NA	247.76	NA	NA	287.09	NA	244.66
CHRYSENE	6390	NA	764.26	NA	479.13	NA	NA	602.81	NA	375.63
DIBENZO(A,H)ANTHRACENE	1460	NA	93.38	NA	85.16	NA	NA	89.09	NA	52.05
FLUORANTHENE	13600	NA	885.66	NA	644.24	NA	NA	788.42	NA	830.68
FLUORENE	858.78	NA	25.15	NA	42.69	NA	NA	55.07	NA	53.58
HIGH MOLECULAR WEIGHT PAHS	72956	NA	5531.95	NA	4525.58	NA	NA	5336.06	NA	4197.97
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	5856.04	NA	390.54	NA	292.706	NA	NA	331.59	NA	306.6
NAPHTHALENE	2.94	NA	0.00	NA	8.02	NA	NA	3.82	NA	0.00
PERYLENE	1336	NA	165.24	NA	147.23	NA	NA	202.71	NA	115.56
PHENANTHRENE	4890	NA	217.44	NA	224.34	NA	NA	264.29	NA	384.96
PYRENE	10100	NA	709.97	NA	517.86	NA	NA	601.1	NA	680.75
TOTAL PAHS	78812.04	NA	5922.49	NA	4818.286	NA	NA	5667.65	NA	4504.57
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	35 U	NA	9.4 U	NA	8.7 U	8.2 U	NA	15	NA
ACENAPHTHENE	NA	120	NA	9.4 U	NA	8.7 U	8.2 U	NA	25	NA
ACENAPHTHYLENE	NA	54	NA	18	NA	10 J	19	NA	39	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
ANTHRACENE	NA	280	NA	45	NA	11 J	25	NA	62	NA
BENZO(A)ANTHRACENE	NA	1000	NA	150 J	NA	47 J	92 J	NA	240	NA
BENZO(A)PYRENE	NA	1000	NA	150 J	NA	78 J	130 J	NA	370	NA
BENZO(B)FLUORANTHENE	NA	1700	NA	280 J	NA	110 J	190 J	NA	560	NA
BENZO(G,H,I)PERYLENE	NA	460	NA	65 J	NA	35 J	54 J	NA	170	NA
BENZO(K)FLUORANTHENE	NA	420	NA	110 J	NA	36 J	67 J	NA	170	NA
CHRYSENE	NA	1100	NA	180 J	NA	56 J	100 J	NA	220	NA
DIBENZO(A,H)ANTHRACENE	NA	140 J	NA	18 J	NA	15 J	18 J	NA	35	NA
FLUORANTHENE	NA	1700	NA	200	NA	34 J	90	NA	260	NA
FLUORENE	NA	140	NA	11	NA	8.7 U	10	NA	31	NA
HIGH MOLECULAR WEIGHT PAHS	NA	9760	NA	1644	NA	584	1043	NA	2945	NA
INDENO(1,2,3-CD)PYRENE	NA	440	NA	61 J	NA	33 J	52 J	NA	120	NA
LOW MOLECULAR WEIGHT PAHS	NA	1735	NA	150	NA	49	115	NA	418	NA
NAPHTHALENE	NA	41	NA	9.4 U	NA	8.7 U	8.2 U	NA	16	NA
PHENANTHRENE	NA	1100 J	NA	76	NA	28 J	61	NA	230	NA
PYRENE	NA	1800	NA	430 J	NA	140 J	250 J	NA	800	NA
TOTAL PAH	NA	11495	NA	1794	NA	633	1158	NA	3363	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	3.8079	NA	4.0305	NA	2.9225	NA	NA	2.5852	NA	1.5433
4,4'-DDE	13.6113	NA	0.00	NA	1.7493	NA	NA	2.1156	NA	3.5781
ALDRIN	0.00	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
HEXACHLOROBENZENE	0.1739	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
MIREX	0.00	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	0.191 JEB	NA	0.551 JEB	NA	0.171 JEB	0.171 JEB	NA	1.18 JEB	NA
2,4'-DICHLOROBIPHENYL	NA	0.26 EB	NA	0.801 EB	NA	0.376 EB	0.354 JEB	NA	0.872 JEB	NA
PCB-101	NA	7.9 J	NA	11.6 J	NA	4.23 J	4.26 J	NA	34.2 J	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	2.89	NA	3.62	NA	1.21	1.25	NA	10.7	NA
PCB-118	NA	7.41	NA	12.2	NA	4.17	4.36	NA	28.5	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	3.15 J	NA	2.74 J	NA	1.26 J	1.26 J	NA	7.33 J	NA
PCB-138	NA	24.3 J	NA	16 J	NA	9.67 J	9.44 J	NA	45.9 J	NA
PCB-153	NA	22.2 J	NA	14.2 J	NA	10 J	9.57 J	NA	37.2 J	NA
PCB-170	NA	5.27	NA	2.43	NA	2.24	1.97	NA	7.21	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
PCB-180	NA	12.7 J	NA	5.95 J	NA	5.4 J	4.42 J	NA	18.4 J	NA
PCB-187	NA	8.18	NA	5.03	NA	4.62	4.22	NA	15	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	1.56	NA	0.886	NA	0.808	0.628	NA	2.62	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	5.59	NA	1.74	NA	1.36	1.38	NA	3.67	NA
PCB-209	NA	66.3 J	NA	3.28 J	NA	2.4	2.3	NA	6.51	NA
PCB-28	NA	1.02 J	NA	2.08 J	NA	1.05 J	1.08 J	NA	2.52 J	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	1.17 JEB	NA	3.76 JEB	NA	0.902 JEB	0.97 JEB	NA	6.51 JEB	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	1.96 EB	NA	7.1 EB	NA	1.24 EB	1.43 EB	NA	12.6 EB	NA
PCB-66	NA	2.25	NA	4.9	NA	1.99	2.09	NA	8.13	NA
PCB-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	733.3312	349	194.56	198	105.4064	106	102	132.0812	498	73.3573
TAL Metal Analysis (MG/KG)										
ALUMINUM	NA	16700	NA	12100	NA	11800	10900	NA	10700	NA
ANTIMONY	NA	0.76 UJ	NA	0.61 J	NA	0.35 UJ	0.33 UJ	NA	0.30 UJ	NA
ARSENIC	NA	13.5 J	NA	11.5 J	NA	9.8 J	10.6 J	NA	10.0 J	NA
BARIUM	NA	123	NA	36.2	NA	33.1	30.7	NA	29.6	NA
BERYLLIUM	NA	1.6	NA	1.1	NA	1.1	1.0	NA	0.91	NA
CADMIUM	1.002	2.7 J	0.121	0.63 J	0.217	0.43 J	0.42 J	0.209	0.52 J	0.174
CALCIUM	NA	7710 J	NA	14700 J	NA	24300 J	18800 J	NA	7540 J	NA
CHROMIUM	195.012	51.7 J	84.788	42.9	105.578	40.5	38.3	109.064	39.4	79.302
COBALT	NA	10.0 J	NA	7.3 J	NA	6.9 J	6.6 J	NA	6.8 J	NA
COPPER	262.344	150 J	62.843	63.7 J	52.291	63.9 J	59.8 J	57.769	55.7 J	27.93
IRON	NA	34400	NA	25400	NA	23200	22200	NA	21500	NA
LEAD	201.061	114 J	51.348	50.4 J	43.296	46.5 J	46.2 J	48.579	49.9 J	31.699
MAGNESIUM	NA	7120	NA	8440	NA	7630	7230	NA	6630	NA
MANGANESE	NA	250	NA	251	NA	262	236	NA	228	NA
MERCURY	NA	0.27	NA	0.25	NA	0.27	0.21	NA	0.33	NA
NICKEL	128.18	38.5 J	37.406	18.5 J	38.347	17.0 J	16.2 J	40.837	17.1 J	37.406
POTASSIUM	NA	3340 J	NA	3890 J	NA	3690	3520	NA	3050 J	NA
SELENIUM	NA	R	NA	0.54 U	NA	0.47 U	0.44 U	NA	R	NA
SILVER	1.2668	0.26 UJ	13.776	0.27 UJ	2.3207	0.23 UJ	0.22 UJ	1.5936	0.20 UJ	5.4065
SODIUM	NA	17100 J	NA	20500	NA	17500	16700	NA	14700	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
THALLIUM	NA	2.4 UJ	NA	1.9 UJ	NA	1.8 UJ	1.5 UJ	NA	1.4 UJ	NA
VANADIUM	NA	53.6	NA	41.7	NA	39.9	37.0	NA	36.1	NA
ZINC	1231.421	377	189.526	171 J	173.311	125 J	117 J	175.299	148 J	118.703
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	NA	0.8100	NA	0.4400	NA	0.2300 B	0.2000 B	NA	0.5900	NA
CHROMIUM	NA	10.70	NA	24.70	NA	13.80	8.800	NA	9.500	NA
COPPER	NA	36.80 N*	NA	30.40 N*	NA	34.30 N*	33.50 N*	NA	47.70 N*	NA
LEAD	NA	73.40	NA	49.90	NA	44.30	38.60	NA	55.50	NA
MERCURY	NA	0.001300 UN	NA	0.001300 UN	NA	0.002600 BN	0.005100 BN	NA	0.003300 BN	NA
NICKEL	NA	75.50 N*	NA	24.00 N*	NA	4.600 N*	39.70 N*	NA	19.80 N*	NA
SULFIDE	NA	2400	NA	370.0	NA	2600	1100	NA	210.0	NA
ZINC	NA	233.0	NA	163.0	NA	84.20	68.30	NA	146.0	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	NA	0.007100	NA	0.003900	NA	0.002770 U	0.002660 U	NA	0.005200	NA
CHROMIUM	NA	0.2052 U	NA	0.4753 U	NA	0.2660 U	0.1690 U	NA	0.1820	NA
COPPER	NA	0.5791 J	NA	0.4783 UJ	NA	0.5401 J	0.5274 J	NA	0.7510 J	NA
LEAD	NA	0.3544	NA	0.2409	NA	0.2140	0.1863	NA	0.2680	NA
MERCURY	NA	0.00006600 UJ	NA	0.00006700 UJ	NA	0.00006200 UJ	0.00006000 UJ	NA	0.00005800 UJ	NA
NICKEL	NA	1.286 UJ	NA	0.4091 UJ	NA	0.07800 UJ	0.6757 UJ	NA	0.3381 J	NA
SEM/AVS RATIO	NA	0.05990	NA	0.2391	NA	0.02540	0.05170	NA	0.5787	NA
SULFIDE	NA	75.2023 J	NA	11.4438 J	NA	80.3209 J	33.9942 J	NA	6.5229 J	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	4.5028	NA	2.7358	NA	2.0418	1.7573	NA	3.7747	NA
ZINC	NA	3.5622 J	NA	2.491 J	NA	1.2877 J	1.0436 J	NA	2.2304 J	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MONOBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRABUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	2.63	25000	3.17	26000	6.7	25000	23000	4.37	22000	2.67

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	11.37	NA	0.00	NA	0.00	18.53	NA	13.32	0.00	1.85
1-METHYLNAPHTHALENE	0.12	NA	0.00	NA	0.00	10.97	NA	9.85	0.00	6.92
1-METHYLPHENANTHRENE	81.87	NA	4.33	NA	1.27	51.06	NA	21.94	59.6	4.16
2,3,5-TRIMETHYLNAPHTHALENE	11	NA	0.00	NA	1.01	8.15	NA	0.00	0.00	1.61
2,6-DIMETHYLNAPHTHALENE	1.89	NA	0.00	NA	0.00	12.33	NA	7.35	0.00	0.73
2-METHYLNAPHTHALENE	2.37	NA	0.00	NA	0.74	6.93	NA	0.98	0.00	11.32
ACENAPHTHENE	11.93	NA	0.00	NA	2.29	20.89	NA	10.01	0.00	1
ACENAPHTHYLENE	37.66	NA	2.74	NA	1.03	57.61	NA	95.69	1.99	8.33
ANTHRACENE	180.83	NA	18.58	NA	17.37	254.49	NA	283.67	59.38	15.76
BENZO(A)ANTHRACENE	562.46	NA	34.55	NA	26.14	274.2	NA	184.77	28.21	40.13
BENZO(A)PYRENE	480.98	NA	49.13	NA	38.47	206.33	NA	248.81	43.73	26.07
BENZO(B)FLUORANTHENE	874.35	NA	67.28	NA	70.46	381.04	NA	438.4	80.42	34.34
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	487.19	NA	53.22	NA	40.07	257.17	NA	387.85	51.55	20.86
BENZO(G,H,I)PERYLENE	327.54	NA	19.41	NA	29.52	132.09	NA	226.48	41.2	32.57
BENZO(K)FLUORANTHENE	293.51	NA	55.6	NA	24.16	244.85	NA	346.72	130.14	13.19
CHRYSENE	623.78	NA	70.6	NA	47.47	538.27	NA	523.21	139.59	27.18
DIBENZO(A,H)ANTHRACENE	118.13	NA	14.96	NA	9.34	28.43	NA	35.93	9.31	11.72
FLUORANTHENE	817.94	NA	113.99	NA	94.27	1320	NA	817.36	116.74	66.58
FLUORENE	53.58	NA	4.86	NA	0.92	74.94	NA	48.75	0.00	8.49
HIGH MOLECULAR WEIGHT PAHS	5855.67	NA	616.58	NA	535.87	4991.43	NA	4493.61	872.66	435.52
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	18.33	131.74	NA	168	36.45	25.85
LOW MOLECULAR WEIGHT PAHS	396.15	NA	30.51	NA	26.53	527.65	NA	504.27	120.97	65.32
NAPHTHALENE	3.53	NA	0.00	NA	1.9	11.75	NA	12.71	0.00	5.15
PERYLENE	202.68	NA	17.4	NA	22.57	95.53	NA	130.58	41.6	16.32
PHENANTHRENE	309.45	NA	41.14	NA	21.15	391.69	NA	262.55	41	52.73
PYRENE	757.66	NA	79.3	NA	93.92	990.09	NA	722.95	112.72	67.98
TOTAL PAHS	6251.82	NA	647.09	NA	562.4	5519.08	NA	4997.88	993.63	500.84
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	8.5 UJ	NA	4.5 U	NA	NA	11	NA	NA	NA
ACENAPHTHENE	NA	8.5 UJ	NA	4.5 U	NA	NA	10	NA	NA	NA
ACENAPHTHYLENE	NA	32 J	NA	4.5 U	NA	NA	20	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
ANTHRACENE	NA	42 J	NA	8.9	NA	NA	70	NA	NA	NA
BENZO(A)ANTHRACENE	NA	130 J	NA	34 J	NA	NA	240	NA	NA	NA
BENZO(A)PYRENE	NA	190 J	NA	46 J	NA	NA	320 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	300 J	NA	71 J	NA	NA	620 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	80 J	NA	25 J	NA	NA	99 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	88 J	NA	16 J	NA	NA	160 J	NA	NA	NA
CHRYSENE	NA	170 J	NA	37 J	NA	NA	320	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	20 J	NA	9.5 J	NA	NA	28 J	NA	NA	NA
FLUORANTHENE	NA	200 J	NA	47 J	NA	NA	220	NA	NA	NA
FLUORENE	NA	12 J	NA	4.5 U	NA	NA	22	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	1525	NA	378.5	NA	NA	2776	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	77 J	NA	22 J	NA	NA	89 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	160	NA	31.9	NA	NA	308	NA	NA	NA
NAPHTHALENE	NA	8.5 UJ	NA	4.5 U	NA	NA	15	NA	NA	NA
PHENANTHRENE	NA	74 J	NA	23	NA	NA	160	NA	NA	NA
PYRENE	NA	270 J	NA	71 J	NA	NA	680	NA	NA	NA
TOTAL PAH	NA	1685	NA	410.4	NA	NA	3084	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	2.0961	NA	0.381	NA	0.7402	8.7102	NA	2.4326	0.7479	0.418
4,4'-DDE	1.8163	NA	0.7751	NA	3.4584	1.4549	NA	2.5068	0.6304	0.3951
ALDRIN	0.00	NA	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
HEXACHLOROBENZENE	0.0581	NA	0.00	NA	0.00	0.00	NA	0.0629	0.00	0.00
MIREX	0.00	NA	0.00	NA	0.00	0.00	NA	0.00	-0.0031	0.00
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	0.313 JEB	NA	0.0169 JEB	NA	NA	1.57 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	0.465 EB	NA	0.019 JEB	NA	NA	1.68 EB	NA	NA	NA
PCB-101	NA	13.1 J	NA	1.1 J	NA	NA	24.6 J	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	4.17	NA	0.611	NA	NA	8.93	NA	NA	NA
PCB-118	NA	11.1	NA	1.31	NA	NA	23.8	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	2.4 J	NA	0.463 J	NA	NA	5.47 J	NA	NA	NA
PCB-138	NA	15.5 J	NA	2.7 J	NA	NA	31.8 J	NA	NA	NA
PCB-153	NA	13.5 J	NA	1.9 J	NA	NA	25.2 J	NA	NA	NA
PCB-170	NA	2.09	NA	0.545	NA	NA	5.03	NA	NA	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
PCB-180	NA	4.2 J	NA	1.21 J	NA	NA	11.9 J	NA	NA	NA
PCB-187	NA	3.94	NA	0.709	NA	NA	8.46	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	0.53	NA	0.126	NA	NA	1.62	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	1.27	NA	0.129	NA	NA	2.64	NA	NA	NA
PCB-209	NA	2.3	NA	0.241	NA	NA	3.34	NA	NA	NA
PCB-28	NA	1.31 J	NA	0.0892 J	NA	NA	3.94 JEB	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	3.14 JEB	NA	0.166 JEB	NA	NA	8.1 JEB	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	7.22 EB	NA	0.243 EB	NA	NA	16.5 EB	NA	NA	NA
PCB-66	NA	3.02	NA	0.336	NA	NA	8.1	NA	NA	NA
PCB-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	148.3893	179	28.1474	23.8	11.728	658.1613	385	176.009	22.3161	22.9766
TAL Metal Analysis (MG/KG)										
ALUMINUM	NA	12000	NA	6050	NA	NA	10900	NA	NA	NA
ANTIMONY	NA	0.38 UJ	NA	0.19 UJ	NA	NA	R	NA	NA	NA
ARSENIC	NA	11.0 J	NA	3.2 J	NA	NA	11.6 J	NA	NA	NA
BARIUM	NA	37.5	NA	7.2 J	NA	NA	33.0 J	NA	NA	NA
BERYLLIUM	NA	1.1	NA	0.22	NA	NA	0.97	NA	NA	NA
CADMIUM	0.194	0.42 J	0.851	0.13 J	0.072	0.311	0.023 UJ	0.232	0.0419	0.0016
CALCIUM	NA	8130 J	NA	3180 J	NA	NA	29300	NA	NA	NA
CHROMIUM	102.832	41.3	65.304	13.1 J	60.848	131.934	44.4	114.214	56.456	60.54
COBALT	NA	7.4 J	NA	4.4 J	NA	NA	6.6 J	NA	NA	NA
COPPER	76.006	51.9 J	3.988	18.3 J	12.469	81.459	74.5 J	53.865	18.093	7.746
IRON	NA	24000	NA	13900	NA	NA	21300	NA	NA	NA
LEAD	50.604	46.5 J	14.856	29.1 J	22.132	46.082	65.6 J	45.99	35.2	28.9404
MAGNESIUM	NA	7730	NA	2810	NA	NA	6660	NA	NA	NA
MANGANESE	NA	256	NA	102	NA	NA	234	NA	NA	NA
MERCURY	NA	0.37	NA	0.026 J	NA	NA	1.1	NA	NA	NA
NICKEL	40.238	17.9 J	33.898	12.6 J	31.421	167.916	17.6 J	40.399	16.87	9.155
POTASSIUM	NA	3830	NA	493 J	NA	NA	3270	NA	NA	NA
SELENIUM	NA	0.50 U	NA	R	NA	NA	0.46 U	NA	NA	NA
SILVER	1.7387	0.25 UJ	0.7328	0.12 UJ	0.5636	1.2244	0.23 U	1.5811	0.0638	0.0531
SODIUM	NA	16400	NA	3850	NA	NA	14400	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
THALLIUM	NA	1.8 UJ	NA	R	NA	NA	1.9 J	NA	NA	NA
VANADIUM	NA	40.7	NA	14.3	NA	NA	38.2	NA	NA	NA
ZINC	184.302	129 J	58.824	67.9 J	63.84	1104.448	162	160.599	89.479	67.598
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	NA	0.2000 B	NA	0.05900 B	NA	NA	0.7600	NA	NA	NA
CHROMIUM	NA	9.300	NA	2.800	NA	NA	10.40	NA	NA	NA
COPPER	NA	26.00 N*	NA	23.10 N*	NA	NA	32.90 *	NA	NA	NA
LEAD	NA	40.70	NA	26.10	NA	NA	51.70	NA	NA	NA
MERCURY	NA	0.001800 BN	NA	0.0006700 UN	NA	NA	0.003200 B	NA	NA	NA
NICKEL	NA	24.50 N*	NA	70.20 N*	NA	NA	7.000 E	NA	NA	NA
SULFIDE	NA	510.0	NA	39.00	NA	NA	NA	NA	NA	NA
ZINC	NA	94.60	NA	37.70	NA	NA	120.0	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	NA	0.002760 U	NA	0.001500 U	NA	NA	0.006800	NA	NA	NA
CHROMIUM	NA	0.1797 U	NA	0.05340 U	NA	NA	0.2000	NA	NA	NA
COPPER	NA	0.4101 UJ	NA	0.3631 J	NA	NA	0.5185 J	NA	NA	NA
LEAD	NA	0.1965	NA	0.1259	NA	NA	0.2498	NA	NA	NA
MERCURY	NA	0.00006200 UJ	NA	0.00003400 UJ	NA	NA	0.00005500 U	NA	NA	NA
NICKEL	NA	0.4177 UJ	NA	1.1955 J	NA	NA	0.1200 J	NA	NA	NA
SEM/AVS RATIO	NA	0.1034	NA	1.8791	NA	NA	0.9544	NA	NA	NA
SULFIDE	NA	15.8906 J	NA	1.2031 J	NA	NA	3.0763 J	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	1.6427	NA	2.2607	NA	NA	2.936	NA	NA	NA
ZINC	NA	1.4462 J	NA	0.5762 J	NA	NA	1.8409 J	NA	NA	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MONOBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRABUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	4.63	22000	1.51	4100	1.53	6.17	16000	5.33	0.64	1.01

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.00	1.5	0.00	9.37	0.00	0.00	NA	5.62	9.36	10.93
1-METHYLNAPHTHALENE	0.00	2.36	0.00	0.00	0.00	0.00	NA	14.95	78.68	35.72
1-METHYLPHENANTHRENE	176.54	21.19	82.13	228.33	311.12	421.18	NA	15.41	28.68	107.59
2,3,5-TRIMETHYLNAPHTHALENE	0.00	1.82	0.00	1.01	0.00	4.3	NA	4.19	7.06	9.73
2,6-DIMETHYLNAPHTHALENE	0.00	0.67	0.00	0.00	0.00	0.00	NA	3.04	1.18	5.39
2-METHYLNAPHTHALENE	0.00	1.46	0.00	0.00	0.00	0.00	NA	20.1	35.18	53.4
ACENAPHTHENE	0.00	1.05	0.00	14.84	0.00	17.13	NA	7.12	10.79	21.57
ACENAPHTHYLENE	0.00	2.78	32.21	167	0.00	64.6	NA	30.23	42.38	65.31
ANTHRACENE	257	7.83	212.67	753.36	799.35	922.14	NA	99.9	129.74	165.52
BENZO(A)ANTHRACENE	134.35	14.48	187.99	897.91	399.2	1420	NA	196.33	271.7	414.03
BENZO(A)PYRENE	245.08	11.76	310.59	1190	496.21	880.34	NA	109.63	182.008	239.46
BENZO(B)FLUORANTHENE	324.38	20.17	476.63	1890	1050	1500	NA	158.84	252.21	317.95
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	220.86	11.44	264.91	1020	576.42	742.72	NA	88.94	145.57	186.89
BENZO(G,H,I)PERYLENE	164.98	13.71	163.01	562.52	259.74	279.72	NA	133.61	215.38	310.4
BENZO(K)FLUORANTHENE	229.83	32.56	242.86	899.04	791.3	2299.84	NA	47.04	75.13	117.63
CHRYSENE	444.14	13.57	386.62	1460	1170	1580	NA	121.62	193.46	234.29
DIBENZO(A,H)ANTHRACENE	20.5	3.62	64.18	243.3	39.28	56.8	NA	43.99	63.36	117
FLUORANTHENE	464.3	34.36	477.49	1590	1830	5850	NA	324.6	549.89	827.01
FLUORENE	0.00	4.96	24.42	92.44	0.00	215.62	NA	29.36	78.14	63.94
HIGH MOLECULAR WEIGHT PAHS	3129.21	237.28	3417.68	12859.78	9211.87	20405.51	NA	1923.4	3270.568	4408.67
INDENO(1,2,3-CD)PYRENE	142.96	9.44	142.51	529.48	255.29	276.16	NA	99.71	164.16	225.8
LOW MOLECULAR WEIGHT PAHS	433.54	48.21	351.43	1266.35	1110.47	1654.1	NA	232.9	437.18	551.02
NAPHTHALENE	0.00	2.59	0.00	0.00	0.00	9.13	NA	2.98	15.99	11.92
PERYLENE	129.95	12.63	90.7	310.78	244.35	299.93	NA	54.42	95.61	118
PHENANTHRENE	112	18.25	201.41	626.75	550.08	1400	NA	171.29	547.73	477.64
PYRENE	495.88	41.29	408.78	1640	1550	3820	NA	373.38	514.36	822.57
TOTAL PAHS	3562.75	285.49	3769.11	14126.13	10322.34	22059.61	NA	2156.3	3707.748	4959.69
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	9.1 UJ	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	11 J	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	34 J	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
ANTHRACENE	NA	NA	NA	NA	NA	NA	54 J	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	200 J	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	230 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	410 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	93 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	140 J	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	260 J	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	29 J	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	250 J	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	19 J	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	2048	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	86 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	268	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	9.1 UJ	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	150 J	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	350 J	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	NA	NA	2316	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	1.5749	0.00	0.6533	4.3373	2.3874	6.2639	NA	1.1765	2.5337	1.5831
4,4'-DDE	1.1955	0.3584	0.4383	0.00	1.7878	0.00	NA	0.7568	2.0208	3.7097
ALDRIN	0.00	0.00	0.00	0.087	0.00	0.1782	NA	0.00	0.00	0.00
HEXACHLOROBENZENE	0.0634	0.00	0.071	0.1049	0.1034	0.1183	NA	0.2434	0.0826	1.4655
MIREX	0.00	0.00	0.1688	0.3908	0.2284	0.3245	NA	0.0866	0.28	0.2163
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.437 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.696 EB	NA	NA	NA
PCB-101	NA	NA	NA	NA	NA	NA	15 J	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	NA	NA	NA	NA	NA	4.38	NA	NA	NA
PCB-118	NA	NA	NA	NA	NA	NA	12.8	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	NA	NA	NA	NA	NA	2.84 J	NA	NA	NA
PCB-138	NA	NA	NA	NA	NA	NA	17.6 J	NA	NA	NA
PCB-153	NA	NA	NA	NA	NA	NA	14.3 J	NA	NA	NA
PCB-170	NA	NA	NA	NA	NA	NA	2.26	NA	NA	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
PCB-180	NA	NA	NA	NA	NA	NA	4.88 J	NA	NA	NA
PCB-187	NA	NA	NA	NA	NA	NA	4.3	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	NA	NA	NA	NA	NA	0.661	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	NA	NA	NA	NA	NA	1.41	NA	NA	NA
PCB-209	NA	NA	NA	NA	NA	NA	2.15	NA	NA	NA
PCB-28	NA	NA	NA	NA	NA	NA	1.69 J	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	NA	NA	NA	NA	NA	3.47 JEB	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	NA	NA	NA	NA	NA	7.67 EB	NA	NA	NA
PCB-66	NA	NA	NA	NA	NA	NA	4.27	NA	NA	NA
PCB-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	54.835	9.4	243.7826	292.7514	216.559	366.9521	202	92.3076	178.2045	150.1339
TAL Metal Analysis (MG/KG)										
ALUMINUM	NA	NA	NA	NA	NA	NA	12500	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	0.37 UJ	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	11.0 J	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	40.6	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	1.1	NA	NA	NA
CADMIUM	0.0536	0.0285	0.0405	0.2227	0.1723	0.2536	0.54 J	0.1892	0.2089	0.2091
CALCIUM	NA	NA	NA	NA	NA	NA	8300 J	NA	NA	NA
CHROMIUM	72.28	55.45	57.342	106.538	105.124	99.231	43.2	142.34	106.25	98.852
COBALT	NA	NA	NA	NA	NA	NA	7.5 J	NA	NA	NA
COPPER	18.606	6.41	17.233	81.666	66.912	79.683	58.7 J	29.659	51.264	49.438
IRON	NA	NA	NA	NA	NA	NA	24400	NA	NA	NA
LEAD	42.025	31.5291	32.9018	60.2299	57.8157	76.9119	47.9 J	41.8304	52.5276	54.1921
MAGNESIUM	NA	NA	NA	NA	NA	NA	8150	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	253	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.23	NA	NA	NA
NICKEL	10.127	4.438	5.902	25.361	22.794	23.066	18.4 J	7.909	25.281	23.196
POTASSIUM	NA	NA	NA	NA	NA	NA	3920	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	0.49 U	NA	NA	NA
SILVER	0.0533	0.0473	0.0534	0.1591	0.4008	0.8837	0.24 UJ	0.0822	0.1222	0.1223
SODIUM	NA	NA	NA	NA	NA	NA	18800	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20			DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604		DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004		6/13/1994	6/13/1994	6/13/1994
QC Identifier											
THALLIUM	NA	NA	NA	NA	NA	NA	1.8	UJ	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	42.0		NA	NA	NA
ZINC	83.129	48.315	71.286	163.324	139.453	157.727	158	J	174.732	142.782	140.573
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)											
CADMIUM	NA	NA	NA	NA	NA	NA	0.2300	B	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	11.90		NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	32.90	N*	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	43.10		NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.001300	UN	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	51.40	N*	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	80.00		NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	88.00		NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)											
CADMIUM	NA	NA	NA	NA	NA	NA	0.002860	U	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	0.2286	U	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	0.5176	J	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	0.2081		NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.00006400	UJ	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	0.8757	UJ	NA	NA	NA
SEM/AVS RATIO	NA	NA	NA	NA	NA	NA	0.8330		NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	2.4862	J	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	2.0709		NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	1.3452	J	NA	NA	NA
Miscellaneous Analysis (UG/KG)											
DIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
MONOBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TETRABUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TRIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Total Organic Carbon Analysis (MG/KG)											
CARBON	2.06	0.26	1.01	2.95	4.21	3.29	18000		1.15	2.94	2.86

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	2.67	6.8913	NA	NA	6.6637	NA	NA	NA
1-METHYLNAPHTHALENE	10.82	10.9328	NA	NA	7.8339	NA	NA	NA
1-METHYLPHENANTHRENE	9.02	52.5604	NA	NA	43.5391	NA	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	3.28	6.1887	NA	NA	4.343	NA	NA	NA
2,6-DIMETHYLNAPHTHALENE	3.48	27.1956	NA	NA	18.6451	NA	NA	NA
2-METHYLNAPHTHALENE	14.56	11.2173	NA	NA	13.8635	NA	NA	NA
ACENAPHTHENE	2.2	41.7442	NA	NA	12.2124	NA	NA	NA
ACENAPHTHYLENE	31.85	75.6525	NA	NA	93.8391	NA	NA	NA
ANTHRACENE	38.28	302.1497	NA	NA	268.4	NA	NA	NA
BENZO(A)ANTHRACENE	86.15	328.1891	NA	NA	517.9409	NA	NA	NA
BENZO(A)PYRENE	54.52	395.8064	NA	NA	434.2685	NA	NA	NA
BENZO(B)FLUORANTHENE	69.42	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	38.08	345.3157	NA	NA	365.0057	NA	NA	NA
BENZO(G,H,I)PERYLENE	61.29	199.7091	NA	NA	201.169	NA	NA	NA
BENZO(K)FLUORANTHENE	105.67	876.604	NA	NA	998.7657	NA	NA	NA
CHRYSENE	57.66	484.8087	NA	NA	591.6976	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	16.11	60.8598	NA	NA	61.3426	NA	NA	NA
FLUORANTHENE	223.98	490.4041	NA	NA	686.4765	NA	NA	NA
FLUORENE	18.21	44.1331	NA	NA	53.8912	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	1162.21	2343.5877	NA	NA	3031.3942	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	45.89	195.3932	NA	NA	209.3156	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	136.02	776.1088	NA	NA	775.2631	NA	NA	NA
NAPHTHALENE	1.65	17.9795	NA	NA	16.1573	NA	NA	NA
PERYLENE	26.2	103.96	NA	NA	133.3047	NA	NA	NA
PHENANTHRENE	179.64	283.2325	NA	NA	316.8996	NA	NA	NA
PYRENE	197.6	583.5197	NA	NA	739.6682	NA	NA	NA
TOTAL PAHS	1298.23	4940	NA	NA	5800	NA	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	5.2

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	21
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	77
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	89 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	170 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	27 J
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	71 J
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	110
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	8.0 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	120
FLUORENE	NA	NA	NA	NA	NA	NA	NA	8.2
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	816
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	24 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	74.4
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	40
PYRENE	NA	NA	NA	NA	NA	NA	NA	120
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	890.4
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	0.2954	0.10	NA	NA	1.5221	NA	NA	NA
4,4'-DDE	0.4708	0.8747	NA	NA	0.6077	NA	NA	NA
ALDRIN	0.00	0.10	NA	NA	0.10	NA	NA	NA
HEXACHLOROBENZENE	0.00	0.080	NA	NA	0.1185 J	NA	NA	NA
MIREX	0.00	0.10	NA	NA	0.1872 J	NA	NA	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.135 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.192 EB
PCB-101	NA	6.481	NA	NA	5.724	NA	NA	6.46 J
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	1.7527	NA	NA	1.8208	NA	NA	2.46
PCB-118	NA	5.0247	NA	NA	6.2007	NA	NA	5.95
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	1.3681	NA	NA	1.3364	NA	NA	1.29 J
PCB-138	NA	5.9192	NA	NA	7.2131	NA	NA	7.21 J
PCB-153	NA	4.3733	NA	NA	6.1611	NA	NA	4.88 J
PCB-170	NA	0.8938	NA	NA	1.5347	NA	NA	0.717
PCB-18	NA	0.6655	NA	NA	0.7851	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
PCB-180	NA	1.8609	NA	NA	2.7359	NA	NA	1.38 J
PCB-187	NA	1.8067	NA	NA	1.9215	NA	NA	0.912
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	0.1638	NA	NA	0.5054	NA	NA	0.123 J
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	1.5175	NA	NA	2.1269	NA	NA	0.321
PCB-209	NA	0.914	NA	NA	2.037	NA	NA	0.44
PCB-28	NA	2.0575	NA	NA	1.262	NA	NA	0.38 JEB
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	2.0422	NA	NA	1.9768	NA	NA	1.65 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	3.2134	NA	NA	3.618	NA	NA	4.36 EB
PCB-66	NA	6.1573	NA	NA	1.6273	NA	NA	1.21
PCB-8	NA	0.5945	NA	NA	0.5337	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	25.869	93.6121	NA	NA	98.2409	NA	NA	80.1
TAL Metal Analysis (MG/KG)								
ALUMINUM	NA	21201.25	NA	NA	23628.5	NA	NA	7400
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	R
ARSENIC	NA	6.36	NA	NA	9.43	NA	NA	7.0 J
BARIUM	NA	NA	NA	NA	NA	NA	NA	16.8 J
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	0.56
CADMIUM	0.0149	0.34 J	NA	NA	0.18 J	NA	NA	0.013 UJ
CALCIUM	NA	NA	NA	NA	NA	NA	NA	3150
CHROMIUM	71.895	55.0	NA	NA	53.5	NA	NA	22.2 J
COBALT	NA	NA	NA	NA	NA	NA	NA	5.7 J
COPPER	14.432	23.5	NA	NA	39.25	NA	NA	35.2 J
IRON	NA	23830.75	NA	NA	23353.5	NA	NA	17600
LEAD	39.1522	35.9	NA	NA	40.4	NA	NA	27.0 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	4030
MANGANESE	NA	268.5	NA	NA	148.5	NA	NA	161
MERCURY	NA	0.134	NA	NA	0.137	NA	NA	0.060
NICKEL	11.742	21.0	NA	NA	20.5	NA	NA	15.3 J
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	1530
SELENIUM	NA	NA	NA	NA	NA	NA	NA	0.25 U
SILVER	0.0553	0.2625	NA	NA	0.1875	NA	NA	0.13 U
SODIUM	NA	NA	NA	NA	NA	NA	NA	6500

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	NA	1.2 J
VANADIUM	NA	NA	NA	NA	NA	NA	NA	24.7
ZINC	98.084	110	NA	NA	101.5	NA	NA	74.1 J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.1600 B
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	4.500
COPPER	NA	NA	NA	NA	NA	NA	NA	16.20 *
LEAD	NA	NA	NA	NA	NA	NA	NA	19.70
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.002300 B
NICKEL	NA	NA	NA	NA	NA	NA	NA	4.400 E
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	39.50
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.001610 U
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	0.08620
COPPER	NA	NA	NA	NA	NA	NA	NA	0.2553 J
LEAD	NA	NA	NA	NA	NA	NA	NA	0.09500
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.00003600 U
NICKEL	NA	NA	NA	NA	NA	NA	NA	0.07530 J
SEM/AVS RATIO	NA	-21.7015	0.1171	2.8785	-2.8926	0.2902	1.1824	7.3725
SULFIDE	NA	NA	NA	NA	NA	NA	NA	0.1514 J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	1.1162
ZINC	NA	NA	NA	NA	NA	NA	NA	0.6044 J
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	NA	0.82 J	NA	NA	2.58	NA	NA	NA
MONOBUTYLTIN	NA	0.50	NA	NA	1.05	NA	NA	NA
TETRABUTYLTIN	NA	0.50	NA	NA	0.29 J	NA	NA	NA
TRIBUTYLTIN	NA	0.73 J	NA	NA	2.27	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	1.4	NA	NA	NA	NA	NA	NA	2900

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
Semivolatile Organic Analysis (UG/KG)						
1,1-BIPHENYL	15.0649	NA	NA	0.64	18.1083	NA
1-METHYLNAPHTHALENE	20.4658	NA	NA	5.5608	42.6734	NA
1-METHYLPHENANTHRENE	61.4409	NA	NA	14.215	148.3877	NA
2,3,5-TRIMETHYLNAPHTHALENE	7.8727	NA	NA	1.8923	15.7056	NA
2,6-DIMETHYLNAPHTHALENE	38.4551	NA	NA	0.5525 J	56.9563	NA
2-METHYLNAPHTHALENE	32.7246	NA	NA	3.5003	31.7189	NA
ACENAPHTHENE	23.8942	NA	NA	0.44	27.3134	NA
ACENAPHTHYLENE	142.327	NA	NA	26.6369	326.7656	NA
ANTHRACENE	382.6193	NA	NA	91.18	987.9747	NA
BENZO(A)ANTHRACENE	808.5664	NA	NA	358.6432	3740	NA
BENZO(A)PYRENE	923.9997	NA	NA	235.6422	2380	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	829.1939	NA	NA	197.2686	2070	NA
BENZO(G,H,I)PERYLENE	499.8266	NA	NA	49.2665	846.942	NA
BENZO(K)FLUORANTHENE	2240	NA	NA	573.8013	6100	NA
CHRYSENE	911.5175	NA	NA	243.0485	2690	NA
DIBENZO(A,H)ANTHRACENE	131.2298	NA	NA	22.7131	257.2799	NA
FLUORANTHENE	801.425	NA	NA	274.7406	2560	NA
FLUORENE	61.6292	NA	NA	13.2458	150.9851	NA
HIGH MOLECULAR WEIGHT PAHS	5526.7383	NA	NA	2075.2226	21497.2799	NA
INDENO(1,2,3-CD)PYRENE	473.0522	NA	NA	80.3212	871.5971	NA
LOW MOLECULAR WEIGHT PAHS	1020.2172	NA	NA	226.099	2438.7464	NA
NAPHTHALENE	41.7458	NA	NA	5.259	51.6201	NA
PERYLENE	248.7351	NA	NA	66.6729	617.5347	NA
PHENANTHRENE	335.2771	NA	NA	85.8369	862.3687	NA
PYRENE	1950	NA	NA	940.4349	9870	NA
TOTAL PAHS	11000	NA	NA	3300	34723.9	NA
Low Concentration PAH (SIM) Analysis (UG/KG)						
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	8.1
ACENAPHTHENE	NA	NA	NA	NA	NA	15
ACENAPHTHYLENE	NA	NA	NA	NA	NA	61

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
ANTHRACENE	NA	NA	NA	NA	NA	130
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	410
BENZO(A)PYRENE	NA	NA	NA	NA	NA	530
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	740 *
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	160
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	320
CHRYSENE	NA	NA	NA	NA	NA	560
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	56 J
FLUORANTHENE	NA	NA	NA	NA	NA	380
FLUORENE	NA	NA	NA	NA	NA	31
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	3796
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	160
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	445.1
NAPHTHALENE	NA	NA	NA	NA	NA	10
PHENANTHRENE	NA	NA	NA	NA	NA	190 J
PYRENE	NA	NA	NA	NA	NA	480
TOTAL PAH	NA	NA	NA	NA	NA	4241.1
Pesticide/PCB Analysis (UG/KG)						
2,4'-DDE	65.2185	NA	NA	1.7655	23.2318	NA
4,4'-DDE	7.0026	NA	NA	0.5041	9.6092	NA
ALDRIN	0.10	NA	NA	0.10	0.10	NA
HEXACHLOROBENZENE	0.123 J	NA	NA	0.080	0.3846	NA
MIREX	2.5938	NA	NA	0.4285	8.585	NA
PCB Analysis (UG/KG)						
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	1.39 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	1.85 JEB
PCB-101	220.22	NA	NA	5.307	76.223	227 J
PCB-104	NA	NA	NA	NA	NA	NA
PCB-105	137.4368	NA	NA	2.4691	42.7546	110
PCB-118	242.4092	NA	NA	5.4943	81.9763	293
PCB-126	NA	NA	NA	NA	NA	NA
PCB-128	72.9992	NA	NA	1.2688	25.1776	65.4 J
PCB-138	265.3538	NA	NA	5.8137	94.9642	370 J
PCB-153	173.9958	NA	NA	4.09	65.4074	226 J
PCB-170	44.1602	NA	NA	0.9654	20.3958	32.3
PCB-18	8.362	NA	NA	2.135	27.5421	NA

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
PCB-180	53.1671	NA	NA	1.5326	29.2051	43.5 J
PCB-187	25.8152	NA	NA	0.8777	14.6916	20.3
PCB-188	NA	NA	NA	NA	NA	NA
PCB-195	2.9292	NA	NA	0.2558	3.5626	1.62 J
PCB-201	NA	NA	NA	NA	NA	NA
PCB-206	7.4458	NA	NA	0.5977	9.7235	1.72 J
PCB-209	5.045	NA	NA	0.6182	9.6201	1.77 J
PCB-28	12.9159	NA	NA	2.0613	28.3429	3.46 J
PCB-29	NA	NA	NA	NA	NA	NA
PCB-44	65.0467	NA	NA	1.7735	25.5459	15.6 JEB
PCB-50	NA	NA	NA	NA	NA	NA
PCB-52	130.4981	NA	NA	3.8796	46.2482	38.2 EB
PCB-66	179.5804	NA	NA	1.2291	21.8878	25.2
PCB-8	5.6403	NA	NA	5.2581	65.9511	NA
PCB-87	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	3310	NA	NA	91.254	1380	2960
TAL Metal Analysis (MG/KG)						
ALUMINUM	43767.5	NA	NA	18200.25	18218	10800
ANTIMONY	NA	NA	NA	NA	NA	2.8 UJ
ARSENIC	11.6	NA	NA	11.38	10.32	13.2 J
BARIUM	NA	NA	NA	NA	NA	31.2 J
BERYLLIUM	NA	NA	NA	NA	NA	0.71
CADMIUM	1.03 J	NA	NA	0.10 J	1.24 J	0.92 J
CALCIUM	NA	NA	NA	NA	NA	137000 J
CHROMIUM	103	NA	NA	29.75	50.75	49.2 J
COBALT	NA	NA	NA	NA	NA	4.8 J
COPPER	166.25	NA	NA	2.5 J	1.5 J	442
IRON	34532.5	NA	NA	17196	15478.25	23400
LEAD	150.7	NA	NA	15.5	182	138 J
MAGNESIUM	NA	NA	NA	NA	NA	5040
MANGANESE	346.5	NA	NA	189	193.5	209
MERCURY	0.5875	NA	NA	0.015 U	0.015 U	0.31
NICKEL	43.5	NA	NA	15.5	13.0	14.0 J
POTASSIUM	NA	NA	NA	NA	NA	2370 J
SELENIUM	NA	NA	NA	NA	NA	0.37 U
SILVER	0.6875	NA	NA	0.17	1.82	0.18 UJ
SODIUM	NA	NA	NA	NA	NA	13000

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27						
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604	
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004	
QC Identifier							
THALLIUM	NA	NA	NA	NA	NA		R
VANADIUM	NA	NA	NA	NA	NA	36.8	
ZINC	547.25	NA	NA	36.0	29.75	546	J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)							
CADMIUM	NA	NA	NA	NA	NA	0.3700	
CHROMIUM	NA	NA	NA	NA	NA	24.50	
COPPER	NA	NA	NA	NA	NA	60.70	N*
LEAD	NA	NA	NA	NA	NA	93.90	
MERCURY	NA	NA	NA	NA	NA	0.001000	UN
NICKEL	NA	NA	NA	NA	NA	5.700	N*
SULFIDE	NA	NA	NA	NA	NA	710.0	
ZINC	NA	NA	NA	NA	NA	598.0	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)							
CADMIUM	NA	NA	NA	NA	NA	0.003300	
CHROMIUM	NA	NA	NA	NA	NA	0.4708	
COPPER	NA	NA	NA	NA	NA	0.9555	J
LEAD	NA	NA	NA	NA	NA	0.4534	
MERCURY	NA	NA	NA	NA	NA	0.00005100	UJ
NICKEL	NA	NA	NA	NA	NA	0.09680	UJ
SEM/AVS RATIO	-164.3531	0.06840	12.0719	NA	NA	0.5015	
SULFIDE	NA	NA	NA	NA	NA	21.9848	J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	11.0261	
ZINC	NA	NA	NA	NA	NA	9.1431	J
Miscellaneous Analysis (UG/KG)							
DIBUTYLTIN	5.56	NA	NA	0.50	5.25		NA
MONOBUTYLTIN	4.8	NA	NA	0.50	3.38		NA
TETRABUTYLTIN	0.50	NA	NA	0.50	0.50		NA
TRIBUTYLTIN	8.52	NA	NA	0.50	7.27		NA
Total Organic Carbon Analysis (MG/KG)							
CARBON	NA	NA	NA	NA	NA	15000	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	12.6086	NA	NA	55.4158	12.6874	0.64	0.64	NA
1-METHYLNAPHTHALENE	19.8486	NA	NA	155.9459	27.7092	3.255	3.255	NA
1-METHYLPHENANTHRENE	38.5723	NA	NA	576.9192	49.9757	2.715	2.2056 J	NA
2,3,5-TRIMETHYLNAPHTHALENE	8.4092	NA	NA	59.0593	8.8952	0.54	0.54	NA
2,6-DIMETHYLNAPHTHALENE	34.2342	NA	NA	105.3072	39.1718	1.78	1.78	NA
2-METHYLNAPHTHALENE	43.8733	NA	NA	145.247	35.1052	5.3	0.00	NA
ACENAPHTHENE	17.2749	NA	NA	820.099	20.7905	0.44	0.44	NA
ACENAPHTHYLENE	74.6342	NA	NA	210.611	108.8023	0.77	1.0017	NA
ANTHRACENE	183.4293	NA	NA	2040	323.3137	2.0557 J	1.085	NA
BENZO(A)ANTHRACENE	294.0186	NA	NA	4490	513.224	9.7087	0.00	NA
BENZO(A)PYRENE	377.4684	NA	NA	4130	697.5214	6.2333	0.00	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	362.449	NA	NA	3000	602.8268	4.6899	1.5897 J	NA
BENZO(G,H,I)PERYLENE	247.1024	NA	NA	1780	372.9967	1.9684 J	25	NA
BENZO(K)FLUORANTHENE	911.3454	NA	NA	8490	1550.3108	13.2157	1.9057 J	NA
CHRYSENE	363.6943	NA	NA	4670	646.4287	8.1253	3.76	NA
DIBENZO(A,H)ANTHRACENE	66.5977	NA	NA	570.7401	99.6221	0.3007 J	1.0738 J	NA
FLUORANTHENE	458.7699	NA	NA	11000	649.2962	7.3992 J	14.3696	NA
FLUORENE	31.4468	NA	NA	1020	42.1807	1.34	2.0815 J	NA
HIGH MOLECULAR WEIGHT PAHS	2210.2406	NA	NA	34320.7401	4116.0924	64.6812	19.2034	NA
INDENO(1,2,3-CD)PYRENE	222.5593	NA	NA	1840	332.0114	2.1646 J	1.645	NA
LOW MOLECULAR WEIGHT PAHS	608.693	NA	NA	12822.4259	880.6856	14.021	5.8125	NA
NAPHTHALENE	37.5376	NA	NA	126.4689	47.646	2.6	0.00	NA
PERYLENE	133.3961	NA	NA	928.7011	176.1805	5.7463	0.445	NA
PHENANTHRENE	220.497	NA	NA	8460	302.8472	1.5153 J	1.2043 J	NA
PYRENE	649.6917	NA	NA	9460	1510	32.914	0.00	NA
TOTAL PAHS	4810	NA	NA	64100	8170	96	25.432	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	11 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	11 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	27

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	38
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	140
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	220 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	290 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	97 J
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	110 J
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	180
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	24 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	160
FLUORENE	NA	NA	NA	NA	NA	NA	NA	18
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	1656
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	85 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	182
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	12
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	87
PYRENE	NA	NA	NA	NA	NA	NA	NA	350
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	1838
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	1.6726	NA	NA	3.027	6.3366	0.3287	0.4694	NA
4,4'-DDE	2.0345	NA	NA	17.057	5.0083	0.025	0.1952	NA
ALDRIN	0.10	NA	NA	0.10	0.10	0.10	0.10	NA
HEXACHLOROBENZENE	0.0554 J	NA	NA	0.1034 J	0.0881 J	0.080	0.080	NA
MIREX	0.1694 J	NA	NA	0.3859	1.6626	0.1262 J	0.0696 J	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.231 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.228 EB
PCB-101	5.509	NA	NA	10.109	21.293	0.568	1.134	3.63 J
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	2.0427	NA	NA	3.7277	6.4038	0.1016	0.1817	1.25
PCB-118	7.0903	NA	NA	12.382	22.6231	0.2509 J	0.6896	4.22
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	1.8865	NA	NA	2.7907	6.9928	0.0633 J	0.15	1.01 J
PCB-138	10.857	NA	NA	15.803	33.3266	0.3076	0.8547	6.86 J
PCB-153	9.974	NA	NA	14.7091	27.5092	0.2316	0.6955	7.25 J
PCB-170	3.1251	NA	NA	3.9981	12.8635	0.035	0.1345	0.844
PCB-18	0.4502	NA	NA	0.9586	3.0462	0.4674	0.4542	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
PCB-180	5.7721	NA	NA	7.3233	21.9454	0.2138	0.59	2.11 J
PCB-187	3.9393	NA	NA	5.855	11.4878	0.0554	0.3042	2.4
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.9648	NA	NA	0.8377	2.1603	0.0588	0.1482	0.228
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	3.1163	NA	NA	5.3297	6.8891	0.2296	0.3894	1.33
PCB-209	3.9938	NA	NA	5.2007	4.4421	0.2509	0.8203	1.66
PCB-28	1.4968	NA	NA	2.1122	6.2505	0.149	0.1789	1.47 J
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	1.467	NA	NA	2.5902	6.7862	0.2257	0.494	1.8 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	2.8518	NA	NA	4.5068	12.8159	0.2433	0.875	1.76 EB
PCB-66	1.6536	NA	NA	2.9492	5.874	0.1075	0.2229	1.64
PCB-8	0.6636	NA	NA	0.7466	2.519	0.1925	0.0699 J	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	133.7077	NA	NA	203.8593	430.457	7.4336	16.7737	79.8
TAL Metal Analysis (MG/KG)								
ALUMINUM	41307.5	NA	NA	38435	30315	17497.75	29658.75	13400
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	0.48 UJ
ARSENIC	8.68	NA	NA	9.66	9.5	8.59	4.85	11.8 J
BARIUM	NA	NA	NA	NA	NA	NA	NA	39.0
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	1.2
CADMIUM	0.55 J	NA	NA	0.90 J	0.91 J	0.11 J	0.070 J	0.48 J
CALCIUM	NA	NA	NA	NA	NA	NA	NA	9170 J
CHROMIUM	80.5	NA	NA	107.75	112.75	44.0	108	46.0
COBALT	NA	NA	NA	NA	NA	NA	NA	8.1 J
COPPER	71.75	NA	NA	132.5	179.5	18.25	168	60.1 J
IRON	29155	NA	NA	35297.5	32305	33277.75	30379.25	26700
LEAD	77.7	NA	NA	192.6	148.4	12.8	16.1	51.3 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	9310
MANGANESE	302.5	NA	NA	338	331.5	343.25	268.25	278
MERCURY	0.315	NA	NA	1.0775	0.4075	0.015 U	0.86	0.17
NICKEL	24.25	NA	NA	45.5	77.75	30.75	37.25	19.9 J
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	4360
SELENIUM	NA	NA	NA	NA	NA	NA	NA	R
SILVER	0.5125	NA	NA	1.0	0.96	0.16	0.15	0.32 UJ
SODIUM	NA	NA	NA	NA	NA	NA	NA	24300

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	NA	1.7 UJ
VANADIUM	NA	NA	NA	NA	NA	NA	NA	45.6
ZINC	169.25	NA	NA	327.75	455	71.25	466.5	142 J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.2300 B
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	9.900
COPPER	NA	NA	NA	NA	NA	NA	NA	31.00 N*
LEAD	NA	NA	NA	NA	NA	NA	NA	45.50
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.001600 UN
NICKEL	NA	NA	NA	NA	NA	NA	NA	4.200 BN*
SULFIDE	NA	NA	NA	NA	NA	NA	NA	3.600
ZINC	NA	NA	NA	NA	NA	NA	NA	83.00
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.003660 U
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	0.1897
COPPER	NA	NA	NA	NA	NA	NA	NA	0.4884 J
LEAD	NA	NA	NA	NA	NA	NA	NA	0.2198
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.00008200 UJ
NICKEL	NA	NA	NA	NA	NA	NA	NA	0.07220 UJ
SEM/AVS RATIO	-55.482	0.1186	7.468	NA	NA	NA	NA	19.4047
SULFIDE	NA	NA	NA	NA	NA	NA	NA	0.1117 J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	2.1675
ZINC	NA	NA	NA	NA	NA	NA	NA	1.2696 J
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	21.0	NA	NA	43.4	5.03	0.50	0.50	NA
MONOBUTYLTIN	8.88	NA	NA	14.99	2.9	0.50	0.50	NA
TETRABUTYLTIN	0.60 J	NA	NA	0.50	0.50	0.50	0.50	NA
TRIBUTYLTIN	65.36	NA	NA	140.54	12.87	0.50	0.50	NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	NA	NA	NA	NA	NA	NA	NA	24000

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
Semivolatile Organic Analysis (UG/KG)							
1,1-BIPHENYL	29.9113	NA	NA	30.1792	0.64	12.5828	NA
1-METHYLNAPHTHALENE	50.0709	NA	NA	45.4347	3.255	52.95	NA
1-METHYLPHENANTHRENE	266.5573	NA	NA	241.0912	2.2382 J	194.9058	NA
2,3,5-TRIMETHYLNAPHTHALENE	27.9395	NA	NA	28.7557	0.54	17.6121	NA
2,6-DIMETHYLNAPHTHALENE	112.3151	NA	NA	123.8987	1.78	23.9274	NA
2-METHYLNAPHTHALENE	73.4692	NA	NA	61.8418	5.3	26.7152	NA
ACENAPHTHENE	188.5882	NA	NA	197.1768	0.44	158.0626	NA
ACENAPHTHYLENE	300.1476	NA	NA	460.8249	0.77	119.6388	NA
ANTHRACENE	1220	NA	NA	1750	4.5195	541.4797	NA
BENZO(A)ANTHRACENE	2700	NA	NA	4310	6.773	1640	NA
BENZO(A)PYRENE	2380	NA	NA	3200	9.529	1550.0409	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1950	NA	NA	2510	11.8765	1140	NA
BENZO(G,H,I)PERYLENE	1110	NA	NA	1360	7.0974	700.7949	NA
BENZO(K)FLUORANTHENE	5350	NA	NA	7050	34.6377	2750	NA
CHRYSENE	2800	NA	NA	3740	15.3196	1590	NA
DIBENZO(A,H)ANTHRACENE	317.4257	NA	NA	392.8234	1.8584 J	223.3704	NA
FLUORANTHENE	4970	NA	NA	8290	20.367	2860	NA
FLUORENE	293.6357	NA	NA	333.2252	1.34	137.6665	NA
HIGH MOLECULAR WEIGHT PAHS	18467.4257	NA	NA	28222.8234	82.1203	11413.4112	NA
INDENO(1,2,3-CD)PYRENE	1020	NA	NA	1310	5.9139	673.0268	NA
LOW MOLECULAR WEIGHT PAHS	3761.4565	NA	NA	4643.5637	19.0347	2278.709	NA
NAPHTHALENE	76.0754	NA	NA	90.9503	2.6	55.1463	NA
PERYLENE	610.9469	NA	NA	844.1755	4.9633	367.9719	NA
PHENANTHRENE	1609.5404	NA	NA	1749.5448	4.0652 J	1240	NA
PYRENE	5300	NA	NA	8290	28.2732	3550	NA
TOTAL PAHS	32800	NA	NA	46400	157	19600	NA
Low Concentration PAH (SIM) Analysis (UG/KG)							
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	39 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	120
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	73

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
ANTHRACENE	NA	NA	NA	NA	NA	NA	320
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	1200
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	1200
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	1400
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	510
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	630
CHRYSENE	NA	NA	NA	NA	NA	NA	1300
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	160 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	2000
FLUORENE	NA	NA	NA	NA	NA	NA	130
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	10970
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	470
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	1643
NAPHTHALENE	NA	NA	NA	NA	NA	NA	39 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	1000 J
PYRENE	NA	NA	NA	NA	NA	NA	2100
TOTAL PAH	NA	NA	NA	NA	NA	NA	12613
Pesticide/PCB Analysis (UG/KG)							
2,4'-DDE	4.9571	NA	NA	4.7577	0.10	1.1214	NA
4,4'-DDE	6.2869	NA	NA	6.4334	0.1156	9.2481	NA
ALDRIN	0.10	NA	NA	0.2152	0.10	0.10	NA
HEXACHLOROBENZENE	0.1562 J	NA	NA	0.080	0.080	0.080	NA
MIREX	0.10	NA	NA	0.3101	0.10	0.10	NA
PCB Analysis (UG/KG)							
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.233 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.424 JEB
PCB-101	16.696	NA	NA	15.662	0.255	4.324	9.6 J
PCB-104	NA	NA	NA	NA	NA	NA	NA
PCB-105	6.6132	NA	NA	6.5112	0.035	1.3988	3.66
PCB-118	18.3807	NA	NA	17.5629	0.135	4.5103	9.71
PCB-126	NA	NA	NA	NA	NA	NA	NA
PCB-128	5.1411	NA	NA	4.8757	0.035	0.9992	3.16 J
PCB-138	27.041	NA	NA	26.1257	0.0926 J	5.9912	21.9 J
PCB-153	22.7965	NA	NA	22.6695	0.0957 J	5.2303	19.8 J
PCB-170	7.2459	NA	NA	7.5795	0.035	1.6568	4.15
PCB-18	0.6827	NA	NA	0.7411	0.015	0.2304	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
PCB-180	13.7914	NA	NA	14.7384	0.0819 J	3.6683	10.2 J
PCB-187	8.5443	NA	NA	9.783	0.1186	2.6938	9.28
PCB-188	NA	NA	NA	NA	NA	NA	NA
PCB-195	3.8324	NA	NA	5.9233	0.020	0.5814	1.43
PCB-201	NA	NA	NA	NA	NA	NA	NA
PCB-206	17.3943	NA	NA	39.0153	0.2506	2.5762	7.85
PCB-209	105.269	NA	NA	279.6978	0.2277	2.4618	94.3
PCB-28	1.6609	NA	NA	1.7241	0.0645	0.513	1.16 J
PCB-29	NA	NA	NA	NA	NA	NA	NA
PCB-44	3.9443	NA	NA	3.7456	0.0924	0.9777	1.74 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA
PCB-52	9.6936	NA	NA	8.1678	0.0516 J	1.7773	3.34 EB
PCB-66	3.8666	NA	NA	2.7804	0.0964	0.9991	2.9
PCB-8	0.5965	NA	NA	0.6921	0.055	0.1507	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	546.3809	NA	NA	935.9907	2.854	81.4807	410
TAL Metal Analysis (MG/KG)							
ALUMINUM	37147.5	NA	NA	38107.5	18495.25	17663	13000
ANTIMONY	NA	NA	NA	NA	NA	NA	0.41 UJ
ARSENIC	12.46	NA	NA	12.32	3.0	5.57	12.3 J
BARIUM	NA	NA	NA	NA	NA	NA	48.2
BERYLLIUM	NA	NA	NA	NA	NA	NA	1.0
CADMIUM	1.45	NA	NA	2.18	0.14 J	0.78 J	1.1 J
CALCIUM	NA	NA	NA	NA	NA	NA	11000 J
CHROMIUM	86.5	NA	NA	88.0	31.25	56.0	46.1 J
COBALT	NA	NA	NA	NA	NA	NA	8.4 J
COPPER	157.75	NA	NA	165	1.875 U	60.0	93.5 J
IRON	35452.5	NA	NA	36347.5	16445.75	22018.5	30500
LEAD	185.9	NA	NA	172.5	19.0	87.1	113 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	7820
MANGANESE	282.25	NA	NA	289.75	113	137	251
MERCURY	0.5025	NA	NA	0.51	0.015 U	0.565	0.27
NICKEL	34.75	NA	NA	36.0	15.25	23.25	24.2 J
POTASSIUM	NA	NA	NA	NA	NA	NA	3420 J
SELENIUM	NA	NA	NA	NA	NA	NA	0.54 U
SILVER	0.7875	NA	NA	0.9875	0.065 U	0.61	0.27 UJ
SODIUM	NA	NA	NA	NA	NA	NA	20800

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
THALLIUM	NA	NA	NA	NA	NA	NA	1.9 UJ
VANADIUM	NA	NA	NA	NA	NA	NA	49.4
ZINC	392.75	NA	NA	403.25	34.5	130.5	252
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)							
CADMIUM	NA	NA	NA	NA	NA	NA	0.7200
CHROMIUM	NA	NA	NA	NA	NA	NA	10.90
COPPER	NA	NA	NA	NA	NA	NA	42.30 N*
LEAD	NA	NA	NA	NA	NA	NA	88.70
MERCURY	NA	NA	NA	NA	NA	NA	0.001500 UN
NICKEL	NA	NA	NA	NA	NA	NA	84.50 N*
SULFIDE	NA	NA	NA	NA	NA	NA	2300
ZINC	NA	NA	NA	NA	NA	NA	169.0
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)							
CADMIUM	NA	NA	NA	NA	NA	NA	0.006400
CHROMIUM	NA	NA	NA	NA	NA	NA	0.2102 U
COPPER	NA	NA	NA	NA	NA	NA	0.6664 J
LEAD	NA	NA	NA	NA	NA	NA	0.4281
MERCURY	NA	NA	NA	NA	NA	NA	0.00007300 UJ
NICKEL	NA	NA	NA	NA	NA	NA	1.4396 UJ
SEM/AVS RATIO	-175.5936	0.04130	7.5664	NA	NA	NA	0.05250
SULFIDE	NA	NA	NA	NA	NA	NA	70.1675 J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	3.6869
ZINC	NA	NA	NA	NA	NA	NA	2.586 J
Miscellaneous Analysis (UG/KG)							
DIBUTYLTIN	20.58	NA	NA	30.04	0.50	0.50	NA
MONOBUTYLTIN	8.65	NA	NA	18.06	0.50	0.50	NA
TETRABUTYLTIN	0.50	NA	NA	0.54 J	0.50	0.50	NA
TRIBUTYLTIN	60.89	NA	NA	66.17	0.50	0.50	NA
Total Organic Carbon Analysis (MG/KG)							
CARBON	NA	NA	NA	NA	NA	NA	32000

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	23.7612	NA	NA	0.64	2.8461	14.4062	NA	NA
1-METHYLNAPHTHALENE	55.1059	NA	NA	3.255	10.8544	20.4157	NA	NA
1-METHYLPHENANTHRENE	114.1619	NA	NA	2.715	18.5915	32.5298	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	19.247	NA	NA	0.54	3.7367	7.8987	NA	NA
2,6-DIMETHYLNAPHTHALENE	70.705	NA	NA	4.3851	6.8306	34.6414	NA	NA
2-METHYLNAPHTHALENE	88.1922	NA	NA	5.3	12.1748	36.8598	NA	NA
ACENAPHTHENE	196.9635	NA	NA	0.44	9.4373	17.1397	NA	NA
ACENAPHTHYLENE	91.9431	NA	NA	0.77	19.2568	71.0036	NA	NA
ANTHRACENE	455.8496	NA	NA	0.9119 J	49.8583	200.3	NA	NA
BENZO(A)ANTHRACENE	696.6908	NA	NA	0.8496 J	105.1753	280.585	NA	NA
BENZO(A)PYRENE	811.8407	NA	NA	2.415	137.7264	420.8157	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	772.6699	NA	NA	2.04	103.9351	401.4211	NA	NA
BENZO(G,H,I)PERYLENE	451.5919	NA	NA	1.472 J	74.5695	214.7073	NA	NA
BENZO(K)FLUORANTHENE	1640	NA	NA	4.0093 J	266.7754	1040	NA	NA
CHRYSENE	715.6919	NA	NA	1.3263 J	109.9579	398.9704	NA	NA
DIBENZO(A,H)ANTHRACENE	130.1156	NA	NA	0.844 J	17.6947	62.9278	NA	NA
FLUORANTHENE	1490	NA	NA	1.8671 J	239.1575	399.3288	NA	NA
FLUORENE	176.6084	NA	NA	1.34	15.7432	28.1165	NA	NA
HIGH MOLECULAR WEIGHT PAHS	5594.3696	NA	NA	9.0553	846.8089	2408.6018	NA	NA
INDENO(1,2,3-CD)PYRENE	398.2413	NA	NA	1.2933 J	70.6037	217.9902	NA	NA
LOW MOLECULAR WEIGHT PAHS	2415.6703	NA	NA	13.0357	261.5475	614.8201	NA	NA
NAPHTHALENE	136.1136	NA	NA	2.6	13.64	45.3043	NA	NA
PERYLENE	207.3981	NA	NA	17.4748	38.4788	141.5225	NA	NA
PHENANTHRENE	1270	NA	NA	1.6737 J	141.4371	216.0962	NA	NA
PYRENE	1750.0305	NA	NA	1.7533 J	237.097	845.9742	NA	NA
TOTAL PAHS	11800	NA	NA	37.9	1710	5150	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	5.6635	NA	NA	0.10	0.4163	3.629	NA	NA
4,4'-DDE	4.4378	NA	NA	0.2349	0.5865	1.9497	NA	NA
ALDRIN	0.10	NA	NA	0.10	0.10	0.10	NA	NA
HEXACHLOROBENZENE	0.080	NA	NA	0.080	0.080	0.080	NA	NA
MIREX	5.0321	NA	NA	0.10	0.1278 J	0.3274	NA	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	NA
PCB-101	19.003	NA	NA	0.277	0.293	12.746	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	7.0445	NA	NA	0.035	0.1018	4.3904	NA	NA
PCB-118	19.5558	NA	NA	0.135	0.349	13.7448	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	6.2479	NA	NA	0.0971	0.035	3.0669	NA	NA
PCB-138	26.5724	NA	NA	0.1271 J	0.2396 J	16.1059	NA	NA
PCB-153	20.5378	NA	NA	0.075	0.1476 J	14.4279	NA	NA
PCB-170	6.289	NA	NA	0.035	0.2207	3.8268	NA	NA
PCB-18	1.2973	NA	NA	0.0906	0.2045	1.3428	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
PCB-180	11.5742	NA	NA	0.2419	0.0631 J	6.7996	NA	NA
PCB-187	7.0216	NA	NA	0.0518	0.1921	4.6643	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	1.0068	NA	NA	0.020	0.020	1.7964	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	6.2653	NA	NA	0.015	1.1309	4.3287	NA	NA
PCB-209	6.8161	NA	NA	1.1315	1.7857	4.5038	NA	NA
PCB-28	2.5442	NA	NA	0.0902	0.5919	3.6719	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	4.4891	NA	NA	0.1411	0.2011	3.6906	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	9.22	NA	NA	0.2759	0.4602	7.2303	NA	NA
PCB-66	0.9377	NA	NA	0.144	0.3939	2.7227	NA	NA
PCB-8	1.2214	NA	NA	0.055	0.1058	1.4339	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	315.2884	NA	NA	5.3362	12.9621	220.9876	NA	NA
TAL Metal Analysis (MG/KG)								
ALUMINUM	37525	NA	NA	23276.5	26627.5	38455	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	10.3	NA	NA	6.07	5.45	10.22	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	1.2 J	NA	NA	0.27 J	0.16 J	0.76 J	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	79.25	NA	NA	42.0	49.75	76.75	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	81.25	NA	NA	1.875 U	9.75	80.75	NA	NA
IRON	27417.5	NA	NA	21068.75	21970.25	28335	NA	NA
LEAD	80.0	NA	NA	21.7	34.9	81.0	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	276.5	NA	NA	214	140.75	307.5	NA	NA
MERCURY	0.47	NA	NA	0.015 B	0.1398	0.395	NA	NA
NICKEL	27.25	NA	NA	13.5	16.75	24.75	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	0.7375	NA	NA	0.065 U	0.14	0.5125	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	192.75	NA	NA	48.5	64.5	167	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS RATIO	-19.5035	0.2202	5.5065	NA	NA	-47.2728	0.05570	2.7872
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	4.06	NA	NA	0.50	0.50	86.93	NA	NA
MONOBUTYLTIN	2.45	NA	NA	0.50	0.50	45.5	NA	NA
TETRABUTYLTIN	0.50	NA	NA	0.50	0.50	0.45 J	NA	NA
TRIBUTYLTIN	6.86	NA	NA	0.50	0.50	228.12	NA	NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.64	6.5419	NA	15.369	NA	NA	NA	3.1795	NA	NA
1-METHYLNAPHTHALENE	3.255	10.3431	NA	17.5691	NA	NA	NA	5.1117 J	NA	NA
1-METHYLPHENANTHRENE	2.715	14.126	NA	51.5744	NA	NA	NA	8.8757	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	0.54	4.089	NA	7.8906	NA	NA	NA	2.0425	NA	NA
2,6-DIMETHYLNAPHTHALENE	2.4912 J	17.0688	NA	43.5907	NA	NA	NA	9.9094	NA	NA
2-METHYLNAPHTHALENE	5.3	15.075	NA	32.0827	NA	NA	NA	9.6587 J	NA	NA
ACENAPHTHENE	0.44	4.1809	NA	14.2886	NA	NA	NA	3.3124	NA	NA
ACENAPHTHYLENE	0.77	22.4076	NA	131.2997	NA	NA	NA	11.8505	NA	NA
ANTHRACENE	1.085	51.0713	NA	298.0573	NA	NA	NA	31.4882	NA	NA
BENZO(A)ANTHRACENE	1.802 J	66.8864	NA	387.6965	NA	NA	NA	50.0309	NA	NA
BENZO(A)PYRENE	2.0163 J	147.0902	NA	494.6919	NA	NA	NA	67.8487	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1.5001 J	155.7333	NA	417.1659	NA	NA	NA	63.4532	NA	NA
BENZO(G,H,I)PERYLENE	1.5481 J	92.946	NA	286.709	NA	NA	NA	50.3306	NA	NA
BENZO(K)FLUORANTHENE	5.9001 J	295.1911	NA	1100	NA	NA	NA	155.341	NA	NA
CHRYSENE	2.5637 J	100.0411	NA	491.2839	NA	NA	NA	58.7768	NA	NA
DIBENZO(A,H)ANTHRACENE	0.767 J	25.8549	NA	72.2172	NA	NA	NA	12.4056	NA	NA
FLUORANTHENE	2.5785 J	104.247	NA	535.2793	NA	NA	NA	95.2291	NA	NA
FLUORENE	1.34	9.1526	NA	25.7327	NA	NA	NA	6.5724	NA	NA
HIGH MOLECULAR WEIGHT PAHS	13.3997	743.8501	NA	2897.783	NA	NA	NA	391.2466	NA	NA
INDENO(1,2,3-CD)PYRENE	1.3166 J	74.786	NA	263.6159	NA	NA	NA	45.3127	NA	NA
LOW MOLECULAR WEIGHT PAHS	13.2199	180.0346	NA	725.9518	NA	NA	NA	119.9073	NA	NA
NAPHTHALENE	2.6	17.9095	NA	42.6678	NA	NA	NA	10.8658	NA	NA
PERYLENE	11.5841	45.3489	NA	150.4787	NA	NA	NA	23.9158	NA	NA
PHENANTHRENE	1.6849 J	60.2378	NA	181.823	NA	NA	NA	46.1594	NA	NA
PYRENE	3.6722 J	299.7304	NA	916.6143	NA	NA	NA	106.9554	NA	NA
TOTAL PAHS	39	1640	NA	5980	NA	NA	NA	879	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	8.8 U	NA	NA	NA	9.4 U	NA	NA	NA
ACENAPHTHENE	NA	NA	8.8 U	NA	NA	NA	10	NA	NA	NA
ACENAPHTHYLENE	NA	NA	19	NA	NA	NA	24	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
ANTHRACENE	NA	NA	27	NA	NA	NA	53	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	91	NA	NA	NA	200	NA	NA	NA
BENZO(A)PYRENE	NA	NA	120	NA	NA	NA	250 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	200	NA	NA	NA	530 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	55	NA	NA	NA	100 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	63	NA	NA	NA	190 J	NA	NA	NA
CHRYSENE	NA	NA	150	NA	NA	NA	270	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	14 J	NA	NA	NA	22 J	NA	NA	NA
FLUORANTHENE	NA	NA	130	NA	NA	NA	280	NA	NA	NA
FLUORENE	NA	NA	10	NA	NA	NA	22	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	1055	NA	NA	NA	2334	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	52	NA	NA	NA	82 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	110	NA	NA	NA	232	NA	NA	NA
NAPHTHALENE	NA	NA	8.8 U	NA	NA	NA	13	NA	NA	NA
PHENANTHRENE	NA	NA	54 J	NA	NA	NA	110	NA	NA	NA
PYRENE	NA	NA	180	NA	NA	NA	410	NA	NA	NA
TOTAL PAH	NA	NA	1165	NA	NA	NA	2566	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	0.284	2.4482	NA	0.26	NA	NA	NA	0.6334	NA	NA
4,4'-DDE	0.1597	4.8822	NA	2.3816	NA	NA	NA	0.4185	NA	NA
ALDRIN	0.1247 J	0.1285 J	NA	0.10	NA	NA	NA	0.10	NA	NA
HEXACHLOROBENZENE	0.080	0.080	NA	0.080	NA	NA	NA	0.080	NA	NA
MIREX	0.10	0.1636 J	NA	0.7081	NA	NA	NA	0.10	NA	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	0.346 JEB	NA	NA	NA	0.165 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	0.582 EB	NA	NA	NA	0.483 JEB	NA	NA	NA
PCB-101	0.313	7.483	7.43 J	14.32	NA	NA	4.8 J	1.74	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	0.035	3.3525	2.69	2.6336	NA	NA	1.7	0.5626	NA	NA
PCB-118	0.135	7.8191	8.29	11.282	NA	NA	5.71	2.3403	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	0.035	2.4545	1.83 J	3.1408	NA	NA	1.45 J	0.5496	NA	NA
PCB-138	0.0696 J	10.3747	11.2 J	15.1649	NA	NA	8.66 J	2.8904	NA	NA
PCB-153	0.075	7.9894	9.84 J	12.2329	NA	NA	8.18 J	2.7247	NA	NA
PCB-170	0.035	2.5928	1.75	2.3014	NA	NA	1.56	0.7962	NA	NA
PCB-18	0.015	1.1913	NA	0.907	NA	NA	NA	0.2639	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
PCB-180	0.045	6.4264	3.81 J	4.5228	NA	NA	3.53 J	1.5035	NA	NA
PCB-187	0.010	4.1432	3.32	4.2601	NA	NA	3.39	1.1935	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.020	1.1069	0.486	0.5338	NA	NA	0.409 J	0.1868	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.1998	2.6919	1.27	2.6839	NA	NA	1.32	1.1163	NA	NA
PCB-209	0.2124	2.1184	2.17	4.3385	NA	NA	1.99	1.2885	NA	NA
PCB-28	0.1528	2.1743	1.48 J	2.6096	NA	NA	1.21 JEB	0.5686	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.1902	3.0588	1.93 JEB	2.5857	NA	NA	1.4 JEB	0.5355	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	0.3002	5.4226	3.67 EB	4.4274	NA	NA	2.19 EB	0.9627	NA	NA
PCB-66	0.1078	2.4358	3.11	11.2788	NA	NA	2.7	0.4552	NA	NA
PCB-8	0.055	0.5095	NA	1.2327	NA	NA	NA	0.2865	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	3.1993	146.6901	130	200.912	NA	NA	102	39.9302	NA	NA
TAL Metal Analysis (MG/KG)										
ALUMINUM	34225	27677.5	12800	34225	NA	NA	12700	23359.5	NA	NA
ANTIMONY	NA	NA	0.37 UJ	NA	NA	NA	R	NA	NA	NA
ARSENIC	5.49	9.04	10.9 J	10.93	NA	NA	11.3 J	7.39	NA	NA
BARIUM	NA	NA	35.2	NA	NA	NA	35.5 J	NA	NA	NA
BERYLLIUM	NA	NA	1.2	NA	NA	NA	1.1	NA	NA	NA
CADMIUM	0.12 J	0.53 J	0.53 J	0.72 J	NA	NA	0.028 UJ	0.19 J	NA	NA
CALCIUM	NA	NA	8330 J	NA	NA	NA	23500	NA	NA	NA
CHROMIUM	38.75	56.5	44.3	84.75	NA	NA	42.4 J	46.5	NA	NA
COBALT	NA	NA	7.5 J	NA	NA	NA	7.4 J	NA	NA	NA
COPPER	1.875 U	36.75	58.9 J	66.75	NA	NA	57.3 J	17.25	NA	NA
IRON	17771.75	24123	24800	26545	NA	NA	23400	21405.75	NA	NA
LEAD	29.9	52.7	47.9 J	124.8	NA	NA	43.6 J	40.0	NA	NA
MAGNESIUM	NA	NA	8250	NA	NA	NA	7970	NA	NA	NA
MANGANESE	253.5	219.75	264	293.5	NA	NA	233	133.5	NA	NA
MERCURY	0.0712	0.275	0.23	0.3725	NA	NA	0.27	0.1278	NA	NA
NICKEL	12.5	21.75	18.3 J	25.75	NA	NA	17.7 J	18.25	NA	NA
POTASSIUM	NA	NA	4000	NA	NA	NA	4140	NA	NA	NA
SELENIUM	NA	NA	1.4 R	NA	NA	NA	0.56 U	NA	NA	NA
SILVER	0.065 U	0.57	0.25 UJ	0.8125	NA	NA	0.28 U	0.2375	NA	NA
SODIUM	NA	NA	18600	NA	NA	NA	20000	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
THALLIUM	NA	NA	2.0 UJ	NA	NA	NA	2.0 J	NA	NA	NA
VANADIUM	NA	NA	42.9	NA	NA	NA	41.5	NA	NA	NA
ZINC	36.0	122.75	140 J	201.25	NA	NA	111 J	72.25	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	NA	NA	0.1700 B	NA	NA	NA	0.2000 B	NA	NA	NA
CHROMIUM	NA	NA	8.900	NA	NA	NA	11.50	NA	NA	NA
COPPER	NA	NA	3.400 N*	NA	NA	NA	140.0 *	NA	NA	NA
LEAD	NA	NA	33.00	NA	NA	NA	40.20	NA	NA	NA
MERCURY	NA	NA	0.001300 UN	NA	NA	NA	0.006400 B	NA	NA	NA
NICKEL	NA	NA	3.100 BN*	NA	NA	NA	402.0 E	NA	NA	NA
SULFIDE	NA	NA	16.00	NA	NA	NA	0.08500 U	NA	NA	NA
ZINC	NA	NA	76.30	NA	NA	NA	70.20	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	NA	NA	0.002890 U	NA	NA	NA	0.003150 U	NA	NA	NA
CHROMIUM	NA	NA	0.1718 U	NA	NA	NA	0.2221	NA	NA	NA
COPPER	NA	NA	0.05350 UJ	NA	NA	NA	2.2047 J	NA	NA	NA
LEAD	NA	NA	0.1593	NA	NA	NA	0.1938	NA	NA	NA
MERCURY	NA	NA	0.00006500 UJ	NA	NA	NA	0.00007100 U	NA	NA	NA
NICKEL	NA	NA	R	NA	NA	NA	6.856 J	NA	NA	NA
SEM/AVS RATIO	NA	NA	2.6391	-14.5054	0.1569	2.6996	399.0	1.0704	2.3636	1.8554
SULFIDE	NA	NA	0.5027 J	NA	NA	NA	0.02644 UJ	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	1.3267	NA	NA	NA	10.5504	NA	NA	NA
ZINC	NA	NA	1.1674 J	NA	NA	NA	1.0738 J	NA	NA	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	0.50	0.50	NA	2.71	NA	NA	NA	0.50	NA	NA
MONOBUTYLTIN	0.50	0.50	NA	1.12	NA	NA	NA	0.50	NA	NA
TETRABUTYLTIN	0.50	0.50	NA	0.38 J	NA	NA	NA	0.50	NA	NA
TRIBUTYLTIN	0.50	0.50	NA	4.26	NA	NA	NA	0.50	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	NA	NA	28000	NA	NA	NA	130	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
Semivolatile Organic Analysis (UG/KG)				
1,1-BIPHENYL	6.4185	NA	NA	0.9763 J
1-METHYLNAPHTHALENE	12.7025	NA	NA	1.6283 J
1-METHYLPHENANTHRENE	18.3086	NA	NA	2.5267 J
2,3,5-TRIMETHYLNAPHTHALENE	4.4278	NA	NA	0.7724 J
2,6-DIMETHYLNAPHTHALENE	9.5563	NA	NA	4.9645
2-METHYLNAPHTHALENE	24.215	NA	NA	2.9815 J
ACENAPHTHENE	8.5513	NA	NA	0.7796 J
ACENAPHTHYLENE	28.6848	NA	NA	5.2068
ANTHRACENE	64.347	NA	NA	10.0042
BENZO(A)ANTHRACENE	100.9039	NA	NA	19.3733
BENZO(A)PYRENE	147.6253	NA	NA	21.0301
BENZO(B)FLUORANTHENE	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA
BENZO(E)PYRENE	141.0881	NA	NA	21.2535
BENZO(G,H,I)PERYLENE	97.5955	NA	NA	15.9454
BENZO(K)FLUORANTHENE	348.2932	NA	NA	49.2962
CHRYSENE	127.7599	NA	NA	15.0412
DIBENZO(A,H)ANTHRACENE	26.4518	NA	NA	4.6995
FLUORANTHENE	207.8392	NA	NA	23.813
FLUORENE	13.9193	NA	NA	1.7725 J
HIGH MOLECULAR WEIGHT PAHS	860.3718	NA	NA	126.7275
INDENO(1,2,3-CD)PYRENE	93.2662	NA	NA	16.6419
LOW MOLECULAR WEIGHT PAHS	272.2083	NA	NA	35.2644
NAPHTHALENE	22.2664	NA	NA	3.0524 J
PERYLENE	61.0289	NA	NA	22.6897
PHENANTHRENE	110.2245	NA	NA	11.4673
PYRENE	249.7918	NA	NA	42.7705
TOTAL PAHS	1930	NA	NA	299
Low Concentration PAH (SIM) Analysis (UG/KG)				
2-METHYLNAPHTHALENE	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
ANTHRACENE	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)				
2,4'-DDE	0.8958	NA	NA	0.6482
4,4'-DDE	0.959	NA	NA	0.1788
ALDRIN	0.10	NA	NA	0.10
HEXACHLOROBENZENE	0.080	NA	NA	0.080
MIREX	0.2942	NA	NA	0.078 J
PCB Analysis (UG/KG)				
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA
PCB-101	2.874	NA	NA	1.347
PCB-104	NA	NA	NA	NA
PCB-105	0.7937	NA	NA	0.3111
PCB-118	3.514	NA	NA	1.1045
PCB-126	NA	NA	NA	NA
PCB-128	0.8718	NA	NA	0.4057
PCB-138	4.8626	NA	NA	1.2991
PCB-153	4.8068	NA	NA	1.1181
PCB-170	1.3913	NA	NA	0.3311
PCB-18	0.2355	NA	NA	0.015

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
PCB-180	2.4644	NA	NA	0.8127
PCB-187	1.8859	NA	NA	0.4827
PCB-188	NA	NA	NA	NA
PCB-195	0.4939	NA	NA	0.4887
PCB-201	NA	NA	NA	NA
PCB-206	1.8105	NA	NA	0.579
PCB-209	1.9815	NA	NA	0.7045
PCB-28	0.875	NA	NA	0.2344
PCB-29	NA	NA	NA	NA
PCB-44	0.8472	NA	NA	0.2994
PCB-50	NA	NA	NA	NA
PCB-52	1.3713	NA	NA	0.5421
PCB-66	0.8843	NA	NA	0.3447
PCB-8	0.3271	NA	NA	0.0616 J
PCB-87	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	64.5813	NA	NA	20.9327
TAL Metal Analysis (MG/KG)				
ALUMINUM	32957.5	NA	NA	32772.5
ANTIMONY	NA	NA	NA	NA
ARSENIC	9.66	NA	NA	6.79
BARIUM	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA
CADMIUM	0.32 J	NA	NA	0.16 J
CALCIUM	NA	NA	NA	NA
CHROMIUM	64.25	NA	NA	48.0
COBALT	NA	NA	NA	NA
COPPER	33.5	NA	NA	1.875 U
IRON	25630	NA	NA	21319.75
LEAD	47.6	NA	NA	24.5
MAGNESIUM	NA	NA	NA	NA
MANGANESE	280	NA	NA	294.25
MERCURY	0.1533	NA	NA	0.015 B
NICKEL	20.5	NA	NA	17.0
POTASSIUM	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA
SILVER	0.2875	NA	NA	0.065 U
SODIUM	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
MARINE SEDIMENT SAMPLING AND ANALYSIS, FORMER ROBERT E. DERECKTOR SHIPYARD
NAVSTA NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
THALLIUM	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA
ZINC	105.5	NA	NA	47.0
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)				
CADMIUM	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA
COPPER	NA	NA	NA	NA
LEAD	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA
ZINC	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)				
CADMIUM	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA
COPPER	NA	NA	NA	NA
LEAD	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA
SEM/AVS RATIO	-28.0893	0.04850	1.4307	NA
SULFIDE	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA
ZINC	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)				
DIBUTYLTIN	3.38	NA	NA	0.50
MONOBUTYLTIN	1.85	NA	NA	0.50
TETRABUTYLTIN	0.50	NA	NA	0.50
TRIBUTYLTIN	4.13	NA	NA	0.50
Total Organic Carbon Analysis (MG/KG)				
CARBON	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
Semivolatile Organic Analysis (UG/KG)									
1,1-BIPHENYL	1.3451	NA	NA	NA	NA	NA	NA	NA	NA
1-METHYLNAPHTHALENE	2.5806 J	NA	NA	NA	NA	NA	NA	NA	NA
1-METHYLPHENANTHRENE	9.4928	NA	NA	NA	NA	NA	NA	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	1.4564	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DIMETHYLNAPHTHALENE	6.1762	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	3.83 J	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	1.4241	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	10.6569	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	21.2143	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	45.0965	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	62.8722	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	53.1865	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	37.278	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	124.8111	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	49.9146	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	10.1029	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	99.2789	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	4.5637	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	365.1931	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	34.5814	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	90.8034	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	5.4	NA	NA	NA	NA	NA	NA	NA	NA
PERYLENE	19.271	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	43.7144	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	97.9279	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS	746	NA	NA	NA	NA	NA	NA	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)									
2-METHYLNAPHTHALENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	4.4 U	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	5.6	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01						DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604		JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004		10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier										
ANTHRACENE	NA	NA	NA	NA	7.6		NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	33		NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	46	J	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	83	J	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	16	J	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	26	J	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	40		NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	4.4	UJ	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	73		NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	4.4	U	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	413		NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	15	J	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	43.2		NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	4.4	U	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	30		NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	81		NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	456.2		NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	0.5455	NA	NA	NA	NA		NA	NA	NA	NA
4,4'-DDE	0.2862	NA	NA	NA	NA		NA	NA	NA	NA
ALDRIN	0.10	NA	NA	NA	NA		NA	NA	NA	NA
HEXACHLOROBENZENE	0.080	NA	NA	NA	NA		NA	NA	NA	NA
MIREX	0.10	NA	NA	NA	NA		NA	NA	NA	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	0.00931	JEB	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	0.0439	JEB	NA	NA	NA	NA
PCB-101	0.822	NA	NA	NA	1.2	J	NA	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA		NA	NA	NA	NA
PCB-105	0.1837	NA	NA	NA	0.417		NA	NA	NA	NA
PCB-118	0.5703	NA	NA	NA	0.978		NA	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA		NA	NA	NA	NA
PCB-128	0.2543	NA	NA	NA	0.252	J	NA	NA	NA	NA
PCB-138	0.9656	NA	NA	NA	1.44	J	NA	NA	NA	NA
PCB-153	0.9797	NA	NA	NA	1.13	J	NA	NA	NA	NA
PCB-170	0.342	NA	NA	NA	0.165		NA	NA	NA	NA
PCB-18	0.1503	NA	NA	NA	NA		NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01					DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604	JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004	10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier									
PCB-180	0.5502	NA	NA	NA	0.317 J	NA	NA	NA	NA
PCB-187	0.4659	NA	NA	NA	0.277	NA	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.2177	NA	NA	NA	0.0337 J	NA	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.7117	NA	NA	NA	0.107 J	NA	NA	NA	NA
PCB-209	0.751	NA	NA	NA	0.183	NA	NA	NA	NA
PCB-28	0.3285	NA	NA	NA	0.0743 JEB	NA	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.6077	NA	NA	NA	0.358 JEB	NA	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	1.1141	NA	NA	NA	0.931 EB	NA	NA	NA	NA
PCB-66	0.331	NA	NA	NA	0.285	NA	NA	NA	NA
PCB-8	0.055	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	18.9124	NA	NA	NA	16.4	NA	NA	NA	NA
TAL Metal Analysis (MG/KG)									
ALUMINUM	27475	NA	NA	20423.25	4240	30460	NA	NA	26535
ANTIMONY	NA	NA	NA	NA	R	NA	NA	NA	NA
ARSENIC	2.61	NA	NA	2.5	2.1 J	4.84	NA	NA	5.66
BARIUM	NA	NA	NA	NA	10.3 J	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	0.29	NA	NA	NA	NA
CADMIUM	0.29 J	NA	NA	0.13 J	0.011 UJ	0.17 J	NA	NA	0.13 J
CALCIUM	NA	NA	NA	NA	1880	NA	NA	NA	NA
CHROMIUM	36.5	NA	NA	30.5	10.7 J	49.0	NA	NA	43.75
COBALT	NA	NA	NA	NA	3.0 J	NA	NA	NA	NA
COPPER	7.0	NA	NA	9.0	8.3 J	13.75	NA	NA	17.25
IRON	18091.5	NA	NA	16837.25	7800	18616.5	NA	NA	19103.5
LEAD	29.7	NA	NA	28.3	11.3 J	53.2	NA	NA	46.0
MAGNESIUM	NA	NA	NA	NA	2460	NA	NA	NA	NA
MANGANESE	293.5	NA	NA	253.5	98.6	284.25	NA	NA	256
MERCURY	0.2445	NA	NA	0.13	0.014 J	0.106	NA	NA	0.13
NICKEL	14.25	NA	NA	11.25	6.2 J	14.0	NA	NA	14.75
POTASSIUM	NA	NA	NA	NA	859	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	0.22 U	NA	NA	NA	NA
SILVER	0.1375	NA	NA	0.0625 J	0.11 U	0.2625	NA	NA	0.1625
SODIUM	NA	NA	NA	NA	3590	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-01						DSY-JPC-02			
Sample Number	JPC-1-SUR	JPC-1-SURa	JPC-1-SURb	JPC-1-SUR-D	DSY-SD-JPC01-082604		JPC-2-SUR	JPC-2-SURa	JPC-2-SURb	JPC-2-SUR-D
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004		10/27/1995	10/27/1995	10/27/1995	10/27/1995
QC Identifier										
THALLIUM	NA	NA	NA	NA	0.57	J	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	10.2		NA	NA	NA	NA
ZINC	58.0	NA	NA	36.25	33.0	J	79.25	NA	NA	63.75
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	NA	NA	NA	NA	0.1300	B	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	2.600		NA	NA	NA	NA
COPPER	NA	NA	NA	NA	3.400	*	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	8.000		NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	0.002300	B	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	1.100	BE	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA		NA	NA	NA	NA
ZINC	NA	NA	NA	NA	18.40		NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	NA	NA	NA	NA	0.001460	U	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	0.05090		NA	NA	NA	NA
COPPER	NA	NA	NA	NA	0.05360	UJ	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	0.03880		NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	0.00003300	U	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	0.02789	UJ	NA	NA	NA	NA
SEM/AVS RATIO	-1.1934	0.3785	0.7266	NA	1.8959		0.1444	1.1926	0.8944	NA
SULFIDE	NA	NA	NA	NA	0.1959	J	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	0.3714		NA	NA	NA	NA
ZINC	NA	NA	NA	NA	0.2817	J	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	0.50	NA	NA	NA	NA		0.50	NA	NA	NA
MONOBUTYLTIN	0.50	NA	NA	NA	NA		0.50	NA	NA	NA
TETRABUTYLTIN	0.50	NA	NA	NA	NA		0.37	J NA	NA	NA
TRIBUTYLTIN	0.28	J NA	NA	NA	NA		0.41	J NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	NA	NA	NA	NA	5400		NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	NA	NA	2.98	NA	0.781	NA	1.42	NA	0.2393	NA
1-METHYLNAPHTHALENE	NA	NA	2.38	NA	0.3	NA	0.3	NA	3.255 U	NA
1-METHYLPHENANTHRENE	NA	NA	5.51	NA	8.258	NA	10.4	NA	0.2126	NA
2,3,5-TRIMETHYLNAPHTHALENE	NA	NA	1.24	NA	0.7037	NA	1.02	NA	0.54 U	NA
2,6-DIMETHYLNAPHTHALENE	NA	NA	8.38	NA	2.1089	NA	4.96	NA	3.6	NA
2-METHYLNAPHTHALENE	NA	NA	5.7	NA	1.63	NA	1.63	NA	5.3 U	NA
ACENAPHTHENE	NA	NA	3.1	NA	0.958	NA	1.01	NA	0.398	NA
ACENAPHTHYLENE	NA	NA	4.62	NA	3.2244	NA	4.17	NA	0.77 U	NA
ANTHRACENE	NA	NA	19.54	NA	6.27	NA	6.27	NA	0.4234	NA
BENZO(A)ANTHRACENE	NA	NA	44.55	NA	10.43	NA	10.43	NA	0.4941	NA
BENZO(A)PYRENE	NA	NA	33.66	NA	10.14	NA	10.14	NA	1.1865	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	64.81	NA	70.6566	NA	19.95	NA	3.5037	NA
BENZO(E)PYRENE	NA	NA	26.99	NA	9.92	NA	9.92	NA	1.4628	NA
BENZO(G,H,I)PERYLENE	NA	NA	62.33	NA	16.01	NA	16.01	NA	1.279	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	36.25	NA	10.24	NA	10.24	NA	0.6097	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	9.7	NA	0.76	NA	0.76	NA	0.0954	NA
FLUORANTHENE	NA	NA	136.49	NA	43.2	NA	43.2	NA	2.6609	NA
FLUORENE	NA	NA	3.54	NA	0.18	NA	0.18	NA	1.34 U	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	390.64	NA	116.63	NA	116.63	NA	8.307	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	44.17	NA	8.41	NA	8.41	NA	0.9539	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	82.13	NA	27.4524	NA	28.45	NA	9.9683	NA
NAPHTHALENE	NA	NA	9.12	NA	1.92	NA	1.92	NA	0.3674	NA
PERYLENE	NA	NA	19.87	NA	7.52	NA	7.52	NA	16.6805	NA
PHENANTHRENE	NA	NA	36.51	NA	13.27	NA	13.27	NA	1.3695	NA
PYRENE	NA	NA	129.99	NA	41.86	NA	41.86	NA	3.2604	NA
TOTAL PAHS	NA	NA	711.43	NA	268.7505	NA	224.99	NA	50.0022	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
ANTHRACENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	23	14	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	33 J	20 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	61 J	36 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	11 J	6.6 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	18 J	10 J	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	30	20	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	4.3 UJ	4.4 UJ	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	47	32	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	286	179.1	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 J	6.5 J	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	19	13	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	4.3 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	19	13	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	53	34	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAH	305	192.1	NA	NA	NA	NA	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	NA	NA	0.355	NA	0.245	NA	0.709	NA	0.00	NA
4,4'-DDE	NA	NA	0.721	NA	0.479	NA	0.384	NA	0.025 U	NA
ALDRIN	NA	NA	0.10 U	NA	0.10 U	NA	0.00 U	NA	0.00	NA
HEXACHLOROBENZENE	NA	NA	0.080 U	NA	0.338	NA	0.080 U	NA	0.080 U	NA
MIREX	NA	NA	0.10 U	NA	0.10 U	NA	0.10	NA	0.10 U	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	0.0311 U	0.016 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	0.123 U	0.0571 U	NA	NA	NA	NA	NA	NA	NA	NA
PCB-101	0.0177 U	0.0359 J	0.442	NA	0.323	NA	0.104	NA	0.323	NA
PCB-104	NA	NA	0.0826	NA	0.2049	NA	0.050 U	NA	0.050 B	NA
PCB-105	0.0109 U	0.0129 J	0.357	NA	0.0992	NA	0.035 U	NA	0.035 U	NA
PCB-118	0.0474 J	0.0436 J	0.68	NA	0.552	NA	0.15 U	NA	0.1189	NA
PCB-126	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.0606	NA
PCB-128	0.0181 U	0.0106 U	0.193	NA	0.0716	NA	0.035 U	NA	0.0798	NA
PCB-138	0.0949 J	0.0936 J	1.162	NA	0.483	NA	0.235	NA	0.13	NA
PCB-153	0.124 J	0.10 J	1.211	NA	0.67	NA	0.216	NA	0.1727	NA
PCB-170	0.0155 U	0.0105 U	0.556	NA	0.465	NA	1.863	NA	0.035 U	NA
PCB-18	NA	NA	0.015 U	NA	0.18	NA	0.015 U	NA	0.015 U	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
PCB-180	0.0563 J	0.0463 J	0.882	NA	0.577	NA	0.696	NA	0.0825	NA
PCB-187	0.0509 J	0.0462 J	0.402	NA	0.124	NA	0.531	NA	0.0575	NA
PCB-188	NA	NA	0.0866	NA	0.025 U	NA	0.025 U	NA	0.0685	NA
PCB-195	0.016 U	0.0109 U	0.367	NA	0.227	NA	0.208	NA	0.020 U	NA
PCB-201	NA	NA	0.010 U	NA	0.234	NA	0.0521	NA	0.010 B	NA
PCB-206	0.0145 U	0.0099 U	0.595	NA	0.374	NA	0.188	NA	0.015 U	NA
PCB-209	0.0138 U	0.0123 U	0.294	NA	0.161	NA	0.117	NA	0.0577	NA
PCB-28	0.0138 U	0.0071 U	0.0050 U	NA	0.0766	NA	0.0050 U	NA	0.0050 U	NA
PCB-29	NA	NA	0.050 U	NA	0.050 U	NA	0.050 U	NA	0.050 B	NA
PCB-44	0.0312 U	0.0127 U	0.0681	NA	0.0863	NA	0.030 U	NA	0.030 U	NA
PCB-50	NA	NA	0.035 U	NA	0.035 U	NA	0.035 U	NA	0.035 B	NA
PCB-52	0.0332 U	0.0135 U	0.33	NA	0.164	NA	0.115 U	NA	0.115 U	NA
PCB-66	0.0412 J	0.0196 J	0.545	NA	0.529	NA	0.153	NA	0.1119	NA
PCB-8	NA	NA	0.484	NA	0.0759	NA	0.055 U	NA	0.055 U	NA
PCB-87	NA	NA	0.155	NA	0.103	NA	0.10 U	NA	0.0834	NA
SUM OF PCB CONGENERS X 2	0.829	0.796	23.5386	NA	15.3836	NA	10.8382	NA	4.3774	NA
TAL Metal Analysis (MG/KG)										
ALUMINUM	3440	3400	45200	NA	45100	NA	45100	NA	22108	NA
ANTIMONY	0.18 UJ	0.18 UJ	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	1.1 J	1.2 J	0.65 J	NA	2.01	NA	0.65 J	NA	0.65 J	NA
BARIUM	6.5 J	7.6 J	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	0.18	0.18	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	0.012 UJ	0.012 UJ	0.65 J	NA	0.65 J	NA	0.65 J	NA	0.65 J	NA
CALCIUM	559	483	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	6.8 J	6.9 J	38.148	NA	27.7	NA	31.011	NA	31.25	NA
COBALT	2.1 J	2.1 J	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	4.2 UJ	3.9 UJ	7.518	NA	1.875 J	NA	1.875 J	NA	1.875 J	NA
IRON	6110	6050	28400	NA	21200	NA	30600	NA	21466.75	NA
LEAD	4.4 J	4.3 J	28.4024	NA	23.1756	NA	23.1756	NA	16.6	NA
MAGNESIUM	1940	1940	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	68.0	65.9	861.86	NA	625.07	NA	1018.4	NA	372.5	NA
MERCURY	0.022	0.0089 J	0.10 J	NA	0.10 J	NA	0.10 J	NA	0.015 J	NA
NICKEL	4.7 J	4.8 J	16.6548	NA	10.5675	NA	14.0248	NA	12.75	NA
POTASSIUM	480	495	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	0.25 U	0.24 U	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	0.12 U	0.12 U	0.065 J	NA	0.15	NA	0.3314	NA	0.065 J	NA
SODIUM	2870	3150	NA	NA	NA	NA	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-JPC-03		MCA-JCC-S-01		MCA-JCC-MD-01					
Sample Number	DSY-SD-JPC03-082604	DSY-SD-DUP03-082604	JCC-S1	JCC-S1d	JCC-D1-SUR	JCC-D1-SURd	JCC-M1	JCC-M1d	JCC-D1-BOT	JCC-D1-BOTd
Date Sampled	8/26/2004	8/26/2004	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	8/29/1994	6/1/1995	6/1/1995
QC Identifier	FIELD DUP	FIELD DUP								
THALLIUM	0.43 J	0.35 J	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	6.3	6.3	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	18.8	18.5 J	62.467	NA	45.721	NA	45.721	NA	42.0	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)										
CADMIUM	0.08500 B	0.07100 B	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	1.200	1.100	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	1.200 *	1.100 *	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	2.900	2.700	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.001500 U	0.001600 U	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	0.8000 BE	0.5500 BE	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	7.400	6.800	NA	NA	NA	NA	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)										
CADMIUM	0.001410 U	0.001460 U	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	0.02280	0.02180	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	0.01870 UJ	0.01730 UJ	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	0.01400	0.01300	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.00003200 U	0.00003300 U	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	0.02702 UJ	0.02795 UJ	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS RATIO	0.2000	2.5401	-5.5925	3.0425	1.8905	2.1505	1.289	1.849	0.3618	0.4118
SULFIDE	0.7471 J	0.05480 J	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	0.1494	0.1392	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	0.1126 J	0.1044 J	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)										
DIBUTYLTIN	NA	NA	2.3	NA	0.50 U	NA	0.50 U	NA	NA	NA
MONOBUTYLTIN	NA	NA	0.50 U	NA	0.50 U	NA	0.16	NA	NA	NA
TETRABUTYLTIN	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	NA
TRIBUTYLTIN	NA	NA	4.8	NA	0.50 U	NA	0.50 U	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)										
CARBON	3100	4800	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.00	NA	NA	NA	NA	NA	5.01	12.81	NA	NA
1-METHYLNAPHTHALENE	39.42	NA	NA	NA	NA	NA	6.84	0.5	NA	NA
1-METHYLPHENANTHRENE	995	NA	NA	NA	NA	NA	27.68	367.9	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	116	NA	NA	NA	NA	NA	2.36	10.1	NA	NA
2,6-DIMETHYLNAPHTHALENE	171	NA	NA	NA	NA	NA	6.56	7.55	NA	NA
2-METHYLNAPHTHALENE	30.53	NA	NA	NA	NA	NA	0.00	2.47	NA	NA
ACENAPHTHENE	109	NA	NA	NA	NA	NA	18.26	63.47	NA	NA
ACENAPHTHYLENE	296	NA	NA	NA	NA	NA	58.86	426.7	NA	NA
ANTHRACENE	2370	NA	NA	NA	NA	NA	200.62	1330	NA	NA
BENZO(A)ANTHRACENE	3420	NA	NA	NA	NA	NA	165.97	7380	NA	NA
BENZO(A)PYRENE	3000	NA	NA	NA	NA	NA	163.83	3320	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	357.91	10100	NA	NA
BENZO(B+K)FLUORANTHENE	4740	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1700	NA	NA	NA	NA	NA	272.63	5140	NA	NA
BENZO(G,H,I)PERYLENE	1570	NA	NA	NA	NA	NA	97.41	2070	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	223.5	2070	NA	NA
CHRYSENE	2650	NA	NA	NA	NA	NA	405.57	4980	NA	NA
DIBENZO(A,H)ANTHRACENE	283	NA	NA	NA	NA	NA	21.2	784.3	NA	NA
FLUORANTHENE	8190	NA	NA	NA	NA	NA	1050	12000	NA	NA
FLUORENE	597	NA	NA	NA	NA	NA	42.73	438.65	NA	NA
HIGH MOLECULAR WEIGHT PAHS	24703	NA	NA	NA	NA	NA	4013.39	63994.3	NA	NA
INDENO(1,2,3-CD)PYRENE	1550	NA	NA	NA	NA	NA	99.85	1720	NA	NA
LOW MOLECULAR WEIGHT PAHS	8020.53	NA	NA	NA	NA	NA	369.19	2662.12	NA	NA
NAPHTHALENE	328	NA	NA	NA	NA	NA	0.27	1.97	NA	NA
PERYLENE	994	NA	NA	NA	NA	NA	57.17	1050	NA	NA
PHENANTHRENE	4290	NA	NA	NA	NA	NA	304.79	3990	NA	NA
PYRENE	7160	NA	NA	NA	NA	NA	793.56	9390	NA	NA
TOTAL PAHS	44598.95	NA	NA	NA	NA	NA	4382.58	66656.42	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	4.2 U	4.2 U	8.0 U	4.7 U	NA	NA	11 U	12 U
ACENAPHTHENE	NA	NA	5.8	4.2 U	11	4.7 U	NA	NA	11 U	12 U
ACENAPHTHYLENE	NA	NA	19	4.5	85	8.0	NA	NA	22	30

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
ANTHRACENE	NA	NA	59	8.8	85	8.6	NA	NA	29	36
BENZO(A)ANTHRACENE	NA	NA	240	35	360	39	NA	NA	110 J	150 J
BENZO(A)PYRENE	NA	NA	270 J	42 J	470 J	60 J	NA	NA	160 J	200 J
BENZO(B)FLUORANTHENE	NA	NA	360 J	74 J	870 *	110 J	NA	NA	260 J	260 J
BENZO(G,H,I)PERYLENE	NA	NA	75 J	14 J	200 J	25 J	NA	NA	84 J	86 J
BENZO(K)FLUORANTHENE	NA	NA	130 J	22 J	260 J	33 J	NA	NA	75 J	110 J
CHRYSENE	NA	NA	190	35	430	58	NA	NA	130 J	150 J
DIBENZO(A,H)ANTHRACENE	NA	NA	19 J	4.2 UJ	55 J	6.5 J	NA	NA	20 J	23 J
FLUORANTHENE	NA	NA	560 *	69	430	63	NA	NA	120	150
FLUORENE	NA	NA	11	4.2 U	21	4.7 U	NA	NA	15	17
HIGH MOLECULAR WEIGHT PAHS	NA	NA	2461	384	3775	497.5	NA	NA	1392	1650
INDENO(1,2,3-CD)PYRENE	NA	NA	77 J	13 J	130 J	18 J	NA	NA	73 J	81 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	231.9	42.3	371.3	44.6	NA	NA	127	165
NAPHTHALENE	NA	NA	7.1	4.2 U	9.3	4.7 U	NA	NA	11 U	12 U
PHENANTHRENE	NA	NA	130	29	160	28	NA	NA	61	82
PYRENE	NA	NA	540 *	80	570 J	85	NA	NA	360 J	440 J
TOTAL PAH	NA	NA	2692.9	426.3	4146.3	542.1	NA	NA	1519	1815
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	0.95	NA	NA	NA	NA	NA	0.9781	5.7099	NA	NA
4,4'-DDE	0.30	NA	NA	NA	NA	NA	0.1845	3.1257	NA	NA
ALDRIN	0.00	NA	NA	NA	NA	NA	0.00	0.0554	NA	NA
HEXACHLOROBENZENE	0.080 U	NA	NA	NA	NA	NA	0.00	0.2432	NA	NA
MIREX	0.10 U	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	0.00829 JEB	0.0108 JEB	0.223 JEB	0.0141 JEB	NA	NA	0.213 JEB	0.229 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	0.0343 JEB	0.0341 JEB	0.261 EB	0.0348 JEB	NA	NA	0.44 EB	0.416 JEB
PCB-101	0.907	NA	0.196 J	0.138 J	4.19 J	0.284 J	NA	NA	5.87 J	4.77 J
PCB-104	0.6488	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	0.2762	NA	0.0795	0.055	1.62	0.135	NA	NA	1.79	1.49
PCB-118	0.319	NA	0.241	0.179	5.2	0.372	NA	NA	5.31	4.73
PCB-126	0.1744	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	0.2017	NA	0.0678 J	0.0462 J	1.09 J	0.105 J	NA	NA	1.54 J	1.32 J
PCB-138	0.4422	NA	0.506 J	0.342 J	7.32 J	0.639 J	NA	NA	10.3 J	9.41 J
PCB-153	0.50	NA	0.524 J	0.372 J	7.39 J	0.637 J	NA	NA	10.2 J	9.08 J
PCB-170	0.0689	NA	0.112	0.0795	0.882	0.0982	NA	NA	1.74	1.73
PCB-18	0.3285	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.			DSY-JCC-02	DSY-CHC-01	DSY-CHC-02	DSY-01	DSY-02		
Sample Number	JCC-D1-MID	JCC-D1-MIDd	DSY-SD-CC01-082604	DSY-SD-CC02-082604	DSY-SD-CH01-082604	DSY-SD-CH02-082604	DSY-1	DSY-2	DSY-SD-02-082504	DSY-SD-DUP01-082504
Date Sampled	6/1/1995	6/1/1995	8/26/2004	8/26/2004	8/26/2004	8/26/2004	11/3/1993	11/3/1993	8/25/2004	8/25/2004
QC Identifier									FIELD DUP	FIELD DUP
PCB-180	0.335	NA	0.255 J	0.184 J	2.24 J	0.257 J	NA	NA	4.2 J	4.11 J
PCB-187	0.2988	NA	0.231	0.165	2.34	0.296	NA	NA	4.23	4.21
PCB-188	0.363	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.020 U	NA	0.0336	0.0267 J	0.215	0.038	NA	NA	0.584	0.585
PCB-201	0.1074	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.5197	NA	0.134	0.109	1.42	1.4	NA	NA	1.41	1.45
PCB-209	0.6515	NA	0.221	0.171	1.78	0.785	NA	NA	2.76	3.49
PCB-28	0.1293	NA	0.0747 JEB	0.0624 JEB	1.56 JEB	0.0902 JEB	NA	NA	1.07 J	1.09 J
PCB-29	0.5787	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.79	NA	0.0502 JEB	0.0441 JEB	1.77 JEB	0.0782 JEB	NA	NA	1.21 JEB	1.07 JEB
PCB-50	0.1354	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	1.3751	NA	0.0548 JEB	0.0492 EB	1.9 EB	0.114 EB	NA	NA	2.17 EB	1.62 EB
PCB-66	0.4376	NA	0.124	0.0913	1.72	0.152	NA	NA	2.01	2.07
PCB-8	0.055 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	0.1863	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	20.3913	NA	5.89	4.32	86.2	11.1	67.5772	209.0887	114	106
TAL Metal Analysis (MG/KG)										
ALUMINUM	24684.5	NA	4820	4350	11300	7990	NA	NA	13300	13200
ANTIMONY	NA	NA	R	R	R	R	NA	NA	0.58 UJ	0.51 UJ
ARSENIC	0.65 J	NA	2.6 J	1.9 J	8.9 J	4.3 J	NA	NA	11.5 J	11.0 J
BARIUM	NA	NA	8.8 J	8.2 J	39.9 J	17.2 J	NA	NA	42.1	40.0
BERYLLIUM	NA	NA	0.32	0.28	0.90	0.40	NA	NA	1.2	1.2
CADMIUM	0.65 J	NA	0.010 UJ	0.010 UJ	0.022 UJ	0.013 UJ	0.201	0.154	0.52 J	0.43 J
CALCIUM	NA	NA	1520	1490	4310	5940	NA	NA	11400 J	10600 J
CHROMIUM	33.75	NA	12.1 J	10.2 J	30.3 J	13.8 J	95.992	152.206	44.0	45.1
COBALT	NA	NA	3.5 J	3.1 J	7.4 J	5.4 J	NA	NA	7.6 J	8.0 J
COPPER	1.875 J	NA	8.6 J	6.8 J	75.1 J	22.4 J	45.522	196.827	62.0 J	69.2 J
IRON	22408.25	NA	8910	7900	19700	13900	NA	NA	25400	25600
LEAD	25.3	NA	9.6 J	8.4 J	65.7 J	21.3 J	35.393	180.764	48.2 J	50.8 J
MAGNESIUM	NA	NA	2700	2400	6620	4450	NA	NA	11000	10700
MANGANESE	314	NA	89.9	88.1	191	125	NA	NA	271	268
MERCURY	0.10 J	NA	0.036	0.031	0.26	0.13	NA	NA	0.21	0.38
NICKEL	34.5	NA	7.2 J	6.2 J	16.4 J	10.7 J	38.595	85.275	19.2 J	20.3 J
POTASSIUM	NA	NA	888	777	2780	1010	NA	NA	4240	4360
SELENIUM	NA	NA	0.21 U	0.21 U	0.43 U	0.27 U	NA	NA	0.62 U	0.67 U
SILVER	0.065 J	NA	0.10 U	0.10 U	0.22 U	0.13 U	0.5987	0.823	0.31 UJ	0.34 UJ
SODIUM	NA	NA	3000	2960	14700	4450	NA	NA	25200	26700

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	MCA-JCC-MD-01 cont.				DSY-JCC-02		DSY-CHC-01		DSY-CHC-02		DSY-01	DSY-02				
Sample Number	JCC-D1-MID		JCC-D1-MIDd		DSY-SD-CC01-082604		DSY-SD-CC02-082604		DSY-SD-CH01-082604		DSY-SD-CH02-082604		DSY-1	DSY-2	DSY-SD-02-082504		DSY-SD-DUP01-082504	
Date Sampled	6/1/1995		6/1/1995		8/26/2004		8/26/2004		8/26/2004		8/26/2004		11/3/1993	11/3/1993	8/25/2004		8/25/2004	
QC Identifier															FIELD DUP		FIELD DUP	
THALLIUM	NA		NA		0.66	J	0.59	J	1.6	J	0.95	J	NA	NA	1.7	UJ	1.8	UJ
VANADIUM	NA		NA		12.1		10.4		33.2		17.1		NA	NA	47.3		47.0	
ZINC	56.0		NA		40.3	J	28.9	J	168		52.6	J	149.431	593.456	141	J	158	J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)																		
CADMIUM	NA		NA		0.06200	B	0.06900	B	0.5900		0.1600	B	NA	NA	0.2700	B	0.3000	B
CHROMIUM	NA		NA		2.200		2.100		4.600		2.100		NA	NA	9.700		9.800	
COPPER	NA		NA		3.300	*	2.600	*	20.50	*	13.60	*	NA	NA	28.50	N*	31.20	N*
LEAD	NA		NA		7.100		7.100		51.00		17.20		NA	NA	38.90		44.20	
MERCURY	NA		NA		0.001500	U	0.003800	B	0.002900	U	0.001700	B	NA	NA	0.001600	UN	0.001800	UN
NICKEL	NA		NA		0.9600	BE	1.100	BE	3.100	BE	20.20	E	NA	NA	4.800	N*	4.800	N*
SULFIDE	NA		NA		NA		NA		NA		NA		NA	NA	6.100		400.0	
ZINC	NA		NA		24.80		16.10		106.0		24.80		NA	NA	78.80		88.90	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)																		
CADMIUM	NA		NA		0.001420	U	0.001420	U	0.005200		0.001520	U	NA	NA	0.003630	U	0.003940	U
CHROMIUM	NA		NA		0.04320		0.04130		0.08760		0.04050		NA	NA	0.1865		0.1882	
COPPER	NA		NA		0.05180	UJ	0.04170	UJ	0.3235	J	0.2145	J	NA	NA	0.4488	J	0.4918	J
LEAD	NA		NA		0.03410		0.03420		0.2463		0.08320		NA	NA	0.1878		0.2134	
MERCURY	NA		NA		0.00003200	U	0.00003200	U	0.00006000	U	0.00003400	U	NA	NA	0.00008100	UJ	0.00008800	UJ
NICKEL	NA		NA		0.02727	UJ	0.02717	UJ	0.05260	J	0.3448	J	NA	NA	0.08110	UJ	0.08190	UJ
SEM/AVS RATIO	0.4059		0.5359		13.0171		3.6029		0.2858		0.6606		NA	NA	10.7172		0.1814	
SULFIDE	NA		NA		0.03510	J	0.08940	J	8.1566	J	1.6083	J	NA	NA	0.1892	J	12.4186	J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA		NA		0.4569		0.3221		2.331		1.0624		NA	NA	2.0277		2.2532	
ZINC	NA		NA		0.3796	J	0.2466	J	1.6158	J	0.3794	J	NA	NA	1.2046	J	1.3598	J
Miscellaneous Analysis (UG/KG)																		
DIBUTYLTIN	0.45		NA		NA		NA		NA		NA		NA	NA	NA		NA	
MONOBUTYLTIN	0.42		NA		NA		NA		NA		NA		NA	NA	NA		NA	
TETRABUTYLTIN	0.020		NA		NA		NA		NA		NA		NA	NA	NA		NA	
TRIBUTYLTIN	6.82		NA		NA		NA		NA		NA		NA	NA	NA		NA	
Total Organic Carbon Analysis (MG/KG)																		
CARBON	NA		NA		5500		4600		35000		7600		2.06	1.3	31000		26000	

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	40.77	NA	0.62	NA	11.03	NA	NA	8.9	NA	1.66
1-METHYLNAPHTHALENE	9.71	NA	0.00	NA	1.748	NA	NA	0.00	NA	3.47
1-METHYLPHENANTHRENE	440.82	NA	15.4	NA	42.658	NA	NA	14.03	NA	34.59
2,3,5-TRIMETHYLNAPHTHALENE	51.69	NA	0.00	NA	10.33	NA	NA	3.91	NA	4.02
2,6-DIMETHYLNAPHTHALENE	23.04	NA	0.00	NA	3.35	NA	NA	0.00	NA	1.79
2-METHYLNAPHTHALENE	8.22	NA	0.00	NA	4.74	NA	NA	0.00	NA	0.00
ACENAPHTHENE	192.85	NA	0.00	NA	12.7	NA	NA	18.16	NA	18.28
ACENAPHTHYLENE	867.22	NA	89.27	NA	26.56	NA	NA	24.65	NA	28.05
ANTHRACENE	3360	NA	260.1	NA	128.88	NA	NA	203.05	NA	161.16
BENZO(A)ANTHRACENE	10600	NA	413.96	NA	377.73	NA	NA	404.69	NA	277.05
BENZO(A)PYRENE	4710	NA	431.43	NA	401.78	NA	NA	488.3	NA	301.91
BENZO(B)FLUORANTHENE	9230	NA	646.47	NA	683.27	NA	NA	800.63	NA	398.98
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	5600	NA	443.44	NA	403.67	NA	NA	451.78	NA	303.12
BENZO(G,H,I)PERYLENE	3060	NA	272.12	NA	313.41	NA	NA	355.15	NA	232.62
BENZO(K)FLUORANTHENE	1980	NA	488.58	NA	247.76	NA	NA	287.09	NA	244.66
CHRYSENE	6390	NA	764.26	NA	479.13	NA	NA	602.81	NA	375.63
DIBENZO(A,H)ANTHRACENE	1460	NA	93.38	NA	85.16	NA	NA	89.09	NA	52.05
FLUORANTHENE	13600	NA	885.66	NA	644.24	NA	NA	788.42	NA	830.68
FLUORENE	858.78	NA	25.15	NA	42.69	NA	NA	55.07	NA	53.58
HIGH MOLECULAR WEIGHT PAHS	72956	NA	5531.95	NA	4525.58	NA	NA	5336.06	NA	4197.97
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	5856.04	NA	390.54	NA	292.706	NA	NA	331.59	NA	306.6
NAPHTHALENE	2.94	NA	0.00	NA	8.02	NA	NA	3.82	NA	0.00
PERYLENE	1336	NA	165.24	NA	147.23	NA	NA	202.71	NA	115.56
PHENANTHRENE	4890	NA	217.44	NA	224.34	NA	NA	264.29	NA	384.96
PYRENE	10100	NA	709.97	NA	517.86	NA	NA	601.1	NA	680.75
TOTAL PAHS	78812.04	NA	5922.49	NA	4818.286	NA	NA	5667.65	NA	4504.57
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	35 U	NA	9.4 U	NA	8.7 U	8.2 U	NA	15	NA
ACENAPHTHENE	NA	120	NA	9.4 U	NA	8.7 U	8.2 U	NA	25	NA
ACENAPHTHYLENE	NA	54	NA	18	NA	10 J	19	NA	39	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03		DSY-04		DSY-05			DSY-06		DSY-07
Sample Number	DSY-3	DSY-SD-03-082604	DSY-4	DSY-SD-04-082604	DSY-5	DSY-SD-05-082604	DSY-SD-DUP02-082604	DSY-6	DSY-SD-06-082504	DSY-7
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	8/26/2004	8/26/2004	11/3/1993	8/25/2004	11/3/1993
QC Identifier						FIELD DUP	FIELD DUP			
ANTHRACENE	NA	280	NA	45	NA	11 J	25	NA	62	NA
BENZO(A)ANTHRACENE	NA	1000	NA	150 J	NA	47 J	92 J	NA	240	NA
BENZO(A)PYRENE	NA	1000	NA	150 J	NA	78 J	130 J	NA	370	NA
BENZO(B)FLUORANTHENE	NA	1700	NA	280 J	NA	110 J	190 J	NA	560	NA
BENZO(G,H,I)PERYLENE	NA	460	NA	65 J	NA	35 J	54 J	NA	170	NA
BENZO(K)FLUORANTHENE	NA	420	NA	110 J	NA	36 J	67 J	NA	170	NA
CHRYSENE	NA	1100	NA	180 J	NA	56 J	100 J	NA	220	NA
DIBENZO(A,H)ANTHRACENE	NA	140 J	NA	18 J	NA	15 J	18 J	NA	35	NA
FLUORANTHENE	NA	1700	NA	200	NA	34 J	90	NA	260	NA
FLUORENE	NA	140	NA	11	NA	8.7 U	10	NA	31	NA
HIGH MOLECULAR WEIGHT PAHS	NA	9760	NA	1644	NA	584	1043	NA	2945	NA
INDENO(1,2,3-CD)PYRENE	NA	440	NA	61 J	NA	33 J	52 J	NA	120	NA
LOW MOLECULAR WEIGHT PAHS	NA	1735	NA	150	NA	49	115	NA	418	NA
NAPHTHALENE	NA	41	NA	9.4 U	NA	8.7 U	8.2 U	NA	16	NA
PHENANTHRENE	NA	1100 J	NA	76	NA	28 J	61	NA	230	NA
PYRENE	NA	1800	NA	430 J	NA	140 J	250 J	NA	800	NA
TOTAL PAH	NA	11495	NA	1794	NA	633	1158	NA	3363	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	3.8079	NA	4.0305	NA	2.9225	NA	NA	2.5852	NA	1.5433
4,4'-DDE	13.6113	NA	0.00	NA	1.7493	NA	NA	2.1156	NA	3.5781
ALDRIN	0.00	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
HEXACHLOROBENZENE	0.1739	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
MIREX	0.00	NA	0.00	NA	0.00	NA	NA	0.00	NA	0.00
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	0.191 JEB	NA	0.551 JEB	NA	0.171 JEB	0.171 JEB	NA	1.18 JEB	NA
2,4'-DICHLOROBIPHENYL	NA	0.26 EB	NA	0.801 EB	NA	0.376 EB	0.354 JEB	NA	0.872 JEB	NA
PCB-101	NA	7.9 J	NA	11.6 J	NA	4.23 J	4.26 J	NA	34.2 J	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	2.89	NA	3.62	NA	1.21	1.25	NA	10.7	NA
PCB-118	NA	7.41	NA	12.2	NA	4.17	4.36	NA	28.5	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	3.15 J	NA	2.74 J	NA	1.26 J	1.26 J	NA	7.33 J	NA
PCB-138	NA	24.3 J	NA	16 J	NA	9.67 J	9.44 J	NA	45.9 J	NA
PCB-153	NA	22.2 J	NA	14.2 J	NA	10 J	9.57 J	NA	37.2 J	NA
PCB-170	NA	5.27	NA	2.43	NA	2.24	1.97	NA	7.21	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03			DSY-04			DSY-05				DSY-06			DSY-07
Sample Number	DSY-3	DSY-SD-03-082604		DSY-4	DSY-SD-04-082604		DSY-5	DSY-SD-05-082604		DSY-SD-DUP02-082604		DSY-6	DSY-SD-06-082504		DSY-7
Date Sampled	11/3/1993	8/26/2004		11/3/1993	8/26/2004		11/3/1993	8/26/2004		8/26/2004		11/3/1993	8/25/2004		11/3/1993
QC Identifier								FIELD DUP		FIELD DUP					
PCB-180	NA	12.7	J	NA	5.95	J	NA	5.4	J	4.42	J	NA	18.4	J	NA
PCB-187	NA	8.18		NA	5.03		NA	4.62		4.22		NA	15		NA
PCB-188	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
PCB-195	NA	1.56		NA	0.886		NA	0.808		0.628		NA	2.62		NA
PCB-201	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
PCB-206	NA	5.59		NA	1.74		NA	1.36		1.38		NA	3.67		NA
PCB-209	NA	66.3	J	NA	3.28	J	NA	2.4		2.3		NA	6.51		NA
PCB-28	NA	1.02	J	NA	2.08	J	NA	1.05	J	1.08	J	NA	2.52	J	NA
PCB-29	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
PCB-44	NA	1.17	JEB	NA	3.76	JEB	NA	0.902	JEB	0.97	JEB	NA	6.51	JEB	NA
PCB-50	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
PCB-52	NA	1.96	EB	NA	7.1	EB	NA	1.24	EB	1.43	EB	NA	12.6	EB	NA
PCB-66	NA	2.25		NA	4.9		NA	1.99		2.09		NA	8.13		NA
PCB-8	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
PCB-87	NA	NA		NA	NA		NA	NA		NA		NA	NA		NA
SUM OF PCB CONGENERS X 2	733.3312	349		194.56	198		105.4064	106		102		132.0812	498		73.3573
TAL Metal Analysis (MG/KG)															
ALUMINUM	NA	16700		NA	12100		NA	11800		10900		NA	10700		NA
ANTIMONY	NA	0.76	UJ	NA	0.61	J	NA	0.35	UJ	0.33	UJ	NA	0.30	UJ	NA
ARSENIC	NA	13.5	J	NA	11.5	J	NA	9.8	J	10.6	J	NA	10.0	J	NA
BARIUM	NA	123		NA	36.2		NA	33.1		30.7		NA	29.6		NA
BERYLLIUM	NA	1.6		NA	1.1		NA	1.1		1.0		NA	0.91		NA
CADMIUM	1.002	2.7	J	0.121	0.63	J	0.217	0.43	J	0.42	J	0.209	0.52	J	0.174
CALCIUM	NA	7710	J	NA	14700	J	NA	24300	J	18800	J	NA	7540	J	NA
CHROMIUM	195.012	51.7	J	84.788	42.9		105.578	40.5		38.3		109.064	39.4		79.302
COBALT	NA	10.0	J	NA	7.3	J	NA	6.9	J	6.6	J	NA	6.8	J	NA
COPPER	262.344	150	J	62.843	63.7	J	52.291	63.9	J	59.8	J	57.769	55.7	J	27.93
IRON	NA	34400		NA	25400		NA	23200		22200		NA	21500		NA
LEAD	201.061	114	J	51.348	50.4	J	43.296	46.5	J	46.2	J	48.579	49.9	J	31.699
MAGNESIUM	NA	7120		NA	8440		NA	7630		7230		NA	6630		NA
MANGANESE	NA	250		NA	251		NA	262		236		NA	228		NA
MERCURY	NA	0.27		NA	0.25		NA	0.27		0.21		NA	0.33		NA
NICKEL	128.18	38.5	J	37.406	18.5	J	38.347	17.0	J	16.2	J	40.837	17.1	J	37.406
POTASSIUM	NA	3340	J	NA	3890	J	NA	3690		3520		NA	3050	J	NA
SELENIUM	NA	R		NA	0.54	U	NA	0.47	U	0.44	U	NA	R		NA
SILVER	1.2668	0.26	UJ	13.776	0.27	UJ	2.3207	0.23	UJ	0.22	UJ	1.5936	0.20	UJ	5.4065
SODIUM	NA	17100	J	NA	20500		NA	17500		16700		NA	14700		NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-03			DSY-04			DSY-05						DSY-06			DSY-07
Sample Number	DSY-3	DSY-SD-03-082604		DSY-4	DSY-SD-04-082604		DSY-5	DSY-SD-05-082604		DSY-SD-DUP02-082604			DSY-6	DSY-SD-06-082504		DSY-7
Date Sampled	11/3/1993	8/26/2004		11/3/1993	8/26/2004		11/3/1993	8/26/2004		8/26/2004			11/3/1993	8/25/2004		11/3/1993
QC Identifier								FIELD DUP		FIELD DUP						
THALLIUM	NA	2.4	UJ	NA	1.9	UJ	NA	1.8	UJ	1.5	UJ		NA	1.4	UJ	NA
VANADIUM	NA	53.6		NA	41.7		NA	39.9		37.0			NA	36.1		NA
ZINC	1231.421	377		189.526	171	J	173.311	125	J	117	J		175.299	148	J	118.703
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)																
CADMIUM	NA	0.8100		NA	0.4400		NA	0.2300	B	0.2000	B		NA	0.5900		NA
CHROMIUM	NA	10.70		NA	24.70		NA	13.80		8.800			NA	9.500		NA
COPPER	NA	36.80	N*	NA	30.40	N*	NA	34.30	N*	33.50	N*		NA	47.70	N*	NA
LEAD	NA	73.40		NA	49.90		NA	44.30		38.60			NA	55.50		NA
MERCURY	NA	0.001300	UN	NA	0.001300	UN	NA	0.002600	BN	0.005100	BN		NA	0.003300	BN	NA
NICKEL	NA	75.50	N*	NA	24.00	N*	NA	4.600	N*	39.70	N*		NA	19.80	N*	NA
SULFIDE	NA	2400		NA	370.0		NA	2600		1100			NA	210.0		NA
ZINC	NA	233.0		NA	163.0		NA	84.20		68.30			NA	146.0		NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)																
CADMIUM	NA	0.007100		NA	0.003900		NA	0.002770	U	0.002660	U		NA	0.005200		NA
CHROMIUM	NA	0.2052	U	NA	0.4753	U	NA	0.2660	U	0.1690	U		NA	0.1820		NA
COPPER	NA	0.5791	J	NA	0.4783	UJ	NA	0.5401	J	0.5274	J		NA	0.7510	J	NA
LEAD	NA	0.3544		NA	0.2409		NA	0.2140		0.1863			NA	0.2680		NA
MERCURY	NA	0.00006600	UJ	NA	0.00006700	UJ	NA	0.00006200	UJ	0.00006000	UJ		NA	0.00005800	UJ	NA
NICKEL	NA	1.286	UJ	NA	0.4091	UJ	NA	0.07800	UJ	0.6757	UJ		NA	0.3381	J	NA
SEM/AVS RATIO	NA	0.05990		NA	0.2391		NA	0.02540		0.05170			NA	0.5787		NA
SULFIDE	NA	75.2023	J	NA	11.4438	J	NA	80.3209	J	33.9942	J		NA	6.5229	J	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	4.5028		NA	2.7358		NA	2.0418		1.7573			NA	3.7747		NA
ZINC	NA	3.5622	J	NA	2.491	J	NA	1.2877	J	1.0436	J		NA	2.2304	J	NA
Miscellaneous Analysis (UG/KG)																
DIBUTYLTIN	NA	NA		NA	NA		NA	NA		NA			NA	NA		NA
MONOBUTYLTIN	NA	NA		NA	NA		NA	NA		NA			NA	NA		NA
TETRABUTYLTIN	NA	NA		NA	NA		NA	NA		NA			NA	NA		NA
TRIBUTYLTIN	NA	NA		NA	NA		NA	NA		NA			NA	NA		NA
Total Organic Carbon Analysis (MG/KG)																
CARBON	2.63	25000		3.17	26000		6.7	25000		23000			4.37	22000		2.67

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	11.37	NA	0.00	NA	0.00	18.53	NA	13.32	0.00	1.85
1-METHYLNAPHTHALENE	0.12	NA	0.00	NA	0.00	10.97	NA	9.85	0.00	6.92
1-METHYLPHENANTHRENE	81.87	NA	4.33	NA	1.27	51.06	NA	21.94	59.6	4.16
2,3,5-TRIMETHYLNAPHTHALENE	11	NA	0.00	NA	1.01	8.15	NA	0.00	0.00	1.61
2,6-DIMETHYLNAPHTHALENE	1.89	NA	0.00	NA	0.00	12.33	NA	7.35	0.00	0.73
2-METHYLNAPHTHALENE	2.37	NA	0.00	NA	0.74	6.93	NA	0.98	0.00	11.32
ACENAPHTHENE	11.93	NA	0.00	NA	2.29	20.89	NA	10.01	0.00	1
ACENAPHTHYLENE	37.66	NA	2.74	NA	1.03	57.61	NA	95.69	1.99	8.33
ANTHRACENE	180.83	NA	18.58	NA	17.37	254.49	NA	283.67	59.38	15.76
BENZO(A)ANTHRACENE	562.46	NA	34.55	NA	26.14	274.2	NA	184.77	28.21	40.13
BENZO(A)PYRENE	480.98	NA	49.13	NA	38.47	206.33	NA	248.81	43.73	26.07
BENZO(B)FLUORANTHENE	874.35	NA	67.28	NA	70.46	381.04	NA	438.4	80.42	34.34
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	487.19	NA	53.22	NA	40.07	257.17	NA	387.85	51.55	20.86
BENZO(G,H,I)PERYLENE	327.54	NA	19.41	NA	29.52	132.09	NA	226.48	41.2	32.57
BENZO(K)FLUORANTHENE	293.51	NA	55.6	NA	24.16	244.85	NA	346.72	130.14	13.19
CHRYSENE	623.78	NA	70.6	NA	47.47	538.27	NA	523.21	139.59	27.18
DIBENZO(A,H)ANTHRACENE	118.13	NA	14.96	NA	9.34	28.43	NA	35.93	9.31	11.72
FLUORANTHENE	817.94	NA	113.99	NA	94.27	1320	NA	817.36	116.74	66.58
FLUORENE	53.58	NA	4.86	NA	0.92	74.94	NA	48.75	0.00	8.49
HIGH MOLECULAR WEIGHT PAHS	5855.67	NA	616.58	NA	535.87	4991.43	NA	4493.61	872.66	435.52
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	18.33	131.74	NA	168	36.45	25.85
LOW MOLECULAR WEIGHT PAHS	396.15	NA	30.51	NA	26.53	527.65	NA	504.27	120.97	65.32
NAPHTHALENE	3.53	NA	0.00	NA	1.9	11.75	NA	12.71	0.00	5.15
PERYLENE	202.68	NA	17.4	NA	22.57	95.53	NA	130.58	41.6	16.32
PHENANTHRENE	309.45	NA	41.14	NA	21.15	391.69	NA	262.55	41	52.73
PYRENE	757.66	NA	79.3	NA	93.92	990.09	NA	722.95	112.72	67.98
TOTAL PAHS	6251.82	NA	647.09	NA	562.4	5519.08	NA	4997.88	993.63	500.84
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	8.5 UJ	NA	4.5 U	NA	NA	11	NA	NA	NA
ACENAPHTHENE	NA	8.5 UJ	NA	4.5 U	NA	NA	10	NA	NA	NA
ACENAPHTHYLENE	NA	32 J	NA	4.5 U	NA	NA	20	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
ANTHRACENE	NA	42 J	NA	8.9	NA	NA	70	NA	NA	NA
BENZO(A)ANTHRACENE	NA	130 J	NA	34 J	NA	NA	240	NA	NA	NA
BENZO(A)PYRENE	NA	190 J	NA	46 J	NA	NA	320 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	300 J	NA	71 J	NA	NA	620 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	80 J	NA	25 J	NA	NA	99 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	88 J	NA	16 J	NA	NA	160 J	NA	NA	NA
CHRYSENE	NA	170 J	NA	37 J	NA	NA	320	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	20 J	NA	9.5 J	NA	NA	28 J	NA	NA	NA
FLUORANTHENE	NA	200 J	NA	47 J	NA	NA	220	NA	NA	NA
FLUORENE	NA	12 J	NA	4.5 U	NA	NA	22	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	1525	NA	378.5	NA	NA	2776	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	77 J	NA	22 J	NA	NA	89 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	160	NA	31.9	NA	NA	308	NA	NA	NA
NAPHTHALENE	NA	8.5 UJ	NA	4.5 U	NA	NA	15	NA	NA	NA
PHENANTHRENE	NA	74 J	NA	23	NA	NA	160	NA	NA	NA
PYRENE	NA	270 J	NA	71 J	NA	NA	680	NA	NA	NA
TOTAL PAH	NA	1685	NA	410.4	NA	NA	3084	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	2.0961	NA	0.381	NA	0.7402	8.7102	NA	2.4326	0.7479	0.418
4,4'-DDE	1.8163	NA	0.7751	NA	3.4584	1.4549	NA	2.5068	0.6304	0.3951
ALDRIN	0.00	NA	0.00	NA	0.00	0.00	NA	0.00	0.00	0.00
HEXACHLOROBENZENE	0.0581	NA	0.00	NA	0.00	0.00	NA	0.0629	0.00	0.00
MIREX	0.00	NA	0.00	NA	0.00	0.00	NA	0.00	-0.0031	0.00
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	0.313 JEB	NA	0.0169 JEB	NA	NA	1.57 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	0.465 EB	NA	0.019 JEB	NA	NA	1.68 EB	NA	NA	NA
PCB-101	NA	13.1 J	NA	1.1 J	NA	NA	24.6 J	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	4.17	NA	0.611	NA	NA	8.93	NA	NA	NA
PCB-118	NA	11.1	NA	1.31	NA	NA	23.8	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	2.4 J	NA	0.463 J	NA	NA	5.47 J	NA	NA	NA
PCB-138	NA	15.5 J	NA	2.7 J	NA	NA	31.8 J	NA	NA	NA
PCB-153	NA	13.5 J	NA	1.9 J	NA	NA	25.2 J	NA	NA	NA
PCB-170	NA	2.09	NA	0.545	NA	NA	5.03	NA	NA	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08		DSY-09		DSY-10	DSY-11		DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604	DSY-9	DSY-SD-09-082604	DSY-10	DSY-11	DSY-SD-11-082604	DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004	11/3/1993	8/26/2004	11/3/1993	11/3/1993	8/26/2004	11/3/1993	6/13/1994	6/13/1994
QC Identifier										
PCB-180	NA	4.2 J	NA	1.21 J	NA	NA	11.9 J	NA	NA	NA
PCB-187	NA	3.94	NA	0.709	NA	NA	8.46	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	0.53	NA	0.126	NA	NA	1.62	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	1.27	NA	0.129	NA	NA	2.64	NA	NA	NA
PCB-209	NA	2.3	NA	0.241	NA	NA	3.34	NA	NA	NA
PCB-28	NA	1.31 J	NA	0.0892 J	NA	NA	3.94 JEB	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	3.14 JEB	NA	0.166 JEB	NA	NA	8.1 JEB	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	7.22 EB	NA	0.243 EB	NA	NA	16.5 EB	NA	NA	NA
PCB-66	NA	3.02	NA	0.336	NA	NA	8.1	NA	NA	NA
PCB-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	148.3893	179	28.1474	23.8	11.728	658.1613	385	176.009	22.3161	22.9766
TAL Metal Analysis (MG/KG)										
ALUMINUM	NA	12000	NA	6050	NA	NA	10900	NA	NA	NA
ANTIMONY	NA	0.38 UJ	NA	0.19 UJ	NA	NA	R	NA	NA	NA
ARSENIC	NA	11.0 J	NA	3.2 J	NA	NA	11.6 J	NA	NA	NA
BARIUM	NA	37.5	NA	7.2 J	NA	NA	33.0 J	NA	NA	NA
BERYLLIUM	NA	1.1	NA	0.22	NA	NA	0.97	NA	NA	NA
CADMIUM	0.194	0.42 J	0.851	0.13 J	0.072	0.311	0.023 UJ	0.232	0.0419	0.0016
CALCIUM	NA	8130 J	NA	3180 J	NA	NA	29300	NA	NA	NA
CHROMIUM	102.832	41.3	65.304	13.1 J	60.848	131.934	44.4	114.214	56.456	60.54
COBALT	NA	7.4 J	NA	4.4 J	NA	NA	6.6 J	NA	NA	NA
COPPER	76.006	51.9 J	3.988	18.3 J	12.469	81.459	74.5 J	53.865	18.093	7.746
IRON	NA	24000	NA	13900	NA	NA	21300	NA	NA	NA
LEAD	50.604	46.5 J	14.856	29.1 J	22.132	46.082	65.6 J	45.99	35.2	28.9404
MAGNESIUM	NA	7730	NA	2810	NA	NA	6660	NA	NA	NA
MANGANESE	NA	256	NA	102	NA	NA	234	NA	NA	NA
MERCURY	NA	0.37	NA	0.026 J	NA	NA	1.1	NA	NA	NA
NICKEL	40.238	17.9 J	33.898	12.6 J	31.421	167.916	17.6 J	40.399	16.87	9.155
POTASSIUM	NA	3830	NA	493 J	NA	NA	3270	NA	NA	NA
SELENIUM	NA	0.50 U	NA	R	NA	NA	0.46 U	NA	NA	NA
SILVER	1.7387	0.25 UJ	0.7328	0.12 UJ	0.5636	1.2244	0.23 U	1.5811	0.0638	0.0531
SODIUM	NA	16400	NA	3850	NA	NA	14400	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-08			DSY-09			DSY-10	DSY-11			DSY-12	DSY-13	DSY-14
Sample Number	DSY-8	DSY-SD-08-082604		DSY-9	DSY-SD-09-082604		DSY-10	DSY-11	DSY-SD-11-082604		DSY-12	DSY-13	DSY-14
Date Sampled	11/3/1993	8/26/2004		11/3/1993	8/26/2004		11/3/1993	11/3/1993	8/26/2004		11/3/1993	6/13/1994	6/13/1994
QC Identifier													
THALLIUM	NA	1.8	UJ	NA		R	NA	NA	1.9	J	NA	NA	NA
VANADIUM	NA	40.7		NA	14.3		NA	NA	38.2		NA	NA	NA
ZINC	184.302	129	J	58.824	67.9	J	63.84	1104.448	162		160.599	89.479	67.598
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)													
CADMIUM	NA	0.2000	B	NA	0.05900	B	NA	NA	0.7600		NA	NA	NA
CHROMIUM	NA	9.300		NA	2.800		NA	NA	10.40		NA	NA	NA
COPPER	NA	26.00	N*	NA	23.10	N*	NA	NA	32.90	*	NA	NA	NA
LEAD	NA	40.70		NA	26.10		NA	NA	51.70		NA	NA	NA
MERCURY	NA	0.001800	BN	NA	0.0006700	UN	NA	NA	0.003200	B	NA	NA	NA
NICKEL	NA	24.50	N*	NA	70.20	N*	NA	NA	7.000	E	NA	NA	NA
SULFIDE	NA	510.0		NA	39.00		NA	NA		NA	NA	NA	NA
ZINC	NA	94.60		NA	37.70		NA	NA	120.0		NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)													
CADMIUM	NA	0.002760	U	NA	0.001500	U	NA	NA	0.006800		NA	NA	NA
CHROMIUM	NA	0.1797	U	NA	0.05340	U	NA	NA	0.2000		NA	NA	NA
COPPER	NA	0.4101	UJ	NA	0.3631	J	NA	NA	0.5185	J	NA	NA	NA
LEAD	NA	0.1965		NA	0.1259		NA	NA	0.2498		NA	NA	NA
MERCURY	NA	0.00006200	UJ	NA	0.00003400	UJ	NA	NA	0.00005500	U	NA	NA	NA
NICKEL	NA	0.4177	UJ	NA	1.1955	J	NA	NA	0.1200	J	NA	NA	NA
SEM/AVS RATIO	NA	0.1034		NA	1.8791		NA	NA	0.9544		NA	NA	NA
SULFIDE	NA	15.8906	J	NA	1.2031	J	NA	NA	3.0763	J	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	1.6427		NA	2.2607		NA	NA	2.936		NA	NA	NA
ZINC	NA	1.4462	J	NA	0.5762	J	NA	NA	1.8409	J	NA	NA	NA
Miscellaneous Analysis (UG/KG)													
DIBUTYLTIN	NA		NA	NA		NA	NA	NA		NA	NA	NA	NA
MONOBUTYLTIN	NA		NA	NA		NA	NA	NA		NA	NA	NA	NA
TETRABUTYLTIN	NA		NA	NA		NA	NA	NA		NA	NA	NA	NA
TRIBUTYLTIN	NA		NA	NA		NA	NA	NA		NA	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)													
CARBON	4.63	22000		1.51	4100		1.53	6.17	16000		5.33	0.64	1.01

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.00	1.5	0.00	9.37	0.00	0.00	NA	5.62	9.36	10.93
1-METHYLNAPHTHALENE	0.00	2.36	0.00	0.00	0.00	0.00	NA	14.95	78.68	35.72
1-METHYLPHENANTHRENE	176.54	21.19	82.13	228.33	311.12	421.18	NA	15.41	28.68	107.59
2,3,5-TRIMETHYLNAPHTHALENE	0.00	1.82	0.00	1.01	0.00	4.3	NA	4.19	7.06	9.73
2,6-DIMETHYLNAPHTHALENE	0.00	0.67	0.00	0.00	0.00	0.00	NA	3.04	1.18	5.39
2-METHYLNAPHTHALENE	0.00	1.46	0.00	0.00	0.00	0.00	NA	20.1	35.18	53.4
ACENAPHTHENE	0.00	1.05	0.00	14.84	0.00	17.13	NA	7.12	10.79	21.57
ACENAPHTHYLENE	0.00	2.78	32.21	167	0.00	64.6	NA	30.23	42.38	65.31
ANTHRACENE	257	7.83	212.67	753.36	799.35	922.14	NA	99.9	129.74	165.52
BENZO(A)ANTHRACENE	134.35	14.48	187.99	897.91	399.2	1420	NA	196.33	271.7	414.03
BENZO(A)PYRENE	245.08	11.76	310.59	1190	496.21	880.34	NA	109.63	182.008	239.46
BENZO(B)FLUORANTHENE	324.38	20.17	476.63	1890	1050	1500	NA	158.84	252.21	317.95
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	220.86	11.44	264.91	1020	576.42	742.72	NA	88.94	145.57	186.89
BENZO(G,H,I)PERYLENE	164.98	13.71	163.01	562.52	259.74	279.72	NA	133.61	215.38	310.4
BENZO(K)FLUORANTHENE	229.83	32.56	242.86	899.04	791.3	2299.84	NA	47.04	75.13	117.63
CHRYSENE	444.14	13.57	386.62	1460	1170	1580	NA	121.62	193.46	234.29
DIBENZO(A,H)ANTHRACENE	20.5	3.62	64.18	243.3	39.28	56.8	NA	43.99	63.36	117
FLUORANTHENE	464.3	34.36	477.49	1590	1830	5850	NA	324.6	549.89	827.01
FLUORENE	0.00	4.96	24.42	92.44	0.00	215.62	NA	29.36	78.14	63.94
HIGH MOLECULAR WEIGHT PAHS	3129.21	237.28	3417.68	12859.78	9211.87	20405.51	NA	1923.4	3270.568	4408.67
INDENO(1,2,3-CD)PYRENE	142.96	9.44	142.51	529.48	255.29	276.16	NA	99.71	164.16	225.8
LOW MOLECULAR WEIGHT PAHS	433.54	48.21	351.43	1266.35	1110.47	1654.1	NA	232.9	437.18	551.02
NAPHTHALENE	0.00	2.59	0.00	0.00	0.00	9.13	NA	2.98	15.99	11.92
PERYLENE	129.95	12.63	90.7	310.78	244.35	299.93	NA	54.42	95.61	118
PHENANTHRENE	112	18.25	201.41	626.75	550.08	1400	NA	171.29	547.73	477.64
PYRENE	495.88	41.29	408.78	1640	1550	3820	NA	373.38	514.36	822.57
TOTAL PAHS	3562.75	285.49	3769.11	14126.13	10322.34	22059.61	NA	2156.3	3707.748	4959.69
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	9.1 UJ	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	11 J	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	34 J	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
ANTHRACENE	NA	NA	NA	NA	NA	NA	54 J	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	200 J	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	230 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	410 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	93 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	140 J	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	260 J	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	29 J	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	250 J	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	19 J	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	2048	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	86 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	268	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	9.1 UJ	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	150 J	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	350 J	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	NA	NA	2316	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	1.5749	0.00	0.6533	4.3373	2.3874	6.2639	NA	1.1765	2.5337	1.5831
4,4'-DDE	1.1955	0.3584	0.4383	0.00	1.7878	0.00	NA	0.7568	2.0208	3.7097
ALDRIN	0.00	0.00	0.00	0.087	0.00	0.1782	NA	0.00	0.00	0.00
HEXACHLOROBENZENE	0.0634	0.00	0.071	0.1049	0.1034	0.1183	NA	0.2434	0.0826	1.4655
MIREX	0.00	0.00	0.1688	0.3908	0.2284	0.3245	NA	0.0866	0.28	0.2163
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.437 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.696 EB	NA	NA	NA
PCB-101	NA	NA	NA	NA	NA	NA	15 J	NA	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	NA	NA	NA	NA	NA	4.38	NA	NA	NA
PCB-118	NA	NA	NA	NA	NA	NA	12.8	NA	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	NA	NA	NA	NA	NA	2.84 J	NA	NA	NA
PCB-138	NA	NA	NA	NA	NA	NA	17.6 J	NA	NA	NA
PCB-153	NA	NA	NA	NA	NA	NA	14.3 J	NA	NA	NA
PCB-170	NA	NA	NA	NA	NA	NA	2.26	NA	NA	NA
PCB-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20		DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604	DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004	6/13/1994	6/13/1994	6/13/1994
QC Identifier										
PCB-180	NA	NA	NA	NA	NA	NA	4.88 J	NA	NA	NA
PCB-187	NA	NA	NA	NA	NA	NA	4.3	NA	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	NA	NA	NA	NA	NA	0.661	NA	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	NA	NA	NA	NA	NA	1.41	NA	NA	NA
PCB-209	NA	NA	NA	NA	NA	NA	2.15	NA	NA	NA
PCB-28	NA	NA	NA	NA	NA	NA	1.69 J	NA	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	NA	NA	NA	NA	NA	3.47 JEB	NA	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	NA	NA	NA	NA	NA	7.67 EB	NA	NA	NA
PCB-66	NA	NA	NA	NA	NA	NA	4.27	NA	NA	NA
PCB-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	54.835	9.4	243.7826	292.7514	216.559	366.9521	202	92.3076	178.2045	150.1339
TAL Metal Analysis (MG/KG)										
ALUMINUM	NA	NA	NA	NA	NA	NA	12500	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	0.37 UJ	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	11.0 J	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	40.6	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	1.1	NA	NA	NA
CADMIUM	0.0536	0.0285	0.0405	0.2227	0.1723	0.2536	0.54 J	0.1892	0.2089	0.2091
CALCIUM	NA	NA	NA	NA	NA	NA	8300 J	NA	NA	NA
CHROMIUM	72.28	55.45	57.342	106.538	105.124	99.231	43.2	142.34	106.25	98.852
COBALT	NA	NA	NA	NA	NA	NA	7.5 J	NA	NA	NA
COPPER	18.606	6.41	17.233	81.666	66.912	79.683	58.7 J	29.659	51.264	49.438
IRON	NA	NA	NA	NA	NA	NA	24400	NA	NA	NA
LEAD	42.025	31.5291	32.9018	60.2299	57.8157	76.9119	47.9 J	41.8304	52.5276	54.1921
MAGNESIUM	NA	NA	NA	NA	NA	NA	8150	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	253	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.23	NA	NA	NA
NICKEL	10.127	4.438	5.902	25.361	22.794	23.066	18.4 J	7.909	25.281	23.196
POTASSIUM	NA	NA	NA	NA	NA	NA	3920	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	0.49 U	NA	NA	NA
SILVER	0.0533	0.0473	0.0534	0.1591	0.4008	0.8837	0.24 UJ	0.0822	0.1222	0.1223
SODIUM	NA	NA	NA	NA	NA	NA	18800	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20			DSY-21	DSY-22	DSY-23
Sample Number	DSY-15	DSY-16	DSY-17	DSY-18	DSY-19	DSY-20	DSY-SD-20-082604		DSY-21	DSY-22	DSY-23
Date Sampled	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	6/13/1994	8/26/2004		6/13/1994	6/13/1994	6/13/1994
QC Identifier											
THALLIUM	NA	NA	NA	NA	NA	NA	1.8	UJ	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	42.0		NA	NA	NA
ZINC	83.129	48.315	71.286	163.324	139.453	157.727	158	J	174.732	142.782	140.573
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)											
CADMIUM	NA	NA	NA	NA	NA	NA	0.2300	B	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	11.90		NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	32.90	N*	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	43.10		NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.001300	UN	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	51.40	N*	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	80.00		NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	88.00		NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)											
CADMIUM	NA	NA	NA	NA	NA	NA	0.002860	U	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	0.2286	U	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	0.5176	J	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	0.2081		NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	0.00006400	UJ	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	0.8757	UJ	NA	NA	NA
SEM/AVS RATIO	NA	NA	NA	NA	NA	NA	0.8330		NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	2.4862	J	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	2.0709		NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	1.3452	J	NA	NA	NA
Miscellaneous Analysis (UG/KG)											
DIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
MONOBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TETRABUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
TRIBUTYLTIN	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Total Organic Carbon Analysis (MG/KG)											
CARBON	2.06	0.26	1.01	2.95	4.21	3.29	18000		1.15	2.94	2.86

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	2.67	6.8913	NA	NA	6.6637	NA	NA	NA
1-METHYLNAPHTHALENE	10.82	10.9328	NA	NA	7.8339	NA	NA	NA
1-METHYLPHENANTHRENE	9.02	52.5604	NA	NA	43.5391	NA	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	3.28	6.1887	NA	NA	4.343	NA	NA	NA
2,6-DIMETHYLNAPHTHALENE	3.48	27.1956	NA	NA	18.6451	NA	NA	NA
2-METHYLNAPHTHALENE	14.56	11.2173	NA	NA	13.8635	NA	NA	NA
ACENAPHTHENE	2.2	41.7442	NA	NA	12.2124	NA	NA	NA
ACENAPHTHYLENE	31.85	75.6525	NA	NA	93.8391	NA	NA	NA
ANTHRACENE	38.28	302.1497	NA	NA	268.4	NA	NA	NA
BENZO(A)ANTHRACENE	86.15	328.1891	NA	NA	517.9409	NA	NA	NA
BENZO(A)PYRENE	54.52	395.8064	NA	NA	434.2685	NA	NA	NA
BENZO(B)FLUORANTHENE	69.42	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	38.08	345.3157	NA	NA	365.0057	NA	NA	NA
BENZO(G,H,I)PERYLENE	61.29	199.7091	NA	NA	201.169	NA	NA	NA
BENZO(K)FLUORANTHENE	105.67	876.604	NA	NA	998.7657	NA	NA	NA
CHRYSENE	57.66	484.8087	NA	NA	591.6976	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	16.11	60.8598	NA	NA	61.3426	NA	NA	NA
FLUORANTHENE	223.98	490.4041	NA	NA	686.4765	NA	NA	NA
FLUORENE	18.21	44.1331	NA	NA	53.8912	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	1162.21	2343.5877	NA	NA	3031.3942	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	45.89	195.3932	NA	NA	209.3156	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	136.02	776.1088	NA	NA	775.2631	NA	NA	NA
NAPHTHALENE	1.65	17.9795	NA	NA	16.1573	NA	NA	NA
PERYLENE	26.2	103.96	NA	NA	133.3047	NA	NA	NA
PHENANTHRENE	179.64	283.2325	NA	NA	316.8996	NA	NA	NA
PYRENE	197.6	583.5197	NA	NA	739.6682	NA	NA	NA
TOTAL PAHS	1298.23	4940	NA	NA	5800	NA	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	5.2

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	21
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	77
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	89 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	170 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	27 J
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	71 J
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	110
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	8.0 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	120
FLUORENE	NA	NA	NA	NA	NA	NA	NA	8.2
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	816
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	24 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	74.4
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.8 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	40
PYRENE	NA	NA	NA	NA	NA	NA	NA	120
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	890.4
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	0.2954	0.10	NA	NA	1.5221	NA	NA	NA
4,4'-DDE	0.4708	0.8747	NA	NA	0.6077	NA	NA	NA
ALDRIN	0.00	0.10	NA	NA	0.10	NA	NA	NA
HEXACHLOROBENZENE	0.00	0.080	NA	NA	0.1185 J	NA	NA	NA
MIREX	0.00	0.10	NA	NA	0.1872 J	NA	NA	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.135 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.192 EB
PCB-101	NA	6.481	NA	NA	5.724	NA	NA	6.46 J
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	NA	1.7527	NA	NA	1.8208	NA	NA	2.46
PCB-118	NA	5.0247	NA	NA	6.2007	NA	NA	5.95
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	NA	1.3681	NA	NA	1.3364	NA	NA	1.29 J
PCB-138	NA	5.9192	NA	NA	7.2131	NA	NA	7.21 J
PCB-153	NA	4.3733	NA	NA	6.1611	NA	NA	4.88 J
PCB-170	NA	0.8938	NA	NA	1.5347	NA	NA	0.717
PCB-18	NA	0.6655	NA	NA	0.7851	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
PCB-180	NA	1.8609	NA	NA	2.7359	NA	NA	1.38 J
PCB-187	NA	1.8067	NA	NA	1.9215	NA	NA	0.912
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	NA	0.1638	NA	NA	0.5054	NA	NA	0.123 J
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	NA	1.5175	NA	NA	2.1269	NA	NA	0.321
PCB-209	NA	0.914	NA	NA	2.037	NA	NA	0.44
PCB-28	NA	2.0575	NA	NA	1.262	NA	NA	0.38 JEB
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	NA	2.0422	NA	NA	1.9768	NA	NA	1.65 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	NA	3.2134	NA	NA	3.618	NA	NA	4.36 EB
PCB-66	NA	6.1573	NA	NA	1.6273	NA	NA	1.21
PCB-8	NA	0.5945	NA	NA	0.5337	NA	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	25.869	93.6121	NA	NA	98.2409	NA	NA	80.1
TAL Metal Analysis (MG/KG)								
ALUMINUM	NA	21201.25	NA	NA	23628.5	NA	NA	7400
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	R
ARSENIC	NA	6.36	NA	NA	9.43	NA	NA	7.0 J
BARIUM	NA	NA	NA	NA	NA	NA	NA	16.8 J
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	0.56
CADMIUM	0.0149	0.34 J	NA	NA	0.18 J	NA	NA	0.013 UJ
CALCIUM	NA	NA	NA	NA	NA	NA	NA	3150
CHROMIUM	71.895	55.0	NA	NA	53.5	NA	NA	22.2 J
COBALT	NA	NA	NA	NA	NA	NA	NA	5.7 J
COPPER	14.432	23.5	NA	NA	39.25	NA	NA	35.2 J
IRON	NA	23830.75	NA	NA	23353.5	NA	NA	17600
LEAD	39.1522	35.9	NA	NA	40.4	NA	NA	27.0 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	4030
MANGANESE	NA	268.5	NA	NA	148.5	NA	NA	161
MERCURY	NA	0.134	NA	NA	0.137	NA	NA	0.060
NICKEL	11.742	21.0	NA	NA	20.5	NA	NA	15.3 J
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	1530
SELENIUM	NA	NA	NA	NA	NA	NA	NA	0.25 U
SILVER	0.0553	0.2625	NA	NA	0.1875	NA	NA	0.13 U
SODIUM	NA	NA	NA	NA	NA	NA	NA	6500

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-24	DSY-25			DSY-26			
Sample Number	DSY-24	DSY-25-SUR	DSY-25-SURb	DSY-25-SURc	DSY-26-SUR	DSY-26-SURb	DSY-26-SURc	DSY-SD-26-082604
Date Sampled	6/13/1994	9/28/1995	9/28/1995	9/28/1995	10/19/1995	10/19/1995	10/19/1995	8/26/2004
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	NA	1.2 J
VANADIUM	NA	NA	NA	NA	NA	NA	NA	24.7
ZINC	98.084	110	NA	NA	101.5	NA	NA	74.1 J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.1600 B
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	4.500
COPPER	NA	NA	NA	NA	NA	NA	NA	16.20 *
LEAD	NA	NA	NA	NA	NA	NA	NA	19.70
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.002300 B
NICKEL	NA	NA	NA	NA	NA	NA	NA	4.400 E
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	39.50
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.001610 U
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	0.08620
COPPER	NA	NA	NA	NA	NA	NA	NA	0.2553 J
LEAD	NA	NA	NA	NA	NA	NA	NA	0.09500
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.00003600 U
NICKEL	NA	NA	NA	NA	NA	NA	NA	0.07530 J
SEM/AVS RATIO	NA	-21.7015	0.1171	2.8785	-2.8926	0.2902	1.1824	7.3725
SULFIDE	NA	NA	NA	NA	NA	NA	NA	0.1514 J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	1.1162
ZINC	NA	NA	NA	NA	NA	NA	NA	0.6044 J
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	NA	0.82 J	NA	NA	2.58	NA	NA	NA
MONOBUTYLTIN	NA	0.50	NA	NA	1.05	NA	NA	NA
TETRABUTYLTIN	NA	0.50	NA	NA	0.29 J	NA	NA	NA
TRIBUTYLTIN	NA	0.73 J	NA	NA	2.27	NA	NA	NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	1.4	NA	NA	NA	NA	NA	NA	2900

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
Semivolatile Organic Analysis (UG/KG)						
1,1-BIPHENYL	15.0649	NA	NA	0.64	18.1083	NA
1-METHYLNAPHTHALENE	20.4658	NA	NA	5.5608	42.6734	NA
1-METHYLPHENANTHRENE	61.4409	NA	NA	14.215	148.3877	NA
2,3,5-TRIMETHYLNAPHTHALENE	7.8727	NA	NA	1.8923	15.7056	NA
2,6-DIMETHYLNAPHTHALENE	38.4551	NA	NA	0.5525 J	56.9563	NA
2-METHYLNAPHTHALENE	32.7246	NA	NA	3.5003	31.7189	NA
ACENAPHTHENE	23.8942	NA	NA	0.44	27.3134	NA
ACENAPHTHYLENE	142.327	NA	NA	26.6369	326.7656	NA
ANTHRACENE	382.6193	NA	NA	91.18	987.9747	NA
BENZO(A)ANTHRACENE	808.5664	NA	NA	358.6432	3740	NA
BENZO(A)PYRENE	923.9997	NA	NA	235.6422	2380	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	829.1939	NA	NA	197.2686	2070	NA
BENZO(G,H,I)PERYLENE	499.8266	NA	NA	49.2665	846.942	NA
BENZO(K)FLUORANTHENE	2240	NA	NA	573.8013	6100	NA
CHRYSENE	911.5175	NA	NA	243.0485	2690	NA
DIBENZO(A,H)ANTHRACENE	131.2298	NA	NA	22.7131	257.2799	NA
FLUORANTHENE	801.425	NA	NA	274.7406	2560	NA
FLUORENE	61.6292	NA	NA	13.2458	150.9851	NA
HIGH MOLECULAR WEIGHT PAHS	5526.7383	NA	NA	2075.2226	21497.2799	NA
INDENO(1,2,3-CD)PYRENE	473.0522	NA	NA	80.3212	871.5971	NA
LOW MOLECULAR WEIGHT PAHS	1020.2172	NA	NA	226.099	2438.7464	NA
NAPHTHALENE	41.7458	NA	NA	5.259	51.6201	NA
PERYLENE	248.7351	NA	NA	66.6729	617.5347	NA
PHENANTHRENE	335.2771	NA	NA	85.8369	862.3687	NA
PYRENE	1950	NA	NA	940.4349	9870	NA
TOTAL PAHS	11000	NA	NA	3300	34723.9	NA
Low Concentration PAH (SIM) Analysis (UG/KG)						
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	8.1
ACENAPHTHENE	NA	NA	NA	NA	NA	15
ACENAPHTHYLENE	NA	NA	NA	NA	NA	61

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
ANTHRACENE	NA	NA	NA	NA	NA	130
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	410
BENZO(A)PYRENE	NA	NA	NA	NA	NA	530
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	740 *
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	160
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	320
CHRYSENE	NA	NA	NA	NA	NA	560
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	56 J
FLUORANTHENE	NA	NA	NA	NA	NA	380
FLUORENE	NA	NA	NA	NA	NA	31
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	3796
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	160
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	445.1
NAPHTHALENE	NA	NA	NA	NA	NA	10
PHENANTHRENE	NA	NA	NA	NA	NA	190 J
PYRENE	NA	NA	NA	NA	NA	480
TOTAL PAH	NA	NA	NA	NA	NA	4241.1
Pesticide/PCB Analysis (UG/KG)						
2,4'-DDE	65.2185	NA	NA	1.7655	23.2318	NA
4,4'-DDE	7.0026	NA	NA	0.5041	9.6092	NA
ALDRIN	0.10	NA	NA	0.10	0.10	NA
HEXACHLOROBENZENE	0.123 J	NA	NA	0.080	0.3846	NA
MIREX	2.5938	NA	NA	0.4285	8.585	NA
PCB Analysis (UG/KG)						
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	1.39 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	1.85 JEB
PCB-101	220.22	NA	NA	5.307	76.223	227 J
PCB-104	NA	NA	NA	NA	NA	NA
PCB-105	137.4368	NA	NA	2.4691	42.7546	110
PCB-118	242.4092	NA	NA	5.4943	81.9763	293
PCB-126	NA	NA	NA	NA	NA	NA
PCB-128	72.9992	NA	NA	1.2688	25.1776	65.4 J
PCB-138	265.3538	NA	NA	5.8137	94.9642	370 J
PCB-153	173.9958	NA	NA	4.09	65.4074	226 J
PCB-170	44.1602	NA	NA	0.9654	20.3958	32.3
PCB-18	8.362	NA	NA	2.135	27.5421	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27					
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004
QC Identifier						
PCB-180	53.1671	NA	NA	1.5326	29.2051	43.5 J
PCB-187	25.8152	NA	NA	0.8777	14.6916	20.3
PCB-188	NA	NA	NA	NA	NA	NA
PCB-195	2.9292	NA	NA	0.2558	3.5626	1.62 J
PCB-201	NA	NA	NA	NA	NA	NA
PCB-206	7.4458	NA	NA	0.5977	9.7235	1.72 J
PCB-209	5.045	NA	NA	0.6182	9.6201	1.77 J
PCB-28	12.9159	NA	NA	2.0613	28.3429	3.46 J
PCB-29	NA	NA	NA	NA	NA	NA
PCB-44	65.0467	NA	NA	1.7735	25.5459	15.6 JEB
PCB-50	NA	NA	NA	NA	NA	NA
PCB-52	130.4981	NA	NA	3.8796	46.2482	38.2 EB
PCB-66	179.5804	NA	NA	1.2291	21.8878	25.2
PCB-8	5.6403	NA	NA	5.2581	65.9511	NA
PCB-87	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	3310	NA	NA	91.254	1380	2960
TAL Metal Analysis (MG/KG)						
ALUMINUM	43767.5	NA	NA	18200.25	18218	10800
ANTIMONY	NA	NA	NA	NA	NA	2.8 UJ
ARSENIC	11.6	NA	NA	11.38	10.32	13.2 J
BARIUM	NA	NA	NA	NA	NA	31.2 J
BERYLLIUM	NA	NA	NA	NA	NA	0.71
CADMIUM	1.03 J	NA	NA	0.10 J	1.24 J	0.92 J
CALCIUM	NA	NA	NA	NA	NA	137000 J
CHROMIUM	103	NA	NA	29.75	50.75	49.2 J
COBALT	NA	NA	NA	NA	NA	4.8 J
COPPER	166.25	NA	NA	2.5 J	1.5 J	442
IRON	34532.5	NA	NA	17196	15478.25	23400
LEAD	150.7	NA	NA	15.5	182	138 J
MAGNESIUM	NA	NA	NA	NA	NA	5040
MANGANESE	346.5	NA	NA	189	193.5	209
MERCURY	0.5875	NA	NA	0.015 U	0.015 U	0.31
NICKEL	43.5	NA	NA	15.5	13.0	14.0 J
POTASSIUM	NA	NA	NA	NA	NA	2370 J
SELENIUM	NA	NA	NA	NA	NA	0.37 U
SILVER	0.6875	NA	NA	0.17	1.82	0.18 UJ
SODIUM	NA	NA	NA	NA	NA	13000

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-27						
Sample Number	DSY-27-SUR	DSY-27-SURb	DSY-27-SURc	DSY-V9-BOT	DSY-V9-MID	DSY-SD-27-082604	
Date Sampled	10/12/1995	10/12/1995	10/12/1995	1/11/1996	1/11/1996	8/26/2004	
QC Identifier							
THALLIUM	NA	NA	NA	NA	NA		R
VANADIUM	NA	NA	NA	NA	NA	36.8	
ZINC	547.25	NA	NA	36.0	29.75	546	J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)							
CADMIUM	NA	NA	NA	NA	NA	0.3700	
CHROMIUM	NA	NA	NA	NA	NA	24.50	
COPPER	NA	NA	NA	NA	NA	60.70	N*
LEAD	NA	NA	NA	NA	NA	93.90	
MERCURY	NA	NA	NA	NA	NA	0.001000	UN
NICKEL	NA	NA	NA	NA	NA	5.700	N*
SULFIDE	NA	NA	NA	NA	NA	710.0	
ZINC	NA	NA	NA	NA	NA	598.0	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)							
CADMIUM	NA	NA	NA	NA	NA	0.003300	
CHROMIUM	NA	NA	NA	NA	NA	0.4708	
COPPER	NA	NA	NA	NA	NA	0.9555	J
LEAD	NA	NA	NA	NA	NA	0.4534	
MERCURY	NA	NA	NA	NA	NA	0.00005100	UJ
NICKEL	NA	NA	NA	NA	NA	0.09680	UJ
SEM/AVS RATIO	-164.3531	0.06840	12.0719	NA	NA	0.5015	
SULFIDE	NA	NA	NA	NA	NA	21.9848	J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	11.0261	
ZINC	NA	NA	NA	NA	NA	9.1431	J
Miscellaneous Analysis (UG/KG)							
DIBUTYLTIN	5.56	NA	NA	0.50	5.25		NA
MONOBUTYLTIN	4.8	NA	NA	0.50	3.38		NA
TETRABUTYLTIN	0.50	NA	NA	0.50	0.50		NA
TRIBUTYLTIN	8.52	NA	NA	0.50	7.27		NA
Total Organic Carbon Analysis (MG/KG)							
CARBON	NA	NA	NA	NA	NA	15000	

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	12.6086	NA	NA	55.4158	12.6874	0.64	0.64	NA
1-METHYLNAPHTHALENE	19.8486	NA	NA	155.9459	27.7092	3.255	3.255	NA
1-METHYLPHENANTHRENE	38.5723	NA	NA	576.9192	49.9757	2.715	2.2056 J	NA
2,3,5-TRIMETHYLNAPHTHALENE	8.4092	NA	NA	59.0593	8.8952	0.54	0.54	NA
2,6-DIMETHYLNAPHTHALENE	34.2342	NA	NA	105.3072	39.1718	1.78	1.78	NA
2-METHYLNAPHTHALENE	43.8733	NA	NA	145.247	35.1052	5.3	0.00	NA
ACENAPHTHENE	17.2749	NA	NA	820.099	20.7905	0.44	0.44	NA
ACENAPHTHYLENE	74.6342	NA	NA	210.611	108.8023	0.77	1.0017	NA
ANTHRACENE	183.4293	NA	NA	2040	323.3137	2.0557 J	1.085	NA
BENZO(A)ANTHRACENE	294.0186	NA	NA	4490	513.224	9.7087	0.00	NA
BENZO(A)PYRENE	377.4684	NA	NA	4130	697.5214	6.2333	0.00	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	362.449	NA	NA	3000	602.8268	4.6899	1.5897 J	NA
BENZO(G,H,I)PERYLENE	247.1024	NA	NA	1780	372.9967	1.9684 J	25	NA
BENZO(K)FLUORANTHENE	911.3454	NA	NA	8490	1550.3108	13.2157	1.9057 J	NA
CHRYSENE	363.6943	NA	NA	4670	646.4287	8.1253	3.76	NA
DIBENZO(A,H)ANTHRACENE	66.5977	NA	NA	570.7401	99.6221	0.3007 J	1.0738 J	NA
FLUORANTHENE	458.7699	NA	NA	11000	649.2962	7.3992 J	14.3696	NA
FLUORENE	31.4468	NA	NA	1020	42.1807	1.34	2.0815 J	NA
HIGH MOLECULAR WEIGHT PAHS	2210.2406	NA	NA	34320.7401	4116.0924	64.6812	19.2034	NA
INDENO(1,2,3-CD)PYRENE	222.5593	NA	NA	1840	332.0114	2.1646 J	1.645	NA
LOW MOLECULAR WEIGHT PAHS	608.693	NA	NA	12822.4259	880.6856	14.021	5.8125	NA
NAPHTHALENE	37.5376	NA	NA	126.4689	47.646	2.6	0.00	NA
PERYLENE	133.3961	NA	NA	928.7011	176.1805	5.7463	0.445	NA
PHENANTHRENE	220.497	NA	NA	8460	302.8472	1.5153 J	1.2043 J	NA
PYRENE	649.6917	NA	NA	9460	1510	32.914	0.00	NA
TOTAL PAHS	4810	NA	NA	64100	8170	96	25.432	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	11 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	11 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	27

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	38
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	140
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	220 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	290 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	97 J
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	110 J
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	180
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	24 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	160
FLUORENE	NA	NA	NA	NA	NA	NA	NA	18
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	1656
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	85 J
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	182
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	12
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	87
PYRENE	NA	NA	NA	NA	NA	NA	NA	350
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	1838
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	1.6726	NA	NA	3.027	6.3366	0.3287	0.4694	NA
4,4'-DDE	2.0345	NA	NA	17.057	5.0083	0.025	0.1952	NA
ALDRIN	0.10	NA	NA	0.10	0.10	0.10	0.10	NA
HEXACHLOROBENZENE	0.0554 J	NA	NA	0.1034 J	0.0881 J	0.080	0.080	NA
MIREX	0.1694 J	NA	NA	0.3859	1.6626	0.1262 J	0.0696 J	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.231 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	0.228 EB
PCB-101	5.509	NA	NA	10.109	21.293	0.568	1.134	3.63 J
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	2.0427	NA	NA	3.7277	6.4038	0.1016	0.1817	1.25
PCB-118	7.0903	NA	NA	12.382	22.6231	0.2509 J	0.6896	4.22
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	1.8865	NA	NA	2.7907	6.9928	0.0633 J	0.15	1.01 J
PCB-138	10.857	NA	NA	15.803	33.3266	0.3076	0.8547	6.86 J
PCB-153	9.974	NA	NA	14.7091	27.5092	0.2316	0.6955	7.25 J
PCB-170	3.1251	NA	NA	3.9981	12.8635	0.035	0.1345	0.844
PCB-18	0.4502	NA	NA	0.9586	3.0462	0.4674	0.4542	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28							
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004
QC Identifier								
PCB-180	5.7721	NA	NA	7.3233	21.9454	0.2138	0.59	2.11 J
PCB-187	3.9393	NA	NA	5.855	11.4878	0.0554	0.3042	2.4
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.9648	NA	NA	0.8377	2.1603	0.0588	0.1482	0.228
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	3.1163	NA	NA	5.3297	6.8891	0.2296	0.3894	1.33
PCB-209	3.9938	NA	NA	5.2007	4.4421	0.2509	0.8203	1.66
PCB-28	1.4968	NA	NA	2.1122	6.2505	0.149	0.1789	1.47 J
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	1.467	NA	NA	2.5902	6.7862	0.2257	0.494	1.8 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	2.8518	NA	NA	4.5068	12.8159	0.2433	0.875	1.76 EB
PCB-66	1.6536	NA	NA	2.9492	5.874	0.1075	0.2229	1.64
PCB-8	0.6636	NA	NA	0.7466	2.519	0.1925	0.0699 J	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	133.7077	NA	NA	203.8593	430.457	7.4336	16.7737	79.8
TAL Metal Analysis (MG/KG)								
ALUMINUM	41307.5	NA	NA	38435	30315	17497.75	29658.75	13400
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	0.48 UJ
ARSENIC	8.68	NA	NA	9.66	9.5	8.59	4.85	11.8 J
BARIUM	NA	NA	NA	NA	NA	NA	NA	39.0
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	1.2
CADMIUM	0.55 J	NA	NA	0.90 J	0.91 J	0.11 J	0.070 J	0.48 J
CALCIUM	NA	NA	NA	NA	NA	NA	NA	9170 J
CHROMIUM	80.5	NA	NA	107.75	112.75	44.0	108	46.0
COBALT	NA	NA	NA	NA	NA	NA	NA	8.1 J
COPPER	71.75	NA	NA	132.5	179.5	18.25	168	60.1 J
IRON	29155	NA	NA	35297.5	32305	33277.75	30379.25	26700
LEAD	77.7	NA	NA	192.6	148.4	12.8	16.1	51.3 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	9310
MANGANESE	302.5	NA	NA	338	331.5	343.25	268.25	278
MERCURY	0.315	NA	NA	1.0775	0.4075	0.015 U	0.86	0.17
NICKEL	24.25	NA	NA	45.5	77.75	30.75	37.25	19.9 J
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	4360
SELENIUM	NA	NA	NA	NA	NA	NA	NA	R
SILVER	0.5125	NA	NA	1.0	0.96	0.16	0.15	0.32 UJ
SODIUM	NA	NA	NA	NA	NA	NA	NA	24300

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-28								
Sample Number	DSY-28-SUR	DSY-28-SURb	DSY-28-SURc	DSY-28-BOT	DSY-28-MID	DSY-V4-BOT	DSY-V4-MID	DSY-SD-28-082504	
Date Sampled	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	1/11/1996	1/11/1996	8/25/2004	
QC Identifier									
THALLIUM	NA	NA	NA	NA	NA	NA	NA	1.7	UJ
VANADIUM	NA	NA	NA	NA	NA	NA	NA	45.6	
ZINC	169.25	NA	NA	327.75	455	71.25	466.5	142	J
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)									
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.2300	B
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	9.900	
COPPER	NA	NA	NA	NA	NA	NA	NA	31.00	N*
LEAD	NA	NA	NA	NA	NA	NA	NA	45.50	
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.001600	UN
NICKEL	NA	NA	NA	NA	NA	NA	NA	4.200	BN*
SULFIDE	NA	NA	NA	NA	NA	NA	NA	3.600	
ZINC	NA	NA	NA	NA	NA	NA	NA	83.00	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)									
CADMIUM	NA	NA	NA	NA	NA	NA	NA	0.003660	U
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	0.1897	
COPPER	NA	NA	NA	NA	NA	NA	NA	0.4884	J
LEAD	NA	NA	NA	NA	NA	NA	NA	0.2198	
MERCURY	NA	NA	NA	NA	NA	NA	NA	0.00008200	UJ
NICKEL	NA	NA	NA	NA	NA	NA	NA	0.07220	UJ
SEM/AVS RATIO	-55.482	0.1186	7.468	NA	NA	NA	NA	19.4047	
SULFIDE	NA	NA	NA	NA	NA	NA	NA	0.1117	J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	2.1675	
ZINC	NA	NA	NA	NA	NA	NA	NA	1.2696	J
Miscellaneous Analysis (UG/KG)									
DIBUTYLTIN	21.0	NA	NA	43.4	5.03	0.50	0.50	NA	
MONOBUTYLTIN	8.88	NA	NA	14.99	2.9	0.50	0.50	NA	
TETRABUTYLTIN	0.60 J	NA	NA	0.50	0.50	0.50	0.50	NA	
TRIBUTYLTIN	65.36	NA	NA	140.54	12.87	0.50	0.50	NA	
Total Organic Carbon Analysis (MG/KG)									
CARBON	NA	NA	NA	NA	NA	NA	NA	24000	

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
Semivolatile Organic Analysis (UG/KG)							
1,1-BIPHENYL	29.9113	NA	NA	30.1792	0.64	12.5828	NA
1-METHYLNAPHTHALENE	50.0709	NA	NA	45.4347	3.255	52.95	NA
1-METHYLPHENANTHRENE	266.5573	NA	NA	241.0912	2.2382 J	194.9058	NA
2,3,5-TRIMETHYLNAPHTHALENE	27.9395	NA	NA	28.7557	0.54	17.6121	NA
2,6-DIMETHYLNAPHTHALENE	112.3151	NA	NA	123.8987	1.78	23.9274	NA
2-METHYLNAPHTHALENE	73.4692	NA	NA	61.8418	5.3	26.7152	NA
ACENAPHTHENE	188.5882	NA	NA	197.1768	0.44	158.0626	NA
ACENAPHTHYLENE	300.1476	NA	NA	460.8249	0.77	119.6388	NA
ANTHRACENE	1220	NA	NA	1750	4.5195	541.4797	NA
BENZO(A)ANTHRACENE	2700	NA	NA	4310	6.773	1640	NA
BENZO(A)PYRENE	2380	NA	NA	3200	9.529	1550.0409	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1950	NA	NA	2510	11.8765	1140	NA
BENZO(G,H,I)PERYLENE	1110	NA	NA	1360	7.0974	700.7949	NA
BENZO(K)FLUORANTHENE	5350	NA	NA	7050	34.6377	2750	NA
CHRYSENE	2800	NA	NA	3740	15.3196	1590	NA
DIBENZO(A,H)ANTHRACENE	317.4257	NA	NA	392.8234	1.8584 J	223.3704	NA
FLUORANTHENE	4970	NA	NA	8290	20.367	2860	NA
FLUORENE	293.6357	NA	NA	333.2252	1.34	137.6665	NA
HIGH MOLECULAR WEIGHT PAHS	18467.4257	NA	NA	28222.8234	82.1203	11413.4112	NA
INDENO(1,2,3-CD)PYRENE	1020	NA	NA	1310	5.9139	673.0268	NA
LOW MOLECULAR WEIGHT PAHS	3761.4565	NA	NA	4643.5637	19.0347	2278.709	NA
NAPHTHALENE	76.0754	NA	NA	90.9503	2.6	55.1463	NA
PERYLENE	610.9469	NA	NA	844.1755	4.9633	367.9719	NA
PHENANTHRENE	1609.5404	NA	NA	1749.5448	4.0652 J	1240	NA
PYRENE	5300	NA	NA	8290	28.2732	3550	NA
TOTAL PAHS	32800	NA	NA	46400	157	19600	NA
Low Concentration PAH (SIM) Analysis (UG/KG)							
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	39 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	120
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	73

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
ANTHRACENE	NA	NA	NA	NA	NA	NA	320
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	1200
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	1200
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	1400
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	510
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	630
CHRYSENE	NA	NA	NA	NA	NA	NA	1300
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	160 J
FLUORANTHENE	NA	NA	NA	NA	NA	NA	2000
FLUORENE	NA	NA	NA	NA	NA	NA	130
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	10970
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	470
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	1643
NAPHTHALENE	NA	NA	NA	NA	NA	NA	39 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	1000 J
PYRENE	NA	NA	NA	NA	NA	NA	2100
TOTAL PAH	NA	NA	NA	NA	NA	NA	12613
Pesticide/PCB Analysis (UG/KG)							
2,4'-DDE	4.9571	NA	NA	4.7577	0.10	1.1214	NA
4,4'-DDE	6.2869	NA	NA	6.4334	0.1156	9.2481	NA
ALDRIN	0.10	NA	NA	0.2152	0.10	0.10	NA
HEXACHLOROBENZENE	0.1562 J	NA	NA	0.080	0.080	0.080	NA
MIREX	0.10	NA	NA	0.3101	0.10	0.10	NA
PCB Analysis (UG/KG)							
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.233 JEB
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	0.424 JEB
PCB-101	16.696	NA	NA	15.662	0.255	4.324	9.6 J
PCB-104	NA	NA	NA	NA	NA	NA	NA
PCB-105	6.6132	NA	NA	6.5112	0.035	1.3988	3.66
PCB-118	18.3807	NA	NA	17.5629	0.135	4.5103	9.71
PCB-126	NA	NA	NA	NA	NA	NA	NA
PCB-128	5.1411	NA	NA	4.8757	0.035	0.9992	3.16 J
PCB-138	27.041	NA	NA	26.1257	0.0926 J	5.9912	21.9 J
PCB-153	22.7965	NA	NA	22.6695	0.0957 J	5.2303	19.8 J
PCB-170	7.2459	NA	NA	7.5795	0.035	1.6568	4.15
PCB-18	0.6827	NA	NA	0.7411	0.015	0.2304	NA

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FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29						
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004
QC Identifier							
PCB-180	13.7914	NA	NA	14.7384	0.0819 J	3.6683	10.2 J
PCB-187	8.5443	NA	NA	9.783	0.1186	2.6938	9.28
PCB-188	NA	NA	NA	NA	NA	NA	NA
PCB-195	3.8324	NA	NA	5.9233	0.020	0.5814	1.43
PCB-201	NA	NA	NA	NA	NA	NA	NA
PCB-206	17.3943	NA	NA	39.0153	0.2506	2.5762	7.85
PCB-209	105.269	NA	NA	279.6978	0.2277	2.4618	94.3
PCB-28	1.6609	NA	NA	1.7241	0.0645	0.513	1.16 J
PCB-29	NA	NA	NA	NA	NA	NA	NA
PCB-44	3.9443	NA	NA	3.7456	0.0924	0.9777	1.74 JEB
PCB-50	NA	NA	NA	NA	NA	NA	NA
PCB-52	9.6936	NA	NA	8.1678	0.0516 J	1.7773	3.34 EB
PCB-66	3.8666	NA	NA	2.7804	0.0964	0.9991	2.9
PCB-8	0.5965	NA	NA	0.6921	0.055	0.1507	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	546.3809	NA	NA	935.9907	2.854	81.4807	410
TAL Metal Analysis (MG/KG)							
ALUMINUM	37147.5	NA	NA	38107.5	18495.25	17663	13000
ANTIMONY	NA	NA	NA	NA	NA	NA	0.41 UJ
ARSENIC	12.46	NA	NA	12.32	3.0	5.57	12.3 J
BARIUM	NA	NA	NA	NA	NA	NA	48.2
BERYLLIUM	NA	NA	NA	NA	NA	NA	1.0
CADMIUM	1.45	NA	NA	2.18	0.14 J	0.78 J	1.1 J
CALCIUM	NA	NA	NA	NA	NA	NA	11000 J
CHROMIUM	86.5	NA	NA	88.0	31.25	56.0	46.1 J
COBALT	NA	NA	NA	NA	NA	NA	8.4 J
COPPER	157.75	NA	NA	165	1.875 U	60.0	93.5 J
IRON	35452.5	NA	NA	36347.5	16445.75	22018.5	30500
LEAD	185.9	NA	NA	172.5	19.0	87.1	113 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	7820
MANGANESE	282.25	NA	NA	289.75	113	137	251
MERCURY	0.5025	NA	NA	0.51	0.015 U	0.565	0.27
NICKEL	34.75	NA	NA	36.0	15.25	23.25	24.2 J
POTASSIUM	NA	NA	NA	NA	NA	NA	3420 J
SELENIUM	NA	NA	NA	NA	NA	NA	0.54 U
SILVER	0.7875	NA	NA	0.9875	0.065 U	0.61	0.27 UJ
SODIUM	NA	NA	NA	NA	NA	NA	20800

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FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-29							
Sample Number	DSY-29-SUR	DSY-29-SURb	DSY-29-SURc	DSY-29-SUR-D	DSY-29-BOT	DSY-29-MID	DSY-SD-29-082604	
Date Sampled	10/19/1995	10/19/1995	10/19/1995	10/19/1995	11/16/1995	11/16/1995	8/26/2004	
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	1.9	UJ
VANADIUM	NA	NA	NA	NA	NA	NA	49.4	
ZINC	392.75	NA	NA	403.25	34.5	130.5	252	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	0.7200	
CHROMIUM	NA	NA	NA	NA	NA	NA	10.90	
COPPER	NA	NA	NA	NA	NA	NA	42.30	N*
LEAD	NA	NA	NA	NA	NA	NA	88.70	
MERCURY	NA	NA	NA	NA	NA	NA	0.001500	UN
NICKEL	NA	NA	NA	NA	NA	NA	84.50	N*
SULFIDE	NA	NA	NA	NA	NA	NA	2300	
ZINC	NA	NA	NA	NA	NA	NA	169.0	
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	0.006400	
CHROMIUM	NA	NA	NA	NA	NA	NA	0.2102	U
COPPER	NA	NA	NA	NA	NA	NA	0.6664	J
LEAD	NA	NA	NA	NA	NA	NA	0.4281	
MERCURY	NA	NA	NA	NA	NA	NA	0.00007300	UJ
NICKEL	NA	NA	NA	NA	NA	NA	1.4396	UJ
SEM/AVS RATIO	-175.5936	0.04130	7.5664	NA	NA	NA	0.05250	
SULFIDE	NA	NA	NA	NA	NA	NA	70.1675	J
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	3.6869	
ZINC	NA	NA	NA	NA	NA	NA	2.586	J
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	20.58	NA	NA	30.04	0.50	0.50		NA
MONOBUTYLTIN	8.65	NA	NA	18.06	0.50	0.50		NA
TETRABUTYLTIN	0.50	NA	NA	0.54 J	0.50	0.50		NA
TRIBUTYLTIN	60.89	NA	NA	66.17	0.50	0.50		NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	NA	NA	NA	NA	NA	NA	32000	

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SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
Semivolatile Organic Analysis (UG/KG)								
1,1-BIPHENYL	23.7612	NA	NA	0.64	2.8461	14.4062	NA	NA
1-METHYLNAPHTHALENE	55.1059	NA	NA	3.255	10.8544	20.4157	NA	NA
1-METHYLPHENANTHRENE	114.1619	NA	NA	2.715	18.5915	32.5298	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	19.247	NA	NA	0.54	3.7367	7.8987	NA	NA
2,6-DIMETHYLNAPHTHALENE	70.705	NA	NA	4.3851	6.8306	34.6414	NA	NA
2-METHYLNAPHTHALENE	88.1922	NA	NA	5.3	12.1748	36.8598	NA	NA
ACENAPHTHENE	196.9635	NA	NA	0.44	9.4373	17.1397	NA	NA
ACENAPHTHYLENE	91.9431	NA	NA	0.77	19.2568	71.0036	NA	NA
ANTHRACENE	455.8496	NA	NA	0.9119 J	49.8583	200.3	NA	NA
BENZO(A)ANTHRACENE	696.6908	NA	NA	0.8496 J	105.1753	280.585	NA	NA
BENZO(A)PYRENE	811.8407	NA	NA	2.415	137.7264	420.8157	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	772.6699	NA	NA	2.04	103.9351	401.4211	NA	NA
BENZO(G,H,I)PERYLENE	451.5919	NA	NA	1.472 J	74.5695	214.7073	NA	NA
BENZO(K)FLUORANTHENE	1640	NA	NA	4.0093 J	266.7754	1040	NA	NA
CHRYSENE	715.6919	NA	NA	1.3263 J	109.9579	398.9704	NA	NA
DIBENZO(A,H)ANTHRACENE	130.1156	NA	NA	0.844 J	17.6947	62.9278	NA	NA
FLUORANTHENE	1490	NA	NA	1.8671 J	239.1575	399.3288	NA	NA
FLUORENE	176.6084	NA	NA	1.34	15.7432	28.1165	NA	NA
HIGH MOLECULAR WEIGHT PAHS	5594.3696	NA	NA	9.0553	846.8089	2408.6018	NA	NA
INDENO(1,2,3-CD)PYRENE	398.2413	NA	NA	1.2933 J	70.6037	217.9902	NA	NA
LOW MOLECULAR WEIGHT PAHS	2415.6703	NA	NA	13.0357	261.5475	614.8201	NA	NA
NAPHTHALENE	136.1136	NA	NA	2.6	13.64	45.3043	NA	NA
PERYLENE	207.3981	NA	NA	17.4748	38.4788	141.5225	NA	NA
PHENANTHRENE	1270	NA	NA	1.6737 J	141.4371	216.0962	NA	NA
PYRENE	1750.0305	NA	NA	1.7533 J	237.097	845.9742	NA	NA
TOTAL PAHS	11800	NA	NA	37.9	1710	5150	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)								
2,4'-DDE	5.6635	NA	NA	0.10	0.4163	3.629	NA	NA
4,4'-DDE	4.4378	NA	NA	0.2349	0.5865	1.9497	NA	NA
ALDRIN	0.10	NA	NA	0.10	0.10	0.10	NA	NA
HEXACHLOROBENZENE	0.080	NA	NA	0.080	0.080	0.080	NA	NA
MIREX	5.0321	NA	NA	0.10	0.1278 J	0.3274	NA	NA
PCB Analysis (UG/KG)								
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA	NA	NA	NA	NA
PCB-101	19.003	NA	NA	0.277	0.293	12.746	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	7.0445	NA	NA	0.035	0.1018	4.3904	NA	NA
PCB-118	19.5558	NA	NA	0.135	0.349	13.7448	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	6.2479	NA	NA	0.0971	0.035	3.0669	NA	NA
PCB-138	26.5724	NA	NA	0.1271 J	0.2396 J	16.1059	NA	NA
PCB-153	20.5378	NA	NA	0.075	0.1476 J	14.4279	NA	NA
PCB-170	6.289	NA	NA	0.035	0.2207	3.8268	NA	NA
PCB-18	1.2973	NA	NA	0.0906	0.2045	1.3428	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
PCB-180	11.5742	NA	NA	0.2419	0.0631 J	6.7996	NA	NA
PCB-187	7.0216	NA	NA	0.0518	0.1921	4.6643	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	1.0068	NA	NA	0.020	0.020	1.7964	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	6.2653	NA	NA	0.015	1.1309	4.3287	NA	NA
PCB-209	6.8161	NA	NA	1.1315	1.7857	4.5038	NA	NA
PCB-28	2.5442	NA	NA	0.0902	0.5919	3.6719	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	4.4891	NA	NA	0.1411	0.2011	3.6906	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	9.22	NA	NA	0.2759	0.4602	7.2303	NA	NA
PCB-66	0.9377	NA	NA	0.144	0.3939	2.7227	NA	NA
PCB-8	1.2214	NA	NA	0.055	0.1058	1.4339	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	315.2884	NA	NA	5.3362	12.9621	220.9876	NA	NA
TAL Metal Analysis (MG/KG)								
ALUMINUM	37525	NA	NA	23276.5	26627.5	38455	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	10.3	NA	NA	6.07	5.45	10.22	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	1.2 J	NA	NA	0.27 J	0.16 J	0.76 J	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	79.25	NA	NA	42.0	49.75	76.75	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	81.25	NA	NA	1.875 U	9.75	80.75	NA	NA
IRON	27417.5	NA	NA	21068.75	21970.25	28335	NA	NA
LEAD	80.0	NA	NA	21.7	34.9	81.0	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	276.5	NA	NA	214	140.75	307.5	NA	NA
MERCURY	0.47	NA	NA	0.015 B	0.1398	0.395	NA	NA
NICKEL	27.25	NA	NA	13.5	16.75	24.75	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	0.7375	NA	NA	0.065 U	0.14	0.5125	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-30					DSY-31		
Sample Number	DSY-30-SUR	DSY-30-SURb	DSY-30-SURc	DSY-30-BOT	DSY-30-MID	DSY-31-SUR	DSY-31-SURb	DSY-31-SURc
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	11/16/1995	10/12/1995	10/12/1995	10/12/1995
QC Identifier								
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	192.75	NA	NA	48.5	64.5	167	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)								
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SEM/AVS RATIO	-19.5035	0.2202	5.5065	NA	NA	-47.2728	0.05570	2.7872
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)								
DIBUTYLTIN	4.06	NA	NA	0.50	0.50	86.93	NA	NA
MONOBUTYLTIN	2.45	NA	NA	0.50	0.50	45.5	NA	NA
TETRABUTYLTIN	0.50	NA	NA	0.50	0.50	0.45 J	NA	NA
TRIBUTYLTIN	6.86	NA	NA	0.50	0.50	228.12	NA	NA
Total Organic Carbon Analysis (MG/KG)								
CARBON	NA	NA	NA	NA	NA	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
Semivolatile Organic Analysis (UG/KG)										
1,1-BIPHENYL	0.64	6.5419	NA	15.369	NA	NA	NA	3.1795	NA	NA
1-METHYLNAPHTHALENE	3.255	10.3431	NA	17.5691	NA	NA	NA	5.1117 J	NA	NA
1-METHYLPHENANTHRENE	2.715	14.126	NA	51.5744	NA	NA	NA	8.8757	NA	NA
2,3,5-TRIMETHYLNAPHTHALENE	0.54	4.089	NA	7.8906	NA	NA	NA	2.0425	NA	NA
2,6-DIMETHYLNAPHTHALENE	2.4912 J	17.0688	NA	43.5907	NA	NA	NA	9.9094	NA	NA
2-METHYLNAPHTHALENE	5.3	15.075	NA	32.0827	NA	NA	NA	9.6587 J	NA	NA
ACENAPHTHENE	0.44	4.1809	NA	14.2886	NA	NA	NA	3.3124	NA	NA
ACENAPHTHYLENE	0.77	22.4076	NA	131.2997	NA	NA	NA	11.8505	NA	NA
ANTHRACENE	1.085	51.0713	NA	298.0573	NA	NA	NA	31.4882	NA	NA
BENZO(A)ANTHRACENE	1.802 J	66.8864	NA	387.6965	NA	NA	NA	50.0309	NA	NA
BENZO(A)PYRENE	2.0163 J	147.0902	NA	494.6919	NA	NA	NA	67.8487	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(E)PYRENE	1.5001 J	155.7333	NA	417.1659	NA	NA	NA	63.4532	NA	NA
BENZO(G,H,I)PERYLENE	1.5481 J	92.946	NA	286.709	NA	NA	NA	50.3306	NA	NA
BENZO(K)FLUORANTHENE	5.9001 J	295.1911	NA	1100	NA	NA	NA	155.341	NA	NA
CHRYSENE	2.5637 J	100.0411	NA	491.2839	NA	NA	NA	58.7768	NA	NA
DIBENZO(A,H)ANTHRACENE	0.767 J	25.8549	NA	72.2172	NA	NA	NA	12.4056	NA	NA
FLUORANTHENE	2.5785 J	104.247	NA	535.2793	NA	NA	NA	95.2291	NA	NA
FLUORENE	1.34	9.1526	NA	25.7327	NA	NA	NA	6.5724	NA	NA
HIGH MOLECULAR WEIGHT PAHS	13.3997	743.8501	NA	2897.783	NA	NA	NA	391.2466	NA	NA
INDENO(1,2,3-CD)PYRENE	1.3166 J	74.786	NA	263.6159	NA	NA	NA	45.3127	NA	NA
LOW MOLECULAR WEIGHT PAHS	13.2199	180.0346	NA	725.9518	NA	NA	NA	119.9073	NA	NA
NAPHTHALENE	2.6	17.9095	NA	42.6678	NA	NA	NA	10.8658	NA	NA
PERYLENE	11.5841	45.3489	NA	150.4787	NA	NA	NA	23.9158	NA	NA
PHENANTHRENE	1.6849 J	60.2378	NA	181.823	NA	NA	NA	46.1594	NA	NA
PYRENE	3.6722 J	299.7304	NA	916.6143	NA	NA	NA	106.9554	NA	NA
TOTAL PAHS	39	1640	NA	5980	NA	NA	NA	879	NA	NA
Low Concentration PAH (SIM) Analysis (UG/KG)										
2-METHYLNAPHTHALENE	NA	NA	8.8 U	NA	NA	NA	9.4 U	NA	NA	NA
ACENAPHTHENE	NA	NA	8.8 U	NA	NA	NA	10	NA	NA	NA
ACENAPHTHYLENE	NA	NA	19	NA	NA	NA	24	NA	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
ANTHRACENE	NA	NA	27	NA	NA	NA	53	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	91	NA	NA	NA	200	NA	NA	NA
BENZO(A)PYRENE	NA	NA	120	NA	NA	NA	250 J	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	200	NA	NA	NA	530 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	55	NA	NA	NA	100 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	63	NA	NA	NA	190 J	NA	NA	NA
CHRYSENE	NA	NA	150	NA	NA	NA	270	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	14 J	NA	NA	NA	22 J	NA	NA	NA
FLUORANTHENE	NA	NA	130	NA	NA	NA	280	NA	NA	NA
FLUORENE	NA	NA	10	NA	NA	NA	22	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	1055	NA	NA	NA	2334	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	52	NA	NA	NA	82 J	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	110	NA	NA	NA	232	NA	NA	NA
NAPHTHALENE	NA	NA	8.8 U	NA	NA	NA	13	NA	NA	NA
PHENANTHRENE	NA	NA	54 J	NA	NA	NA	110	NA	NA	NA
PYRENE	NA	NA	180	NA	NA	NA	410	NA	NA	NA
TOTAL PAH	NA	NA	1165	NA	NA	NA	2566	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)										
2,4'-DDE	0.284	2.4482	NA	0.26	NA	NA	NA	0.6334	NA	NA
4,4'-DDE	0.1597	4.8822	NA	2.3816	NA	NA	NA	0.4185	NA	NA
ALDRIN	0.1247 J	0.1285 J	NA	0.10	NA	NA	NA	0.10	NA	NA
HEXACHLOROBENZENE	0.080	0.080	NA	0.080	NA	NA	NA	0.080	NA	NA
MIREX	0.10	0.1636 J	NA	0.7081	NA	NA	NA	0.10	NA	NA
PCB Analysis (UG/KG)										
2,2',5-TRICHLOROBIPHENYL	NA	NA	0.346 JEB	NA	NA	NA	0.165 JEB	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	0.582 EB	NA	NA	NA	0.483 JEB	NA	NA	NA
PCB-101	0.313	7.483	7.43 J	14.32	NA	NA	4.8 J	1.74	NA	NA
PCB-104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-105	0.035	3.3525	2.69	2.6336	NA	NA	1.7	0.5626	NA	NA
PCB-118	0.135	7.8191	8.29	11.282	NA	NA	5.71	2.3403	NA	NA
PCB-126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-128	0.035	2.4545	1.83 J	3.1408	NA	NA	1.45 J	0.5496	NA	NA
PCB-138	0.0696 J	10.3747	11.2 J	15.1649	NA	NA	8.66 J	2.8904	NA	NA
PCB-153	0.075	7.9894	9.84 J	12.2329	NA	NA	8.18 J	2.7247	NA	NA
PCB-170	0.035	2.5928	1.75	2.3014	NA	NA	1.56	0.7962	NA	NA
PCB-18	0.015	1.1913	NA	0.907	NA	NA	NA	0.2639	NA	NA

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.			DSY-32				DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604	DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604	DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995	8/26/2004	9/28/1995	9/28/1995	9/28/1995
QC Identifier										
PCB-180	0.045	6.4264	3.81 J	4.5228	NA	NA	3.53 J	1.5035	NA	NA
PCB-187	0.010	4.1432	3.32	4.2601	NA	NA	3.39	1.1935	NA	NA
PCB-188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-195	0.020	1.1069	0.486	0.5338	NA	NA	0.409 J	0.1868	NA	NA
PCB-201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-206	0.1998	2.6919	1.27	2.6839	NA	NA	1.32	1.1163	NA	NA
PCB-209	0.2124	2.1184	2.17	4.3385	NA	NA	1.99	1.2885	NA	NA
PCB-28	0.1528	2.1743	1.48 J	2.6096	NA	NA	1.21 JEB	0.5686	NA	NA
PCB-29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-44	0.1902	3.0588	1.93 JEB	2.5857	NA	NA	1.4 JEB	0.5355	NA	NA
PCB-50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-52	0.3002	5.4226	3.67 EB	4.4274	NA	NA	2.19 EB	0.9627	NA	NA
PCB-66	0.1078	2.4358	3.11	11.2788	NA	NA	2.7	0.4552	NA	NA
PCB-8	0.055	0.5095	NA	1.2327	NA	NA	NA	0.2865	NA	NA
PCB-87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	3.1993	146.6901	130	200.912	NA	NA	102	39.9302	NA	NA
TAL Metal Analysis (MG/KG)										
ALUMINUM	34225	27677.5	12800	34225	NA	NA	12700	23359.5	NA	NA
ANTIMONY	NA	NA	0.37 UJ	NA	NA	NA	R	NA	NA	NA
ARSENIC	5.49	9.04	10.9 J	10.93	NA	NA	11.3 J	7.39	NA	NA
BARIUM	NA	NA	35.2	NA	NA	NA	35.5 J	NA	NA	NA
BERYLLIUM	NA	NA	1.2	NA	NA	NA	1.1	NA	NA	NA
CADMIUM	0.12 J	0.53 J	0.53 J	0.72 J	NA	NA	0.028 UJ	0.19 J	NA	NA
CALCIUM	NA	NA	8330 J	NA	NA	NA	23500	NA	NA	NA
CHROMIUM	38.75	56.5	44.3	84.75	NA	NA	42.4 J	46.5	NA	NA
COBALT	NA	NA	7.5 J	NA	NA	NA	7.4 J	NA	NA	NA
COPPER	1.875 U	36.75	58.9 J	66.75	NA	NA	57.3 J	17.25	NA	NA
IRON	17771.75	24123	24800	26545	NA	NA	23400	21405.75	NA	NA
LEAD	29.9	52.7	47.9 J	124.8	NA	NA	43.6 J	40.0	NA	NA
MAGNESIUM	NA	NA	8250	NA	NA	NA	7970	NA	NA	NA
MANGANESE	253.5	219.75	264	293.5	NA	NA	233	133.5	NA	NA
MERCURY	0.0712	0.275	0.23	0.3725	NA	NA	0.27	0.1278	NA	NA
NICKEL	12.5	21.75	18.3 J	25.75	NA	NA	17.7 J	18.25	NA	NA
POTASSIUM	NA	NA	4000	NA	NA	NA	4140	NA	NA	NA
SELENIUM	NA	NA	1.4 R	NA	NA	NA	0.56 U	NA	NA	NA
SILVER	0.065 U	0.57	0.25 UJ	0.8125	NA	NA	0.28 U	0.2375	NA	NA
SODIUM	NA	NA	18600	NA	NA	NA	20000	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-31 cont.				DSY-32					DSY-33		
Sample Number	DSY-31-BOT	DSY-31-MID	DSY-SD-31-082604		DSY-32-SUR	DSY-32-SURb	DSY-32-SURc	DSY-SD-32-082604		DSY-33-SUR	DSY-33-SURb	DSY-33-SURc
Date Sampled	11/16/1995	11/16/1995	8/26/2004		9/28/1995	9/28/1995	9/28/1995	8/26/2004		9/28/1995	9/28/1995	9/28/1995
QC Identifier												
THALLIUM	NA	NA	2.0	UJ	NA	NA	NA	2.0	J	NA	NA	NA
VANADIUM	NA	NA	42.9		NA	NA	NA	41.5		NA	NA	NA
ZINC	36.0	122.75	140	J	201.25	NA	NA	111	J	72.25	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)												
CADMIUM	NA	NA	0.1700	B	NA	NA	NA	0.2000	B	NA	NA	NA
CHROMIUM	NA	NA	8.900		NA	NA	NA	11.50		NA	NA	NA
COPPER	NA	NA	3.400	N*	NA	NA	NA	140.0	*	NA	NA	NA
LEAD	NA	NA	33.00		NA	NA	NA	40.20		NA	NA	NA
MERCURY	NA	NA	0.001300	UN	NA	NA	NA	0.006400	B	NA	NA	NA
NICKEL	NA	NA	3.100	BN*	NA	NA	NA	402.0	E	NA	NA	NA
SULFIDE	NA	NA	16.00		NA	NA	NA	0.08500	U	NA	NA	NA
ZINC	NA	NA	76.30		NA	NA	NA	70.20		NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)												
CADMIUM	NA	NA	0.002890	U	NA	NA	NA	0.003150	U	NA	NA	NA
CHROMIUM	NA	NA	0.1718	U	NA	NA	NA	0.2221		NA	NA	NA
COPPER	NA	NA	0.05350	UJ	NA	NA	NA	2.2047	J	NA	NA	NA
LEAD	NA	NA	0.1593		NA	NA	NA	0.1938		NA	NA	NA
MERCURY	NA	NA	0.00006500	UJ	NA	NA	NA	0.00007100	U	NA	NA	NA
NICKEL	NA	NA		R	NA	NA	NA	6.856	J	NA	NA	NA
SEM/AVS RATIO	NA	NA	2.6391		-14.5054	0.1569	2.6996	399.0		1.0704	2.3636	1.8554
SULFIDE	NA	NA	0.5027	J	NA	NA	NA	0.02644	UJ	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	1.3267		NA	NA	NA	10.5504		NA	NA	NA
ZINC	NA	NA	1.1674	J	NA	NA	NA	1.0738	J	NA	NA	NA
Miscellaneous Analysis (UG/KG)												
DIBUTYLTIN	0.50	0.50	NA		2.71	NA	NA	NA		0.50	NA	NA
MONOBUTYLTIN	0.50	0.50	NA		1.12	NA	NA	NA		0.50	NA	NA
TETRABUTYLTIN	0.50	0.50	NA		0.38	J NA	NA	NA		0.50	NA	NA
TRIBUTYLTIN	0.50	0.50	NA		4.26	NA	NA	NA		0.50	NA	NA
Total Organic Carbon Analysis (MG/KG)												
CARBON	NA	NA	28000		NA	NA	NA	130		NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34				
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID	
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995	
QC Identifier					
Semivolatile Organic Analysis (UG/KG)					
1,1-BIPHENYL	6.4185	NA	NA	0.9763	J
1-METHYLNAPHTHALENE	12.7025	NA	NA	1.6283	J
1-METHYLPHENANTHRENE	18.3086	NA	NA	2.5267	J
2,3,5-TRIMETHYLNAPHTHALENE	4.4278	NA	NA	0.7724	J
2,6-DIMETHYLNAPHTHALENE	9.5563	NA	NA	4.9645	
2-METHYLNAPHTHALENE	24.215	NA	NA	2.9815	J
ACENAPHTHENE	8.5513	NA	NA	0.7796	J
ACENAPHTHYLENE	28.6848	NA	NA	5.2068	
ANTHRACENE	64.347	NA	NA	10.0042	
BENZO(A)ANTHRACENE	100.9039	NA	NA	19.3733	
BENZO(A)PYRENE	147.6253	NA	NA	21.0301	
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	
BENZO(B+K)FLUORANTHENE	NA	NA	NA	NA	
BENZO(E)PYRENE	141.0881	NA	NA	21.2535	
BENZO(G,H,I)PERYLENE	97.5955	NA	NA	15.9454	
BENZO(K)FLUORANTHENE	348.2932	NA	NA	49.2962	
CHRYSENE	127.7599	NA	NA	15.0412	
DIBENZO(A,H)ANTHRACENE	26.4518	NA	NA	4.6995	
FLUORANTHENE	207.8392	NA	NA	23.813	
FLUORENE	13.9193	NA	NA	1.7725	J
HIGH MOLECULAR WEIGHT PAHS	860.3718	NA	NA	126.7275	
INDENO(1,2,3-CD)PYRENE	93.2662	NA	NA	16.6419	
LOW MOLECULAR WEIGHT PAHS	272.2083	NA	NA	35.2644	
NAPHTHALENE	22.2664	NA	NA	3.0524	J
PERYLENE	61.0289	NA	NA	22.6897	
PHENANTHRENE	110.2245	NA	NA	11.4673	
PYRENE	249.7918	NA	NA	42.7705	
TOTAL PAHS	1930	NA	NA	299	
Low Concentration PAH (SIM) Analysis (UG/KG)					
2-METHYLNAPHTHALENE	NA	NA	NA	NA	
ACENAPHTHENE	NA	NA	NA	NA	
ACENAPHTHYLENE	NA	NA	NA	NA	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
ANTHRACENE	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA
TOTAL PAH	NA	NA	NA	NA
Pesticide/PCB Analysis (UG/KG)				
2,4'-DDE	0.8958	NA	NA	0.6482
4,4'-DDE	0.959	NA	NA	0.1788
ALDRIN	0.10	NA	NA	0.10
HEXACHLOROBENZENE	0.080	NA	NA	0.080
MIREX	0.2942	NA	NA	0.078 J
PCB Analysis (UG/KG)				
2,2',5-TRICHLOROBIPHENYL	NA	NA	NA	NA
2,4'-DICHLOROBIPHENYL	NA	NA	NA	NA
PCB-101	2.874	NA	NA	1.347
PCB-104	NA	NA	NA	NA
PCB-105	0.7937	NA	NA	0.3111
PCB-118	3.514	NA	NA	1.1045
PCB-126	NA	NA	NA	NA
PCB-128	0.8718	NA	NA	0.4057
PCB-138	4.8626	NA	NA	1.2991
PCB-153	4.8068	NA	NA	1.1181
PCB-170	1.3913	NA	NA	0.3311
PCB-18	0.2355	NA	NA	0.015

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APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
PCB-180	2.4644	NA	NA	0.8127
PCB-187	1.8859	NA	NA	0.4827
PCB-188	NA	NA	NA	NA
PCB-195	0.4939	NA	NA	0.4887
PCB-201	NA	NA	NA	NA
PCB-206	1.8105	NA	NA	0.579
PCB-209	1.9815	NA	NA	0.7045
PCB-28	0.875	NA	NA	0.2344
PCB-29	NA	NA	NA	NA
PCB-44	0.8472	NA	NA	0.2994
PCB-50	NA	NA	NA	NA
PCB-52	1.3713	NA	NA	0.5421
PCB-66	0.8843	NA	NA	0.3447
PCB-8	0.3271	NA	NA	0.0616 J
PCB-87	NA	NA	NA	NA
SUM OF PCB CONGENERS X 2	64.5813	NA	NA	20.9327
TAL Metal Analysis (MG/KG)				
ALUMINUM	32957.5	NA	NA	32772.5
ANTIMONY	NA	NA	NA	NA
ARSENIC	9.66	NA	NA	6.79
BARIUM	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA
CADMIUM	0.32 J	NA	NA	0.16 J
CALCIUM	NA	NA	NA	NA
CHROMIUM	64.25	NA	NA	48.0
COBALT	NA	NA	NA	NA
COPPER	33.5	NA	NA	1.875 U
IRON	25630	NA	NA	21319.75
LEAD	47.6	NA	NA	24.5
MAGNESIUM	NA	NA	NA	NA
MANGANESE	280	NA	NA	294.25
MERCURY	0.1533	NA	NA	0.015 B
NICKEL	20.5	NA	NA	17.0
POTASSIUM	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA
SILVER	0.2875	NA	NA	0.065 U
SODIUM	NA	NA	NA	NA

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R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX C2

SUMMARY OF HISTORIC SEDIMENT ANALYTICAL RESULTS
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

Sample Location	DSY-34			
Sample Number	DSY-34-SUR	DSY-34-SURb	DSY-34-SURc	DSY-34-MID
Date Sampled	10/12/1995	10/12/1995	10/12/1995	11/16/1995
QC Identifier				
THALLIUM	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA
ZINC	105.5	NA	NA	47.0
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (MG/KG)				
CADMIUM	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA
COPPER	NA	NA	NA	NA
LEAD	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA
ZINC	NA	NA	NA	NA
Acid Volatile Sulfides/Simultaneously Extracted Metals Analysis (UMOLE/G)				
CADMIUM	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA
COPPER	NA	NA	NA	NA
LEAD	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA
SEM/AVS RATIO	-28.0893	0.04850	1.4307	NA
SULFIDE	NA	NA	NA	NA
TOTAL SIMULTANEOUSLY EXTRACTED METALS	NA	NA	NA	NA
ZINC	NA	NA	NA	NA
Miscellaneous Analysis (UG/KG)				
DIBUTYLTIN	3.38	NA	NA	0.50
MONOBUTYLTIN	1.85	NA	NA	0.50
TETRABUTYLTIN	0.50	NA	NA	0.50
TRIBUTYLTIN	4.13	NA	NA	0.50
Total Organic Carbon Analysis (MG/KG)				
CARBON	NA	NA	NA	NA

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX D

PIER 1 AND 2 TURBIDITY DATA

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 – SEPTEMBER 29, 2004

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/27/2004 16:30	-1.1		8/28/2004 4:15	-0.4		8/28/2004 16:00	-0.3	
8/27/2004 16:45	0.3		8/28/2004 4:30	0.7		8/28/2004 16:15	-0.2	
8/27/2004 17:00	-0.4		8/28/2004 4:45	0		8/28/2004 16:30	0.3	
8/27/2004 17:15	0.4		8/28/2004 5:00	0.2		8/28/2004 16:45	-0.3	
8/27/2004 17:30	1.1		8/28/2004 5:15	0.1		8/28/2004 17:00	0.6	
8/27/2004 17:45	1.2		8/28/2004 5:30	0.1		8/28/2004 17:15	-0.7	
8/27/2004 18:00	-0.4		8/28/2004 5:45	-0.6		8/28/2004 17:30	-1.3	
8/27/2004 18:15	-0.3		8/28/2004 6:00	-0.7		8/28/2004 17:45	0.3	
8/27/2004 18:30	-0.7		8/28/2004 6:15	-0.7		8/28/2004 18:00	1.3	
8/27/2004 18:45	0.9		8/28/2004 6:30	-0.7		8/28/2004 18:15	-0.2	
8/27/2004 19:00	0		8/28/2004 6:45	-0.9		8/28/2004 18:30	-0.5	
8/27/2004 19:15	0.5		8/28/2004 7:00	-0.6		8/28/2004 18:45	-1.2	
8/27/2004 19:30	0.3		8/28/2004 7:15	0		8/28/2004 19:00	-0.1	
8/27/2004 19:45	-0.4		8/28/2004 7:30	0.3		8/28/2004 19:15	0.3	
8/27/2004 20:00	-1		8/28/2004 7:45	1.2		8/28/2004 19:30	2.9	
8/27/2004 20:15	-0.4		8/28/2004 8:00	0.3		8/28/2004 19:45	-0.1	
8/27/2004 20:30	-0.2		8/28/2004 8:15	-0.5		8/28/2004 20:00	0.3	
8/27/2004 20:45	0.7		8/28/2004 8:30	-0.4		8/28/2004 20:15	0.6	
8/27/2004 21:00	-0.4		8/28/2004 8:45	0.1		8/28/2004 20:30	-0.2	
8/27/2004 21:15	-0.5		8/28/2004 9:00	-0.4		8/28/2004 20:45	-0.9	
8/27/2004 21:30	-1		8/28/2004 9:15	0.1		8/28/2004 21:00	0	
8/27/2004 21:45	-1.2		8/28/2004 9:30	-0.2		8/28/2004 21:15	-0.5	
8/27/2004 22:00	-1.8		8/28/2004 9:45	-1.1		8/28/2004 21:30	0.5	
8/27/2004 22:15	-1.5		8/28/2004 10:00	-0.7		8/28/2004 21:45	-0.4	
8/27/2004 22:30	-1.3		8/28/2004 10:15	-1.1		8/28/2004 22:00	-0.4	
8/27/2004 22:45	-1.1		8/28/2004 10:30	-1.5		8/28/2004 22:15	-0.8	
8/27/2004 23:00	-1.5		8/28/2004 10:45	-1.3		8/28/2004 22:30	-1	
8/27/2004 23:15	-1.3		8/28/2004 11:00	-1.4		8/28/2004 22:45	-1.4	
8/27/2004 23:30	-1.2		8/28/2004 11:15	-1.2		8/28/2004 23:00	-1.3	
8/27/2004 23:45	-0.8		8/28/2004 11:30	-0.7		8/28/2004 23:15	-1.7	
8/28/2004 0:00	-1.1		8/28/2004 11:45	-0.3		8/28/2004 23:30	-0.6	
8/28/2004 0:15	-1.1		8/28/2004 12:00	0.7		8/28/2004 23:45	-1.5	
8/28/2004 0:30	-1.1		8/28/2004 12:15	-1.5		8/29/2004 0:00	-0.9	
8/28/2004 0:45	-0.7		8/28/2004 12:30	-1.4		8/29/2004 0:15	-0.4	
8/28/2004 1:00	-0.7		8/28/2004 12:45	-0.5		8/29/2004 0:30	-1.1	
8/28/2004 1:15	1		8/28/2004 13:00	-0.7		8/29/2004 0:45	-0.5	
8/28/2004 1:30	-1		8/28/2004 13:15	-0.9		8/29/2004 1:00	-1.3	
8/28/2004 1:45	0.1		8/28/2004 13:30	-0.9		8/29/2004 1:15	-0.4	
8/28/2004 2:00	-0.8		8/28/2004 13:45	-0.5		8/29/2004 1:30	-1.1	
8/28/2004 2:15	-0.4		8/28/2004 14:00	-1		8/29/2004 1:45	-1	
8/28/2004 2:30	-1.5		8/28/2004 14:15	-1.1		8/29/2004 2:00	-1.2	
8/28/2004 2:45	0.3		8/28/2004 14:30	-0.2		8/29/2004 2:15	-1.3	
8/28/2004 3:00	0		8/28/2004 14:45	-1		8/29/2004 2:30	-0.3	
8/28/2004 3:15	-1.6		8/28/2004 15:00	-1.4		8/29/2004 2:45	-0.2	
8/28/2004 3:30	-1.5		8/28/2004 15:15	-1.5		8/29/2004 3:00	-0.8	
8/28/2004 3:45	-1.3		8/28/2004 15:30	-1.2		8/29/2004 3:15	-1.5	
8/28/2004 4:00	-1		8/28/2004 15:45	-0.2		8/29/2004 3:30	1.2	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/29/2004 3:45	-0.7		8/29/2004 15:30	-0.5		8/30/2004 3:15	-1.5	
8/29/2004 4:00	-1.3		8/29/2004 15:45	-0.7		8/30/2004 3:30	-0.8	
8/29/2004 4:15	-1.4		8/29/2004 16:00	0.7		8/30/2004 3:45	0.7	
8/29/2004 4:30	-1.1		8/29/2004 16:15	0.6		8/30/2004 4:00	-1.6	
8/29/2004 4:45	-1.1		8/29/2004 16:30	0.3		8/30/2004 4:15	-1	
8/29/2004 5:00	-1		8/29/2004 16:45	1.3		8/30/2004 4:30	-1.3	
8/29/2004 5:15	-0.7		8/29/2004 17:00	0		8/30/2004 4:45	-1	
8/29/2004 5:30	1		8/29/2004 17:15	-1		8/30/2004 5:00	-1.6	
8/29/2004 5:45	-0.4		8/29/2004 17:30	0.7		8/30/2004 5:15	-1.3	
8/29/2004 6:00	0.5		8/29/2004 17:45	-0.5		8/30/2004 5:30	-0.4	
8/29/2004 6:15	0.1		8/29/2004 18:00	1		8/30/2004 5:45	-1	
8/29/2004 6:30	-0.8		8/29/2004 18:15	0		8/30/2004 6:00	-0.6	
8/29/2004 6:45	-0.8		8/29/2004 18:30	0.8		8/30/2004 6:15	-1.6	
8/29/2004 7:00	-0.7		8/29/2004 18:45	0.7		8/30/2004 6:30	-0.8	
8/29/2004 7:15	0.1		8/29/2004 19:00	0.4		8/30/2004 6:45	-0.8	
8/29/2004 7:30	-0.3		8/29/2004 19:15	0.6		8/30/2004 7:00	-0.1	
8/29/2004 7:45	-0.5		8/29/2004 19:30	0.7		8/30/2004 7:15	1.5	
8/29/2004 8:00	0.9		8/29/2004 19:45	1.4		8/30/2004 7:30	-0.4	
8/29/2004 8:15	1.2		8/29/2004 20:00	0.6		8/30/2004 7:45	0	
8/29/2004 8:30	0.9		8/29/2004 20:15	0.2		8/30/2004 8:00	-0.8	
8/29/2004 8:45	0.9		8/29/2004 20:30	1		8/30/2004 8:15	-0.9	
8/29/2004 9:00	0.6		8/29/2004 20:45	0.5		8/30/2004 8:30	-0.2	
8/29/2004 9:15	0.6		8/29/2004 21:00	-0.2		8/30/2004 8:45	2.8	
8/29/2004 9:30	0.6		8/29/2004 21:15	0.9		8/30/2004 9:00	2.5	
8/29/2004 9:45	-0.7		8/29/2004 21:30	1.3		8/30/2004 9:15	-0.4	
8/29/2004 10:00	0.1		8/29/2004 21:45	0.4		8/30/2004 9:30	-0.1	
8/29/2004 10:15	-0.5		8/29/2004 22:00	0.1		8/30/2004 9:45	0.7	
8/29/2004 10:30	-0.1		8/29/2004 22:15	-0.5		8/30/2004 10:00	0.6	
8/29/2004 10:45	-0.4		8/29/2004 22:30	-1		8/30/2004 10:15	-0.4	
8/29/2004 11:00	-0.6		8/29/2004 22:45	-1.1		8/30/2004 10:30	-0.5	
8/29/2004 11:15	-0.8		8/29/2004 23:00	1.5		8/30/2004 10:45	-0.4	
8/29/2004 11:30	-1.2		8/29/2004 23:15	-1.1		8/30/2004 11:00	-0.1	
8/29/2004 11:45	-1		8/29/2004 23:30	-1.3		8/30/2004 11:15	1.3	
8/29/2004 12:00	-1.1		8/29/2004 23:45	-0.8		8/30/2004 11:30	-0.7	
8/29/2004 12:15	-0.8		8/30/2004 0:00	5.4		8/30/2004 11:45	-0.7	
8/29/2004 12:30	1.8		8/30/2004 0:15	-1.3		8/30/2004 12:00	-0.5	
8/29/2004 12:45	-0.4		8/30/2004 0:30	-0.8		8/30/2004 12:15	-0.7	
8/29/2004 13:00	-0.8		8/30/2004 0:45	0.4		8/30/2004 12:30	-0.9	
8/29/2004 13:15	-1.1		8/30/2004 1:00	4.9		8/30/2004 12:45	-1	
8/29/2004 13:30	-1.5		8/30/2004 1:15	-0.6		8/30/2004 13:00	-0.6	
8/29/2004 13:45	-0.6		8/30/2004 1:30	6.7		8/30/2004 13:15	0	
8/29/2004 14:00	-1.1		8/30/2004 1:45	-0.5		8/30/2004 13:30	-0.5	
8/29/2004 14:15	-1		8/30/2004 2:00	-0.7		8/30/2004 13:45	-0.8	
8/29/2004 14:30	-1.5		8/30/2004 2:15	-0.8		8/30/2004 14:00	-0.2	
8/29/2004 14:45	-1.2		8/30/2004 2:30	-0.8		8/30/2004 14:15	-0.5	
8/29/2004 15:00	-0.9		8/30/2004 2:45	-0.8		8/30/2004 14:30	-0.6	
8/29/2004 15:15	0		8/30/2004 3:00	-0.8		8/30/2004 14:45	-0.2	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/30/2004 15:00	-0.8		8/31/2004 2:45	-1.1		8/31/2004 14:30	-0.7	
8/30/2004 15:15	-1.1		8/31/2004 3:00	-0.3		8/31/2004 14:45	-0.4	
8/30/2004 15:30	-1		8/31/2004 3:15	-1.5		8/31/2004 15:00	-0.5	
8/30/2004 15:45	-1		8/31/2004 3:30	-1.3		8/31/2004 15:15	-1.4	
8/30/2004 16:00	-1.4		8/31/2004 3:45	-1.1		8/31/2004 15:30	-1.1	
8/30/2004 16:15	-1.6		8/31/2004 4:00	-1.3		8/31/2004 15:45	-1.1	
8/30/2004 16:30	-0.5		8/31/2004 4:15	-1.3		8/31/2004 16:00	-0.5	
8/30/2004 16:45	-1		8/31/2004 4:30	-1.1		8/31/2004 16:15	-1	
8/30/2004 17:00	-1		8/31/2004 4:45	-0.8		8/31/2004 16:30	-1.5	
8/30/2004 17:15	-1		8/31/2004 5:00	-1.2		8/31/2004 16:45	-1.6	
8/30/2004 17:30	-1.5		8/31/2004 5:15	-1.3		8/31/2004 17:00	-1.3	
8/30/2004 17:45	0.1		8/31/2004 5:30	-0.8		8/31/2004 17:15	-1.5	
8/30/2004 18:00	-0.7		8/31/2004 5:45	0.3		8/31/2004 17:30	0.1	
8/30/2004 18:15	-0.9		8/31/2004 6:00	-1		8/31/2004 17:45	-1.7	
8/30/2004 18:30	-0.7		8/31/2004 6:15	0.1		8/31/2004 18:00	-1.6	
8/30/2004 18:45	-0.8		8/31/2004 6:30	-0.1		8/31/2004 18:15	-1.4	
8/30/2004 19:00	0.1		8/31/2004 6:45	-0.9		8/31/2004 18:30	-0.7	
8/30/2004 19:15	-0.2		8/31/2004 7:00	-0.9		8/31/2004 18:45	-1.3	
8/30/2004 19:30	2.7		8/31/2004 7:15	-1		8/31/2004 19:00	-1.8	
8/30/2004 19:45	0.1		8/31/2004 7:30	-0.3		8/31/2004 19:15	-0.9	
8/30/2004 20:00	0.4		8/31/2004 7:45	-0.7		8/31/2004 19:30	-1.8	
8/30/2004 20:15	0.6		8/31/2004 8:00	-0.8		8/31/2004 19:45	-0.2	
8/30/2004 20:30	-0.2		8/31/2004 8:15	0.6		8/31/2004 20:00	0.6	
8/30/2004 20:45	0.6		8/31/2004 8:30	0.1		8/31/2004 20:15	2	
8/30/2004 21:00	1.4		8/31/2004 8:45	0.3		8/31/2004 20:30	0	
8/30/2004 21:15	0.7		8/31/2004 9:00	0.3		8/31/2004 20:45	0.2	
8/30/2004 21:30	-0.8		8/31/2004 9:15	-0.5		8/31/2004 21:00	-0.2	
8/30/2004 21:45	-0.1		8/31/2004 9:30	0.1		8/31/2004 21:15	-0.8	
8/30/2004 22:00	-0.3		8/31/2004 9:45	-0.3		8/31/2004 21:30	0.4	
8/30/2004 22:15	-0.9		8/31/2004 10:00	0.1		8/31/2004 21:45	-0.4	
8/30/2004 22:30	-0.8		8/31/2004 10:15	-0.7		8/31/2004 22:00	-0.6	
8/30/2004 22:45	-0.8		8/31/2004 10:30	-0.5		8/31/2004 22:15	0.6	
8/30/2004 23:00	-1		8/31/2004 10:45	-1.1		8/31/2004 22:30	-0.5	
8/30/2004 23:15	-0.7		8/31/2004 11:00	-0.6		8/31/2004 22:45	1.4	
8/30/2004 23:30	1.4		8/31/2004 11:15	-0.8		8/31/2004 23:00	0.4	
8/30/2004 23:45	-1		8/31/2004 11:30	-0.8		8/31/2004 23:15	0.4	
8/31/2004 0:00	-0.7		8/31/2004 11:45	-0.5		8/31/2004 23:30	0.4	
8/31/2004 0:15	-1.1		8/31/2004 12:00	-1		8/31/2004 23:45	-0.3	
8/31/2004 0:30	-1.4		8/31/2004 12:15	-1.3		9/1/2004 0:00	-0.3	
8/31/2004 0:45	-0.8		8/31/2004 12:30	-1.1		9/1/2004 0:15	-0.6	
8/31/2004 1:00	-0.7		8/31/2004 12:45	-1		9/1/2004 0:30	-0.7	
8/31/2004 1:15	-0.4		8/31/2004 13:00	0		9/1/2004 0:45	-0.8	
8/31/2004 1:30	0		8/31/2004 13:15	-0.8		9/1/2004 1:00	-1	
8/31/2004 1:45	-1		8/31/2004 13:30	-0.8		9/1/2004 1:15	-1.5	
8/31/2004 2:00	-1.3		8/31/2004 13:45	-1.3		9/1/2004 1:30	-0.8	
8/31/2004 2:15	0.1		8/31/2004 14:00	-0.1		9/1/2004 1:45	0.9	
8/31/2004 2:30	-1		8/31/2004 14:15	-0.4		9/1/2004 2:00	1.6	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/1/2004 2:15	-0.5		9/1/2004 14:00	-1.1		9/2/2004 1:45	0.4	
9/1/2004 2:30	0		9/1/2004 14:15	-0.5		9/2/2004 2:00	-1.8	
9/1/2004 2:45	1.5		9/1/2004 14:30	-0.7		9/2/2004 2:15	-0.8	
9/1/2004 3:00	0.6		9/1/2004 14:45	2.2		9/2/2004 2:30	-1.1	
9/1/2004 3:15	-0.5		9/1/2004 15:00	0.9		9/2/2004 2:45	-0.8	
9/1/2004 3:30	0.5		9/1/2004 15:15	1.7		9/2/2004 3:00	0.1	
9/1/2004 3:45	-1.3		9/1/2004 15:30	-0.9		9/2/2004 3:15	-1.2	
9/1/2004 4:00	-1.3		9/1/2004 15:45	-0.6		9/2/2004 3:30	-0.9	
9/1/2004 4:15	-0.5		9/1/2004 16:00	-1.4		9/2/2004 3:45	-0.7	
9/1/2004 4:30	-1.5		9/1/2004 16:15	-0.4		9/2/2004 4:00	-0.1	
9/1/2004 4:45	4		9/1/2004 16:30	-0.2		9/2/2004 4:15	-0.9	
9/1/2004 5:00	1.8		9/1/2004 16:45	-1.1		9/2/2004 4:30	-1.6	
9/1/2004 5:15	-0.6		9/1/2004 17:00	-0.8		9/2/2004 4:45	-0.2	
9/1/2004 5:30	-0.7		9/1/2004 17:15	-0.7		9/2/2004 5:00	-0.4	
9/1/2004 5:45	-0.4		9/1/2004 17:30	-1.3		9/2/2004 5:15	-1.2	
9/1/2004 6:00	-0.4		9/1/2004 17:45	-1		9/2/2004 5:30	-0.8	
9/1/2004 6:15	-1.5		9/1/2004 18:00	-1.3		9/2/2004 5:45	-1.6	
9/1/2004 6:30	-0.9		9/1/2004 18:15	-1.3		9/2/2004 6:00	-1.1	
9/1/2004 6:45	-1.4		9/1/2004 18:30	-1.3		9/2/2004 6:15	1.2	
9/1/2004 7:00	-0.9		9/1/2004 18:45	-0.8		9/2/2004 6:30	-0.2	
9/1/2004 7:15	-1.3		9/1/2004 19:00	-1.5		9/2/2004 6:45	0	
9/1/2004 7:30	-0.7		9/1/2004 19:15	0.2		9/2/2004 7:00	-0.7	
9/1/2004 7:45	-1.6		9/1/2004 19:30	-1.2		9/2/2004 7:15	-1.1	
9/1/2004 8:00	-0.9		9/1/2004 19:45	-1.6		9/2/2004 7:30	-0.4	
9/1/2004 8:15	-0.4		9/1/2004 20:00	-1.6		9/2/2004 7:45	3.1	
9/1/2004 8:30	-0.5		9/1/2004 20:15	-1.5		9/2/2004 8:00	-0.3	
9/1/2004 8:45	-0.4		9/1/2004 20:30	-1		9/2/2004 8:15	-1.3	
9/1/2004 9:00	0		9/1/2004 20:45	1.2		9/2/2004 8:30	-0.8	
9/1/2004 9:15	-0.3		9/1/2004 21:00	2		9/2/2004 8:45	-0.1	
9/1/2004 9:30	-0.2		9/1/2004 21:15	1.5		9/2/2004 9:00	-0.5	
9/1/2004 9:45	0.9		9/1/2004 21:30	0.7		9/2/2004 9:15	0.7	
9/1/2004 10:00	1.2		9/1/2004 21:45	1.2		9/2/2004 9:30	-0.1	
9/1/2004 10:15	0.1		9/1/2004 22:00	0.7		9/2/2004 9:45	-0.4	
9/1/2004 10:30	0.8		9/1/2004 22:15	1		9/2/2004 10:00	-0.2	
9/1/2004 10:45	-0.2		9/1/2004 22:30	-0.4		9/2/2004 10:15	0.6	
9/1/2004 11:00	0.1		9/1/2004 22:45	-1		9/2/2004 10:30	0.1	
9/1/2004 11:15	0.6		9/1/2004 23:00	-1		9/2/2004 10:45	-0.8	
9/1/2004 11:30	-0.5		9/1/2004 23:15	-1		9/2/2004 11:00	-0.4	
9/1/2004 11:45	0		9/1/2004 23:30	-1.1		9/2/2004 11:15	-0.1	
9/1/2004 12:00	-0.6		9/1/2004 23:45	-1.3		9/2/2004 11:30	0.3	
9/1/2004 12:15	-0.6		9/2/2004 0:00	-1		9/2/2004 11:45	-1	
9/1/2004 12:30	0.9		9/2/2004 0:15	-1		9/2/2004 12:00	0.7	
9/1/2004 12:45	-0.4		9/2/2004 0:30	-0.3		9/2/2004 12:15	0.4	
9/1/2004 13:00	-1.2		9/2/2004 0:45	-1.5		9/2/2004 12:30	0.1	
9/1/2004 13:15	-0.4		9/2/2004 1:00	-0.3		9/2/2004 12:45	0.2	
9/1/2004 13:30	-0.7		9/2/2004 1:15	-1		9/2/2004 13:00	0	
9/1/2004 13:45	-0.9		9/2/2004 1:30	-1.4		9/2/2004 13:15	-0.1	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/2/2004 13:30	-0.8		9/3/2004 1:15	-0.6		9/3/2004 13:00	-0.7	
9/2/2004 13:45	-0.4		9/3/2004 1:30	-0.9		9/3/2004 13:15	0.6	
9/2/2004 14:00	-1.1		9/3/2004 1:45	-0.8		9/3/2004 13:30	-0.9	
9/2/2004 14:15	-1		9/3/2004 2:00	-0.7		9/3/2004 13:45	-0.8	
9/2/2004 14:30	-0.7		9/3/2004 2:15	-0.6		9/3/2004 14:00	-1.3	
9/2/2004 14:45	-0.5		9/3/2004 2:30	2.8		9/3/2004 14:15	-0.7	
9/2/2004 15:00	-1		9/3/2004 2:45	-0.8		9/3/2004 14:30	-1	
9/2/2004 15:15	-0.5		9/3/2004 3:00	-0.9		9/3/2004 14:45	-1.1	
9/2/2004 15:30	-0.9		9/3/2004 3:15	-0.7		9/3/2004 15:00	-1	
9/2/2004 15:45	0.1		9/3/2004 3:30	-0.4		9/3/2004 15:15	-0.8	
9/2/2004 16:00	-1.1		9/3/2004 3:45	-1		9/3/2004 15:30	0.4	
9/2/2004 16:15	-0.8		9/3/2004 4:00	-1.2		9/3/2004 15:45	-0.6	
9/2/2004 16:30	-0.2		9/3/2004 4:15	-1		9/3/2004 16:00	-0.1	
9/2/2004 16:45	-0.4		9/3/2004 4:30	-1.1		9/3/2004 16:15	-1.5	
9/2/2004 17:00	-1.1		9/3/2004 4:45	-0.7		9/3/2004 16:30	-1.1	
9/2/2004 17:15	-1.4		9/3/2004 5:00	-1.1		9/3/2004 16:45	-0.6	
9/2/2004 17:30	-1.3		9/3/2004 5:15	-1.4		9/3/2004 17:00	-1	
9/2/2004 17:45	-0.5		9/3/2004 5:30	-0.7		9/3/2004 17:15	-1.1	
9/2/2004 18:00	0.9		9/3/2004 5:45	3		9/3/2004 17:30	-1.7	
9/2/2004 18:15	-0.4		9/3/2004 6:00	-0.1		9/3/2004 17:45	-1	
9/2/2004 18:30	-1.3		9/3/2004 6:15	-1.3		9/3/2004 18:00	-1.2	
9/2/2004 18:45	-1.5		9/3/2004 6:30	-1.3		9/3/2004 18:15	-1.3	
9/2/2004 19:00	-1.6		9/3/2004 6:45	-1.3		9/3/2004 18:30	-1.4	
9/2/2004 19:15	-0.9		9/3/2004 7:00	-1		9/3/2004 18:45	-0.7	
9/2/2004 19:30	-0.8		9/3/2004 7:15	-1.4		9/3/2004 19:00	-1.2	
9/2/2004 19:45	-1.1		9/3/2004 7:30	-1.2		9/3/2004 19:15	-0.9	
9/2/2004 20:00	-1.5		9/3/2004 7:45	-1.3		9/3/2004 19:30	-1.1	
9/2/2004 20:15	-1.5		9/3/2004 8:00	-1.5		9/3/2004 19:45	-0.3	
9/2/2004 20:30	-1.1		9/3/2004 8:15	-0.8		9/3/2004 20:00	-1.6	
9/2/2004 20:45	-0.9		9/3/2004 8:30	1.3		9/3/2004 20:15	-0.7	
9/2/2004 21:00	-1.7		9/3/2004 8:45	-1.5		9/3/2004 20:30	-1.7	
9/2/2004 21:15	-1.7		9/3/2004 9:00	-0.3		9/3/2004 20:45	-1.5	
9/2/2004 21:30	2.7		9/3/2004 9:15	-0.4		9/3/2004 21:00	-1	
9/2/2004 21:45	1.5		9/3/2004 9:30	-0.7		9/3/2004 21:15	-0.7	
9/2/2004 22:00	0.4		9/3/2004 9:45	-0.7		9/3/2004 21:30	-1.1	
9/2/2004 22:15	0.9		9/3/2004 10:00	-0.6		9/3/2004 21:45	-1.3	
9/2/2004 22:30	0.1		9/3/2004 10:15	0		9/3/2004 22:00	-1	
9/2/2004 22:45	0.3		9/3/2004 10:30	0.7		9/3/2004 22:15	0	
9/2/2004 23:00	0.1		9/3/2004 10:45	0.7		9/3/2004 22:30	0.3	
9/2/2004 23:15	0		9/3/2004 11:00	0		9/3/2004 22:45	0.1	
9/2/2004 23:30	1.3		9/3/2004 11:15	0.5		9/3/2004 23:00	-0.4	
9/2/2004 23:45	0.7		9/3/2004 11:30	-0.2		9/3/2004 23:15	-0.3	
9/3/2004 0:00	-0.2		9/3/2004 11:45	0		9/3/2004 23:30	-0.7	
9/3/2004 0:15	-1.1		9/3/2004 12:00	-0.5		9/3/2004 23:45	-0.7	
9/3/2004 0:30	-0.7		9/3/2004 12:15	0		9/4/2004 0:00	-0.8	
9/3/2004 0:45	-0.6		9/3/2004 12:30	0.4		9/4/2004 0:15	-0.8	
9/3/2004 1:00	-1.4		9/3/2004 12:45	-0.6		9/4/2004 0:30	-0.5	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/4/2004 0:45	-0.6		9/4/2004 12:30	0.7		9/5/2004 0:15	-0.7	
9/4/2004 1:00	0.7		9/4/2004 12:45	1.4		9/5/2004 0:30	-1	
9/4/2004 1:15	-0.5		9/4/2004 13:00	0.7		9/5/2004 0:45	2.4	
9/4/2004 1:30	-0.7		9/4/2004 13:15	0.2		9/5/2004 1:00	0.9	
9/4/2004 1:45	-0.8		9/4/2004 13:30	-0.4		9/5/2004 1:15	0.2	
9/4/2004 2:00	-1.1		9/4/2004 13:45	-0.2		9/5/2004 1:30	-1	
9/4/2004 2:15	-0.6		9/4/2004 14:00	-0.3		9/5/2004 1:45	-1.1	
9/4/2004 2:30	-0.7		9/4/2004 14:15	-0.2		9/5/2004 2:00	0.4	
9/4/2004 2:45	-0.7		9/4/2004 14:30	-1.1		9/5/2004 2:15	-1.1	
9/4/2004 3:00	-1.5		9/4/2004 14:45	-0.6		9/5/2004 2:30	-0.4	
9/4/2004 3:15	-0.7		9/4/2004 15:00	-0.5		9/5/2004 2:45	0.6	
9/4/2004 3:30	-0.7		9/4/2004 15:15	-0.2		9/5/2004 3:00	-0.5	
9/4/2004 3:45	-1.3		9/4/2004 15:30	-0.2		9/5/2004 3:15	-0.9	
9/4/2004 4:00	-0.4		9/4/2004 15:45	-0.4		9/5/2004 3:30	-1.1	
9/4/2004 4:15	-1.1		9/4/2004 16:00	-0.7		9/5/2004 3:45	-0.7	
9/4/2004 4:30	-1		9/4/2004 16:15	-0.6		9/5/2004 4:00	-1.3	
9/4/2004 4:45	-1.1		9/4/2004 16:30	-0.3		9/5/2004 4:15	-0.9	
9/4/2004 5:00	-1.3		9/4/2004 16:45	-0.7		9/5/2004 4:30	-1.2	
9/4/2004 5:15	-0.2		9/4/2004 17:00	-1.2		9/5/2004 4:45	-1	
9/4/2004 5:30	-1.5		9/4/2004 17:15	-1		9/5/2004 5:00	-1	
9/4/2004 5:45	-1.3		9/4/2004 17:30	-0.9		9/5/2004 5:15	-0.7	
9/4/2004 6:00	-1		9/4/2004 17:45	-1.1		9/5/2004 5:30	-0.8	
9/4/2004 6:15	-0.1		9/4/2004 18:00	-0.4		9/5/2004 5:45	-0.5	
9/4/2004 6:30	-1.1		9/4/2004 18:15	-0.8		9/5/2004 6:00	-0.2	
9/4/2004 6:45	0.7		9/4/2004 18:30	-1.1		9/5/2004 6:15	-1.2	
9/4/2004 7:00	-0.5		9/4/2004 18:45	-0.8		9/5/2004 6:30	0.3	
9/4/2004 7:15	-0.4		9/4/2004 19:00	-1.6		9/5/2004 6:45	-1	
9/4/2004 7:30	-1		9/4/2004 19:15	-0.9		9/5/2004 7:00	-1.1	
9/4/2004 7:45	-1.3		9/4/2004 19:30	-0.9		9/5/2004 7:15	-1.4	
9/4/2004 8:00	-1.1		9/4/2004 19:45	-1.3		9/5/2004 7:30	-0.5	
9/4/2004 8:15	-1.3		9/4/2004 20:00	-1.6		9/5/2004 7:45	0.3	
9/4/2004 8:30	-1.4		9/4/2004 20:15	-1.8		9/5/2004 8:00	-1.6	
9/4/2004 8:45	-0.4		9/4/2004 20:30	-1.2		9/5/2004 8:15	-1	
9/4/2004 9:00	-0.9		9/4/2004 20:45	-1.8		9/5/2004 8:30	-0.9	
9/4/2004 9:15	-1		9/4/2004 21:00	-1.3		9/5/2004 8:45	-1	
9/4/2004 9:30	-1		9/4/2004 21:15	-1.1		9/5/2004 9:00	-0.9	
9/4/2004 9:45	-1.2		9/4/2004 21:30	-1.1		9/5/2004 9:15	-1.5	
9/4/2004 10:00	-0.7		9/4/2004 21:45	-0.2		9/5/2004 9:30	-1.5	
9/4/2004 10:15	-1.4		9/4/2004 22:00	-0.5		9/5/2004 9:45	-1.1	
9/4/2004 10:30	-0.1		9/4/2004 22:15	-1.5		9/5/2004 10:00	-1.1	
9/4/2004 10:45	0.8		9/4/2004 22:30	-1.2		9/5/2004 10:15	-0.9	
9/4/2004 11:00	-0.5		9/4/2004 22:45	-1		9/5/2004 10:30	-1.2	
9/4/2004 11:15	-0.2		9/4/2004 23:00	-1.1		9/5/2004 10:45	-0.7	
9/4/2004 11:30	0.4		9/4/2004 23:15	-0.6		9/5/2004 11:00	-1.3	
9/4/2004 11:45	-0.8		9/4/2004 23:30	0.7		9/5/2004 11:15	0	
9/4/2004 12:00	-0.7		9/4/2004 23:45	-0.8		9/5/2004 11:30	0	
9/4/2004 12:15	-0.2		9/5/2004 0:00	0.2		9/5/2004 11:45	0.4	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/5/2004 12:00	1.8		9/5/2004 23:45	-1.6		9/6/2004 11:30	-1	
9/5/2004 12:15	0.1		9/6/2004 0:00	-0.7		9/6/2004 11:45	-1.2	
9/5/2004 12:30	-0.4		9/6/2004 0:15	-1.6		9/6/2004 12:00	-1.6	
9/5/2004 12:45	-0.4		9/6/2004 0:30	-1.4		9/6/2004 12:15	-1.7	
9/5/2004 13:00	-0.6		9/6/2004 0:45	-1.7		9/6/2004 12:30	-1.8	
9/5/2004 13:15	-0.5		9/6/2004 1:00	-1.6		9/6/2004 12:45	-1.8	
9/5/2004 13:30	-0.8		9/6/2004 1:15	1.5		9/6/2004 13:00	-1.6	
9/5/2004 13:45	-1		9/6/2004 1:30	2.5		9/6/2004 13:15	3.9	
9/5/2004 14:00	-1.3		9/6/2004 1:45	0.7		9/6/2004 13:30	0.7	
9/5/2004 14:15	-0.6		9/6/2004 2:00	1		9/6/2004 13:45	1.5	
9/5/2004 14:30	-1		9/6/2004 2:15	0.4		9/6/2004 14:00	1.1	
9/5/2004 14:45	-0.4		9/6/2004 2:30	1.6		9/6/2004 14:15	0.5	
9/5/2004 15:00	-1		9/6/2004 2:45	0.1		9/6/2004 14:30	0.1	
9/5/2004 15:15	-1.1		9/6/2004 3:00	-0.3		9/6/2004 14:45	-0.5	
9/5/2004 15:30	-0.9		9/6/2004 3:15	0		9/6/2004 15:00	-0.8	
9/5/2004 15:45	-0.6		9/6/2004 3:30	-0.2		9/6/2004 15:15	-0.7	
9/5/2004 16:00	-0.5		9/6/2004 3:45	-0.3		9/6/2004 15:30	-1.3	
9/5/2004 16:15	-1.1		9/6/2004 4:00	-0.6		9/6/2004 15:45	-0.2	
9/5/2004 16:30	-0.4		9/6/2004 4:15	-0.9		9/6/2004 16:00	0.9	
9/5/2004 16:45	-1.2		9/6/2004 4:30	-1.6		9/6/2004 16:15	-0.3	
9/5/2004 17:00	-1		9/6/2004 4:45	-1.6		9/6/2004 16:30	-1	
9/5/2004 17:15	-0.9		9/6/2004 5:00	-1.3		9/6/2004 16:45	-1.1	
9/5/2004 17:30	-0.8		9/6/2004 5:15	-1.3		9/6/2004 17:00	-1.1	
9/5/2004 17:45	-0.5		9/6/2004 5:30	-1		9/6/2004 17:15	-1.3	
9/5/2004 18:00	-1.3		9/6/2004 5:45	-1		9/6/2004 17:30	-1.3	
9/5/2004 18:15	-1.3		9/6/2004 6:00	-0.7		9/6/2004 17:45	-1	
9/5/2004 18:30	-1.6		9/6/2004 6:15	-1.4		9/6/2004 18:00	-1.5	
9/5/2004 18:45	-1.1		9/6/2004 6:30	-1.2		9/6/2004 18:15	-1.5	
9/5/2004 19:00	3.5		9/6/2004 6:45	0.1		9/6/2004 18:30	-1	
9/5/2004 19:15	-1.1		9/6/2004 7:00	0.4		9/6/2004 18:45	-1.3	
9/5/2004 19:30	-1.6		9/6/2004 7:15	-1.1		9/6/2004 19:00	1	
9/5/2004 19:45	-1.3		9/6/2004 7:30	-1		9/6/2004 19:15	-1.3	
9/5/2004 20:00	-1.1		9/6/2004 7:45	-1.1		9/6/2004 19:30	-1.2	
9/5/2004 20:15	-1.7		9/6/2004 8:00	-1		9/6/2004 19:45	-1.6	
9/5/2004 20:30	-0.4		9/6/2004 8:15	-1.3		9/6/2004 20:00	0.8	
9/5/2004 20:45	0		9/6/2004 8:30	-1.4		9/6/2004 20:15	0	
9/5/2004 21:00	0		9/6/2004 8:45	-1.6		9/6/2004 20:30	-1.1	
9/5/2004 21:15	-0.5		9/6/2004 9:00	-0.9		9/6/2004 20:45	-0.5	
9/5/2004 21:30	0		9/6/2004 9:15	-1.5		9/6/2004 21:00	0	
9/5/2004 21:45	-1.3		9/6/2004 9:30	-1.6		9/6/2004 21:15	-1.5	
9/5/2004 22:00	-1.3		9/6/2004 9:45	-1.5		9/6/2004 21:30	-1.5	
9/5/2004 22:15	-1.8		9/6/2004 10:00	-1		9/6/2004 21:45	-0.8	
9/5/2004 22:30	-1.5		9/6/2004 10:15	-0.6		9/6/2004 22:00	-1.4	
9/5/2004 22:45	-1.8		9/6/2004 10:30	0		9/6/2004 22:15	-1.4	
9/5/2004 23:00	-1.6		9/6/2004 10:45	-1.2		9/6/2004 22:30	-0.7	
9/5/2004 23:15	-1.8		9/6/2004 11:00	-1.1		9/6/2004 22:45	-1.1	
9/5/2004 23:30	-1.8		9/6/2004 11:15	-1.6		9/6/2004 23:00	-1.2	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/6/2004 23:15	-1.5		9/7/2004 11:00	-1.1		9/7/2004 22:45	-0.1	
9/6/2004 23:30	-1.8		9/7/2004 11:15	-0.4		9/7/2004 23:00	-0.5	
9/6/2004 23:45	-1.3		9/7/2004 11:30	-0.7		9/7/2004 23:15	-0.5	
9/7/2004 0:00	-1		9/7/2004 11:45	-1.4		9/7/2004 23:30	-0.5	
9/7/2004 0:15	-1.8		9/7/2004 12:00	-1.1		9/7/2004 23:45	-0.7	
9/7/2004 0:30	-1.5		9/7/2004 12:15	-0.8		9/8/2004 0:00	-1	
9/7/2004 0:45	-0.7		9/7/2004 12:30	3.1		9/8/2004 0:15	-1.1	
9/7/2004 1:00	-1.6		9/7/2004 12:45	-0.5		9/8/2004 0:30	-1.3	
9/7/2004 1:15	-1.6		9/7/2004 13:00	-0.8		9/8/2004 0:45	-0.9	
9/7/2004 1:30	-1.7		9/7/2004 13:15	-0.8		9/8/2004 1:00	-0.4	
9/7/2004 1:45	-1.6		9/7/2004 13:30	-1.1		9/8/2004 1:15	-1.1	
9/7/2004 2:00	-1.3		9/7/2004 13:45	0.7		9/8/2004 1:30	-1.6	
9/7/2004 2:15	-1.1		9/7/2004 14:00	-1.3		9/8/2004 1:45	0.1	
9/7/2004 2:30	-1.8		9/7/2004 14:15	-1.3		9/8/2004 2:00	-1	
9/7/2004 2:45	-1.8		9/7/2004 14:30	-0.5		9/8/2004 2:15	-0.3	
9/7/2004 3:00	-1.6		9/7/2004 14:45	-1		9/8/2004 2:30	0.7	
9/7/2004 3:15	-0.4		9/7/2004 15:00	-1.6		9/8/2004 2:45	-0.2	
9/7/2004 3:30	0		9/7/2004 15:15	-1.1		9/8/2004 3:00	-1.3	
9/7/2004 3:45	0		9/7/2004 15:30	0.3		9/8/2004 3:15	-0.3	
9/7/2004 4:00	-0.8		9/7/2004 15:45	-0.7		9/8/2004 3:30	-1.1	
9/7/2004 4:15	-0.4		9/7/2004 16:00	-0.2		9/8/2004 3:45	-1.4	
9/7/2004 4:30	-0.8		9/7/2004 16:15	-0.5		9/8/2004 4:00	-1.5	
9/7/2004 4:45	-0.2		9/7/2004 16:30	-0.5		9/8/2004 4:15	-1.3	
9/7/2004 5:00	-0.5		9/7/2004 16:45	-0.6		9/8/2004 4:30	-0.7	
9/7/2004 5:15	-0.2		9/7/2004 17:00	-1.2		9/8/2004 4:45	-1	
9/7/2004 5:30	-0.2		9/7/2004 17:15	-1.6		9/8/2004 5:00	-1.1	
9/7/2004 5:45	-0.9		9/7/2004 17:30	-1.8		9/8/2004 5:15	-0.9	
9/7/2004 6:00	-0.6		9/7/2004 17:45	-1.4		9/8/2004 5:30	-1.2	
9/7/2004 6:15	-1.1		9/7/2004 18:00	-1.2		9/8/2004 5:45	-1.2	
9/7/2004 6:30	-1.4		9/7/2004 18:15	-1.3		9/8/2004 6:00	-0.4	
9/7/2004 6:45	-1		9/7/2004 18:30	-1		9/8/2004 6:15	0	
9/7/2004 7:00	-1.6		9/7/2004 18:45	-1.1		9/8/2004 6:30	-0.9	
9/7/2004 7:15	-0.7		9/7/2004 19:00	-0.8		9/8/2004 6:45	-0.6	
9/7/2004 7:30	-1.5		9/7/2004 19:15	-1.1		9/8/2004 7:00	-1.1	
9/7/2004 7:45	-0.9		9/7/2004 19:30	-1.1		9/8/2004 7:15	-1.1	
9/7/2004 8:00	-1.2		9/7/2004 19:45	-0.9		9/8/2004 7:30	-1.6	
9/7/2004 8:15	-0.7		9/7/2004 20:00	-0.1		9/8/2004 7:45	0.6	
9/7/2004 8:30	-1.6		9/7/2004 20:15	1.6		9/8/2004 8:00	-1.6	
9/7/2004 8:45	-0.7		9/7/2004 20:30	-1.1		9/8/2004 8:15	-1.2	
9/7/2004 9:00	-1.3		9/7/2004 20:45	-1.1		9/8/2004 8:30	-1.1	
9/7/2004 9:15	-1.6		9/7/2004 21:00	-0.6		9/8/2004 8:45	-0.4	
9/7/2004 9:30	-1.3		9/7/2004 21:15	-1.1		9/8/2004 9:00	-0.5	
9/7/2004 9:45	-1.5		9/7/2004 21:30	-1.1		9/8/2004 9:15	-1.3	
9/7/2004 10:00	-0.3		9/7/2004 21:45	0.1		9/8/2004 9:30	2	
9/7/2004 10:15	0.2		9/7/2004 22:00	2.5		9/8/2004 9:45	-0.1	
9/7/2004 10:30	-0.1		9/7/2004 22:15	0.1		9/8/2004 10:00	-1	
9/7/2004 10:45	-0.5		9/7/2004 22:30	-0.4		9/8/2004 10:15	-1.2	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/8/2004 10:30	-1.4		9/8/2004 22:15	-0.8		9/9/2004 10:00	-0.5	
9/8/2004 10:45	-1.5		9/8/2004 22:30	-1		9/9/2004 10:15	-1	
9/8/2004 11:00	-1.1		9/8/2004 22:45	-1.3		9/9/2004 10:30	0.1	
9/8/2004 11:15	-1.3		9/8/2004 23:00	-1.4		9/9/2004 10:45	-1	
9/8/2004 11:30	-1.3		9/8/2004 23:15	0.8		9/9/2004 11:00	-1.1	
9/8/2004 11:45	-0.8		9/8/2004 23:30	-0.8		9/9/2004 11:15	-0.9	
9/8/2004 12:00	-1.2		9/8/2004 23:45	-1.1		9/9/2004 11:30	-1.5	
9/8/2004 12:15	-1.3		9/9/2004 0:00	0.5		9/9/2004 11:45	-0.1	
9/8/2004 12:30	-1.1		9/9/2004 0:15	-0.5		9/9/2004 12:00	-1.3	
9/8/2004 12:45	0.9		9/9/2004 0:30	0		9/9/2004 12:15	15.1	
9/8/2004 13:00	-0.8		9/9/2004 0:45	-0.6		9/9/2004 12:30	-1.4	
9/8/2004 13:15	-1.2		9/9/2004 1:00	-0.4		9/9/2004 12:45	-0.2	
9/8/2004 13:30	-1		9/9/2004 1:15	-0.5		9/9/2004 13:00	1.1	
9/8/2004 13:45	-1.5		9/9/2004 1:30	-1		9/9/2004 13:15	-1	
9/8/2004 14:00	-1.2		9/9/2004 1:45	-0.8		9/9/2004 13:30	-1.1	
9/8/2004 14:15	-1.8		9/9/2004 2:00	-1.3		9/9/2004 13:45	-1.1	
9/8/2004 14:30	-1.6		9/9/2004 2:15	-1.6		9/9/2004 14:00	-1.3	
9/8/2004 14:45	-1.1		9/9/2004 2:30	-0.9		9/9/2004 14:15	-1.3	
9/8/2004 15:00	-1.1		9/9/2004 2:45	-0.2		9/9/2004 14:30	-1.5	
9/8/2004 15:15	-1.1		9/9/2004 3:00	-1		9/9/2004 14:45	-1.5	
9/8/2004 15:30	-1.2		9/9/2004 3:15	-1.1		9/9/2004 15:00	-1.3	
9/8/2004 15:45	1.7		9/9/2004 3:30	-0.8		9/9/2004 15:15	-1.5	
9/8/2004 16:00	1.3		9/9/2004 3:45	-0.8		9/9/2004 15:30	-1.6	
9/8/2004 16:15	-0.6		9/9/2004 4:00	-1.5		9/9/2004 15:45	-1.6	
9/8/2004 16:30	-0.7		9/9/2004 4:15	-1.1		9/9/2004 16:00	-1.5	
9/8/2004 16:45	0		9/9/2004 4:30	-1.5		9/9/2004 16:15	-1.6	
9/8/2004 17:00	0.3		9/9/2004 4:45	-1.2		9/9/2004 16:30	-1.1	
9/8/2004 17:15	0.5		9/9/2004 5:00	-1.3		9/9/2004 16:45	-1	
9/8/2004 17:30	0.6		9/9/2004 5:15	-0.9		9/9/2004 17:00	2.6	
9/8/2004 17:45	-0.7		9/9/2004 5:30	0.4		9/9/2004 17:15	2.7	
9/8/2004 18:00	-0.2		9/9/2004 5:45	-0.5		9/9/2004 17:30	0.6	
9/8/2004 18:15	-0.3		9/9/2004 6:00	0.4		9/9/2004 17:45	1	
9/8/2004 18:30	-0.5		9/9/2004 6:15	0.4		9/9/2004 18:00	1.7	
9/8/2004 18:45	-0.3		9/9/2004 6:30	-0.2		9/9/2004 18:15	1.1	
9/8/2004 19:00	-0.8		9/9/2004 6:45	1.1		9/9/2004 18:30	0.3	
9/8/2004 19:15	-0.7		9/9/2004 7:00	-0.3		9/9/2004 18:45	-0.8	
9/8/2004 19:30	-0.6		9/9/2004 7:15	-0.4		9/9/2004 19:00	-1.3	
9/8/2004 19:45	-0.8		9/9/2004 7:30	0.1		9/9/2004 19:15	-1	
9/8/2004 20:00	-0.7		9/9/2004 7:45	-0.7		9/9/2004 19:30	-0.4	
9/8/2004 20:15	-0.7		9/9/2004 8:00	-0.7		9/9/2004 19:45	-1.3	
9/8/2004 20:30	-0.6		9/9/2004 8:15	-0.1		9/9/2004 20:00	-0.9	
9/8/2004 20:45	-0.5		9/9/2004 8:30	-0.2		9/9/2004 20:15	-1.1	
9/8/2004 21:00	-0.7		9/9/2004 8:45	-0.5		9/9/2004 20:30	-1	
9/8/2004 21:15	-0.7		9/9/2004 9:00	-0.9		9/9/2004 20:45	-1	
9/8/2004 21:30	-0.4		9/9/2004 9:15	-1.1		9/9/2004 21:00	-1	
9/8/2004 21:45	-0.6		9/9/2004 9:30	-1		9/9/2004 21:15	-0.8	
9/8/2004 22:00	0.6		9/9/2004 9:45	-1.1		9/9/2004 21:30	-1.3	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/9/2004 21:45	-0.7		9/10/2004 9:30	-1.3		9/10/2004 21:15	-0.7	
9/9/2004 22:00	-1.1		9/10/2004 9:45	0.1		9/10/2004 21:30	-0.5	
9/9/2004 22:15	-1.4		9/10/2004 10:00	-1.5		9/10/2004 21:45	-0.4	
9/9/2004 22:30	-1.3		9/10/2004 10:15	-1.5		9/10/2004 22:00	-0.4	
9/9/2004 22:45	-1.1		9/10/2004 10:30	-1.5		9/10/2004 22:15	-0.5	
9/9/2004 23:00	-1		9/10/2004 10:45	-1.2		9/10/2004 22:30	-0.6	
9/9/2004 23:15	-1.2		9/10/2004 11:00	0.7		9/10/2004 22:45	-0.9	
9/9/2004 23:30	-1		9/10/2004 11:15	-1.5		9/10/2004 23:00	-1	
9/9/2004 23:45	-1		9/10/2004 11:30	-1.4		9/10/2004 23:15	-1.1	
9/10/2004 0:00	-1.2		9/10/2004 11:45	-1.1		9/10/2004 23:30	0.2	
9/10/2004 0:15	-1.4		9/10/2004 12:00	-1.2		9/10/2004 23:45	-0.8	
9/10/2004 0:30	-1.2		9/10/2004 12:15	-1.3		9/11/2004 0:00	-0.9	
9/10/2004 0:45	-1		9/10/2004 12:30	-1.1		9/11/2004 0:15	2.2	
9/10/2004 1:00	-1.2		9/10/2004 12:45	-1.6		9/11/2004 0:30	1.8	
9/10/2004 1:15	-1		9/10/2004 13:00	-1.6		9/11/2004 0:45	0	
9/10/2004 1:30	-0.9		9/10/2004 13:15	-1.6		9/11/2004 1:00	-0.6	
9/10/2004 1:45	-1.1		9/10/2004 13:30	-0.8		9/11/2004 1:15	-0.5	
9/10/2004 2:00	-0.8		9/10/2004 13:45	-0.2		9/11/2004 1:30	-0.8	
9/10/2004 2:15	-1.1		9/10/2004 14:00	-0.7		9/11/2004 1:45	-0.6	
9/10/2004 2:30	-1		9/10/2004 14:15	0.8		9/11/2004 2:00	-0.8	
9/10/2004 2:45	-1.3		9/10/2004 14:30	-1		9/11/2004 2:15	0.4	
9/10/2004 3:00	-1.3		9/10/2004 14:45	0.7		9/11/2004 2:30	-1.1	
9/10/2004 3:15	-1.1		9/10/2004 15:00	0.2		9/11/2004 2:45	-0.5	
9/10/2004 3:30	-1.1		9/10/2004 15:15	-0.7		9/11/2004 3:00	-1.5	
9/10/2004 3:45	-0.8		9/10/2004 15:30	-0.7		9/11/2004 3:15	-0.5	
9/10/2004 4:00	-0.6		9/10/2004 15:45	-1.3		9/11/2004 3:30	-1.3	
9/10/2004 4:15	-1.3		9/10/2004 16:00	-1.3		9/11/2004 3:45	-1	
9/10/2004 4:30	-1.1		9/10/2004 16:15	-0.8		9/11/2004 4:00	-1.4	
9/10/2004 4:45	-1.4		9/10/2004 16:30	-0.7		9/11/2004 4:15	-1.3	
9/10/2004 5:00	-1.5		9/10/2004 16:45	-0.7		9/11/2004 4:30	-1.2	
9/10/2004 5:15	-1.5		9/10/2004 17:00	-0.5		9/11/2004 4:45	-1.3	
9/10/2004 5:30	-1.8		9/10/2004 17:15	-0.2		9/11/2004 5:00	1.4	
9/10/2004 5:45	-1.5		9/10/2004 17:30	14.5		9/11/2004 5:15	0.3	
9/10/2004 6:00	-1.5		9/10/2004 17:45	3.1		9/11/2004 5:30	-0.7	
9/10/2004 6:15	-1.3		9/10/2004 18:00	0.7		9/11/2004 5:45	-0.2	
9/10/2004 6:30	-1.3		9/10/2004 18:15	6.7		9/11/2004 6:00	-1.1	
9/10/2004 6:45	-1.9		9/10/2004 18:30	0		9/11/2004 6:15	-1.4	
9/10/2004 7:00	-1.7		9/10/2004 18:45	0		9/11/2004 6:30	-1.1	
9/10/2004 7:15	-1.6		9/10/2004 19:00	0.1		9/11/2004 6:45	0.4	
9/10/2004 7:30	-1.5		9/10/2004 19:15	0.5		9/11/2004 7:00	-0.8	
9/10/2004 7:45	-1.2		9/10/2004 19:30	0.3		9/11/2004 7:15	-1.5	
9/10/2004 8:00	-0.8		9/10/2004 19:45	0.8		9/11/2004 7:30	-1.3	
9/10/2004 8:15	-1.3		9/10/2004 20:00	0.6		9/11/2004 7:45	-0.8	
9/10/2004 8:30	-1.4		9/10/2004 20:15	0.6		9/11/2004 8:00	-0.5	
9/10/2004 8:45	-1.4		9/10/2004 20:30	0		9/11/2004 8:15	0.9	
9/10/2004 9:00	-1.5		9/10/2004 20:45	0.3		9/11/2004 8:30	2.4	
9/10/2004 9:15	-1.1		9/10/2004 21:00	0.3		9/11/2004 8:45	-0.3	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/11/2004 9:00	-0.7		9/11/2004 20:45	-0.7		9/12/2004 8:30	-0.5	
9/11/2004 9:15	-0.4		9/11/2004 21:00	-1		9/12/2004 8:45	-0.4	
9/11/2004 9:30	0.2		9/11/2004 21:15	-1		9/12/2004 9:00	-1	
9/11/2004 9:45	-0.5		9/11/2004 21:30	-0.8		9/12/2004 9:15	-0.6	
9/11/2004 10:00	1		9/11/2004 21:45	-0.4		9/12/2004 9:30	-0.4	
9/11/2004 10:15	-0.6		9/11/2004 22:00	-0.8		9/12/2004 9:45	-1.1	
9/11/2004 10:30	-0.9		9/11/2004 22:15	-0.4		9/12/2004 10:00	-0.4	
9/11/2004 10:45	-1		9/11/2004 22:30	-1.3		9/12/2004 10:15	-0.7	
9/11/2004 11:00	-1.1		9/11/2004 22:45	1.5		9/12/2004 10:30	-0.4	
9/11/2004 11:15	-1.1		9/11/2004 23:00	-0.9		9/12/2004 10:45	-1	
9/11/2004 11:30	-1		9/11/2004 23:15	-1.3		9/12/2004 11:00	-0.8	
9/11/2004 11:45	-0.9		9/11/2004 23:30	-0.7		9/12/2004 11:15	-0.8	
9/11/2004 12:00	-1.3		9/11/2004 23:45	-1.4		9/12/2004 11:30	-1	
9/11/2004 12:15	-1.1		9/12/2004 0:00	-1.3		9/12/2004 11:45	-0.7	
9/11/2004 12:30	-0.9		9/12/2004 0:15	-0.9		9/12/2004 12:00	-0.5	
9/11/2004 12:45	-1.1		9/12/2004 0:30	-0.7		9/12/2004 12:15	-0.6	
9/11/2004 13:00	-1.3		9/12/2004 0:45	-0.5		9/12/2004 12:30	-0.8	
9/11/2004 13:15	-0.8		9/12/2004 1:00	-0.8		9/12/2004 12:45	-0.7	
9/11/2004 13:30	-1.5		9/12/2004 1:15	-1		9/12/2004 13:00	-0.2	
9/11/2004 13:45	-1.1		9/12/2004 1:30	-0.8		9/12/2004 13:15	-0.6	
9/11/2004 14:00	-1.3		9/12/2004 1:45	-0.9		9/12/2004 13:30	-0.7	
9/11/2004 14:15	-1.3		9/12/2004 2:00	-1.2		9/12/2004 13:45	-0.8	
9/11/2004 14:30	-1		9/12/2004 2:15	-0.9		9/12/2004 14:00	-0.5	
9/11/2004 14:45	-1.3		9/12/2004 2:30	-1.4		9/12/2004 14:15	-0.5	
9/11/2004 15:00	-1.2		9/12/2004 2:45	-1.4		9/12/2004 14:30	1.2	
9/11/2004 15:15	-1		9/12/2004 3:00	-1.1		9/12/2004 14:45	-0.7	
9/11/2004 15:30	-1.2		9/12/2004 3:15	0.7		9/12/2004 15:00	-0.5	
9/11/2004 15:45	-1.5		9/12/2004 3:30	-1.5		9/12/2004 15:15	-1.1	
9/11/2004 16:00	-1.5		9/12/2004 3:45	-1.5		9/12/2004 15:30	-1.3	
9/11/2004 16:15	-1.8		9/12/2004 4:00	-1.3		9/12/2004 15:45	-1.2	
9/11/2004 16:30	5.3		9/12/2004 4:15	-1.5		9/12/2004 16:00	-0.8	
9/11/2004 16:45	1.8		9/12/2004 4:30	-1.6		9/12/2004 16:15	-1.1	
9/11/2004 17:00	0.6		9/12/2004 4:45	-1.2		9/12/2004 16:30	-1	
9/11/2004 17:15	1.2		9/12/2004 5:00	-0.5		9/12/2004 16:45	-1.3	
9/11/2004 17:30	0		9/12/2004 5:15	-1.6		9/12/2004 17:00	-1.1	
9/11/2004 17:45	0.7		9/12/2004 5:30	5.3		9/12/2004 17:15	-0.7	
9/11/2004 18:00	0		9/12/2004 5:45	1		9/12/2004 17:30	-1.1	
9/11/2004 18:15	0.6		9/12/2004 6:00	0.3		9/12/2004 17:45	-0.6	
9/11/2004 18:30	0.4		9/12/2004 6:15	-0.1		9/12/2004 18:00	0.7	
9/11/2004 18:45	0.3		9/12/2004 6:30	0.3		9/12/2004 18:15	1.2	
9/11/2004 19:00	0.3		9/12/2004 6:45	-0.2		9/12/2004 18:30	0.1	
9/11/2004 19:15	0.6		9/12/2004 7:00	0.1		9/12/2004 18:45	-0.6	
9/11/2004 19:30	-0.5		9/12/2004 7:15	0.7		9/12/2004 19:00	-0.7	
9/11/2004 19:45	1.5		9/12/2004 7:30	-0.2		9/12/2004 19:15	-0.4	
9/11/2004 20:00	0.3		9/12/2004 7:45	0.5		9/12/2004 19:30	-0.8	
9/11/2004 20:15	0.5		9/12/2004 8:00	0		9/12/2004 19:45	-1	
9/11/2004 20:30	-0.8		9/12/2004 8:15	0.1		9/12/2004 20:00	0.1	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/12/2004 20:15	-1		9/13/2004 8:00	0		9/13/2004 19:45	-0.2	
9/12/2004 20:30	-0.8		9/13/2004 8:15	-0.5		9/13/2004 20:00	-0.3	
9/12/2004 20:45	-1.1		9/13/2004 8:30	-0.6		9/13/2004 20:15	0.5	
9/12/2004 21:00	-0.8		9/13/2004 8:45	-1		9/13/2004 20:30	-0.1	
9/12/2004 21:15	-1.1		9/13/2004 9:00	-0.4		9/13/2004 20:45	0.1	
9/12/2004 21:30	-0.4		9/13/2004 9:15	-0.4		9/13/2004 21:00	-0.5	
9/12/2004 21:45	-1.2		9/13/2004 9:30	0		9/13/2004 21:15	-0.8	
9/12/2004 22:00	-0.6		9/13/2004 9:45	-0.7		9/13/2004 21:30	0.1	
9/12/2004 22:15	0.5		9/13/2004 10:00	-1.1		9/13/2004 21:45	-0.8	
9/12/2004 22:30	-1.2		9/13/2004 10:15	-0.6		9/13/2004 22:00	-0.9	
9/12/2004 22:45	-1.6		9/13/2004 10:30	-0.6		9/13/2004 22:15	-0.9	
9/12/2004 23:00	-1.6		9/13/2004 10:45	-1.2		9/13/2004 22:30	0.2	
9/12/2004 23:15	-0.6		9/13/2004 11:00	-0.7		9/13/2004 22:45	-0.8	
9/12/2004 23:30	-0.9		9/13/2004 11:15	-0.7		9/13/2004 23:00	-0.4	
9/12/2004 23:45	-1.5		9/13/2004 11:30	-1		9/13/2004 23:15	-0.4	
9/13/2004 0:00	-1		9/13/2004 11:45	-0.9		9/13/2004 23:30	0.2	
9/13/2004 0:15	1.4		9/13/2004 12:00	-0.4		9/13/2004 23:45	-0.2	
9/13/2004 0:30	-0.8		9/13/2004 12:15	-0.8		9/14/2004 0:00	-1.1	
9/13/2004 0:45	-0.5		9/13/2004 12:30	-0.8		9/14/2004 0:15	-0.9	
9/13/2004 1:00	-0.8		9/13/2004 12:45	-0.5		9/14/2004 0:30	-1.1	
9/13/2004 1:15	-1		9/13/2004 13:00	-0.4		9/14/2004 0:45	0.1	
9/13/2004 1:30	-0.7		9/13/2004 13:15	-0.8		9/14/2004 1:00	-0.9	
9/13/2004 1:45	-0.8		9/13/2004 13:30	-0.3		9/14/2004 1:15	-0.6	
9/13/2004 2:00	-1		9/13/2004 13:45	-0.7		9/14/2004 1:30	-0.5	
9/13/2004 2:15	-1.1		9/13/2004 14:00	-1		9/14/2004 1:45	-0.8	
9/13/2004 2:30	-0.2		9/13/2004 14:15	-0.7		9/14/2004 2:00	-1	
9/13/2004 2:45	-1.5		9/13/2004 14:30	-0.4		9/14/2004 2:15	-0.6	
9/13/2004 3:00	-1		9/13/2004 14:45	-0.8		9/14/2004 2:30	-0.8	
9/13/2004 3:15	-1.2		9/13/2004 15:00	-0.2		9/14/2004 2:45	-0.9	
9/13/2004 3:30	-1		9/13/2004 15:15	-0.8		9/14/2004 3:00	-1	
9/13/2004 3:45	-1		9/13/2004 15:30	-0.9		9/14/2004 3:15	-1.1	
9/13/2004 4:00	-1.5		9/13/2004 15:45	-0.8		9/14/2004 3:30	-0.7	
9/13/2004 4:15	-1.5		9/13/2004 16:00	-0.6		9/14/2004 3:45	-1	
9/13/2004 4:30	-1.2		9/13/2004 16:15	-0.5		9/14/2004 4:00	-1	
9/13/2004 4:45	-1.1		9/13/2004 16:30	-0.8		9/14/2004 4:15	-1.3	
9/13/2004 5:00	-1.5		9/13/2004 16:45	-0.7		9/14/2004 4:30	-0.6	
9/13/2004 5:15	4		9/13/2004 17:00	-1		9/14/2004 4:45	-0.7	
9/13/2004 5:30	-1.3		9/13/2004 17:15	-0.8		9/14/2004 5:00	-0.6	
9/13/2004 5:45	-1.6		9/13/2004 17:30	-0.4		9/14/2004 5:15	-1.3	
9/13/2004 6:00	-1.6		9/13/2004 17:45	0		9/14/2004 5:30	-0.9	
9/13/2004 6:15	-1.3		9/13/2004 18:00	-0.1		9/14/2004 5:45	-0.8	
9/13/2004 6:30	-0.5		9/13/2004 18:15	-0.5		9/14/2004 6:00	-1.3	
9/13/2004 6:45	0.2		9/13/2004 18:30	-0.4		9/14/2004 6:15	-0.8	
9/13/2004 7:00	0.8		9/13/2004 18:45	-0.7		9/14/2004 6:30	-0.8	
9/13/2004 7:15	1.9		9/13/2004 19:00	0.6		9/14/2004 6:45	-1	
9/13/2004 7:30	1		9/13/2004 19:15	0		9/14/2004 7:00	0.8	
9/13/2004 7:45	0.4		9/13/2004 19:30	0.6		9/14/2004 7:15	0.4	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/14/2004 7:30	0		9/14/2004 19:15	-0.4		9/15/2004 7:00	0.1	
9/14/2004 7:45	2.8		9/14/2004 19:30	-0.4		9/15/2004 7:15	-0.8	
9/14/2004 8:00	0.1		9/14/2004 19:45	0.1		9/15/2004 7:30	-0.2	
9/14/2004 8:15	0		9/14/2004 20:00	-0.2		9/15/2004 7:45	-1	
9/14/2004 8:30	3.1		9/14/2004 20:15	2		9/15/2004 8:00	-0.7	
9/14/2004 8:45	3.4		9/14/2004 20:30	0.3		9/15/2004 8:15	-0.4	
9/14/2004 9:00	0		9/14/2004 20:45	1.7		9/15/2004 8:30	0.9	
9/14/2004 9:15	-0.4		9/14/2004 21:00	1.9		9/15/2004 8:45	0.8	
9/14/2004 9:30	-0.3		9/14/2004 21:15	0.3		9/15/2004 9:00	0	
9/14/2004 9:45	-0.2		9/14/2004 21:30	-0.3		9/15/2004 9:15	-0.3	
9/14/2004 10:00	-0.6		9/14/2004 21:45	-0.4		9/15/2004 9:30	0.7	
9/14/2004 10:15	-0.6		9/14/2004 22:00	0.4		9/15/2004 9:45	-0.5	
9/14/2004 10:30	-1.2		9/14/2004 22:15	0.4		9/15/2004 10:00	-0.1	
9/14/2004 10:45	-1		9/14/2004 22:30	0		9/15/2004 10:15	3.2	
9/14/2004 11:00	-1		9/14/2004 22:45	0.4		9/15/2004 10:30	2.5	
9/14/2004 11:15	-1		9/14/2004 23:00	1.4		9/15/2004 10:45	0.8	
9/14/2004 11:30	-0.7		9/14/2004 23:15	0.4		9/15/2004 11:00	0.6	
9/14/2004 11:45	0		9/14/2004 23:30	0.3		9/15/2004 11:15	1	
9/14/2004 12:00	-0.7		9/14/2004 23:45	-0.2		9/15/2004 11:30	0.6	
9/14/2004 12:15	-0.8		9/15/2004 0:00	-0.7		9/15/2004 11:45	1.4	
9/14/2004 12:30	-1.1		9/15/2004 0:15	-1.1		9/15/2004 12:00	2.6	
9/14/2004 12:45	-0.2		9/15/2004 0:30	-0.5		9/15/2004 12:15	0.5	
9/14/2004 13:00	-0.2		9/15/2004 0:45	-0.8		9/15/2004 12:30	-0.5	
9/14/2004 13:15	-4.9		9/15/2004 1:00	-0.8		9/15/2004 12:45	-0.8	
9/14/2004 13:30	-5.8		9/15/2004 1:15	-0.8		9/15/2004 13:00	-0.9	
9/14/2004 13:45	-5.1		9/15/2004 1:30	0.4		9/15/2004 13:15	-0.7	
9/14/2004 14:00	-5.2		9/15/2004 1:45	0.5		9/15/2004 13:30	-1.1	
9/14/2004 14:15	-5.1		9/15/2004 2:00	-0.5		9/15/2004 13:45	-1	
9/14/2004 14:30	-0.9		9/15/2004 2:15	-0.2		9/15/2004 14:00	0.4	
9/14/2004 14:45	-0.9		9/15/2004 2:30	-1.3		9/15/2004 14:15	-0.5	
9/14/2004 15:00	-1.1		9/15/2004 2:45	-0.5		9/15/2004 14:30	0.9	
9/14/2004 15:15	-1		9/15/2004 3:00	-0.6		9/15/2004 14:45	-0.8	
9/14/2004 15:30	-1		9/15/2004 3:15	-0.5		9/15/2004 15:00	-0.8	
9/14/2004 15:45	-5.1		9/15/2004 3:30	-0.6		9/15/2004 15:15	0.4	
9/14/2004 16:00	-1.3		9/15/2004 3:45	103.1		9/15/2004 15:30	0.2	
9/14/2004 16:15	-0.5		9/15/2004 4:00	-1.3		9/15/2004 15:45	-0.4	
9/14/2004 16:30	-1.3		9/15/2004 4:15	0.9		9/15/2004 16:00	2.1	
9/14/2004 16:45	-0.5		9/15/2004 4:30	-1.1		9/15/2004 16:15	-0.7	
9/14/2004 17:00	-0.7		9/15/2004 4:45	-1		9/15/2004 16:30	-1.1	
9/14/2004 17:15	-1		9/15/2004 5:00	-1.2		9/15/2004 16:45	-0.8	
9/14/2004 17:30	12.3		9/15/2004 5:15	-1.1		9/15/2004 17:00	-0.5	
9/14/2004 17:45	-0.9		9/15/2004 5:30	-0.5		9/15/2004 17:15	-0.7	
9/14/2004 18:00	1.2		9/15/2004 5:45	-1.3		9/15/2004 17:30	2	
9/14/2004 18:15	-1.1		9/15/2004 6:00	-1.1		9/15/2004 17:45	-0.8	
9/14/2004 18:30	-0.9		9/15/2004 6:15	-0.9		9/15/2004 18:00	-0.9	
9/14/2004 18:45	-1.5		9/15/2004 6:30	0.8		9/15/2004 18:15	-0.9	
9/14/2004 19:00	-0.8		9/15/2004 6:45	-0.7		9/15/2004 18:30	-0.8	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/15/2004 18:45	-0.6		9/16/2004 6:30	-1		9/16/2004 18:15	-1.1	
9/15/2004 19:00	-0.8		9/16/2004 6:45	-1.3		9/16/2004 18:30	-0.7	
9/15/2004 19:15	-0.7		9/16/2004 7:00	-0.7		9/16/2004 18:45	-1.5	
9/15/2004 19:30	-0.2		9/16/2004 7:15	-0.5		9/16/2004 19:00	-1.1	
9/15/2004 19:45	-0.5		9/16/2004 7:30	-1.1		9/16/2004 19:15	-1	
9/15/2004 20:00	-0.7		9/16/2004 7:45	-0.8		9/16/2004 19:30	-1.1	
9/15/2004 20:15	-0.6		9/16/2004 8:00	0.1		9/16/2004 19:45	1	
9/15/2004 20:30	-0.5		9/16/2004 8:15	-0.2		9/16/2004 20:00	0.6	
9/15/2004 20:45	0.1		9/16/2004 8:30	-0.8		9/16/2004 20:15	-0.5	
9/15/2004 21:00	-0.4		9/16/2004 8:45	-0.9		9/16/2004 20:30	-1.1	
9/15/2004 21:15	0.2		9/16/2004 9:00	-0.3		9/16/2004 20:45	0.4	
9/15/2004 21:30	0.6		9/16/2004 9:15	-1		9/16/2004 21:00	0.8	
9/15/2004 21:45	-0.2		9/16/2004 9:30	-0.3		9/16/2004 21:15	1	
9/15/2004 22:00	0.9		9/16/2004 9:45	1.1		9/16/2004 21:30	-0.4	
9/15/2004 22:15	-0.4		9/16/2004 10:00	-0.2		9/16/2004 21:45	-0.4	
9/15/2004 22:30	-0.2		9/16/2004 10:15	1		9/16/2004 22:00	-0.2	
9/15/2004 22:45	-0.4		9/16/2004 10:30	2.3		9/16/2004 22:15	-0.4	
9/15/2004 23:00	-0.3		9/16/2004 10:45	0.8		9/16/2004 22:30	0.3	
9/15/2004 23:15	0.3		9/16/2004 11:00	0.6		9/16/2004 22:45	0.2	
9/15/2004 23:30	0.4		9/16/2004 11:15	0.2		9/16/2004 23:00	1	
9/15/2004 23:45	0.1		9/16/2004 11:30	0.5		9/16/2004 23:15	0	
9/16/2004 0:00	0.1		9/16/2004 11:45	0.1		9/16/2004 23:30	0.1	
9/16/2004 0:15	0.3		9/16/2004 12:00	1		9/16/2004 23:45	0.7	
9/16/2004 0:30	0.3		9/16/2004 12:15	0.9		9/17/2004 0:00	0.7	
9/16/2004 0:45	0.6		9/16/2004 12:30	0.8		9/17/2004 0:15	1	
9/16/2004 1:00	0.2		9/16/2004 12:45	1.5		9/17/2004 0:30	5.2	
9/16/2004 1:15	-0.7		9/16/2004 13:00	1.4		9/17/2004 0:45	11.4	
9/16/2004 1:30	-0.3		9/16/2004 13:15	1.4		9/17/2004 1:00	1.1	
9/16/2004 1:45	-0.9		9/16/2004 13:30	0.8		9/17/2004 1:15	-0.3	
9/16/2004 2:00	-1.1		9/16/2004 13:45	-0.2		9/17/2004 1:30	-0.5	
9/16/2004 2:15	-1		9/16/2004 14:00	0.1		9/17/2004 1:45	-0.9	
9/16/2004 2:30	-0.8		9/16/2004 14:15	-0.9		9/17/2004 2:00	-1	
9/16/2004 2:45	-0.7		9/16/2004 14:30	-0.9		9/17/2004 2:15	-1.3	
9/16/2004 3:00	1.4		9/16/2004 14:45	-0.7		9/17/2004 2:30	2.6	
9/16/2004 3:15	-0.5		9/16/2004 15:00	-1		9/17/2004 2:45	-0.8	
9/16/2004 3:30	-0.7		9/16/2004 15:15	-0.5		9/17/2004 3:00	-1.1	
9/16/2004 3:45	-1		9/16/2004 15:30	-0.9		9/17/2004 3:15	-1.5	
9/16/2004 4:00	0.4		9/16/2004 15:45	-0.9		9/17/2004 3:30	-0.4	
9/16/2004 4:15	0.7		9/16/2004 16:00	-0.5		9/17/2004 3:45	1273	
9/16/2004 4:30	0.1		9/16/2004 16:15	-0.2		9/17/2004 4:00	12.1	
9/16/2004 4:45	-0.4		9/16/2004 16:30	0		9/17/2004 4:15	-0.4	
9/16/2004 5:00	-1.1		9/16/2004 16:45	0.9		9/17/2004 4:30	0.4	
9/16/2004 5:15	-1		9/16/2004 17:00	-1		9/17/2004 4:45	0.2	
9/16/2004 5:30	-1.2		9/16/2004 17:15	0.1		9/17/2004 5:00	1.1	
9/16/2004 5:45	-1.1		9/16/2004 17:30	1.4		9/17/2004 5:15	-0.8	
9/16/2004 6:00	-0.7		9/16/2004 17:45	-0.1		9/17/2004 5:30	-0.8	
9/16/2004 6:15	-0.9		9/16/2004 18:00	-1.3		9/17/2004 5:45	-0.8	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/17/2004 6:00	-1.1		9/17/2004 17:45	0		9/18/2004 5:30	2.2	
9/17/2004 6:15	-1		9/17/2004 18:00	-0.5		9/18/2004 5:45	-0.2	
9/17/2004 6:30	-0.9		9/17/2004 18:15	-0.8		9/18/2004 6:00	-0.8	
9/17/2004 6:45	-0.7		9/17/2004 18:30	-0.8		9/18/2004 6:15	0.7	
9/17/2004 7:00	-0.5		9/17/2004 18:45	-1		9/18/2004 6:30	0.8	
9/17/2004 7:15	-1.1		9/17/2004 19:00	-0.4		9/18/2004 6:45	-0.7	
9/17/2004 7:30	0.5		9/17/2004 19:15	-1.3		9/18/2004 7:00	0.3	
9/17/2004 7:45	1.5		9/17/2004 19:30	-0.7		9/18/2004 7:15	-0.2	
9/17/2004 8:00	-0.7		9/17/2004 19:45	-0.8		9/18/2004 7:30	0.1	
9/17/2004 8:15	-0.1		9/17/2004 20:00	-0.4		9/18/2004 7:45	0.2	
9/17/2004 8:30	0.6		9/17/2004 20:15	-0.7		9/18/2004 8:00	-0.4	
9/17/2004 8:45	1.7		9/17/2004 20:30	-0.4		9/18/2004 8:15	-1.1	
9/17/2004 9:00	2.3		9/17/2004 20:45	0		9/18/2004 8:30	-0.9	
9/17/2004 9:15	-0.1		9/17/2004 21:00	2.1		9/18/2004 8:45	-0.4	
9/17/2004 9:30	-0.3		9/17/2004 21:15	0.3		9/18/2004 9:00	-0.8	
9/17/2004 9:45	-0.8		9/17/2004 21:30	0.5		9/18/2004 9:15	0	
9/17/2004 10:00	-0.3		9/17/2004 21:45	0.5		9/18/2004 9:30	0.5	
9/17/2004 10:15	-0.4		9/17/2004 22:00	0.3		9/18/2004 9:45	0.1	
9/17/2004 10:30	-0.5		9/17/2004 22:15	0		9/18/2004 10:00	0.7	
9/17/2004 10:45	-0.4		9/17/2004 22:30	-0.4		9/18/2004 10:15	0.2	
9/17/2004 11:00	0.7		9/17/2004 22:45	0.3		9/18/2004 10:30	1.2	
9/17/2004 11:15	0.4		9/17/2004 23:00	-0.4		9/18/2004 10:45	0.4	
9/17/2004 11:30	1.9		9/17/2004 23:15	1.5		9/18/2004 11:00	1.4	
9/17/2004 11:45	0.4		9/17/2004 23:30	-0.5		9/18/2004 11:15	-0.3	
9/17/2004 12:00	0.3		9/17/2004 23:45	-0.7		9/18/2004 11:30	0.3	
9/17/2004 12:15	0		9/18/2004 0:00	-0.4		9/18/2004 11:45	0.8	
9/17/2004 12:30	0.3		9/18/2004 0:15	-0.5		9/18/2004 12:00	2.5	
9/17/2004 12:45	0.7		9/18/2004 0:30	0.4		9/18/2004 12:15	3.1	
9/17/2004 13:00	0.4		9/18/2004 0:45	0.7		9/18/2004 12:30	3.4	
9/17/2004 13:15	1.5		9/18/2004 1:00	2		9/18/2004 12:45	1.1	
9/17/2004 13:30	1		9/18/2004 1:15	0.1		9/18/2004 13:00	2.1	
9/17/2004 13:45	0.9		9/18/2004 1:30	-0.7		9/18/2004 13:15	0.9	
9/17/2004 14:00	0		9/18/2004 1:45	-0.5		9/18/2004 13:30	2.8	
9/17/2004 14:15	-0.3		9/18/2004 2:00	-0.5		9/18/2004 13:45	1.1	
9/17/2004 14:30	-0.7		9/18/2004 2:15	-0.3		9/18/2004 14:00	2.1	
9/17/2004 14:45	-0.7		9/18/2004 2:30	-0.9		9/18/2004 14:15	0.9	
9/17/2004 15:00	-1.3		9/18/2004 2:45	-0.7		9/18/2004 14:30	0.1	
9/17/2004 15:15	-1.1		9/18/2004 3:00	-0.6		9/18/2004 14:45	-0.2	
9/17/2004 15:30	-0.8		9/18/2004 3:15	-1.2		9/18/2004 15:00	3.2	
9/17/2004 15:45	-1.1		9/18/2004 3:30	-0.6		9/18/2004 15:15	0.7	
9/17/2004 16:00	1.2		9/18/2004 3:45	0.7		9/18/2004 15:30	0.1	
9/17/2004 16:15	1.4		9/18/2004 4:00	-0.2		9/18/2004 15:45	0.3	
9/17/2004 16:30	1.8		9/18/2004 4:15	-0.8		9/18/2004 16:00	0.5	
9/17/2004 16:45	-0.2		9/18/2004 4:30	-1		9/18/2004 16:15	2.8	
9/17/2004 17:00	-1		9/18/2004 4:45	-0.5		9/18/2004 16:30	1.5	
9/17/2004 17:15	-0.9		9/18/2004 5:00	-0.7		9/18/2004 16:45	1.7	
9/17/2004 17:30	-0.6		9/18/2004 5:15	-0.5		9/18/2004 17:00	1.3	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/18/2004 17:15	0.9		9/19/2004 5:15	0.2		9/19/2004 17:00	0.3	
9/18/2004 17:30	0.3		9/19/2004 5:30	11.4		9/19/2004 17:15	-0.4	
9/18/2004 17:45	-0.2		9/19/2004 5:45	1		9/19/2004 17:30	0.6	
9/18/2004 18:00	0.6		9/19/2004 6:00	1.4		9/19/2004 17:45	3.7	
9/18/2004 18:15	0.3		9/19/2004 6:15	1.4		9/19/2004 18:00	1.2	
9/18/2004 18:30	-0.4		9/19/2004 6:30	1.2		9/19/2004 18:15	0.4	
9/18/2004 18:45	-0.5		9/19/2004 6:45	0.7		9/19/2004 18:30	-0.5	
9/18/2004 19:00	0.1		9/19/2004 7:00	0.7		9/19/2004 18:45	0.4	
9/18/2004 19:15	0.3		9/19/2004 7:15	0.6		9/19/2004 19:00	0	
9/18/2004 19:30	-0.3		9/19/2004 7:30	1.2		9/19/2004 19:15	0	
9/18/2004 19:45	-0.4		9/19/2004 7:45	1		9/19/2004 19:30	0	
9/18/2004 20:00	0		9/19/2004 8:00	1.8		9/19/2004 19:45	0.3	
9/18/2004 20:15	-0.1		9/19/2004 8:15	2.6		9/19/2004 20:00	0.5	
9/18/2004 20:30	-0.4		9/19/2004 8:30	1		9/19/2004 20:15	1.2	
9/18/2004 20:45	-0.5		9/19/2004 8:45	0.9		9/19/2004 20:30	0.9	
9/18/2004 21:15	-0.3		9/19/2004 9:00	8.2		9/19/2004 20:45	1.2	
9/18/2004 21:30	0.1		9/19/2004 9:15	2.3		9/19/2004 21:00	0.4	
9/18/2004 21:45	-0.2		9/19/2004 9:30	2		9/19/2004 21:15	-0.1	
9/18/2004 22:00	-0.2		9/19/2004 9:45	2.2		9/19/2004 21:30	-0.2	
9/18/2004 22:15	-0.2		9/19/2004 10:00	1.8		9/19/2004 21:45	-0.5	
9/18/2004 22:30	0		9/19/2004 10:15	0		9/19/2004 22:00	0.3	
9/18/2004 22:45	-0.4		9/19/2004 10:30	0.1		9/19/2004 22:15	1.4	
9/18/2004 23:00	0		9/19/2004 10:45	1		9/19/2004 22:30	0.4	
9/18/2004 23:15	-0.2		9/19/2004 11:00	0		9/19/2004 22:45	0.6	
9/18/2004 23:30	0.1		9/19/2004 11:15	0.4		9/19/2004 23:00	2.2	
9/18/2004 23:45	-0.5		9/19/2004 11:30	0.1		9/19/2004 23:15	0	
9/19/2004 0:00	-0.7		9/19/2004 11:45	1.4		9/19/2004 23:30	-0.1	
9/19/2004 0:15	-0.4		9/19/2004 12:00	-0.2		9/19/2004 23:45	-0.5	
9/19/2004 0:30	-1.1		9/19/2004 12:15	0.6		9/20/2004 0:00	-0.5	
9/19/2004 0:45	-0.8		9/19/2004 12:30	-0.2		9/20/2004 0:15	-0.5	
9/19/2004 1:00	-0.8		9/19/2004 12:45	-0.5		9/20/2004 0:30	-0.4	
9/19/2004 1:15	-1.1		9/19/2004 13:00	-0.1		9/20/2004 0:45	-0.6	
9/19/2004 1:30	0.1		9/19/2004 13:15	1.7		9/20/2004 1:00	-0.5	
9/19/2004 1:45	0.3		9/19/2004 13:30	0		9/20/2004 1:15	0	
9/19/2004 2:00	0		9/19/2004 13:45	0.7		9/20/2004 1:30	0.7	
9/19/2004 2:15	1.3		9/19/2004 14:00	0.4		9/20/2004 1:45	0.6	
9/19/2004 2:30	1.9		9/19/2004 14:15	0.7		9/20/2004 2:00	1.5	
9/19/2004 2:45	1.5		9/19/2004 14:30	0.1		9/20/2004 2:15	1	
9/19/2004 3:00	0.4		9/19/2004 14:45	0.5		9/20/2004 2:30	1.6	
9/19/2004 3:15	1.2		9/19/2004 15:00	0		9/20/2004 2:45	0.9	
9/19/2004 3:30	2.1		9/19/2004 15:15	0.7		9/20/2004 3:00	0.9	
9/19/2004 3:45	0.7		9/19/2004 15:30	-0.5		9/20/2004 3:15	0.6	
9/19/2004 4:00	3.9		9/19/2004 15:45	1.4		9/20/2004 3:30	0.3	
9/19/2004 4:15	3		9/19/2004 16:00	2		9/20/2004 3:45	0.3	
9/19/2004 4:30	0		9/19/2004 16:15	2		9/20/2004 4:00	0.5	
9/19/2004 4:45	0.2		9/19/2004 16:30	1.2		9/20/2004 4:15	0.1	
9/19/2004 5:00	1.4		9/19/2004 16:45	1.8		9/20/2004 4:30	-0.2	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/20/2004 4:45	1		9/22/2004 22:00	-0.5		9/23/2004 9:45	0	
9/20/2004 5:00	0.7		9/22/2004 22:15	-0.1		9/23/2004 10:00	-0.5	
9/20/2004 5:15	0.1		9/22/2004 22:30	-0.2		9/23/2004 10:15	-0.8	
9/20/2004 5:30	0.3		9/22/2004 22:45	-0.5		9/23/2004 10:30	-0.9	
9/20/2004 5:45	0.7		9/22/2004 23:00	-1		9/23/2004 10:45	0.2	
9/20/2004 6:00	0.5		9/22/2004 23:15	-1.1		9/23/2004 11:00	2.7	
9/20/2004 6:15	1.7		9/22/2004 23:30	-0.8		9/23/2004 11:15	-0.4	
9/20/2004 6:30	0.7		9/22/2004 23:45	-1		9/23/2004 11:30	0	
9/20/2004 6:45	0		9/23/2004 0:00	-1.5		9/23/2004 11:45	-1.2	
9/20/2004 7:00	0.7		9/23/2004 0:15	-1.5		9/23/2004 12:00	-0.9	
9/20/2004 7:15	-0.1		9/23/2004 0:30	-1.4		9/23/2004 12:15	0.3	
9/20/2004 7:30	-0.1		9/23/2004 0:45	-0.8		9/23/2004 12:30	-1	
9/20/2004 7:45	-0.8		9/23/2004 1:00	-1.1		9/23/2004 12:45	0	
9/20/2004 8:00	18.9		9/23/2004 1:15	-0.8		9/23/2004 13:00	-1	
9/20/2004 8:15	0.7		9/23/2004 1:30	-1.3		9/23/2004 13:15	-1.2	
9/20/2004 8:45	1.1		9/23/2004 1:45	-0.8		9/23/2004 13:30	-0.2	
9/22/2004 14:15	0		9/23/2004 2:00	-0.8		9/23/2004 13:45	-0.7	
9/22/2004 14:30	-0.5		9/23/2004 2:15	-0.5		9/23/2004 14:00	-1.1	
9/22/2004 14:45	0		9/23/2004 2:30	0		9/23/2004 14:15	-1	
9/22/2004 15:00	0		9/23/2004 2:45	-0.5		9/23/2004 14:30	-0.7	
9/22/2004 15:15	-0.7		9/23/2004 3:00	-0.8		9/23/2004 14:45	2.8	
9/22/2004 15:30	0		9/23/2004 3:15	-0.5		9/23/2004 15:00	-0.8	
9/22/2004 15:45	0		9/23/2004 3:30	-0.4		9/23/2004 15:15	0.7	
9/22/2004 16:00	1.5		9/23/2004 3:45	-0.5		9/23/2004 15:30	1.5	
9/22/2004 16:15	-0.8		9/23/2004 4:00	0.4		9/23/2004 15:45	-0.2	
9/22/2004 16:30	1.9		9/23/2004 4:15	0.4		9/23/2004 16:00	-0.1	
9/22/2004 16:45	1.8		9/23/2004 4:30	1.8		9/23/2004 16:15	-0.2	
9/22/2004 17:00	-0.7		9/23/2004 4:45	-0.2		9/23/2004 16:30	-0.6	
9/22/2004 17:15	-0.7		9/23/2004 5:00	-0.4		9/23/2004 16:45	0.8	
9/22/2004 17:30	-0.5		9/23/2004 5:15	0.3		9/23/2004 17:00	-0.4	
9/22/2004 17:45	0.1		9/23/2004 5:30	-0.2		9/23/2004 17:15	0.6	
9/22/2004 18:00	-0.4		9/23/2004 5:45	1.3		9/23/2004 17:30	-1.1	
9/22/2004 18:15	-0.4		9/23/2004 6:00	0.3		9/23/2004 17:45	-1.1	
9/22/2004 18:30	-1.3		9/23/2004 6:15	8.4		9/23/2004 18:00	-0.8	
9/22/2004 18:45	-1		9/23/2004 6:30	3.4		9/23/2004 18:15	-1	
9/22/2004 19:00	0.8		9/23/2004 6:45	2.8		9/23/2004 18:30	-0.8	
9/22/2004 19:15	-0.5		9/23/2004 7:00	-0.5		9/23/2004 18:45	-0.4	
9/22/2004 19:30	-0.9		9/23/2004 7:15	-0.1		9/23/2004 19:00	-0.8	
9/22/2004 19:45	-0.3		9/23/2004 7:30	-0.4		9/23/2004 19:15	-0.3	
9/22/2004 20:00	-0.7		9/23/2004 7:45	0.4		9/23/2004 19:30	-1	
9/22/2004 20:15	-0.5		9/23/2004 8:00	-0.8		9/23/2004 19:45	-1	
9/22/2004 20:30	-1		9/23/2004 8:15	-0.6		9/23/2004 20:00	0.2	
9/22/2004 20:45	-0.5		9/23/2004 8:30	-1		9/23/2004 20:15	-0.6	
9/22/2004 21:00	1.1		9/23/2004 8:45	-0.7		9/23/2004 20:30	-0.8	
9/22/2004 21:15	-0.8		9/23/2004 9:00	0.3		9/23/2004 20:45	-0.7	
9/22/2004 21:30	-0.7		9/23/2004 9:15	-0.1		9/23/2004 21:00	-0.2	
9/22/2004 21:45	-0.4		9/23/2004 9:30	-0.8		9/23/2004 21:15	-0.5	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/23/2004 21:30	-0.7		9/24/2004 9:15	-0.5		9/24/2004 21:00	-0.8	
9/23/2004 21:45	-0.5		9/24/2004 9:30	0.3		9/24/2004 21:15	-0.7	
9/23/2004 22:00	-0.6		9/24/2004 9:45	-0.8		9/24/2004 21:30	-0.5	
9/23/2004 22:15	-0.4		9/24/2004 10:00	-1.4		9/24/2004 21:45	-0.3	
9/23/2004 22:30	-0.5		9/24/2004 10:15	-1		9/24/2004 22:00	0.6	
9/23/2004 22:45	-0.5		9/24/2004 10:30	-1.1		9/24/2004 22:15	-0.9	
9/23/2004 23:00	-0.5		9/24/2004 10:45	-1.2		9/24/2004 22:30	0	
9/23/2004 23:15	1.3		9/24/2004 11:00	0.5		9/24/2004 22:45	-1.1	
9/23/2004 23:30	-0.7		9/24/2004 11:15	-0.4		9/24/2004 23:00	-1	
9/23/2004 23:45	0		9/24/2004 11:30	-0.2		9/24/2004 23:15	-0.8	
9/24/2004 0:00	-0.7		9/24/2004 11:45	-0.2		9/24/2004 23:30	-0.7	
9/24/2004 0:15	-0.2		9/24/2004 12:00	-1.1		9/24/2004 23:45	-0.9	
9/24/2004 0:30	-1		9/24/2004 12:15	-0.9		9/25/2004 0:00	-1	
9/24/2004 0:45	-0.9		9/24/2004 12:30	-0.9		9/25/2004 0:15	-1	
9/24/2004 1:00	-1.1		9/24/2004 12:45	-0.8		9/25/2004 0:30	2.5	
9/24/2004 1:15	-0.8		9/24/2004 13:00	-0.2		9/25/2004 0:45	0.5	
9/24/2004 1:30	-1.5		9/24/2004 13:15	-0.4		9/25/2004 1:00	0	
9/24/2004 1:45	-1.3		9/24/2004 13:30	-0.7		9/25/2004 1:15	-0.3	
9/24/2004 2:00	-1.5		9/24/2004 13:45	-1		9/25/2004 1:30	0	
9/24/2004 2:15	-1.5		9/24/2004 14:00	-1.2		9/25/2004 1:45	0.1	
9/24/2004 2:30	-0.8		9/24/2004 14:15	-1.1		9/25/2004 2:00	-0.7	
9/24/2004 2:45	-1.3		9/24/2004 14:30	-1.4		9/25/2004 2:15	-1.4	
9/24/2004 3:00	-0.5		9/24/2004 14:45	-1.3		9/25/2004 2:30	-1	
9/24/2004 3:15	-1.5		9/24/2004 15:00	-0.7		9/25/2004 2:45	0.2	
9/24/2004 3:30	-1.8		9/24/2004 15:15	-1.4		9/25/2004 3:00	0.7	
9/24/2004 3:45	-1.3		9/24/2004 15:30	-1		9/25/2004 3:15	-1.3	
9/24/2004 4:00	-1.5		9/24/2004 15:45	-0.8		9/25/2004 3:30	-1.3	
9/24/2004 4:15	-0.4		9/24/2004 16:00	-0.7		9/25/2004 3:45	-0.4	
9/24/2004 4:30	0		9/24/2004 16:15	0.8		9/25/2004 4:00	-0.4	
9/24/2004 4:45	0.4		9/24/2004 16:30	1.5		9/25/2004 4:15	-0.4	
9/24/2004 5:00	0.5		9/24/2004 16:45	0.6		9/25/2004 4:30	-0.8	
9/24/2004 5:15	0.7		9/24/2004 17:00	0.9		9/25/2004 4:45	-0.7	
9/24/2004 5:30	0.4		9/24/2004 17:15	0.6		9/25/2004 5:00	-1.1	
9/24/2004 5:45	1.6		9/24/2004 17:30	-0.2		9/25/2004 5:15	-0.4	
9/24/2004 6:00	0.1		9/24/2004 17:45	-0.8		9/25/2004 5:30	-0.2	
9/24/2004 6:15	-0.7		9/24/2004 18:00	-0.5		9/25/2004 5:45	-0.2	
9/24/2004 6:30	0.3		9/24/2004 18:15	-0.4		9/25/2004 6:00	1.2	
9/24/2004 6:45	-0.9		9/24/2004 18:30	-0.5		9/25/2004 6:15	1	
9/24/2004 7:00	-0.5		9/24/2004 18:45	-0.7		9/25/2004 6:30	0.4	
9/24/2004 7:15	1.2		9/24/2004 19:00	-0.8		9/25/2004 6:45	-0.4	
9/24/2004 7:30	0.2		9/24/2004 19:15	-1		9/25/2004 7:00	-0.5	
9/24/2004 7:45	-0.4		9/24/2004 19:30	-0.7		9/25/2004 7:15	-0.1	
9/24/2004 8:00	-1		9/24/2004 19:45	-1		9/25/2004 7:30	0.9	
9/24/2004 8:15	0.3		9/24/2004 20:00	-0.4		9/25/2004 7:45	0.1	
9/24/2004 8:30	-0.9		9/24/2004 20:15	-0.6		9/25/2004 8:00	0.4	
9/24/2004 8:45	1		9/24/2004 20:30	-0.2		9/25/2004 8:15	0.9	
9/24/2004 9:00	-0.8		9/24/2004 20:45	-0.5		9/25/2004 8:30	-0.2	

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PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/25/2004 8:45	1.3		9/25/2004 20:30	-0.2		9/26/2004 8:15	0.7	
9/25/2004 9:00	-0.5		9/25/2004 20:45	-0.4		9/26/2004 8:30	-0.2	
9/25/2004 9:15	-0.2		9/25/2004 21:00	-0.6		9/26/2004 8:45	0.2	
9/25/2004 9:30	4.7		9/25/2004 21:15	-0.5		9/26/2004 9:00	0.9	
9/25/2004 9:45	-0.8		9/25/2004 21:30	-0.2		9/26/2004 9:15	10.1	
9/25/2004 10:00	-0.5		9/25/2004 21:45	-0.5		9/26/2004 9:30	0.9	
9/25/2004 10:15	-0.1		9/25/2004 22:00	-0.4		9/26/2004 9:45	0.1	
9/25/2004 10:30	-0.2		9/25/2004 22:15	-0.8		9/26/2004 10:00	0.1	
9/25/2004 10:45	-0.8		9/25/2004 22:30	-0.8		9/26/2004 10:15	-0.8	
9/25/2004 11:00	-0.8		9/25/2004 22:45	-1.1		9/26/2004 10:30	-0.5	
9/25/2004 11:15	-0.7		9/25/2004 23:00	-0.4		9/26/2004 10:45	0.1	
9/25/2004 11:30	-0.8		9/25/2004 23:15	-0.5		9/26/2004 11:00	0.6	
9/25/2004 11:45	-0.9		9/25/2004 23:30	-0.7		9/26/2004 11:15	0.9	
9/25/2004 12:00	-0.8		9/25/2004 23:45	-0.8		9/26/2004 11:30	-0.5	
9/25/2004 12:15	-0.9		9/26/2004 0:00	-1		9/26/2004 11:45	-0.1	
9/25/2004 12:30	-0.8		9/26/2004 0:15	0.1		9/26/2004 12:00	0	
9/25/2004 12:45	-0.2		9/26/2004 0:30	-1.3		9/26/2004 12:15	-0.4	
9/25/2004 13:00	-0.4		9/26/2004 0:45	-0.7		9/26/2004 12:30	0	
9/25/2004 13:15	-1		9/26/2004 1:00	1.2		9/26/2004 12:45	0.2	
9/25/2004 13:30	-0.5		9/26/2004 1:15	-0.1		9/26/2004 13:00	0.6	
9/25/2004 13:45	-0.6		9/26/2004 1:30	-1		9/26/2004 13:15	4.2	
9/25/2004 14:00	-0.9		9/26/2004 1:45	0.1		9/26/2004 13:30	-0.4	
9/25/2004 14:15	-0.9		9/26/2004 2:00	-0.5		9/26/2004 13:45	-0.2	
9/25/2004 14:30	-0.6		9/26/2004 2:15	-1		9/26/2004 14:00	0	
9/25/2004 14:45	-0.8		9/26/2004 2:30	-0.9		9/26/2004 14:15	-0.4	
9/25/2004 15:00	-0.6		9/26/2004 2:45	-1.6		9/26/2004 14:30	-0.8	
9/25/2004 15:15	1.7		9/26/2004 3:00	0		9/26/2004 14:45	-0.7	
9/25/2004 15:30	-1.1		9/26/2004 3:15	-1.1		9/26/2004 15:00	4.3	
9/25/2004 15:45	-0.5		9/26/2004 3:30	-0.6		9/26/2004 15:15	0.4	
9/25/2004 16:00	-0.5		9/26/2004 3:45	-0.8		9/26/2004 15:30	-1.2	
9/25/2004 16:15	0		9/26/2004 4:00	-1.1		9/26/2004 15:45	-1.3	
9/25/2004 16:30	-0.8		9/26/2004 4:15	-0.4		9/26/2004 16:00	-0.2	
9/25/2004 16:45	-0.4		9/26/2004 4:30	4		9/26/2004 16:15	0.1	
9/25/2004 17:00	0.1		9/26/2004 4:45	1		9/26/2004 16:30	-0.6	
9/25/2004 17:15	-0.4		9/26/2004 5:00	0		9/26/2004 16:45	0.4	
9/25/2004 17:30	-0.4		9/26/2004 5:15	0.8		9/26/2004 17:00	-0.4	
9/25/2004 17:45	-0.2		9/26/2004 5:30	1.7		9/26/2004 17:15	0	
9/25/2004 18:00	0.2		9/26/2004 5:45	-0.2		9/26/2004 17:30	0.6	
9/25/2004 18:15	1.2		9/26/2004 6:00	0.6		9/26/2004 17:45	-0.8	
9/25/2004 18:30	0.7		9/26/2004 6:15	0.3		9/26/2004 18:00	-0.8	
9/25/2004 18:45	2.4		9/26/2004 6:30	0.1		9/26/2004 18:15	-0.5	
9/25/2004 19:00	0.6		9/26/2004 6:45	0.3		9/26/2004 18:30	0.4	
9/25/2004 19:15	-0.5		9/26/2004 7:00	1.1		9/26/2004 18:45	0.7	
9/25/2004 19:30	-0.9		9/26/2004 7:15	1.6		9/26/2004 19:00	2.1	
9/25/2004 19:45	-0.1		9/26/2004 7:30	2.7		9/26/2004 19:15	1	
9/25/2004 20:00	-0.3		9/26/2004 7:45	1.4		9/26/2004 19:30	1.1	
9/25/2004 20:15	0.1		9/26/2004 8:00	0.1		9/26/2004 19:45	0.9	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/26/2004 20:00	2.3		9/27/2004 7:45	2.1		9/27/2004 19:30	1	
9/26/2004 20:15	1.5		9/27/2004 8:00	1.5		9/27/2004 19:45	1.1	
9/26/2004 20:30	1.8		9/27/2004 8:15	0.2		9/27/2004 20:00	1.3	
9/26/2004 20:45	2		9/27/2004 8:30	-0.2		9/27/2004 20:15	0.1	
9/26/2004 21:00	2.3		9/27/2004 8:45	1.2		9/27/2004 20:30	0.7	
9/26/2004 21:15	3.3		9/27/2004 9:00	0.1		9/27/2004 20:45	-0.5	
9/26/2004 21:30	26.4		9/27/2004 9:15	1.1		9/27/2004 21:00	0.7	
9/26/2004 21:45	0		9/27/2004 9:30	0.4		9/27/2004 21:15	0.6	
9/26/2004 22:00	-0.8		9/27/2004 9:45	0.3		9/27/2004 21:30	-0.1	
9/26/2004 22:15	0		9/27/2004 10:00	0.4		9/27/2004 21:45	0	
9/26/2004 22:30	0.1		9/27/2004 10:15	-0.6		9/27/2004 22:00	0.6	
9/26/2004 22:45	0.7		9/27/2004 10:30	-0.2		9/27/2004 22:15	-0.3	
9/26/2004 23:00	-0.7		9/27/2004 10:45	-0.5		9/27/2004 22:30	0.1	
9/26/2004 23:15	-0.8		9/27/2004 11:00	-0.5		9/27/2004 22:45	0.4	
9/26/2004 23:30	-0.2		9/27/2004 11:15	-0.4		9/27/2004 23:00	0.1	
9/26/2004 23:45	0.8		9/27/2004 11:30	-0.8		9/27/2004 23:15	-0.3	
9/27/2004 0:00	0		9/27/2004 11:45	0.1		9/27/2004 23:30	-0.4	
9/27/2004 0:15	0.1		9/27/2004 12:00	-0.3		9/27/2004 23:45	-0.8	
9/27/2004 0:30	-0.5		9/27/2004 12:15	-1.1		9/28/2004 0:00	-0.7	
9/27/2004 0:45	2.6		9/27/2004 12:30	-0.7		9/28/2004 0:15	-0.8	
9/27/2004 1:00	-0.5		9/27/2004 12:45	-1		9/28/2004 0:30	1.4	
9/27/2004 1:15	0		9/27/2004 13:00	-0.2		9/28/2004 0:45	0.6	
9/27/2004 1:30	0.6		9/27/2004 13:15	0.4		9/28/2004 1:00	-0.4	
9/27/2004 1:45	0.1		9/27/2004 13:30	-0.7		9/28/2004 1:15	-0.5	
9/27/2004 2:00	-0.9		9/27/2004 13:45	-0.8		9/28/2004 1:30	-0.7	
9/27/2004 2:15	-0.3		9/27/2004 14:00	-0.5		9/28/2004 1:45	-0.9	
9/27/2004 2:30	-1.5		9/27/2004 14:15	-1		9/28/2004 2:00	-0.8	
9/27/2004 2:45	-0.5		9/27/2004 14:30	-1		9/28/2004 2:15	1.2	
9/27/2004 3:00	0.7		9/27/2004 14:45	-0.5		9/28/2004 2:30	-0.7	
9/27/2004 3:15	0.8		9/27/2004 15:00	-0.5		9/28/2004 2:45	-0.6	
9/27/2004 3:30	-0.4		9/27/2004 15:15	0.3		9/28/2004 3:00	-0.7	
9/27/2004 3:45	-0.5		9/27/2004 15:30	-0.4		9/28/2004 3:15	-0.5	
9/27/2004 4:00	-1.1		9/27/2004 15:45	-1.1		9/28/2004 3:30	0	
9/27/2004 4:15	-1.5		9/27/2004 16:00	0.3		9/28/2004 3:45	-0.4	
9/27/2004 4:30	-1.2		9/27/2004 16:15	-0.7		9/28/2004 4:00	-0.4	
9/27/2004 4:45	-1.4		9/27/2004 16:30	-1.1		9/28/2004 4:15	-0.8	
9/27/2004 5:00	0.7		9/27/2004 16:45	-0.4		9/28/2004 4:30	-1	
9/27/2004 5:15	0.1		9/27/2004 17:00	0.6		9/28/2004 4:45	-1	
9/27/2004 5:30	3.8		9/27/2004 17:15	-0.2		9/28/2004 5:00	-0.9	
9/27/2004 5:45	0.7		9/27/2004 17:30	-1		9/28/2004 5:15	-0.7	
9/27/2004 6:00	-0.1		9/27/2004 17:45	-0.5		9/28/2004 5:30	-0.7	
9/27/2004 6:15	0.2		9/27/2004 18:00	-0.7		9/28/2004 5:45	-1.2	
9/27/2004 6:30	-0.2		9/27/2004 18:15	-0.1		9/28/2004 6:00	-0.8	
9/27/2004 6:45	-0.7		9/27/2004 18:30	3.5		9/28/2004 6:15	0	
9/27/2004 7:00	-0.2		9/27/2004 18:45	1.4		9/28/2004 6:30	-0.5	
9/27/2004 7:15	0		9/27/2004 19:00	0.2		9/28/2004 6:45	0.2	
9/27/2004 7:30	-0.1		9/27/2004 19:15	0.5		9/28/2004 7:00	0.1	

APPENDIX D1

PIER 1 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 29, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)
9/28/2004 7:15	0.3		9/28/2004 19:00	-0.5		9/29/2004 6:45	10
9/28/2004 7:30	1		9/28/2004 19:15	0.1		9/29/2004 7:00	-0.7
9/28/2004 7:45	0.9		9/28/2004 19:30	-0.3		9/29/2004 7:15	0.2
9/28/2004 8:00	0.1		9/28/2004 19:45	0		9/29/2004 7:30	-0.1
9/28/2004 8:15	0.5		9/28/2004 20:00	0.8		9/29/2004 7:45	0.1
9/28/2004 8:30	-0.5		9/28/2004 20:15	0.3		9/29/2004 8:00	0.1
9/28/2004 8:45	1.7		9/28/2004 20:30	0.3		9/29/2004 8:15	0
9/28/2004 9:00	0.4		9/28/2004 20:45	-0.7		9/29/2004 8:30	-0.4
9/28/2004 9:15	1.8		9/28/2004 21:00	2		9/29/2004 8:45	-0.5
9/28/2004 9:30	0.4		9/28/2004 21:15	2.6		9/29/2004 9:00	-0.7
9/28/2004 9:45	0.5		9/28/2004 21:30	0.9		9/29/2004 9:15	-0.4
9/28/2004 10:00	1.3		9/28/2004 21:45	0.9		9/29/2004 9:30	1.2
9/28/2004 10:15	0.7		9/28/2004 22:00	1		9/29/2004 9:45	0.5
9/28/2004 10:30	0.3		9/28/2004 22:15	0.6		9/29/2004 10:00	-0.3
9/28/2004 10:45	2.3		9/28/2004 22:30	1.5		9/29/2004 10:15	-0.2
9/28/2004 11:00	2.5		9/28/2004 22:45	2.3		9/29/2004 10:30	-0.2
9/28/2004 11:15	0			0.1		9/29/2004 10:45	1.1
9/28/2004 11:30	0.1		9/28/2004 23:15	1		9/29/2004 11:00	1.2
9/28/2004 11:45	-0.8		9/28/2004 23:30	-0.3		9/29/2004 11:15	1.5
9/28/2004 12:00	-1		9/28/2004 23:45	1.9		9/29/2004 11:30	2.8
9/28/2004 12:15	-0.7		9/29/2004 0:00	-0.2		9/29/2004 11:45	1.5
9/28/2004 12:30	-1.1		9/29/2004 0:15	0		9/29/2004 12:00	0.3
9/28/2004 12:45	-0.4		9/29/2004 0:30	-0.7		9/29/2004 12:15	5
9/28/2004 13:00	-0.2		9/29/2004 0:45	-0.8		9/29/2004 12:30	0.1
9/28/2004 13:15	-0.8		9/29/2004 1:00	-0.5			
9/28/2004 13:30	-1		9/29/2004 1:15	1.2			
9/28/2004 13:45	-0.6		9/29/2004 1:30	0.4			
9/28/2004 14:00	-0.3		9/29/2004 1:45	-0.7			
9/28/2004 14:15	0		9/29/2004 2:00	0.1			
9/28/2004 14:30	0.1		9/29/2004 2:15	3.7			
9/28/2004 14:45	-0.8		9/29/2004 2:30	0.6			
9/28/2004 15:00	-0.9		9/29/2004 2:45	-0.5			
9/28/2004 15:15	3.5		9/29/2004 3:00	0			
9/28/2004 15:30	0.1		9/29/2004 3:15	-0.2			
9/28/2004 15:45	0.7		9/29/2004 3:30	0.6			
9/28/2004 16:00	-0.3		9/29/2004 3:45	0.9			
9/28/2004 16:15	-0.5		9/29/2004 4:00	0.1			
9/28/2004 16:30	-0.3		9/29/2004 4:15	0.1			
9/28/2004 16:45	-1		9/29/2004 4:30	0.5			
9/28/2004 17:00	-1.5		9/29/2004 4:45	2.3			
9/28/2004 17:15	-1		9/29/2004 5:00	-0.8			
9/28/2004 17:30	-0.5		9/29/2004 5:15	0.8			
9/28/2004 17:45	-0.9		9/29/2004 5:30	0.6			
9/28/2004 18:00	-1		9/29/2004 5:45	-0.5			
9/28/2004 18:15	-0.7		9/29/2004 6:00	0.9			
9/28/2004 18:30	-0.5		9/29/2004 6:15	0.1			
9/28/2004 18:45	-0.1		9/29/2004 6:30	0			

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 – SEPTEMBER 29, 2004

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/27/2004 17:00	8.5		8/28/2004 4:30	6.6		8/28/2004 16:00	6.2	
8/27/2004 17:15	7.4		8/28/2004 4:45	5.6		8/28/2004 16:15	6.1	
8/27/2004 17:30	7.4		8/28/2004 5:00	6.6		8/28/2004 16:30	6.8	
8/27/2004 17:45	6.8		8/28/2004 5:15	6.8		8/28/2004 16:45	6.2	
8/27/2004 18:00	7.9		8/28/2004 5:30	6.7		8/28/2004 17:00	6.9	
8/27/2004 18:15	6.2		8/28/2004 5:45	6.2		8/28/2004 17:15	7.3	
8/27/2004 18:30	7.6		8/28/2004 6:00	6.1		8/28/2004 17:30	7.4	
8/27/2004 18:45	7.1		8/28/2004 6:15	5.9		8/28/2004 17:45	6.2	
8/27/2004 19:00	6.5		8/28/2004 6:30	6.3		8/28/2004 18:00	7.5	
8/27/2004 19:15	5.7		8/28/2004 6:45	5.9		8/28/2004 18:15	7.2	
8/27/2004 19:30	6.4		8/28/2004 7:00	6.7		8/28/2004 18:30	6.4	
8/27/2004 19:45	5.4		8/28/2004 7:15	7.5		8/28/2004 18:45	5.4	
8/27/2004 20:00	6.6		8/28/2004 7:30	7.2		8/28/2004 19:00	7.9	
8/27/2004 20:15	6		8/28/2004 7:45	6.5		8/28/2004 19:15	7.6	
8/27/2004 20:30	5.2		8/28/2004 8:00	7		8/28/2004 19:30	8.1	
8/27/2004 20:45	5.4		8/28/2004 8:15	6.1		8/28/2004 19:45	6.9	
8/27/2004 21:00	7		8/28/2004 8:30	6		8/28/2004 20:00	9.2	
8/27/2004 21:15	5.1		8/28/2004 8:45	6.1		8/28/2004 20:15	5.9	
8/27/2004 21:30	5.7		8/28/2004 9:00	5.6		8/28/2004 20:30	6.4	
8/27/2004 21:45	5.6		8/28/2004 9:15	5.4		8/28/2004 20:45	8.1	
8/27/2004 22:00	6.4		8/28/2004 9:30	5.4		8/28/2004 21:00	7.2	
8/27/2004 22:15	6		8/28/2004 9:45	5.5		8/28/2004 21:15	6.1	
8/27/2004 22:30	6.1		8/28/2004 10:00	6.2		8/28/2004 21:30	5.7	
8/27/2004 22:45	5.5		8/28/2004 10:15	6.1		8/28/2004 21:45	6	
8/27/2004 23:00	6.1		8/28/2004 10:30	7.1		8/28/2004 22:00	5.5	
8/27/2004 23:15	5.4		8/28/2004 10:45	5.4		8/28/2004 22:15	6.7	
8/27/2004 23:30	6		8/28/2004 11:00	6.2		8/28/2004 22:30	6.2	
8/27/2004 23:45	5.1		8/28/2004 11:15	5.9		8/28/2004 22:45	5.9	
8/28/2004 0:00	5		8/28/2004 11:30	5.8		8/28/2004 23:00	5.9	
8/28/2004 0:15	5.2		8/28/2004 11:45	5.9		8/28/2004 23:15	5.7	
8/28/2004 0:30	5.3		8/28/2004 12:00	5.4		8/28/2004 23:30	5	
8/28/2004 0:45	5.3		8/28/2004 12:15	5.3		8/28/2004 23:45	5.5	
8/28/2004 1:00	5.4		8/28/2004 12:30	6		8/29/2004 0:00	5.2	
8/28/2004 1:15	5		8/28/2004 12:45	5.5		8/29/2004 0:15	5	
8/28/2004 1:30	6.2		8/28/2004 13:00	6.1		8/29/2004 0:30	7.8	
8/28/2004 1:45	8.3		8/28/2004 13:15	7.8		8/29/2004 0:45	5.7	
8/28/2004 2:00	6.3		8/28/2004 13:30	5.7		8/29/2004 1:00	5.6	
8/28/2004 2:15	6.5		8/28/2004 13:45	5.5		8/29/2004 1:15	7.1	
8/28/2004 2:30	5.6		8/28/2004 14:00	6.1		8/29/2004 1:30	5.4	
8/28/2004 2:45	5.6		8/28/2004 14:15	5.9		8/29/2004 1:45	5.8	
8/28/2004 3:00	6		8/28/2004 14:30	5.3		8/29/2004 2:00	6.7	
8/28/2004 3:15	5.5		8/28/2004 14:45	5.9		8/29/2004 2:15	6.7	
8/28/2004 3:30	7.1		8/28/2004 15:00	5.4		8/29/2004 2:30	6	
8/28/2004 3:45	5.6		8/28/2004 15:15	5.7		8/29/2004 2:45	6.4	
8/28/2004 4:00	5.5		8/28/2004 15:30	5.4		8/29/2004 3:00	6	
8/28/2004 4:15	5.6		8/28/2004 15:45	5.4		8/29/2004 3:15	5.4	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/29/2004 3:30	6		8/29/2004 15:00	5.1		8/30/2004 2:30	5.6	
8/29/2004 3:45	6.1		8/29/2004 15:15	5.7		8/30/2004 2:45	6.7	
8/29/2004 4:00	5		8/29/2004 15:30	7.4		8/30/2004 3:00	6.2	
8/29/2004 4:15	5.7		8/29/2004 15:45	8.3		8/30/2004 3:15	5.9	
8/29/2004 4:30	4.8		8/29/2004 16:00	7.2		8/30/2004 3:30	6.9	
8/29/2004 4:45	5.1		8/29/2004 16:15	5.3		8/30/2004 3:45	5.8	
8/29/2004 5:00	5.2		8/29/2004 16:30	4.2		8/30/2004 4:00	5.6	
8/29/2004 5:15	4.9		8/29/2004 16:45	5.4		8/30/2004 4:15	6.1	
8/29/2004 5:30	8.6		8/29/2004 17:00	5.2		8/30/2004 4:30	5.6	
8/29/2004 5:45	8.7		8/29/2004 17:15	4.4		8/30/2004 4:45	4.9	
8/29/2004 6:00	8.3		8/29/2004 17:30	4.1		8/30/2004 5:00	4.9	
8/29/2004 6:15	7.3		8/29/2004 17:45	6.9		8/30/2004 5:15	5.1	
8/29/2004 6:30	6.4		8/29/2004 18:00	7.2		8/30/2004 5:30	5.1	
8/29/2004 6:45	8.1		8/29/2004 18:15	7.8		8/30/2004 5:45	5.3	
8/29/2004 7:00	6.7		8/29/2004 18:30	7.4		8/30/2004 6:00	5	
8/29/2004 7:15	11.1		8/29/2004 18:45	8.1		8/30/2004 6:15	5.3	
8/29/2004 7:30	6.6		8/29/2004 19:00	8		8/30/2004 6:30	5	
8/29/2004 7:45	7.3		8/29/2004 19:15	7		8/30/2004 6:45	6.8	
8/29/2004 8:00	6.8		8/29/2004 19:30	9.7		8/30/2004 7:00	4.7	
8/29/2004 8:15	8		8/29/2004 19:45	7.9		8/30/2004 7:15	8.8	
8/29/2004 8:30	8		8/29/2004 20:00	7.2		8/30/2004 7:30	5.8	
8/29/2004 8:45	8.6		8/29/2004 20:15	6.3		8/30/2004 7:45	7.4	
8/29/2004 9:00	6.6		8/29/2004 20:30	6.2		8/30/2004 8:00	5.6	
8/29/2004 9:15	5.1		8/29/2004 20:45	7		8/30/2004 8:15	5.6	
8/29/2004 9:30	5.3		8/29/2004 21:00	6.5		8/30/2004 8:30	7.2	
8/29/2004 9:45	8.2		8/29/2004 21:15	5.4		8/30/2004 8:45	7.8	
8/29/2004 10:00	9.6		8/29/2004 21:30	5.2		8/30/2004 9:00	6.9	
8/29/2004 10:15	5.7		8/29/2004 21:45	5.7		8/30/2004 9:15	6.7	
8/29/2004 10:30	7.2		8/29/2004 22:00	6.9		8/30/2004 9:30	7.3	
8/29/2004 10:45	5.8		8/29/2004 22:15	7.2		8/30/2004 9:45	6.8	
8/29/2004 11:00	6.9		8/29/2004 22:30	5.8		8/30/2004 10:00	6.8	
8/29/2004 11:15	5.9		8/29/2004 22:45	6.7		8/30/2004 10:15	6.6	
8/29/2004 11:30	5.3		8/29/2004 23:00	8.1		8/30/2004 10:30	6.6	
8/29/2004 11:45	6.1		8/29/2004 23:15	7.4		8/30/2004 10:45	6.1	
8/29/2004 12:00	5.5		8/29/2004 23:30	6.1		8/30/2004 11:00	5.9	
8/29/2004 12:15	4.8		8/29/2004 23:45	6.2		8/30/2004 11:15	5.7	
8/29/2004 12:30	5.3		8/30/2004 0:00	4.7		8/30/2004 11:30	6.1	
8/29/2004 12:45	5		8/30/2004 0:15	5.3		8/30/2004 11:45	5.1	
8/29/2004 13:00	5.1		8/30/2004 0:30	5.1		8/30/2004 12:00	5.8	
8/29/2004 13:15	5		8/30/2004 0:45	4.5		8/30/2004 12:15	6.1	
8/29/2004 13:30	5.3		8/30/2004 1:00	5.3		8/30/2004 12:30	5.3	
8/29/2004 13:45	5.1		8/30/2004 1:15	5.8		8/30/2004 12:45	5.4	
8/29/2004 14:00	5.6		8/30/2004 1:30	5.1		8/30/2004 13:00	6.7	
8/29/2004 14:15	4.5		8/30/2004 1:45	5.1		8/30/2004 13:15	5.4	
8/29/2004 14:30	5.1		8/30/2004 2:00	6.3		8/30/2004 13:30	5.1	
8/29/2004 14:45	5.1		8/30/2004 2:15	7.7		8/30/2004 13:45	5	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
8/30/2004 14:00	5.9		8/31/2004 1:30	5.9		8/31/2004 13:00	5.8	
8/30/2004 14:15	5.4		8/31/2004 1:45	5.5		8/31/2004 13:15	5.4	
8/30/2004 14:30	6		8/31/2004 2:00	5.7		8/31/2004 13:30	6	
8/30/2004 14:45	5.3		8/31/2004 2:15	6		8/31/2004 13:45	5.9	
8/30/2004 15:00	5.7		8/31/2004 2:30	5.5		8/31/2004 14:00	5.5	
8/30/2004 15:15	5.7		8/31/2004 2:45	6.3		8/31/2004 14:15	5.4	
8/30/2004 15:30	6.5		8/31/2004 3:00	6.1		8/31/2004 14:30	6.3	
8/30/2004 15:45	7.6		8/31/2004 3:15	5.4		8/31/2004 14:45	6.2	
8/30/2004 16:00	6.6		8/31/2004 3:30	5.5		8/31/2004 15:00	6.6	
8/30/2004 16:15	6.7		8/31/2004 3:45	5.8		8/31/2004 15:15	5.8	
8/30/2004 16:30	5.4		8/31/2004 4:00	5.4		8/31/2004 15:30	6.7	
8/30/2004 16:45	5.7		8/31/2004 4:15	5.8		8/31/2004 15:45	6.1	
8/30/2004 17:00	6.2		8/31/2004 4:30	5.7		8/31/2004 16:00	6.3	
8/30/2004 17:15	5.7		8/31/2004 4:45	5.6		8/31/2004 16:15	6.2	
8/30/2004 17:30	5.6		8/31/2004 5:00	5.1		8/31/2004 16:30	5.9	
8/30/2004 17:45	6		8/31/2004 5:15	5.5		8/31/2004 16:45	6.2	
8/30/2004 18:00	6.5		8/31/2004 5:30	5.3		8/31/2004 17:00	5.7	
8/30/2004 18:15	6.9		8/31/2004 5:45	5.2		8/31/2004 17:15	5.3	
8/30/2004 18:30	6.7		8/31/2004 6:00	5.1		8/31/2004 17:30	9.4	
8/30/2004 18:45	6.5		8/31/2004 6:15	5		8/31/2004 17:45	5.3	
8/30/2004 19:00	6.9		8/31/2004 6:30	5		8/31/2004 18:00	5.6	
8/30/2004 19:15	7.1		8/31/2004 6:45	5.9		8/31/2004 18:15	5	
8/30/2004 19:30	7.2		8/31/2004 7:00	5.4		8/31/2004 18:30	5.5	
8/30/2004 19:45	10		8/31/2004 7:15	5.4		8/31/2004 18:45	5	
8/30/2004 20:00	8.2		8/31/2004 7:30	5.1		8/31/2004 19:00	4.8	
8/30/2004 20:15	6.4		8/31/2004 7:45	5.7		8/31/2004 19:15	5.4	
8/30/2004 20:30	7.5		8/31/2004 8:00	9.2		8/31/2004 19:30	5.7	
8/30/2004 20:45	8.6		8/31/2004 8:15	7		8/31/2004 19:45	5.4	
8/30/2004 21:00	7.9		8/31/2004 8:30	7.5		8/31/2004 20:00	5.5	
8/30/2004 21:15	6.7		8/31/2004 8:45	5.7		8/31/2004 20:15	8.5	
8/30/2004 21:30	5.6		8/31/2004 9:00	6.5		8/31/2004 20:30	5.6	
8/30/2004 21:45	6.8		8/31/2004 9:15	6		8/31/2004 20:45	7.3	
8/30/2004 22:00	7.3		8/31/2004 9:30	6.1		8/31/2004 21:00	6.5	
8/30/2004 22:15	5.7		8/31/2004 9:45	6.5		8/31/2004 21:15	5.3	
8/30/2004 22:30	5.6		8/31/2004 10:00	6.5		8/31/2004 21:30	5.8	
8/30/2004 22:45	5.5		8/31/2004 10:15	5.3		8/31/2004 21:45	8.3	
8/30/2004 23:00	4.9		8/31/2004 10:30	5.5		8/31/2004 22:00	5.4	
8/30/2004 23:15	5.1		8/31/2004 10:45	5.4		8/31/2004 22:15	6	
8/30/2004 23:30	5.1		8/31/2004 11:00	5.3		8/31/2004 22:30	5.1	
8/30/2004 23:45	5.4		8/31/2004 11:15	6.3		8/31/2004 22:45	5.6	
8/31/2004 0:00	7.6		8/31/2004 11:30	6.7		8/31/2004 23:00	5.8	
8/31/2004 0:15	6.2		8/31/2004 11:45	5.9		8/31/2004 23:15	6.2	
8/31/2004 0:30	5.3		8/31/2004 12:00	5.8		8/31/2004 23:30	6.8	
8/31/2004 0:45	7.4		8/31/2004 12:15	5.7		8/31/2004 23:45	6.7	
8/31/2004 1:00	5.6		8/31/2004 12:30	5.9		9/1/2004 0:00	6.4	
8/31/2004 1:15	6.4		8/31/2004 12:45	6.1		9/1/2004 0:15	5.8	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/1/2004 0:30	5.6		9/1/2004 12:00	7.1		9/1/2004 23:30	6.1	
9/1/2004 0:45	5.4		9/1/2004 12:15	7.4		9/1/2004 23:45	6	
9/1/2004 1:00	5.8		9/1/2004 12:30	6.1		9/2/2004 0:00	6.1	
9/1/2004 1:15	5.1		9/1/2004 12:45	6.4		9/2/2004 0:15	5.4	
9/1/2004 1:30	4.7		9/1/2004 13:00	5.6		9/2/2004 0:30	5.6	
9/1/2004 1:45	4.5		9/1/2004 13:15	5.5		9/2/2004 0:45	8.6	
9/1/2004 2:00	5.3		9/1/2004 13:30	5.2		9/2/2004 1:00	7.8	
9/1/2004 2:15	6.1		9/1/2004 13:45	4.8		9/2/2004 1:15	6.2	
9/1/2004 2:30	6.1		9/1/2004 14:00	4.7		9/2/2004 1:30	5.7	
9/1/2004 2:45	5.3		9/1/2004 14:15	4.4		9/2/2004 1:45	6.1	
9/1/2004 3:00	5.6		9/1/2004 14:30	5.1		9/2/2004 2:00	6.2	
9/1/2004 3:15	7.5		9/1/2004 14:45	5.1		9/2/2004 2:15	6.8	
9/1/2004 3:30	9		9/1/2004 15:00	6.3		9/2/2004 2:30	6.1	
9/1/2004 3:45	6.2		9/1/2004 15:15	5.3		9/2/2004 2:45	6.8	
9/1/2004 4:00	6.5		9/1/2004 15:30	5.1		9/2/2004 3:00	6.4	
9/1/2004 4:15	6.3		9/1/2004 15:45	5.4		9/2/2004 3:15	6.8	
9/1/2004 4:30	6.5		9/1/2004 16:00	5.3		9/2/2004 3:30	5.4	
9/1/2004 4:45	5.8		9/1/2004 16:15	5.1		9/2/2004 3:45	6	
9/1/2004 5:00	5.5		9/1/2004 16:30	5.1		9/2/2004 4:00	6.1	
9/1/2004 5:15	6.2		9/1/2004 16:45	5.4		9/2/2004 4:15	6.2	
9/1/2004 5:30	6.5		9/1/2004 17:00	4.7		9/2/2004 4:30	7.4	
9/1/2004 5:45	9.4		9/1/2004 17:15	5.6		9/2/2004 4:45	6.2	
9/1/2004 6:00	6.8		9/1/2004 17:30	5.3		9/2/2004 5:00	6.1	
9/1/2004 6:15	5.6		9/1/2004 17:45	5.6		9/2/2004 5:15	6.4	
9/1/2004 6:30	5.7		9/1/2004 18:00	5.7		9/2/2004 5:30	6.3	
9/1/2004 6:45	5.9		9/1/2004 18:15	5.3		9/2/2004 5:45	6.7	
9/1/2004 7:00	5.4		9/1/2004 18:30	5		9/2/2004 6:00	5.3	
9/1/2004 7:15	5		9/1/2004 18:45	6		9/2/2004 6:15	6.6	
9/1/2004 7:30	4.9		9/1/2004 19:00	5		9/2/2004 6:30	6.1	
9/1/2004 7:45	5.3		9/1/2004 19:15	5.8		9/2/2004 6:45	5.9	
9/1/2004 8:00	5.4		9/1/2004 19:30	4.8		9/2/2004 7:00	5.2	
9/1/2004 8:15	5		9/1/2004 19:45	5		9/2/2004 7:15	6.2	
9/1/2004 8:30	5.9		9/1/2004 20:00	5.8		9/2/2004 7:30	5.1	
9/1/2004 8:45	8.1		9/1/2004 20:15	7.3		9/2/2004 7:45	6.7	
9/1/2004 9:00	6.3		9/1/2004 20:30	5.2		9/2/2004 8:00	6	
9/1/2004 9:15	6.1		9/1/2004 20:45	5.7		9/2/2004 8:15	5.5	
9/1/2004 9:30	7.3		9/1/2004 21:00	9.1		9/2/2004 8:30	6.3	
9/1/2004 9:45	8.2		9/1/2004 21:15	7		9/2/2004 8:45	6.1	
9/1/2004 10:00	7.8		9/1/2004 21:30	6.1		9/2/2004 9:00	5.7	
9/1/2004 10:15	7.5		9/1/2004 21:45	5.3		9/2/2004 9:15	6.1	
9/1/2004 10:30	6.5		9/1/2004 22:00	6.2		9/2/2004 9:30	6.5	
9/1/2004 10:45	5.3		9/1/2004 22:15	7.2		9/2/2004 9:45	6.1	
9/1/2004 11:00	6.6		9/1/2004 22:30	6.2		9/2/2004 10:00	5.6	
9/1/2004 11:15	5.5		9/1/2004 22:45	5.7		9/2/2004 10:15	8.6	
9/1/2004 11:30	5.5		9/1/2004 23:00	5.5		9/2/2004 10:30	6.7	
9/1/2004 11:45	6.1		9/1/2004 23:15	7.1		9/2/2004 10:45	7.1	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/2/2004 11:00	7		9/2/2004 22:30	8.3		9/3/2004 10:00	5.3	
9/2/2004 11:15	6.7		9/2/2004 22:45	7.4		9/3/2004 10:15	6.5	
9/2/2004 11:30	6.2		9/2/2004 23:00	6.7		9/3/2004 10:30	6.7	
9/2/2004 11:45	6.3		9/2/2004 23:15	6.1		9/3/2004 10:45	7.6	
9/2/2004 12:00	5.2		9/2/2004 23:30	8.1		9/3/2004 11:00	6.6	
9/2/2004 12:15	5.4		9/2/2004 23:45	6.4		9/3/2004 11:15	7.1	
9/2/2004 12:30	6.2		9/3/2004 0:00	5.9		9/3/2004 11:30	6.2	
9/2/2004 12:45	6.7		9/3/2004 0:15	5.3		9/3/2004 11:45	6.3	
9/2/2004 13:00	7.1		9/3/2004 0:30	5.7		9/3/2004 12:00	7.3	
9/2/2004 13:15	6.5		9/3/2004 0:45	6.7		9/3/2004 12:15	7	
9/2/2004 13:30	6		9/3/2004 1:00	6.2		9/3/2004 12:30	6.2	
9/2/2004 13:45	6		9/3/2004 1:15	6.6		9/3/2004 12:45	5.7	
9/2/2004 14:00	6.2		9/3/2004 1:30	6.2		9/3/2004 13:00	5.6	
9/2/2004 14:15	5.2		9/3/2004 1:45	7.7		9/3/2004 13:15	6	
9/2/2004 14:30	6.2		9/3/2004 2:00	5.9		9/3/2004 13:30	6.2	
9/2/2004 14:45	7.5		9/3/2004 2:15	5.5		9/3/2004 13:45	7.5	
9/2/2004 15:00	5.6		9/3/2004 2:30	5.7		9/3/2004 14:00	6.3	
9/2/2004 15:15	5.8		9/3/2004 2:45	5.1		9/3/2004 14:15	5.8	
9/2/2004 15:30	5.5		9/3/2004 3:00	5.6		9/3/2004 14:30	5.7	
9/2/2004 15:45	5.9		9/3/2004 3:15	4.9		9/3/2004 14:45	6	
9/2/2004 16:00	6.5		9/3/2004 3:30	4.6		9/3/2004 15:00	5.8	
9/2/2004 16:15	6.9		9/3/2004 3:45	5.3		9/3/2004 15:15	5.7	
9/2/2004 16:30	7.3		9/3/2004 4:00	5.9		9/3/2004 15:30	5.3	
9/2/2004 16:45	6		9/3/2004 4:15	6.1		9/3/2004 15:45	5.7	
9/2/2004 17:00	5.5		9/3/2004 4:30	6.5		9/3/2004 16:00	6.2	
9/2/2004 17:15	5.2		9/3/2004 4:45	6.1		9/3/2004 16:15	6.1	
9/2/2004 17:30	5.2		9/3/2004 5:00	5.2		9/3/2004 16:30	5.7	
9/2/2004 17:45	5.9		9/3/2004 5:15	5.5		9/3/2004 16:45	5.9	
9/2/2004 18:00	5.9		9/3/2004 5:30	5.6		9/3/2004 17:00	5.6	
9/2/2004 18:15	6.4		9/3/2004 5:45	5.9		9/3/2004 17:15	5.6	
9/2/2004 18:30	6.8		9/3/2004 6:00	5.3		9/3/2004 17:30	5.7	
9/2/2004 18:45	8.1		9/3/2004 6:15	5.6		9/3/2004 17:45	5.4	
9/2/2004 19:00	5.3		9/3/2004 6:30	5.3		9/3/2004 18:00	5.9	
9/2/2004 19:15	5.3		9/3/2004 6:45	5.7		9/3/2004 18:15	5.7	
9/2/2004 19:30	5		9/3/2004 7:00	6.7		9/3/2004 18:30	5	
9/2/2004 19:45	5.2		9/3/2004 7:15	5.4		9/3/2004 18:45	4.9	
9/2/2004 20:00	5.4		9/3/2004 7:30	4.8		9/3/2004 19:00	5	
9/2/2004 20:15	5.6		9/3/2004 7:45	5		9/3/2004 19:15	4.7	
9/2/2004 20:30	5.1		9/3/2004 8:00	5.2		9/3/2004 19:30	5.2	
9/2/2004 20:45	4.8		9/3/2004 8:15	5		9/3/2004 19:45	6.1	
9/2/2004 21:00	5		9/3/2004 8:30	5.3		9/3/2004 20:00	4.8	
9/2/2004 21:15	5.4		9/3/2004 8:45	5.3		9/3/2004 20:15	5.4	
9/2/2004 21:30	5.3		9/3/2004 9:00	8.4		9/3/2004 20:30	5	
9/2/2004 21:45	5.4		9/3/2004 9:15	8.3		9/3/2004 20:45	4.8	
9/2/2004 22:00	7.6		9/3/2004 9:30	5.7		9/3/2004 21:00	4.8	
9/2/2004 22:15	7.3		9/3/2004 9:45	5.6		9/3/2004 21:15	4.6	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/3/2004 21:30	5.3		9/4/2004 9:00	5.7		9/4/2004 20:30	40.5	
9/3/2004 21:45	5.2		9/4/2004 9:15	5.5		9/4/2004 20:45	44.3	
9/3/2004 22:00	5.1		9/4/2004 9:30	5.1		9/4/2004 21:00	30.2	
9/3/2004 22:15	4.7		9/4/2004 9:45	5.3		9/4/2004 21:15	12.4	
9/3/2004 22:30	5.2		9/4/2004 10:00	5.4		9/4/2004 21:30	23.5	
9/3/2004 22:45	6.9		9/4/2004 10:15	5.8		9/4/2004 21:45	45.3	
9/3/2004 23:00	5		9/4/2004 10:30	6.2		9/4/2004 22:00	41.7	
9/3/2004 23:15	7.1		9/4/2004 10:45	6.1		9/4/2004 22:15	50.4	
9/3/2004 23:30	5.6		9/4/2004 11:00	5.4		9/4/2004 22:30	34.8	
9/3/2004 23:45	6.4		9/4/2004 11:15	6.1		9/4/2004 22:45	12.6	
9/4/2004 0:00	5.7		9/4/2004 11:30	6.2		9/4/2004 23:00	13.9	
9/4/2004 0:15	7		9/4/2004 11:45	6.2		9/4/2004 23:15	29.6	
9/4/2004 0:30	6.9		9/4/2004 12:00	6.4		9/4/2004 23:30	44	
9/4/2004 0:45	8.4		9/4/2004 12:15	7.6		9/4/2004 23:45	39.6	
9/4/2004 1:00	6.7		9/4/2004 12:30	16.2		9/5/2004 0:00	16.1	
9/4/2004 1:15	6.7		9/4/2004 12:45	7.8		9/5/2004 0:15	12.4	
9/4/2004 1:30	5.7		9/4/2004 13:00	7.4		9/5/2004 0:30	14.1	
9/4/2004 1:45	5.9		9/4/2004 13:15	7.9		9/5/2004 0:45	13.2	
9/4/2004 2:00	5.9		9/4/2004 13:30	5.6		9/5/2004 1:00	31.4	
9/4/2004 2:15	5.1		9/4/2004 13:45	5.3		9/5/2004 1:15	7.3	
9/4/2004 2:30	6		9/4/2004 14:00	5.4		9/5/2004 1:30	44.6	
9/4/2004 2:45	6.4		9/4/2004 14:15	5		9/5/2004 1:45	56.8	
9/4/2004 3:00	6.3		9/4/2004 14:30	5.2		9/5/2004 2:00	39.9	
9/4/2004 3:15	6		9/4/2004 14:45	6.5		9/5/2004 2:15	17.2	
9/4/2004 3:30	6		9/4/2004 15:00	7		9/5/2004 2:30	16.2	
9/4/2004 3:45	5.1		9/4/2004 15:15	6.8		9/5/2004 2:45	46.9	
9/4/2004 4:00	6.2		9/4/2004 15:30	5.9		9/5/2004 3:00	45.5	
9/4/2004 4:15	5.7		9/4/2004 15:45	6.2		9/5/2004 3:15	62.3	
9/4/2004 4:30	5.5		9/4/2004 16:00	6		9/5/2004 3:30	12.8	
9/4/2004 4:45	5.1		9/4/2004 16:15	5.2		9/5/2004 3:45	17.4	
9/4/2004 5:00	4.8		9/4/2004 16:30	5.8		9/5/2004 4:00	17.3	
9/4/2004 5:15	5		9/4/2004 16:45	5.4		9/5/2004 4:15	52.6	
9/4/2004 5:30	4.8		9/4/2004 17:00	5.7		9/5/2004 4:30	43.2	
9/4/2004 5:45	5.6		9/4/2004 17:15	5.4		9/5/2004 4:45	54.8	
9/4/2004 6:00	5.1		9/4/2004 17:30	5.4		9/5/2004 5:00	13.9	
9/4/2004 6:15	5.1		9/4/2004 17:45	6.2		9/5/2004 5:15	31.6	
9/4/2004 6:30	4.8		9/4/2004 18:00	5.3		9/5/2004 5:30	11.2	
9/4/2004 6:45	5		9/4/2004 18:15	5.6		9/5/2004 5:45	18.1	
9/4/2004 7:00	8		9/4/2004 18:30	5.7		9/5/2004 6:00	6.1	
9/4/2004 7:15	5.6		9/4/2004 18:45	5.9		9/5/2004 6:15	6	
9/4/2004 7:30	7.6		9/4/2004 19:00	5.7		9/5/2004 6:30	5.9	
9/4/2004 7:45	6.5		9/4/2004 19:15	7.8		9/5/2004 6:45	5.3	
9/4/2004 8:00	5		9/4/2004 19:30	13.3		9/5/2004 7:00	5.5	
9/4/2004 8:15	4.7		9/4/2004 19:45	17		9/5/2004 7:15	5.7	
9/4/2004 8:30	5		9/4/2004 20:00	7.2		9/5/2004 7:30	5.9	
9/4/2004 8:45	5.2		9/4/2004 20:15	6.5		9/5/2004 7:45	6.5	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/5/2004 8:00	6.8		9/5/2004 19:30	119.9		9/6/2004 7:00	5	
9/5/2004 8:15	5.1		9/5/2004 19:45	53.7		9/6/2004 7:15	5.6	
9/5/2004 8:30	5.4		9/5/2004 20:00	6.2		9/6/2004 7:30	5.4	
9/5/2004 8:45	6.3		9/5/2004 20:15	43.9		9/6/2004 7:45	5.6	
9/5/2004 9:00	5.8		9/5/2004 20:30	38.9		9/6/2004 8:00	6	
9/5/2004 9:15	5.3		9/5/2004 20:45	18		9/6/2004 8:15	5.8	
9/5/2004 9:30	5		9/5/2004 21:00	21.7		9/6/2004 8:30	5.7	
9/5/2004 9:45	5.1		9/5/2004 21:15	26.9		9/6/2004 8:45	5	
9/5/2004 10:00	5.1		9/5/2004 21:30	54.7		9/6/2004 9:00	5.9	
9/5/2004 10:15	5.1		9/5/2004 21:45	43.4		9/6/2004 9:15	5.4	
9/5/2004 10:30	5		9/5/2004 22:00	50.1		9/6/2004 9:30	5.3	
9/5/2004 10:45	5.6		9/5/2004 22:15	35.6		9/6/2004 9:45	5.1	
9/5/2004 11:00	7.3		9/5/2004 22:30	31.1		9/6/2004 10:00	5.9	
9/5/2004 11:15	6.7		9/5/2004 22:45	21.6		9/6/2004 10:15	5	
9/5/2004 11:30	7.3		9/5/2004 23:00	5.1		9/6/2004 10:30	6.3	
9/5/2004 11:45	7.3		9/5/2004 23:15	5.1		9/6/2004 10:45	5	
9/5/2004 12:00	21.7		9/5/2004 23:30	52.9		9/6/2004 11:00	5.1	
9/5/2004 12:15	7.2		9/5/2004 23:45	49.2		9/6/2004 11:15	5	
9/5/2004 12:30	7		9/6/2004 0:00	51.3		9/6/2004 11:30	4.8	
9/5/2004 12:45	6.8		9/6/2004 0:15	20.2		9/6/2004 11:45	5	
9/5/2004 13:00	6.4		9/6/2004 0:30	20		9/6/2004 12:00	4.7	
9/5/2004 13:15	5.7		9/6/2004 0:45	33.9		9/6/2004 12:15	4.8	
9/5/2004 13:30	5.8		9/6/2004 1:00	23.4		9/6/2004 12:30	4.8	
9/5/2004 13:45	5.7		9/6/2004 1:15	20.6		9/6/2004 12:45	4.7	
9/5/2004 14:00	5.9		9/6/2004 1:30	24.4		9/6/2004 13:00	4.8	
9/5/2004 14:15	6.6		9/6/2004 1:45	32.8		9/6/2004 13:15	5	
9/5/2004 14:30	6.7		9/6/2004 2:00	14.9		9/6/2004 13:30	7.6	
9/5/2004 14:45	5.9		9/6/2004 2:15	63.4		9/6/2004 13:45	7	
9/5/2004 15:00	5.9		9/6/2004 2:30	58.6		9/6/2004 14:00	6.2	
9/5/2004 15:15	5.4		9/6/2004 2:45	16.2		9/6/2004 14:15	8.1	
9/5/2004 15:30	6.3		9/6/2004 3:00	21.1		9/6/2004 14:30	6.4	
9/5/2004 15:45	6.1		9/6/2004 3:15	56		9/6/2004 14:45	5.6	
9/5/2004 16:00	6.1		9/6/2004 3:30	11.9		9/6/2004 15:00	5.3	
9/5/2004 16:15	5.8		9/6/2004 3:45	27.8		9/6/2004 15:15	5	
9/5/2004 16:30	5.8		9/6/2004 4:00	21.4		9/6/2004 15:30	5.1	
9/5/2004 16:45	5.8		9/6/2004 4:15	14.7		9/6/2004 15:45	5	
9/5/2004 17:00	5.4		9/6/2004 4:30	10		9/6/2004 16:00	7.5	
9/5/2004 17:15	6.2		9/6/2004 4:45	52.9		9/6/2004 16:15	8.1	
9/5/2004 17:30	5.5		9/6/2004 5:00	44.1		9/6/2004 16:30	7	
9/5/2004 17:45	5.3		9/6/2004 5:15	27.6		9/6/2004 16:45	5.7	
9/5/2004 18:00	5.4		9/6/2004 5:30	35.8		9/6/2004 17:00	5.3	
9/5/2004 18:15	6.1		9/6/2004 5:45	41.7		9/6/2004 17:15	5.9	
9/5/2004 18:30	6.1		9/6/2004 6:00	5.9		9/6/2004 17:30	5.6	
9/5/2004 18:45	6.4		9/6/2004 6:15	5.3		9/6/2004 17:45	5.4	
9/5/2004 19:00	5.8		9/6/2004 6:30	5		9/6/2004 18:00	5.7	
9/5/2004 19:15	5.7		9/6/2004 6:45	4.8		9/6/2004 18:15	5.3	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/6/2004 18:30	5.1		9/7/2004 6:00	5.3		9/7/2004 17:30	5.3	
9/6/2004 18:45	5		9/7/2004 6:15	5		9/7/2004 17:45	5.3	
9/6/2004 19:00	5.1		9/7/2004 6:30	5.1		9/7/2004 18:00	5.1	
9/6/2004 19:15	22		9/7/2004 6:45	5.2		9/7/2004 18:15	5.2	
9/6/2004 19:30	10.5		9/7/2004 7:00	5.4		9/7/2004 18:30	5.4	
9/6/2004 19:45	6.8		9/7/2004 7:15	5.4		9/7/2004 18:45	5.6	
9/6/2004 20:00	30.1		9/7/2004 7:30	6.2		9/7/2004 19:00	4.9	
9/6/2004 20:15	37.3		9/7/2004 7:45	4.9		9/7/2004 19:15	10.4	
9/6/2004 20:30	48		9/7/2004 8:00	5.4		9/7/2004 19:30	11.4	
9/6/2004 20:45	40.8		9/7/2004 8:15	9.7		9/7/2004 19:45	47.4	
9/6/2004 21:00	41.5		9/7/2004 8:30	5.9		9/7/2004 20:00	15.6	
9/6/2004 21:15	18.2		9/7/2004 8:45	5.4		9/7/2004 20:15	43.7	
9/6/2004 21:30	16.8		9/7/2004 9:00	5.1		9/7/2004 20:30	6.9	
9/6/2004 21:45	8		9/7/2004 9:15	5.8		9/7/2004 20:45	12	
9/6/2004 22:00	5.4		9/7/2004 9:30	5.8		9/7/2004 21:00	7.5	
9/6/2004 22:15	21.7		9/7/2004 9:45	5.1		9/7/2004 21:15	5.3	
9/6/2004 22:30	8.1		9/7/2004 10:00	7.5		9/7/2004 21:30	5.4	
9/6/2004 22:45	33.1		9/7/2004 10:15	6.3		9/7/2004 21:45	6	
9/6/2004 23:00	11.2		9/7/2004 10:30	5.6		9/7/2004 22:00	7.5	
9/6/2004 23:15	11.4		9/7/2004 10:45	6.2		9/7/2004 22:15	5.6	
9/6/2004 23:30	6.4		9/7/2004 11:00	5.4		9/7/2004 22:30	6.5	
9/6/2004 23:45	37.1		9/7/2004 11:15	6.6		9/7/2004 22:45	5.5	
9/7/2004 0:00	5.6		9/7/2004 11:30	10		9/7/2004 23:00	5.7	
9/7/2004 0:15	7.4		9/7/2004 11:45	5.6		9/7/2004 23:15	5.6	
9/7/2004 0:30	4.8		9/7/2004 12:00	5.3		9/7/2004 23:30	6.5	
9/7/2004 0:45	5.6		9/7/2004 12:15	5.1		9/7/2004 23:45	5.6	
9/7/2004 1:00	22.7		9/7/2004 12:30	5.6		9/8/2004 0:00	5	
9/7/2004 1:15	20.9		9/7/2004 12:45	4.9		9/8/2004 0:15	5	
9/7/2004 1:30	28.3		9/7/2004 13:00	5.1		9/8/2004 0:30	4.9	
9/7/2004 1:45	5.6		9/7/2004 13:15	5.3		9/8/2004 0:45	4.5	
9/7/2004 2:00	7.2		9/7/2004 13:30	4.8		9/8/2004 1:00	5.3	
9/7/2004 2:15	9.8		9/7/2004 13:45	5.9		9/8/2004 1:15	4.8	
9/7/2004 2:30	5.2		9/7/2004 14:00	5		9/8/2004 1:30	5.1	
9/7/2004 2:45	5		9/7/2004 14:15	5		9/8/2004 1:45	5	
9/7/2004 3:00	20.2		9/7/2004 14:30	5.9		9/8/2004 2:00	5.1	
9/7/2004 3:15	7		9/7/2004 14:45	6		9/8/2004 2:15	5	
9/7/2004 3:30	6.7		9/7/2004 15:00	6.5		9/8/2004 2:30	4.4	
9/7/2004 3:45	5.7		9/7/2004 15:15	5.3		9/8/2004 2:45	4.7	
9/7/2004 4:00	5.9		9/7/2004 15:30	5.5		9/8/2004 3:00	4.3	
9/7/2004 4:15	6.3		9/7/2004 15:45	5.6		9/8/2004 3:15	4.9	
9/7/2004 4:30	10		9/7/2004 16:00	5.6		9/8/2004 3:30	5.1	
9/7/2004 4:45	9.2		9/7/2004 16:15	5.7		9/8/2004 3:45	5	
9/7/2004 5:00	11.9		9/7/2004 16:30	5.1		9/8/2004 4:00	5.3	
9/7/2004 5:15	62.7		9/7/2004 16:45	5.2		9/8/2004 4:15	7.4	
9/7/2004 5:30	6.7		9/7/2004 17:00	5.1		9/8/2004 4:30	6	
9/7/2004 5:45	41.1		9/7/2004 17:15	5.2		9/8/2004 4:45	6	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/8/2004 5:00	5.9		9/8/2004 16:30	6.1		9/9/2004 4:00	4.2	
9/8/2004 5:15	5.1		9/8/2004 16:45	5.1		9/9/2004 4:15	4.7	
9/8/2004 5:30	5.6		9/8/2004 17:00	6.5		9/9/2004 4:30	24.7	
9/8/2004 5:45	5.1		9/8/2004 17:15	6.2		9/9/2004 4:45	5.4	
9/8/2004 6:00	5.3		9/8/2004 17:30	5.9		9/9/2004 5:00	44	
9/8/2004 6:15	5.3		9/8/2004 17:45	5.9		9/9/2004 5:15	42.8	
9/8/2004 6:30	5		9/8/2004 18:00	6.6		9/9/2004 5:30	42.5	
9/8/2004 6:45	5.8		9/8/2004 18:15	5.2		9/9/2004 5:45	41.1	
9/8/2004 7:00	5.4		9/8/2004 18:30	5.3		9/9/2004 6:00	9.2	
9/8/2004 7:15	5.6		9/8/2004 18:45	5.3		9/9/2004 6:15	5.7	
9/8/2004 7:30	5.2		9/8/2004 19:00	5.6		9/9/2004 6:30	5.3	
9/8/2004 7:45	5.2		9/8/2004 19:15	5.3		9/9/2004 6:45	6.4	
9/8/2004 8:00	5		9/8/2004 19:30	5.5		9/9/2004 7:00	6.2	
9/8/2004 8:15	5.3		9/8/2004 19:45	5.4		9/9/2004 7:15	6.8	
9/8/2004 8:30	5		9/8/2004 20:00	5.9		9/9/2004 7:30	8.3	
9/8/2004 8:45	5.4		9/8/2004 20:15	5.5		9/9/2004 7:45	9.2	
9/8/2004 9:00	8.9		9/8/2004 20:30	6.5		9/9/2004 8:00	6.8	
9/8/2004 9:15	5.1		9/8/2004 20:45	5.4		9/9/2004 8:15	15.1	
9/8/2004 9:30	5.8		9/8/2004 21:00	5.4		9/9/2004 8:30	14.7	
9/8/2004 9:45	5.9		9/8/2004 21:15	4.9		9/9/2004 8:45	12	
9/8/2004 10:00	5.4		9/8/2004 21:30	5.3		9/9/2004 9:00	8.1	
9/8/2004 10:15	5.3		9/8/2004 21:45	5.3		9/9/2004 9:15	14.7	
9/8/2004 10:30	4.9		9/8/2004 22:00	4.7		9/9/2004 9:30	17.5	
9/8/2004 10:45	4.8		9/8/2004 22:15	4.6		9/9/2004 9:45	13.6	
9/8/2004 11:00	5.3		9/8/2004 22:30	4.5		9/9/2004 10:00	18.4	
9/8/2004 11:15	4.7		9/8/2004 22:45	4.5		9/9/2004 10:15	18.8	
9/8/2004 11:30	5.5		9/8/2004 23:00	4.3		9/9/2004 10:30	7.8	
9/8/2004 11:45	5.9		9/8/2004 23:15	4.5		9/9/2004 10:45	6	
9/8/2004 12:00	5.4		9/8/2004 23:30	5		9/9/2004 11:00	6.1	
9/8/2004 12:15	4.9		9/8/2004 23:45	4.4		9/9/2004 11:15	6.1	
9/8/2004 12:30	5.4		9/9/2004 0:00	5.4		9/9/2004 11:30	5.7	
9/8/2004 12:45	5.7		9/9/2004 0:15	4.7		9/9/2004 11:45	6.4	
9/8/2004 13:00	6		9/9/2004 0:30	4.8		9/9/2004 12:00	7.3	
9/8/2004 13:15	4.5		9/9/2004 0:45	4.3		9/9/2004 12:15	5.8	
9/8/2004 13:30	4.3		9/9/2004 1:00	4.4		9/9/2004 12:30	7	
9/8/2004 13:45	4.8		9/9/2004 1:15	5.3		9/9/2004 12:45	5.5	
9/8/2004 14:00	4.2		9/9/2004 1:30	5.9		9/9/2004 13:00	7.5	
9/8/2004 14:15	4		9/9/2004 1:45	4.7		9/9/2004 13:15	6.8	
9/8/2004 14:30	5.2		9/9/2004 2:00	4.8		9/9/2004 13:30	9.1	
9/8/2004 14:45	4.7		9/9/2004 2:15	4.7		9/9/2004 13:45	7	
9/8/2004 15:00	4.7		9/9/2004 2:30	4.9		9/9/2004 14:00	6	
9/8/2004 15:15	6.5		9/9/2004 2:45	5		9/9/2004 14:15	5.7	
9/8/2004 15:30	6.1		9/9/2004 3:00	4.5		9/9/2004 14:30	5.6	
9/8/2004 15:45	6.8		9/9/2004 3:15	4.2		9/9/2004 14:45	5	
9/8/2004 16:00	5.6		9/9/2004 3:30	5		9/9/2004 15:00	5.3	
9/8/2004 16:15	6.3		9/9/2004 3:45	4.2		9/9/2004 15:15	5.1	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/9/2004 15:30	6.3		9/10/2004 3:00	4.7		9/10/2004 14:30	7.6	
9/9/2004 15:45	6.4		9/10/2004 3:15	4.6		9/10/2004 14:45	7.6	
9/9/2004 16:00	7.4		9/10/2004 3:30	5		9/10/2004 15:00	9.7	
9/9/2004 16:15	6.2		9/10/2004 3:45	5.1		9/10/2004 15:15	7.3	
9/9/2004 16:30	7.6		9/10/2004 4:00	5.4		9/10/2004 15:30	6.4	
9/9/2004 16:45	7.9		9/10/2004 4:15	5.2		9/10/2004 15:45	5.6	
9/9/2004 17:00	5.9		9/10/2004 4:30	5.7		9/10/2004 16:00	5.1	
9/9/2004 17:15	6.7		9/10/2004 4:45	5.9		9/10/2004 16:15	5	
9/9/2004 17:30	9.4		9/10/2004 5:00	6.1		9/10/2004 16:30	7.6	
9/9/2004 17:45	7.2		9/10/2004 5:15	6.8		9/10/2004 16:45	7	
9/9/2004 18:00	6.7		9/10/2004 5:30	5.7		9/10/2004 17:00	7.6	
9/9/2004 18:15	6.8		9/10/2004 5:45	5.5		9/10/2004 17:15	5.9	
9/9/2004 18:30	6		9/10/2004 6:00	5.6		9/10/2004 17:30	5.8	
9/9/2004 18:45	5.6		9/10/2004 6:15	6.1		9/10/2004 17:45	5.6	
9/9/2004 19:00	5.3		9/10/2004 6:30	5.5		9/10/2004 18:00	6.2	
9/9/2004 19:15	5.1		9/10/2004 6:45	5.6		9/10/2004 18:15	6.5	
9/9/2004 19:30	6.8		9/10/2004 7:00	5.2		9/10/2004 18:30	6.8	
9/9/2004 19:45	5		9/10/2004 7:15	6.1		9/10/2004 18:45	7	
9/9/2004 20:00	5		9/10/2004 7:30	5.6		9/10/2004 19:00	7.5	
9/9/2004 20:15	5		9/10/2004 7:45	5.5		9/10/2004 19:15	7	
9/9/2004 20:30	5		9/10/2004 8:00	6.4		9/10/2004 19:30	5.9	
9/9/2004 20:45	5.1		9/10/2004 8:15	6.2		9/10/2004 19:45	6.4	
9/9/2004 21:00	5.4		9/10/2004 8:30	5.7		9/10/2004 20:00	5.8	
9/9/2004 21:15	5.1		9/10/2004 8:45	5.5		9/10/2004 20:15	6	
9/9/2004 21:30	4.9		9/10/2004 9:00	5.5		9/10/2004 20:30	5.9	
9/9/2004 21:45	5.1		9/10/2004 9:15	5.8		9/10/2004 20:45	5.7	
9/9/2004 22:00	5.1		9/10/2004 9:30	5.4		9/10/2004 21:00	6.7	
9/9/2004 22:15	5.2		9/10/2004 9:45	5.4		9/10/2004 21:15	14.9	
9/9/2004 22:30	4.9		9/10/2004 10:00	5.1		9/10/2004 21:30	13.9	
9/9/2004 22:45	5.3		9/10/2004 10:15	5.4		9/10/2004 21:45	13.1	
9/9/2004 23:00	5.8		9/10/2004 10:30	5.3		9/10/2004 22:00	12.3	
9/9/2004 23:15	5.2		9/10/2004 10:45	5.3		9/10/2004 22:15	11.7	
9/9/2004 23:30	5.5		9/10/2004 11:00	5		9/10/2004 22:30	8.6	
9/9/2004 23:45	5.7		9/10/2004 11:15	5.2		9/10/2004 22:45	8.7	
9/10/2004 0:00	5.7		9/10/2004 11:30	5.4		9/10/2004 23:00	8.5	
9/10/2004 0:15	5.8		9/10/2004 11:45	5.3		9/10/2004 23:15	8.2	
9/10/2004 0:30	6		9/10/2004 12:00	5		9/10/2004 23:30	8.9	
9/10/2004 0:45	5.8		9/10/2004 12:15	5		9/10/2004 23:45	8.7	
9/10/2004 1:00	5.6		9/10/2004 12:30	5.6		9/11/2004 0:00	8.6	
9/10/2004 1:15	5.4		9/10/2004 12:45	6		9/11/2004 0:15	8.1	
9/10/2004 1:30	5.8		9/10/2004 13:00	5.3		9/11/2004 0:30	8.5	
9/10/2004 1:45	5.7		9/10/2004 13:15	6		9/11/2004 0:45	10.3	
9/10/2004 2:00	5		9/10/2004 13:30	6.3		9/11/2004 1:00	8.3	
9/10/2004 2:15	5		9/10/2004 13:45	5.6		9/11/2004 1:15	7.9	
9/10/2004 2:30	5.4		9/10/2004 14:00	5.7		9/11/2004 1:30	8.1	
9/10/2004 2:45	4.8		9/10/2004 14:15	8.6		9/11/2004 1:45	7.9	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/11/2004 2:00	10.3		9/11/2004 13:30	9		9/12/2004 1:00	15.5	
9/11/2004 2:15	9.8		9/11/2004 13:45	9.4		9/12/2004 1:15	6.5	
9/11/2004 2:30	8.4		9/11/2004 14:00	9.1		9/12/2004 1:30	6.4	
9/11/2004 2:45	8.6		9/11/2004 14:15	9.4		9/12/2004 1:45	10.5	
9/11/2004 3:00	8.9		9/11/2004 14:30	9		9/12/2004 2:00	4.8	
9/11/2004 3:15	8.4		9/11/2004 14:45	10.3		9/12/2004 2:15	5.9	
9/11/2004 3:30	8.2		9/11/2004 15:00	9.8		9/12/2004 2:30	5.2	
9/11/2004 3:45	8.4		9/11/2004 15:15	9.4		9/12/2004 2:45	4.8	
9/11/2004 4:00	8.7		9/11/2004 15:30	9.7		9/12/2004 3:00	10.8	
9/11/2004 4:15	4.6		9/11/2004 15:45	9.6		9/12/2004 3:15	5.9	
9/11/2004 4:30	5.3		9/11/2004 16:00	9.2		9/12/2004 3:30	6.7	
9/11/2004 4:45	6		9/11/2004 16:15	9		9/12/2004 3:45	6.3	
9/11/2004 5:00	9		9/11/2004 16:30	10.3		9/12/2004 4:00	5	
9/11/2004 5:15	8.3		9/11/2004 16:45	16.9		9/12/2004 4:15	5.3	
9/11/2004 5:30	7.9		9/11/2004 17:00	13.6		9/12/2004 4:30	5.8	
9/11/2004 5:45	7		9/11/2004 17:15	9		9/12/2004 4:45	5.7	
9/11/2004 6:00	7.2		9/11/2004 17:30	7.2		9/12/2004 5:00	5.5	
9/11/2004 6:15	7.8		9/11/2004 17:45	8.1		9/12/2004 5:15	5.1	
9/11/2004 6:30	6.5		9/11/2004 18:00	7.8		9/12/2004 5:30	5.3	
9/11/2004 6:45	9		9/11/2004 18:15	7		9/12/2004 5:45	9.3	
9/11/2004 7:00	9		9/11/2004 18:30	7.9		9/12/2004 6:00	7.8	
9/11/2004 7:15	10		9/11/2004 18:45	8.3		9/12/2004 6:15	7.5	
9/11/2004 7:30	14.9		9/11/2004 19:00	6.7		9/12/2004 6:30	7.6	
9/11/2004 7:45	12		9/11/2004 19:15	12.7		9/12/2004 6:45	6.9	
9/11/2004 8:00	10.4		9/11/2004 19:30	7.3		9/12/2004 7:00	5.4	
9/11/2004 8:15	9.9		9/11/2004 19:45	13.9		9/12/2004 7:15	6.4	
9/11/2004 8:30	10.8		9/11/2004 20:00	12.9		9/12/2004 7:30	10.6	
9/11/2004 8:45	10.1		9/11/2004 20:15	5.9		9/12/2004 7:45	7.7	
9/11/2004 9:00	10.1		9/11/2004 20:30	5.7		9/12/2004 8:00	7.6	
9/11/2004 9:15	10.9		9/11/2004 20:45	5.4		9/12/2004 8:15	6.2	
9/11/2004 9:30	9.5		9/11/2004 21:00	5.7		9/12/2004 8:30	6.4	
9/11/2004 9:45	10.8		9/11/2004 21:15	5.5		9/12/2004 8:45	5.9	
9/11/2004 10:00	10.1		9/11/2004 21:30	5.3		9/12/2004 9:00	5.6	
9/11/2004 10:15	9.7		9/11/2004 21:45	8.1		9/12/2004 9:15	5.5	
9/11/2004 10:30	9.6		9/11/2004 22:00	9		9/12/2004 9:30	5.7	
9/11/2004 10:45	9		9/11/2004 22:15	8.7		9/12/2004 9:45	5.6	
9/11/2004 11:00	8.9		9/11/2004 22:30	8.5		9/12/2004 10:00	5.9	
9/11/2004 11:15	8.8		9/11/2004 22:45	8.7		9/12/2004 10:15	5.8	
9/11/2004 11:30	9		9/11/2004 23:00	8.9		9/12/2004 10:30	5.3	
9/11/2004 11:45	9.8		9/11/2004 23:15	9.3		9/12/2004 10:45	5.7	
9/11/2004 12:00	9.2		9/11/2004 23:30	9		9/12/2004 11:00	5.6	
9/11/2004 12:15	9.4		9/11/2004 23:45	8.4		9/12/2004 11:15	9.9	
9/11/2004 12:30	9.8		9/12/2004 0:00	9		9/12/2004 11:30	8.4	
9/11/2004 12:45	9.2		9/12/2004 0:15	10.6		9/12/2004 11:45	6.8	
9/11/2004 13:00	9.9		9/12/2004 0:30	11		9/12/2004 12:00	6.5	
9/11/2004 13:15	9.6		9/12/2004 0:45	13.1		9/12/2004 12:15	5.9	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/12/2004 12:30	6.3		9/13/2004 0:00	5.9		9/13/2004 11:30	5.6	
9/12/2004 12:45	5.7		9/13/2004 0:15	5.5		9/13/2004 11:45	5.2	
9/12/2004 13:00	6.3		9/13/2004 0:30	5.1		9/13/2004 12:00	5.5	
9/12/2004 13:15	6.2		9/13/2004 0:45	5.7		9/13/2004 12:15	4.6	
9/12/2004 13:30	6.5		9/13/2004 1:00	5.3		9/13/2004 12:30	5.3	
9/12/2004 13:45	6.7		9/13/2004 1:15	5.4		9/13/2004 12:45	5.1	
9/12/2004 14:00	6.1		9/13/2004 1:30	5.5		9/13/2004 13:00	5.7	
9/12/2004 14:15	6.9		9/13/2004 1:45	6.7		9/13/2004 13:15	5.1	
9/12/2004 14:30	6.2		9/13/2004 2:00	6.6		9/13/2004 13:30	5.7	
9/12/2004 14:45	52.3		9/13/2004 2:15	5.1		9/13/2004 13:45	5.4	
9/12/2004 15:00	9.6		9/13/2004 2:30	4.9		9/13/2004 14:00	5.4	
9/12/2004 15:15	6.4		9/13/2004 2:45	6		9/13/2004 14:15	5.5	
9/12/2004 15:30	5.8		9/13/2004 3:00	5.4		9/13/2004 14:30	6.5	
9/12/2004 15:45	6		9/13/2004 3:15	5.7		9/13/2004 14:45	5.9	
9/12/2004 16:00	5.3		9/13/2004 3:30	5.7		9/13/2004 15:00	5.9	
9/12/2004 16:15	5.6		9/13/2004 3:45	6.1		9/13/2004 15:15	5.9	
9/12/2004 16:30	5.6		9/13/2004 4:00	4.9		9/13/2004 15:30	5.4	
9/12/2004 16:45	5.3		9/13/2004 4:15	6.7		9/13/2004 15:45	5.1	
9/12/2004 17:00	5.6		9/13/2004 4:30	5.9		9/13/2004 16:00	4.9	
9/12/2004 17:15	5.5		9/13/2004 4:45	5.1		9/13/2004 16:15	6.4	
9/12/2004 17:30	5.3		9/13/2004 5:00	5.1		9/13/2004 16:30	5.3	
9/12/2004 17:45	8.3		9/13/2004 5:15	4.5		9/13/2004 16:45	4.8	
9/12/2004 18:00	7.5		9/13/2004 5:30	4.8		9/13/2004 17:00	4.9	
9/12/2004 18:15	7.3		9/13/2004 5:45	4.8		9/13/2004 17:15	5.5	
9/12/2004 18:30	6		9/13/2004 6:00	5.4		9/13/2004 17:30	4.7	
9/12/2004 18:45	5.9		9/13/2004 6:15	9.3		9/13/2004 17:45	5	
9/12/2004 19:00	6.4		9/13/2004 6:30	7.3		9/13/2004 18:00	4.9	
9/12/2004 19:15	5.4		9/13/2004 6:45	7.4		9/13/2004 18:15	4.6	
9/12/2004 19:30	5.8		9/13/2004 7:00	8.6		9/13/2004 18:30	4.9	
9/12/2004 19:45	5.9		9/13/2004 7:15	7.9		9/13/2004 18:45	6.9	
9/12/2004 20:00	5.6		9/13/2004 7:30	7.4		9/13/2004 19:00	7.5	
9/12/2004 20:15	5.2		9/13/2004 7:45	5.9		9/13/2004 19:15	7.1	
9/12/2004 20:30	5.4		9/13/2004 8:00	6.5		9/13/2004 19:30	7.8	
9/12/2004 20:45	6.2		9/13/2004 8:15	5.3		9/13/2004 19:45	7.2	
9/12/2004 21:00	5.4		9/13/2004 8:30	5.4		9/13/2004 20:00	5.6	
9/12/2004 21:15	5.9		9/13/2004 8:45	5.8		9/13/2004 20:15	5.6	
9/12/2004 21:30	8.7		9/13/2004 9:00	5.1		9/13/2004 20:30	5.1	
9/12/2004 21:45	6		9/13/2004 9:15	5.1		9/13/2004 20:45	5.1	
9/12/2004 22:00	6.2		9/13/2004 9:30	6.2		9/13/2004 21:00	6.2	
9/12/2004 22:15	5.4		9/13/2004 9:45	5.7		9/13/2004 21:15	5.8	
9/12/2004 22:30	5		9/13/2004 10:00	6.1		9/13/2004 21:30	5.8	
9/12/2004 22:45	5.3		9/13/2004 10:15	5.8		9/13/2004 21:45	5.7	
9/12/2004 23:00	5.3		9/13/2004 10:30	5.7		9/13/2004 22:00	5.7	
9/12/2004 23:15	5.3		9/13/2004 10:45	5.6		9/13/2004 22:15	5.9	
9/12/2004 23:30	5.5		9/13/2004 11:00	5.4		9/13/2004 22:30	5.6	
9/12/2004 23:45	6		9/13/2004 11:15	4.8		9/13/2004 22:45	5.6	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/13/2004 23:00	5.4		9/14/2004 10:30	6.2		9/14/2004 22:00	-200	
9/13/2004 23:15	6.4		9/14/2004 10:45	6.4		9/14/2004 22:15	-71	
9/13/2004 23:30	6.6		9/14/2004 11:00	6.1		9/14/2004 22:30	-200	
9/13/2004 23:45	6.1		9/14/2004 11:15	5.4		9/14/2004 22:45	-200	
9/14/2004 0:00	5.1		9/14/2004 11:30	5.6		9/14/2004 23:00	-200	
9/14/2004 0:15	5.8		9/14/2004 11:45	5.2		9/14/2004 23:15	-200	
9/14/2004 0:30	5.4		9/14/2004 12:00	5		9/14/2004 23:30	-200	
9/14/2004 0:45	5.3		9/14/2004 12:15	5.3		9/14/2004 23:45	-200	
9/14/2004 1:00	5.5		9/14/2004 12:30	5.5		9/15/2004 0:00	-200	
9/14/2004 1:15	5.4		9/14/2004 12:45	5.9		9/15/2004 0:15	-200	
9/14/2004 1:30	5.7		9/14/2004 13:00	5.1		9/15/2004 0:30	-200	
9/14/2004 1:45	5.5		9/14/2004 13:15	5.6		9/15/2004 0:45	-200	
9/14/2004 2:00	6.8		9/14/2004 13:30	6.6		9/15/2004 1:00	-200	
9/14/2004 2:15	5.6		9/14/2004 13:45	5.5		9/15/2004 1:15	-200	
9/14/2004 2:30	5.9		9/14/2004 14:00	5.6		9/15/2004 1:30	-200	
9/14/2004 2:45	5.5		9/14/2004 14:15	5.3		9/15/2004 1:45	-200	
9/14/2004 3:00	5.6		9/14/2004 14:30	5.1		9/15/2004 2:00	-200	
9/14/2004 3:15	5.9		9/14/2004 14:45	5.7		9/15/2004 2:15	-200	
9/14/2004 3:30	5.6		9/14/2004 15:00	5		9/15/2004 2:30	-200	
9/14/2004 3:45	5.3		9/14/2004 15:15	6.9		9/15/2004 2:45	-200	
9/14/2004 4:00	5.5		9/14/2004 15:30	5.9		9/15/2004 3:00	-200	
9/14/2004 4:15	6.4		9/14/2004 15:45	5.3		9/15/2004 3:15	-200	
9/14/2004 4:30	5.3		9/14/2004 16:00	5.9		9/15/2004 3:30	-200	
9/14/2004 4:45	4.8		9/14/2004 16:15	6.3		9/15/2004 3:45	-200	
9/14/2004 5:00	5		9/14/2004 16:30	405.8		9/15/2004 4:00	-200	
9/14/2004 5:15	4.5		9/14/2004 16:45	7.6		9/15/2004 4:15	-200	
9/14/2004 5:30	4.5		9/14/2004 17:00	6.2		9/15/2004 4:30	-200	
9/14/2004 5:45	4.9		9/14/2004 17:15	5.6		9/15/2004 4:45	-200	
9/14/2004 6:00	6.1		9/14/2004 17:30	5.1		9/15/2004 5:00	-200	
9/14/2004 6:15	5.7		9/14/2004 17:45	106.5		9/15/2004 5:15	-200	
9/14/2004 6:30	5.4		9/14/2004 18:00	-162.9		9/15/2004 5:30	-200	
9/14/2004 6:45	4.9		9/14/2004 18:15	-200		9/15/2004 5:45	-200	
9/14/2004 7:00	8.2		9/14/2004 18:30	-200		9/15/2004 6:00	-200	
9/14/2004 7:15	5.3		9/14/2004 18:45	-200		9/15/2004 6:15	-200	
9/14/2004 7:30	9.4		9/14/2004 19:00	-200		9/15/2004 6:30	-200	
9/14/2004 7:45	6.5		9/14/2004 19:15	-200		9/15/2004 6:45	-200	
9/14/2004 8:00	6.7		9/14/2004 19:30	-200		9/15/2004 7:00	-200	
9/14/2004 8:15	5.8		9/14/2004 19:45	-200		9/15/2004 7:15	-200	
9/14/2004 8:30	5.4		9/14/2004 20:00	-200		9/15/2004 7:30	-200	
9/14/2004 8:45	7		9/14/2004 20:15	-200		9/15/2004 7:45	-200	
9/14/2004 9:00	5		9/14/2004 20:30	-200		9/15/2004 8:00	-200	
9/14/2004 9:15	5.9		9/14/2004 20:45	-200		9/15/2004 8:15	-200	
9/14/2004 9:30	6.6		9/14/2004 21:00	-200		9/15/2004 8:30	-200	
9/14/2004 9:45	5.1		9/14/2004 21:15	-200		9/15/2004 8:45	-200	
9/14/2004 10:00	5.8		9/14/2004 21:30	-200		9/15/2004 9:00	-200	
9/14/2004 10:15	6.4		9/14/2004 21:45	-200		9/15/2004 9:15	-200	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/15/2004 9:30	-200		9/15/2004 21:00	-200		9/16/2004 8:30	-200	
9/15/2004 9:45	-200		9/15/2004 21:15	-200		9/16/2004 8:45	-200	
9/15/2004 10:00	-200		9/15/2004 21:30	-200		9/16/2004 9:00	-200	
9/15/2004 10:15	-200		9/15/2004 21:45	-200		9/16/2004 9:15	-200	
9/15/2004 10:30	-200		9/15/2004 22:00	-200		9/16/2004 9:30	-200	
9/15/2004 10:45	-200		9/15/2004 22:15	-200		9/16/2004 9:45	-200	
9/15/2004 11:00	-200		9/15/2004 22:30	-200		9/16/2004 10:00	-200	
9/15/2004 11:15	-200		9/15/2004 22:45	-200		9/16/2004 10:15	-200	
9/15/2004 11:30	-200		9/15/2004 23:00	-200		9/16/2004 10:30	-200	
9/15/2004 11:45	-200		9/15/2004 23:15	-200		9/16/2004 10:45	-200	
9/15/2004 12:00	-200		9/15/2004 23:30	-200		9/16/2004 11:00	-200	
9/15/2004 12:15	-200		9/15/2004 23:45	-200		9/16/2004 11:15	-200	
9/15/2004 12:30	-200		9/16/2004 0:00	-172.6		9/16/2004 11:30	-200	
9/15/2004 12:45	-200		9/16/2004 0:15	-200		9/16/2004 11:45	-200	
9/15/2004 13:00	-200		9/16/2004 0:30	-200		9/16/2004 12:00	-200	
9/15/2004 13:15	-200		9/16/2004 0:45	-200		9/16/2004 12:15	-200	
9/15/2004 13:30	-200		9/16/2004 1:00	-200		9/16/2004 12:30	-200	
9/15/2004 13:45	-200		9/16/2004 1:15	-200		9/16/2004 12:45	-200	
9/15/2004 14:00	-200		9/16/2004 1:30	-200		9/16/2004 13:00	-200	
9/15/2004 14:15	-200		9/16/2004 1:45	-200		9/16/2004 13:15	-200	
9/15/2004 14:30	-200		9/16/2004 2:00	-200		9/16/2004 13:30	-200	
9/15/2004 14:45	-200		9/16/2004 2:15	-200		9/16/2004 13:45	-200	
9/15/2004 15:00	-200		9/16/2004 2:30	-200		9/16/2004 14:00	-200	
9/15/2004 15:15	-200		9/16/2004 2:45	-200		9/16/2004 14:15	-200	
9/15/2004 15:30	-200		9/16/2004 3:00	-200		9/16/2004 14:30	-200	
9/15/2004 15:45	-200		9/16/2004 3:15	-200		9/16/2004 14:45	-200	
9/15/2004 16:00	-200		9/16/2004 3:30	-200		9/16/2004 15:00	-200	
9/15/2004 16:15	-200		9/16/2004 3:45	-200		9/16/2004 15:15	-200	
9/15/2004 16:30	-200		9/16/2004 4:00	-200		9/16/2004 15:30	-200	
9/15/2004 16:45	-200		9/16/2004 4:15	-200		9/16/2004 15:45	-200	
9/15/2004 17:00	-200		9/16/2004 4:30	-200		9/16/2004 16:00	-200	
9/15/2004 17:15	-200		9/16/2004 4:45	-200		9/16/2004 16:15	-200	
9/15/2004 17:30	-200		9/16/2004 5:00	-200		9/16/2004 16:30	-200	
9/15/2004 17:45	-200		9/16/2004 5:15	-200		9/16/2004 16:45	-200	
9/15/2004 18:00	-200		9/16/2004 5:30	-200		9/16/2004 17:00	-200	
9/15/2004 18:15	-200		9/16/2004 5:45	-200		9/16/2004 17:15	-200	
9/15/2004 18:30	-200		9/16/2004 6:00	-200		9/16/2004 17:30	-200	
9/15/2004 18:45	-200		9/16/2004 6:15	-200		9/16/2004 17:45	-200	
9/15/2004 19:00	-200		9/16/2004 6:30	-200		9/16/2004 18:00	-200	
9/15/2004 19:15	-200		9/16/2004 6:45	-200		9/16/2004 18:15	-200	
9/15/2004 19:30	-200		9/16/2004 7:00	-200		9/16/2004 18:30	-200	
9/15/2004 19:45	-200		9/16/2004 7:15	-200		9/16/2004 18:45	-200	
9/15/2004 20:00	-200		9/16/2004 7:30	-200		9/16/2004 19:00	-200	
9/15/2004 20:15	-200		9/16/2004 7:45	-200		9/16/2004 19:15	-200	
9/15/2004 20:30	-200		9/16/2004 8:00	-200		9/16/2004 19:30	-200	
9/15/2004 20:45	-200		9/16/2004 8:15	-200		9/16/2004 19:45	-200	

APPENDIX D2

PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/16/2004 20:00	-200		9/17/2004 7:30	-200		9/17/2004 19:00	-200	
9/16/2004 20:15	-200		9/17/2004 7:45	-200		9/17/2004 19:15	-200	
9/16/2004 20:30	-200		9/17/2004 8:00	-200		9/17/2004 19:30	-200	
9/16/2004 20:45	-200		9/17/2004 8:15	-200		9/17/2004 19:45	-200	
9/16/2004 21:00	-200		9/17/2004 8:30	-200		9/17/2004 20:00	-200	
9/16/2004 21:15	-200		9/17/2004 8:45	-200		9/17/2004 20:15	-200	
9/16/2004 21:30	-200		9/17/2004 9:00	-200		9/17/2004 20:30	-200	
9/16/2004 21:45	-200		9/17/2004 9:15	-200		9/17/2004 20:45	-200	
9/16/2004 22:00	-200		9/17/2004 9:30	-200		9/17/2004 21:00	-200	
9/16/2004 22:15	-200		9/17/2004 9:45	-200		9/17/2004 21:15	-200	
9/16/2004 22:30	-200		9/17/2004 10:00	-200		9/17/2004 21:30	-200	
9/16/2004 22:45	-200		9/17/2004 10:15	-200		9/17/2004 21:45	-200	
9/16/2004 23:00	-200		9/17/2004 10:30	-200		9/17/2004 22:00	-200	
9/16/2004 23:15	-200		9/17/2004 10:45	-200		9/17/2004 22:15	-200	
9/16/2004 23:30	-200		9/17/2004 11:00	-200		9/17/2004 22:30	-200	
9/16/2004 23:45	-200		9/17/2004 11:15	-200		9/17/2004 22:45	-200	
9/17/2004 0:00	-200		9/17/2004 11:30	-200		9/17/2004 23:00	-200	
9/17/2004 0:15	-200		9/17/2004 11:45	-200		9/17/2004 23:15	-200	
9/17/2004 0:30	-200		9/17/2004 12:00	-200		9/17/2004 23:30	-200	
9/17/2004 0:45	-200		9/17/2004 12:15	-200		9/17/2004 23:45	-200	
9/17/2004 1:00	-200		9/17/2004 12:30	-200		9/18/2004 0:00	-200	
9/17/2004 1:15	-200		9/17/2004 12:45	-200		9/18/2004 0:15	-200	
9/17/2004 1:30	-200		9/17/2004 13:00	-200		9/18/2004 0:30	-200	
9/17/2004 1:45	-200		9/17/2004 13:15	-200		9/18/2004 0:45	-200	
9/17/2004 2:00	-200		9/17/2004 13:30	-200		9/18/2004 1:00	-200	
9/17/2004 2:15	-200		9/17/2004 13:45	-200		9/18/2004 1:15	-200	
9/17/2004 2:30	-200		9/17/2004 14:00	-200		9/18/2004 1:30	-200	
9/17/2004 2:45	-200		9/17/2004 14:15	-200		9/18/2004 1:45	-200	
9/17/2004 3:00	-200		9/17/2004 14:30	-200		9/18/2004 2:00	-200	
9/17/2004 3:15	-200		9/17/2004 14:45	-200		9/18/2004 2:15	-200	
9/17/2004 3:30	-200		9/17/2004 15:00	-200		9/18/2004 2:30	-200	
9/17/2004 3:45	-200		9/17/2004 15:15	-194.2		9/18/2004 2:45	-200	
9/17/2004 4:00	-200		9/17/2004 15:30	-200		9/18/2004 3:00	-200	
9/17/2004 4:15	-200		9/17/2004 15:45	-200		9/18/2004 3:15	-200	
9/17/2004 4:30	-200		9/17/2004 16:00	-200		9/18/2004 3:30	-200	
9/17/2004 4:45	-200		9/17/2004 16:15	-200		9/18/2004 3:45	-200	
9/17/2004 5:00	-200		9/17/2004 16:30	-200		9/18/2004 4:00	-200	
9/17/2004 5:15	-200		9/17/2004 16:45	-200		9/18/2004 4:15	-200	
9/17/2004 5:30	-200		9/17/2004 17:00	-200		9/18/2004 4:30	-200	
9/17/2004 5:45	-200		9/17/2004 17:15	-200		9/18/2004 4:45	-200	
9/17/2004 6:00	-200		9/17/2004 17:30	-200		9/18/2004 5:00	-200	
9/17/2004 6:15	-200		9/17/2004 17:45	-200		9/18/2004 5:15	-200	
9/17/2004 6:30	-200		9/17/2004 18:00	-200		9/18/2004 5:30	-200	
9/17/2004 6:45	-200		9/17/2004 18:15	-200		9/18/2004 5:45	-200	
9/17/2004 7:00	-200		9/17/2004 18:30	-200		9/18/2004 6:00	-200	
9/17/2004 7:15	-200		9/17/2004 18:45	-200		9/18/2004 6:15	-200	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/18/2004 6:30	-200		9/18/2004 18:00	-200		9/19/2004 5:30	-200	
9/18/2004 6:45	-200		9/18/2004 18:15	-200		9/19/2004 5:45	-200	
9/18/2004 7:00	-200		9/18/2004 18:30	-200		9/19/2004 6:00	-200	
9/18/2004 7:15	-200		9/18/2004 18:45	-200		9/19/2004 6:15	-200	
9/18/2004 7:30	-200		9/18/2004 19:00	-200		9/19/2004 6:30	-200	
9/18/2004 7:45	-200		9/18/2004 19:15	-200		9/19/2004 6:45	-200	
9/18/2004 8:00	-200		9/18/2004 19:30	-200		9/19/2004 7:00	-200	
9/18/2004 8:15	-200		9/18/2004 19:45	-200		9/19/2004 7:15	-200	
9/18/2004 8:30	-200		9/18/2004 20:00	-200		9/19/2004 7:30	-200	
9/18/2004 8:45	-200		9/18/2004 20:15	-200		9/19/2004 7:45	-200	
9/18/2004 9:00	-200		9/18/2004 20:30	-200		9/19/2004 8:00	-200	
9/18/2004 9:15	-200		9/18/2004 20:45	-200		9/19/2004 8:15	-200	
9/18/2004 9:30	-200		9/18/2004 21:00	-200		9/19/2004 8:30	-200	
9/18/2004 9:45	-200		9/18/2004 21:15	-200		9/19/2004 8:45	-200	
9/18/2004 10:00	-200		9/18/2004 21:30	-200		9/19/2004 9:00	-200	
9/18/2004 10:15	-200		9/18/2004 21:45	-200		9/19/2004 9:15	-200	
9/18/2004 10:30	-200		9/18/2004 22:00	-200		9/19/2004 9:30	-200	
9/18/2004 10:45	-200		9/18/2004 22:15	-200		9/19/2004 9:45	-200	
9/18/2004 11:00	-200		9/18/2004 22:30	-200		9/19/2004 10:00	-200	
9/18/2004 11:15	-200		9/18/2004 22:45	-200		9/19/2004 10:15	-200	
9/18/2004 11:30	-200		9/18/2004 23:00	-200		9/19/2004 10:30	-200	
9/18/2004 11:45	-200		9/18/2004 23:15	-200		9/19/2004 10:45	-200	
9/18/2004 12:00	-200		9/18/2004 23:30	-200		9/19/2004 11:00	-200	
9/18/2004 12:15	-200		9/18/2004 23:45	-200		9/19/2004 11:15	-200	
9/18/2004 12:30	-200		9/19/2004 0:00	-200		9/19/2004 11:30	-200	
9/18/2004 12:45	-200		9/19/2004 0:15	-200		9/19/2004 11:45	-200	
9/18/2004 13:00	-200		9/19/2004 0:30	-200		9/19/2004 12:00	-200	
9/18/2004 13:15	-200		9/19/2004 0:45	-200		9/19/2004 12:15	-200	
9/18/2004 13:30	-200		9/19/2004 1:00	-200		9/19/2004 12:30	-200	
9/18/2004 13:45	-200		9/19/2004 1:15	-200		9/19/2004 12:45	-200	
9/18/2004 14:00	-200		9/19/2004 1:30	-200		9/19/2004 13:00	-200	
9/18/2004 14:15	-200		9/19/2004 1:45	-200		9/19/2004 13:15	-200	
9/18/2004 14:30	-200		9/19/2004 2:00	-200		9/19/2004 13:30	-200	
9/18/2004 14:45	-200		9/19/2004 2:15	-200		9/19/2004 13:45	-200	
9/18/2004 15:00	-200		9/19/2004 2:30	-197.3		9/19/2004 14:00	-200	
9/18/2004 15:15	-200		9/19/2004 2:45	-200		9/19/2004 14:15	-200	
9/18/2004 15:30	-200		9/19/2004 3:00	-200		9/19/2004 14:30	-200	
9/18/2004 15:45	-200		9/19/2004 3:15	-200		9/19/2004 14:45	-200	
9/18/2004 16:00	-200		9/19/2004 3:30	-200		9/19/2004 15:00	-200	
9/18/2004 16:15	-200		9/19/2004 3:45	-200		9/19/2004 15:15	-200	
9/18/2004 16:30	-200		9/19/2004 4:00	-200		9/19/2004 15:30	-200	
9/18/2004 16:45	-200		9/19/2004 4:15	-200		9/19/2004 15:45	-200	
9/18/2004 17:00	-200		9/19/2004 4:30	-200		9/19/2004 16:00	-200	
9/18/2004 17:15	-200		9/19/2004 4:45	-200		9/19/2004 16:15	-200	
9/18/2004 17:30	-200		9/19/2004 5:00	-200		9/19/2004 16:30	-200	
9/18/2004 17:45	-200		9/19/2004 5:15	-200		9/19/2004 16:45	-200	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/19/2004 17:00	-200		9/20/2004 4:30	-200		9/20/2004 16:00	-200	
9/19/2004 17:15	-200		9/20/2004 4:45	-200		9/20/2004 16:15	-200	
9/19/2004 17:30	-200		9/20/2004 5:00	-200		9/20/2004 16:30	-200	
9/19/2004 17:45	-200		9/20/2004 5:15	-200		9/20/2004 16:45	-187.5	
9/19/2004 18:00	-200		9/20/2004 5:30	-200		9/20/2004 17:00	-200	
9/19/2004 18:15	-200		9/20/2004 5:45	-200		9/20/2004 17:15	-200	
9/19/2004 18:30	-200		9/20/2004 6:00	-200		9/20/2004 17:30	-200	
9/19/2004 18:45	-200		9/20/2004 6:15	-200		9/20/2004 17:45	-200	
9/19/2004 19:00	-200		9/20/2004 6:30	-200		9/20/2004 18:00	-200	
9/19/2004 19:15	-200		9/20/2004 6:45	-200		9/20/2004 18:15	-200	
9/19/2004 19:30	-200		9/20/2004 7:00	-200		9/20/2004 18:30	-200	
9/19/2004 19:45	-200		9/20/2004 7:15	-200		9/20/2004 18:45	-200	
9/19/2004 20:00	-200		9/20/2004 7:30	-200		9/20/2004 19:00	-200	
9/19/2004 20:15	-200		9/20/2004 7:45	-200		9/20/2004 19:15	-200	
9/19/2004 20:30	-200		9/20/2004 8:00	-200		9/20/2004 19:30	-200	
9/19/2004 20:45	-200		9/20/2004 8:15	-200		9/20/2004 19:45	-200	
9/19/2004 21:00	-200		9/20/2004 8:30	-200		9/20/2004 20:00	-200	
9/19/2004 21:15	-200		9/20/2004 8:45	-200		9/20/2004 20:15	-200	
9/19/2004 21:30	-200		9/20/2004 9:00	-200		9/20/2004 20:30	-200	
9/19/2004 21:45	-200		9/20/2004 9:15	-200		9/20/2004 20:45	-200	
9/19/2004 22:00	-200		9/20/2004 9:30	-200		9/20/2004 21:00	-200	
9/19/2004 22:15	-200		9/20/2004 9:45	-200		9/20/2004 21:15	-200	
9/19/2004 22:30	-200		9/20/2004 10:00	-200		9/20/2004 21:30	-200	
9/19/2004 22:45	-200		9/20/2004 10:15	-200		9/20/2004 21:45	-200	
9/19/2004 23:00	-200		9/20/2004 10:30	-200		9/20/2004 22:00	-200	
9/19/2004 23:15	-200		9/20/2004 10:45	-200		9/20/2004 22:15	-200	
9/19/2004 23:30	-200		9/20/2004 11:00	-200		9/20/2004 22:30	-200	
9/19/2004 23:45	-200		9/20/2004 11:15	-200		9/20/2004 22:45	-200	
9/20/2004 0:00	-200		9/20/2004 11:30	-200		9/20/2004 23:00	-200	
9/20/2004 0:15	-200		9/20/2004 11:45	-200		9/20/2004 23:15	-200	
9/20/2004 0:30	-200		9/20/2004 12:00	-200		9/20/2004 23:30	-200	
9/20/2004 0:45	-200		9/20/2004 12:15	-200		9/20/2004 23:45	-200	
9/20/2004 1:00	-200		9/20/2004 12:30	-200		9/21/2004 0:00	-200	
9/20/2004 1:15	-200		9/20/2004 12:45	-200		9/21/2004 0:15	-200	
9/20/2004 1:30	-200		9/20/2004 13:00	-200		9/21/2004 0:30	-200	
9/20/2004 1:45	-200		9/20/2004 13:15	-200		9/21/2004 0:45	-200	
9/20/2004 2:00	-200		9/20/2004 13:30	-200		9/21/2004 1:00	-200	
9/20/2004 2:15	-200		9/20/2004 13:45	-200		9/21/2004 1:15	-200	
9/20/2004 2:30	-200		9/20/2004 14:00	-200		9/21/2004 1:30	-200	
9/20/2004 2:45	-200		9/20/2004 14:15	-200		9/21/2004 1:45	-200	
9/20/2004 3:00	-200		9/20/2004 14:30	-200		9/21/2004 2:00	-200	
9/20/2004 3:15	-200		9/20/2004 14:45	-200		9/21/2004 2:15	-200	
9/20/2004 3:30	-200		9/20/2004 15:00	-200		9/21/2004 2:30	-200	
9/20/2004 3:45	-200		9/20/2004 15:15	-200		9/21/2004 2:45	-200	
9/20/2004 4:00	-200		9/20/2004 15:30	-200		9/21/2004 3:00	-200	
9/20/2004 4:15	-200		9/20/2004 15:45	-200		9/21/2004 3:15	-200	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/21/2004 3:30	-200		9/21/2004 15:00	-200		9/22/2004 2:30	-200	
9/21/2004 3:45	-200		9/21/2004 15:15	-200		9/22/2004 2:45	-200	
9/21/2004 4:00	-200		9/21/2004 15:30	-200		9/22/2004 3:00	-200	
9/21/2004 4:15	-200		9/21/2004 15:45	-200		9/22/2004 3:15	-200	
9/21/2004 4:30	-200		9/21/2004 16:00	-200		9/22/2004 3:30	-200	
9/21/2004 4:45	-200		9/21/2004 16:15	-200		9/22/2004 3:45	-200	
9/21/2004 5:00	-200		9/21/2004 16:30	-200		9/22/2004 4:00	-200	
9/21/2004 5:15	-200		9/21/2004 16:45	-200		9/22/2004 4:15	-200	
9/21/2004 5:30	-200		9/21/2004 17:00	-200		9/22/2004 4:30	-200	
9/21/2004 5:45	-200		9/21/2004 17:15	-196.5		9/22/2004 4:45	-200	
9/21/2004 6:00	-200		9/21/2004 17:30	-200		9/22/2004 5:00	-200	
9/21/2004 6:15	-200		9/21/2004 17:45	-200		9/22/2004 5:15	-200	
9/21/2004 6:30	-200		9/21/2004 18:00	-200		9/22/2004 5:30	-200	
9/21/2004 6:45	-200		9/21/2004 18:15	-200		9/22/2004 5:45	-200	
9/21/2004 7:00	-196.2		9/21/2004 18:30	-200		9/22/2004 6:00	-200	
9/21/2004 7:15	-200		9/21/2004 18:45	-200		9/22/2004 6:15	-200	
9/21/2004 7:30	-200		9/21/2004 19:00	-200		9/22/2004 6:30	-200	
9/21/2004 7:45	-200		9/21/2004 19:15	-200		9/22/2004 6:45	-200	
9/21/2004 8:00	-200		9/21/2004 19:30	-200		9/22/2004 7:00	-200	
9/21/2004 8:15	-200		9/21/2004 19:45	-200		9/22/2004 7:15	-200	
9/21/2004 8:30	-200		9/21/2004 20:00	-200		9/22/2004 7:30	-200	
9/21/2004 8:45	-200		9/21/2004 20:15	-200		9/22/2004 7:45	-200	
9/21/2004 9:00	-200		9/21/2004 20:30	-200		9/22/2004 8:00	-200	
9/21/2004 9:15	-200		9/21/2004 20:45	-200		9/22/2004 8:15	-200	
9/21/2004 9:30	-200		9/21/2004 21:00	-200		9/22/2004 8:30	-200	
9/21/2004 9:45	-200		9/21/2004 21:15	-200		9/22/2004 8:45	-200	
9/21/2004 10:00	-200		9/21/2004 21:30	-200		9/22/2004 9:00	-200	
9/21/2004 10:15	-200		9/21/2004 21:45	-200		9/22/2004 9:15	-200	
9/21/2004 10:30	-200		9/21/2004 22:00	-200		9/22/2004 9:30	-200	
9/21/2004 10:45	-200		9/21/2004 22:15	-200		9/22/2004 9:45	-200	
9/21/2004 11:00	-200		9/21/2004 22:30	-200		9/22/2004 10:00	-200	
9/21/2004 11:15	-200		9/21/2004 22:45	-200		9/22/2004 10:15	-200	
9/21/2004 11:30	-200		9/21/2004 23:00	-200		9/22/2004 10:30	-200	
9/21/2004 11:45	-200		9/21/2004 23:15	-200		9/22/2004 10:45	-200	
9/21/2004 12:00	-200		9/21/2004 23:30	-200		9/22/2004 11:00	-200	
9/21/2004 12:15	-200		9/21/2004 23:45	-200		9/22/2004 11:15	-200	
9/21/2004 12:30	-200		9/22/2004 0:00	-200		9/22/2004 11:30	-200	
9/21/2004 12:45	-200		9/22/2004 0:15	-200		9/22/2004 11:45	-200	
9/21/2004 13:00	-200		9/22/2004 0:30	-200		9/22/2004 12:00	-200	
9/21/2004 13:15	-200		9/22/2004 0:45	-200		9/22/2004 12:15	-200	
9/21/2004 13:30	-200		9/22/2004 1:00	-200		9/22/2004 12:30	-200	
9/21/2004 13:45	-200		9/22/2004 1:15	-200		9/22/2004 12:45	-200	
9/21/2004 14:00	-200		9/22/2004 1:30	-200		9/22/2004 13:00	-200	
9/21/2004 14:15	-200		9/22/2004 1:45	-200		9/22/2004 13:15	-200	
9/21/2004 14:30	-200		9/22/2004 2:00	-200		9/22/2004 13:30	-200	
9/21/2004 14:45	-200		9/22/2004 2:15	-200		9/22/2004 13:45	-200	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/22/2004 14:00	-200		9/23/2004 3:00	-4.4		9/23/2004 14:30	-4.6	
9/22/2004 14:15	-200		9/23/2004 3:15	-4.4		9/23/2004 14:45	-4.5	
9/22/2004 14:30	-200		9/23/2004 3:30	-4.4		9/23/2004 15:00	2	
9/22/2004 14:45	-200		9/23/2004 3:45	1.2		9/23/2004 15:15	-4.4	
9/22/2004 15:00	-200		9/23/2004 4:00	4.9		9/23/2004 15:30	-4.3	
9/22/2004 16:45	-5		9/23/2004 4:15	-1.6		9/23/2004 15:45	-2.1	
9/22/2004 17:00	-2.7		9/23/2004 4:30	-4.4		9/23/2004 16:00	3.6	
9/22/2004 17:15	-4		9/23/2004 4:45	-4.4		9/23/2004 16:15	-4.5	
9/22/2004 17:30	-4.5		9/23/2004 5:00	-4.4		9/23/2004 16:30	8.5	
9/22/2004 17:45	-4.4		9/23/2004 5:15	1.8		9/23/2004 16:45	-4.4	
9/22/2004 18:00	-4.6		9/23/2004 5:30	4		9/23/2004 17:00	-2.4	
9/22/2004 18:15	-4.7		9/23/2004 5:45	-2.1		9/23/2004 17:15	10.4	
9/22/2004 18:30	-4.6		9/23/2004 6:00	-4.4		9/23/2004 17:30	-4.4	
9/22/2004 18:45	-4.5		9/23/2004 6:15	-4.4		9/23/2004 17:45	17	
9/22/2004 19:00	-4.4		9/23/2004 6:30	-4.5		9/23/2004 18:00	5.1	
9/22/2004 19:15	0.3		9/23/2004 6:45	-2		9/23/2004 18:15	-3.3	
9/22/2004 19:30	49.1		9/23/2004 7:00	4		9/23/2004 18:30	9.4	
9/22/2004 19:45	23.8		9/23/2004 7:15	1.8		9/23/2004 18:45	-4.3	
9/22/2004 20:00	1.2		9/23/2004 7:30	-4.5		9/23/2004 19:00	1.5	
9/22/2004 20:15	-4.3		9/23/2004 7:45	-4.5		9/23/2004 19:15	-4.4	
9/22/2004 20:30	-4.3		9/23/2004 8:00	-4.4		9/23/2004 19:30	8.1	
9/22/2004 20:45	-4		9/23/2004 8:15	15.4		9/23/2004 19:45	-1.8	
9/22/2004 21:00	29.1		9/23/2004 8:30	4.5		9/23/2004 20:00	-3.2	
9/22/2004 21:15	2.1		9/23/2004 8:45	-4.4		9/23/2004 20:15	29	
9/22/2004 21:30	-4.3		9/23/2004 9:00	-2.5		9/23/2004 20:30	12.2	
9/22/2004 21:45	-4.2		9/23/2004 9:15	-1.3		9/23/2004 20:45	-4.4	
9/22/2004 22:00	-3.6		9/23/2004 9:30	-4.5		9/23/2004 21:00	38.1	
9/22/2004 22:15	56.2		9/23/2004 9:45	35.3		9/23/2004 21:15	-2.4	
9/22/2004 22:30	11.7		9/23/2004 10:00	-3.9		9/23/2004 21:30	-3.3	
9/22/2004 22:45	-0.5		9/23/2004 10:15	-4.4		9/23/2004 21:45	7.3	
9/22/2004 23:00	-4.4		9/23/2004 10:30	2.6		9/23/2004 22:00	-4.3	
9/22/2004 23:15	-4.4		9/23/2004 10:45	-4.4		9/23/2004 22:15	37.9	
9/22/2004 23:30	-4.2		9/23/2004 11:00	-3.3		9/23/2004 22:30	-3.8	
9/22/2004 23:45	15.9		9/23/2004 11:15	5.9		9/23/2004 22:45	-4.3	
9/23/2004 0:00	-1.8		9/23/2004 11:30	-4.4		9/23/2004 23:00	-4.1	
9/23/2004 0:15	-4.4		9/23/2004 11:45	-4.3		9/23/2004 23:15	10.3	
9/23/2004 0:30	-4.4		9/23/2004 12:00	3.7		9/23/2004 23:30	0	
9/23/2004 0:45	-4		9/23/2004 12:15	-4.5		9/23/2004 23:45	-2	
9/23/2004 1:00	33.2		9/23/2004 12:30	6.8		9/24/2004 0:00	15.6	
9/23/2004 1:15	5.1		9/23/2004 12:45	-3.2		9/24/2004 0:15	-4	
9/23/2004 1:30	-1.8		9/23/2004 13:00	-4.4		9/24/2004 0:30	-3.6	
9/23/2004 1:45	-4.4		9/23/2004 13:15	-1.9		9/24/2004 0:45	13.4	
9/23/2004 2:00	-4.4		9/23/2004 13:30	2.6		9/24/2004 1:00	-4	
9/23/2004 2:15	-3.8		9/23/2004 13:45	-4.6		9/24/2004 1:15	10.4	
9/23/2004 2:30	27.6		9/23/2004 14:00	-3.6		9/24/2004 1:30	-4.4	
9/23/2004 2:45	-2.1		9/23/2004 14:15	1.2		9/24/2004 1:45	-2	

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PIER 2 TURBIDITY DATA COLLECTED AUGUST 27 - SEPTEMBER 30, 2004
FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/24/2004 2:00	8.2		9/24/2004 13:30	-1.7		9/25/2004 1:00	-2.6	
9/24/2004 2:15	0.3		9/24/2004 13:45	-4.3		9/25/2004 1:15	1	
9/24/2004 2:30	-4.4		9/24/2004 14:00	11.5		9/25/2004 1:30	-2.3	
9/24/2004 2:45	-4.4		9/24/2004 14:15	-0.7		9/25/2004 1:45	70	
9/24/2004 3:00	-0.9		9/24/2004 14:30	-4.1		9/25/2004 2:00	-1.2	
9/24/2004 3:15	5.8		9/24/2004 14:45	1.2		9/25/2004 2:15	1.4	
9/24/2004 3:30	0		9/24/2004 15:00	-3.1		9/25/2004 2:30	3.7	
9/24/2004 3:45	-4.4		9/24/2004 15:15	-3.1		9/25/2004 2:45	1.7	
9/24/2004 4:00	-1.2		9/24/2004 15:30	45.7		9/25/2004 3:00	-3.6	
9/24/2004 4:15	-0.3		9/24/2004 15:45	-4.5		9/25/2004 3:15	0.6	
9/24/2004 4:30	5.1		9/24/2004 16:00	-3.3		9/25/2004 3:30	-4.6	
9/24/2004 4:45	-0.1		9/24/2004 16:15	-4		9/25/2004 3:45	-4.4	
9/24/2004 5:00	-3.8		9/24/2004 16:30	-2.4		9/25/2004 4:00	2.3	
9/24/2004 5:15	-4.4		9/24/2004 16:45	-4.4		9/25/2004 4:15	-3.6	
9/24/2004 5:30	5.1		9/24/2004 17:00	-1.5		9/25/2004 4:30	-4.1	
9/24/2004 5:45	-2.4		9/24/2004 17:15	-3.4		9/25/2004 4:45	2.3	
9/24/2004 6:00	-3.9		9/24/2004 17:30	-4		9/25/2004 5:00	5.3	
9/24/2004 6:15	0.3		9/24/2004 17:45	1.5		9/25/2004 5:15	0	
9/24/2004 6:30	-4.4		9/24/2004 18:00	-0.4		9/25/2004 5:30	-3	
9/24/2004 6:45	-4		9/24/2004 18:15	-1.5		9/25/2004 5:45	-3.1	
9/24/2004 7:00	-3		9/24/2004 18:30	0.1		9/25/2004 6:00	-3.6	
9/24/2004 7:15	0.6		9/24/2004 18:45	1.2		9/25/2004 6:15	-1.5	
9/24/2004 7:30	-4.4		9/24/2004 19:00	-0.6		9/25/2004 6:30	-2.1	
9/24/2004 7:45	-3.7		9/24/2004 19:15	3.7		9/25/2004 6:45	0.6	
9/24/2004 8:00	3		9/24/2004 19:30	3.6		9/25/2004 7:00	-3.9	
9/24/2004 8:15	-4.4		9/24/2004 19:45	4.4		9/25/2004 7:15	-1.5	
9/24/2004 8:30	-4.4		9/24/2004 20:00	11.7		9/25/2004 7:30	9.5	
9/24/2004 8:45	5.1		9/24/2004 20:15	-3.5		9/25/2004 7:45	8.8	
9/24/2004 9:00	-2		9/24/2004 20:30	5.1		9/25/2004 8:00	2.5	
9/24/2004 9:15	-0.7		9/24/2004 20:45	-3.2		9/25/2004 8:15	553.6	
9/24/2004 9:30	-3.9		9/24/2004 21:00	27.5		9/25/2004 8:30	-3.5	
9/24/2004 9:45	-3.4		9/24/2004 21:15	2.5		9/25/2004 8:45	36	
9/24/2004 10:00	-4.3		9/24/2004 21:30	11.7		9/25/2004 9:00	-3	
9/24/2004 10:15	2.7		9/24/2004 21:45	1.7		9/25/2004 9:15	-1.8	
9/24/2004 10:30	-1.6		9/24/2004 22:00	9.1		9/25/2004 9:30	-0.6	
9/24/2004 10:45	-4.4		9/24/2004 22:15	8.1		9/25/2004 9:45	1.8	
9/24/2004 11:00	-4.1		9/24/2004 22:30	6.5		9/25/2004 10:00	-3.8	
9/24/2004 11:15	0		9/24/2004 22:45	57.9		9/25/2004 10:15	-4.9	
9/24/2004 11:30	-4.5		9/24/2004 23:00	-3.6		9/25/2004 10:30	-3.5	
9/24/2004 11:45	-3.8		9/24/2004 23:15	4.5		9/25/2004 10:45	-4.2	
9/24/2004 12:00	-2.3		9/24/2004 23:30	-4.3		9/25/2004 11:00	-3.2	
9/24/2004 12:15	-4.4		9/24/2004 23:45	-2.7		9/25/2004 11:15	-4.7	
9/24/2004 12:30	-0.5		9/25/2004 0:00	-0.2		9/25/2004 11:30	-3.9	
9/24/2004 12:45	1.1		9/25/2004 0:15	12.7		9/25/2004 11:45	1.5	
9/24/2004 13:00	-4		9/25/2004 0:30	-2.1		9/25/2004 12:00	-1.9	
9/24/2004 13:15	-3.3		9/25/2004 0:45	-3.9		9/25/2004 12:15	-2.7	

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FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/25/2004 12:30	-1.6		9/26/2004 0:00	-4.6		9/26/2004 11:30	-1.5	
9/25/2004 12:45	-1.8		9/26/2004 0:15	0.1		9/26/2004 11:45	-1.3	
9/25/2004 13:00	3.3		9/26/2004 0:30	-4.5		9/26/2004 12:00	-1.1	
9/25/2004 13:15	-3.6		9/26/2004 0:45	-4.5		9/26/2004 12:15	0	
9/25/2004 13:30	3.3		9/26/2004 1:00	-2.7		9/26/2004 12:30	-0.9	
9/25/2004 13:45	-4.4		9/26/2004 1:15	-4.5		9/26/2004 12:45	-1.2	
9/25/2004 14:00	-3.4		9/26/2004 1:30	-4.4		9/26/2004 13:00	-1.2	
9/25/2004 14:15	-4.5		9/26/2004 1:45	-3		9/26/2004 13:15	0.6	
9/25/2004 14:30	-1		9/26/2004 2:00	-4.4		9/26/2004 13:30	0	
9/25/2004 14:45	-4.5		9/26/2004 2:15	-4		9/26/2004 13:45	0	
9/25/2004 15:00	-4.5		9/26/2004 2:30	-3.3		9/26/2004 14:00	0.7	
9/25/2004 15:15	-4.5		9/26/2004 2:45	-4.5		9/26/2004 14:15	0.4	
9/25/2004 15:30	0.1		9/26/2004 3:00	-4.4		9/26/2004 14:30	2.3	
9/25/2004 15:45	-3.5		9/26/2004 3:15	-4.1		9/26/2004 14:45	3.6	
9/25/2004 16:00	-4.4		9/26/2004 3:30	-3.3		9/26/2004 15:00	5.1	
9/25/2004 16:15	-2		9/26/2004 3:45	-4.4		9/26/2004 15:15	4.6	
9/25/2004 16:30	-3.2		9/26/2004 4:00	-4.4		9/26/2004 15:30	3.4	
9/25/2004 16:45	-4.5		9/26/2004 4:15	-3.7		9/26/2004 15:45	3.6	
9/25/2004 17:00	-4.4		9/26/2004 4:30	-4		9/26/2004 16:00	5.8	
9/25/2004 17:15	-2.8		9/26/2004 4:45	-4.4		9/26/2004 16:15	4.5	
9/25/2004 17:30	-4.2		9/26/2004 5:00	-3.9		9/26/2004 16:30	4.2	
9/25/2004 17:45	-4.3		9/26/2004 5:15	-4.1		9/26/2004 16:45	16.9	
9/25/2004 18:00	-3		9/26/2004 5:30	-4.4		9/26/2004 17:00	0.2	
9/25/2004 18:15	-4.2		9/26/2004 5:45	-4.4		9/26/2004 17:15	1.2	
9/25/2004 18:30	-4.5		9/26/2004 6:00	-4.2		9/26/2004 17:30	3	
9/25/2004 18:45	-4.1		9/26/2004 6:15	-2.6		9/26/2004 17:45	17.2	
9/25/2004 19:00	-4.1		9/26/2004 6:30	-3.3		9/26/2004 18:00	3.7	
9/25/2004 19:15	-4.4		9/26/2004 6:45	-3.7		9/26/2004 18:15	7.7	
9/25/2004 19:30	-3		9/26/2004 7:00	-3.1		9/26/2004 18:30	9.1	
9/25/2004 19:45	-4.4		9/26/2004 7:15	-3		9/26/2004 18:45	6.7	
9/25/2004 20:00	-4.5		9/26/2004 7:30	-1.2		9/26/2004 19:00	8.7	
9/25/2004 20:15	-3		9/26/2004 7:45	-2.8		9/26/2004 19:15	-4.7	
9/25/2004 20:30	-4.5		9/26/2004 8:00	-2.6		9/26/2004 19:30	10.1	
9/25/2004 20:45	0.6		9/26/2004 8:15	-2.1		9/26/2004 19:45	3.3	
9/25/2004 21:00	-4.4		9/26/2004 8:30	1.7		9/26/2004 20:00	-22.1	
9/25/2004 21:15	-4.5		9/26/2004 8:45	-0.5		9/26/2004 20:15	4.2	
9/25/2004 21:30	-0.2		9/26/2004 9:00	-1.6		9/26/2004 20:30	5.4	
9/25/2004 21:45	-3		9/26/2004 9:15	0.7		9/26/2004 20:45	3.7	
9/25/2004 22:00	-4.5		9/26/2004 9:30	-1.4		9/26/2004 21:00	4.4	
9/25/2004 22:15	-2.1		9/26/2004 9:45	-0.3		9/26/2004 21:15	9.3	
9/25/2004 22:30	-4.3		9/26/2004 10:00	-0.4		9/26/2004 21:30	-2.2	
9/25/2004 22:45	-4.5		9/26/2004 10:15	0.5		9/26/2004 21:45	-8.4	
9/25/2004 23:00	-3.2		9/26/2004 10:30	-1.7		9/26/2004 22:00	8.3	
9/25/2004 23:15	-4.5		9/26/2004 10:45	-1.5		9/26/2004 22:15	10	
9/25/2004 23:30	-4.1		9/26/2004 11:00	-0.1		9/26/2004 22:30	15.3	
9/25/2004 23:45	-4.5		9/26/2004 11:15	-1.2		9/26/2004 22:45	13.3	

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NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)	
9/26/2004 23:00	-14.2		9/27/2004 10:30	-6		9/27/2004 22:00	-28	
9/26/2004 23:15	13.1		9/27/2004 10:45	3.6		9/27/2004 22:15	-19	
9/26/2004 23:30	15.9		9/27/2004 11:00	-10.5		9/27/2004 22:30	-27.6	
9/26/2004 23:45	17		9/27/2004 11:15	-0.5		9/27/2004 22:45	-20.8	
9/27/2004 0:00	13.1		9/27/2004 11:30	-6.3		9/27/2004 23:00	-17.7	
9/27/2004 0:15	12		9/27/2004 11:45	-0.8		9/27/2004 23:15	-10.9	
9/27/2004 0:30	11.8		9/27/2004 12:00	-1.3		9/27/2004 23:30	-16.3	
9/27/2004 0:45	18.5		9/27/2004 12:15	-6.3		9/27/2004 23:45	-26.2	
9/27/2004 1:00	13.1		9/27/2004 12:30	-11.8		9/28/2004 0:00	-19.6	
9/27/2004 1:15	11.7		9/27/2004 12:45	0		9/28/2004 0:15	-14.9	
9/27/2004 1:30	30.8		9/27/2004 13:00	0.6		9/28/2004 0:30	-22.1	
9/27/2004 1:45	17.6		9/27/2004 13:15	-1.1		9/28/2004 0:45	-18.2	
9/27/2004 2:00	8.9		9/27/2004 13:30	-7.1		9/28/2004 1:00	-14.6	
9/27/2004 2:15	7.5		9/27/2004 13:45	6		9/28/2004 1:15	-13.4	
9/27/2004 2:30	15.1		9/27/2004 14:00	1.8		9/28/2004 1:30	-18.9	
9/27/2004 2:45	9.8		9/27/2004 14:15	-0.8		9/28/2004 1:45	-10.9	
9/27/2004 3:00	7.6		9/27/2004 14:30	-15.6		9/28/2004 2:00	-4.4	
9/27/2004 3:15	12		9/27/2004 14:45	11.1		9/28/2004 2:15	-4.4	
9/27/2004 3:30	14.3		9/27/2004 15:00	2.9		9/28/2004 2:30	-4.4	
9/27/2004 3:45	7.2		9/27/2004 15:15	-5.4		9/28/2004 2:45	-4.4	
9/27/2004 4:00	6.7		9/27/2004 15:30	-7.6		9/28/2004 3:00	-4.4	
9/27/2004 4:15	4		9/27/2004 15:45	-7.3		9/28/2004 3:15	-4.4	
9/27/2004 4:30	13		9/27/2004 16:00	-27.7		9/28/2004 3:30	-4.4	
9/27/2004 4:45	4.6		9/27/2004 16:15	-15.2		9/28/2004 3:45	-4.4	
9/27/2004 5:00	9.4		9/27/2004 16:30	-11.2		9/28/2004 4:00	-4.4	
9/27/2004 5:15	6.7		9/27/2004 16:45	-4.2		9/28/2004 4:15	-4.4	
9/27/2004 5:30	8.6		9/27/2004 17:00	-9.7		9/28/2004 4:30	-4.4	
9/27/2004 5:45	6.6		9/27/2004 17:15	-10.9		9/28/2004 4:45	-4.5	
9/27/2004 6:00	0		9/27/2004 17:30	-11.4		9/28/2004 5:00	-4.4	
9/27/2004 6:15	3.6		9/27/2004 17:45	-14.8		9/28/2004 5:15	-4.4	
9/27/2004 6:30	6.1		9/27/2004 18:00	-14.2		9/28/2004 5:30	-4.4	
9/27/2004 6:45	7.3		9/27/2004 18:15	-9.1		9/28/2004 5:45	-4.4	
9/27/2004 7:00	3.2		9/27/2004 18:30	-11.1		9/28/2004 6:00	-4.4	
9/27/2004 7:15	1.8		9/27/2004 18:45	-14.1		9/28/2004 6:15	-4.4	
9/27/2004 7:30	12.9		9/27/2004 19:00	-10.2		9/28/2004 6:30	-4.4	
9/27/2004 7:45	12.4		9/27/2004 19:15	-11.7		9/28/2004 6:45	-4.4	
9/27/2004 8:00	2.8		9/27/2004 19:30	-21.4		9/28/2004 7:00	-4.4	
9/27/2004 8:15	-0.7		9/27/2004 19:45	-25.3		9/28/2004 7:15	-4.4	
9/27/2004 8:30	5		9/27/2004 20:00	-6.9		9/28/2004 7:30	-4.4	
9/27/2004 8:45	-3.3		9/27/2004 20:15	-22.6		9/28/2004 7:45	-4.4	
9/27/2004 9:00	2		9/27/2004 20:30	-8.1		9/28/2004 8:00	-4.4	
9/27/2004 9:15	3.2		9/27/2004 20:45	-16.5		9/28/2004 8:15	-4.4	
9/27/2004 9:30	-1.1		9/27/2004 21:00	-17.6		9/28/2004 8:30	-4.4	
9/27/2004 9:45	-3.2		9/27/2004 21:15	-12.9		9/28/2004 8:45	-4.4	
9/27/2004 10:00	-1		9/27/2004 21:30	-24.8		9/28/2004 9:00	-4.4	
9/27/2004 10:15	-5.2		9/27/2004 21:45	-28.8		9/28/2004 9:15	-4.4	

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FORMER ROBERT E. DERECKTOR SHIPYARD
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)		DATE TIME	TURBIDITY (NTU)
9/28/2004 9:30	-4.4		9/28/2004 21:00	-104.5		9/29/2004 8:30	405.2
9/28/2004 9:45	-4.4		9/28/2004 21:15	-85.4		9/29/2004 8:45	-72.2
9/28/2004 10:00	-4.4		9/28/2004 21:30	-73.3		9/29/2004 9:00	48
9/28/2004 10:15	-4.4		9/28/2004 21:45	-4.5		9/29/2004 9:15	82.8
9/28/2004 10:30	-3.4		9/28/2004 22:00	-4.5		9/29/2004 9:30	-29.5
9/28/2004 10:45	-4.4		9/28/2004 22:15	-4.5		9/29/2004 9:45	-35.4
9/28/2004 11:00	-4.4		9/28/2004 22:30	-4.5		9/29/2004 10:00	10.9
9/28/2004 11:15	-4.4		9/28/2004 22:45	222.2		9/29/2004 10:15	-47.4
9/28/2004 11:30	-4.4		9/28/2004 23:00	-4.5		9/29/2004 10:30	-11.9
9/28/2004 11:45	-4.4		9/28/2004 23:15	192.2		9/29/2004 10:45	419.9
9/28/2004 12:00	-4.4		9/28/2004 23:30	-4.4		9/29/2004 11:00	263.8
9/28/2004 12:15	-4.4		9/28/2004 23:45	-4.4		9/29/2004 11:15	-35.8
9/28/2004 12:30	-4.1		9/29/2004 0:00	202.9		9/29/2004 11:30	-105.3
9/28/2004 12:45	-4.4		9/29/2004 0:15	-57.5		9/29/2004 11:45	-37
9/28/2004 13:00	66.7		9/29/2004 0:30	57.4		9/29/2004 12:00	74.2
9/28/2004 13:15	-21.8		9/29/2004 0:45	-4.4		9/29/2004 12:15	-114.7
9/28/2004 13:30	206.8		9/29/2004 1:00	-4.4		9/29/2004 12:30	161.8
9/28/2004 13:45	260.6		9/29/2004 1:15	-4.5		9/29/2004 12:45	-9.6
9/28/2004 14:00	114.1		9/29/2004 1:30	-4.5		9/29/2004 13:00	-31.1
9/28/2004 14:15	175.8		9/29/2004 1:45	326.7		9/29/2004 13:15	9.9
9/28/2004 14:30	104.1		9/29/2004 2:00	-4.5			
9/28/2004 14:45	123.3		9/29/2004 2:15	-4.5			
9/28/2004 15:00	238.8		9/29/2004 2:30	-4.4			
9/28/2004 15:15	-99		9/29/2004 2:45	-4.5			
9/28/2004 15:30	-83.5		9/29/2004 3:00	-4.5			
9/28/2004 15:45	-103.3		9/29/2004 3:15	-4.5			
9/28/2004 16:00	-74.9		9/29/2004 3:30	-4.4			
9/28/2004 16:15	-70		9/29/2004 3:45	-4.5			
9/28/2004 16:30	-88.9		9/29/2004 4:00	-4.5			
9/28/2004 16:45	-71		9/29/2004 4:15	-4.4			
9/28/2004 17:00	-71.5		9/29/2004 4:30	-4.5			
9/28/2004 17:15	-88.4		9/29/2004 4:45	-64.9			
9/28/2004 17:30	-102.5		9/29/2004 5:00	-4.4			
9/28/2004 17:45	-99		9/29/2004 5:15	-4.3			
9/28/2004 18:00	-59.9		9/29/2004 5:30	230.6			
9/28/2004 18:15	-52.7		9/29/2004 5:45	-3.8			
9/28/2004 18:30	-60.7		9/29/2004 6:00	87.7			
9/28/2004 18:45	-82		9/29/2004 6:15	-32.3			
9/28/2004 19:00	-64		9/29/2004 6:30	37.2			
9/28/2004 19:15	-76.5		9/29/2004 6:45	125			
9/28/2004 19:30	-68.8		9/29/2004 7:00	76.9			
9/28/2004 19:45	-4.4		9/29/2004 7:15	-4.6			
9/28/2004 20:00	-48		9/29/2004 7:30	148.2			
9/28/2004 20:15	-41.1		9/29/2004 7:45	257.3			
9/28/2004 20:30	-59.1		9/29/2004 8:00	-43.9			
9/28/2004 20:45	-4.4		9/29/2004 8:15	327.5			

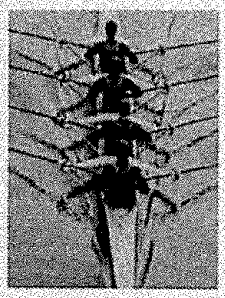
APPENDIX E

HYDROCARBON CHARACTERIZATION REPORT

ERATTA

Draft Report,
Hydrocarbon Characterization,
Former Robert E. Derecktor Shipyard
Naval Station Newport, Newport Rhode Island
Newfields, Inc. December 2004

4/22/05: Due to a field transcription error, the sample collected at Station DSY-26 was labeled DSY-SD-36-082604. Therefore, all references to this sample in this report should be to station DSY-26. Since station 26 was not impacted by the site contaminants of concern, the findings of the report are not impacted by this error.



NEWFIELDS

new INSIGHT | new DIRECTION | new DECISION

HYDROCARBON CHARACTERIZATION NAVAL STATION NEWPORT, RI FORMER ROBERT E. DERECKTOR SHIPYARD SITE 19

DRAFT REPORT

Tetra Tech NUS, Inc.
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Department of the Navy
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NEWFIELDS

DRAFT REPORT

HYDROCARBON CHARACTERIZATION
NAVAL STATION NEWPORT, RHODE ISLAND
FORMER ROBERT E. DERECKTOR SHIPYARD
SITE 19

December 2004

prepared for

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Attachment A: Tables
Attachment B: Figures
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Attachment D: Saturated Hydrocarbon Results by GC/MS/SIM
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Attachment G: Laboratory Report for Data Delivery Group ETR0408123 (Sediments)
Attachment H: Laboratory Report for Data Delivery Group ETR0408124 (Sediments)

Executive Summary

The Navy conducted a hydrocarbon characterization of sediments collected around the former Derecktor Shipyard (Shipyard) within the Naval Station located in Coddington Cove off Newport, RI. The results of this study were intended to help the project team evaluate the cleanup liability of the Navy with respect to possible impacts from historical activities in the Shipyard. This study compared the concentrations and compositions of petroleum and combustion residues in these sediments with three background reference locations in the Narragansett Bay (Jamestown Cranston Cove, Jamestown Potter Cove, and Castle Hill Cove). In order to address the project objectives, advanced chemical analyses (high resolution hydrocarbon fingerprints, alkylated PAHs, and biomarker fingerprints) were performed on twenty-one sediment samples collected from the Shipyard plus six reference sediments.

In summary, the former Derecktor Shipyard generally contained hydrocarbon concentrations and compositions that were consistent with background. Slightly elevated PAH concentrations were observed near creosote treated wood pilings and storm sewer outfalls. Mixtures of background hydrocarbons and low levels of middle to heavy petroleum were observed in three separate Study Area locations. We attributed these petroleum residues to fueling or other vessel related activities. However, these petroleum residues contributed little to the elevated levels of PAHs of ecological concern in the Shipyard.

1. INTRODUCTION

The former Robert E. Derecktor Shipyard (Shipyard) resided within the current Naval Station in Newport, Rhode Island (Figure 1). It was also referred to as Site 19 at the New England Education and Training Center (NETC). Past environmental studies identified several contaminants of concern in sediments at the Shipyard site including polycyclic aromatic hydrocarbons (PAHs). This hydrocarbon characterization was part of a more comprehensive ecological risk assessment intended to develop the most appropriate risk management decision for the site.

Specifically, this study compared the hydrocarbon composition of PAHs and other hydrocarbons in surficial sediment samples collected from the Shipyard to three Reference Areas (ambient background) from other parts in Narragansett Bay. The primary objectives of the project were to determine 1) the relationship between the hydrocarbon composition of Shipyard sediments and the Reference Areas and 2) the extent to which PAHs in Shipyard sediments could be attributed to impacts of hydrocarbons derived from Shipyard activities.

2. TECHNICAL APPROACH

Past assessments demonstrated the presence of PAHs in the Shipyard sediments. In order to help evaluate the possible effects of historical Shipyard activities on proximal sediments, a sampling strategy based upon the known historic and current candidate sources was developed based on the Navy User's Guide for Determining the Sources of Contaminants in Sediment (Stout et al., 2003). The historical activities of greatest environmental concern in the Shipyard included ship construction, repair, and fueling. These activities were centered around Piers 1 and 2 (Figure 2). Other potential hydrocarbon sources included landside runoff channeled through storm sewers. In addition, airborne soot from ship exhaust and local industry may have generated combustion byproducts, including PAHs.

The sampling plan prioritized samples around the Piers and former berths of aircraft carriers. Three shallow sediment cores (101, 103, and 104) were collected around Pier 1 to evaluate differences in sediment chemistry with depth. Several near shore sediments were collected to evaluate effects from local runoff and storm water outfalls. Table 1 described the general purpose of each Study Area sample located on Figures 1 and 2.

3. ANALYTICAL METHODS

The samples were prepared and analyzed in accordance with published methods (Emsbo-Mattingly *et al.*, 2003; Stout *et al.*, 2003; Stout *et al.*, 2002) as described in the Work Plan for Sampling Marine Sediments from the Former Derecktor Shipyard (TetraTech, 2004). The samples were analyzed by several methods in order to provide a detailed description of hydrocarbons with a broad molecular weight range. In general, the high resolution hydrocarbons fingerprint painted a broad-brush picture of the dominant extractable hydrocarbons types while the mass spectrophotometric methods provided more detailed and purified profiles of the tar and petroleum products (Emsbo-Mattingly *et al.*, 2003; Stout *et al.*, 2002). We used these data collectively to characterize the types of hydrocarbon materials in the study samples.

3.1 Sample Collection and Shipping

The field team collected approximately 30 sediment samples that included 3 blind duplicates in August, 2004 (Figures 1 to 2). Surficial sediment samples were collected from the 0" to 6" interval with a petite ponar, Smith-MacIntyre grab sampler, or equivalent sampling technique (TetraTech, 2004). Three samples were collected to 12" in order to evaluate deeper sediment intervals. In addition, four equipment rinse blanks were collected to demonstrate the potential impacts of cross contamination due to the sampling equipment.

The field samples were shipped via overnight courier and received between 2°C and 6°C at the Woods Hole Group Environmental Laboratories (WHGEL) in Raynham, Massachusetts. A total of thirty four samples were received by the laboratory on August 31, 2004 (Table 1). Two samples (DSY-SD03-082604 and DSY-SD28-082504) had cracked lids upon receipt. The secondary packaging assured that the sample integrity was not compromised. The lids were replaced by the laboratory. Other information related to chain of custody and sample receipt was provided at the end of the laboratory reports (Attachments F, G, and H).

The sample ID's were abbreviated when necessary to simplify the tables and figures used for data presentation (Table 1).

3.2 Sample Preparation

An aliquot of each sediment sample (30 g wet weight) was fortified with surrogates, dried with sodium sulfate and serially shake extracted with dichloromethane (DCM). Similarly, an aliquot of the equipment blank (1000 mL of rinse water) was fortified with surrogates and serially shake extracted with DCM. The sample extracts were concentrated by Kuderna-Danish and nitrogen blow down techniques. Sulfur and polar interferences were removed with a copper powder and alumina, respectively. The sample extracts and diluents were split prior to analysis. The extracts were fortified with internal standards and submitted for GC/FID and GC/MS/SIM analyses (described below).

3.3 High Resolution Hydrocarbon Fingerprint and TPH

The sample extracts were analyzed using a high-resolution gas chromatograph equipped with a flame ionization detector (GC/FID). High resolution GC/FID fingerprints were generated over a broad carbon range (approximately n-C_9 to n-C_{40}) that provided an overall assessment of the semi-volatile hydrocarbons present in each sample. These fingerprints provided information on the dominant extractable hydrocarbons that potentially included pyrogenic PAHs, petroleum products, and detrital vegetation. The GC/FID fingerprints for each field and QC sample were placed in Attachment C.

3.4 Polycyclic Aromatic Hydrocarbons (PAH)

The sample extracts were also analyzed using a high-resolution gas chromatograph equipped with a mass spectrometer operated in the selected ion monitoring mode (GC/MS/SIM). The instrument was calibrated to allow for quantification of a broad range of 2- through 6-ring PAHs, selected alkylated PAH homologues, selected sulfur-containing compounds (dibenzothiophenes), and other compounds useful for

the identification of hydrocarbon sources in the environment. Table 2 presented an inventory of the target compounds along with abbreviations used in selected figures of this report. The acronym EPAPAH was used in the discussion in reference to the sum of the 16 individual EPA Priority Pollutant PAH compounds (Table 2). Similarly, the acronym TPAH refers to the sum of all fifty PAHs used for the forensic analysis of PAH patterns. Collectively, the concentrations of these target compounds helped qualitatively and quantitatively compare the Study Area samples. The concentrations of PAHs (and hopane; see below) in soil and sediment samples were reported in dry weight units. As part of the discussion, PAH histograms were constructed to summarize the most significant compositional features.

3.5 Saturated Hydrocarbon Fingerprints and Triterpane Biomarkers

Environmental forensic investigators demonstrated that the presence and/or pattern of biomarkers revealed information about the specific source(s) of petrogenic residues in the environment; e.g., petroleum or coal (Stout et al., 2002). An aliquot of the GC/FID extract was solvent exchanged and fractionated on silica gel to remove the aromatic hydrocarbons that can interfere with the analyses of saturated hydrocarbons and biomarkers. This purified extract was injected into a GC/MS/SIM instrument. Saturated hydrocarbon fingerprints were generated from this analysis (Attachment D). These fingerprints helped identify the types of petroleum products in the sample and possibly the feedstock from which the tar was generated. In addition, the laboratory generated triterpane fingerprints (Attachment E). The relative abundances diagnostic biomarkers (Table 5) helped identify different types of fossil fuel.

3.6 Total Organic Carbon (TOC)

Total organic carbon was measured according to EPA Method 9060 (Attachments G and H). This method entailed the removal of water and inorganic carbon prior to high temperature combustion at 900°C in a stream of oxygen. Carbon was converted to CO_2 which was scrubbed of sulfur and nitrogen containing gases prior to coulombic detection.

3.7 Visual Presentation of Data

This investigation generated a substantial quantity of chemistry data, both chromatographic and numerical. In order to present this data in a meaningful manner, we used a variety of visual and graphical techniques to display and explain the most significant features. Largely, we relied upon four methods of data visualization in this report. These include:

- Gas Chromatograms presented the raw output from analytical instruments used to characterize the hydrocarbon distributions.
- Scatter Plots depicted the two dimensional relationship between two hydrocarbon parameters in a format amenable to establishing qualitative trends or quantitative correlations.
- Principal Component Analysis Plots using multidimensional statistics to ascertain similarities or differences in chemical composition among samples.
- Histograms for graphically comparing detailed PAH data.

Whenever possible, color coding and symbols were used to illustrate the most relevant compositional features. When appropriate, we added additional samples of crude oil (Crude) to the figures for reference purposes.

4. RESULTS AND DISCUSSION

We divided the results and discussion into method-specific sections for ease of presentation. This section opens with a discussion of the major hydrocarbon patterns evident in the GC/FID data. Thereafter, we present a more detailed description of the hydrocarbon materials evident in the GC/MS/SIM data. These data helped equate source identification features in the absence of compounds that might otherwise interfere with the interpretation. Herein, the PAH data proved most useful for characterizing the soot and tar residues while the saturate and biomarkers helped describe the petroleum materials.

4.1 Dominant Hydrocarbon Signatures

High resolution hydrocarbon fingerprints (GC/FID) revealed the dominant hydrocarbon patterns in environmental samples. The principal patterns of interest in this study included organic residues of thermal decomposition *(e.g.,* soot, creosote, and tar-based asphalt) and petroleum *(e.g.,* diesel, heavy fuel oil, and petroleum asphalt) material. These patterns were identified by characteristic assemblages of saturated and aromatic hydrocarbons.

Samples collected in the three Reference Areas consisted of weathered heavy residual range petroleum as indicated by a late eluting (after the quality control compounds) unresolved complex mixture (UCM) (Figure 3a). This material often consists of weathered asphalt, lubricating or hydraulic oil typical of urban runoff. The dominant pattern of weathered residual range petroleum appeared in all sediment samples throughout the Study Area[a] indicating a widespread source of this material to the regional sediments (Figure 3). In comparison with the Reference Area sediments, some samples from the Shipyard contained slightly higher levels of fluoranthene (FL0), pyrene (PY0), and other 3- to 6-ring PAHs (Figures 3b and 3c). These compounds are typically associated with combustion (*e.g.*, vehicular emissions or soot) or carbonization (*e.g.*, tar products, like creosote) byproducts. Based on personal experience, we attributed the unidentifed peaks in DSY-SD-09-082604 to sewage or storm sewer effluent[b] (Figure 3d). We observed low levels of degraded middle distillates in sample DSY-SD-27-082604[c]. In summary, the dominant features of the sediments collected from the Shipyard closely resembled Castle Hill Cove sediments.

Several hydrocarbon indicators helped identify the samples with hydrocarbon compositions that differed from the Reference Areas. The concentration of total organic carbon (TOC) was not correlated with total EPAPAHs (R^2 = 0.149) (Figure 4a). Among samples with less than 10 mg/kg total EPAPAHs, the difference in TOC was likely caused by natural organics or petroleum. Most sediment samples from the Shipyard compared well with the Reference Area sediments (see grouping of sediments in the middle and lower left of Figure 4a). Indeed, most of the Study Area concentrations fell below typical EPAPAH levels for urban background sediments (less than 20 mg/kg, see Stout *et al.*, 2004). Some near shore samples clearly contained higher levels of organic carbon and PAHs (see 03, 29, and 103). Other samples in the near shore and at the end of Pier 1 contained slightly higher levels of PAHs than the Reference Area sediments (see 27 and 101-0612, respectively). Generally, the shallow core samples revealed that the 0" to 6" interval contained slightly lower levels of PAHs relative to the 6" to 12" interval. Samples from core 103 exhibited the greatest difference between the two intervals.

The bulk composition of PAHs remained fairly constant in the Reference Areas and Shipyard as indicated by the very good regression between EPAPAHs and TPAHs (R^2 = 0.9963 in Figure 4b). The total EPAPAHs accounted for approximately 66% of the total PAHs in the Study samples. This proportionality

[a] Study Area includes the Reference Areas plus the Former Derecktor Shipyard.

[b] This tentative identification should be confirmed by GC/MS analysis if a definitive identification is required.

[c] It should be noted that the kerosene and middle distillates contained petrogenic 2- and 3-ring PAHs that were not responsible for the pyrogenic 4- to 6-ring PAHs associated with the highest PAH containing samples in the Study Area (discussed later in this report). In other words, we identified middle distillates, but they were not the source of PAHs that exceeded the PAH concentration range of the Reference Area samples.

of total EPAPAHs and total PAHs was consistent with non-petroleum derived PAHs (*e.g.*, combustion and carbonization) present in urban sediments (Stout *et al.*, 2004). Sample 06 contained slightly higher levels of TPAHs indicating a slightly higher level of petroleum in this sample. As expected, sample 06 contained one of the highest levels of hopane (a heavy petroleum constituent) among the study samples (Figure 4c). To a lesser extent, sample 11 also contained slightly elevated petroleum (see 11 above the regression line in Figure 4c). By contrast, we recognized proportionally more combustion byproducts in 03 and 29 (see samples below the regression line in Figure 4c). Sample 103-0612 and to a lesser extent 27, 101-0612, and 103-0006 contained more petroleum and combustion byproducts than the Reference Areas (see samples proximal to the regression line to the upper right of the Reference Area samples in Figure 4c).

In summary, qualitative fingerprints and quantitative measurements indicated that most of the sediment samples collected from the Shipyard resembled the Reference Areas. Most of the hydrocarbons consisted of weathered residual range petroleum likely sourced to runoff (*e.g.*, asphalt, lubricating oil, and hydraulic oils). The PAHs were predominantly pyrogenic and likely derived from byproducts of combustion *(e.g.,* soot) or carbonization *(e.g.,* tar products, like creosote). Several samples from the Shipyard contained higher levels of PAHs than the Reference Areas. These included 03, 27, 29, 101-0612, 103-0006, and 103-0612. These samples were primarily located along the near shore from the southerly ship setup and ferry mooring area *(e.g.,* samples 03 and 29) to the northerly Pier 2 *(e.g.,* 29). Several samples around Pier 1 *(e.g.,* 101 and 103) contained higher levels of PAHs as well.

4.2 Petrogenic and Pyrogenic PAH Patterns

The concentration and distribution of polycyclic aromatic hydrocarbons (PAHs) provided greater detail and specificity about the type of petroleum, tar, and plant material in the field samples. For example, petroleum possesses a petrogenic PAH pattern consisting of low parent abundance relative to the alkylated PAHs; e.g., C0 < C1. By contrast, pyrogenic PAHs form during the partial combustion or pyrolysis of organic matter. A pyrogenic PAH pattern exhibits high parent abundance relative to the alkylated PAH; e.g., C0 > C1 > C2, before weathering. Finally, diagenetic PAHs, like retene and perylene, form naturally in sediments containing specific types of decaying vegetation. Forensic scientists employ diagnostic concentration patterns and ratios to help identify the presence of PAHs from these various sources. At the outset, it should also be noted that these concentration ratios are more reliable source indicators than the peak heights used in the simpler hydrocarbon fingerprinting due, in part, to the potential presence of interferences *(e.g.,* QC compounds, phthalates, halogenated organics, and others) subtle chromatographic changes (peak widening) that can occur in the GC/FID fingerprints. Consequently, we used the more reliable PAH data for the definitive characterization of PAH sources.

As evident in the high resolution hydrocarbon fingerprinting data discussed previously, all of the Study Area samples exhibited a dominant pyrogenic pattern consistent with partially combusted (e.g., soot) or carbonized (*e.g.,* tar products, like creosote) organic material (Figure 5). Low levels of petrogenic PAHs were also evident in selected Study Area samples (Figure 5). Several samples from the Reference Area and shipyard contained high levels of anthracene (A0) relative to phenanthrene (P0) (Figures 5a, 5b and 5e). The high ratio of A0/P0 was particularly significant, because A0 was normally less abundant than P0 in most pyrogenic substances. Tar refining was required to alter this ratio (Rhodes, 1945; AWPA, 2001; Emsbo-Mattingly *et al.*, 2001). Consequently, a high ratio of A0/P0 clearly indicated the presence of specially refined tar products, like creosote. To be clear, the elevated level of A0 did not always occur during the manufacture of creosote; rather, it was simply an easily recognized signature of some form of tar refining. Indeed, the use of the A0/P0 ratio was one parameter used for differentiating multiple sources of creosote in the Elizabeth River Case Study (Stout *et al.*, 2003). The relative abundances of other PAHs also indicated different pyrogenic origins. The variability in the amounts of fluoranthene (FL0) relative to pyrene (PY0) likely indicated the presence of PAHs from different origins. Further identification of individual pyrogenic PAH sources was not possible with the available data.

We used Principal Components Analysis[d] (PCA) to further demonstrate these compositional features more quantitatively. Factors 1 and 2 accounted for 93% and 2% of the variability, respectively. As a rule of thumb, samples that plotted closely together on the PCA scores plots (Figure 6a) were compositionally similar and the degree of separation among samples was proportional to the compositional differences. These PCA results illustrated the compositional similarity among Reference Area and Shipyard samples (see samples within the dashed loop in Figure 6a). However, some differences were evident by inspection of the PCA score and loading plots. For example, the loading plot (Figure 6b) illustrated the groups of analytes that differed among the samples. Heavily alkylated 4-ring PAHs plus hopane (upper left corner of loading plot) indicated higher relative abundances of heavy residual range petroleum (Figure 6b). Samples with relatively high abundances of these compounds plotted in the upper left corner of the scores plot (Figure 6a). By contrast, enriched levels of pyrogenic PAHs in the lower right of the loadings plot (Figure 6b) corresponded to samples in the lower right of the scores plot (Figure 6a). Samples in the lower left of the scores plot (Figure 6a) corresponded to slightly higher levels of selected 2- and 3-ring PAHs in the loadings plot (Figure 6b). Finally, samples in the upper right of the scores plot (Figure 6a) corresponded to higher levels of BC2, BNT2, FP3, FP4 and PA4 on the loadings plot (Figure 6b).

The PCA results indicated that the PAH composition of the Study Area samples was very similar. Most of the compositional differences among samples were caused by varying mixtures of regional background plus slightly higher levels of hydrocarbons from shipyard and landside activities in a few samples. Inspection of the PAH fingerprints (Figure 5) demonstrated that most samples were predominantly pyrogenic PAHs with slight variations in the expression of petrogenic PAHs. In the PCA data, we observed these differences among all of the study samples simultaneously. Again, sediments collected from locations 03, 29, 101 and 103 differed from the Reference Area samples due to slightly enriched pyrogenic PAHs (see lower right of Figure 6a). In addition, sample 06 contained PAHs consistent with less alkylated BNT, more BC2, and other subtleties (see upper right of Figure 6a). We attributed these features to the presence of a slightly lighter petroleum material relative to the pervasive heavy residual range petroleum observed throughout the Study Area. Several samples (JPC01, JPC02, CC01, CC02, 36, and DUP03) contained slightly elevated levels of 2-and 3-ring PAHs (see lower left of Figure 6a). We speculated that the alkylated naphthalenes (N2 and N4) came from low levels of diesel residues while slight enrichments of acenaphthylene (AY), acenaphthene (AE), and biphenyl (B) came from varying types of weathered organics.

In summary, the PAH patterns in the Study Area samples were very similar. Most Shipyard samples fell within the compositional variability observed in the Reference Areas. Slightly different types of petroleum were evident in sample 06. Slightly different types of pyrogenic PAHs were evident in samples 03, 29, 101, and 103. These differences in the pyrogenic PAHs were likely caused by an additional impact from soot and tar products, like creosote. Shallow core samples around Pier 1 (locations 101, 103, and 104) indicated lower levels of pyrogenic PAHs in the 0" to 6" interval relative to the 6" to 12" interval. All things being equal, this spatial relationship indicated that more recently deposited material contained less soot and creosote leachate than older sediments. Relative to the present condition, it was reasonable that past activities around Pier 1 included higher emission levels from ships and landside industry. In addition, pilings treated with creosote likely leached PAHs more readily near the time of installation (past) than after many years of exposure (present)[e]. Collectively, the compositional similarities among Study Area

[d] Principal Component Analysis (PCA; Pirouette, Version 3.02, Infometrix, Seattle, WA) is a factor analysis method that generates new independent variables (i.e. factors) that are linear combinations of the original input variables *(e.g.,* PAH concentrations). This method reduces the dimensionality of the data to a few important "principal components" (axes) that best describe variations in the data. The first axis (1st PC) demonstrates the most prominent trend and successive axes (2nd PC, 3rd PC, etc.) demonstrate additional trends in decreasing order of importance. Prior to PCA, the PAH concentration input data are log-transformed to reduce the effect of widely varying concentrations between samples and between individual analytes. The primary objective of the PCA conducted for this study was to aid in the classification of field samples based on their chemical similarities or differences, without any pre-classification as to their nature/source(s). In this report, the results of a PCA are presented using 2-dimensional factor score and loading plots.

[e] Based on personal experience, the influence of creosote leachate does not typically migrate far from the source; however, powerful prop wash or storm events could redistribute creosote impacted sediments.

samples were greater than the differences. The sediment chemistry was consistent with chronic releases of anthropogenic material from a shipyard and marina in a currently less active state than in the past.

4.3 Fugitive Petroleum and Plant Waxes

The saturated hydrocarbon fingerprints revealed the purified profile of fossil fuels (*e.g.,* petroleum and coal) and plant waxes in the absence of aromatic interferences (*e.g.,* PAHs). As described previously, most of the sediment samples contained varying proportions of heavy residual petroleum. In order to equitably compare the saturated fraction of samples with complex hydrocarbon mixtures, the saturated fraction of each sample required careful isolation in the laboratory.

All of the Study Area samples contained varying levels of plant waxes (Figure 7). These detrital signatures were recognized as normal alkanes with enriched odd-numbered carbons relative to even-numbered carbons eluting between n-tricosane (n-C23) and n-pentatriacontane (n-C35). The presence of plant waxes established the sediments received organic material derived from landside vegetation. Variations in the plant wax signature were possibly caused by the magnitude and type of leaf litter inputs.

The Study Area samples also contained residual range petroleum as indicated by the late eluting unresolved complex mixture (UCM) (Figure 7). The general features of this material were consistent with abraded asphalt or heavy petroleum products (*e.g.*, lubricating and hydraulic oils). These data also confirmed the low level presence of petroleum distillates in several samples. For example, an earlier eluting UCM topped by diesel range isoprenoids was consistent with biodegraded diesel, home heating fuel oil, or marine fuel oil (Figure 7b). Additionally, we observed low levels of moderately weathered heavy fuel, lubricating, or hydraulic oil near the storm water outfall in the southern Shipyard (Figure 7d). We concluded that storm sewer discharges might, in part, explain the presence of heavy petroleum in the Shipyard. Finally, the presence of lighter hydrocarbons and isoprenoid profile (higher levels of C_{15} and C_{16} relative to pristine and phytane) suggested the presence of kerosene at sampling location number 27 (Figure 7e). The wide range UCM in this sample suggested the likely presence of diesel as well.

In summary, these data confirmed the regional presence of heavy residual range (RR) petroleum mixed with plant waxes (PW) (Table 3). It is possible that both of these materials originated from land side sources, such as abraded asphalt and leaf litter. We recognized low level occurrences kerosene range (KR) and diesel range (DR) around the Piers and storm water outfall (Table 3). Kerosene had many uses as a fuel and solvent. As a very degradable material, its isolated occurrence in surface sediments near the landside end of Pier 2 suggested that it may indicate a more recent release. Low levels of diesel range petroleum were more widely observed around the Piers and at multiple depths in the shallow cores. We attributed these hydrocarbons to releases of marine fuel oil from ships berthed around Piers 1 and 2.

4.4 Genetic Origins of Heavy Hydrocarbons

Triterpane biomarkers reside in the heavy molecular weight fraction of crude oil and coal. The relative abundances of specific biomarkers help identify the conditions and region where the crude oil and coal were formed (Peters and Moldowan, 1993). The term, genetic signature, refers to the relationship between the molecular architecture of preserved organic matter to the organisms and geochemical processes controlling or influencing the formation of fossil fuel. Having survived millennia under heated and pressurized conditions, selected biomarkers (*e.g.,* triterpanes and steranes) resist the degradation processes that occur in most coastal sediment environments. These biomarkers are capable of differentiating the origins of heavy hydrocarbons even when most of the more labile compounds degrade.

We recognized three triterpane biomarker patterns in the Study Area samples (Figure 8, Table 3). Pattern A consisted of oleanane plus Ts and Tm in approximately equal abundances and was devoid of tricyclic triterpanes (Figure 8a). Pattern B resembled Pattern A, except the amount of Ts was slightly more than Tm and was enriched in tricyclic triterpanes (Figure 8b). Pattern C resembled Pattern A, except the amount of Ts was less than Tm (Figure 8c). These three patterns established that the residual range petroleum likely originated from different crude oils. The measurement of Ts was difficult in several samples due to the likely co-elution with another known biomarker compound (Figure 8d). Samples with

this problem could not be definitively separated into Pattern A or C (Table 3). Pattern D was only observed in the crude oil reference sample (Figure 8e).

For the purposes of this project, the triterpanes simply provided an independent confirmation that residual range petroleum was present in the Study Area samples. With the exception of Pattern B observed at sampling location 04, the genetic origin of the residual range petroleum (Triterpane Patterns A, C, and A/C) was widely observed in Reference and Shipyard locations (Table 3). In other words, the residual range petroleum associated with Patterns A and C were not uniquely sourced to Shipyard operations. One possible origin was abraded asphalt and roadway runoff from regional sources that drained into the proximal sediments. The trace (t) levels of triterpanes in the Jamestown Potter Cove (JPC) Reference Area locations indicated lower inputs of residual range petroleum relative to the other Study Area samples.

5. SUMMARY

The Navy conducted a hydrocarbon characterization of sediments collected around the former Derecktor Shipyard (Shipyard) within the Naval Station located in Coddington Cove in Newport, RI. The objective of this study was intended to help the project team evaluate the cleanup liability of the Navy with respect to possible impacts from historical activities in the Shipyard. This study compared the concentrations and compositions of petroleum and hydrocarbon combustion residues in these sediments with three background Reference Areas in Narragansett Bay (Jamestown Cranston Cove, Jamestown Potter Cove, and Castle Hill Cove). In order to address the project objectives, advanced chemical analyses (high resolution hydrocarbon fingerprints, alkylated PAHs, and biomarker fingerprints) were performed on twenty-one sediment samples collected from the Shipyard plus six Reference Area sediments. The results of these analyses yielded the following conclusions:

- The six Reference Area sediments contained varied hydrocarbon mixtures derived from petroleum (petrogenic), combustion (pyrogenic), and natural (diagenetic) origins. The dominant hydrocarbons consisted of weathered residual range petroleum mixed with plant waxes and pyrogenic PAHs. The concentration of the 16 EPA Priority Pollutant PAHs ranged from 220 ug/kg to 6,500 ug/kg. Sediments from Jamestown Cranston Cove contained the highest levels of plant waxes while Castle Hill Cove contained the highest levels of pyrogenic PAHs.

- Sediment samples from the shallow cores at sampling locations DSY-SD-101 (EPAPAHs equal to 9,500 ug/kg in the 6" to 12" interval) and DSY-SD-103 (EPAPAHs from 11,000 ug/kg to 44,000 ug/kg in the first two 6" intervals, respectively) resembled the Castle Hill Cove reference sediments but had slightly higher levels of pyrogenic 4- to 6-ring PAHs. The high level of anthracene (A0) relative to phenanthrene (P0) in these sediments was consistent with the presence of creosote used to treat marine pilings and other wooden structures.

- Sediment samples collected from locations DSY-SD-03-082604 and DSY-SD-29-082604 also contained slightly higher pyrogenic 4- to 6-ring PAHs (EPAPAHs equal to 22,000 ug/kg to15,000 ug/kg, respectively) in comparison to background reference sediments. We attributed the elevated PAHs to higher soot loadings from proximal storm drains, ship engine exhaust, and local industry.

- The sediment sample DSY-SD-09-082604 contained PAH levels consistent with background (EPAPAHs equal to 490 ug/kg to 700 ug/kg). However, compared to other Coddington Cove and background reference samples, this sediment contained slightly higher levels of hydrocarbons associated with middle to heavy residual range petroleum *(e.g.,* slightly enriched petrogenic PAHs). This pattern was very similar to DSY-SD-06-082504 (EPAPAHs equal to 3,600 ug/kg). DSY-SD-27-082604 contained a mixture of combustion derived PAHs plus slightly higher levels of hydrocarbons consistent with middle distillate fuel *(e.g.,* marine diesel) (EPAPAHs equal to 7,900 ug/kg).

- The remaining sediment samples were indistinguishable from the background based on hydrocarbons concentration and composition. These samples included DSY-SD-02-082504, DSY-SD-04-082604, DSY-SD-05-082604, DSY-SD-08-082504, DSY-SD-11-082604, DSY-SD-20-082604, DSY-SD-28-082504, DSY-SD-31-082604, DSY-SD-32-082604, DSY-SD-36-082604, DSY-SD-101-0006, DSY-SD-104-0006, and DSY-SD-104-0612.

In summary, the former Derecktor Shipyard generally contained hydrocarbon concentrations and compositions that were consistent with background represented by Reference Area locations in Narragansett Bay. Slightly elevated PAH concentrations were observed near creosote treated wood pilings and storm sewer outfalls. Mixtures of background hydrocarbons and low levels of middle to heavy petroleum were observed in three separate Study Area locations. We attributed these petroleum residues to fueling or other vessel related activities. However, these petroleum residues contributed little to the elevated levels of PAHs in the Shipyard.

6. REFERENCES

American Wood Preservers Association (2001) Standard Methods for Analysis of Creosote and Oil-Type Preservatives, AWPA Selma, AL.

Emsbo-Mattingly, S.D., A.D. Uhler, S.A. Stout, K.J. McCarthy. (2001) Identifying Creosote at Contaminated Sites: An Environmental Forensics Overview, Contaminated Soil Sediment and Water. AEHS Contaminated Soil, Sediment and Water.

Emsbo-Mattingly, S.D., Boehm, P.D., Coleman, A. (2003) Identifying PAHs from Manufactured Gas Plant Sites. EPRI Technical Report 1005289, Palo Alto, CA.

Peters, K.E. and J.M. Moldowan (1993) The Biomarker Guide. Prentice Hall, Englewood Cliffs, New Jersey, 363 p.

Rhodes, E.O. (1945) The Chemical Nature of Coal Tar. In: Chemistry of Coal Utilization, Vol 2, John Wiley & Sons, Inc., New York, p 1287-1370.

Stout, S.A., Uhler, A.D., McCarthy, K.J. and Emsbo-Mattingly, S.D. (2002) Chemical Fingerprinting of Hydrocarbons. In: Introduction to Environmental Forensics, (B. Murphy and R. Morrison, Eds.), Academic Press.

Stout, S.A., Leather, J.M., and Corl, W.E. III (2003) A User's Guide for Determining the Sources of Contaminants in Sediments. A Demonstration Study: Sources of PAH in the Sediments in the Vicinity of the Norfolk Naval Shipyard, Elizabeth River, Norfolk, Virginia. U.S. Dept. of the Navy, SPAWAR Systems Center, San Diego, Technical Report 1907, Sept. 2003, 97 pp.

Stout, S.A., Uhler, A.D., and Emsbo-Mattingly, S.D. (2004) Comparative Evaluation of Background Anthropogenic Hydrocarbons in Surficial Sediments from Nine Urban Waterways. Environ. Sci. Technol. 38(11): 2987-2994.

Attachment A
Tables

Table 1. Study Area Sample Summary

Client Sample ID	Abbrev	Laboratory Sample ID	Description	Date Collected	Date Received	Matrix	High Resolution Hydrocarbon Fingerprint (GC/FID)	Alkylated PAH (GC/MS)	Biomarker (GC/MS)
DSY-SD-02-082504	02	0408123-07	Near shore	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-03-082604	03	0408123-12	Near shore	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-04-082604	04	0408124-02	Near shore	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-05-082604	05	0408123-14	Between Piers Near Aircraft Carriers	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-06-082504	06	0408123-10	Between Piers Near Aircraft Carriers	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-08-082604	08	0408124-01	Between Piers Near Aircraft Carriers	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-09-082604	09	0408123-11	Near Stormwater Outfall	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-11-082604	11	0408124-06	Between Piers Near Aircraft Carriers	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-20-082604	20	0408124-03	Between Piers Near Aircraft Carriers	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-27-082604	27	0408124-04	Near shore	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-28-082504	28	0408123-09	Near shore	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-29-082604	29	0408123-13	Near shore	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-31-082604	31	0408124-05	Between Piers Near Aircraft Carriers	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-32-082604	32	0408124-07	North of Pier 2	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-36-082604	36	0408124-08	North of Pier 2	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-101-0006	101-0006	0408123-01	End of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-101-0612	101-0612	0408123-02	End of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-103-0006	103-0006	0408123-03	Near Shore and North of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-103-0612	103-0612	0408123-04	Near Shore and North of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-104-0006	104-0006	0408123-05	Near Shore and South of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-104-0612	104-0612	0408123-06	Near Shore and South of Pier 1	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-CC01-082604	CC01	0408124-09	Reference (Cranston Cove)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-CC02-082604	CC02	0408124-10	Reference (Cranston Cove)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-JPC01-082604	JPC01	0408124-11	Reference (Jamestown Potter Cove)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-JPC03-082604	JPC03	0408124-12	Reference (Jamestown Potter Cove)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-CH01-082604	CH01	0408124-14	Reference (Castle Hill)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-CH02-082604	CH02	0408124-15	Reference (Castle Hill)	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-DUP01-082504	DUP01	0408123-08	QC	08/25/04	08/31/04	Solid	X	X	X
DSY-SD-DUP02-082604	DUP02	0408123-15	QC	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-DUP03-082604	DUP03	0408124-13	QC	08/26/04	08/31/04	Solid	X	X	X
DSY-SD-FB01-082704	FB01	0408122-04	QC	08/27/04	08/31/04	Water	X	X	
DSY-SD-RB01-082504	RB01	0408122-01	QC	08/25/04	08/31/04	Water			
DSY-SD-RB02-082604	RB02	0408122-02	QC	08/26/04	08/31/04	Water			
DSY-SD-RB03-082604	RB03	0408122-03	QC	08/26/04	08/31/04	Water			
Total					34		31	31	30

X denotes that analyses were performed.

Table 2. PAH Analytes

Analyte	Abbreviation	Aromatic Ring Number	Total PAH (TPAH)	EPA Priority Pollutant PAH (EPAPAH)
Naphthalene	N0	2	X	X
C1-Naphthalenes	N1	2	X	
C2-Naphthalenes	N2	2	X	
C3-Naphthalenes	N3	2	X	
C4-Naphthalenes	N4	2	X	
Biphenyl	B	2	X	
Acenaphthylene	AY	3	X	X
Acenaphthene	AE	3	X	X
Dibenzofuran	DF	3	X	
Fluorene	F0	3	X	X
C1-Fluorenes	F1	3	X	
C2-Fluorenes	F2	3	X	
C3-Fluorenes	F3	3	X	
Anthracene	A0	3	X	X
Phenanthrene	P0	3	X	X
C1-Phenanthrenes/Anthracenes	PA1	3	X	
C2-Phenanthrenes/Anthracenes	PA2	3	X	
C3-Phenanthrenes/Anthracenes	PA3	3	X	
C4-Phenanthrenes/Anthracenes	PA4	3	X	
Dibenzothiophene	DBT0	3	X	
C1-Dibenzothiophenes	DBT1	3	X	
C2-Dibenzothiophenes	DBT2	3	X	
C3-Dibenzothiophenes	DBT3	3	X	
C4-Dibenzothiophenes	DBT4	3	X	
Benzo(b)fluorene	BF	4	X	
Fluoranthene	FL0	4	X	X
Pyrene	PY0	4	X	X
C1-Fluoranthenes/Pyrenes	FP1	4	X	
C2-Fluoranthenes/Pyrenes	FP2	4	X	
C3-Fluoranthenes/Pyrenes	FP3	4	X	
C0-Benzo(b)naphthothiophenes	BNT0	4	X	
C1-Benzo(b)naphthothiophenes	BNT1	4	X	
C2-Benzo(b)naphthothiophenes	BNT2	4	X	
C3-Benzo(b)naphthothiophenes	BNT3	4	X	
C4-Benzo(b)naphthothiophenes	BNT4	4	X	
Benzo(a)anthracene	BA0	4	X	X
Chrysene	C0	4	X	X
C1-Chrysenes	BC1	4	X	
C2-Chrysenes	BC2	4	X	
C3-Chrysenes	BC3	4	X	
C4-Chrysenes	BC4	4	X	
Benzo(b)fluoranthene	BB	5	X	X
Benzo(j/k)fluoranthene	BJK	5	X	X
Benzo(a)fluoranthene	BAF	5	X	
Benzo(e)pyrene	BEP	5	X	
Benzo(a)pyrene	BAP	5	X	X
Perylene	PER	5	X	
Indeno(1,2,3-c,d)pyrene	IND	6	X	X
Dibenz(a,h)anthracene	DA	5	X	X
Benzo(g,h,i)perylene	GHI	6	X	X

Table 3. Summary of Hydrocarbon Chemistry.

Client ID	Description	EPAPAH (mg/kg)	TPAH (mg/kg)	Hopane (mg/kg)	TOC (mg/kg)	Saturates & Biomarkers KR	DR	RR	PW	TT	Dominant Anthropogenic Hydrocarbon Pattern
DSY-SD-02-082504	Near Shore	1.99	3.32	0.07	16,500			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-03-082604	Near Shore	22.2	34.4	0.32	24,000			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-04-082604	Near Shore	3.61	5.87	0.11	19,000			X	X	B	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-05-082604	Near Piers	1.67	3.05	0.12	18,000			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-06-082504	Near Piers	3.56	9.63	1.00	18,000		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-08-082604	Near Piers	1.85	2.97	0.06	16,000			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-09-082604	Near Shore	0.70	1.26	0.05	4,150		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-09-082604 DUP	Near Shore	0.49	0.92	0.04	3,850		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-11-082604	Near Piers	3.06	5.71	0.36	14,000		X	X	X	A	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-20-082604	Near Piers	1.46	2.31	0.04	15,500			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-27-082604	Near Shore	7.86	13.0	0.33	15,000	X	X	X	X	C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel and Kerosene
DSY-SD-28-082504	Near Shore	2.09	3.52	0.11	19,500			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-29-082604	Near Shore	15.1	23.6	0.22	24,500			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-31-082604	Near Piers	2.23	3.58	0.08	15,500			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-32-082604	North of Piers	0.97	1.57	0.03	15,500			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-36-082604	North of Piers	1.12	1.68	0.02	4,850			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-101-0006	Near Piers	3.56	6.09	0.16	14,500		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-101-0612	Near Piers	9.50	15.3	0.31	14,500		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-103-0006	Near Shore	11.1	17.2	0.26	14,500		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-103-0612	Near Shore	43.8	70.8	1.40	16,000		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-104-0006	Near Shore	2.16	3.72	0.12	18,000		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-104-0612	Near Shore	3.65	5.97	0.16	16,500		X	X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs and Weathered Diesel
DSY-SD-CC01-082604	Reference	1.24	1.81	0.005	6,000			X	X	C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-CC02-082604	Reference	0.31	0.46	0.004	4,900			X	X	C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-JPC01-082604	Reference	0.28	0.48	0.005	6,550			X	X	t	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-JPC03-082604	Reference	0.22	0.36	0.001	3,050			X	X	t	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-CH01-082604	Reference	6.51	11.7	0.16	16,500			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-CH01-082604 DUP	Reference	4.50	8.64	0.13	17,000			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-CH02-082604	Reference	0.45	1.05	0.02	7,550			X	X	A	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-DUP01-082504	QC	1.47	2.45	0.07	18,500			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-DUP02-082604	QC	1.38	2.51	0.08	16,000			X	X	A/C	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-DUP03-082604	QC	0.16	0.27	0.001	3,450			X	X	t	Heavy Weathered Residual Petroleum with Low PAHs
DSY-SD-FB01-082704	QC	ND	ND	ND	ND						No significant hydrocarbons
Reference Crude	QC	0.90	9.20	0.17	NA			X	X	D	Unweathered Crude
Reference Crude	QC	0.92	10.6	0.12	NA			X	X	D	Unweathered Crude

Key:
Saturated Hydrocarbon Fingerprint Categories: KR kerosene range, DR diesel range, RR residual range, and PW plant waxes.
Triterpane (TT) Biomarkers: Pattern A - O plus Ts ≈ Tm; B – O plus Ts > Tm; C – O plus Ts < Tm; D - no O; A/C – O plus Ts ≤ Tm (specific abundance of Ts was obstructed by coelution).

Attachment B
Figures

Figure 1. Site Summary Map

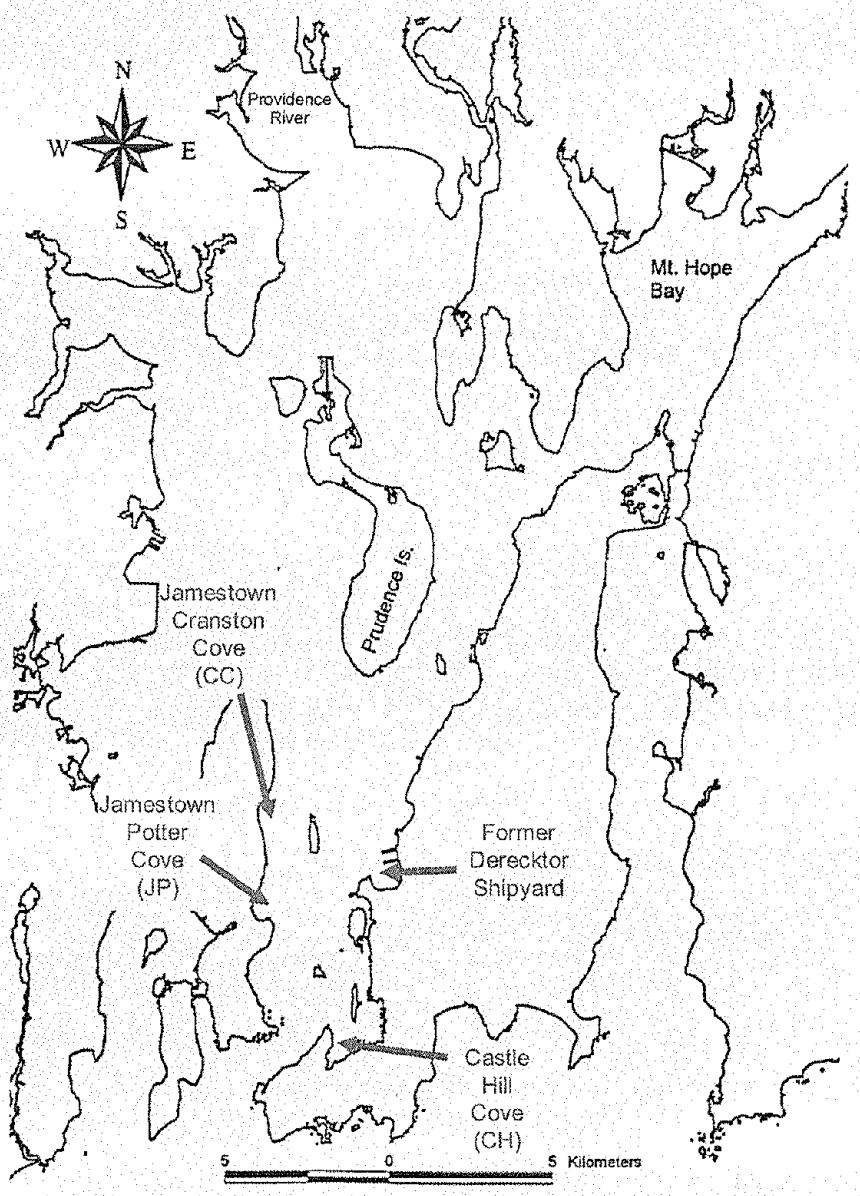


Figure 2-1. Allen Harbor and Reference Locations in Narragansett Bay.

P:\Projects\Federal\DOD\Navy\Projects\2660097\SedimentSampleWP\Draft\QAPP\Addendum\Figures\RefLocMap.cdr

Figure 2. Former Derecktor Shipyard Site

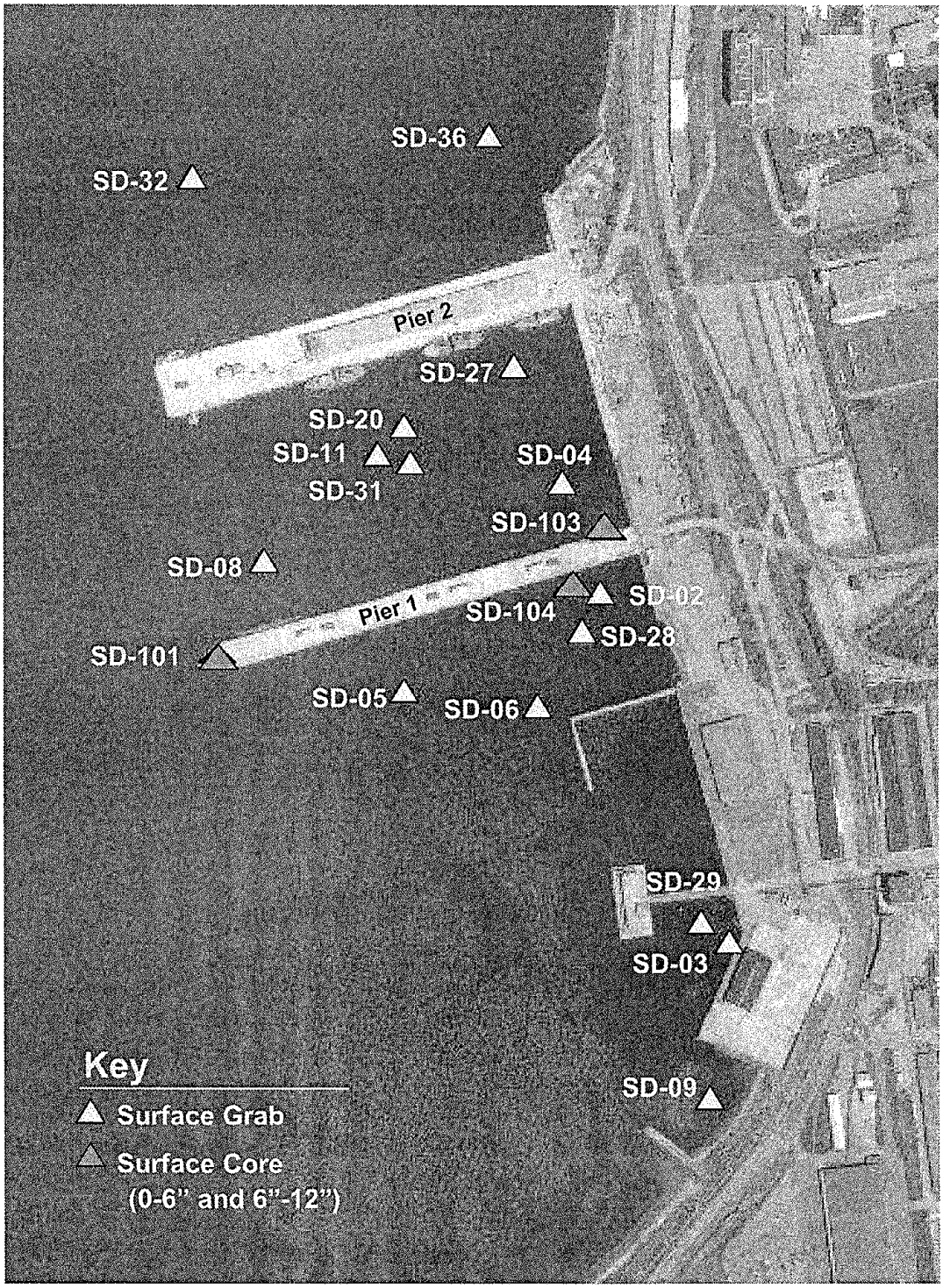
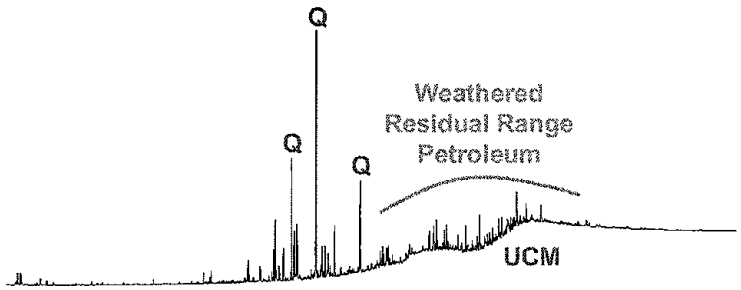
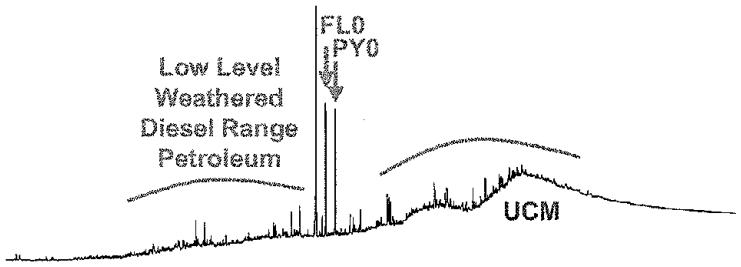


Figure 3. Selected High Resolution Hydrocarbon Fingerprints (GC/FID)

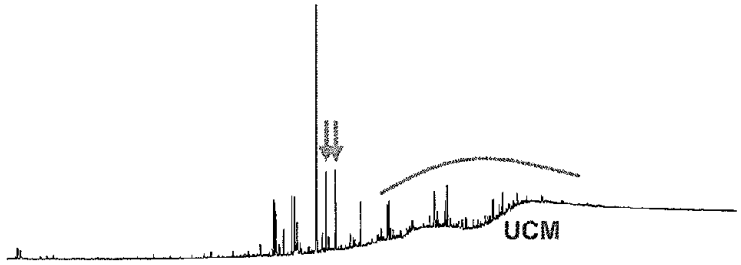
a. DSY-SD-CH01-082604
Weathered residual range petroleum dominated the fingerprint. Low levels of PAHs were evident. Other Reference Area samples contained more plant waxes.



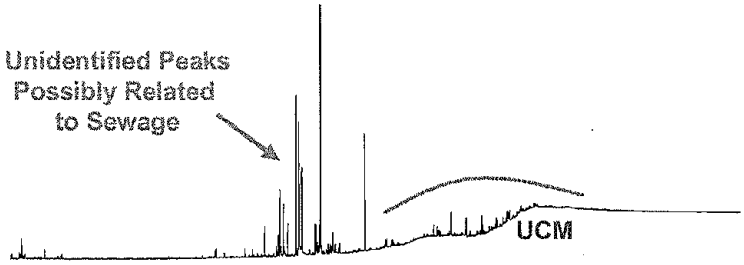
b. DSY-SD-103-0612
This fingerprint resembled the CH Reference Area (Figure 3a) with slightly higher levels of PAHs and residues of degraded diesel range petroleum.



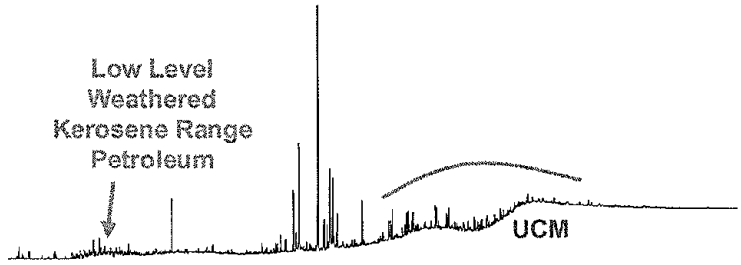
c. DSY-SD-03-082604
This fingerprint resembled the CH Reference Area (Figure 3a) with slightly higher levels of PAHs.



d. DSY-SD-09-082604
This fingerprint resembled the CH Reference Area (Figure 3a) with unidentified peaks possibly derived from sewage.



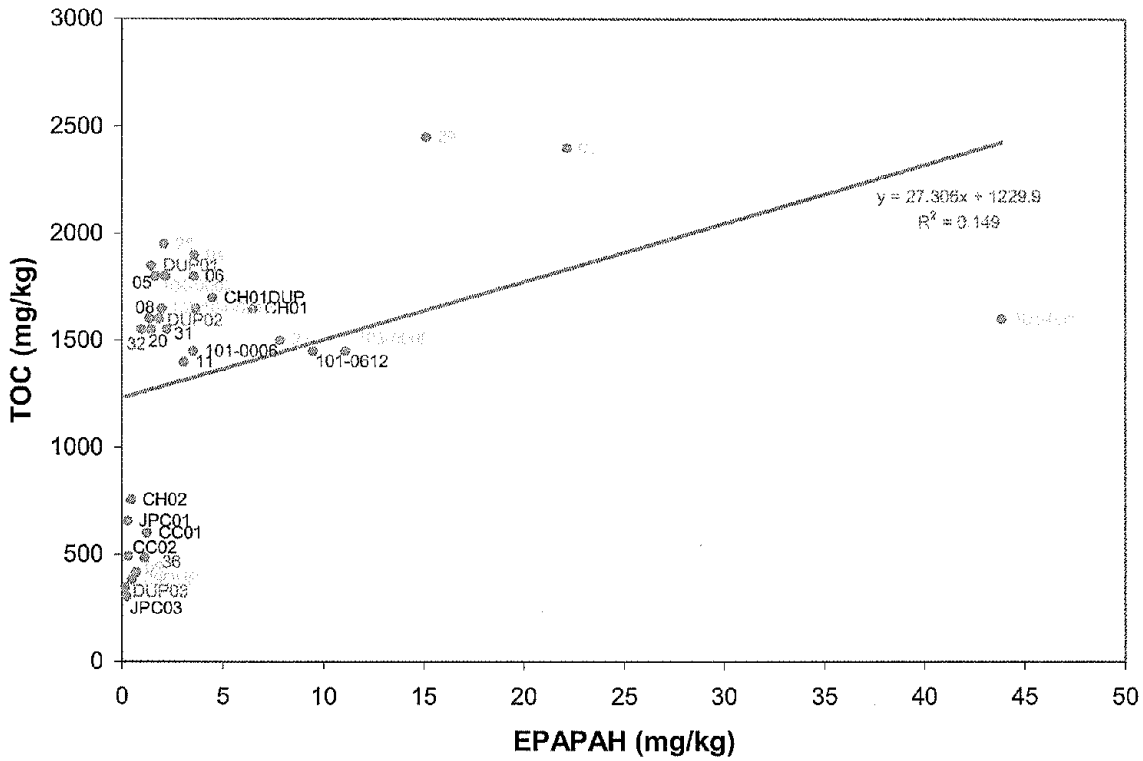
e. DSY-SD-27-082604
This fingerprint resembled the CH Reference Area (Figure 3a) with residues of degraded kerosene and diesel range petroleum.



FL0 fluoranthene and PY0 pyrene (Table 2)
Q quality control compounds include surrogates and internal standards
UCM unresolved complex mixture

Figure 4. Relationships Among Bulk Hydrocarbon Measurements.

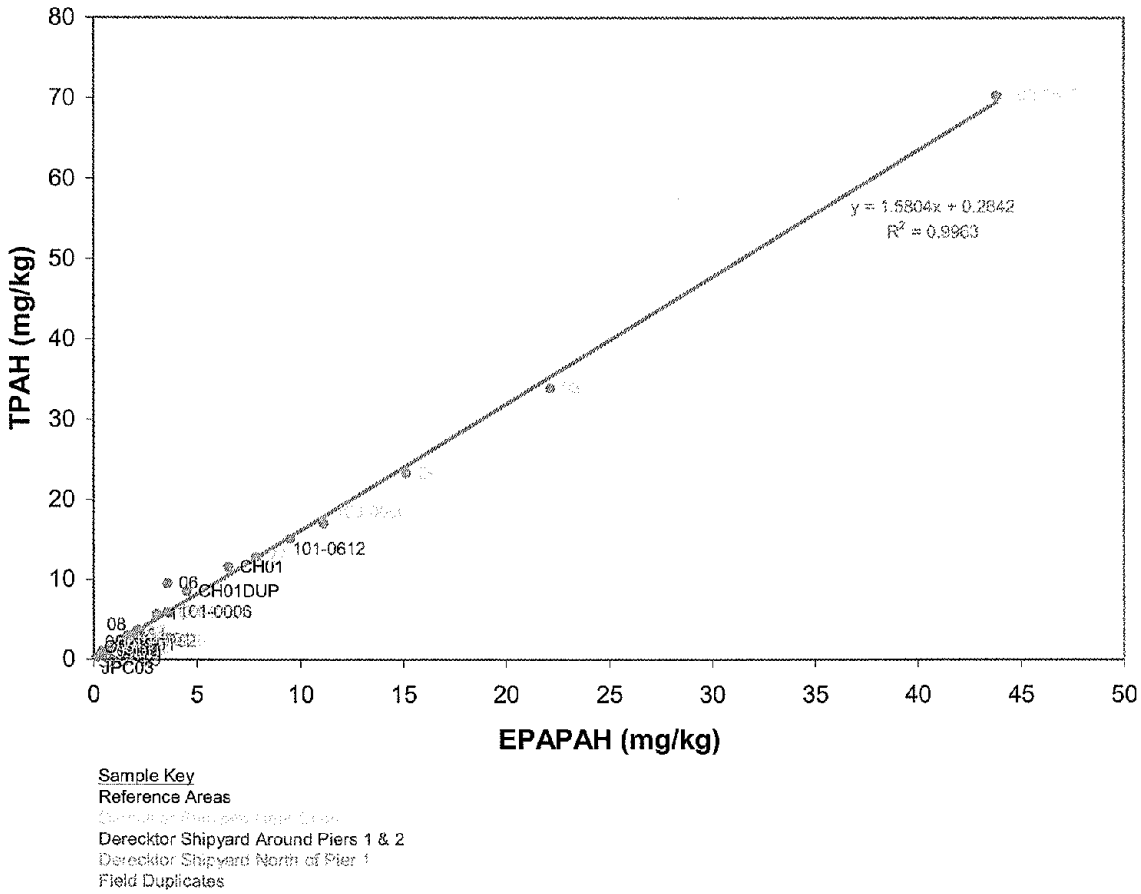
a. EPAPAH v TOC.
The quantities of total EPAPAHs and TOC were basically independent in the Study Area (R^2 = 0.149). Therefore, TOC was not a leading indicator of pyrogenic PAHs. The majority of samples contained PAHs and TOC equal to the Reference Area concentrations. Samples with significantly higher levels of PAHs and TOC than the Reference Areas included 03, 29, and 103. Marginally higher PAH concentrations were present at sampling locations 27 and 101. The majority of samples with higher levels of PAHs reside in the near shore. The shallow core at 103 exhibited higher PAH concentrations of PAHs in the 6" to 12" interval relative to the 0" to 6" interval. This trend was also evident to a lesser degree in the shallow cores at 101 and 104.



Sample Key
Reference Areas
Derecktor Shipyard Around Piers 1 & 2
Derecktor Shipyard North of Pier 1
Field Duplicates

Figure 4. Relationships Among Bulk Hydrocarbon Measurements (cont).

b. EPAPAH v TPAH.
TPAHs include EPAPAHs plus numerous alkylated PAHs and dibenzothiophenes. Samples with elevated higher levels of TPAH relative to EPAPAH often contain elevated petroleum and samples with lower levels of TPAH contained combustion byproducts. A good correlation existed between the concentrations of EPAPAH and TPAH (R^2 = 0.9963). Using this general rule, samples 06 likely contained slightly higher levels of petroleum. Several samples (03, 27, 29, 101 and 103) contained enriched levels of pyrogenic material. Again, the near shore and deeper core sediments had higher PAH levels than off shore and surficial core sediments. The remaining samples were reasonably consistent with the variable loading of background PAHs.



Sample Key
Reference Areas
Dereckter Shipyard Around Piers 1 & 2
Dereckter Shipyard North of Pier 1
Field Duplicates

Figure 4. Relationships Among Bulk Hydrocarbon Measurements (cont).

c. EPAPAH v Hopane.
Hopane is a conservative marker for heavy petroleum range material – high levels of hopane indicate high levels of residual range petroleum. The correlation between EPAPAH and hopane was fair (R^2 = 0.609) and largely controlled by the higher levels of both petroleum and combustion byproducts in 103-0612. High relative concentrations of hopane relative to EPAPAHs were consistent with enriched petroleum (see samples 06, 11, and 27). Samples with low levels of hopane relative to EPAPAHs had higher levels of combustion byproducts (see samples 03, 29, and 103-0006).

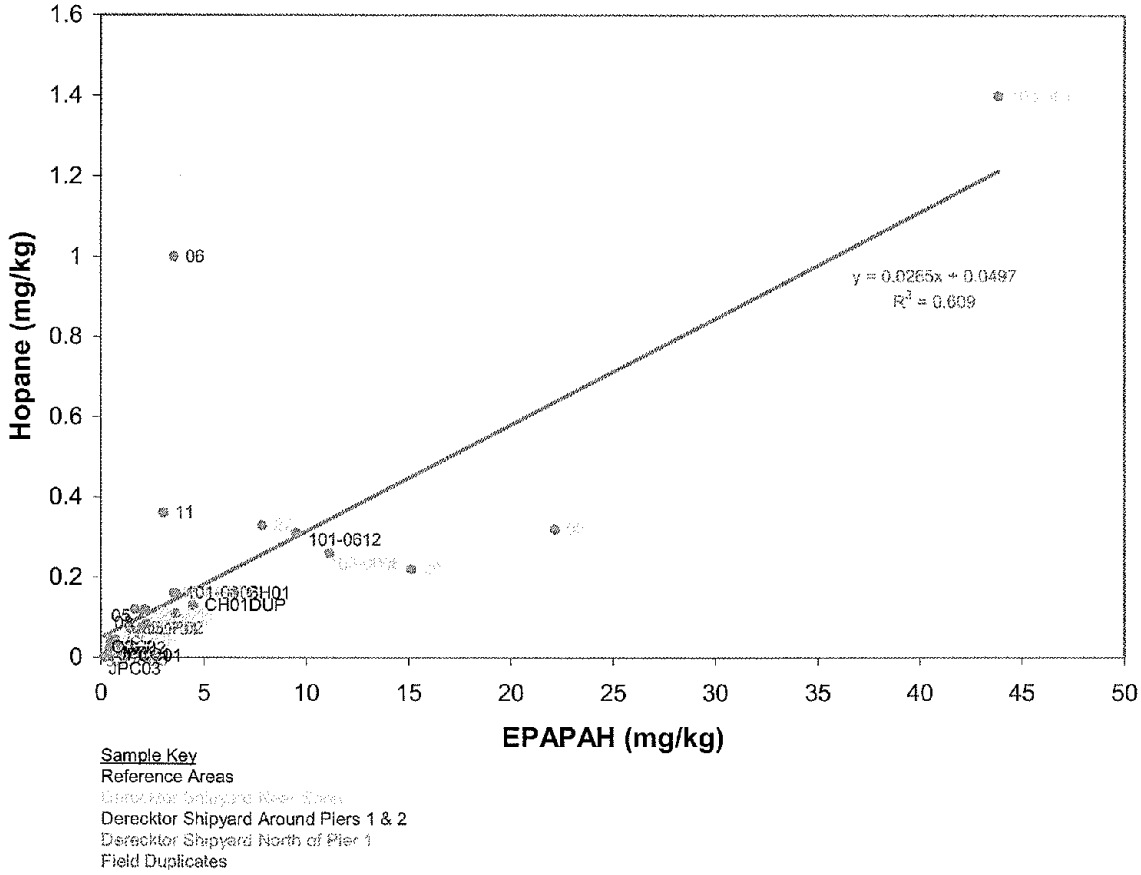
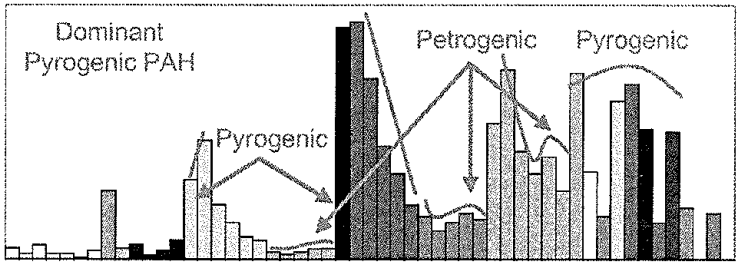
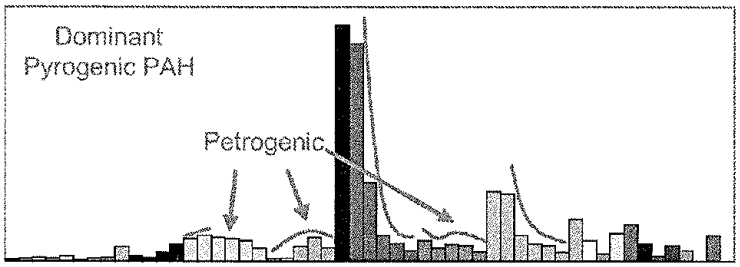


Figure 5. Selected PAH Histograms (GC/MS/SIM).

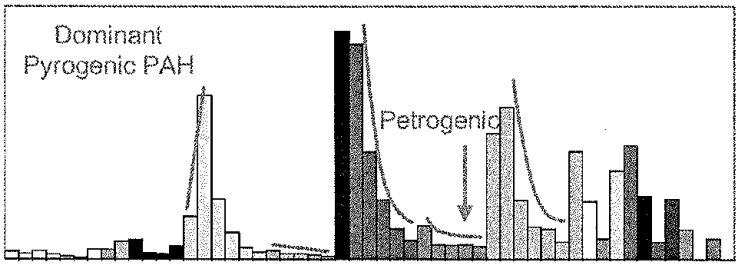
a. DSY-SD-CH01-082604
Reference areas contained 3- to 6-ring pyrogenic PAHs mixed with lesser amounts of petrogenic 3- and 4-ring PAHs. Lower levels of 2- and 3-ring PAHs indicated weathering.



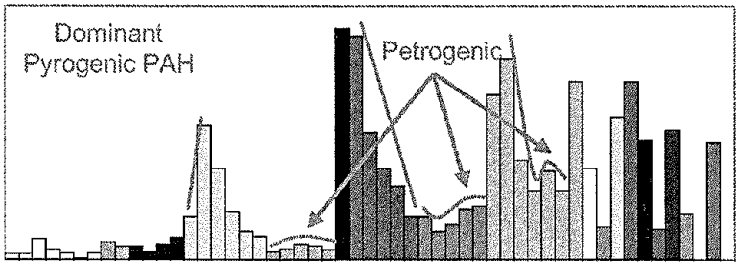
b. DSY-SD-103-0612
Similar to the Reference Area with higher levels of 4-ring pyrogenic PAHs. The high level of A0 relative to P0 is consistent with a refined tar product, like creosote wood preservative.



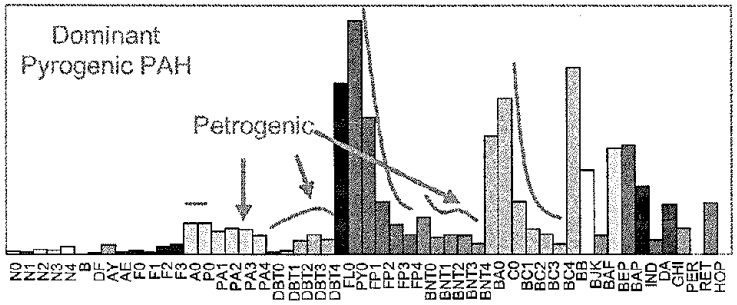
c. DSY-SD-03-082604
Similar to the Reference Area with higher levels of pyrogenic PAHs.



d. DSY-SD-09-082604
Similar mixture of petrogenic and pyrogenic PAHs to Reference Area.



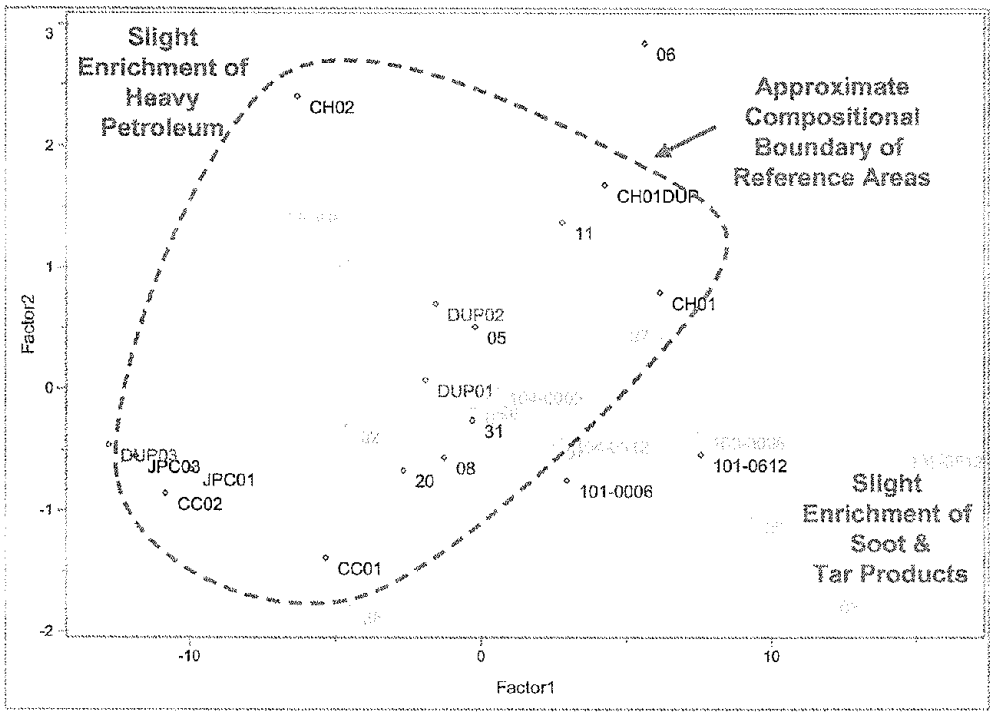
e. DSY-SD-27-082604
Similar to the Reference Area. The high level of A0 relative to P0 is consistent with a refined tar product, like creosote wood preservative.



PAH abbreviations on Table 2.

Figure 6. Principal Components Analysis of PAH Analytes In Field and Reference Samples (cont).

a. Sample Groupings (PCA Scores Plot).
All samples predominantly contained pyrogenic PAHs. The differences were primarily attributed to varying levels of petrogenic PAHs. Samples with higher levels of petroleum plotted in the upper left while lesser relative abundances of petroleum were associated with the samples in the lower right. Sample 06 contained more middle distillate range petrogenic PAHs. Samples from 03, 29, 36, 101, and 103 contained higher levels of pyrogenic PAHs than observed in the Reference Areas. Sample 36 contained more pyrogenic 3-ring PAHs than the other study samples.



Sample Key
Reference Areas
Derecktor Shipyard New Slipway
Derecktor Shipyard Around Piers 1 & 2
Derecktor Shipyard North of Pier 1
Field Duplicates

Figure 6. Principal Components Analysis of PAH Analytes In Field and Reference Samples (cont).

b. Analyte Groupings (PCA LoadingsPlot).
Principal components 1 (x-axis) and 2 (y-axis) accounted for 93% and 2% of the variability, respectively. The PAH concentration data illustrate the primary compositional features that differentiated the samples: heavy petroleum residuals enriched in 4-ring petrogenic PAHs plotted in the upper left and soot or tar residues enriched in 3- to 6-ring PAHs plotted in the lower right.

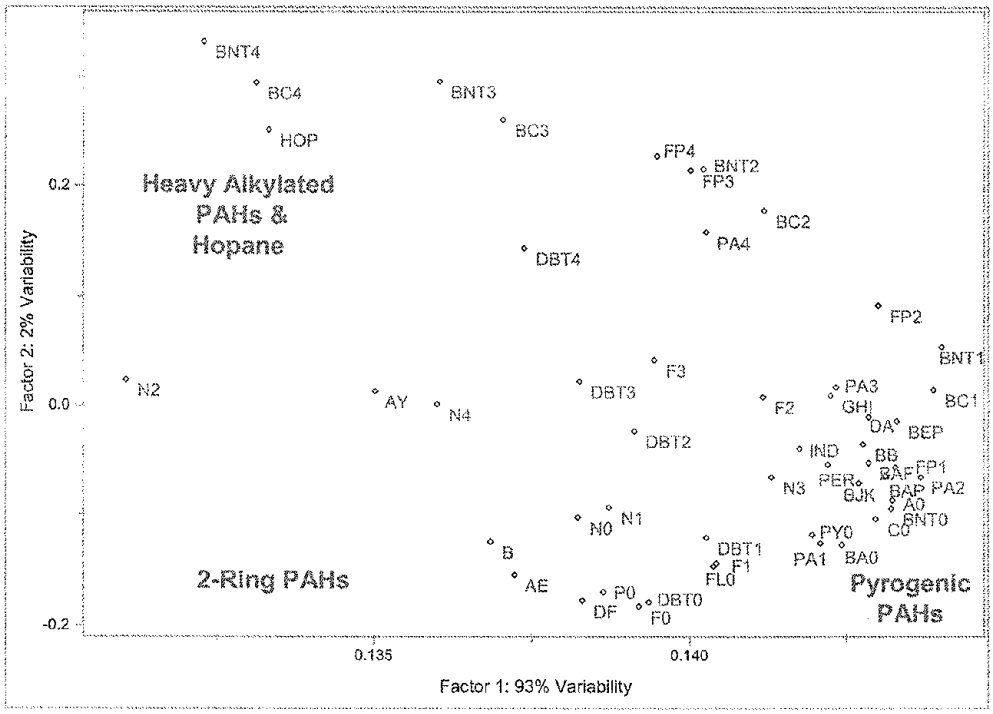
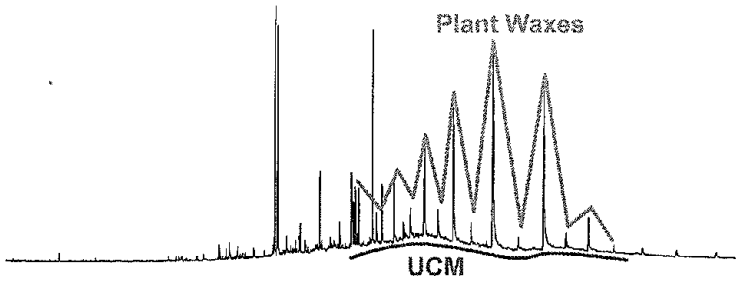
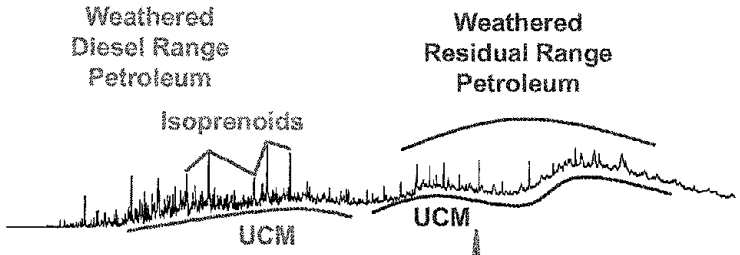


Figure 7. Saturated Hydrocarbon Fingerprints (GC/MS/SIM).

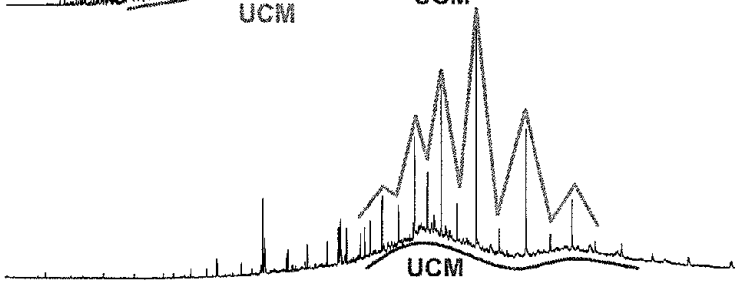
a. DSY-SD-CH01-082604
Enriched odd carbon numbered normal alkanes indicate strong plant wax signal. Late eluting UCM indicates heavy petroleum (asphalt, lube or hydraulic oils).



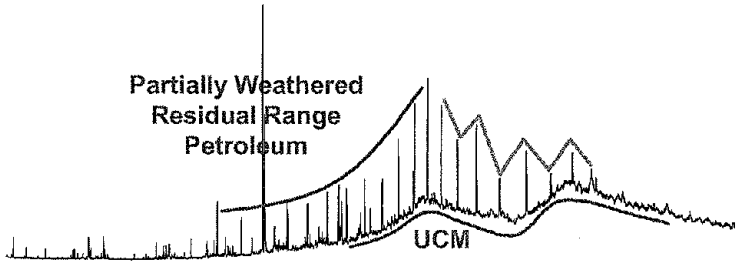
b. DSY-SD-103-0612
Diesel range isoprenoides and UCM. Late eluting UCM indicates heavy petroleum (asphalt, lube or hydraulic oils).



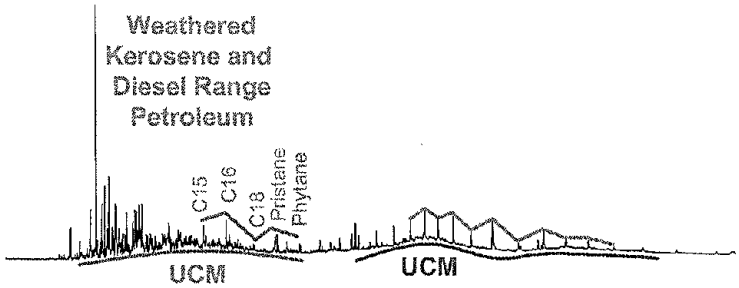
c. DSY-SD-03-082604
Enriched odd carbon numbered normal alkanes indicate strong plant wax signal. Late eluting UCM indicates heavy petroleum (asphalt, lube or hydraulic oils).



d. DSY-SD-09-082604
Similar to DSY-SD-CH01-082604 with higher levels of partially weathered heavy petroleum.



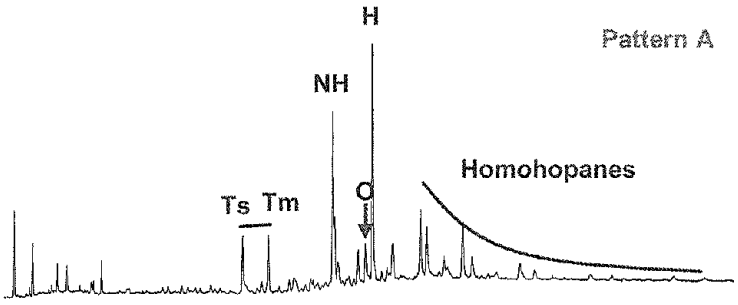
e. DSY-SD-27-082604
Lightest material consistent with weathered kerosene range petroleum. Diesel range isoprenoides and UCM. Late eluting UCM indicates heavy petroleum (asphalt, lube or hydraulic oils).



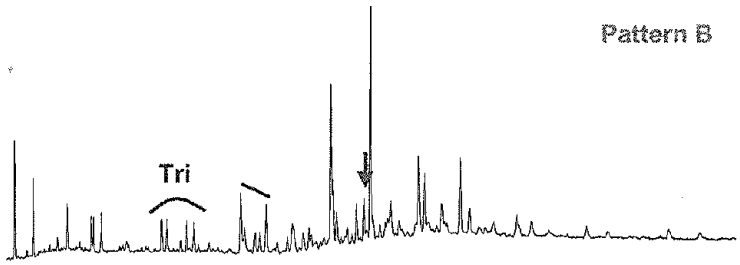
UCM unresolved complex mixture

Figure 8. Triterpane Biomarker Patterns (GC/MS/SIM).

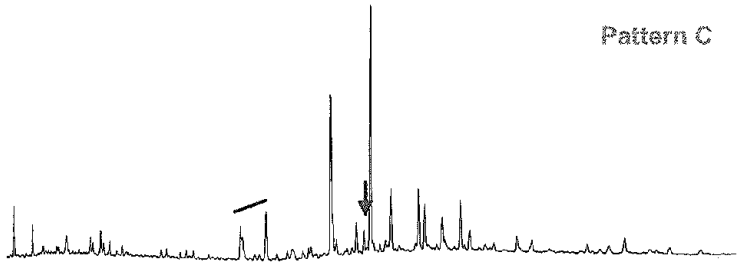
a. DSY-CH01-082604
Pattern A consists of a full range of triterpanes as presented. The distinctive feature of this petroleum among samples in this report includes O plus Ts ≈ Tm.



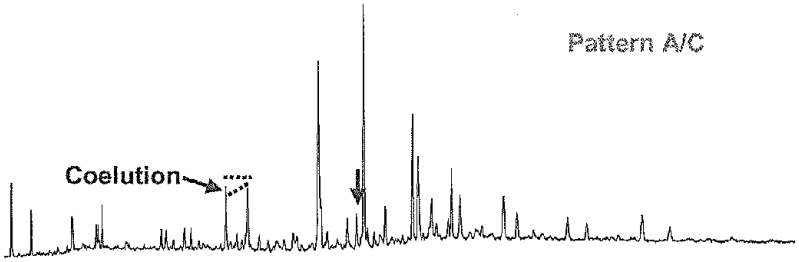
b. DSY-SD-04-082604
Pattern B resembles pattern A with Ts > Tm and higher levels of Tri.



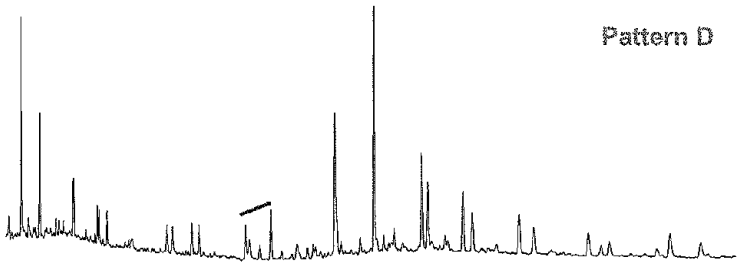
c. DSY-SD-27-082604
Pattern C resembles pattern A with Ts < Tm.



d. DSY-SD-103-0612
A peak coeluted with Ts and prevented the differentiation between Patterns A and C.



e. Reference Crude
Pattern D occurred only in the reference crude sample. This petroleum contained little to no O.



Ts 18α(H)-22,29,30-Trisnorneohopane
Tm 17α(H)-22,29,30-Trisnorhopane
NH 30-Norhopane
H Hopane
O Oleananes
Tri Tricyclic triterpanes

Attachment C
High Resolution Hydrocarbon Fingerprinting Results by GC/FID

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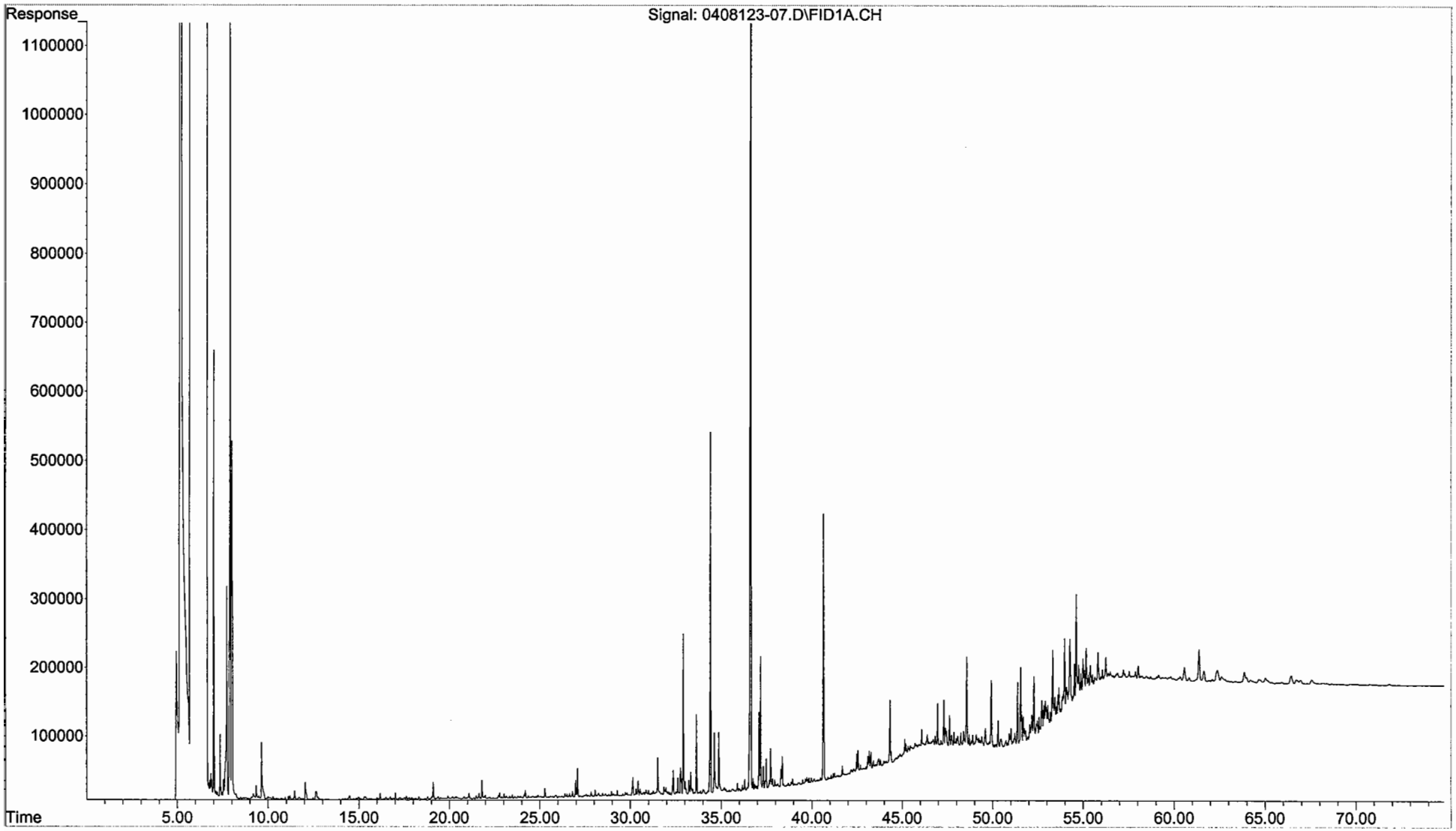

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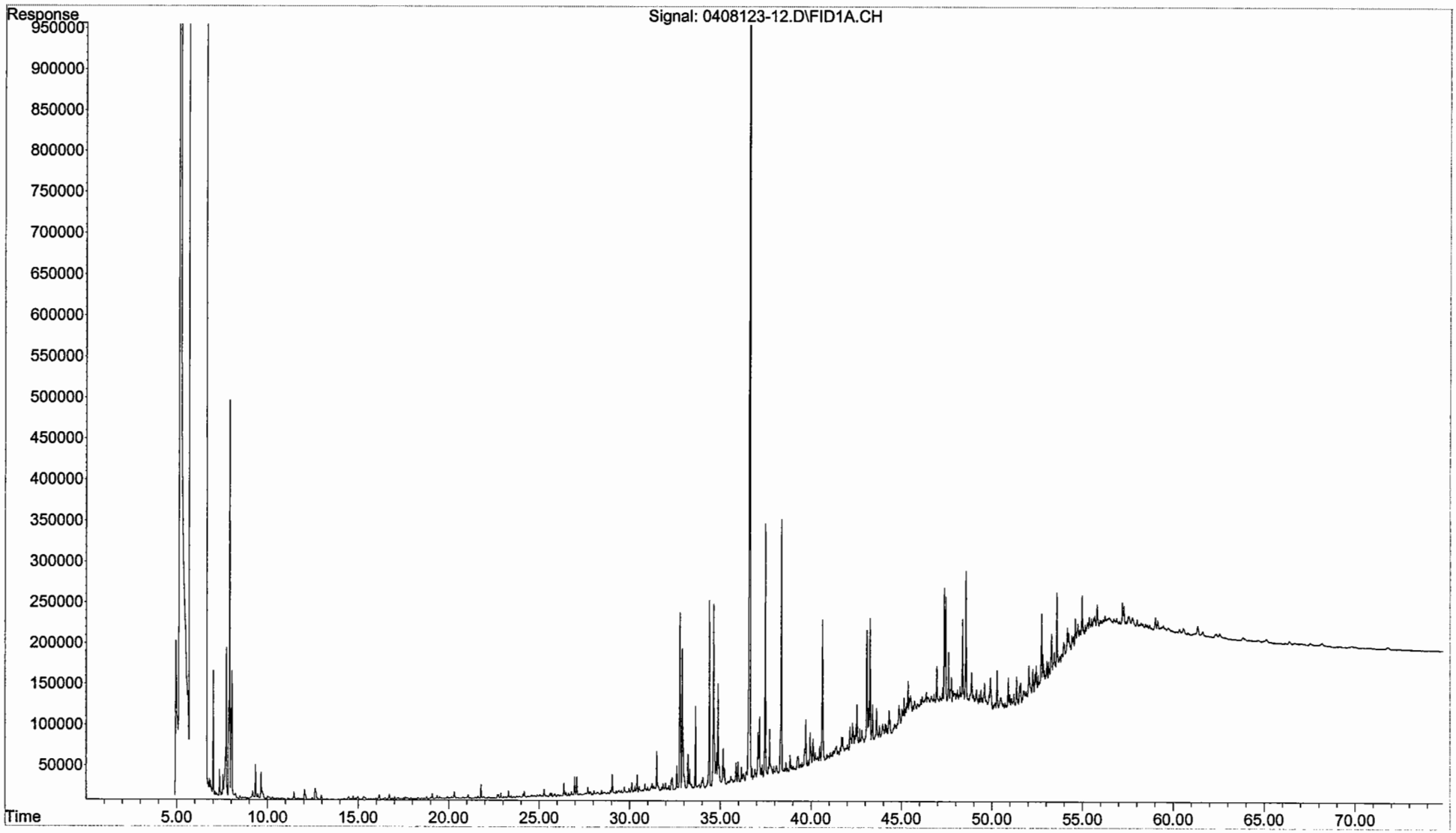

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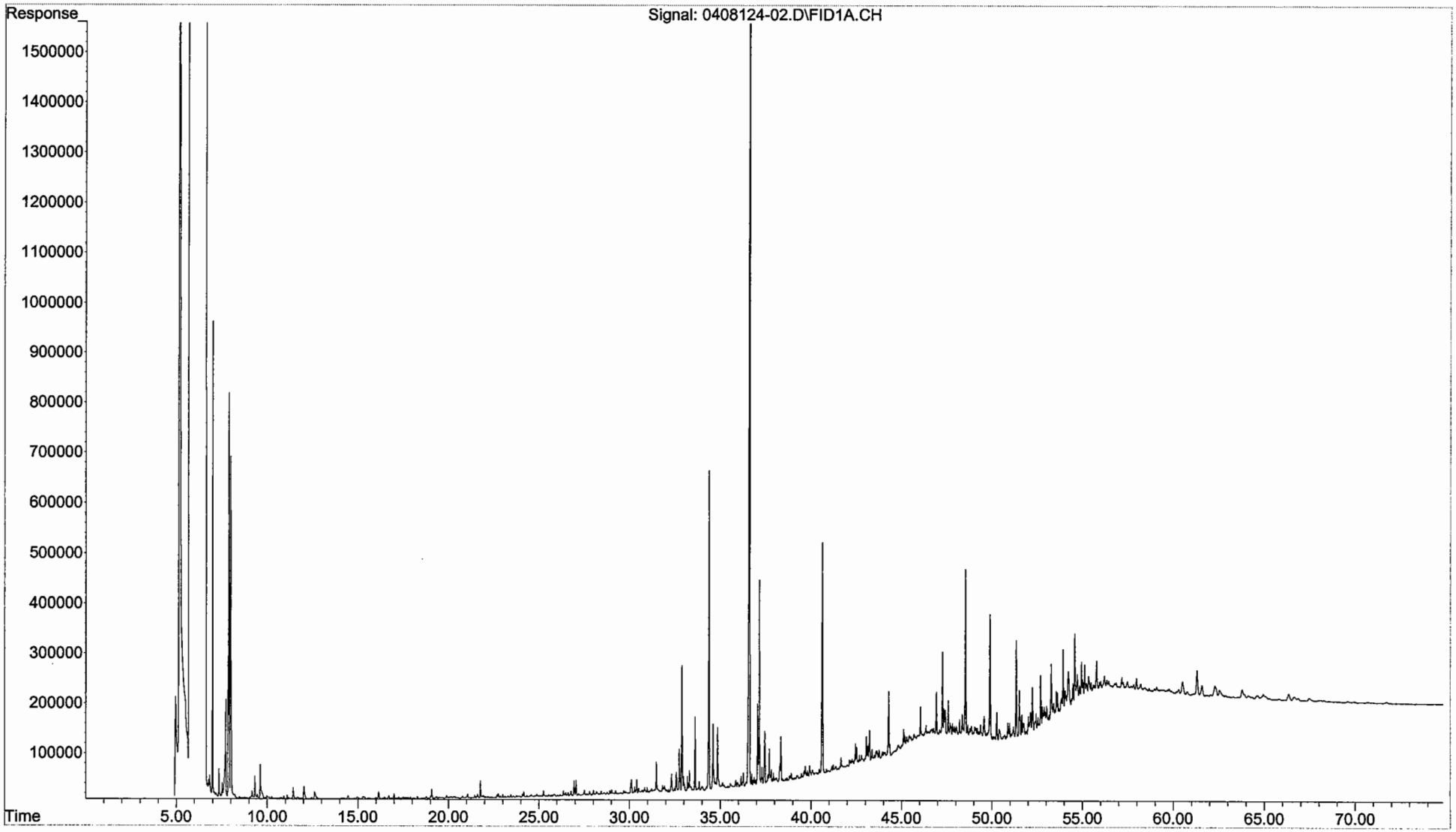

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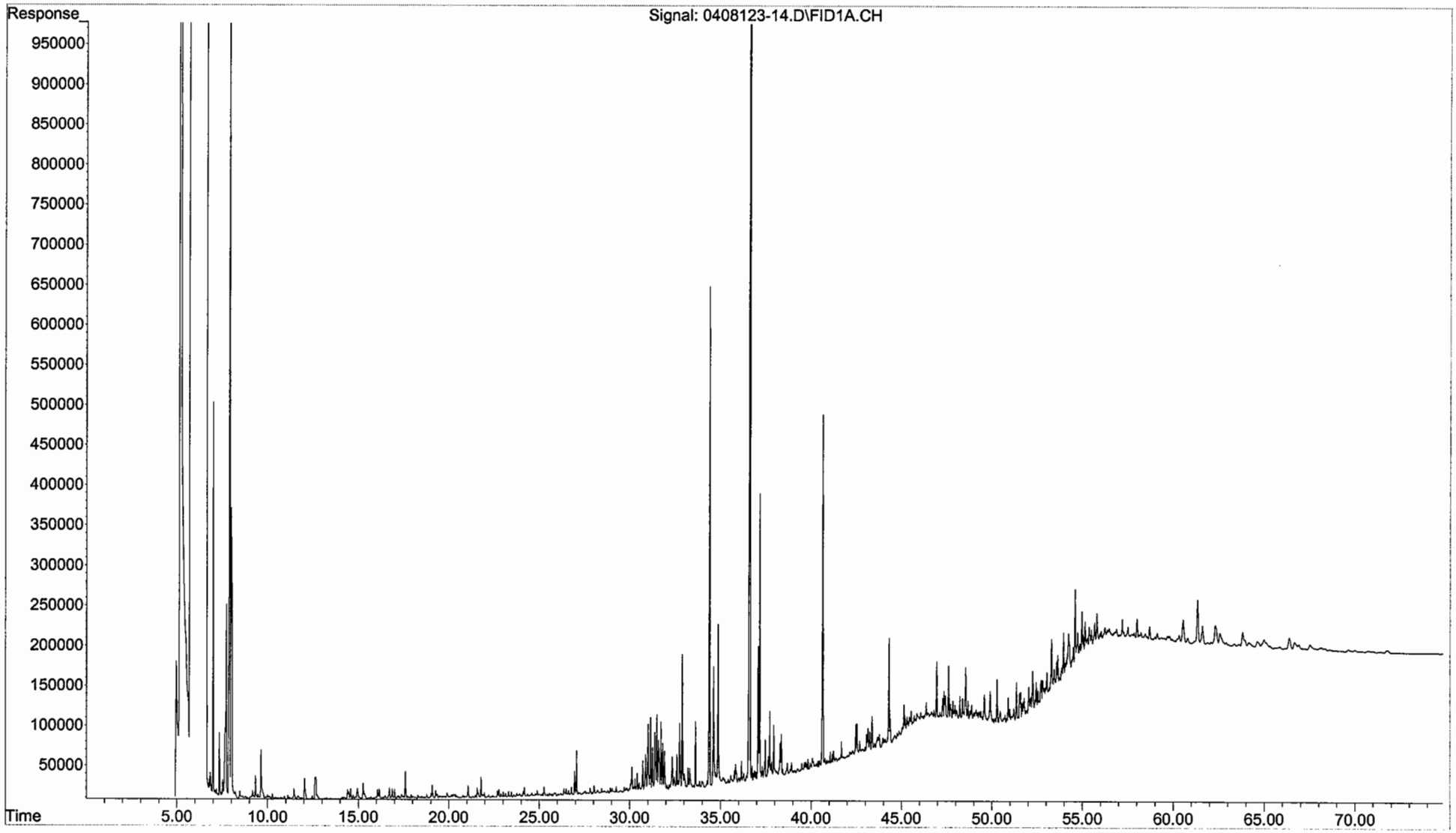

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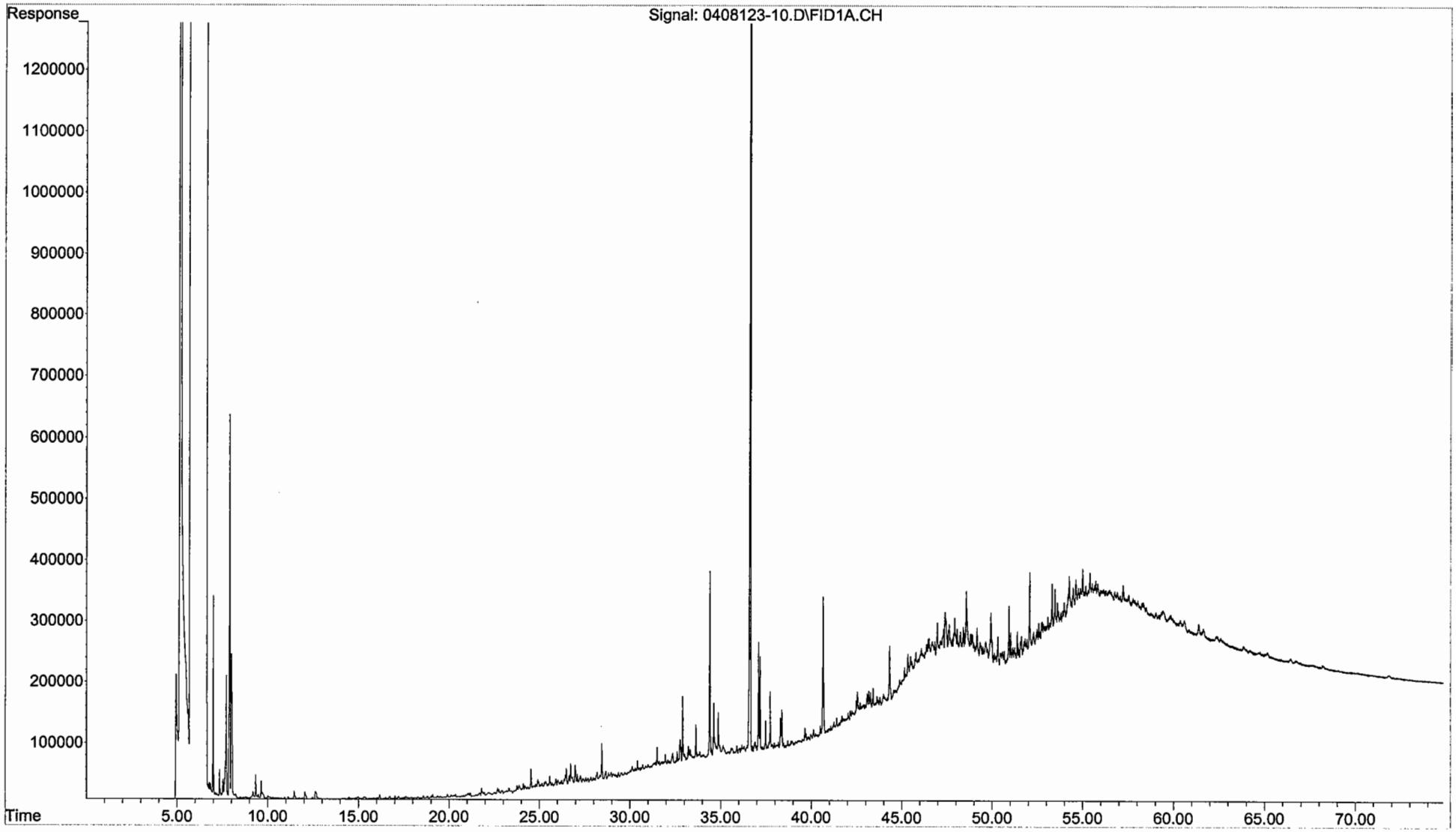

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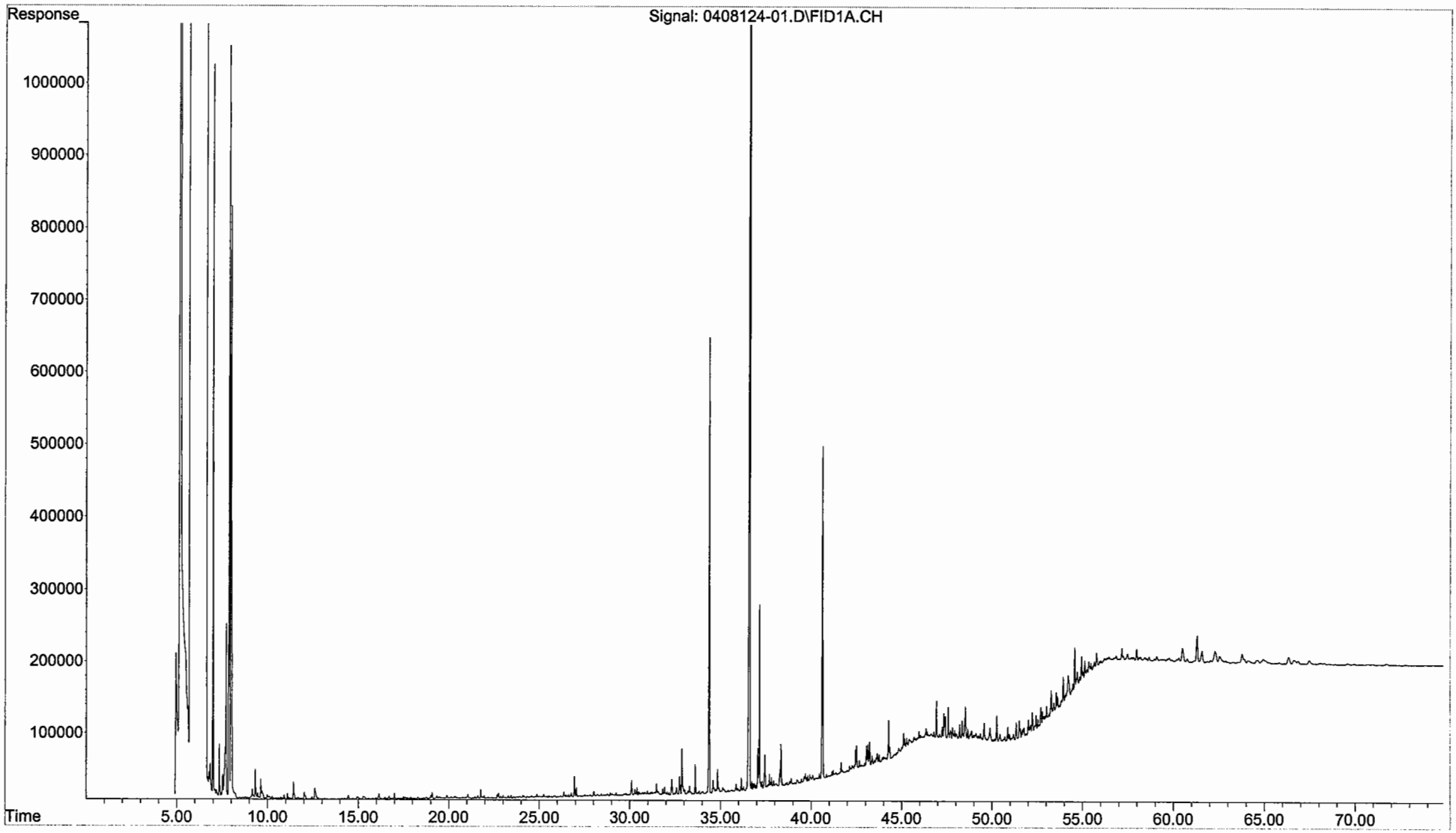

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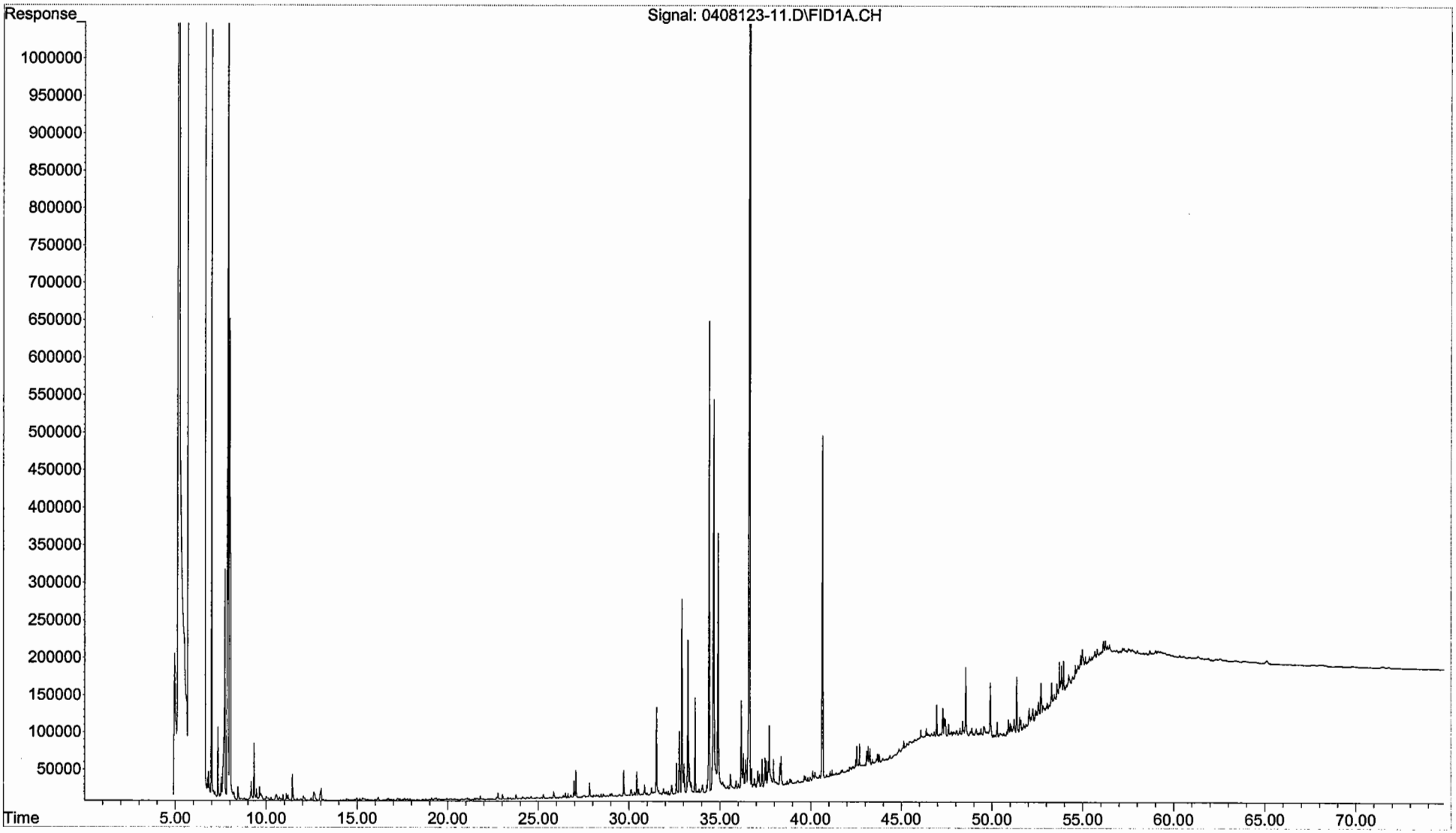

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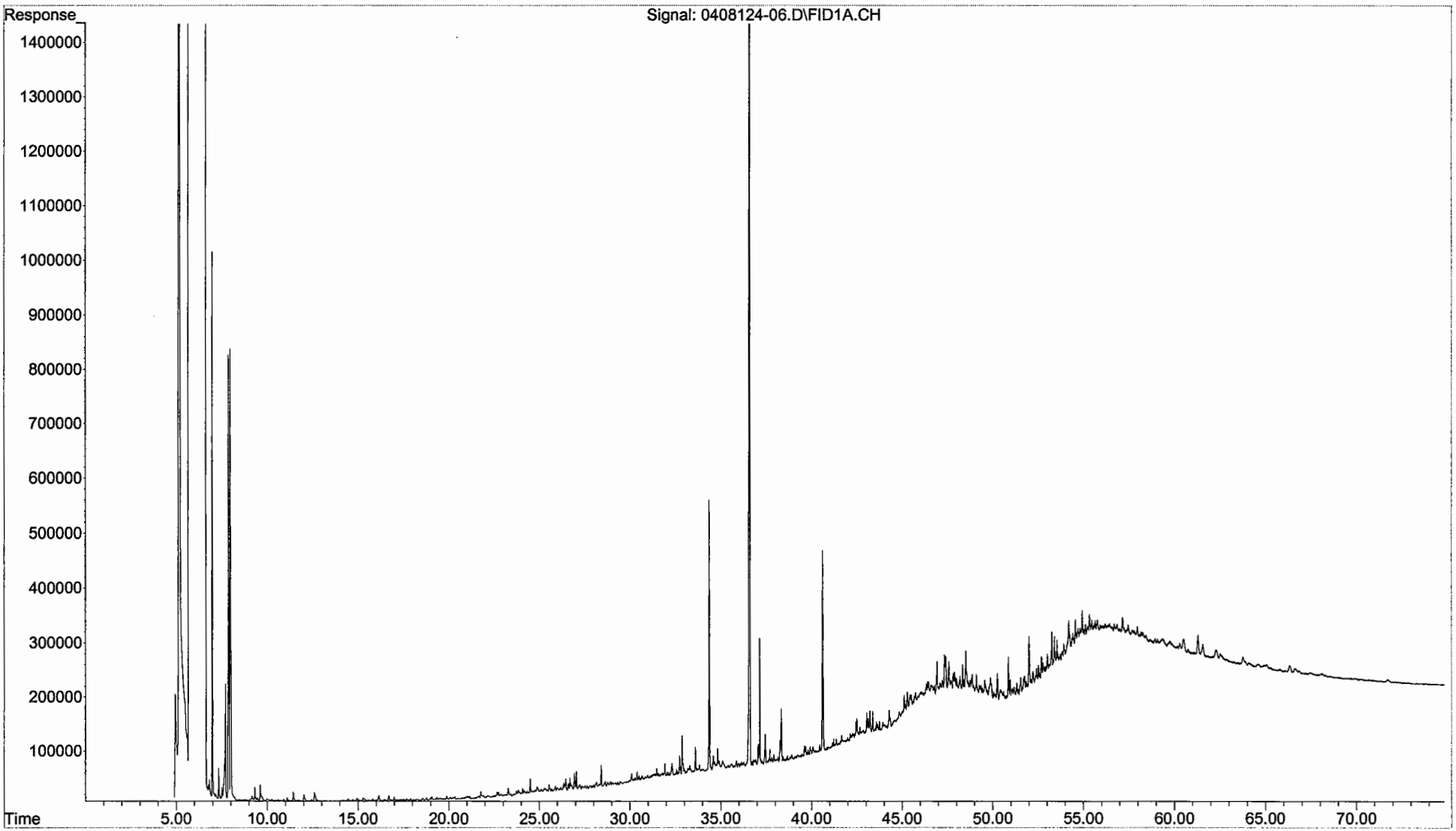

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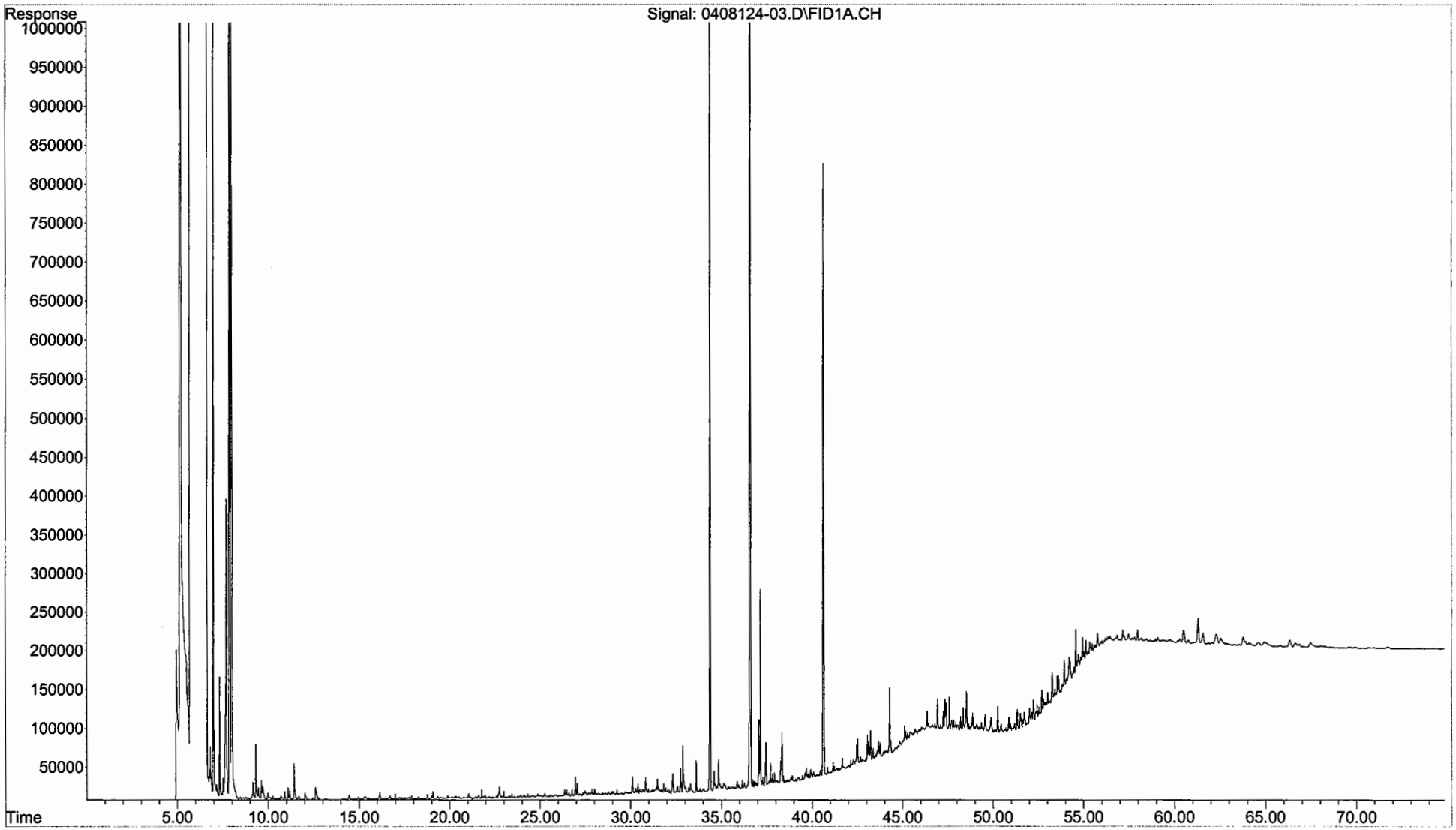

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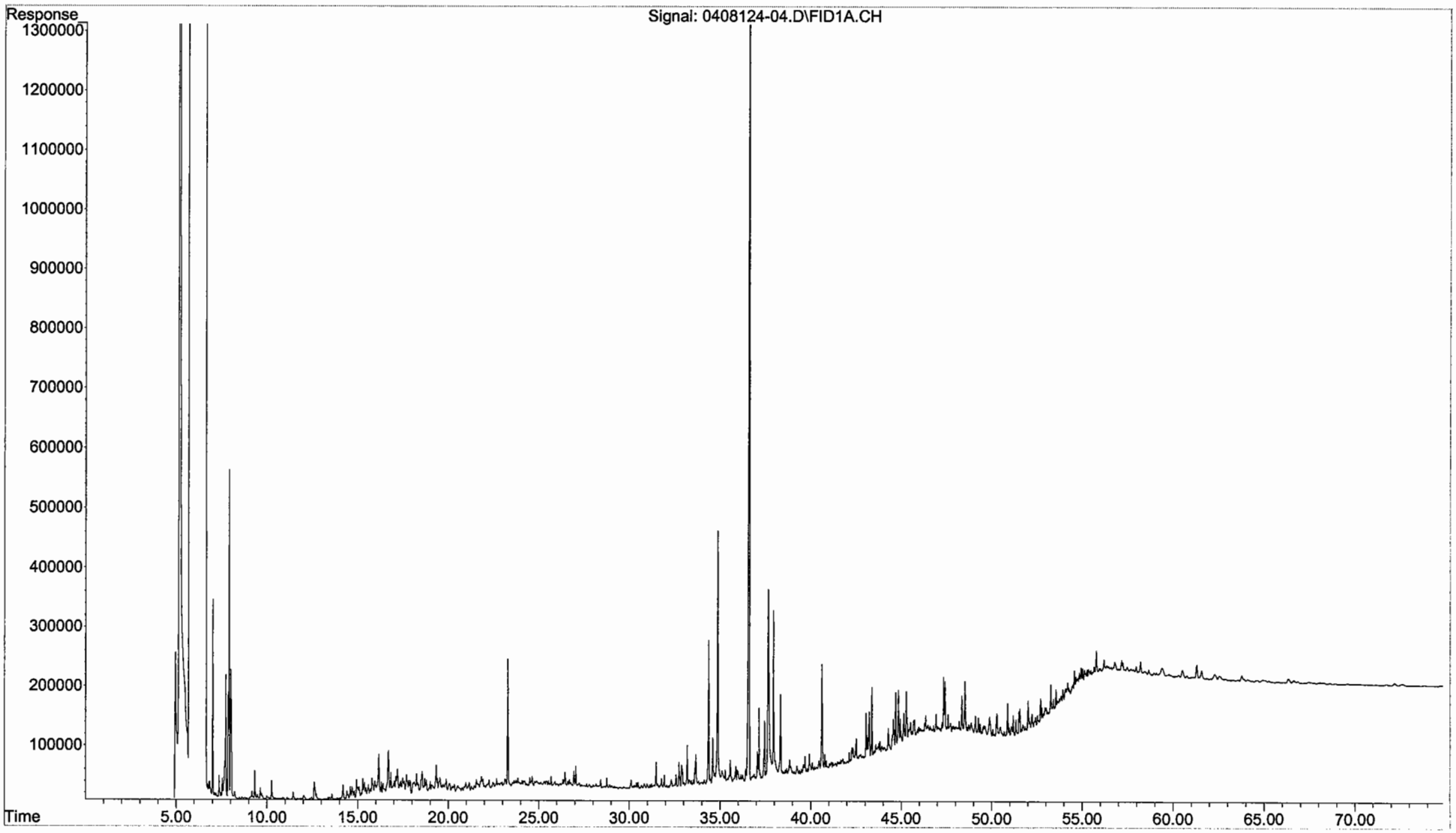

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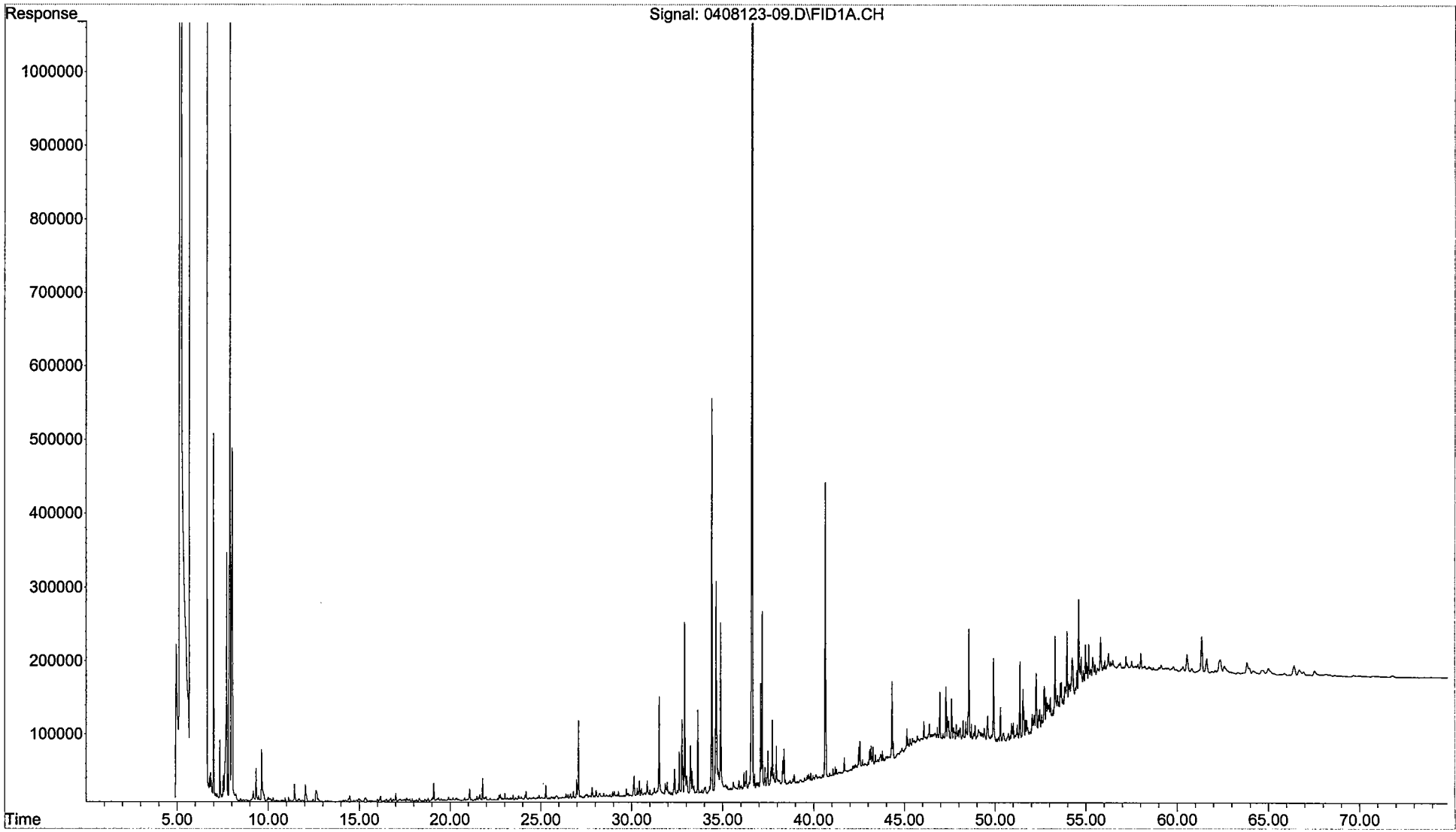

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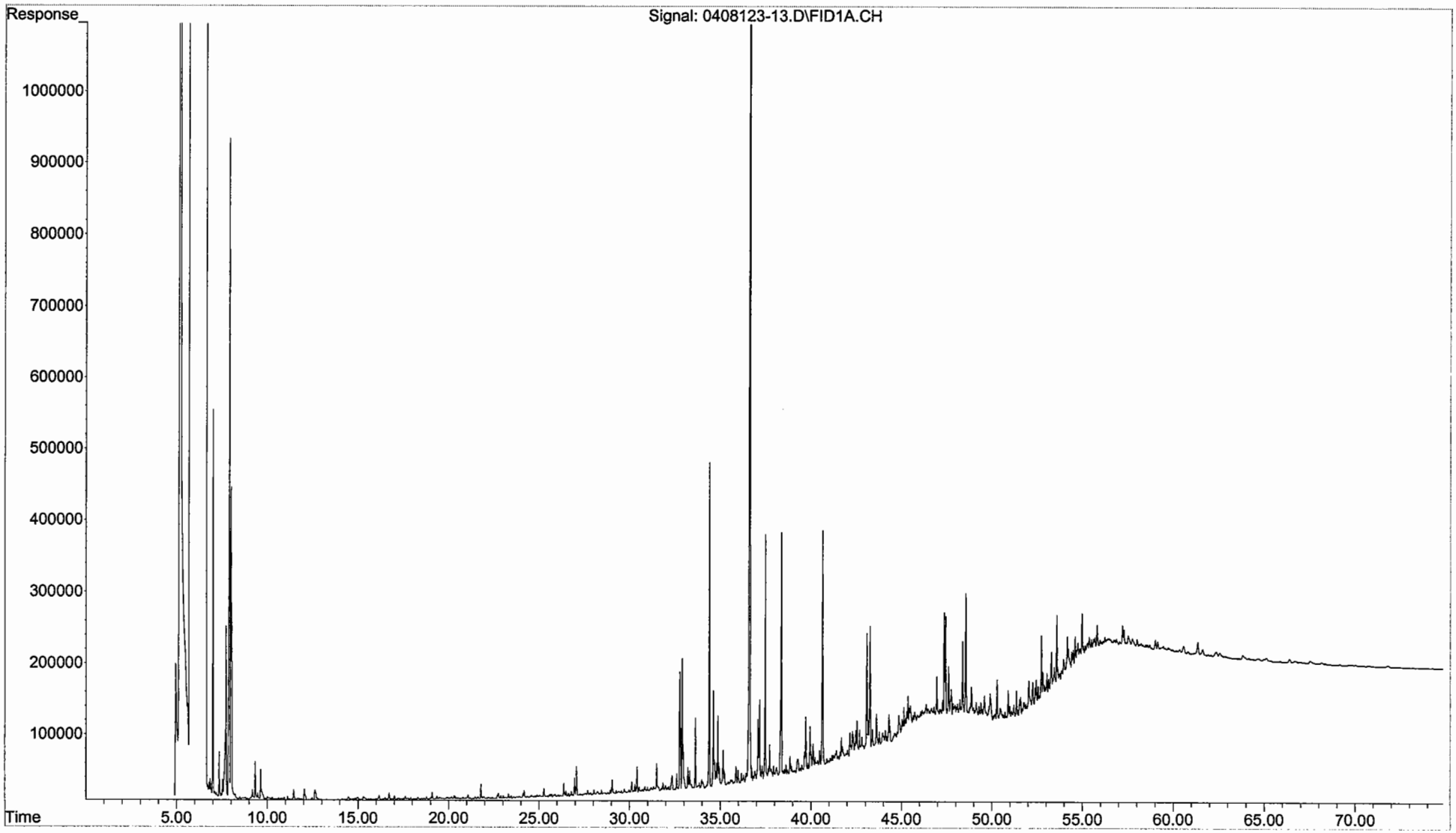

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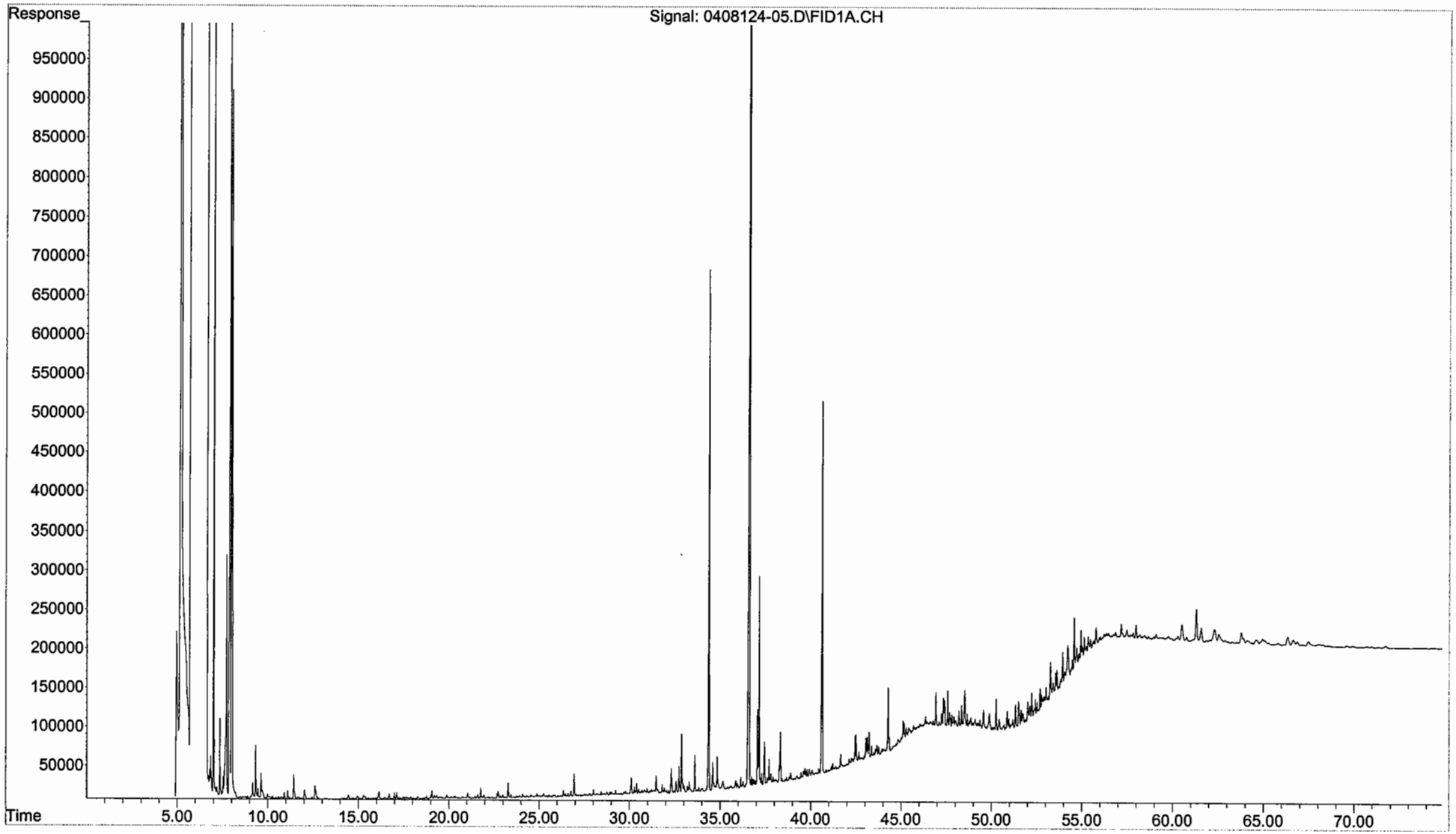

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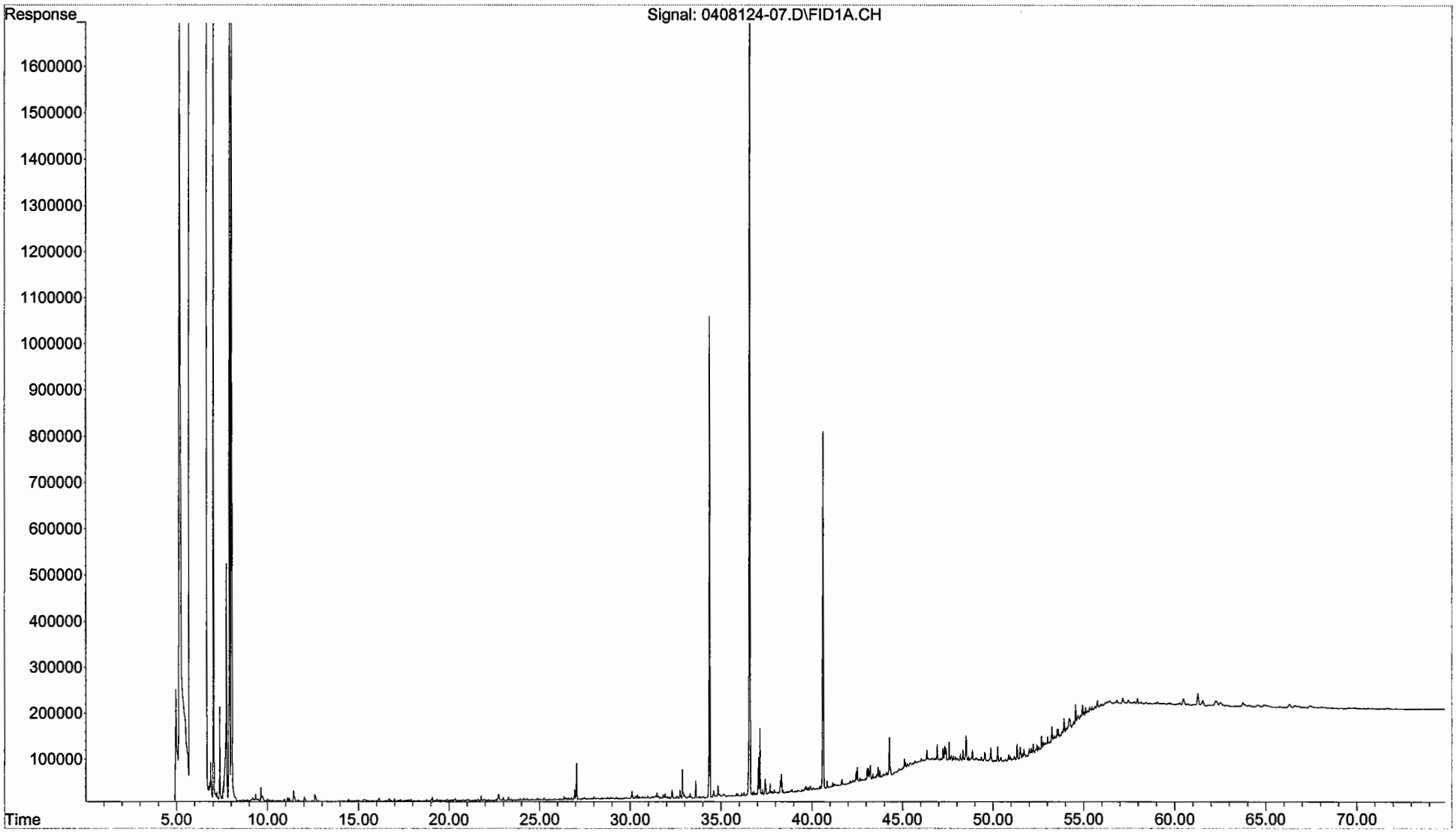

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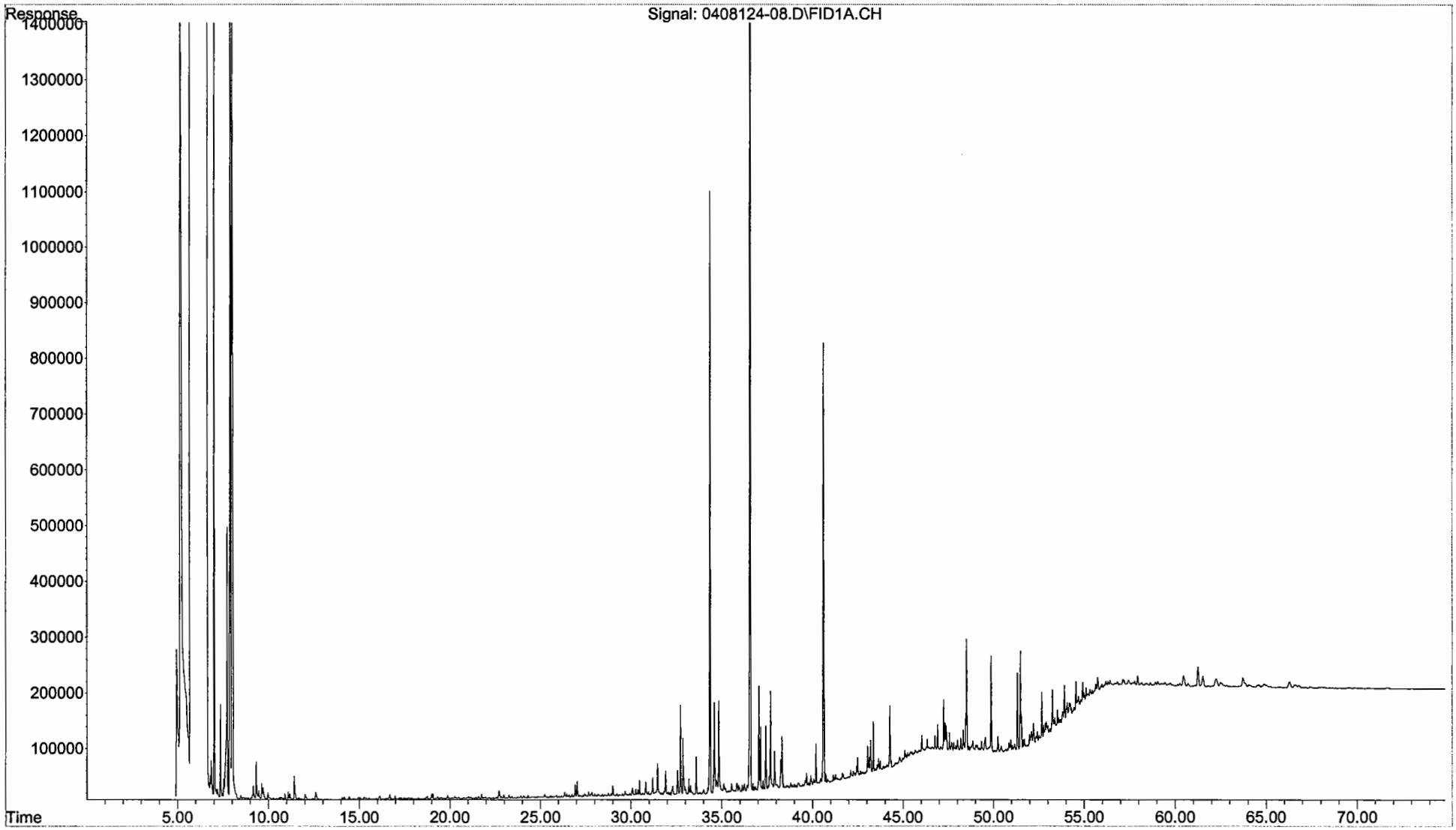

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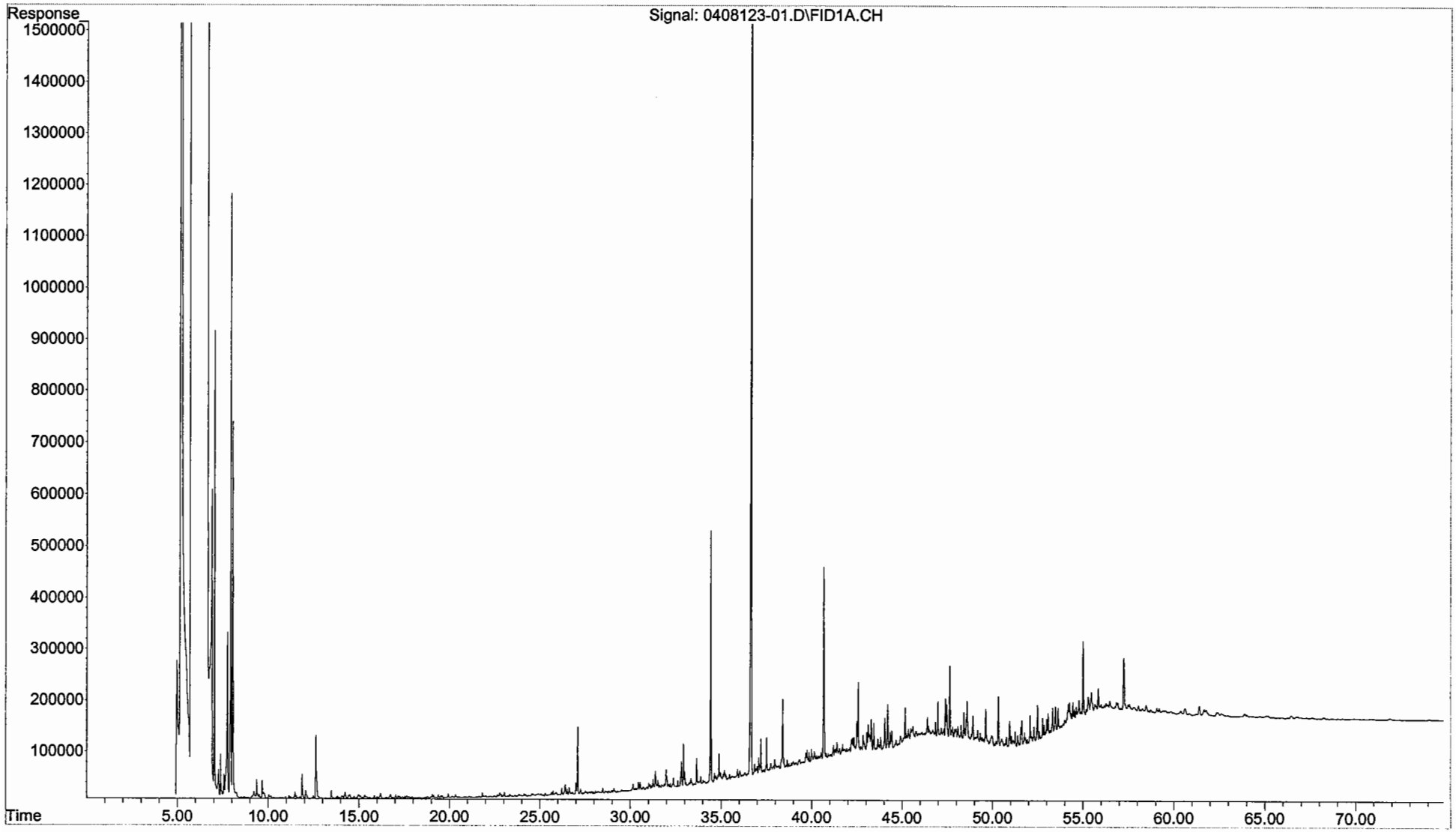

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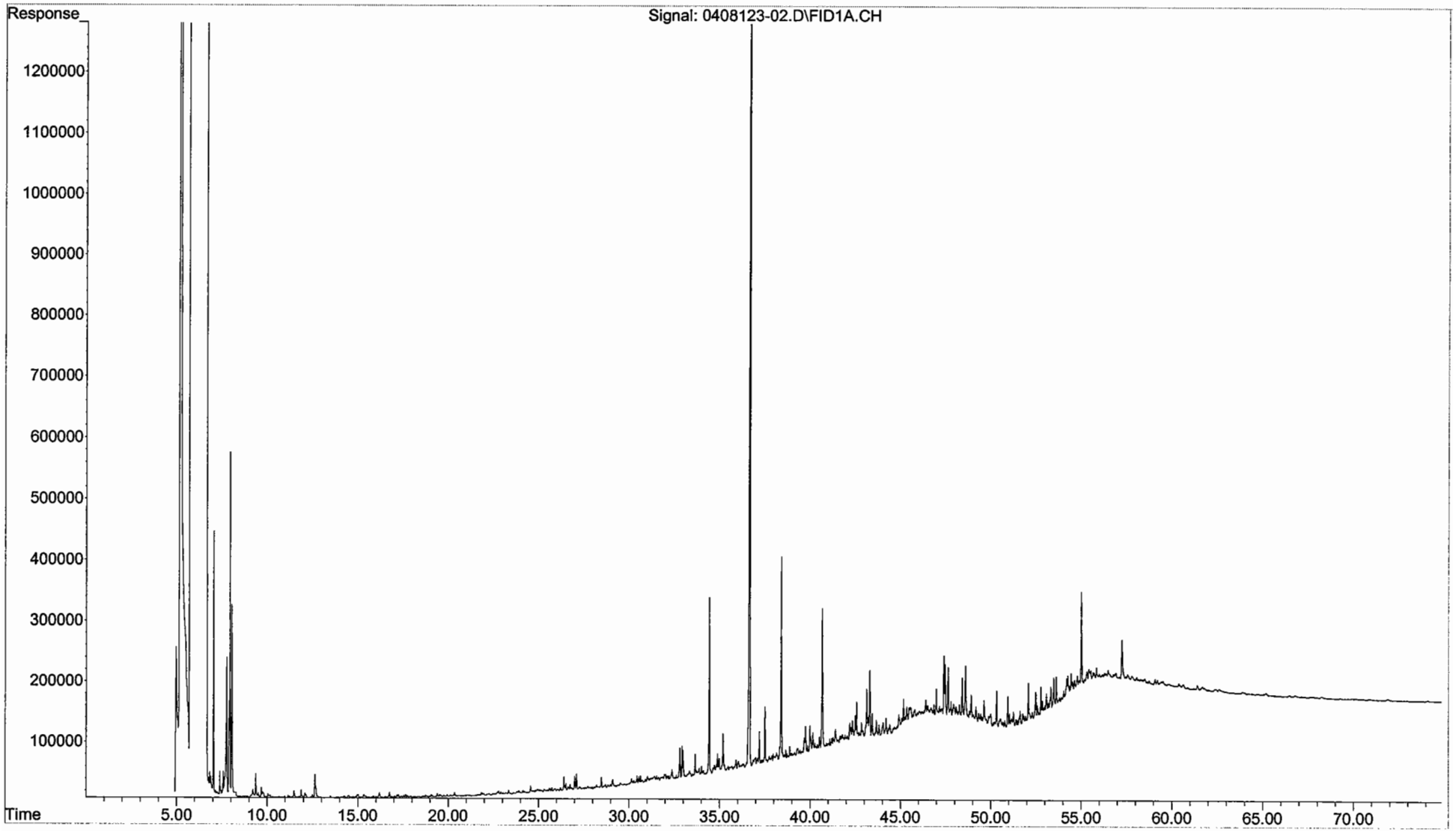
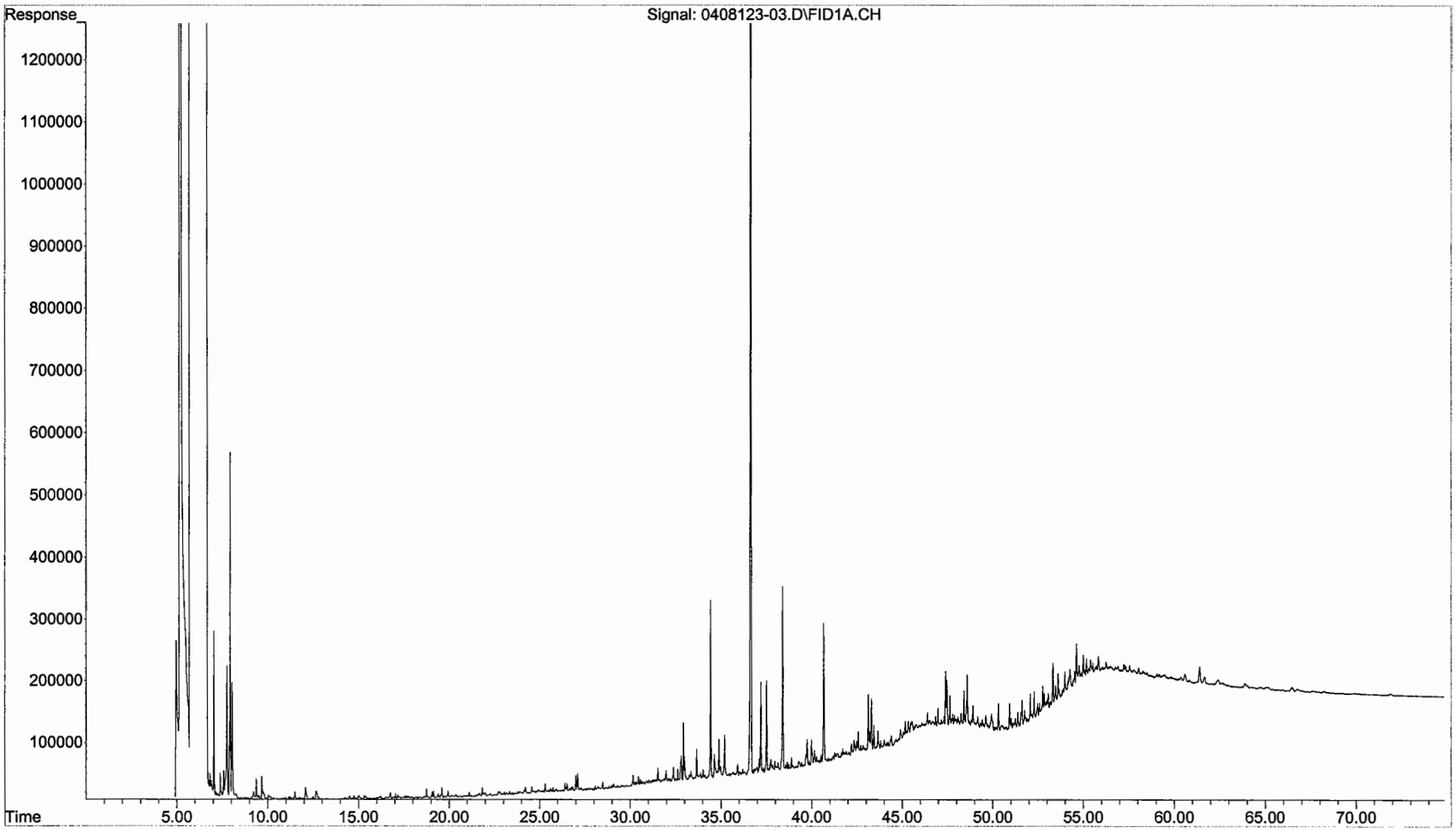
Sample Name: 0408123-02
Misc Info : 1X

DSY-SD-101-0612
0408123-02



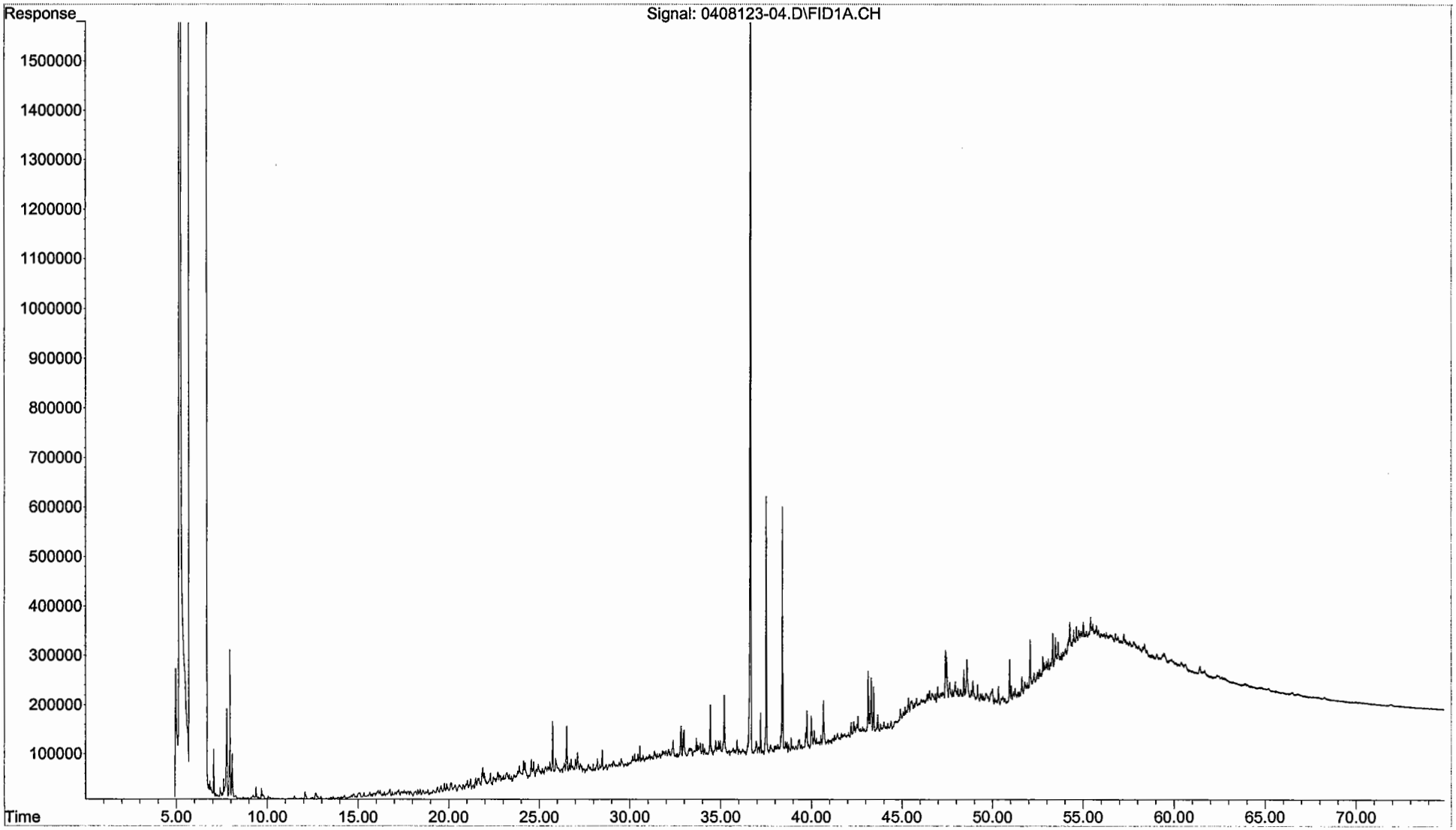
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-03.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 7:08 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-03
Misc Info : 1X

DSY-SD-103-0006
0408123-03



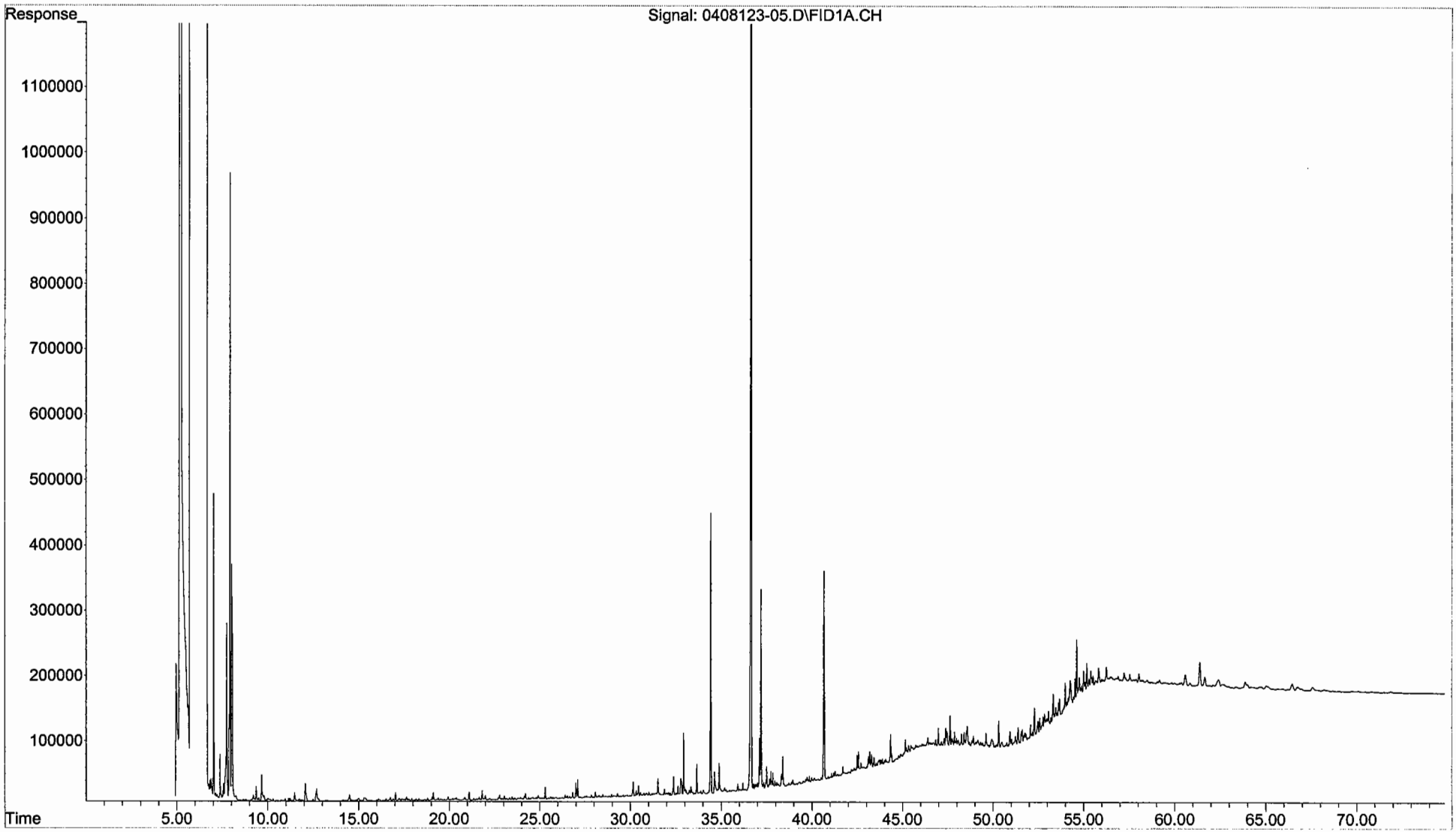
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-04.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 8:39 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-04
Misc Info : 1X

DSY-SD-103-0612
0408123-04



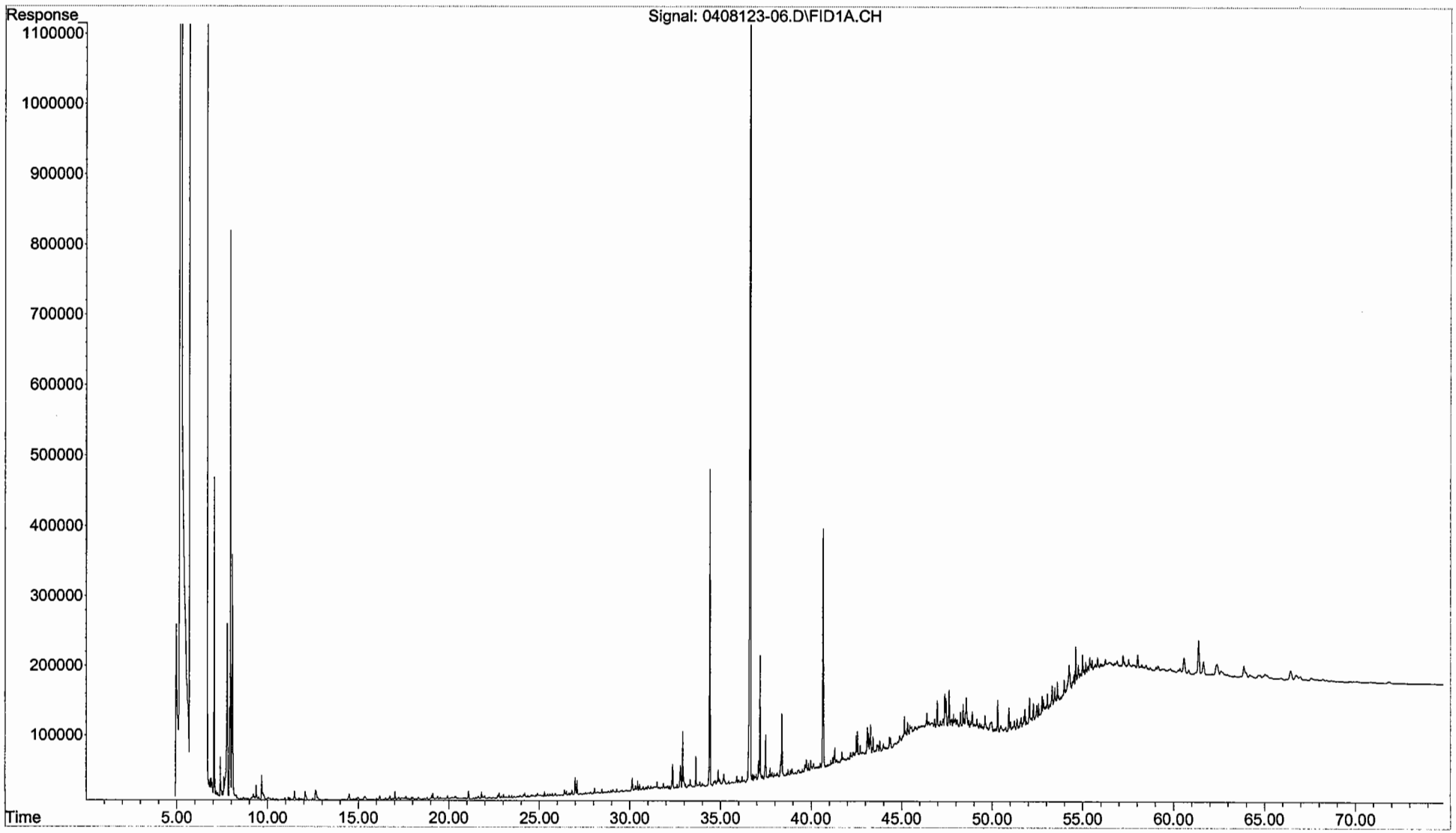
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-05.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 10:12 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-05
Misc Info : 1X

DSY-SD-104-0006
0408123-05



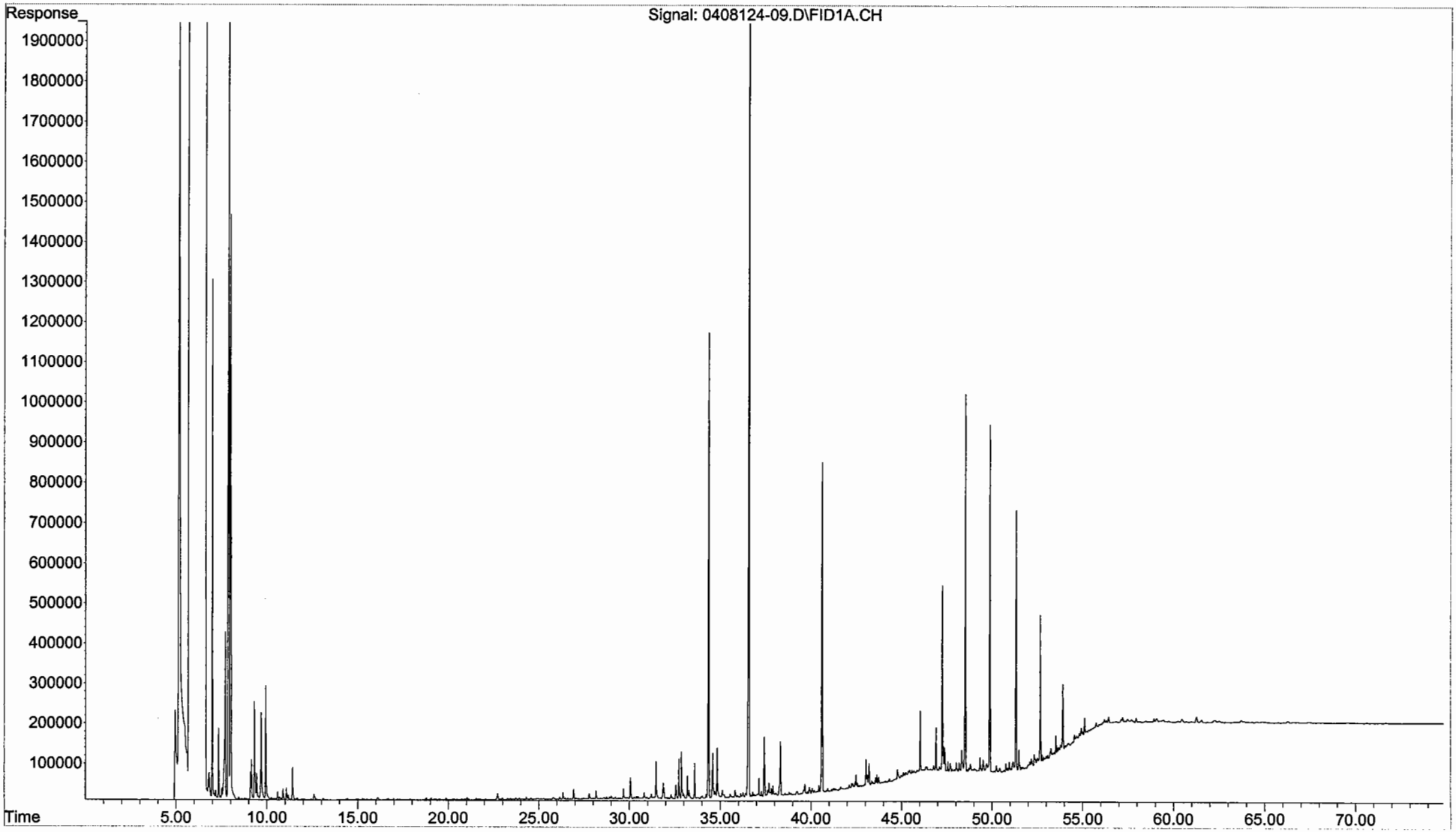
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-06.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 11:43 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-06
Misc Info : 1X

DSY-SD-104-0612
0408123-06



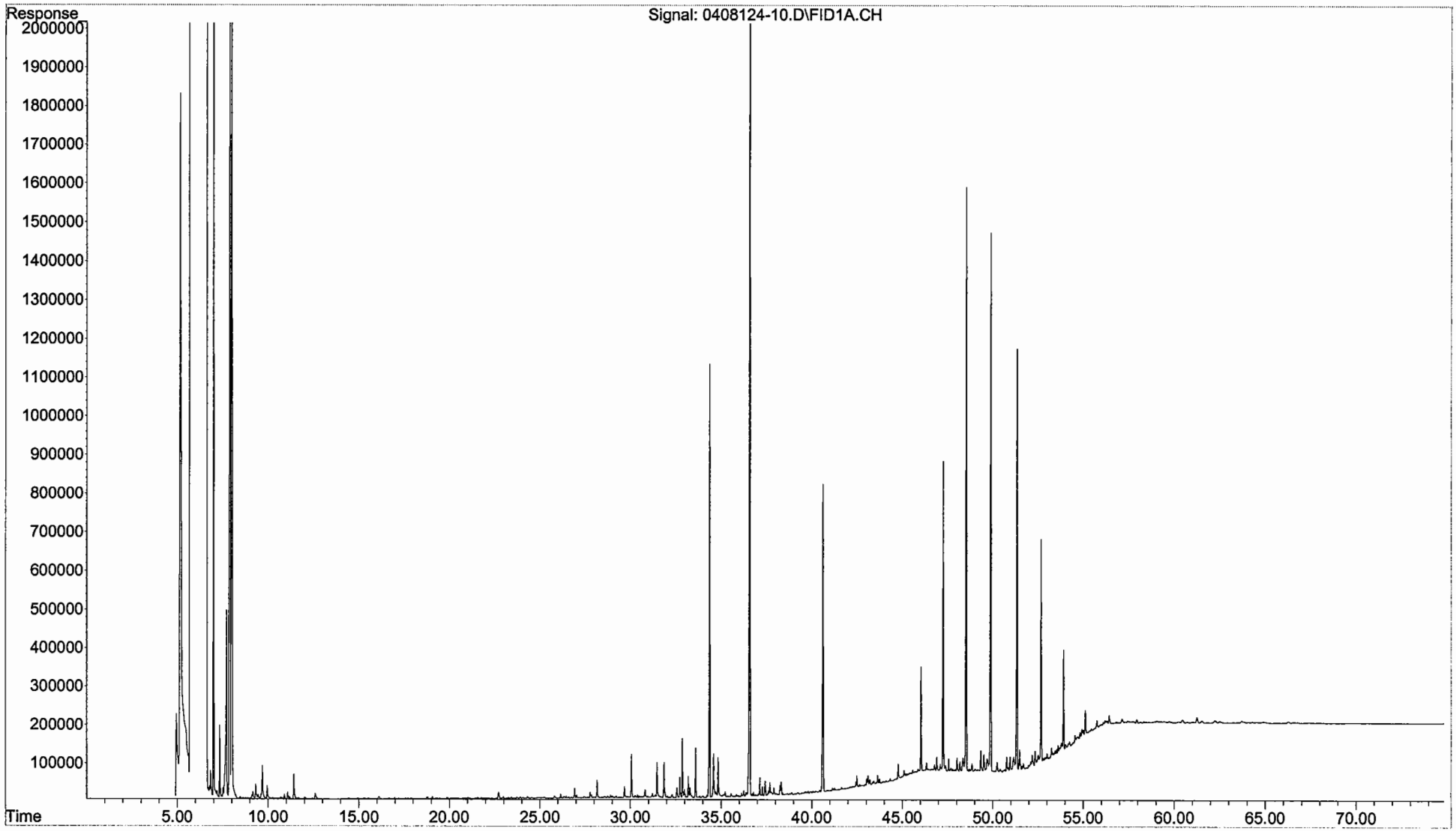
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-09.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 8:31 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-09
Misc Info : 1X

DSY-SD-CC01-082604
0408124-09



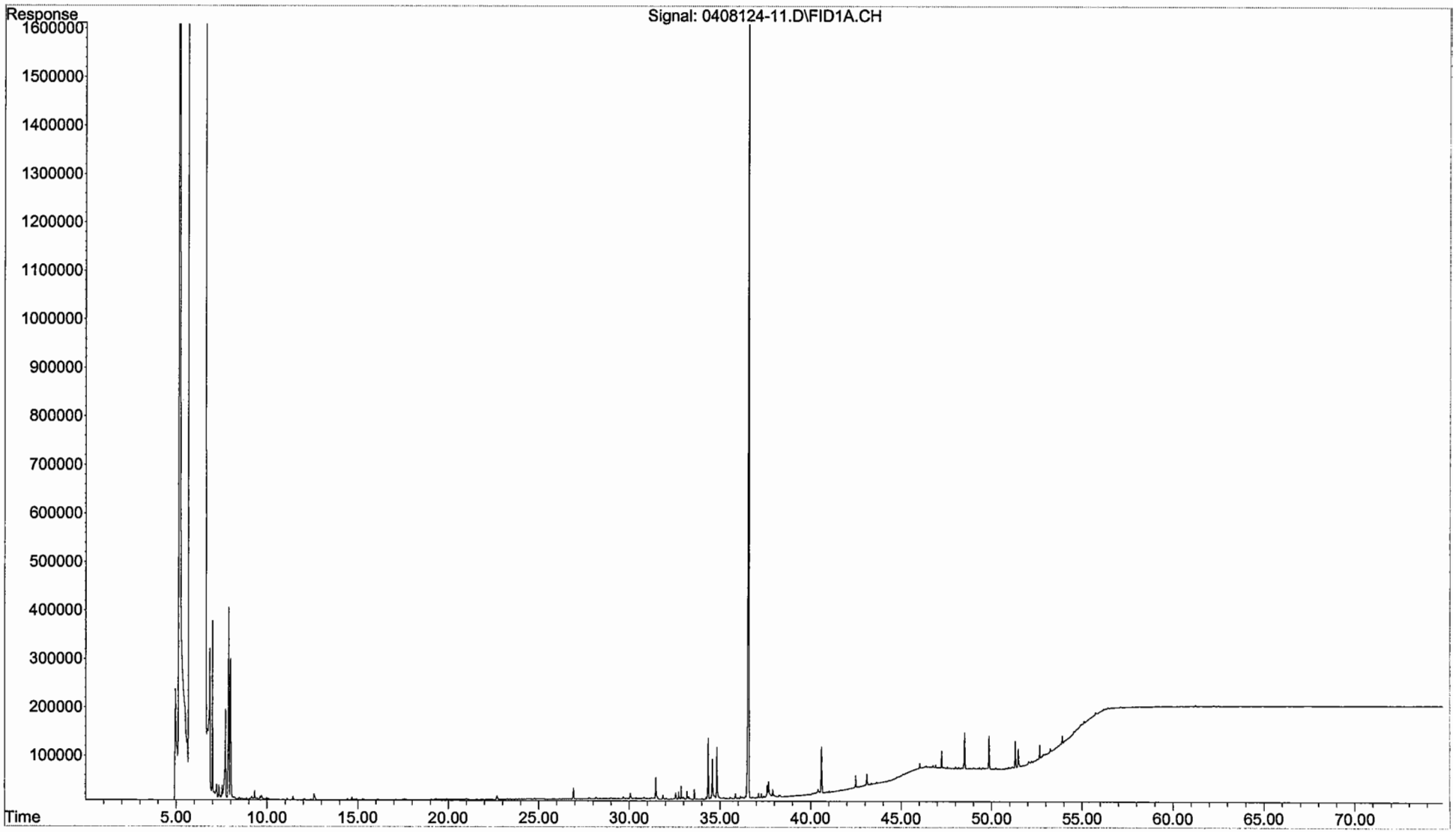
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-10.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 9:55 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-10
Misc Info : 1X

DSY-SD-CC02-082604
0408124-10



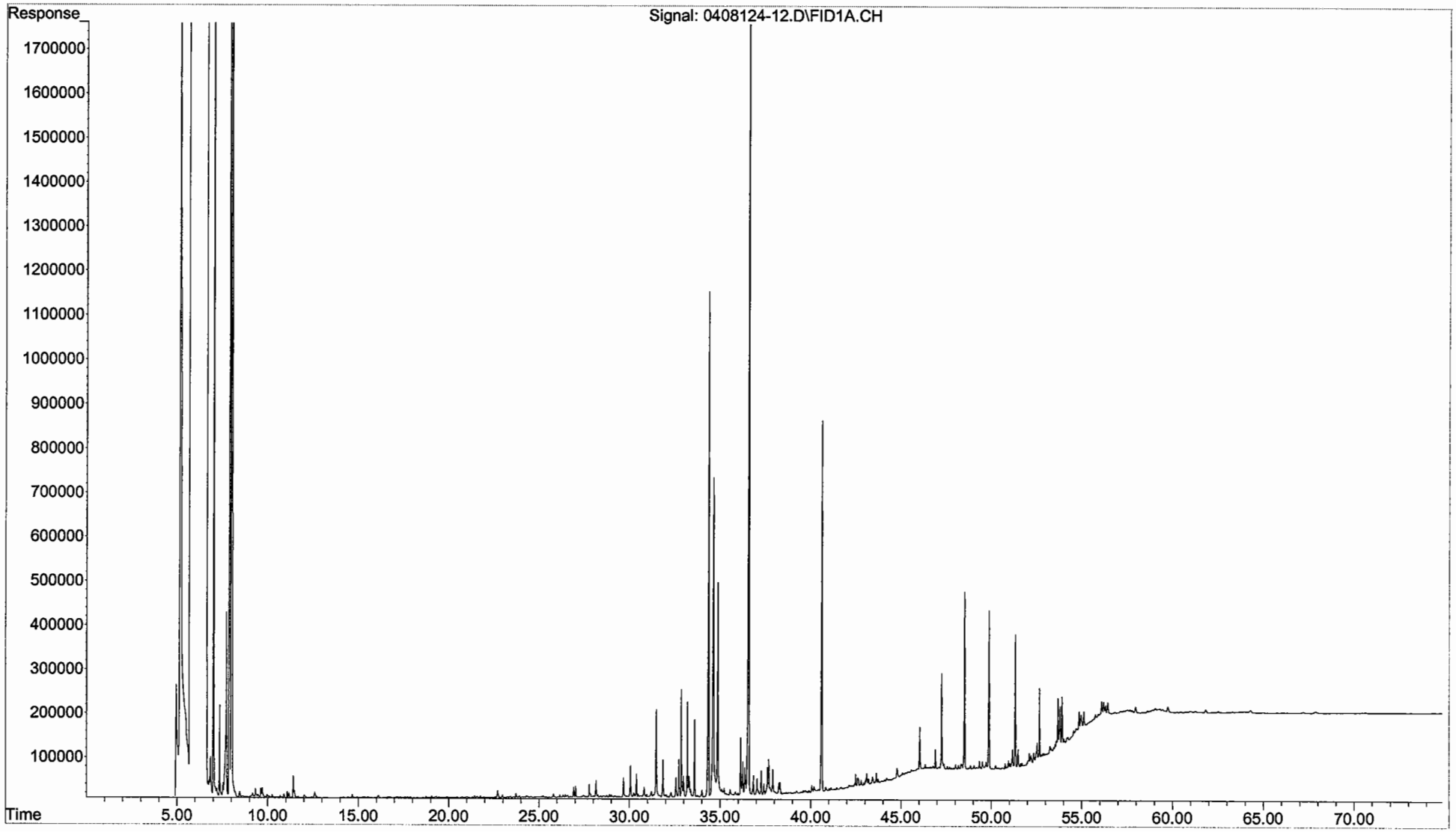
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-11.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 11:19 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-11
Misc Info : 1X

DSY-SD-JPC01-082604
0408124-11



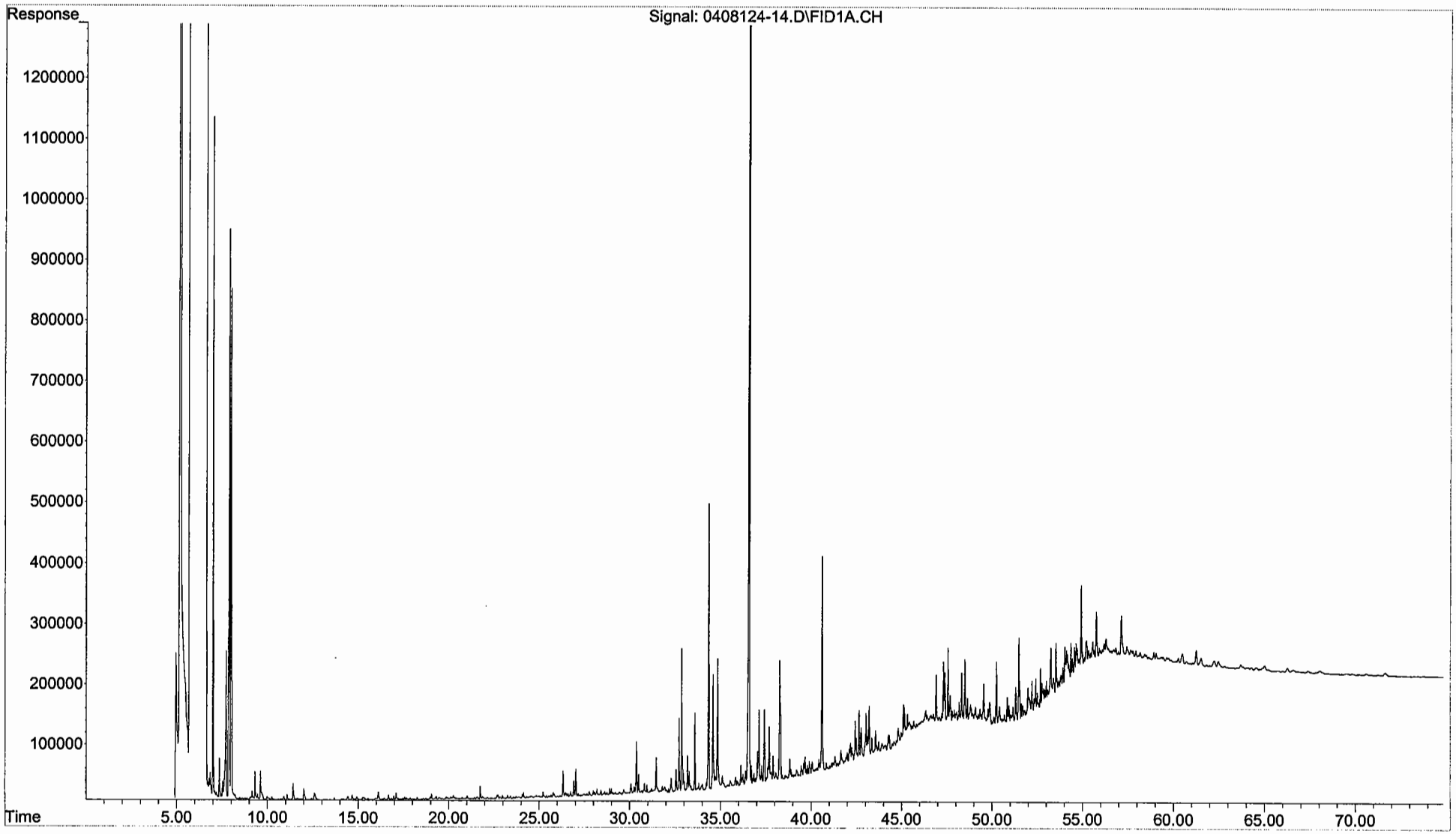
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-12.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 12:44 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-12
Misc Info : 1X

DSY-SD-JPC03-082604
0408124-12



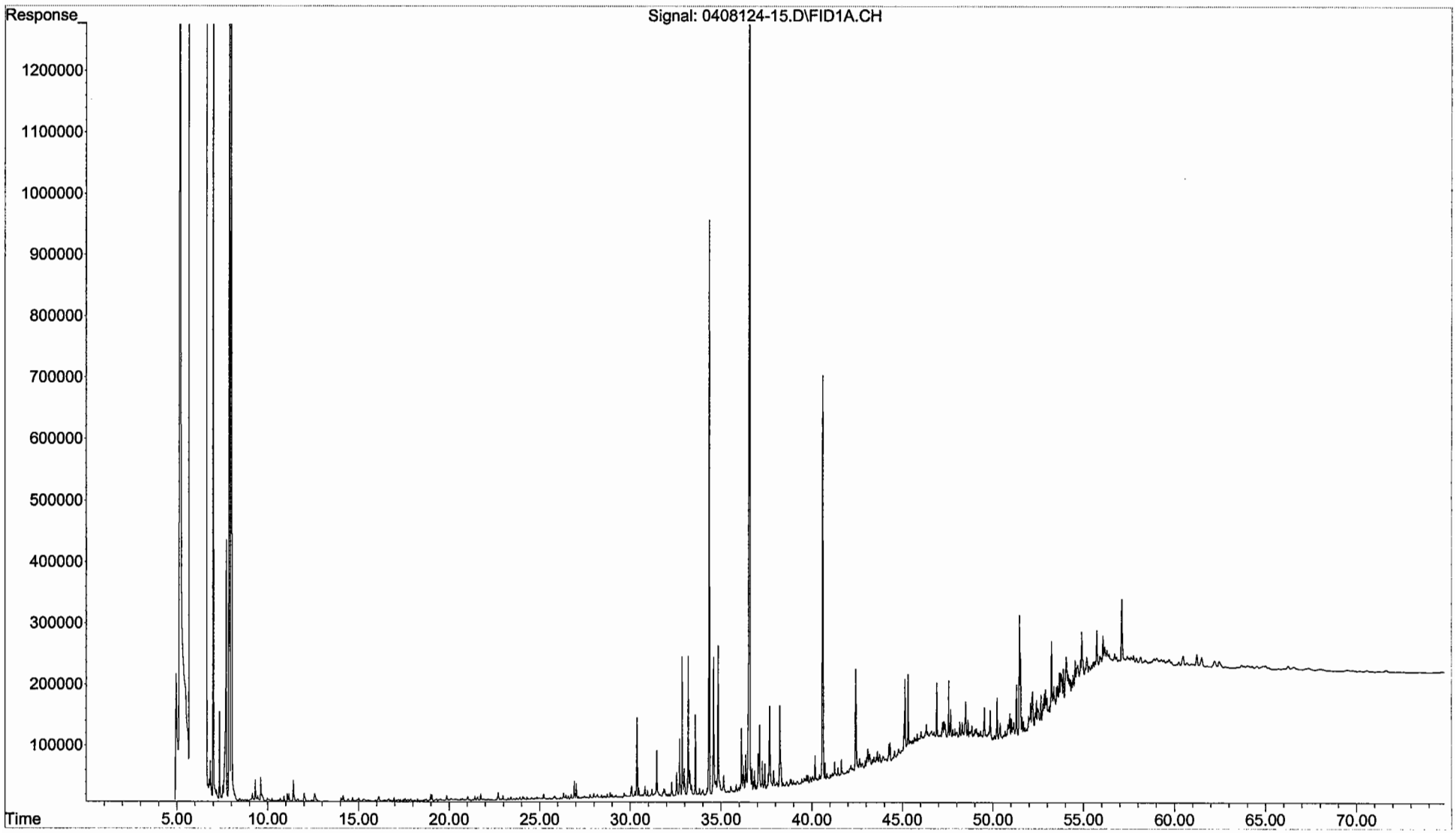
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-14.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 3:35 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-14
Misc Info : 1X

DSY-SD-CH01-082604
0408124-14



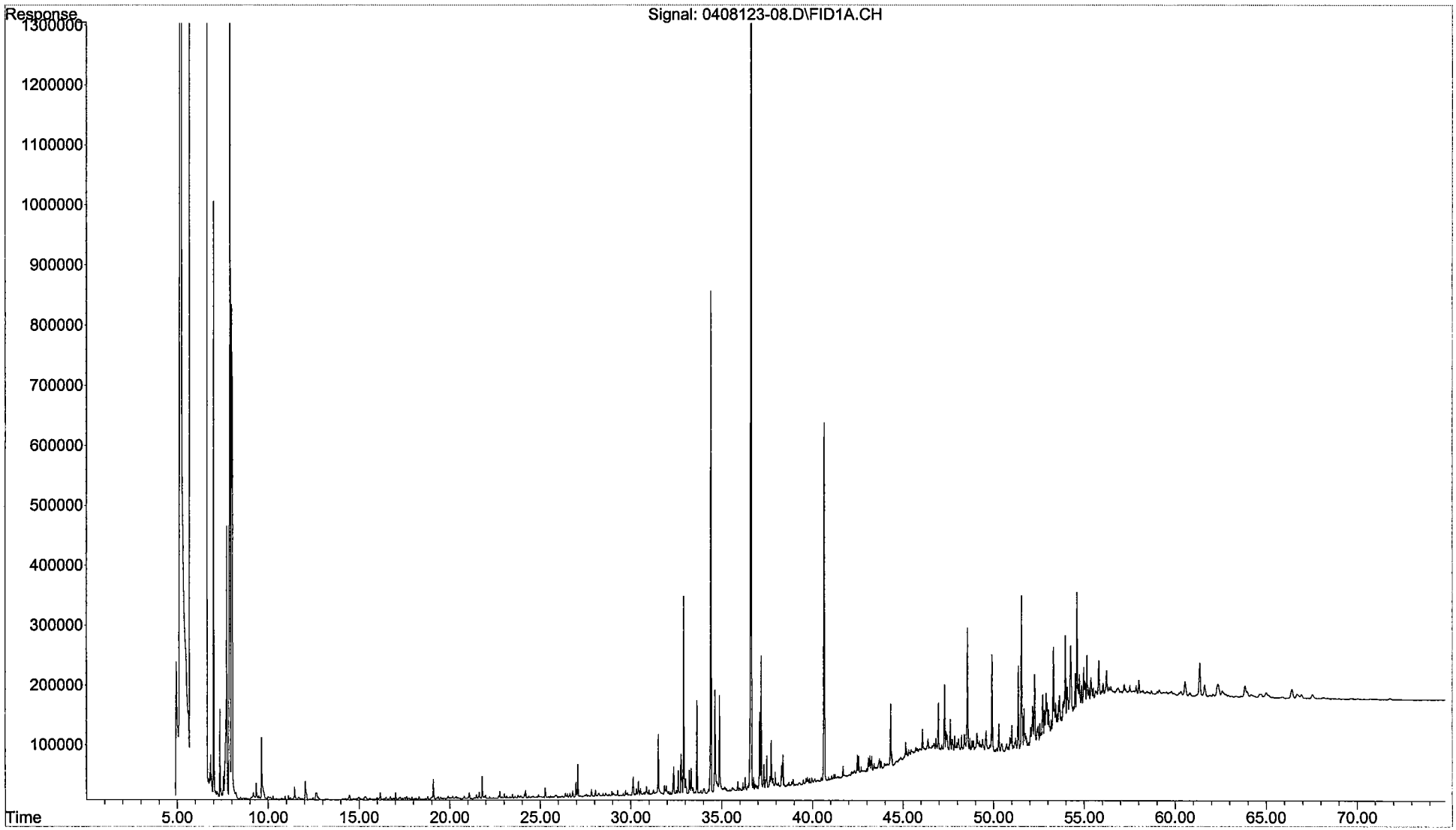
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-15.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 7:47 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-15
Misc Info : 1X

DSY-SD-CH02-082604
0408124-15



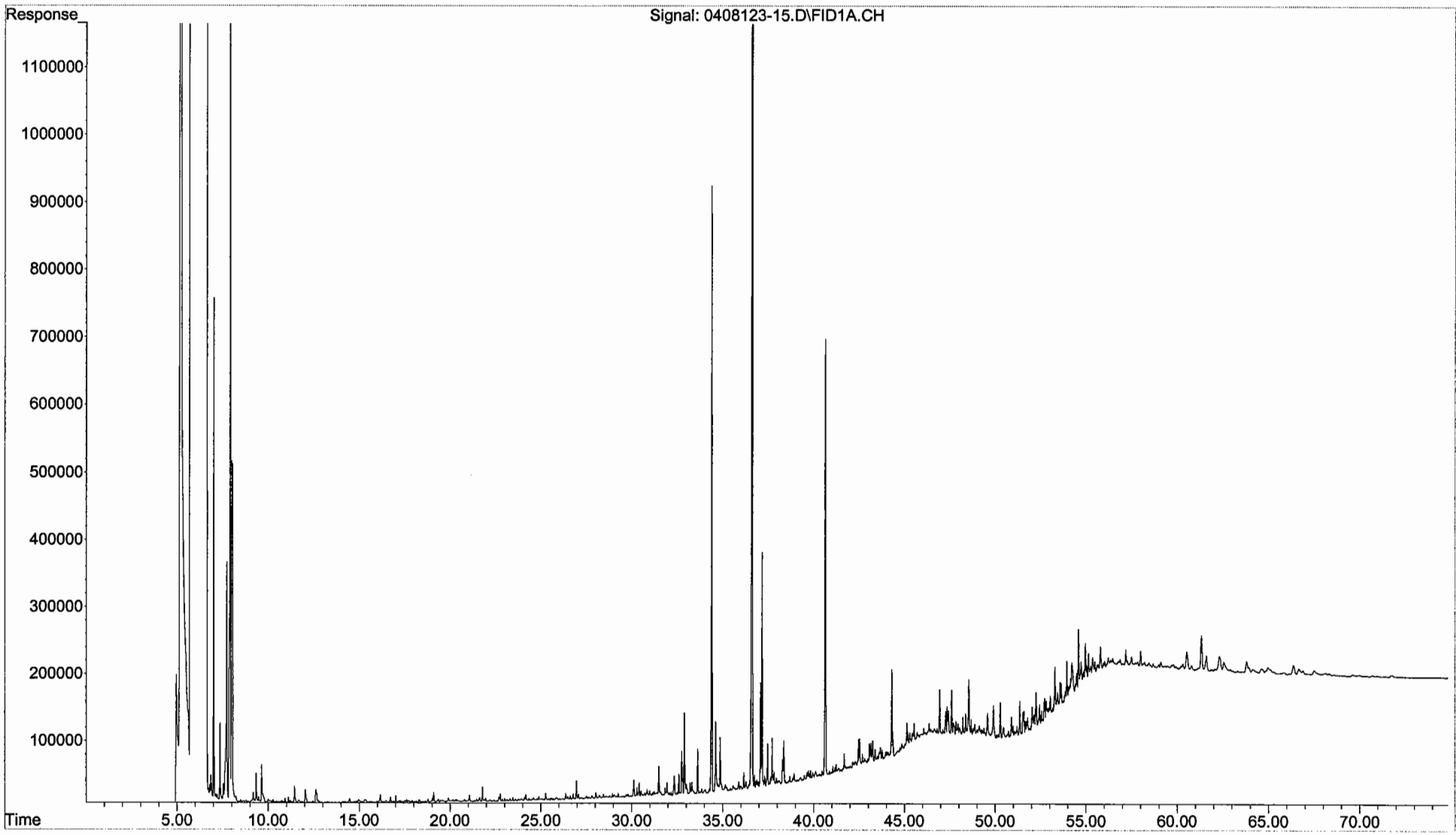
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-08.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 6:44 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-08
Misc Info : 1X

DSY-SD-DUP01-082504
0408123-08



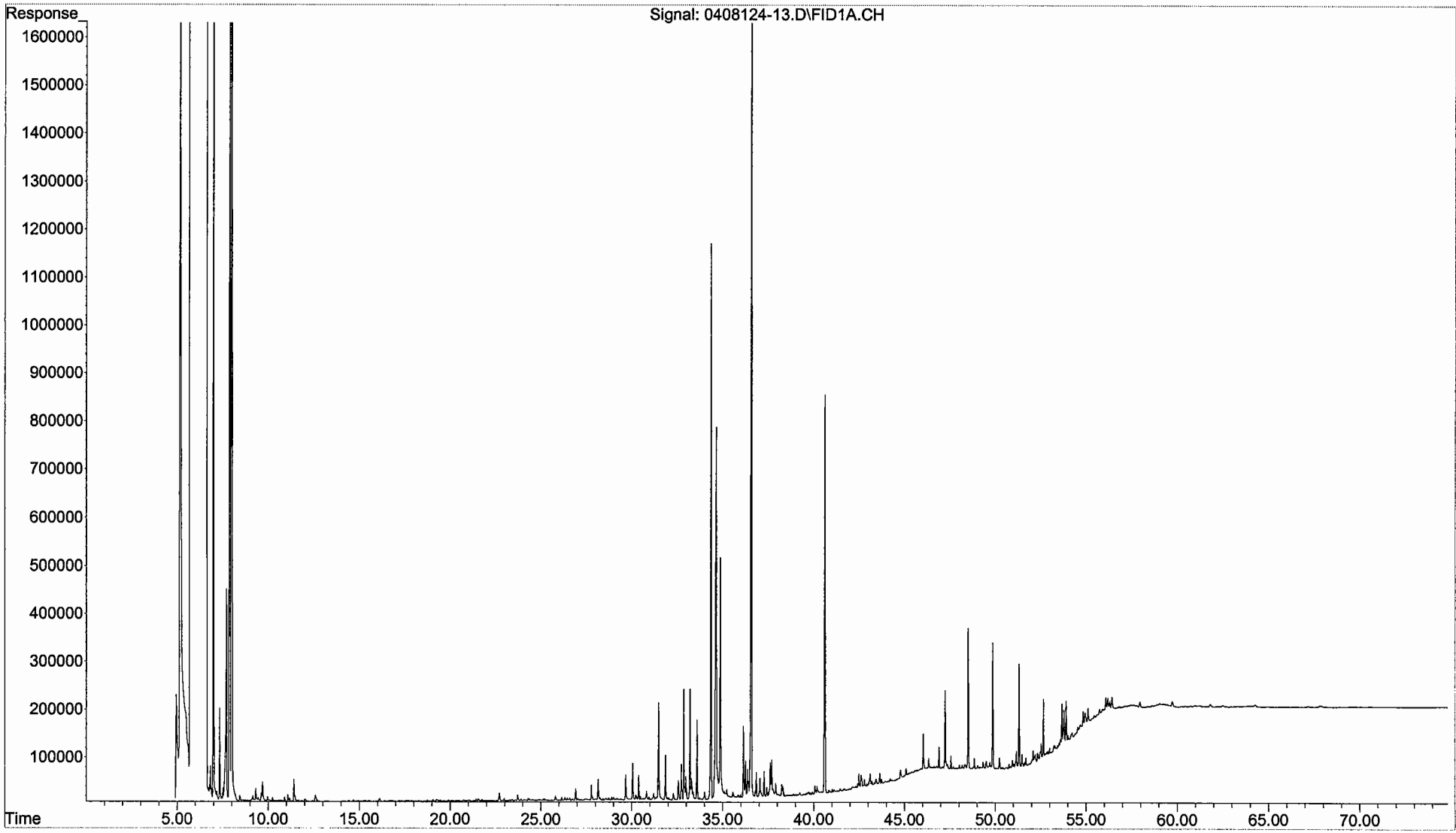
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-15.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 7:19 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-15
Misc Info : 1X

DSY-SD-DUP02-082604
0408123-15



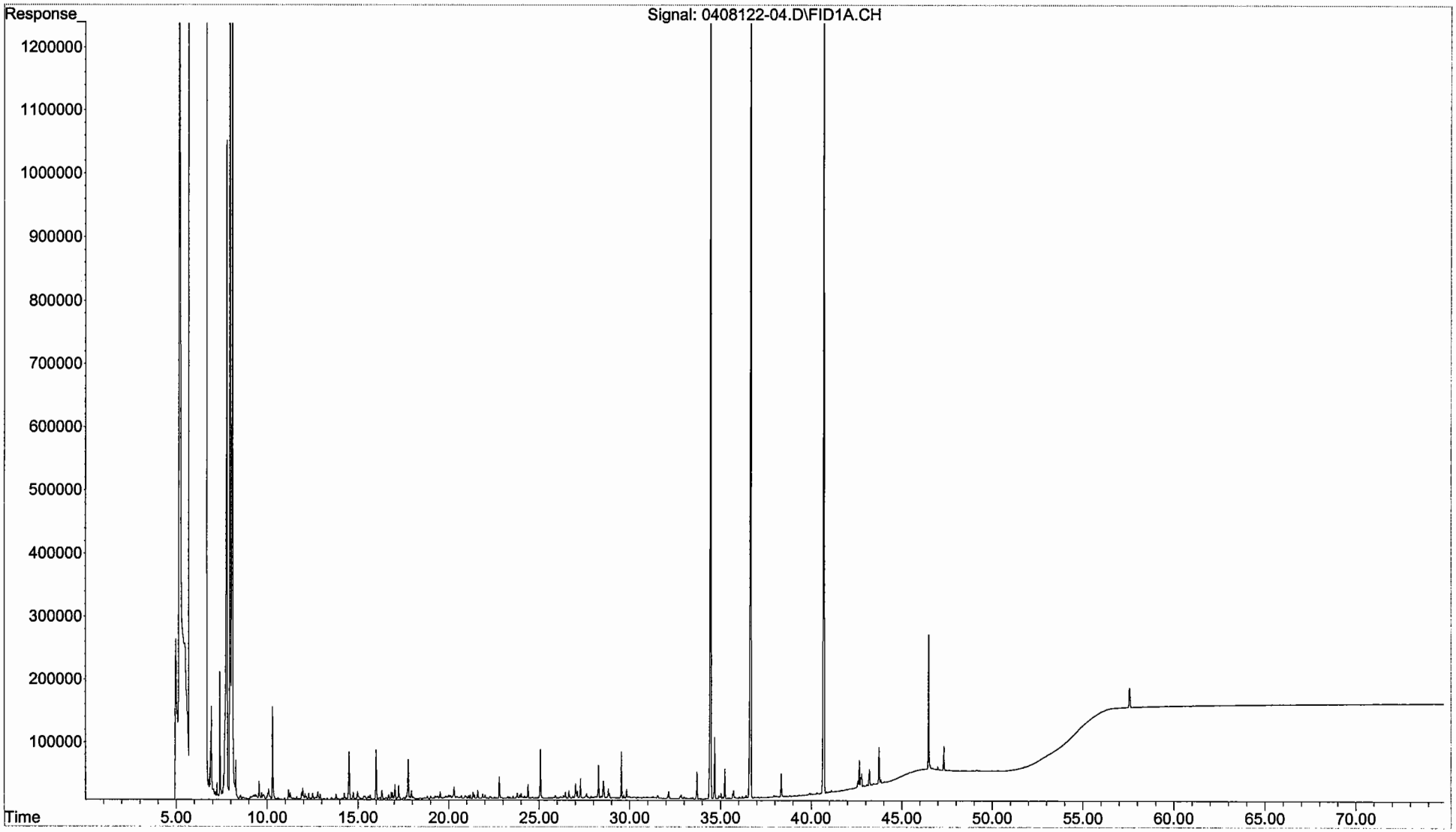
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-13.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 2:08 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-13
Misc Info : 1X

DSY-SD-DUP03-082604
0408124-13



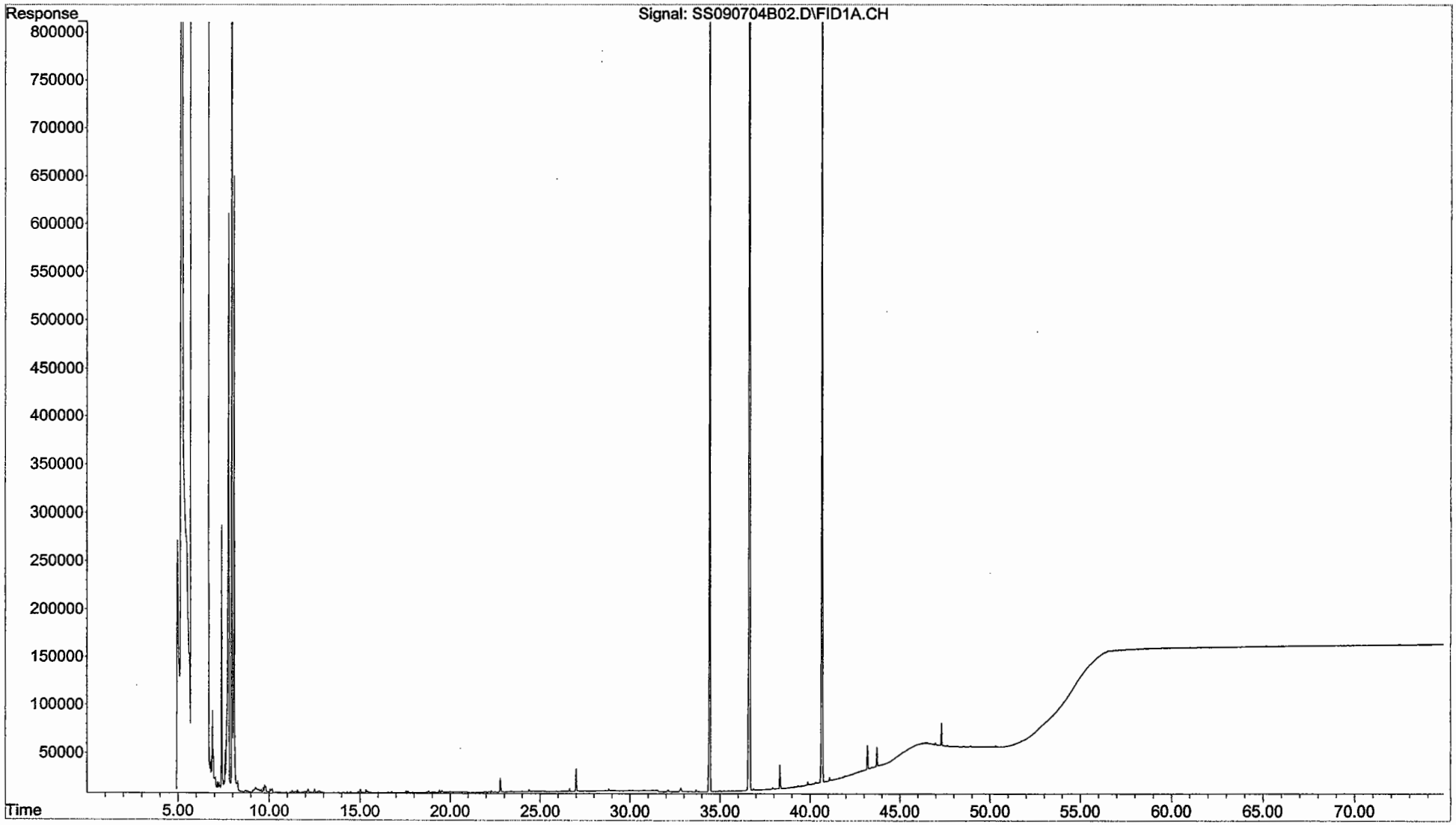
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408122-04.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 5:20 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408122-04
Misc Info : 1X

DSY-SD-FB01-082704
0408122-04



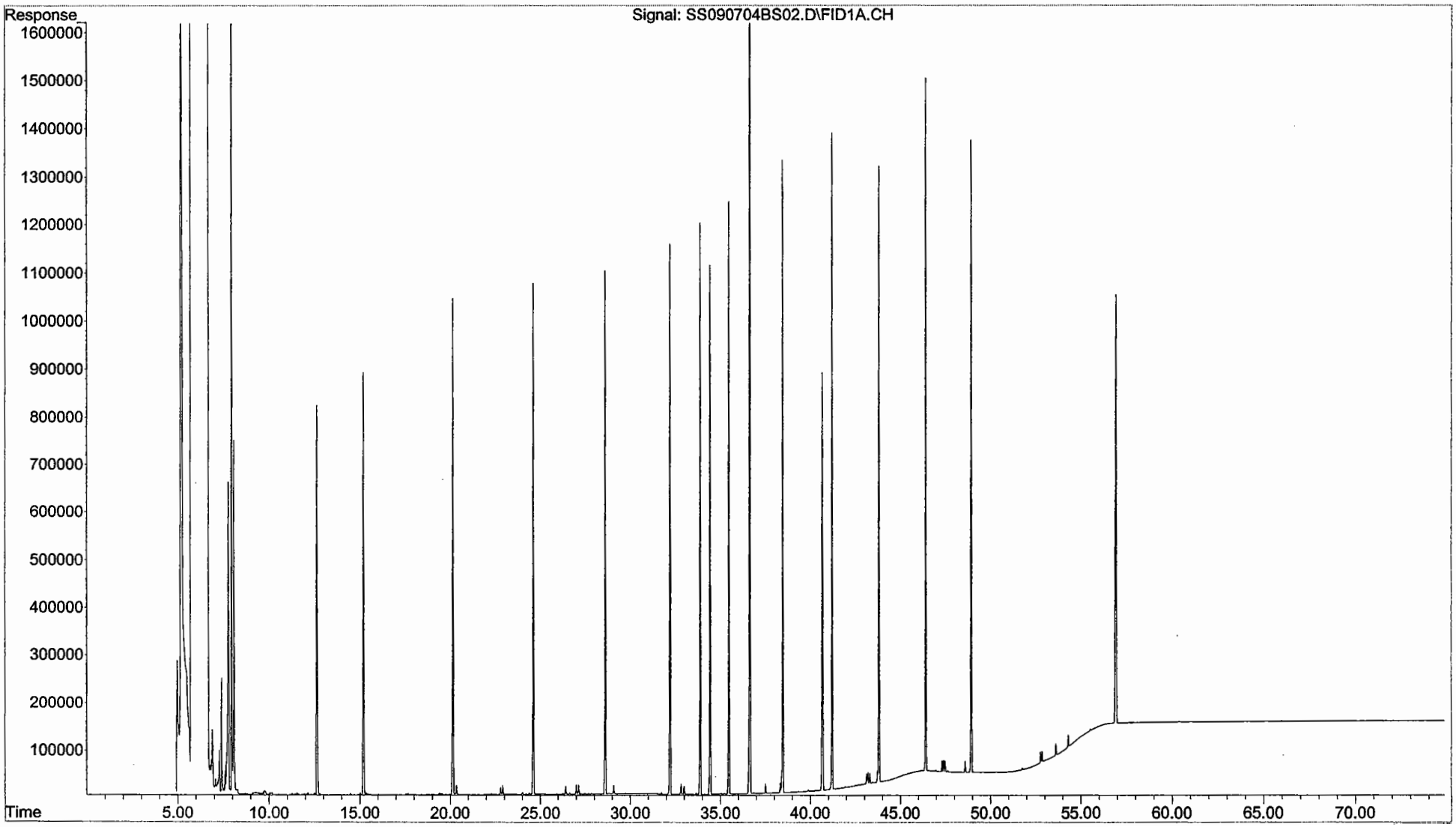
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704B02.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 11:28 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704B02
Misc Info : 1X

Procedural Blank
SS090704B02



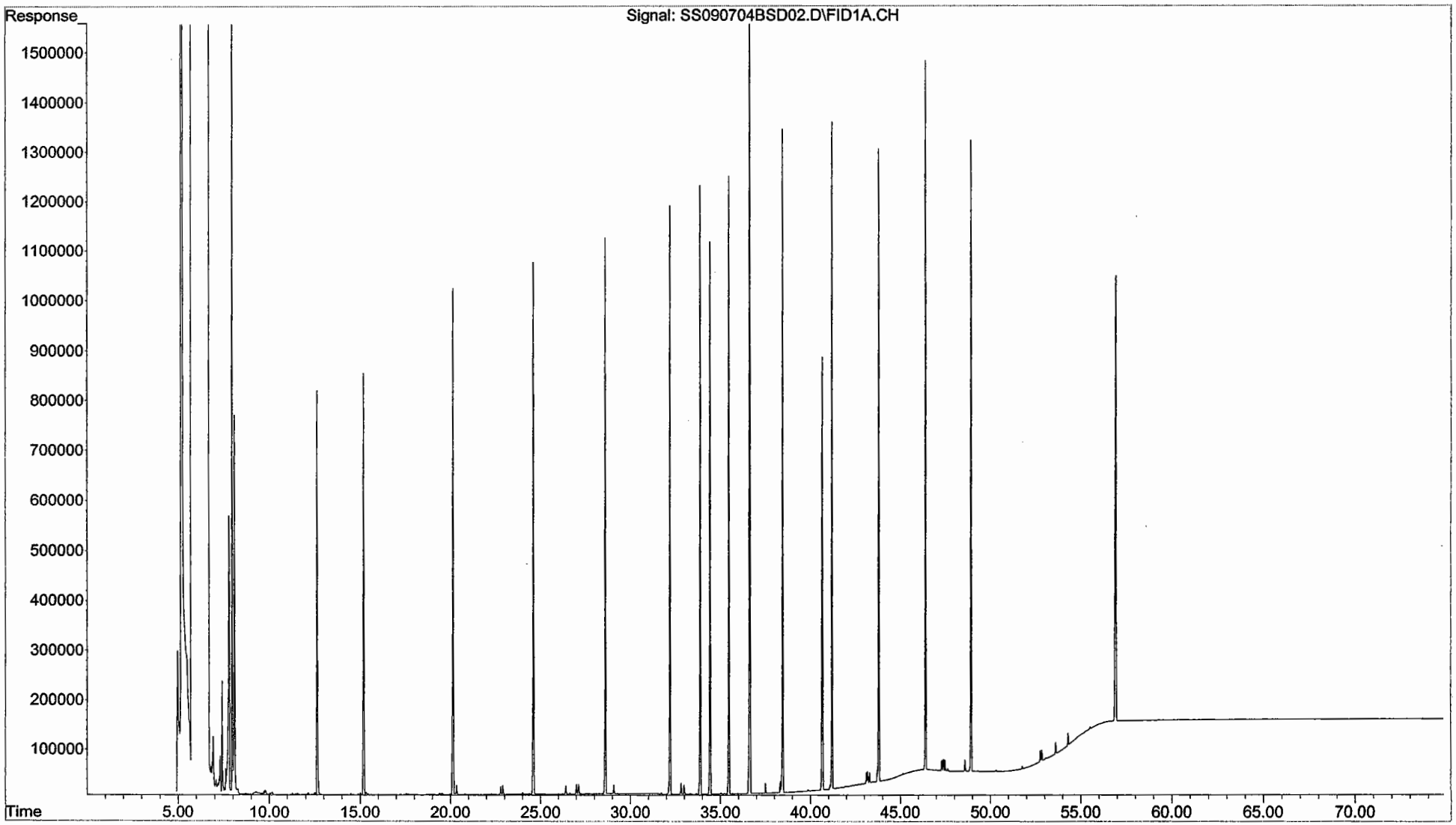
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704BS02.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 1:01 am using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704BS02
Misc Info : 1X

Blank Spike
SS090704BS02



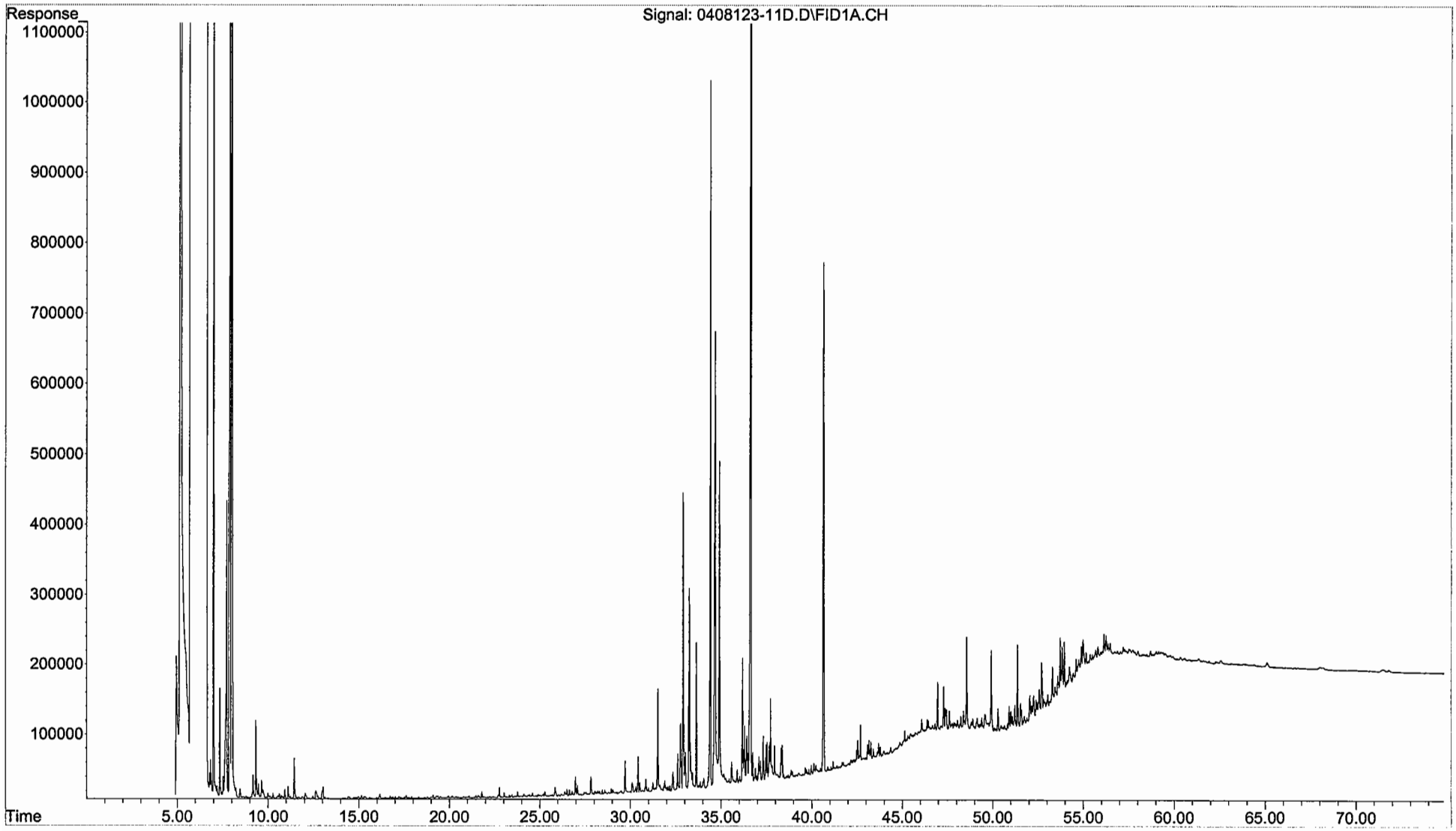
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704BSD02.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 26 Sep 2004 2:33 am using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704BSD02
Misc Info : 1X

Blank Spike Duplicate
SS090704BSD02



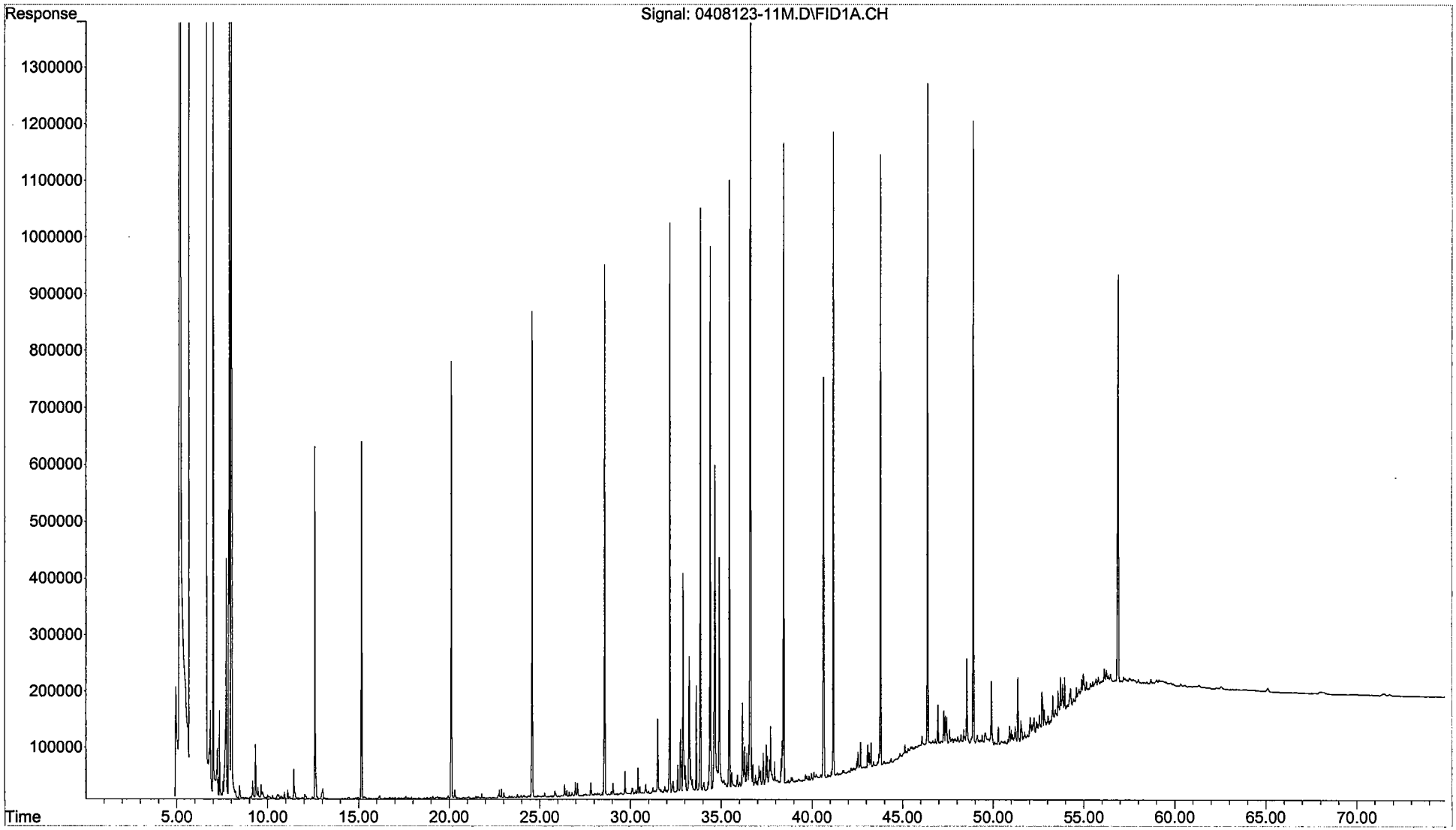
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-11D.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 12:20 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-11D
Misc Info : 1X

DSY-SD-09-082604 Duplicate
0408123-11D



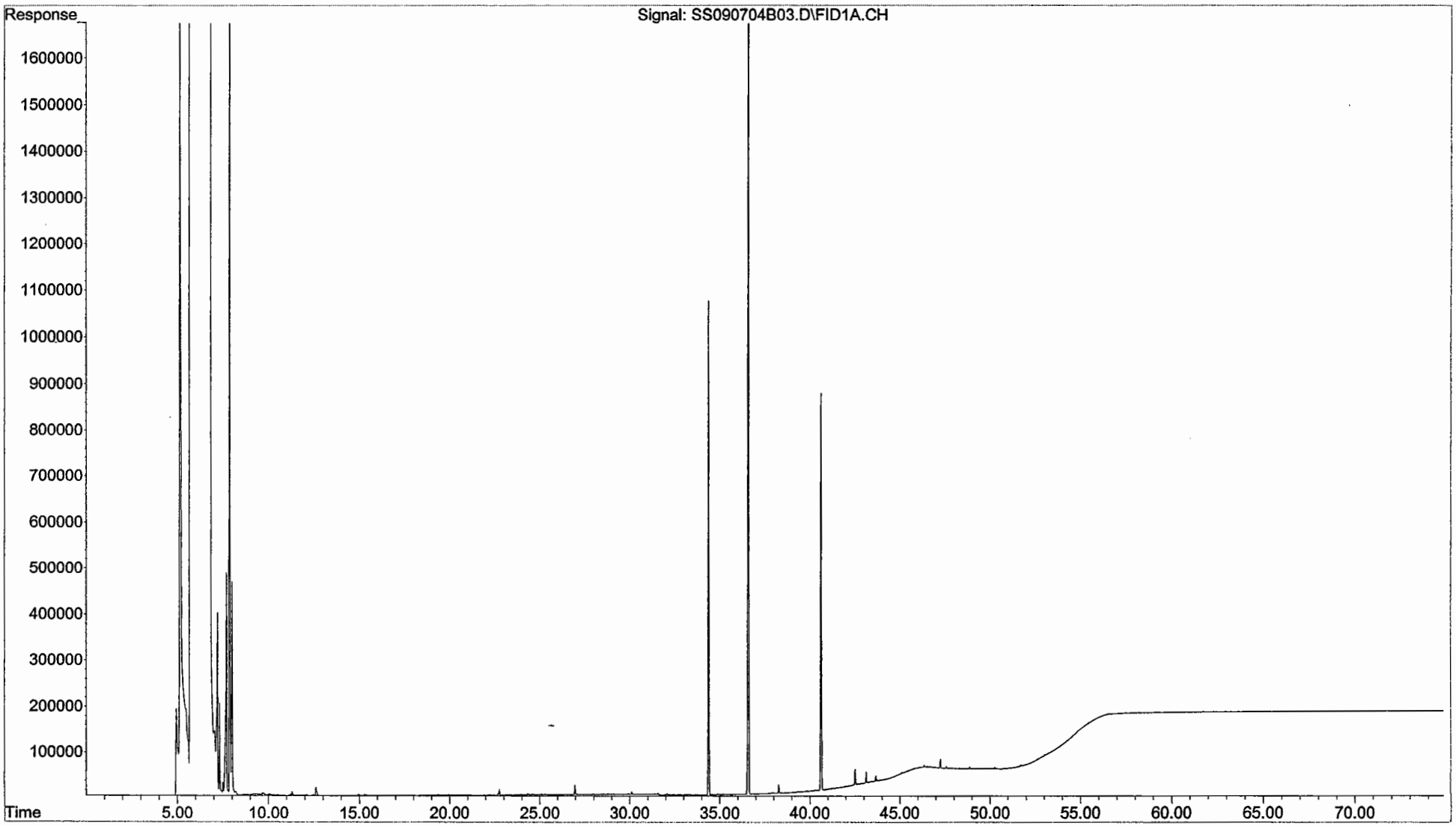
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408123-11M.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 1:43 am using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408123-11M
Misc Info : 1X

Matrix Spike of DSY-SD-09-082604
0408123-11M



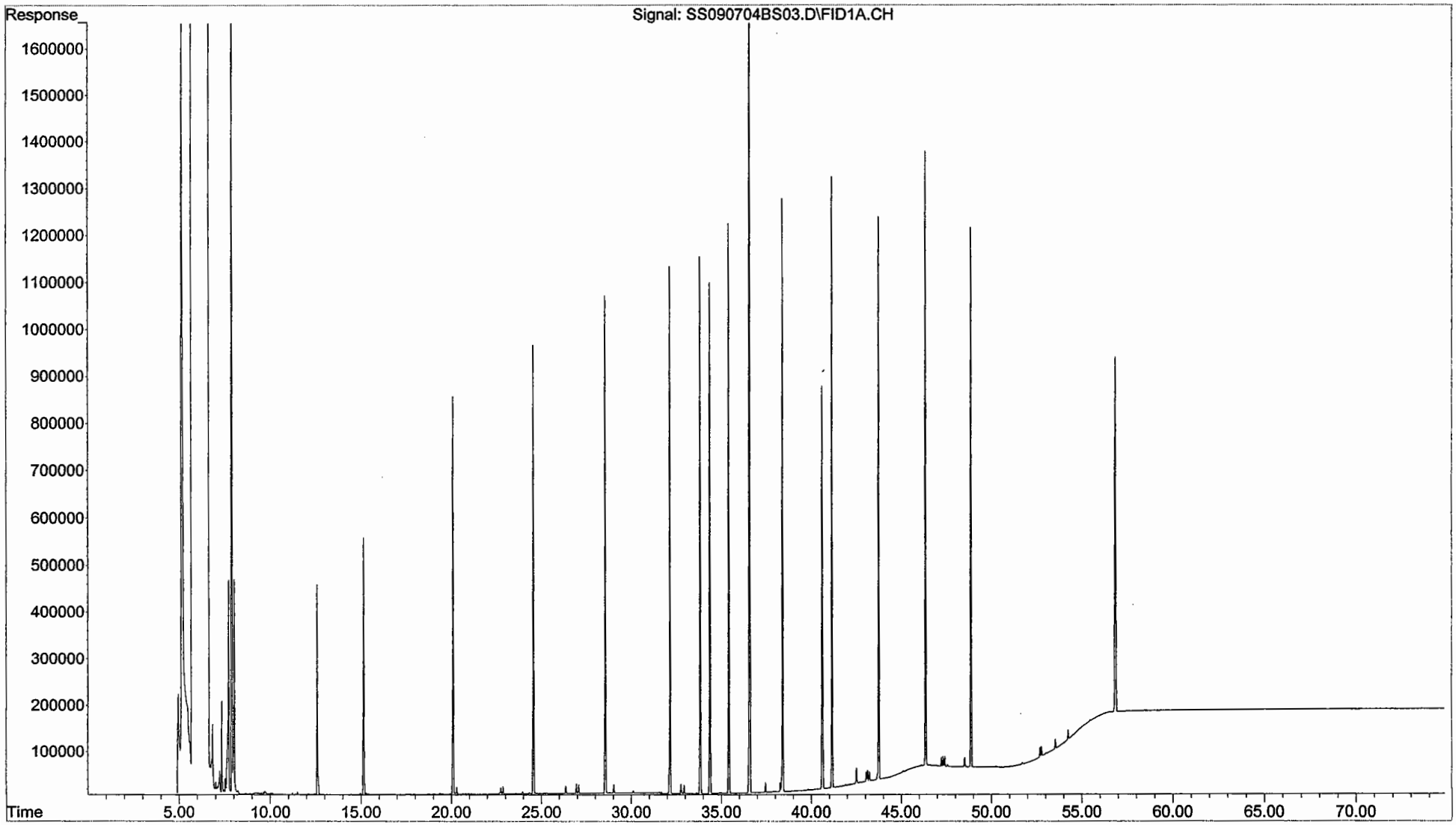
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704B03.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 12:55 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704B03
Misc Info : 1X

Procedural Blank
SS090704B03



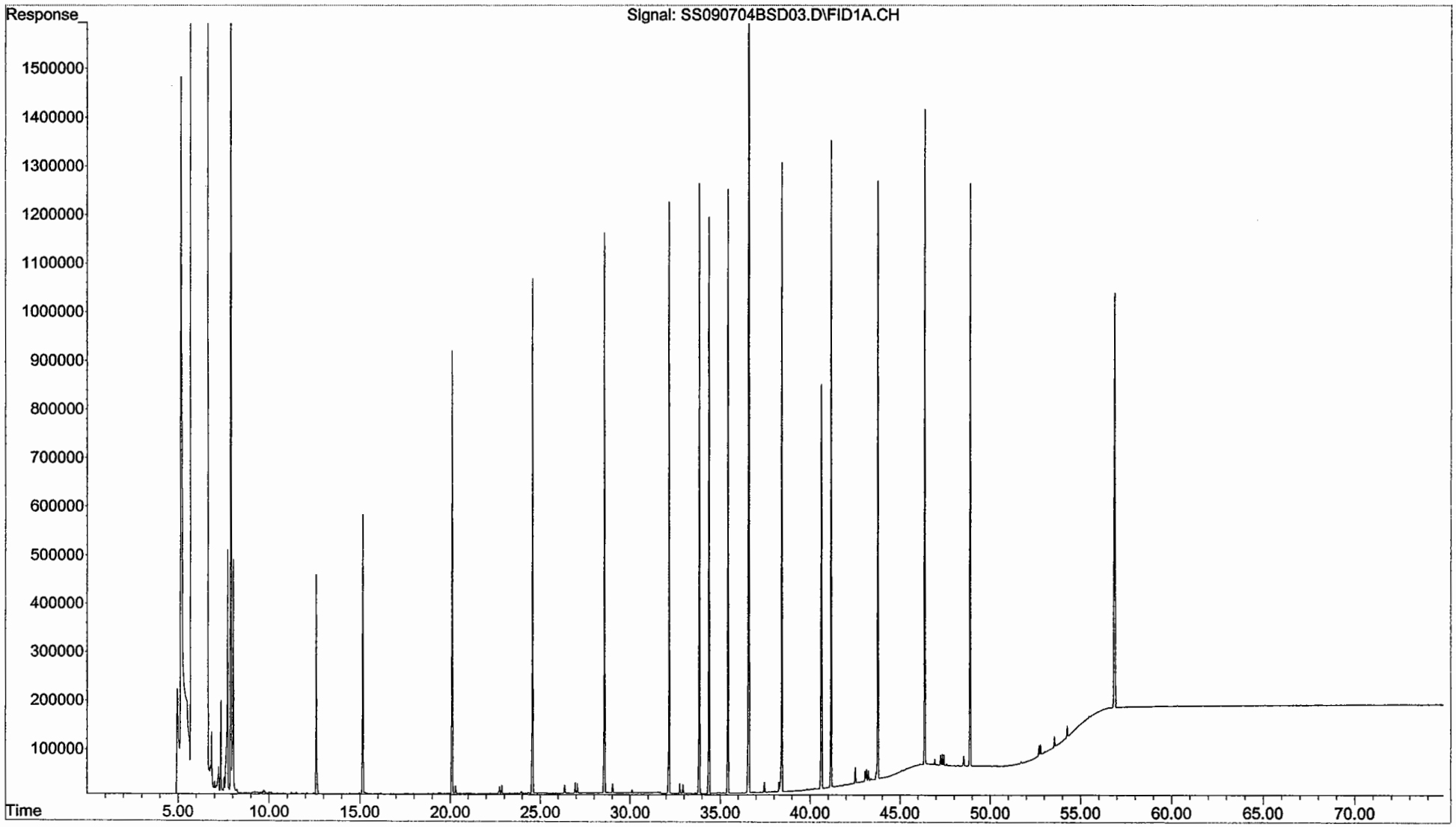
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704BS03.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 2:19 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704BS03
Misc Info : 1X

Blank Spike
SS090704BS03



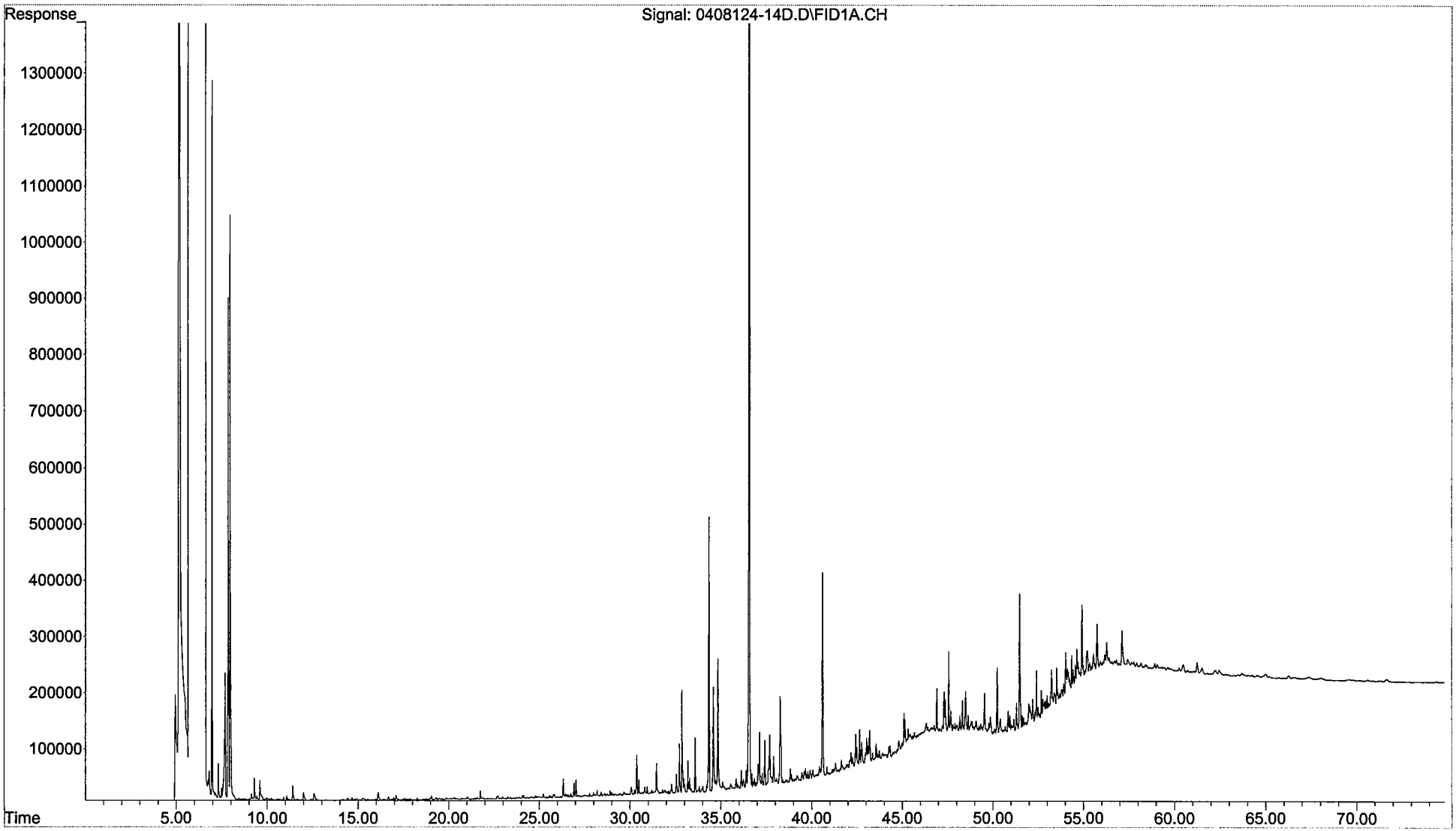
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SS090704BSD03.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 27 Sep 2004 3:43 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SS090704BSD03
Misc Info : 1X

Blank Spike Duplicate
SS090704BSD03



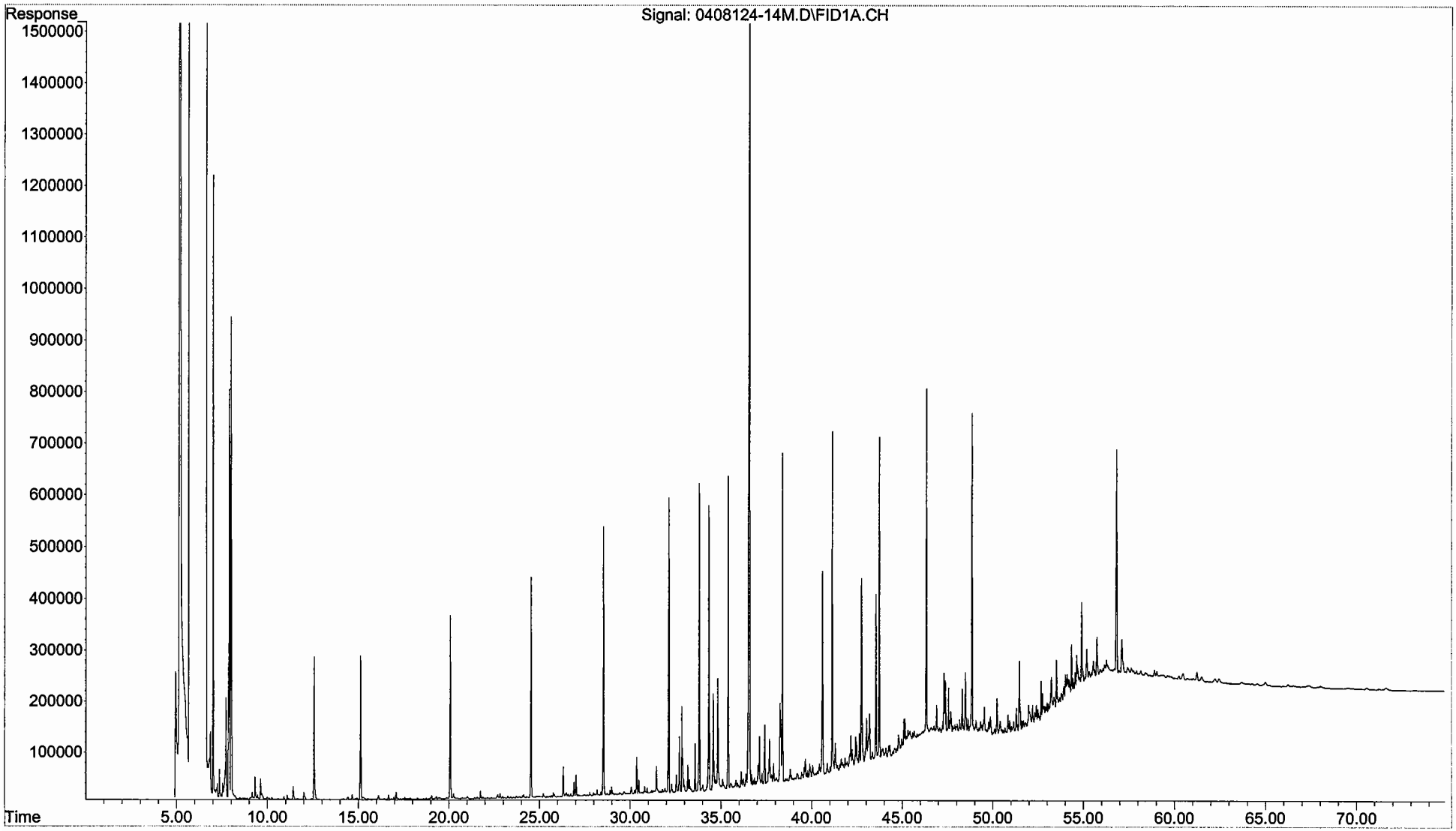
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-14D.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 4:59 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-14D
Misc Info : 1X

DSY-SD-CH01-082604 Duplicate
0408124-14D



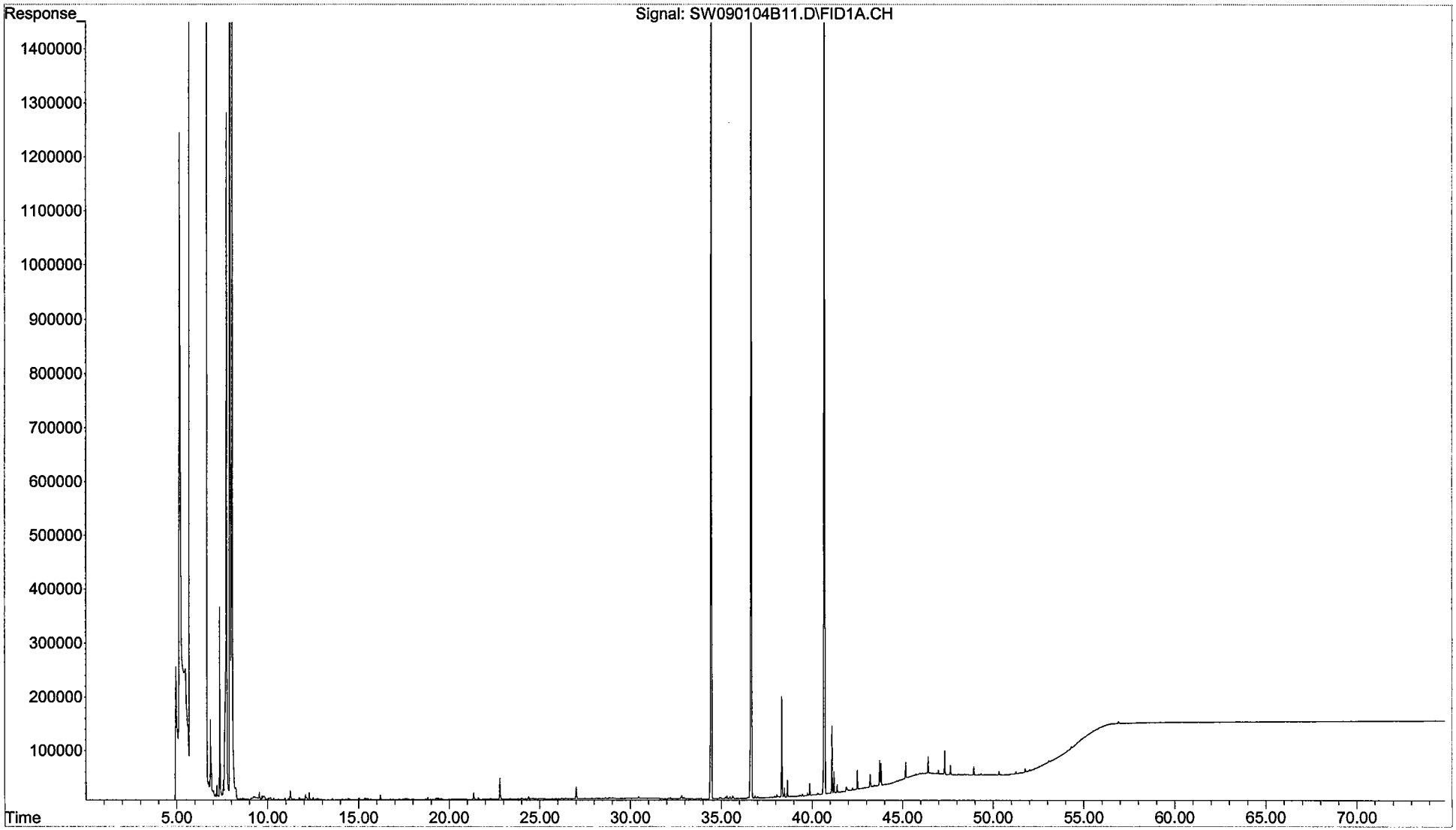
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \0408124-14M.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 28 Sep 2004 6:23 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: 0408124-14M
Misc Info : 1X

Matrix Spike of DSY-SD-CH01-082604
0408124-14M



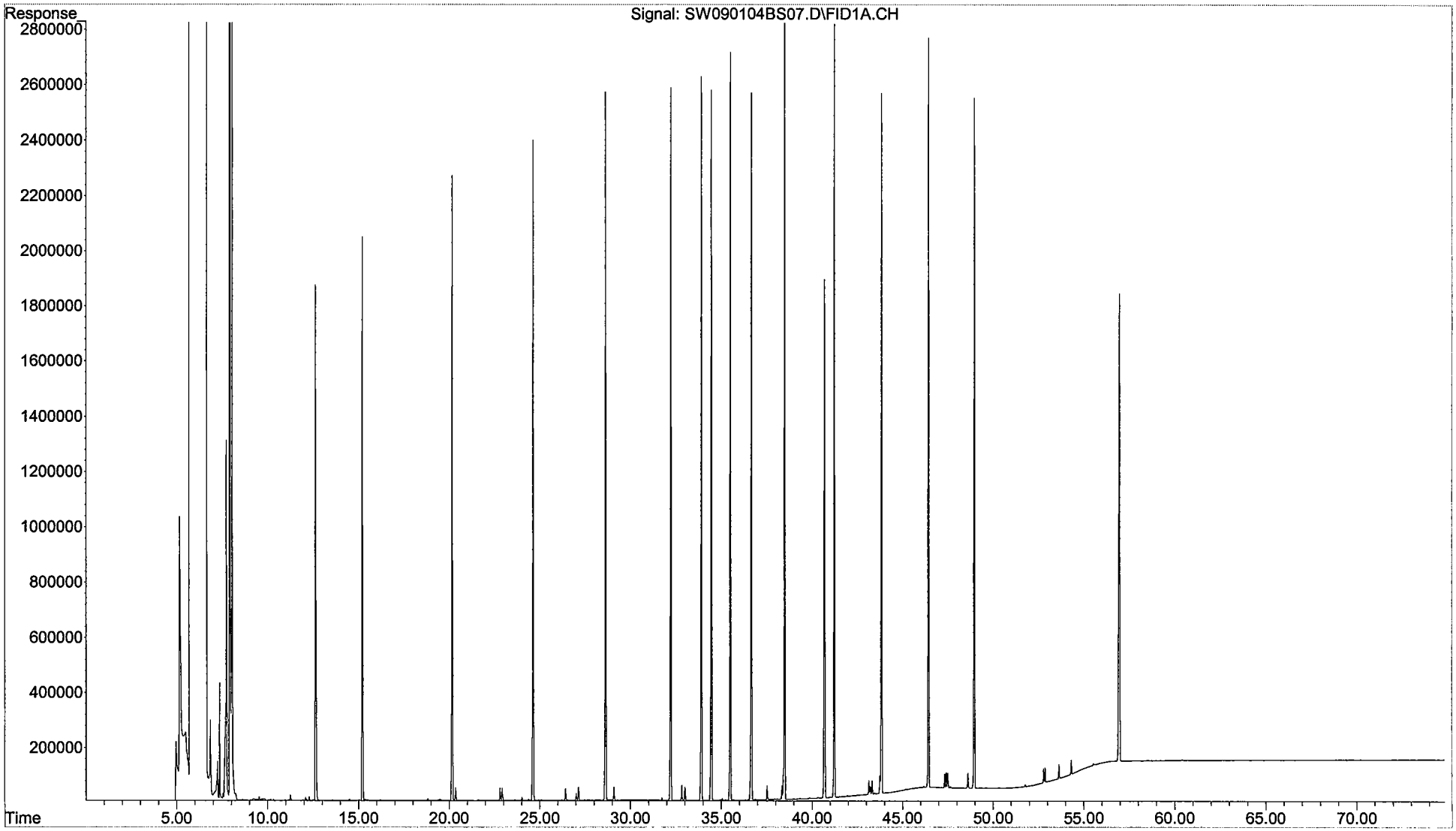
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SW090104B11.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 12:46 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SW090104B11
Misc Info : 1X

Procedural Blank
SW090104B11



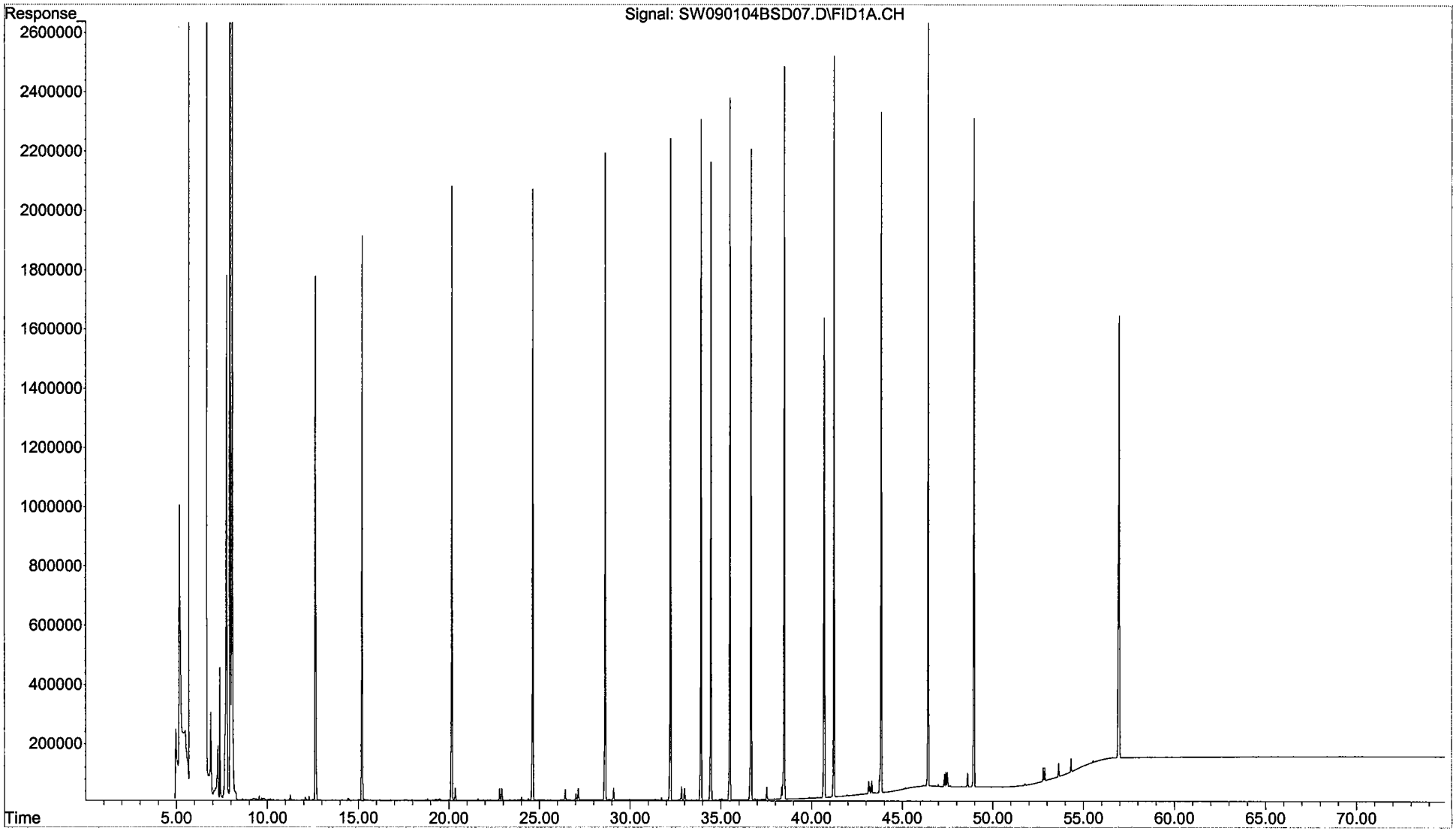
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SW090104BS07.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 2:16 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SW090104BS07
Misc Info : 1X

Blank Spike
SW090104BS07



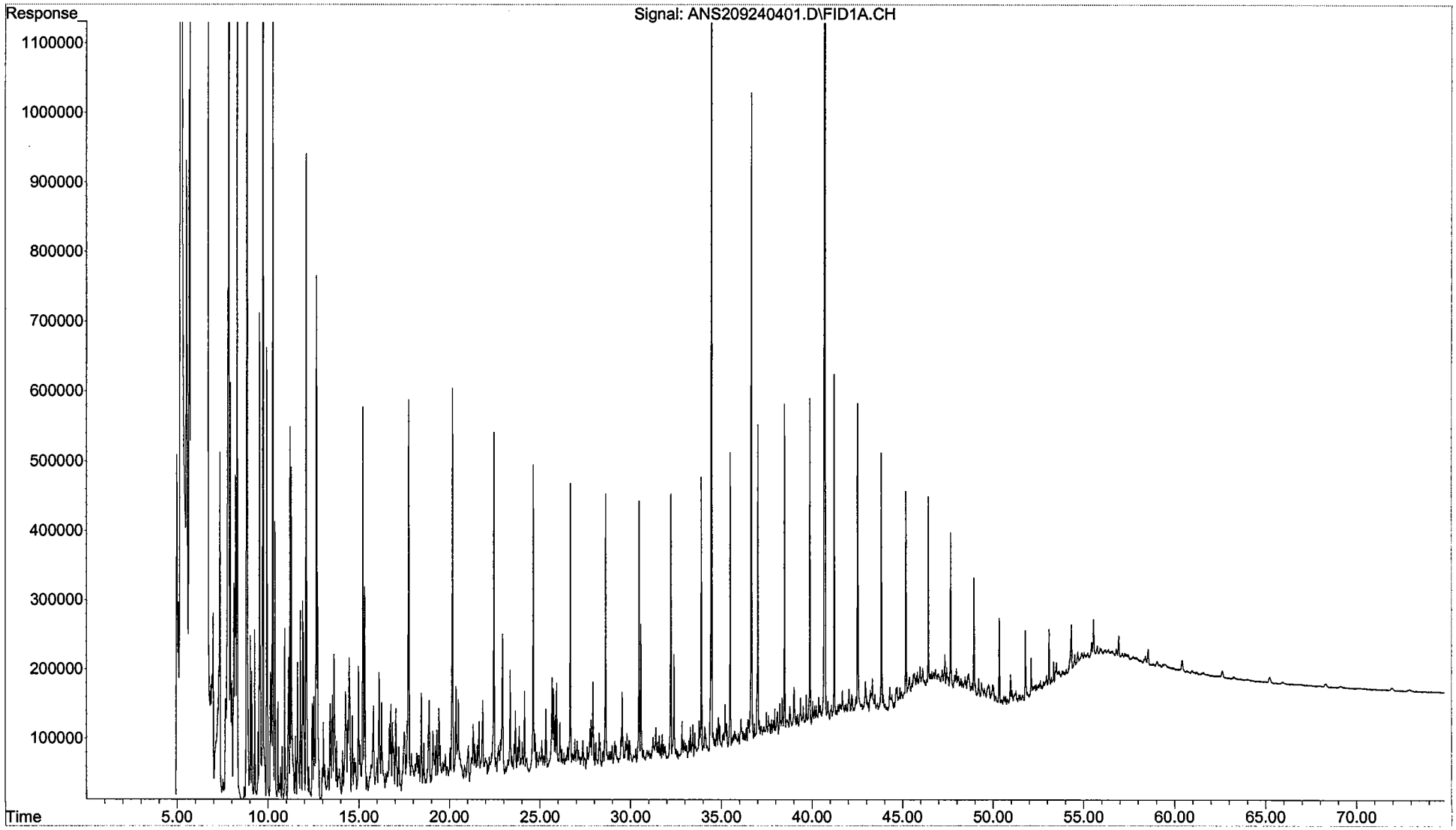
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \SW090104BSD07.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 3:48 pm using AcqMethod MS2SHC092404REV02.M
Sample Name: SW090104BSD07
Misc Info : 1X

Blank Spike Duplicate
SW090104BSD07



File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\Preliminary FID
... \ANS209240401.D
Operator : NLJr
Instrument : PAH #2 FI
Acquired : 25 Sep 2004 6:43 am using AcqMethod MS2SHC092404REV02.M
Sample Name: ANS209240401
Misc Info : SW090104A 5.14mg/mL

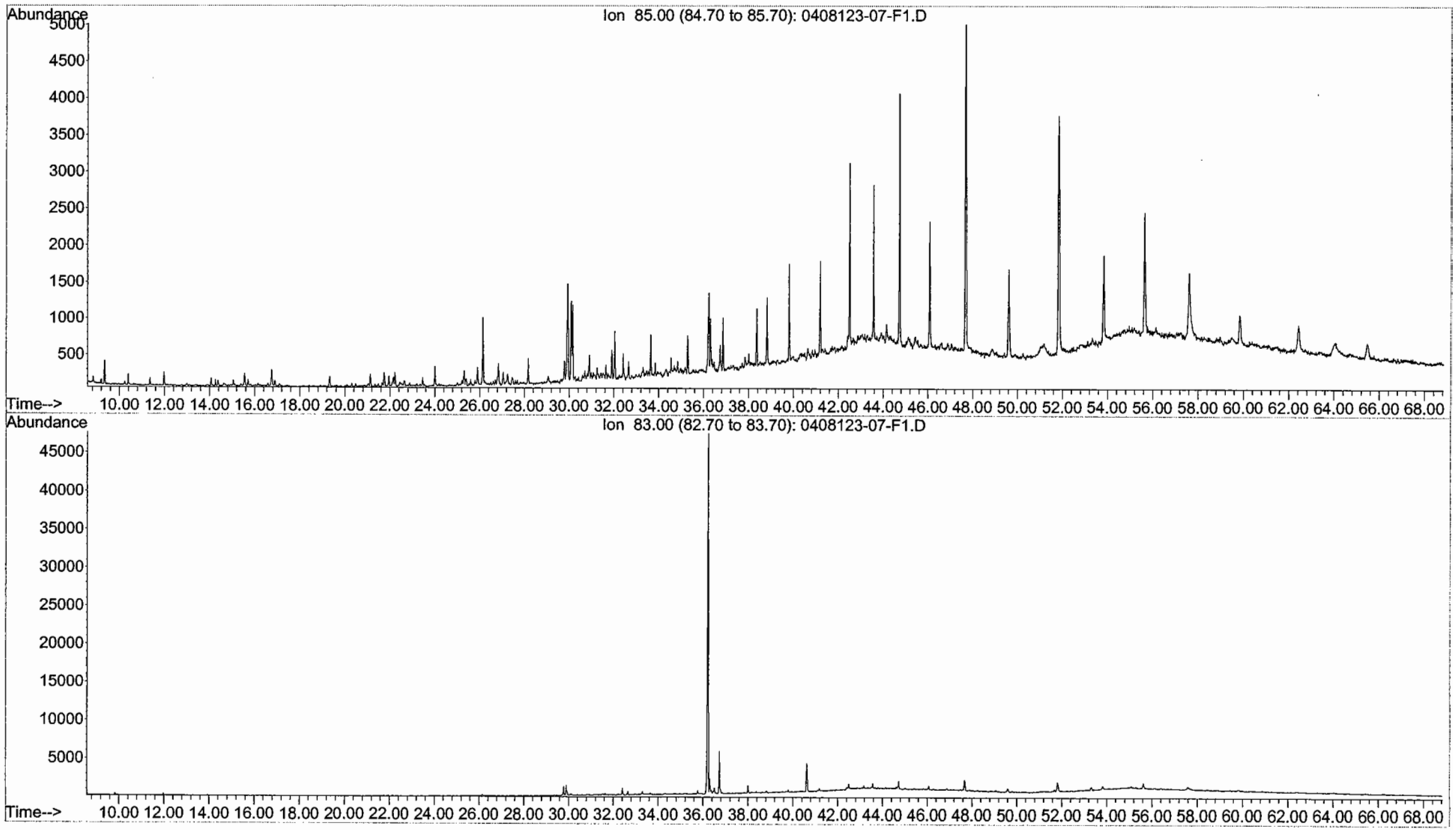
North Slope Crude Reference Oil



Attachment D
Saturated Fingerprinting Results by GC/MS/SIM

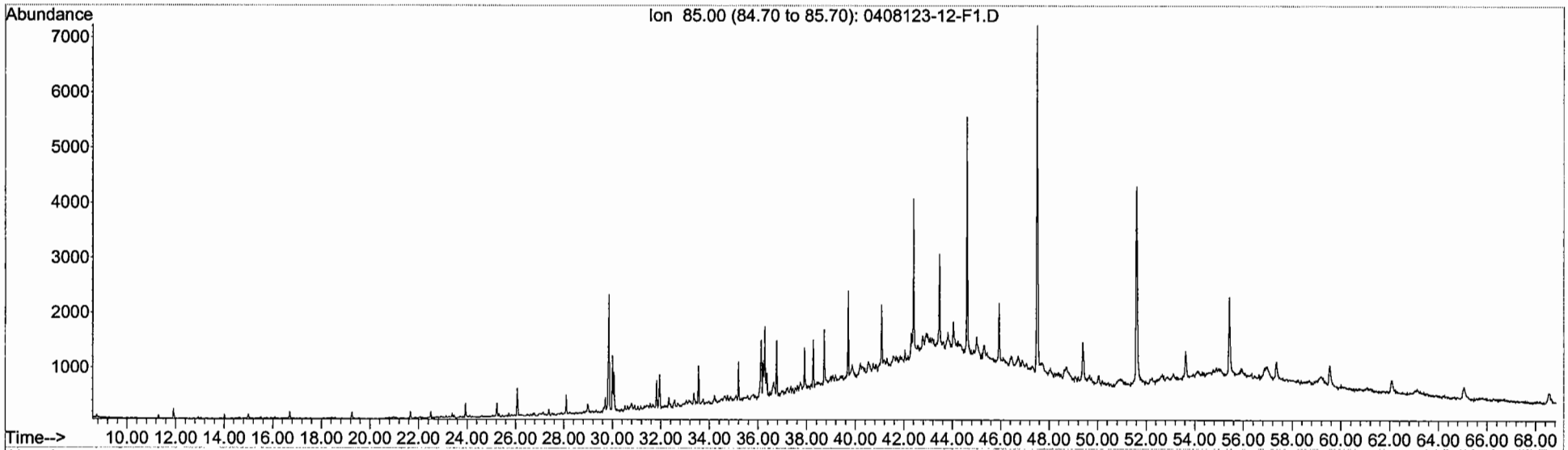
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-07-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916
Sample Name: 0408123-07-RF1
Misc Info : 1X

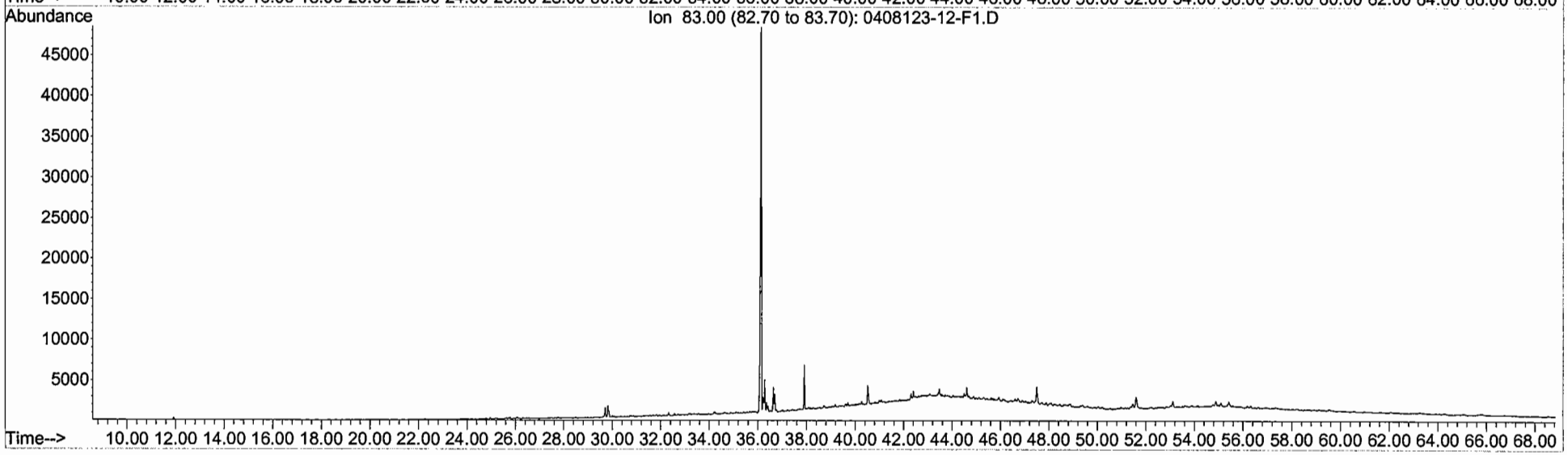
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-02-082504
0408123-07-F1



File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-12-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924
Sample Name: 0408123-12-RF1
Misc Info : 1X

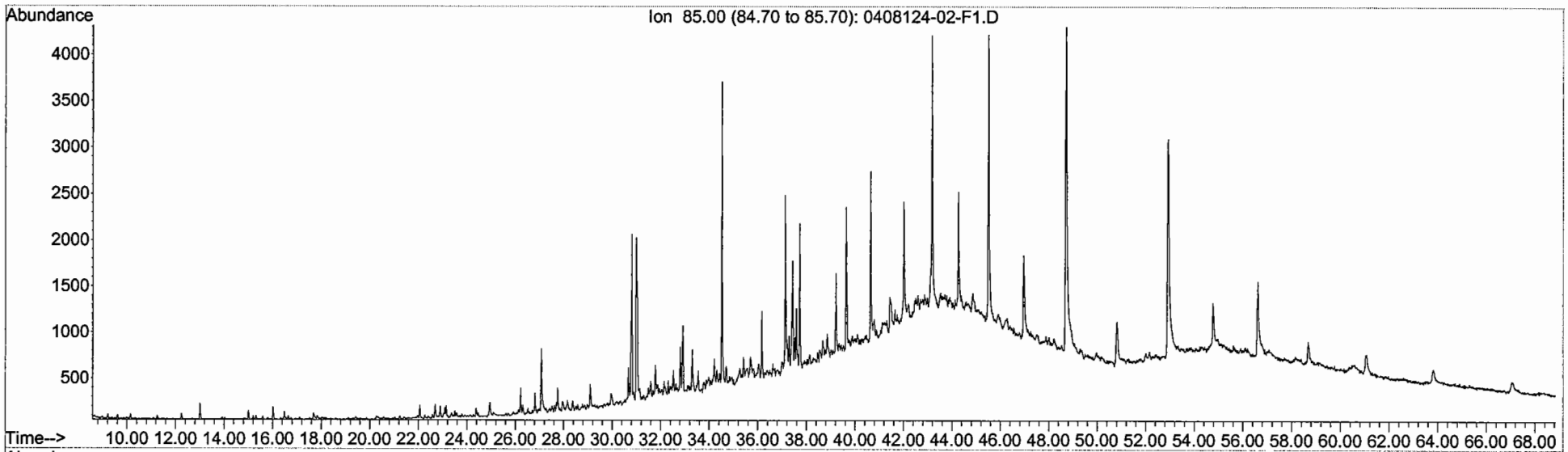
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-03-082604
0408123-12-F1

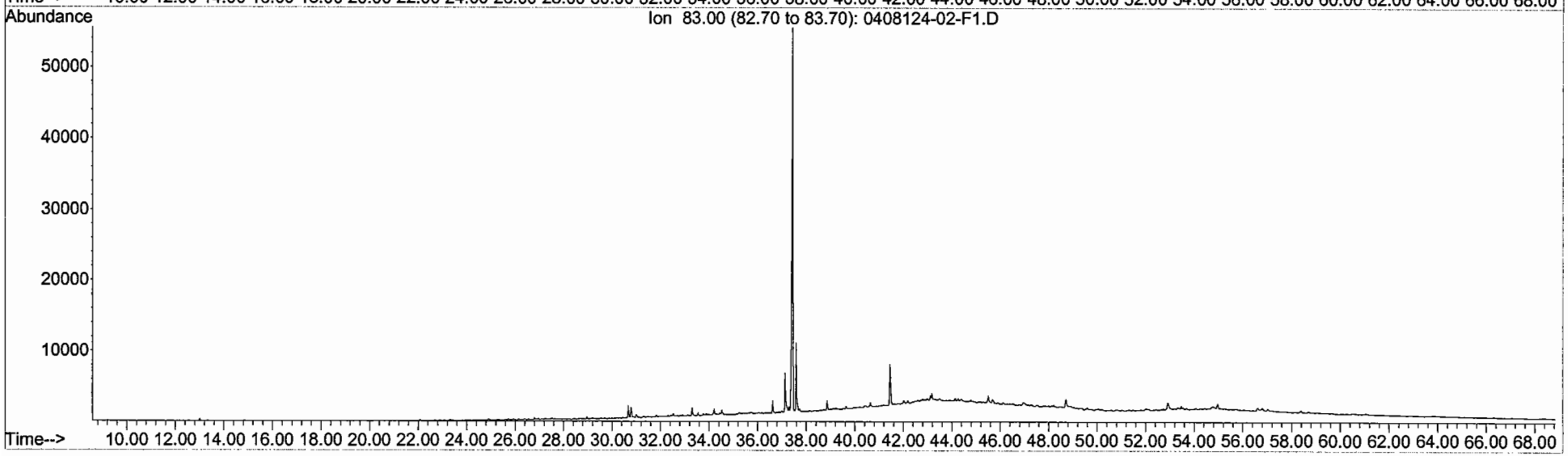




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-02-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916
Sample Name: 0408124-02-RF1
Misc Info : 1X

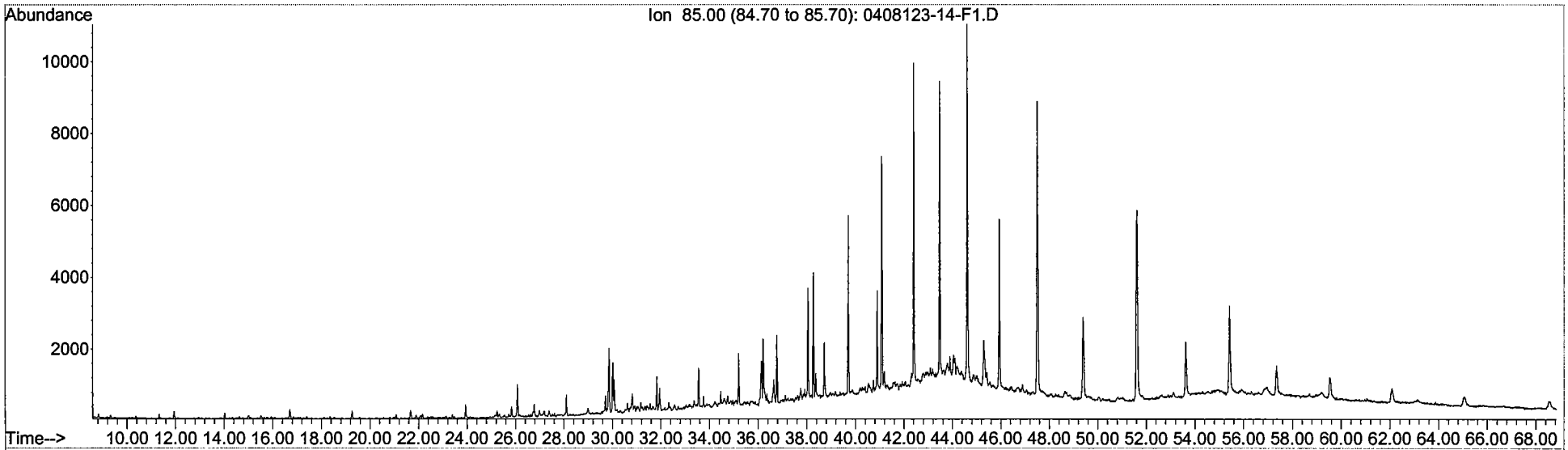
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-04-082604
0408124-02-F1

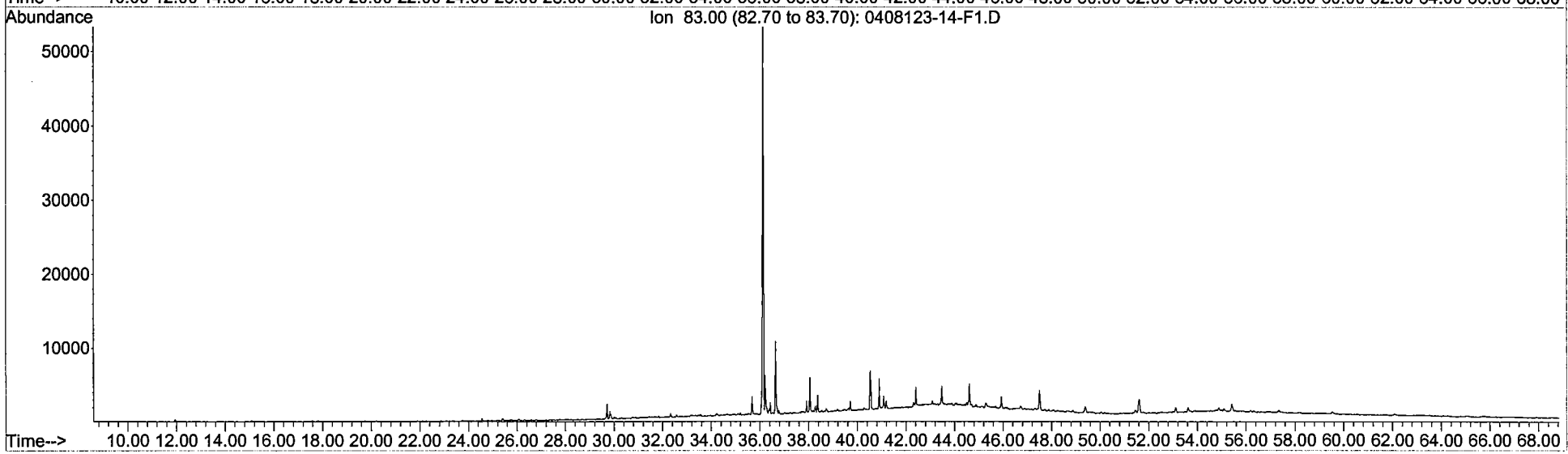




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-14-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924
Sample Name: 0408123-14-RF1
Misc Info : 1X

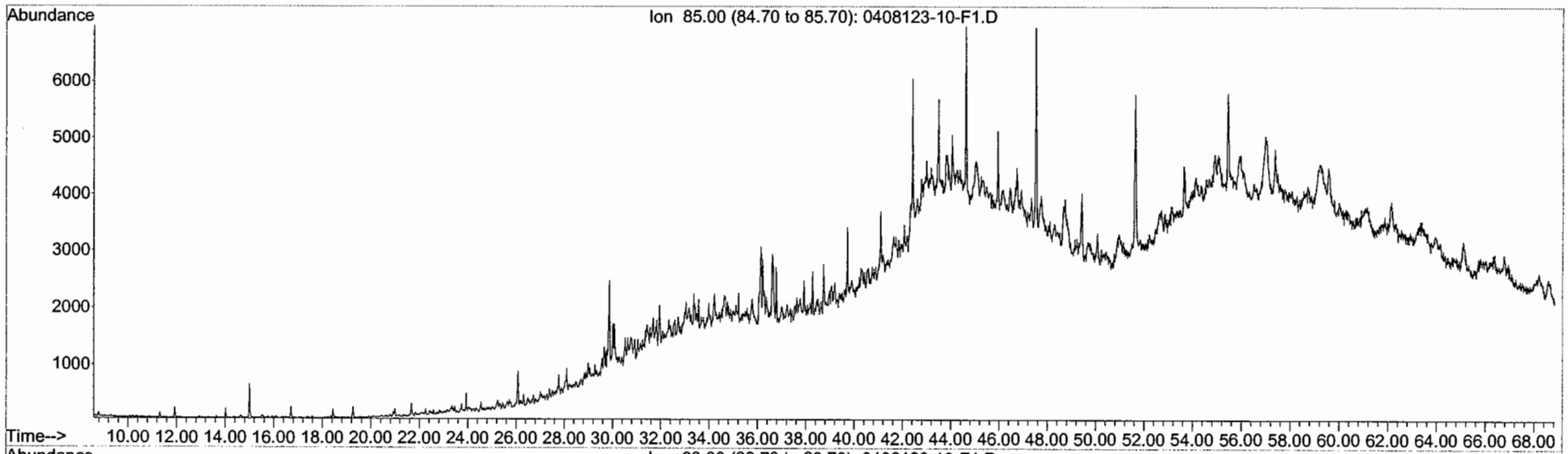
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-05-082604
0408123-14-F1

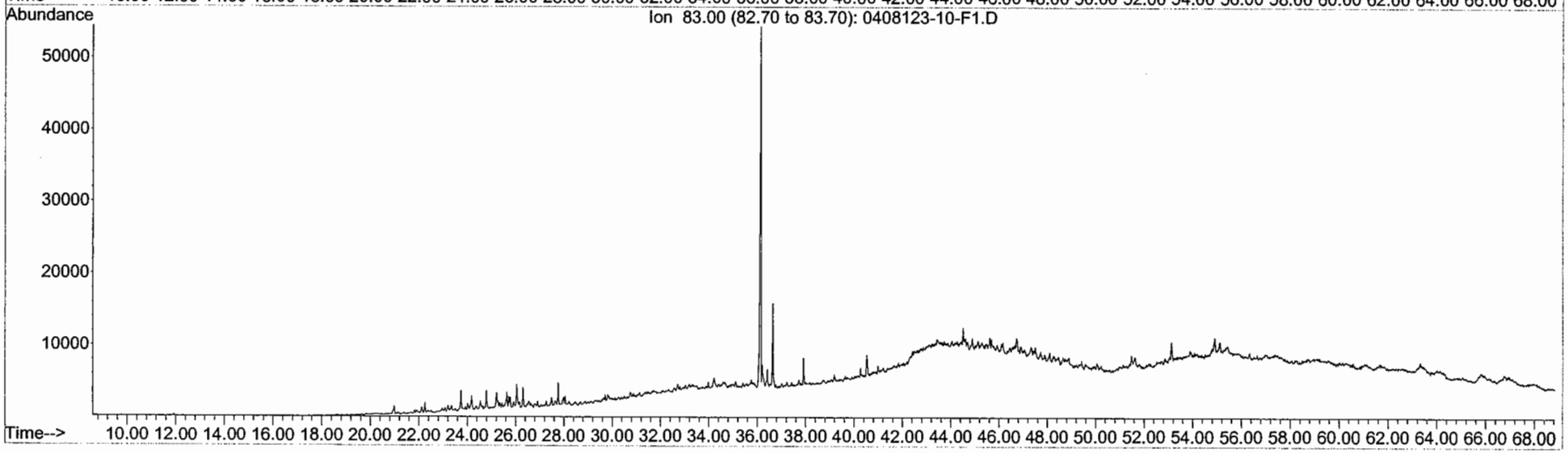




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-10-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924
Sample Name: 0408123-10-RF1
Misc Info : 1X

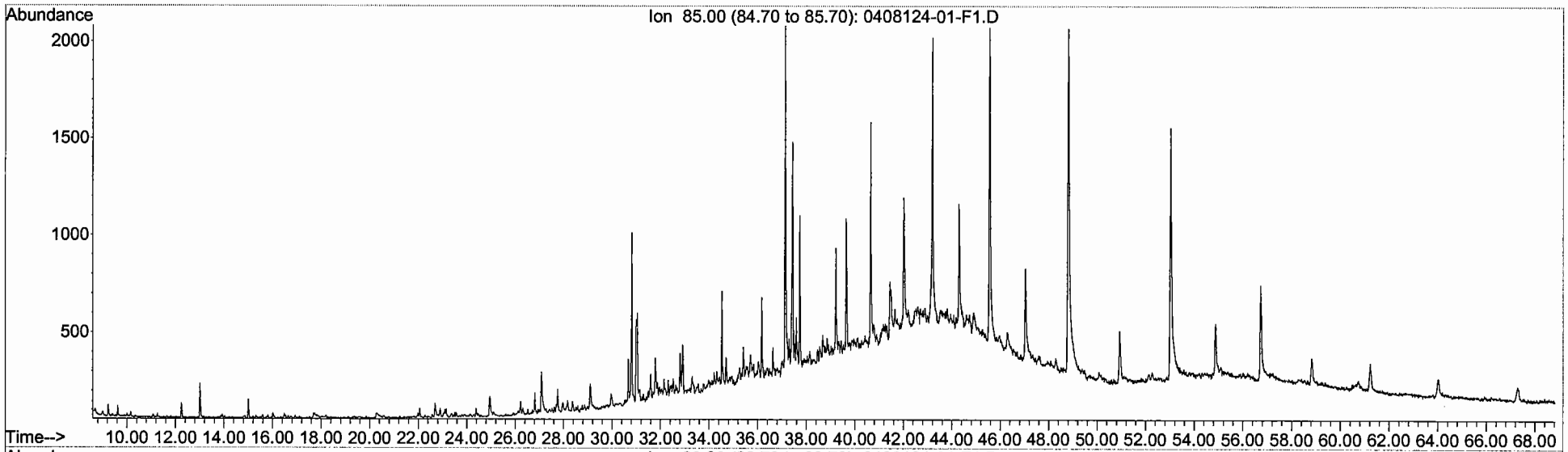
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-06-082504
0408123-10-F1

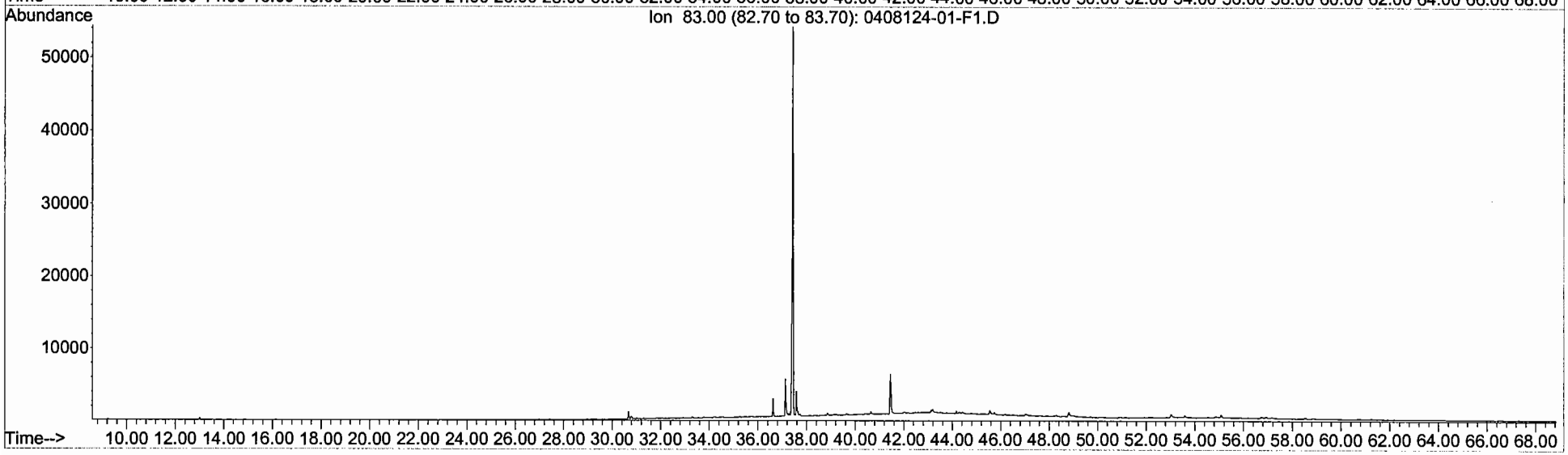




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-01-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916
Sample Name: 0408124-01-RF1
Misc Info : 1X

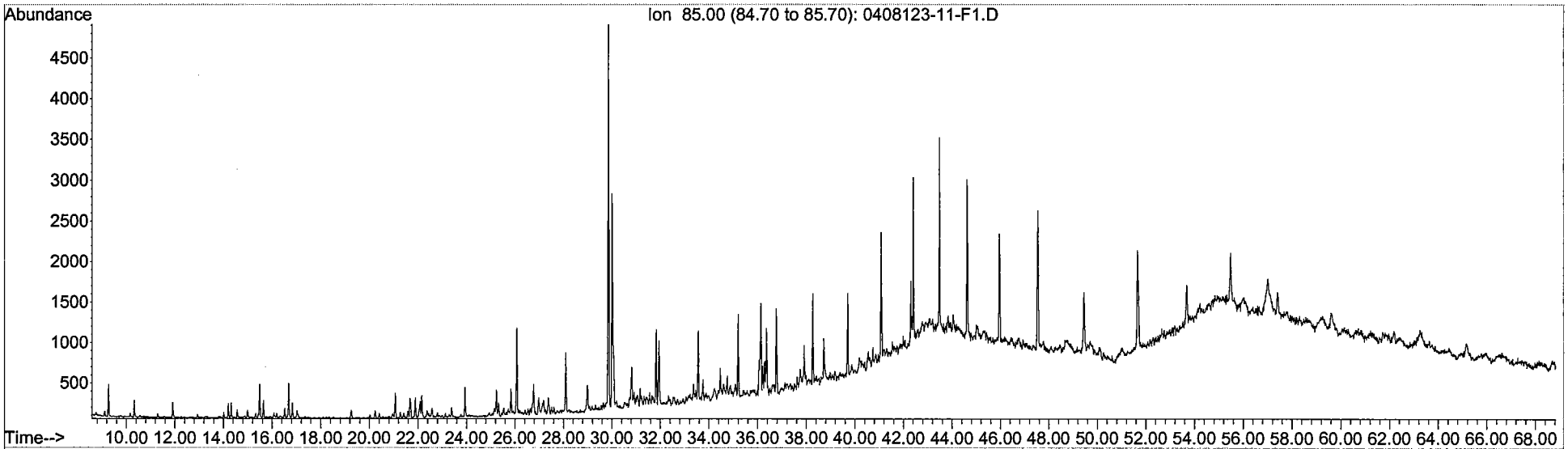
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-08-082604
0408124-01-F1

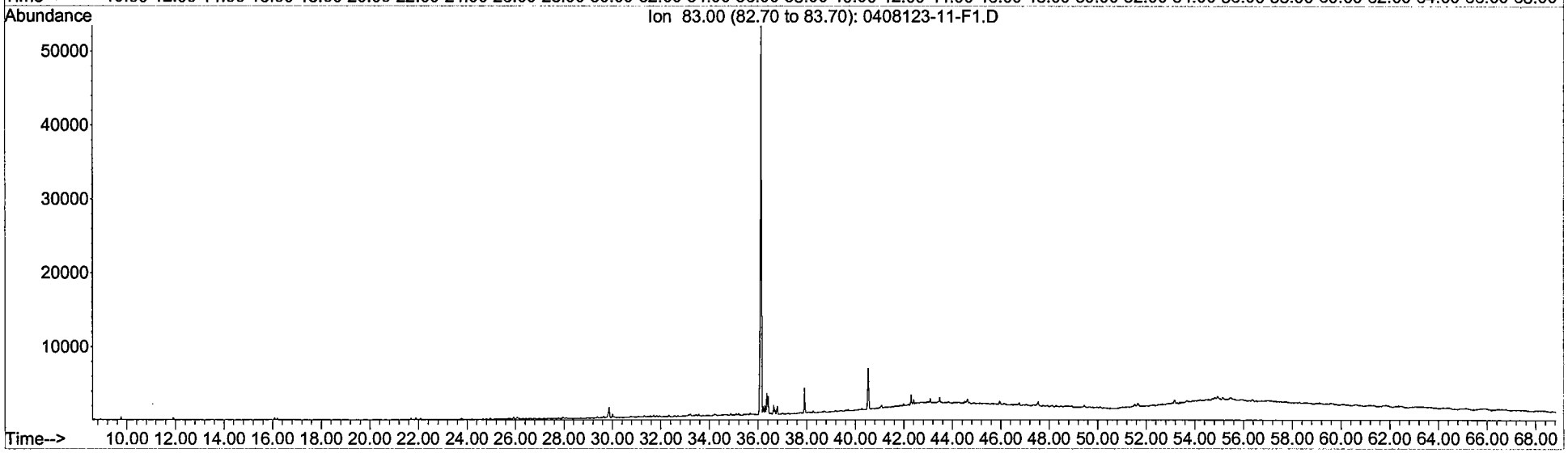




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-11-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924
Sample Name: 0408123-11-RF1
Misc Info : 1X

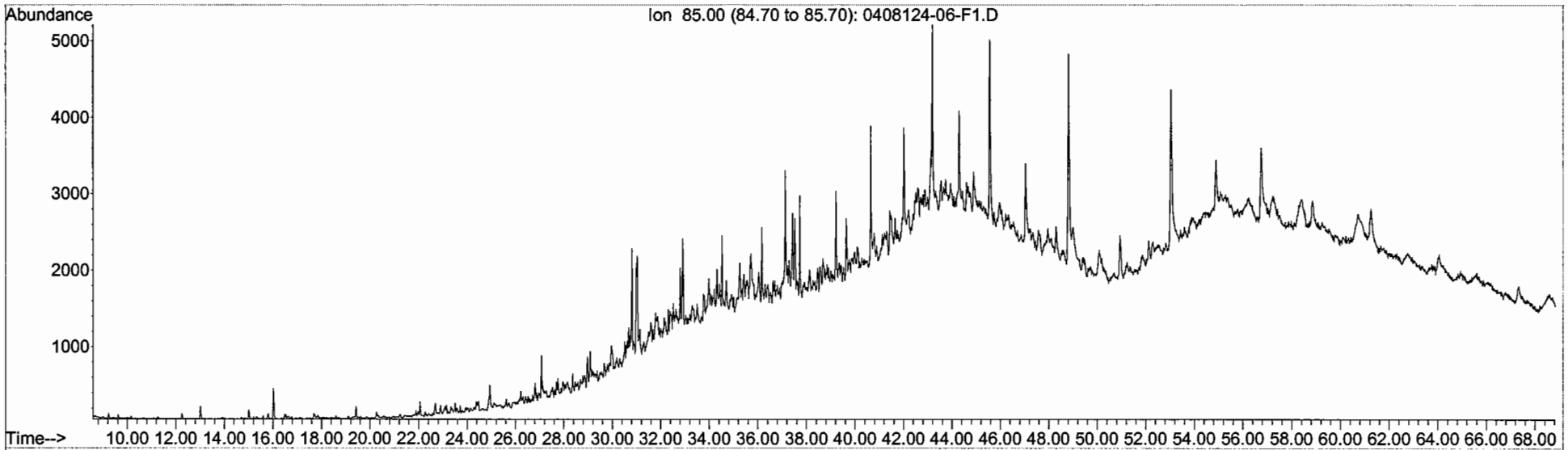
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-09-082604
0408123-11-F1

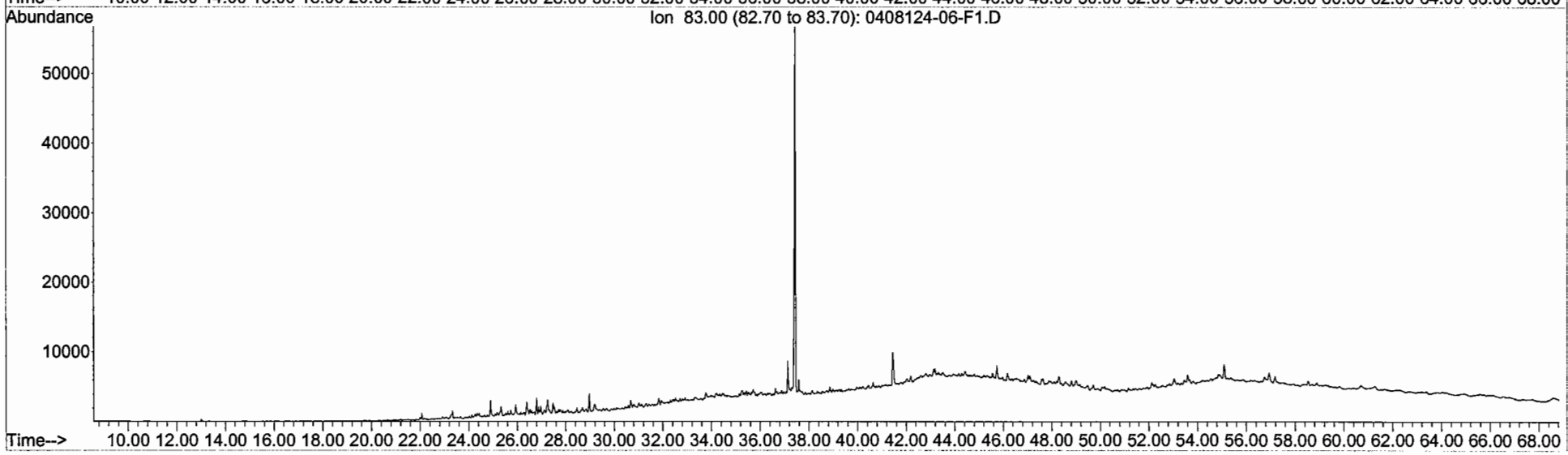




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-06-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916
Sample Name: 0408124-06-RF1
Misc Info : 1X

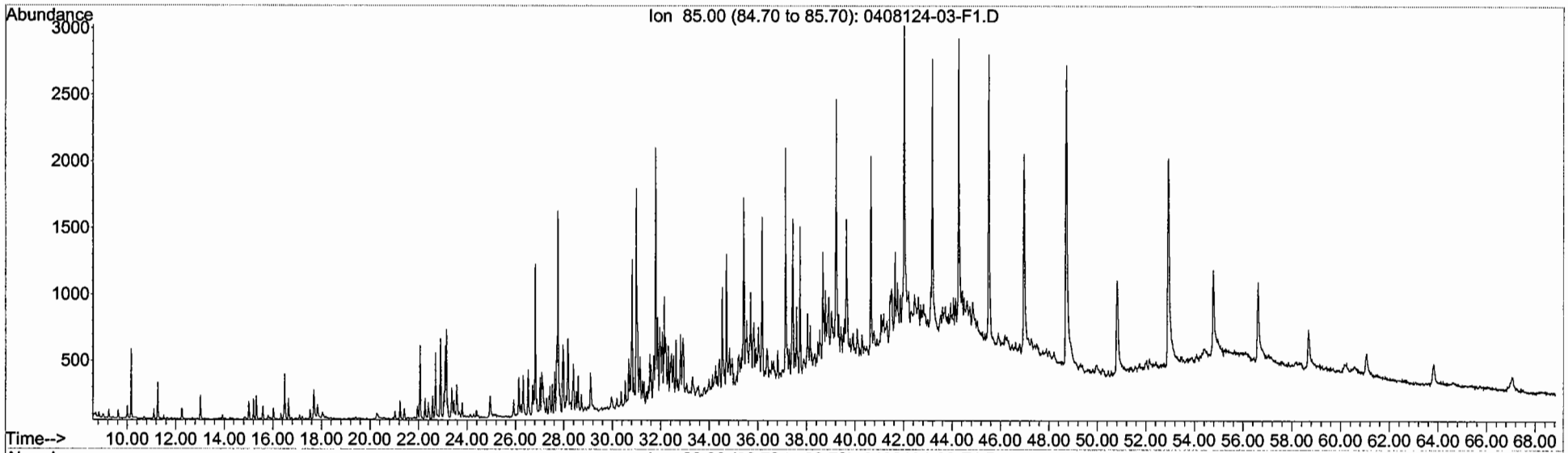
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-11-082604
0408124-06-F1

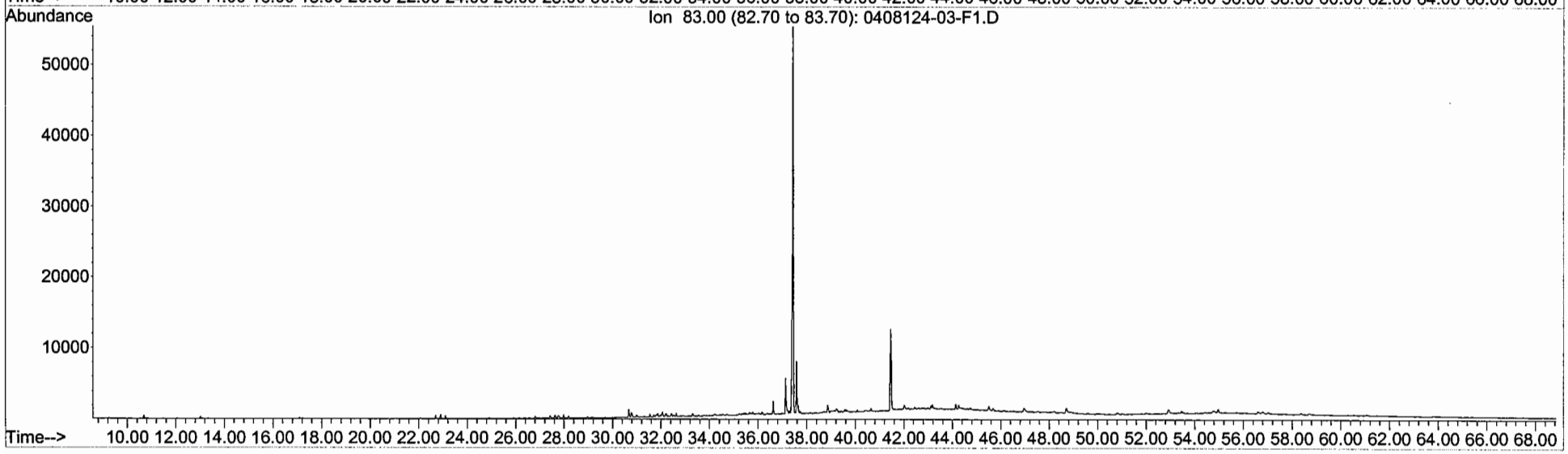




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-03-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916
Sample Name: 0408124-03-RF1
Misc Info : 1X

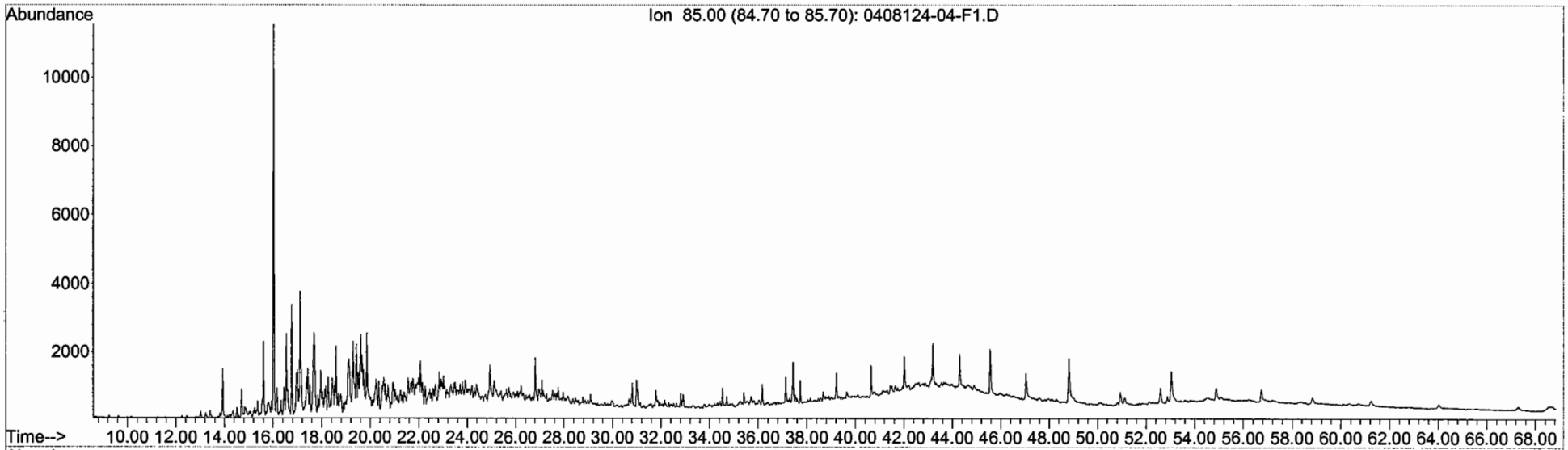
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-20-082604
0408124-03-F1

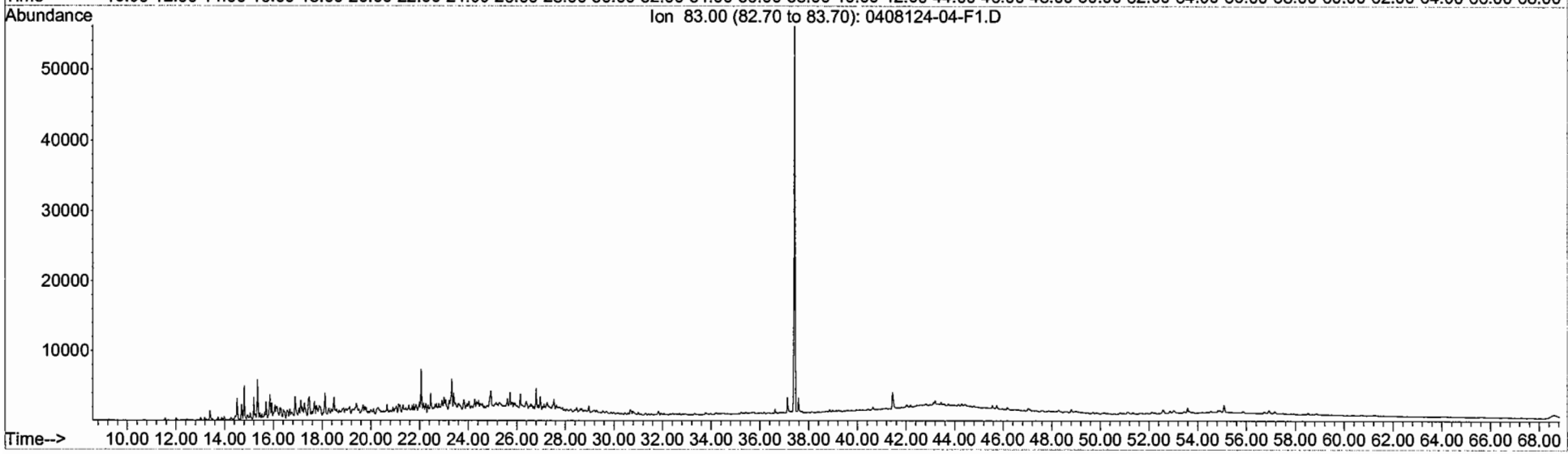




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-04-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916
Sample Name: 0408124-04-RF1
Misc Info : 1X

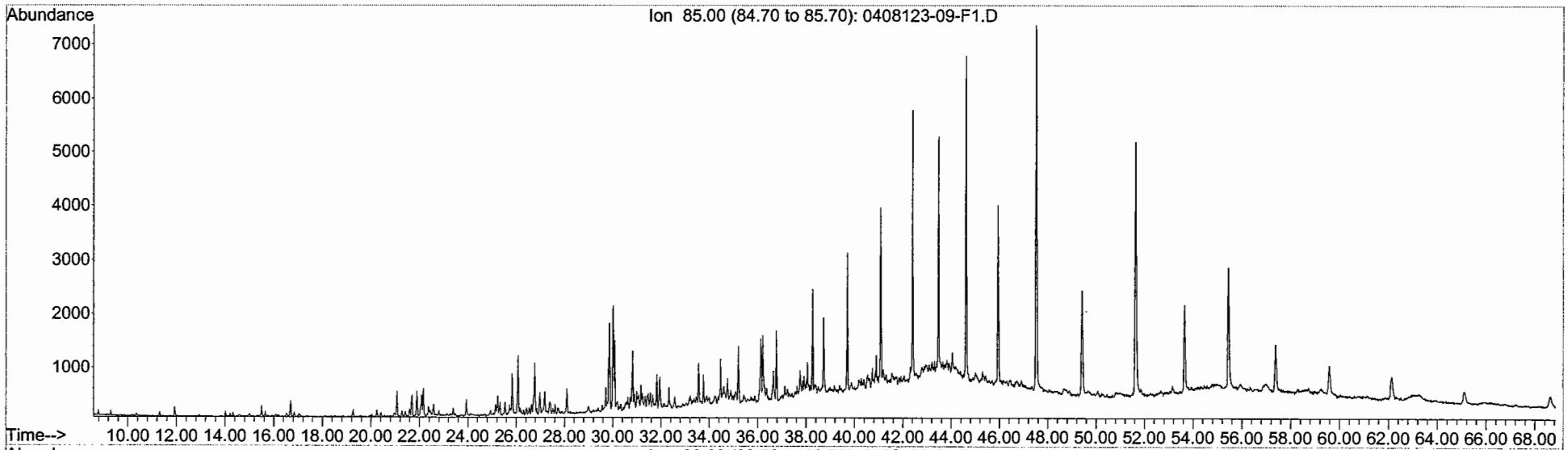
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-27-082604
0408124-04-F1

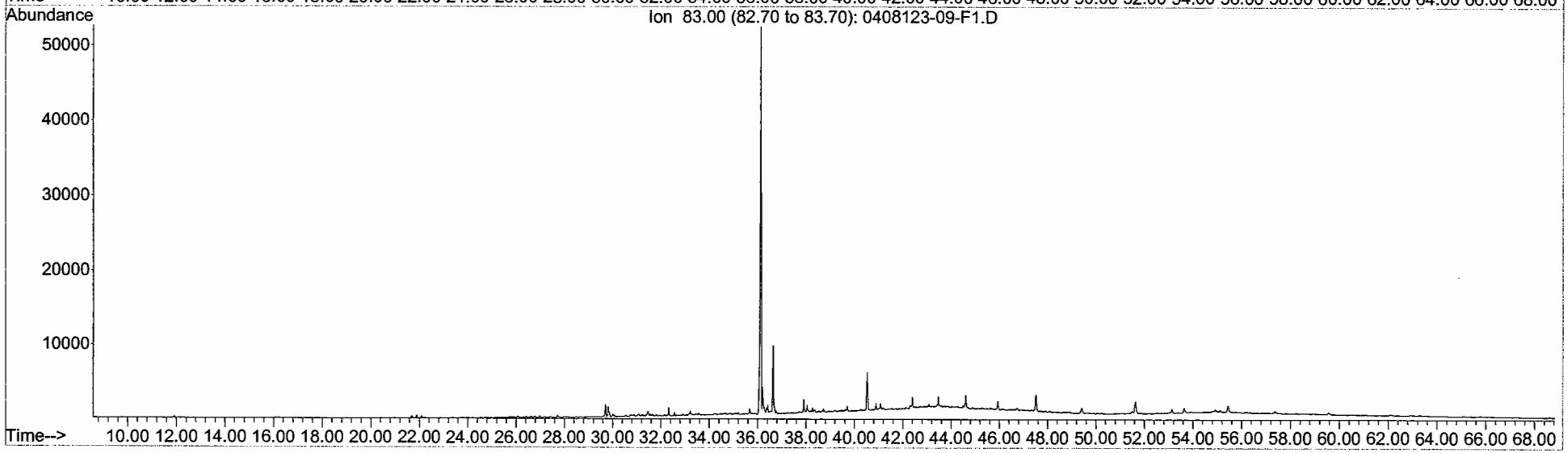




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-09-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924
Sample Name: 0408123-09-RF1
Misc Info : 1X

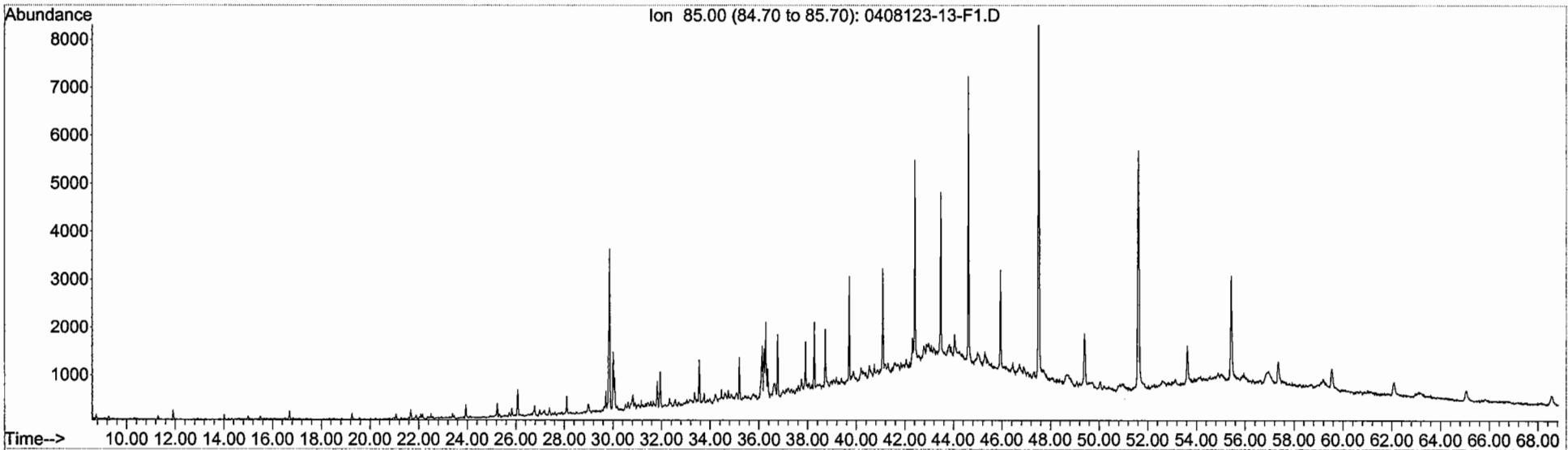
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-28-082504
0408123-09-F1

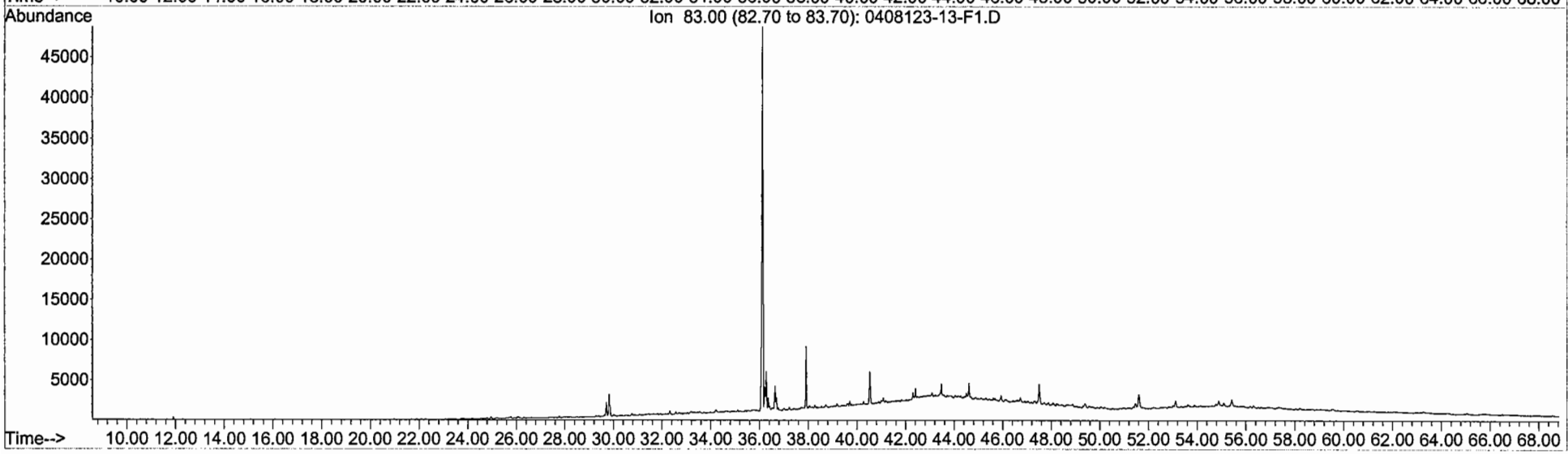




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-13-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924
Sample Name: 0408123-13-RF1
Misc Info : 1X

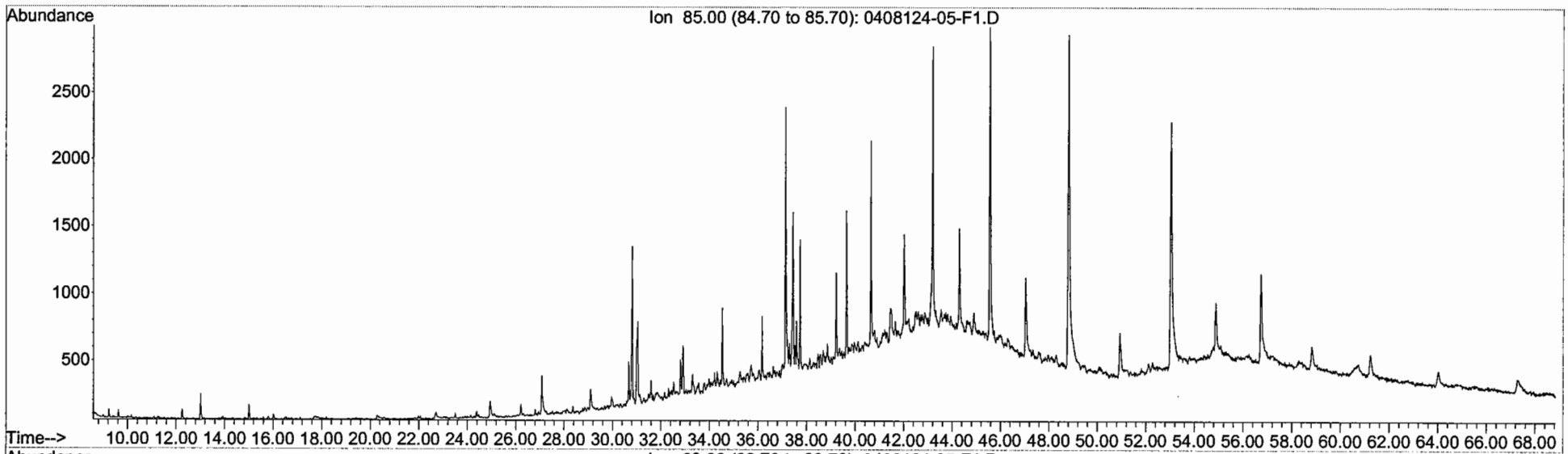
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-29-082604
0408123-13-F1

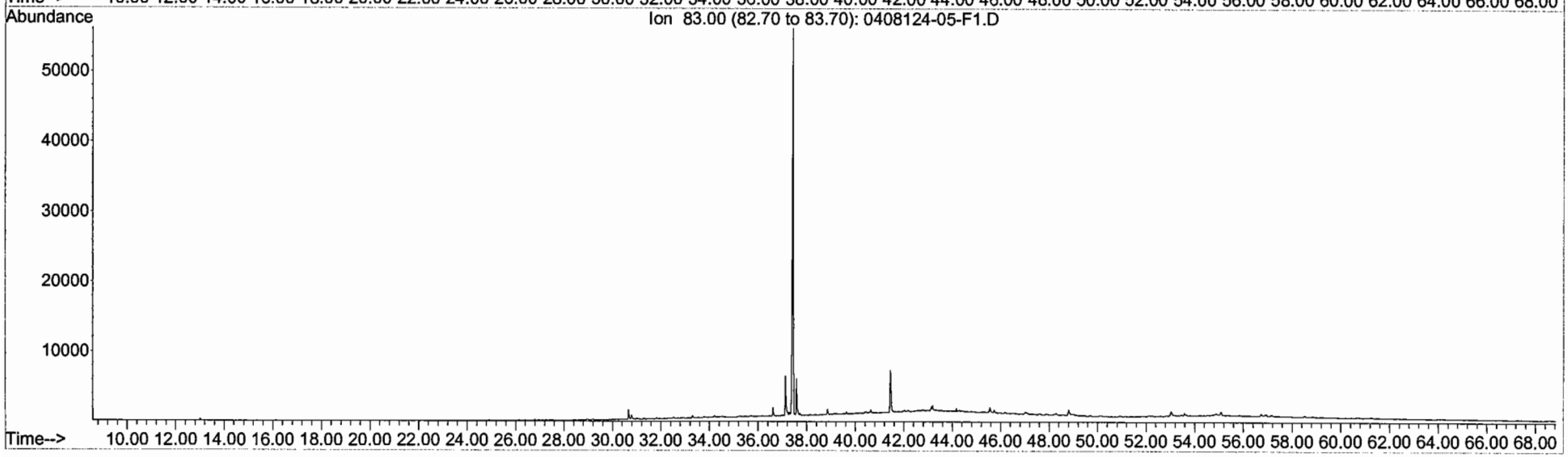




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-05-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916
Sample Name: 0408124-05-RF1
Misc Info : 1X

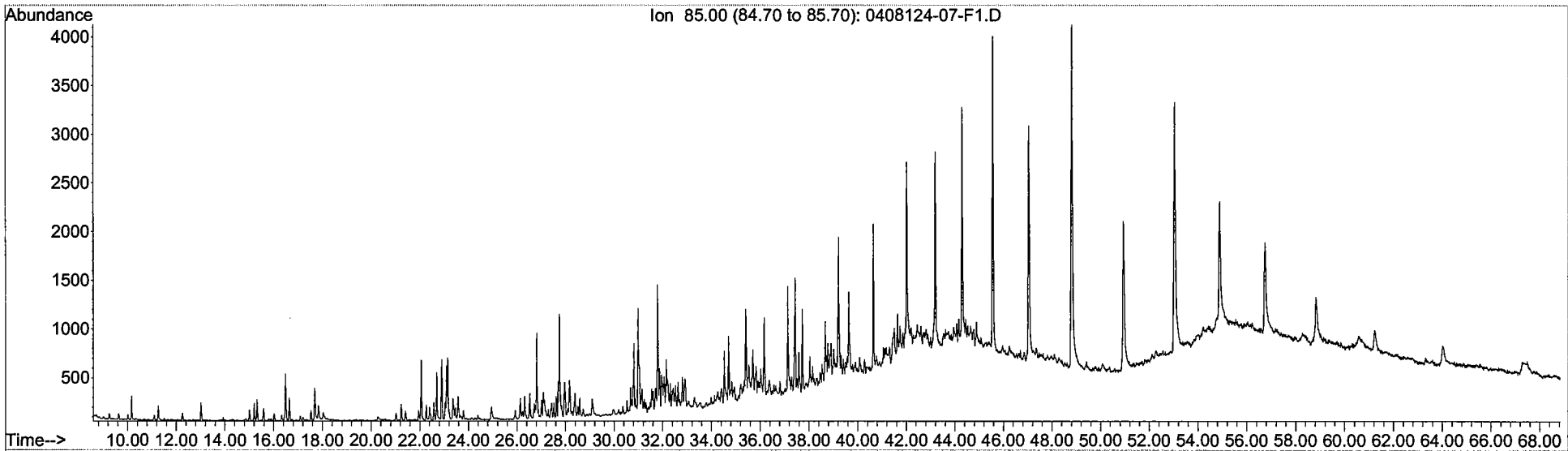
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-31-082604
0408124-05-F1

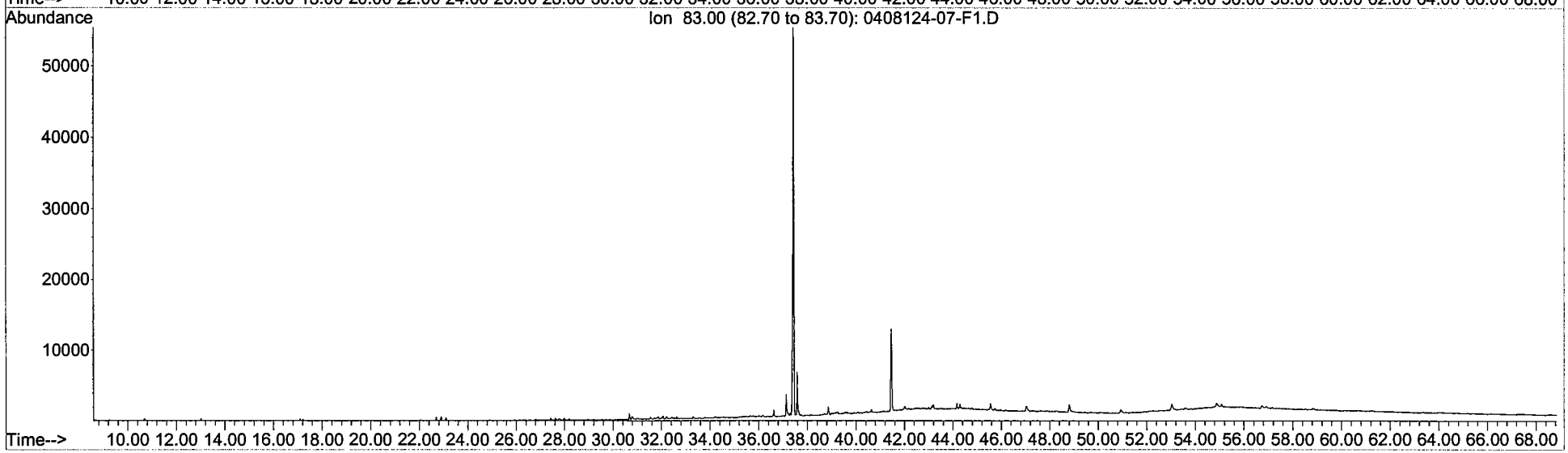




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-07-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916
Sample Name: 0408124-07-RF1
Misc Info : 1X

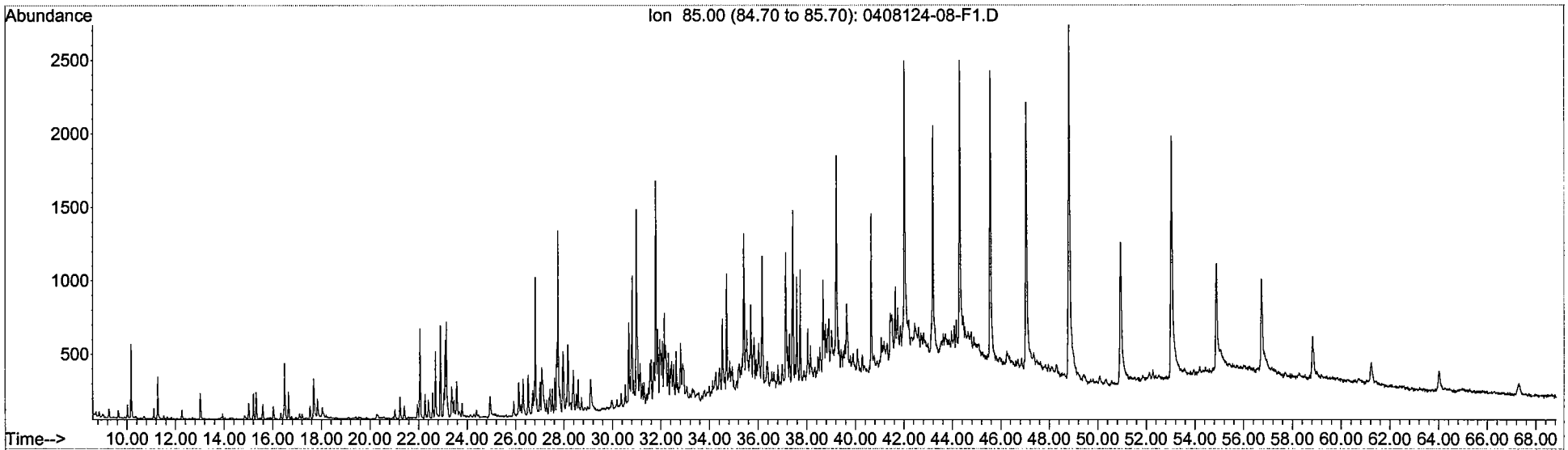
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-32-082604
0408124-07-F1

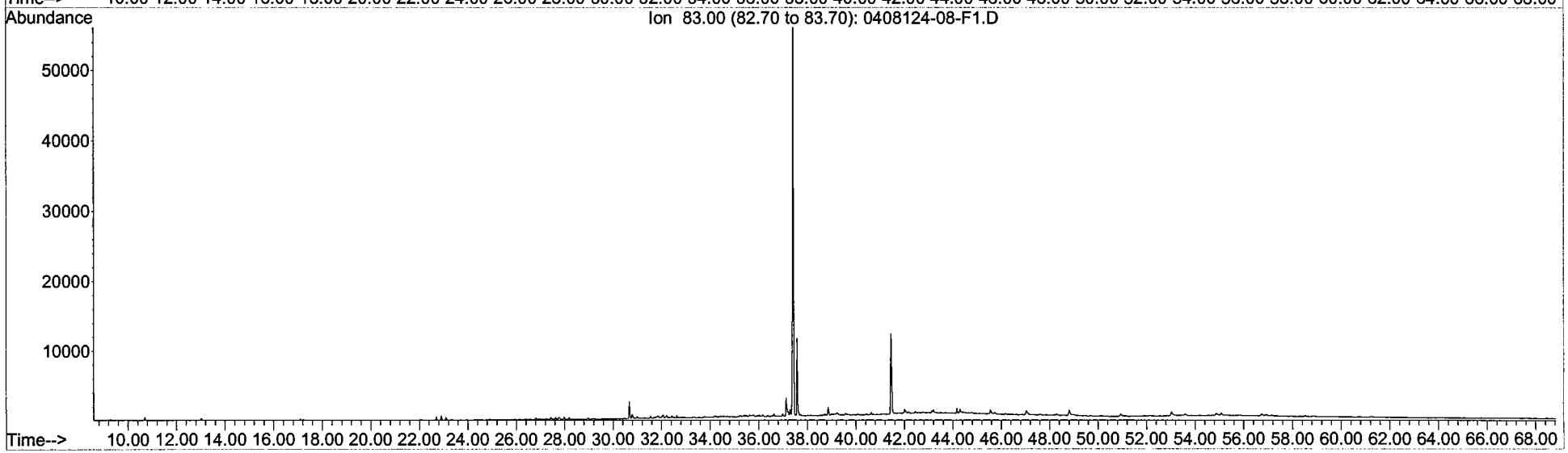




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-08-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916
Sample Name: 0408124-08-RF1
Misc Info : 1X

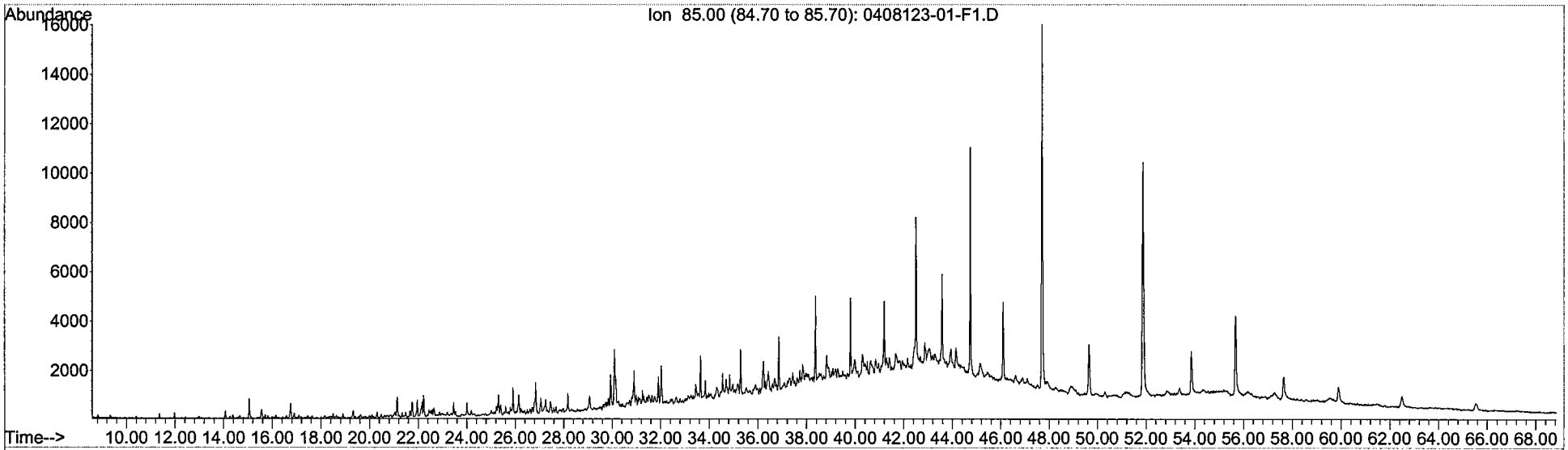
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-36-082604
0408124-08-F1

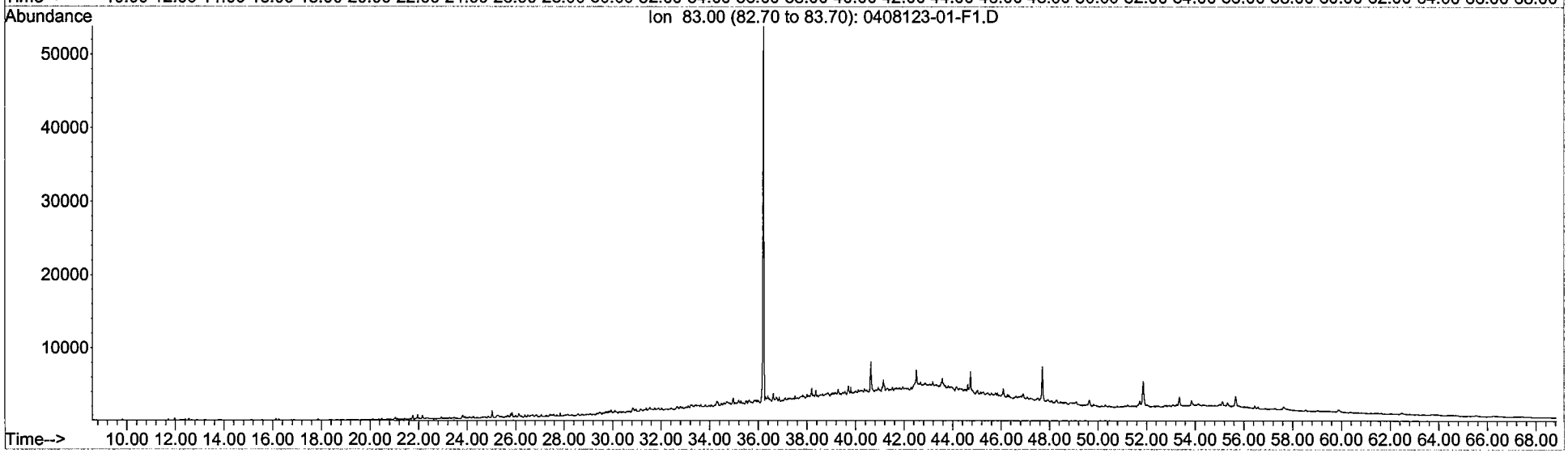




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-01-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916
Sample Name: 0408123-01-RF1
Misc Info : 1X

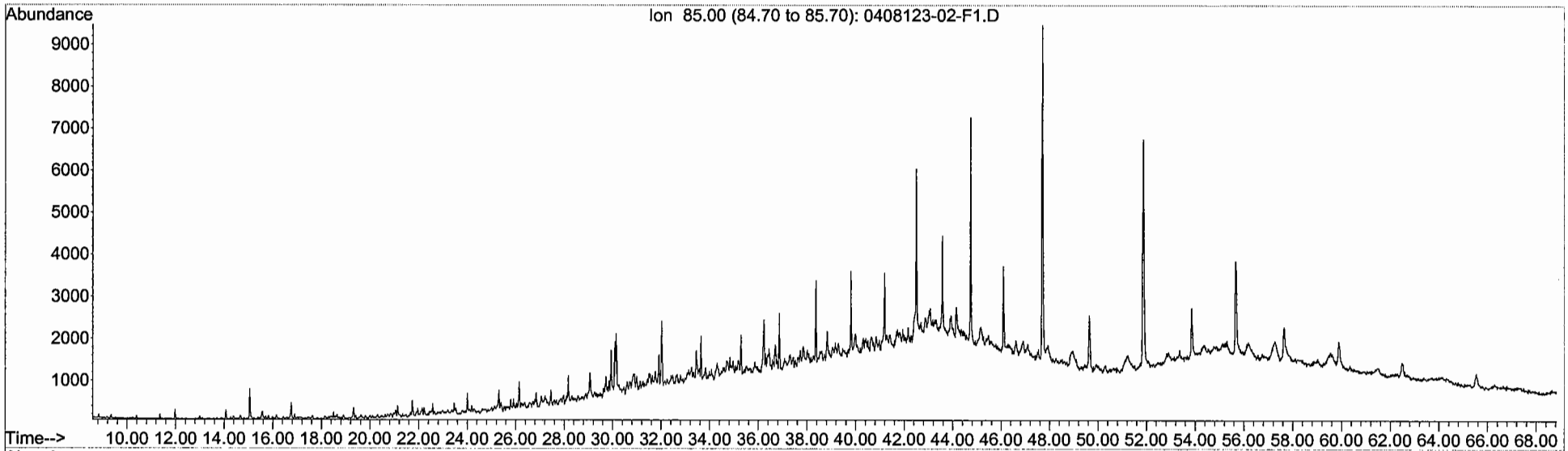
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-101-0006
0408123-01-F1

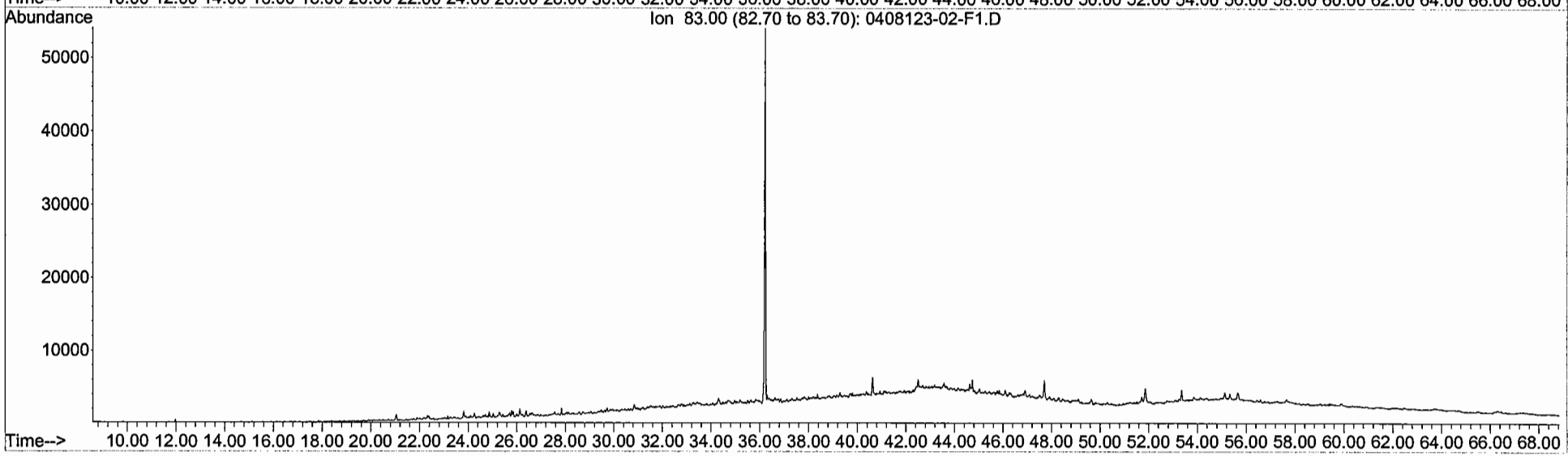




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916
Sample Name: 0408123-02-RF1
Misc Info : 1X

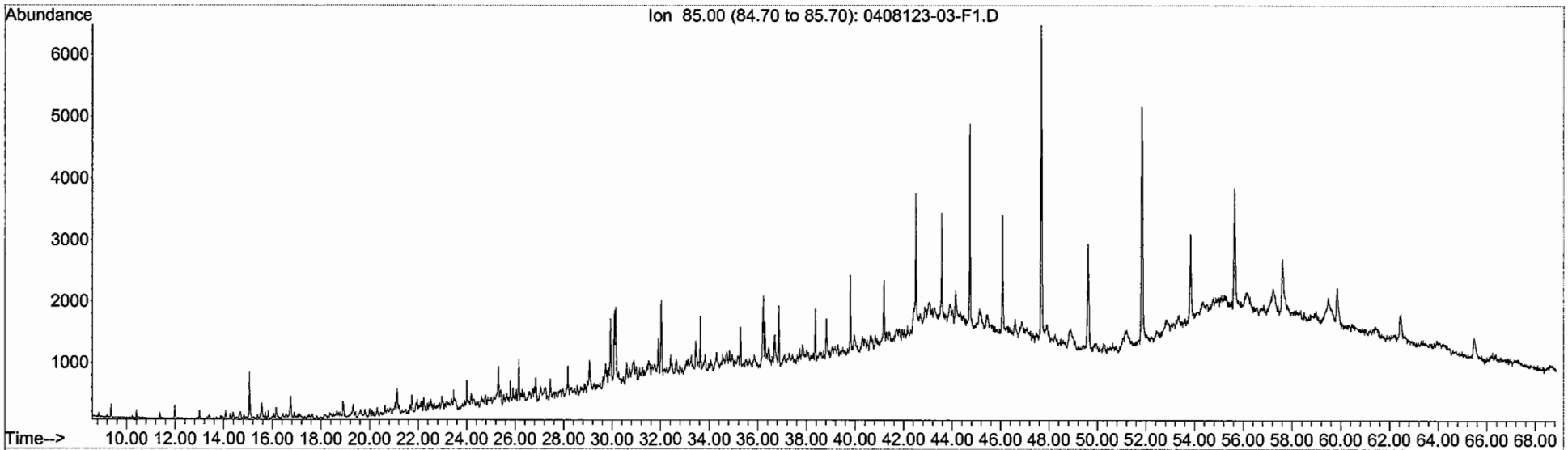
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-101-0612
0408123-02-F1

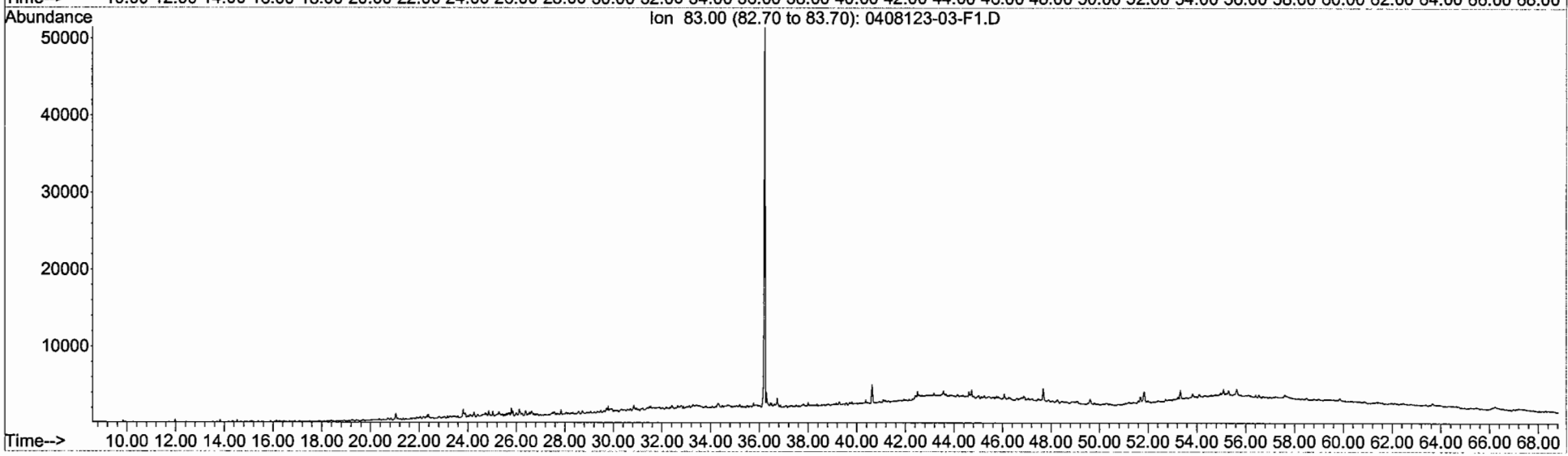




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-03-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916
Sample Name: 0408123-03-RF1
Misc Info : 1X

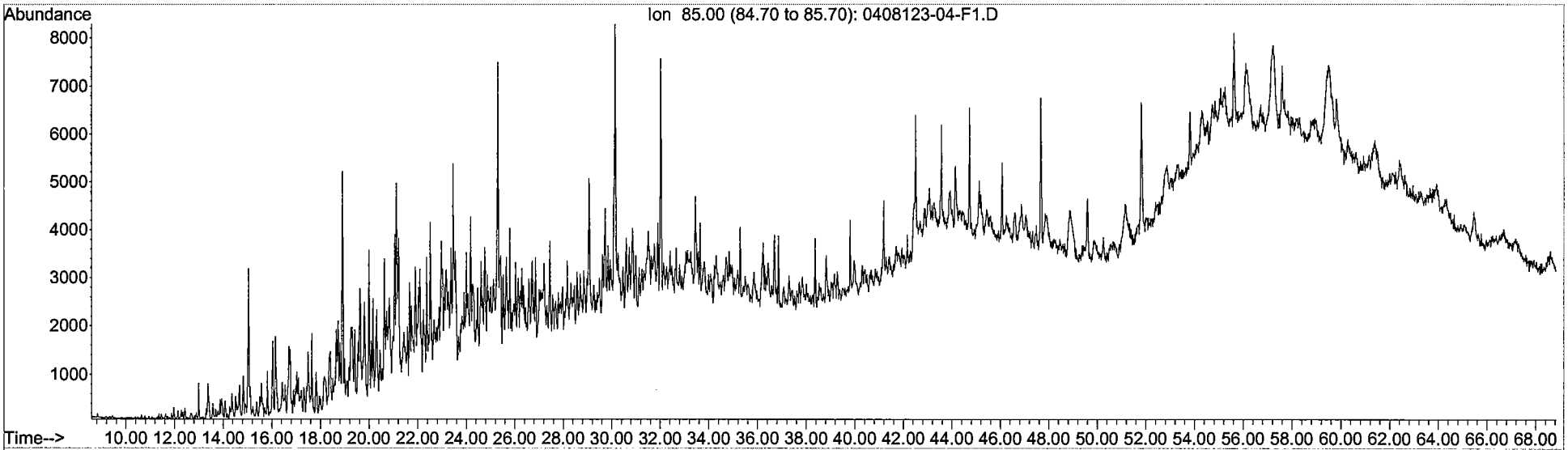
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-103-0006
0408123-03-F1

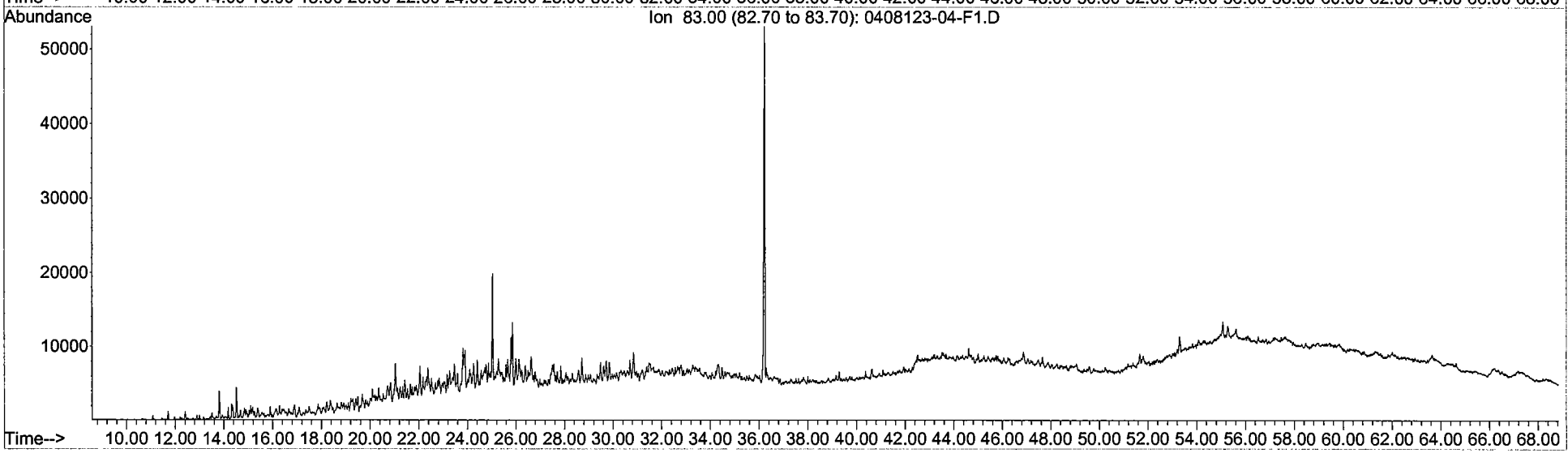




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-04-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916
Sample Name: 0408123-04-RF1
Misc Info : 1X

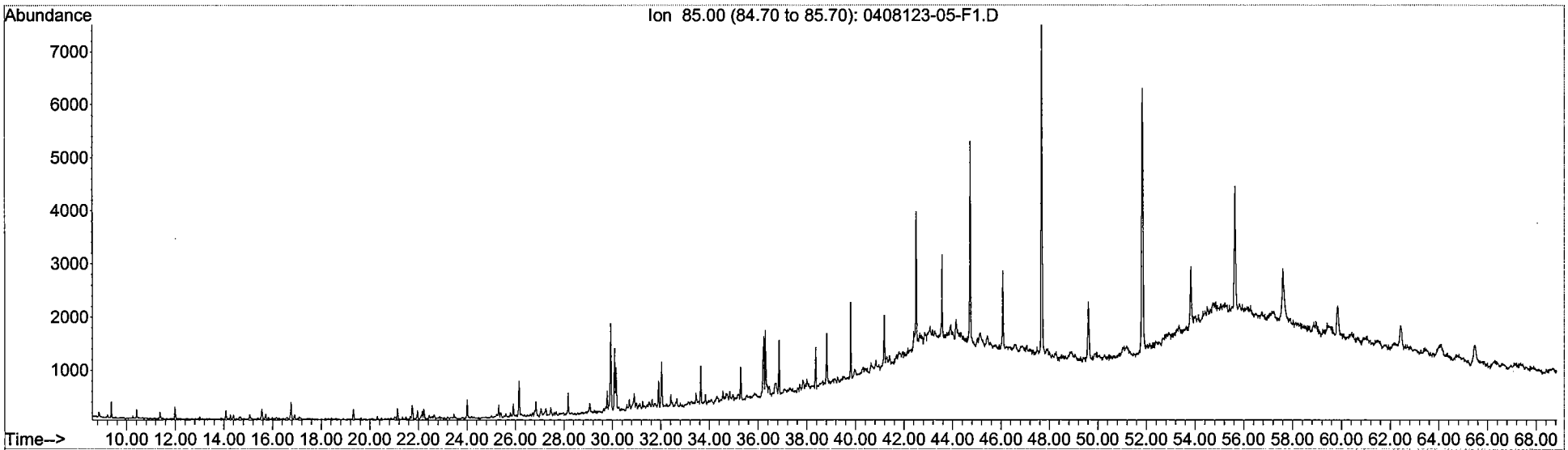
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-103-0612
0408123-04-F1

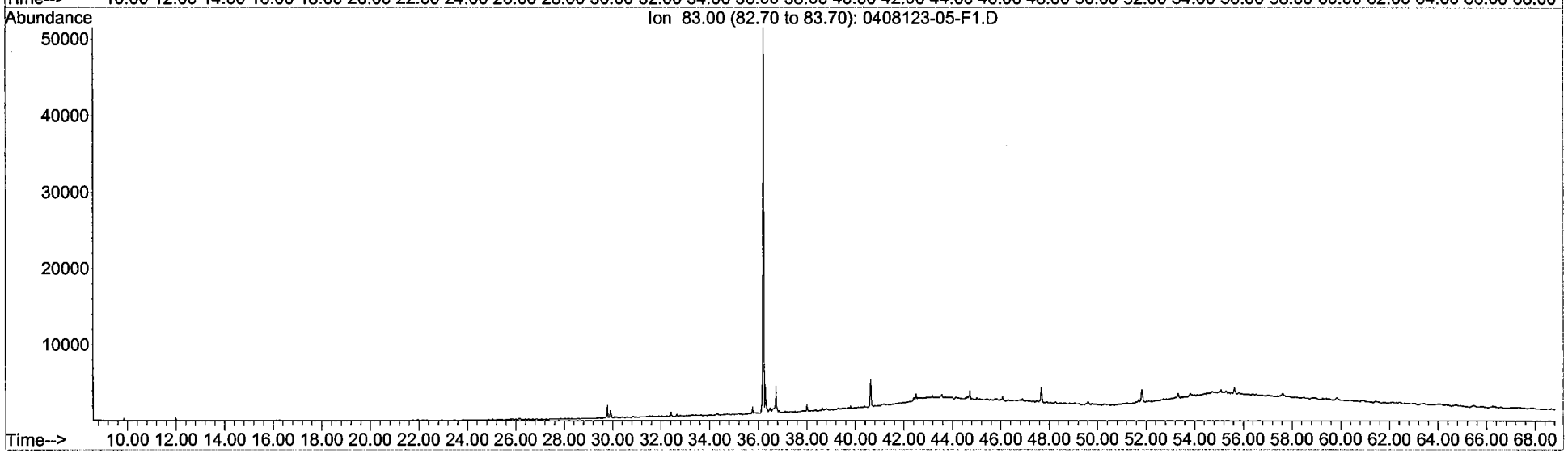




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-05-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916
Sample Name: 0408123-05-RF1
Misc Info : 1X

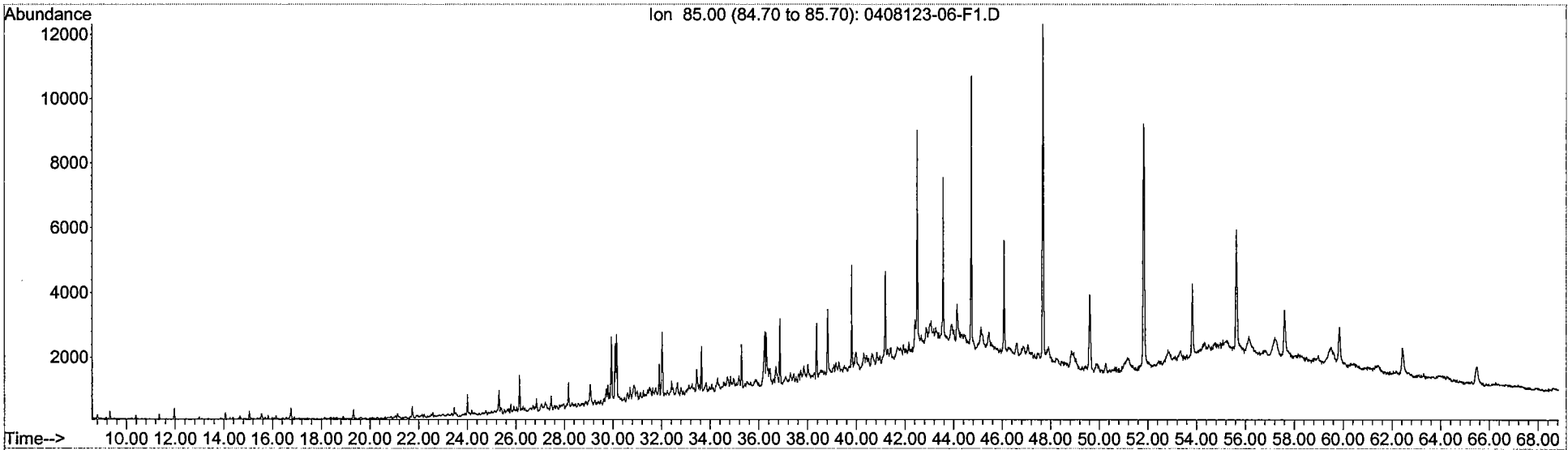
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-104-0006
0408123-05-F1

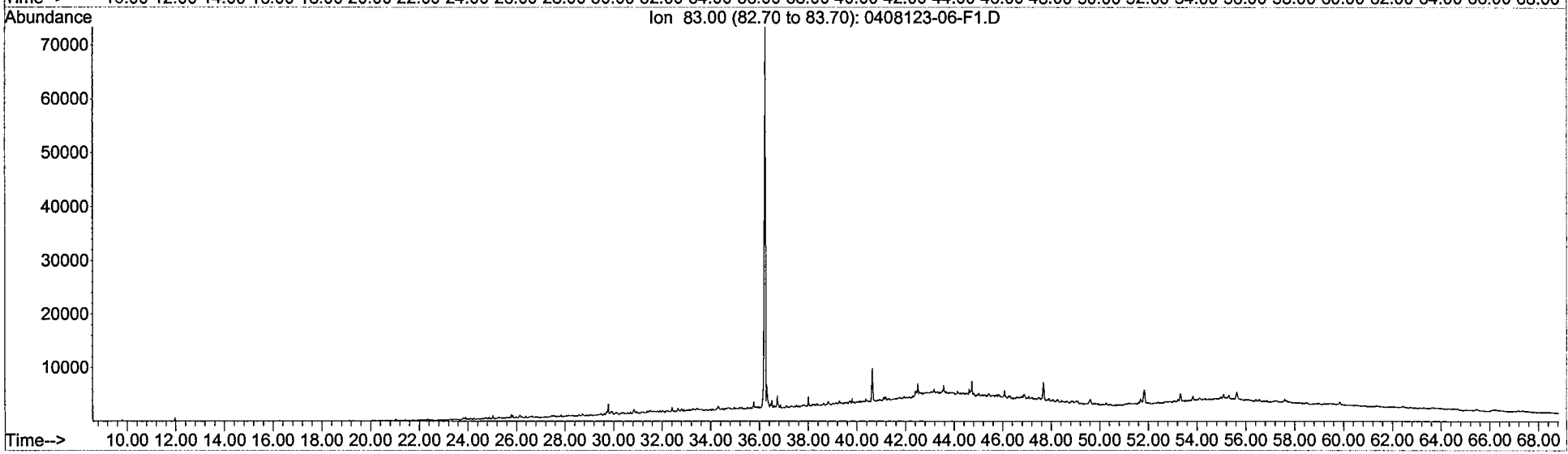




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-06-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916
Sample Name: 0408123-06-RF1
Misc Info : 1X

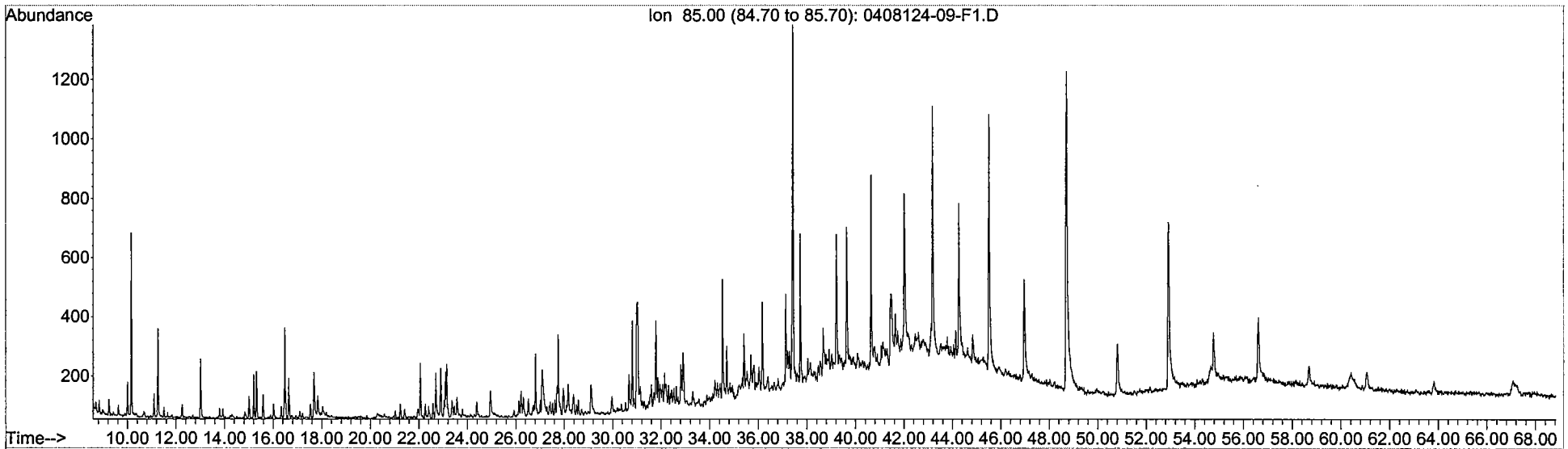
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-104-0612
0408123-06-F1

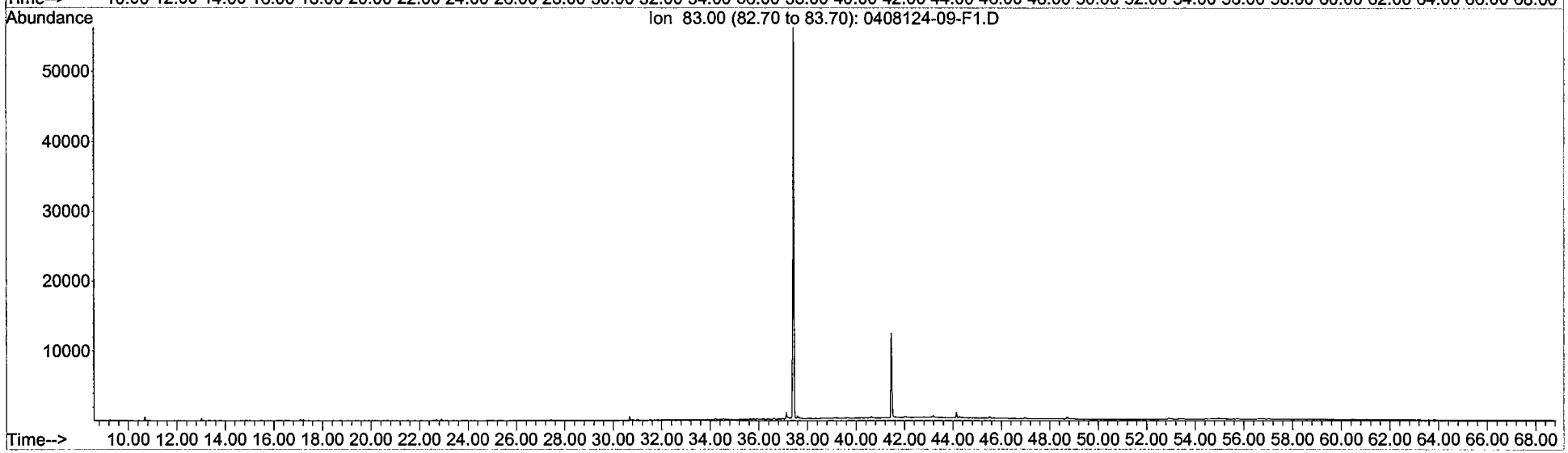




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-09-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916
Sample Name: 0408124-09-RF1
Misc Info : 1X

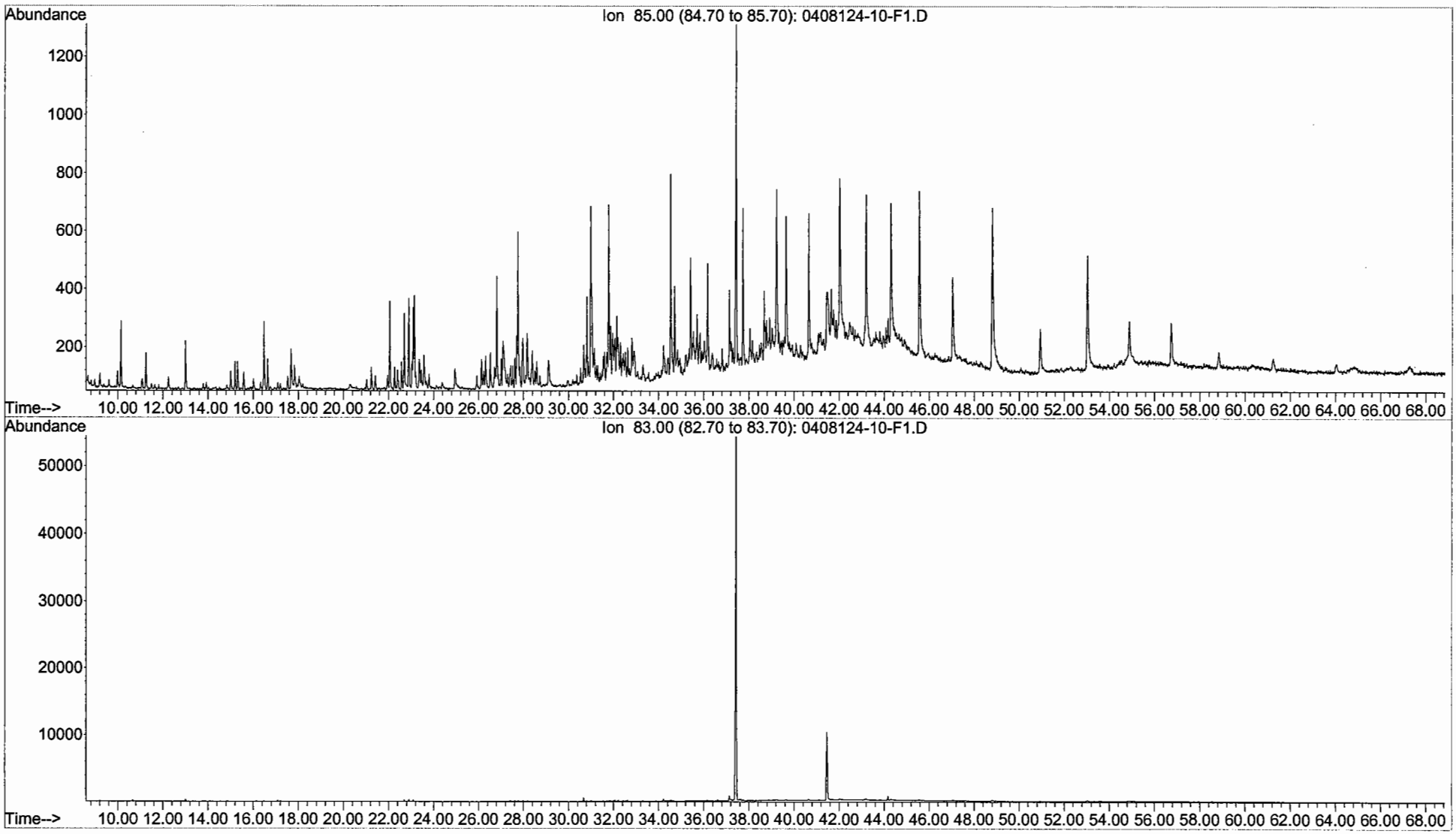
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-CC01-082604
0408124-09-F1





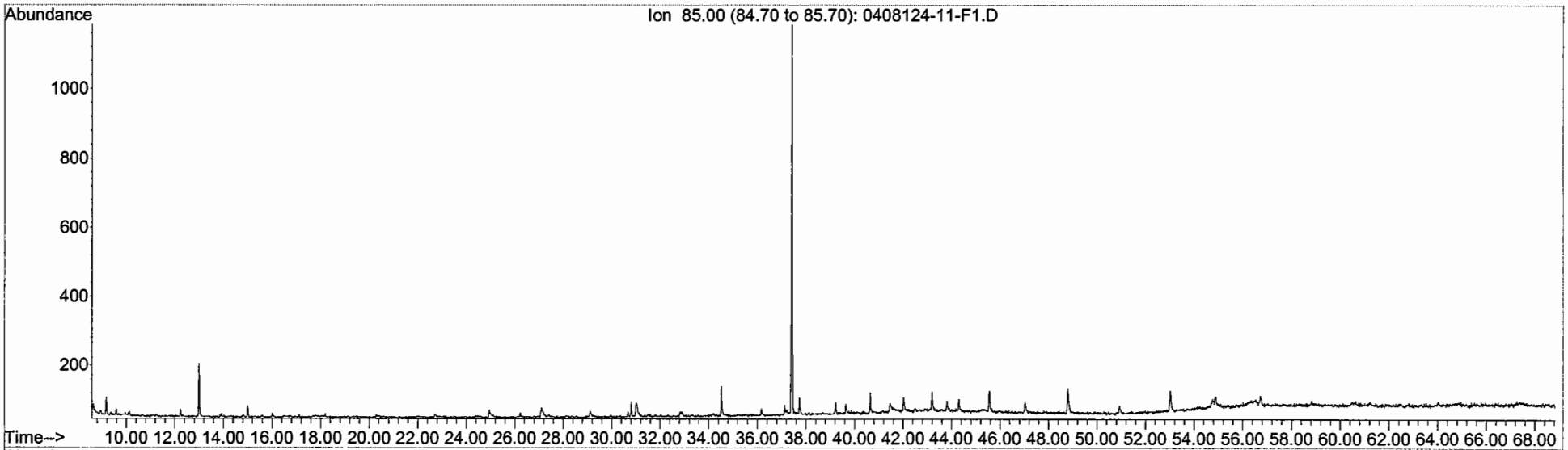
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-10-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916
Sample Name: 0408124-10-RF1
Misc Info : 1X

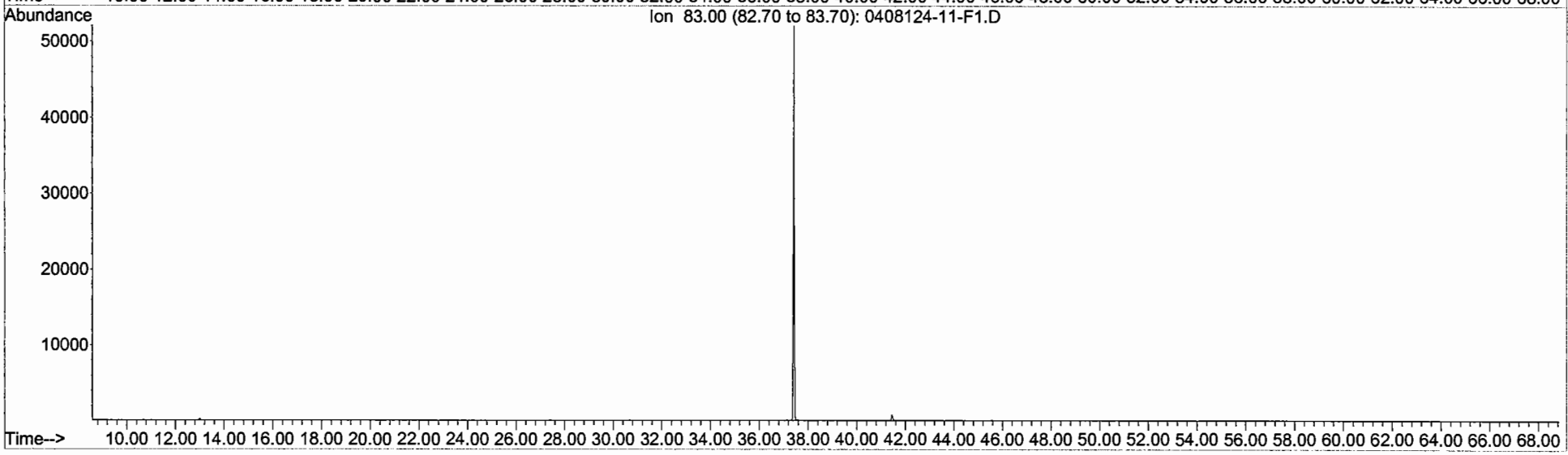
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-CC02-082604
0408124-10-F1



File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-11-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916
Sample Name: 0408124-11-RF1
Misc Info : 1X

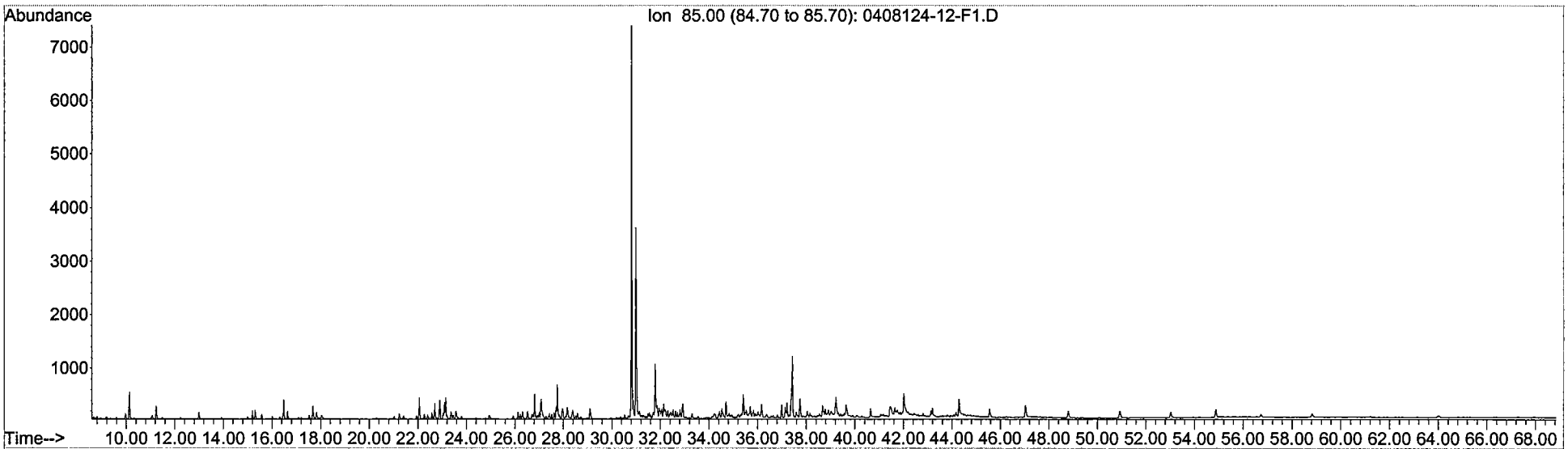
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-JPC01-082604
0408124-11-F1

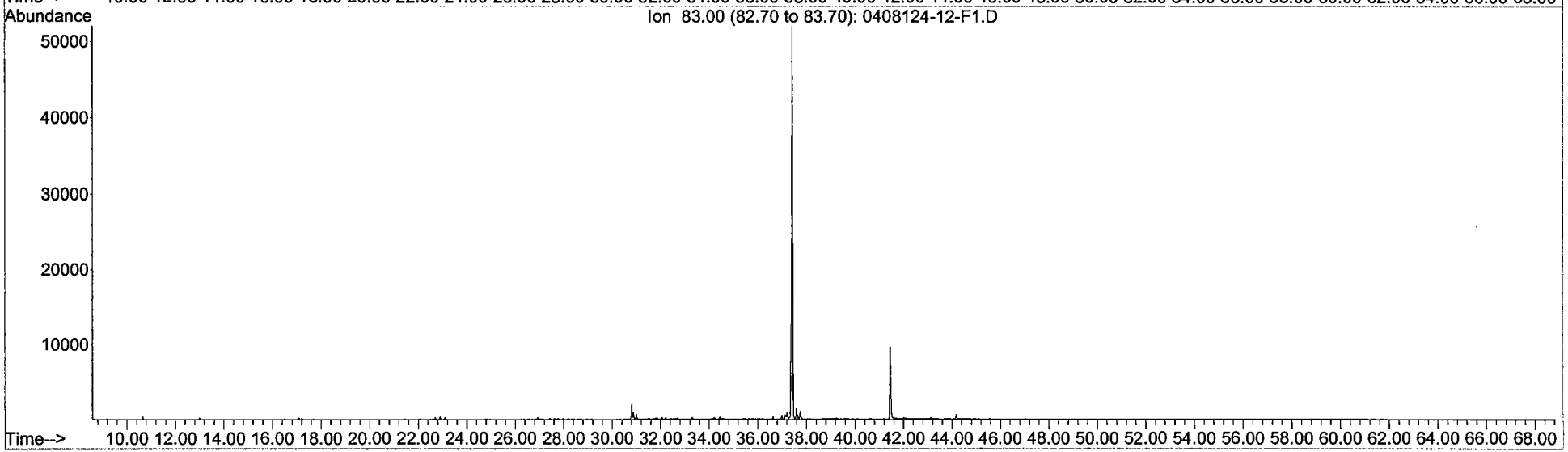




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-12-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916
Sample Name: 0408124-12-RF1
Misc Info : 1X

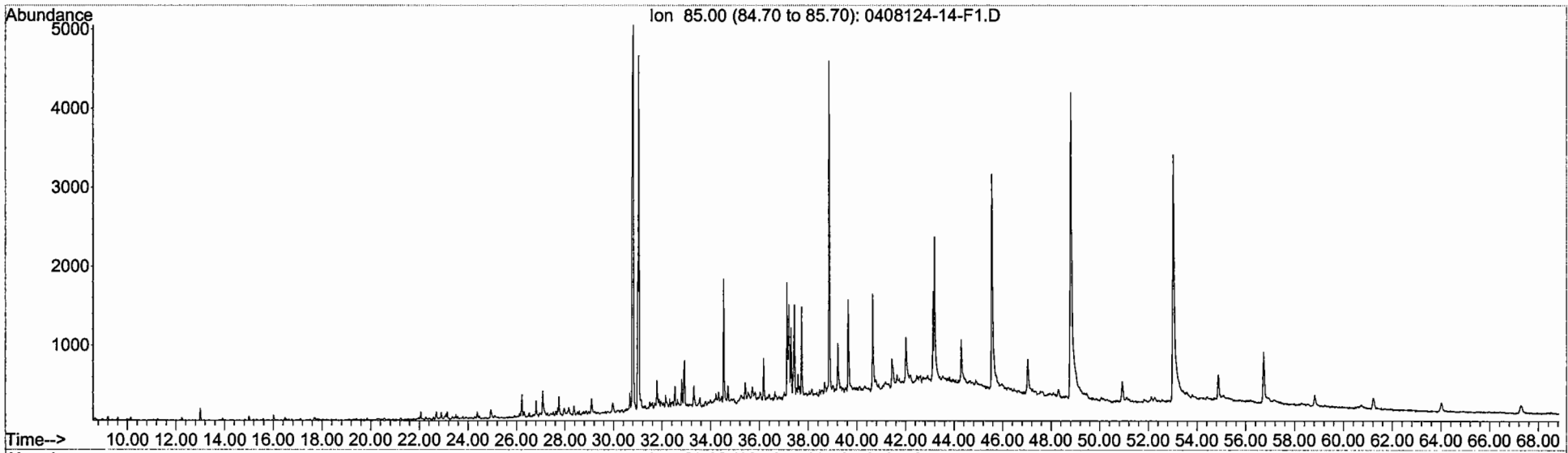
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-JPC03-082604
0408124-12-F1

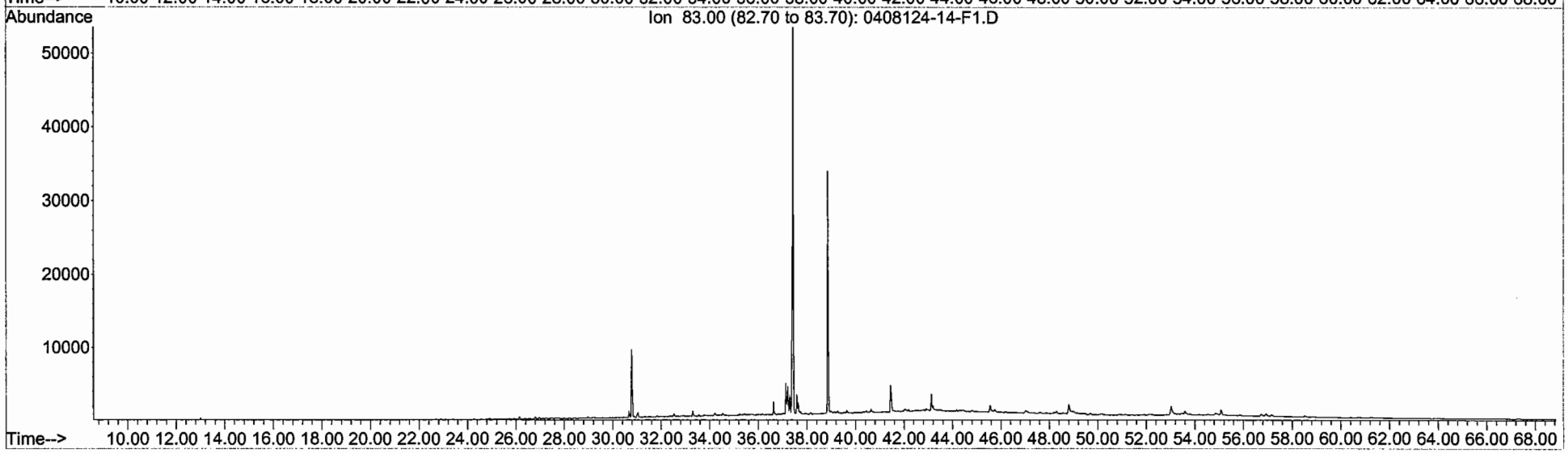




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-14-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916
Sample Name: 0408124-14-RF1
Misc Info : 1X

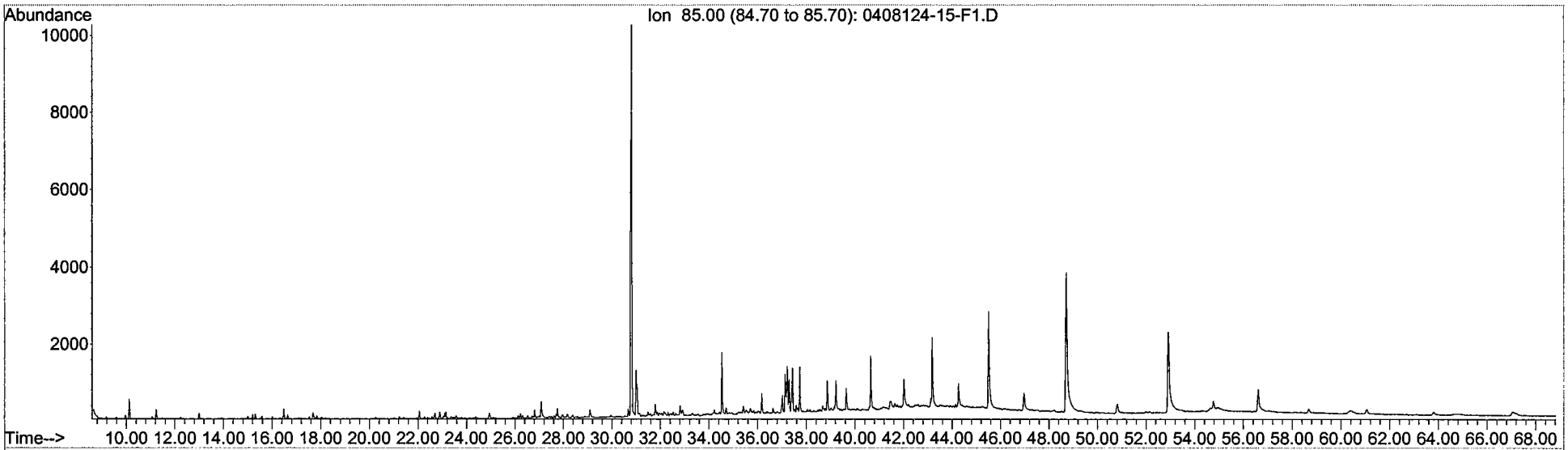
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-CH01-082604
0408124-14-F1

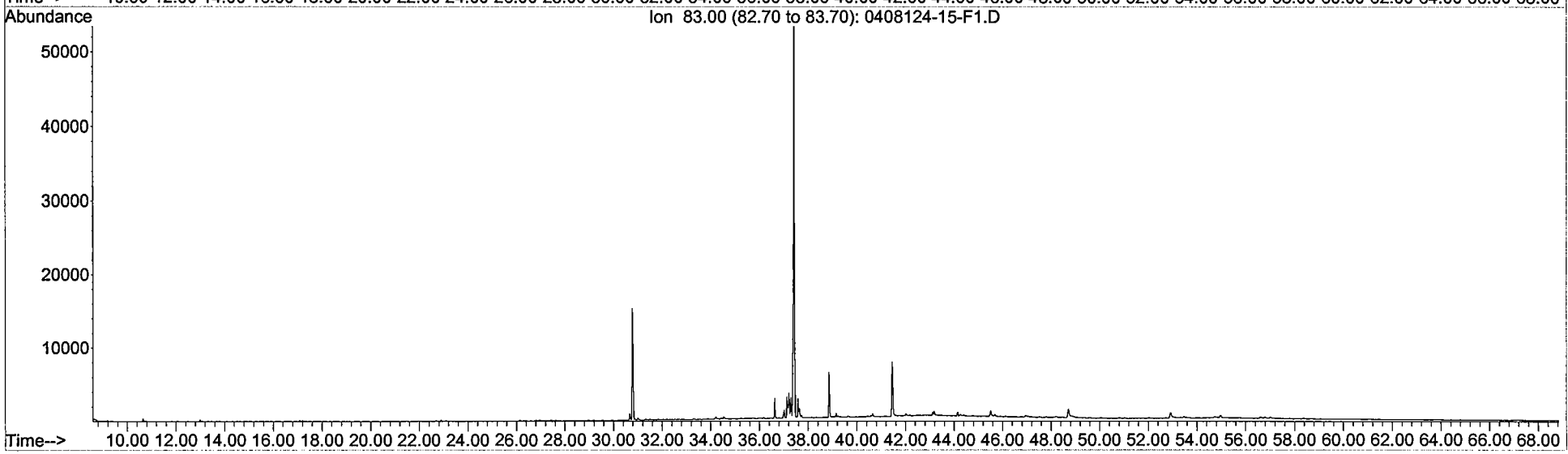




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-15-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916
Sample Name: 0408124-15-RF1
Misc Info : 1X

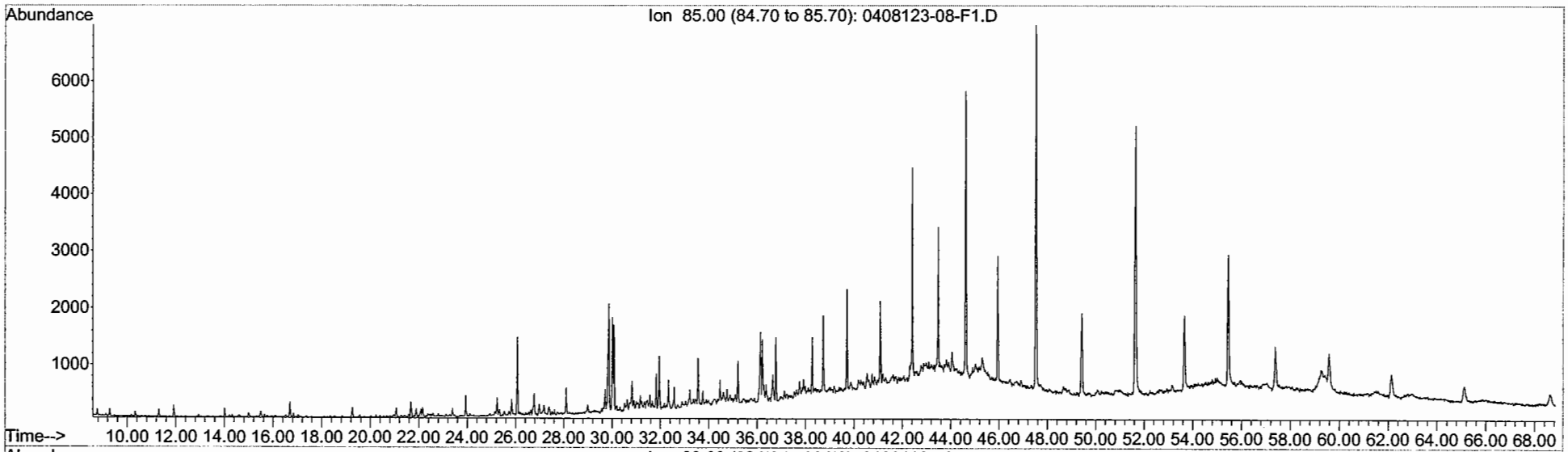
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-CH02-082604
0408124-15-F1

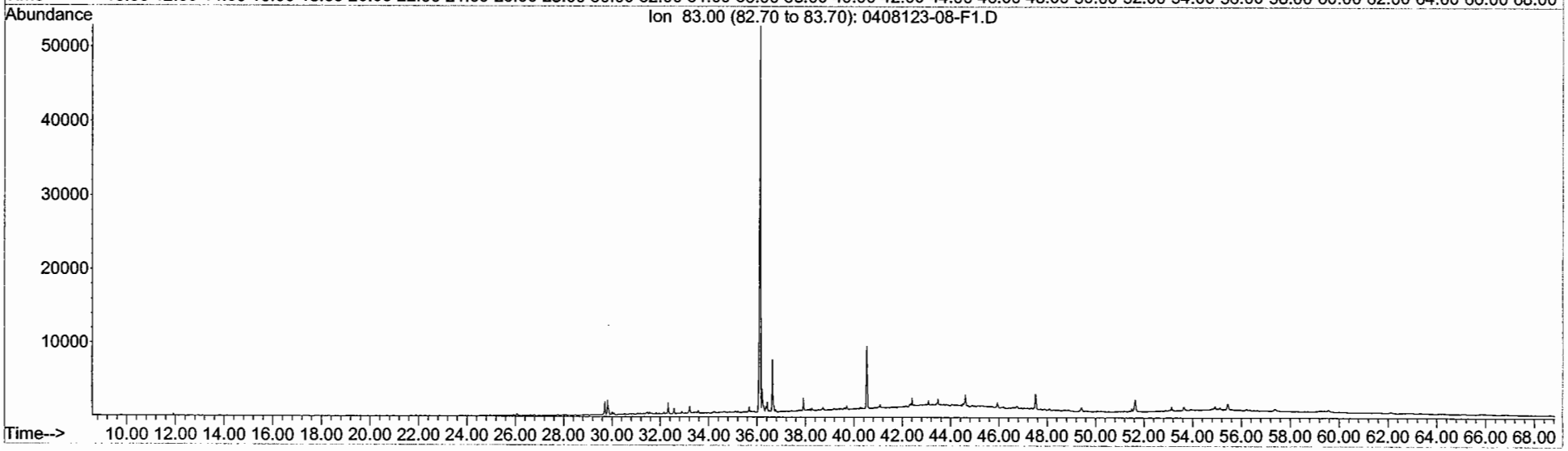




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-08-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924
Sample Name: 0408123-08-RF1
Misc Info : 1X

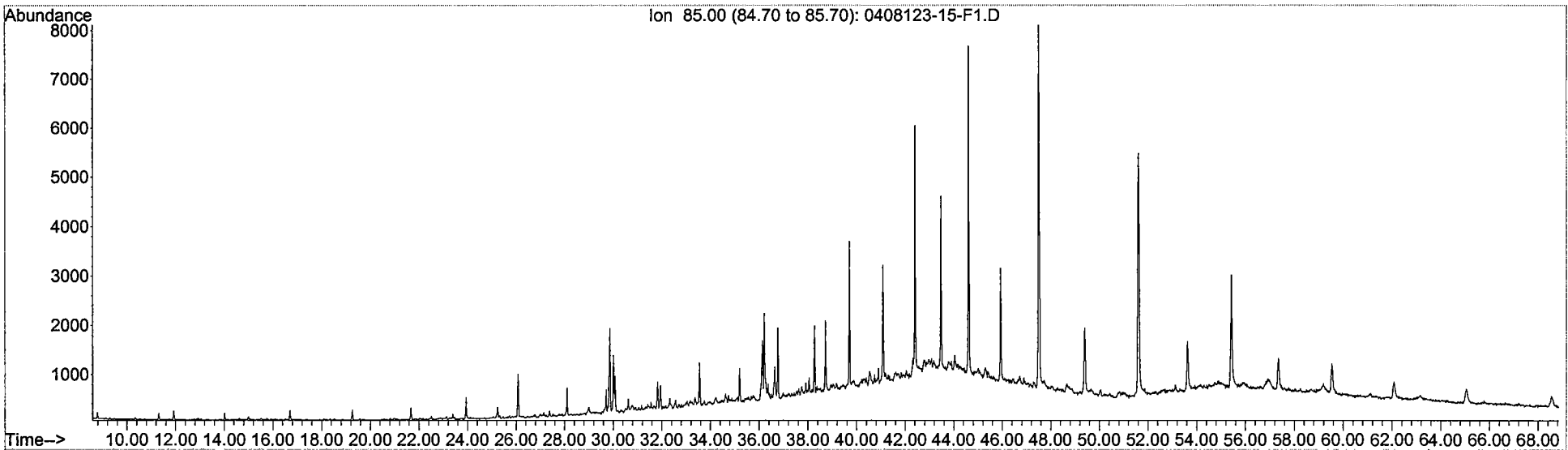
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-DUP01-082504
0408123-08-F1

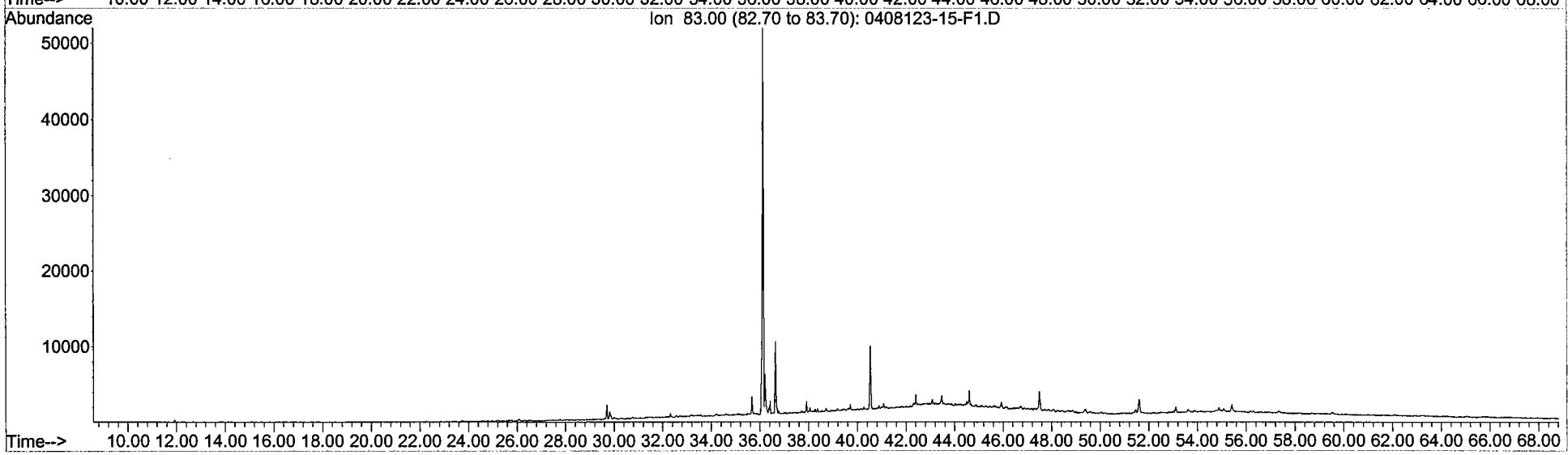




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-15-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924
Sample Name: 0408123-15-RF1
Misc Info : 1X

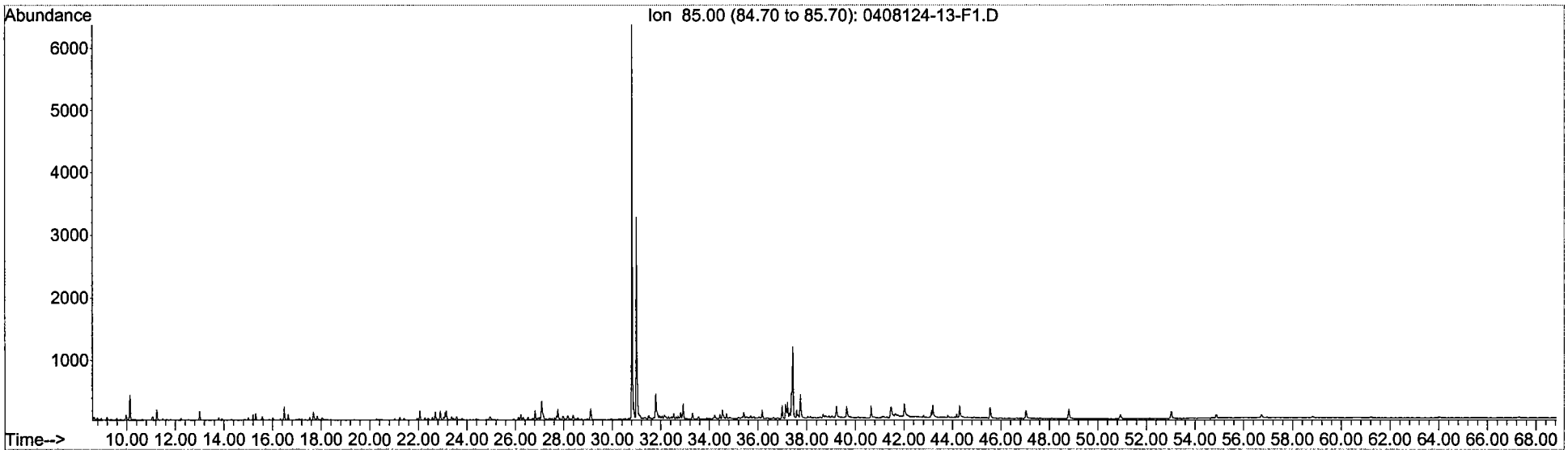
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-DUP02-082604
0408123-15-F1

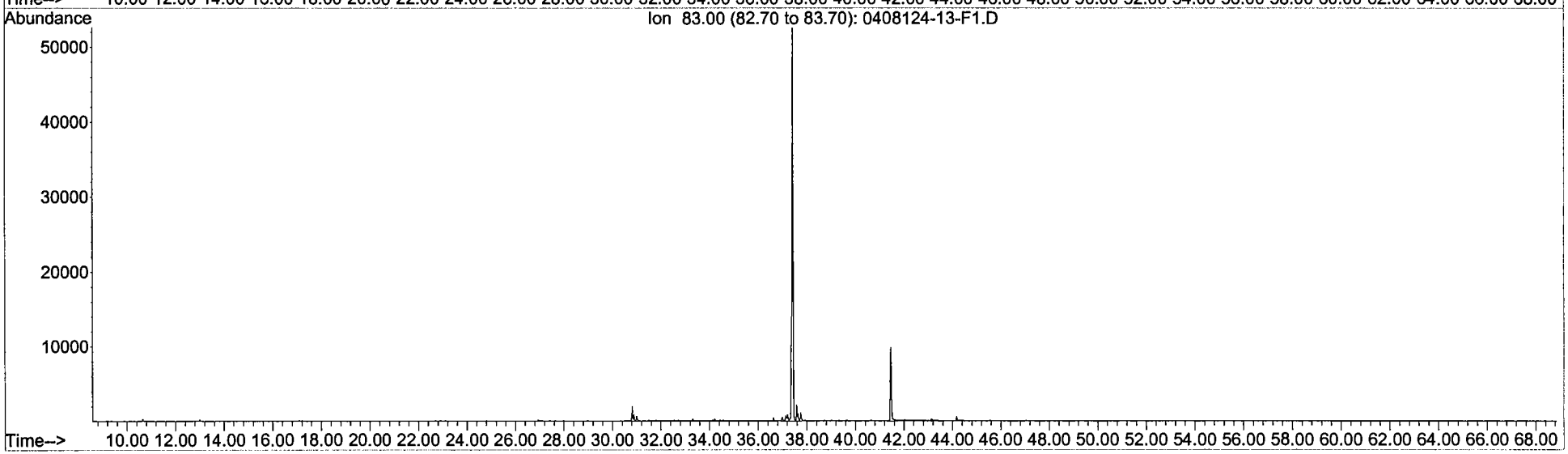




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-13-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916
Sample Name: 0408124-13-RF1
Misc Info : 1X

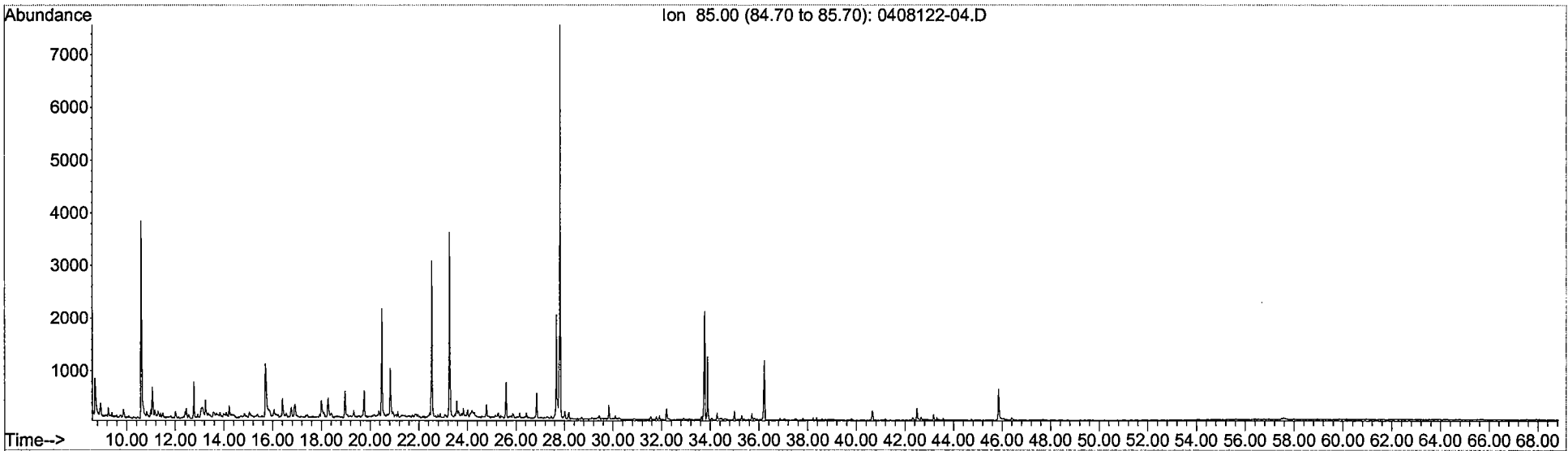
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-DUP03-082604
0408124-13-F1

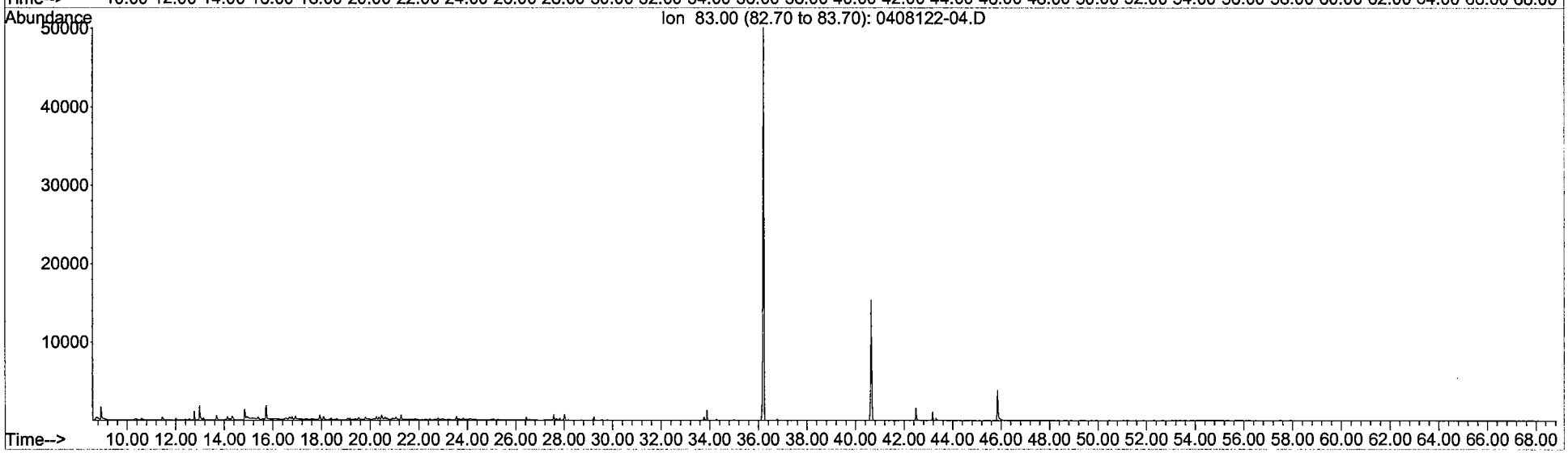




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408122\PAH\040
... 8122-04.D
Operator : BL
Instrument : PAHINST1
Acquired : 20 Sep 2004 5:11 pm using AcqMethod PAH10916
Sample Name: 0408122-04
Misc Info : 1X

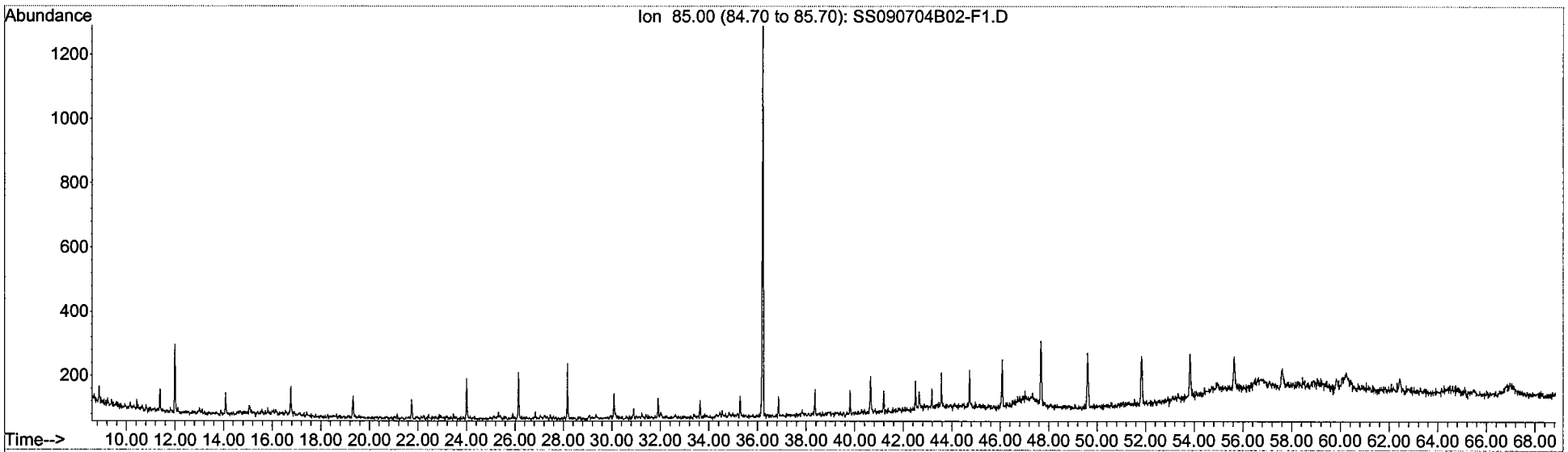
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-FB01-082704
0408122-04

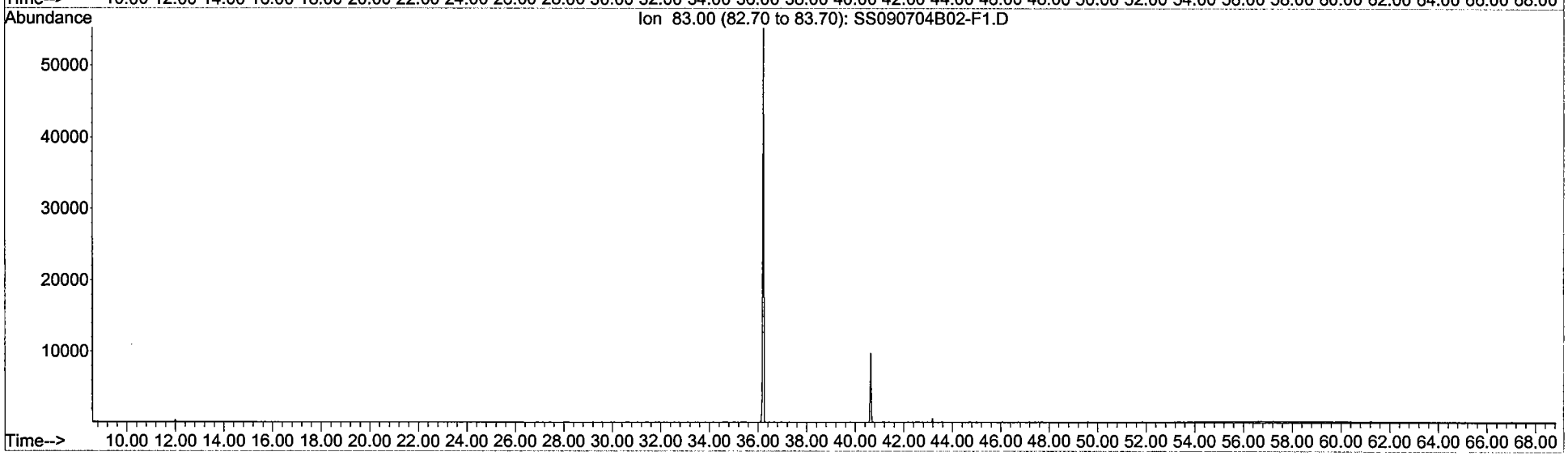




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\SS090704B02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916
Sample Name: SS090704B02-RF1
Misc Info : 1X

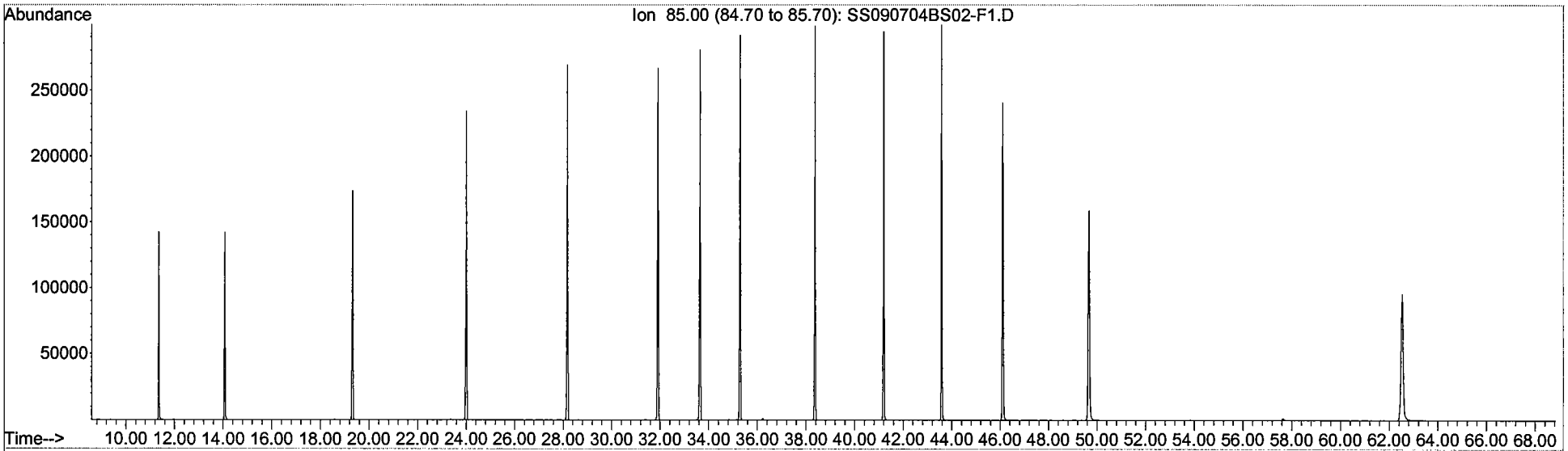
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Procedural Blank
SS090704B02-F1

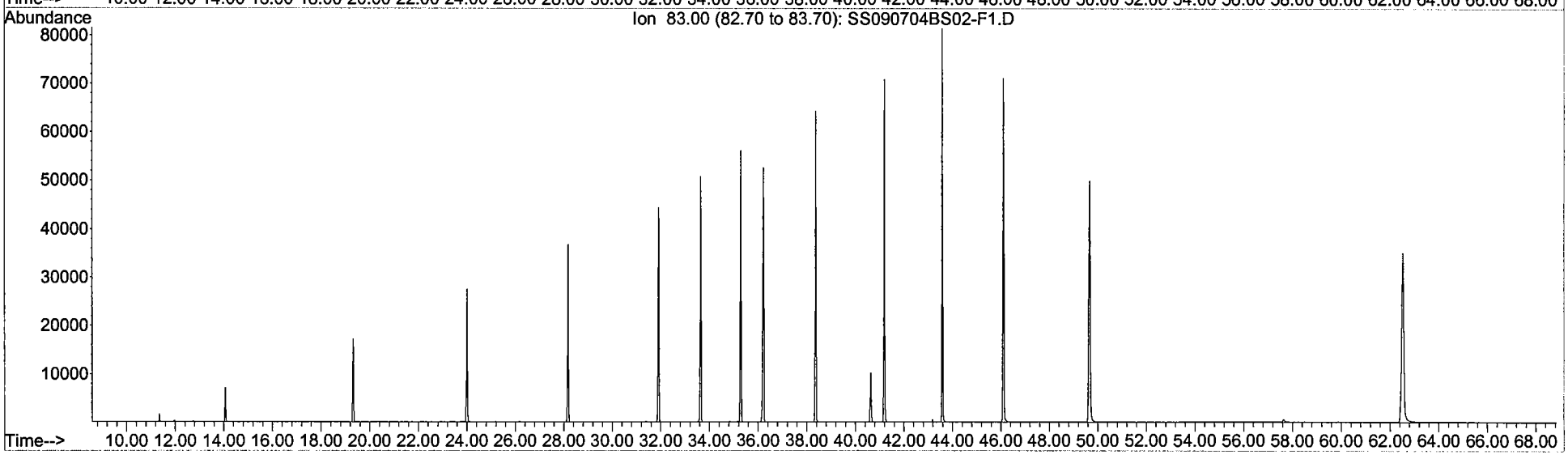




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\SS090704BS02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 1:44 pm using AcqMethod PAH10916
Sample Name: SS090704BS02-RF1
Misc Info : 1X

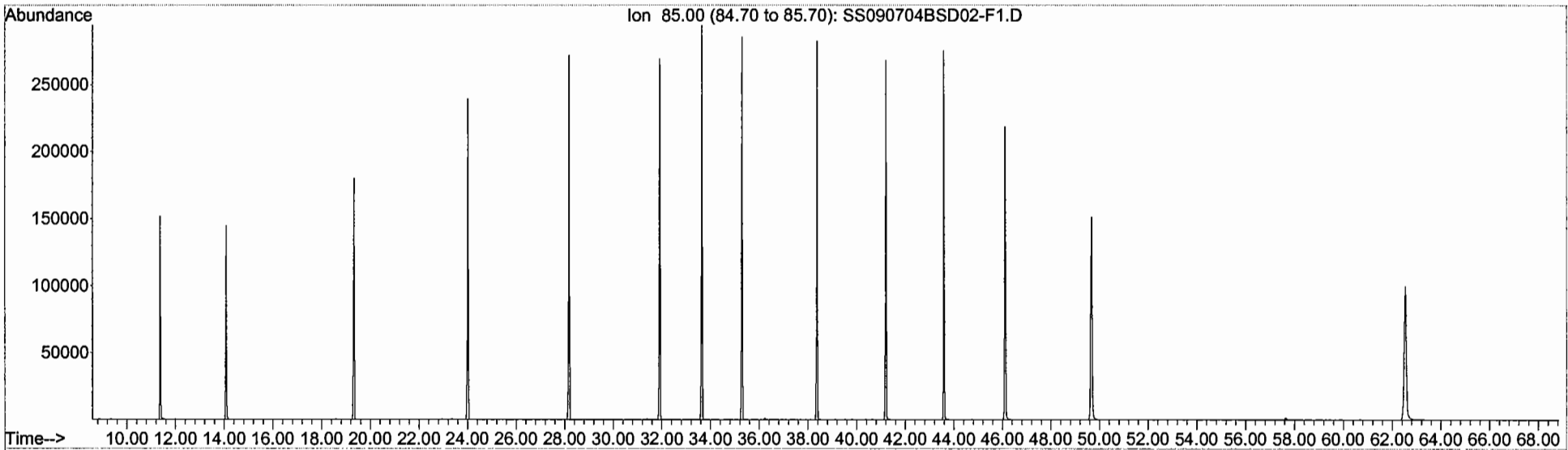
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike
SS090704BS02-F1

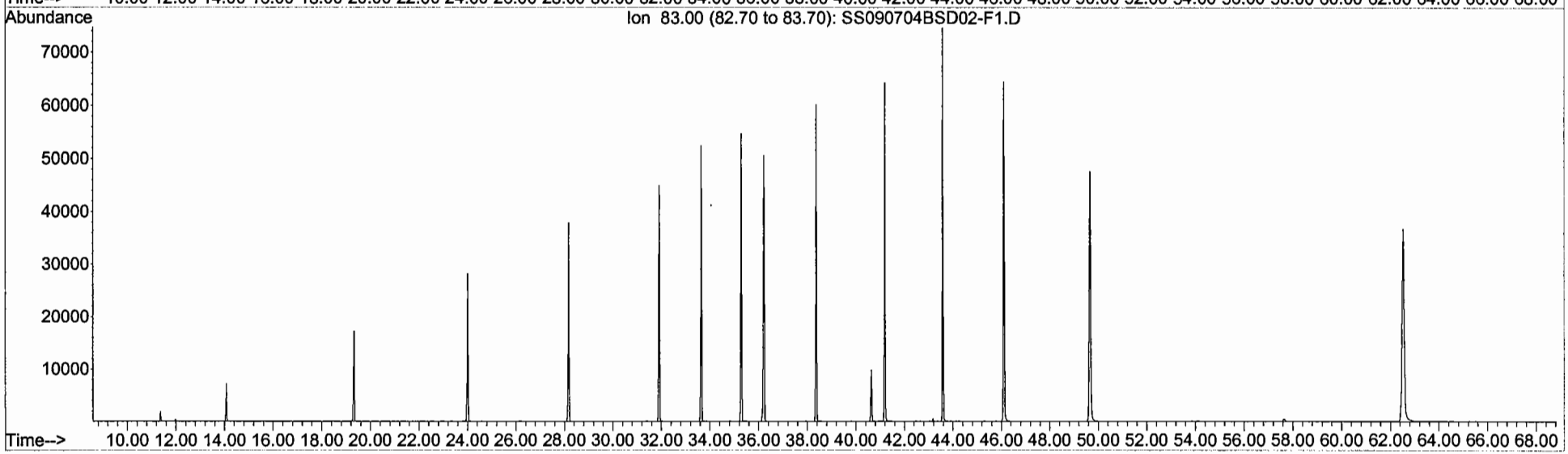




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\SS090704BSD02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 3:04 pm using AcqMethod PAH10916
Sample Name: SS090704BSD02-RF1
Misc Info : 1X

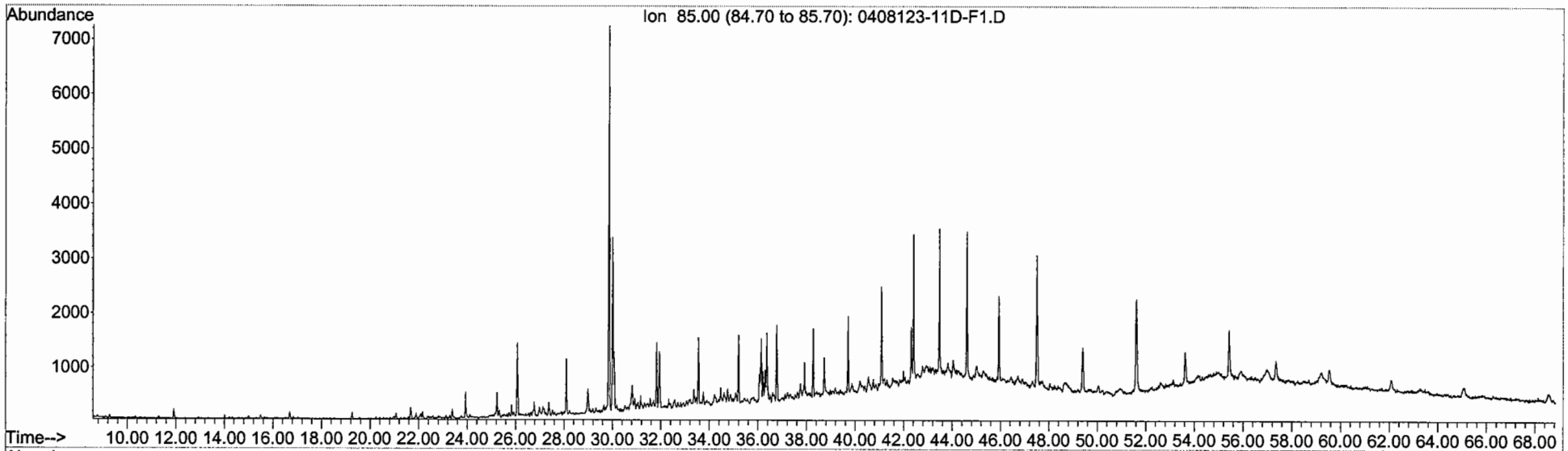
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike Duplicate
SS090704BSD02-F1

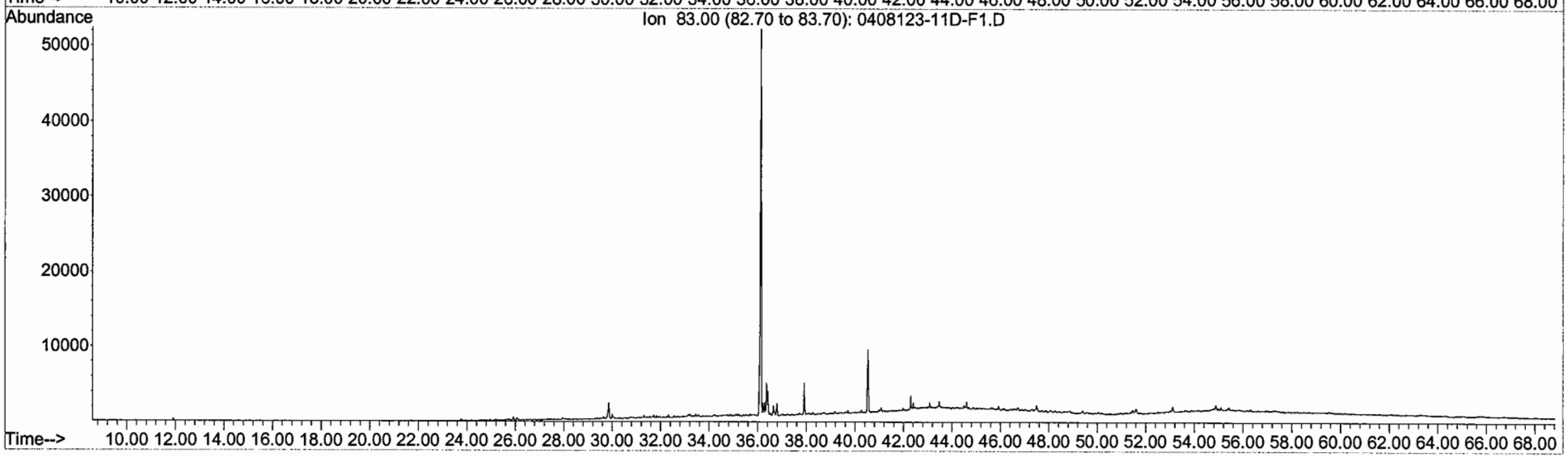




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-11D-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924
Sample Name: 0408123-11D-RF1
Misc Info : 1X

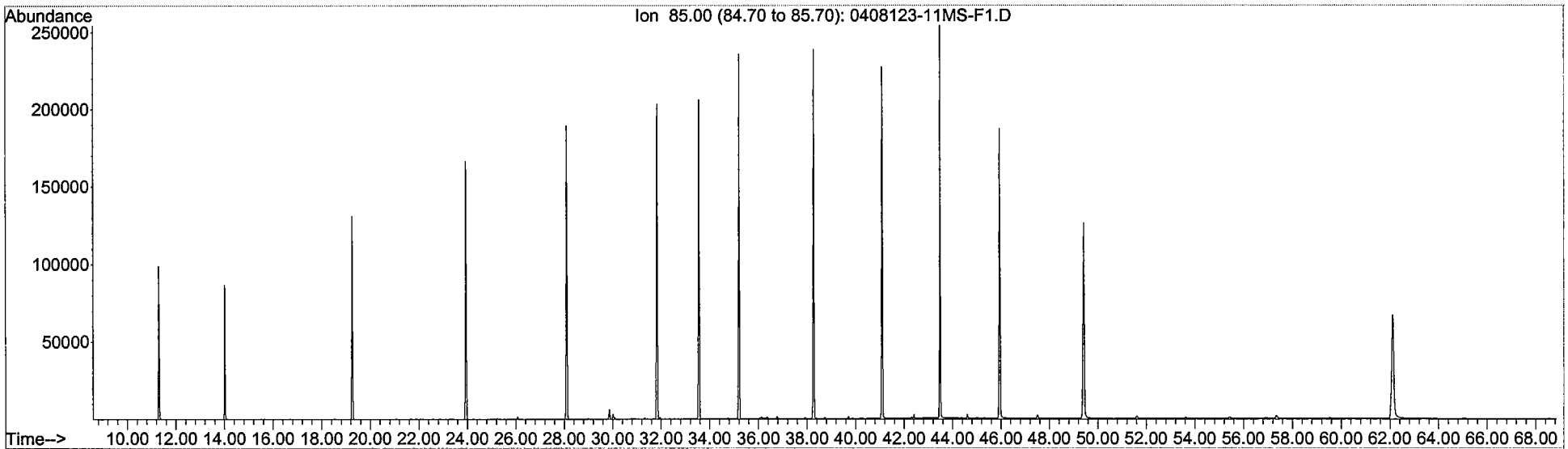
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-09-082604 Duplicate
0408123-11D-F1

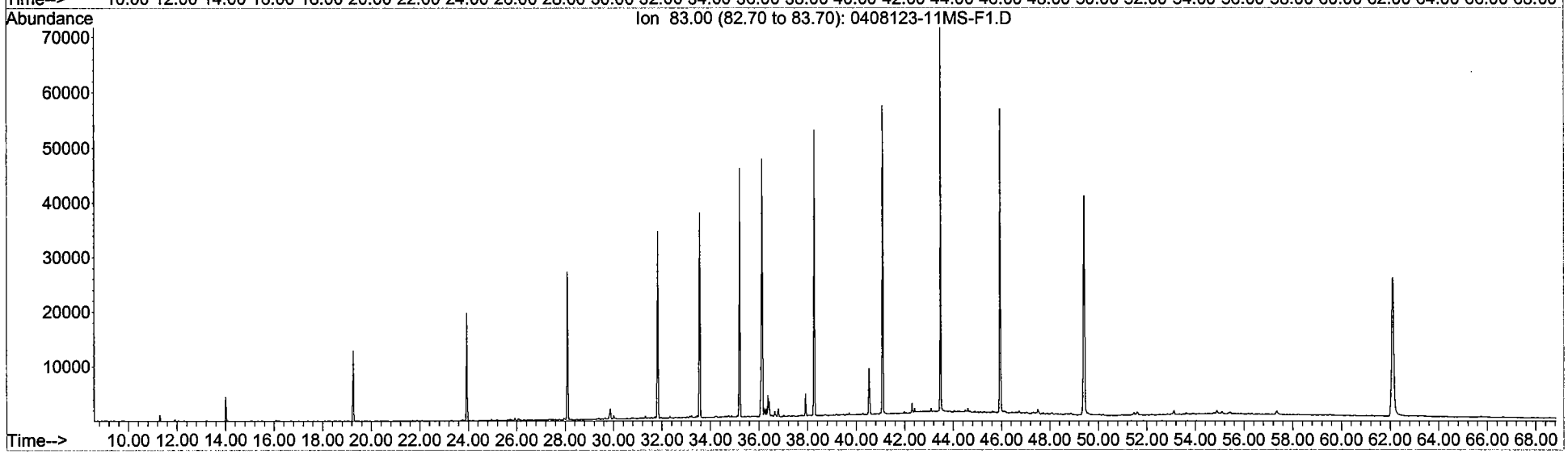




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-11MS-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 5:33 pm using AcqMethod PAH10924
Sample Name: 0408123-11MS-RF1
Misc Info : 1X

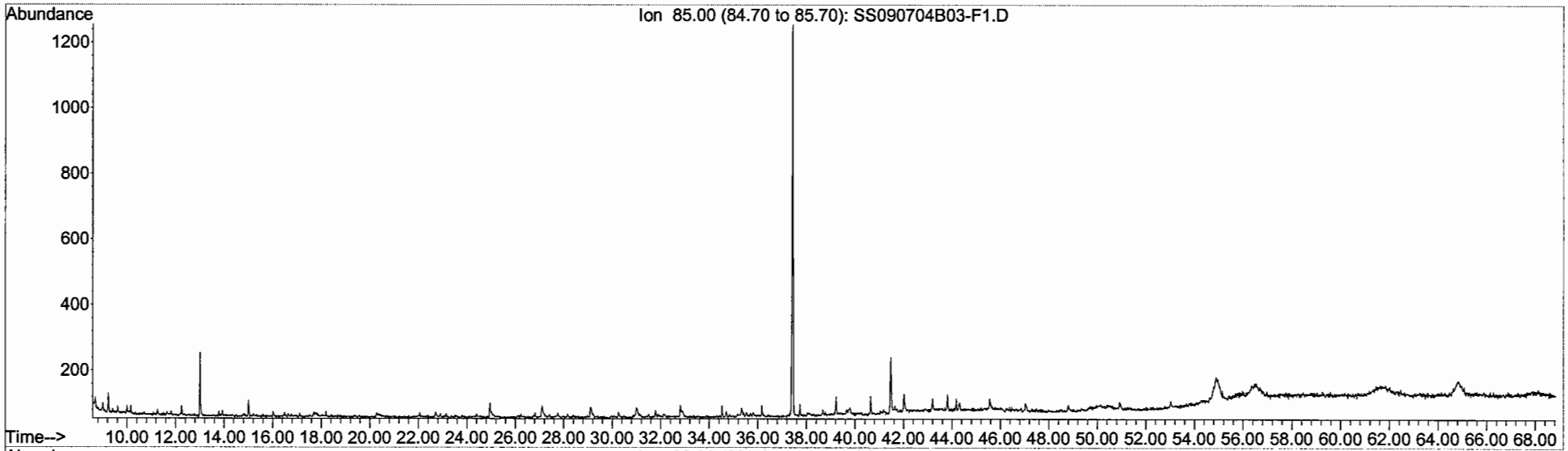
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Matrix Spike of DSY-SD-09-082604
0408123-11M-F1

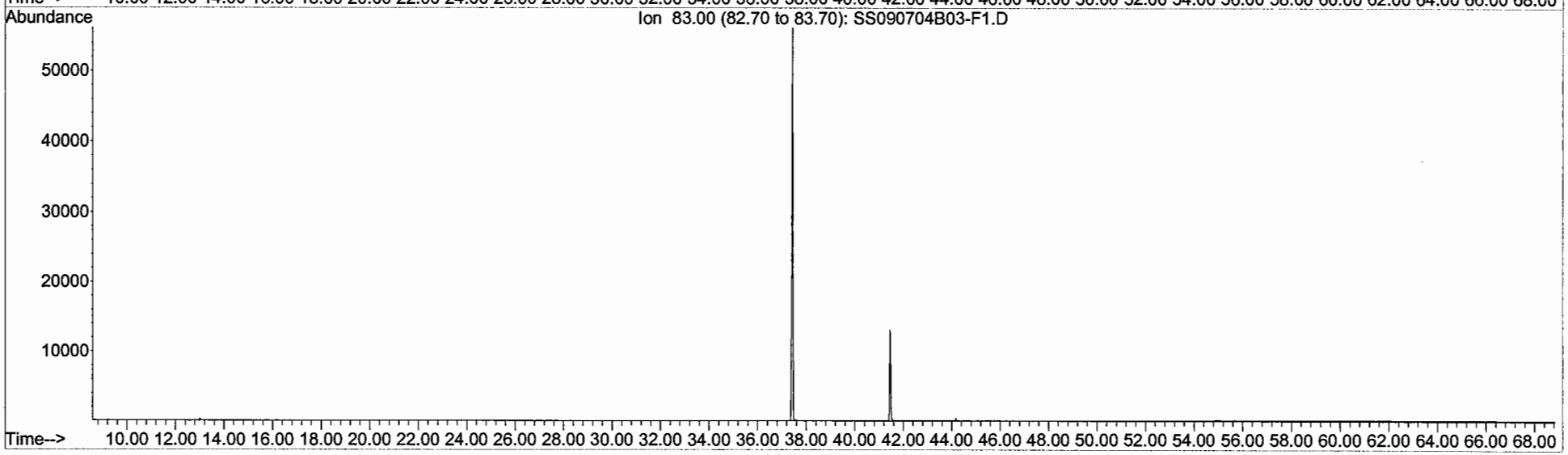




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\SS090704B03-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916
Sample Name: SS090704B03-RF1
Misc Info : 1X

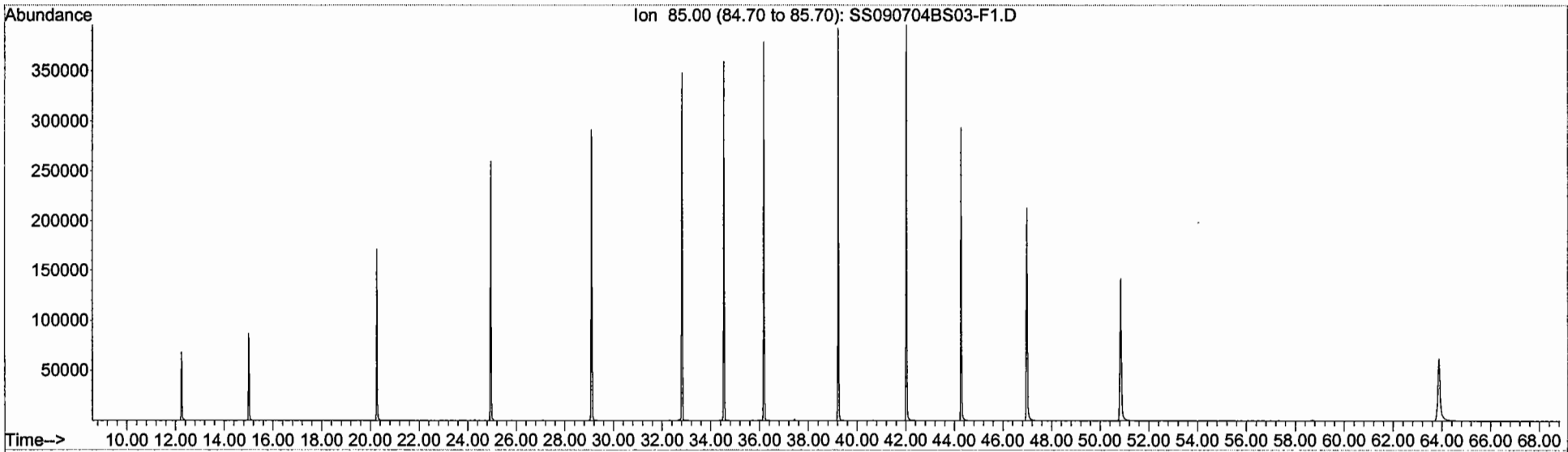
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Procedural Blank
SS090704B03-F1

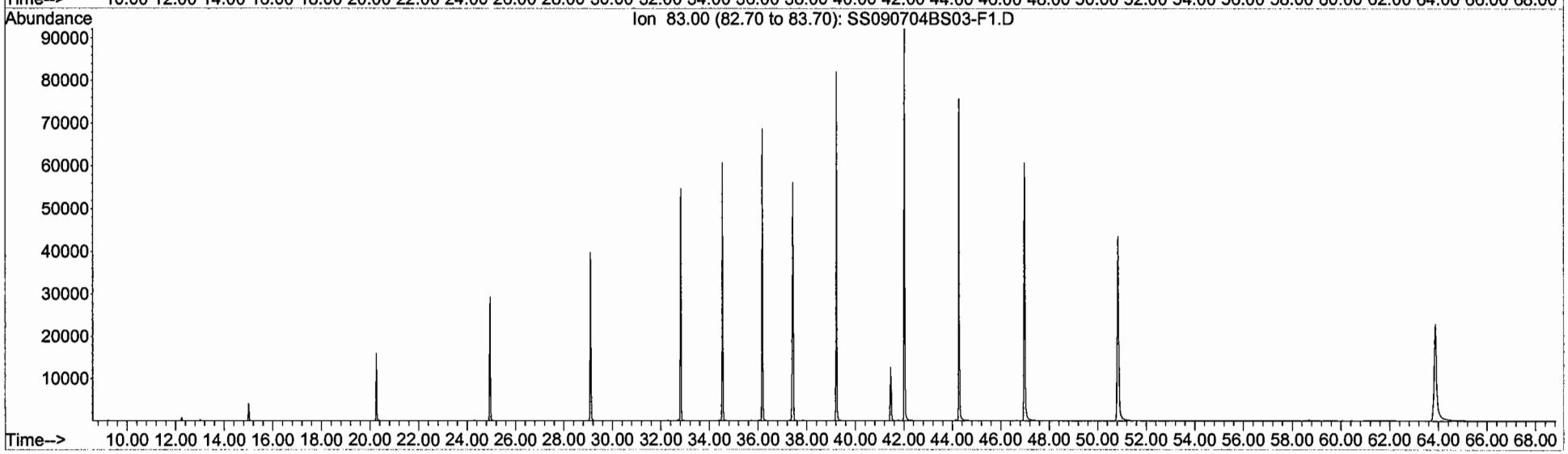




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\SS090704BS03-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 21 Sep 2004 9:34 pm using AcqMethod PAH30916
Sample Name: SS090704BS03-RF1
Misc Info : 1X

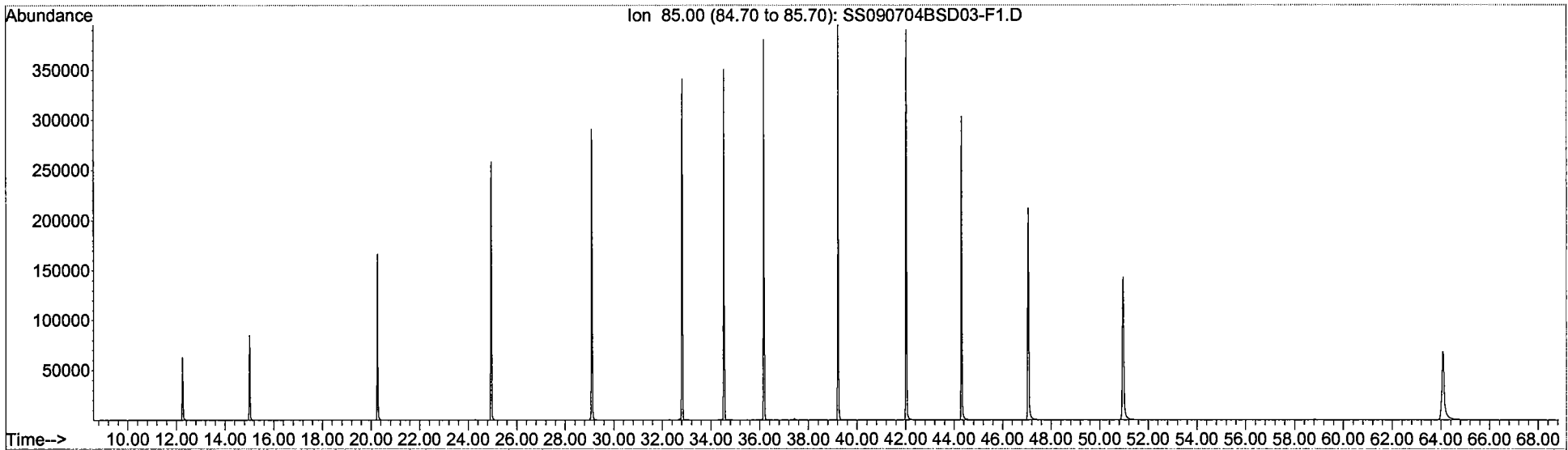
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike
SS090704BS03-F1

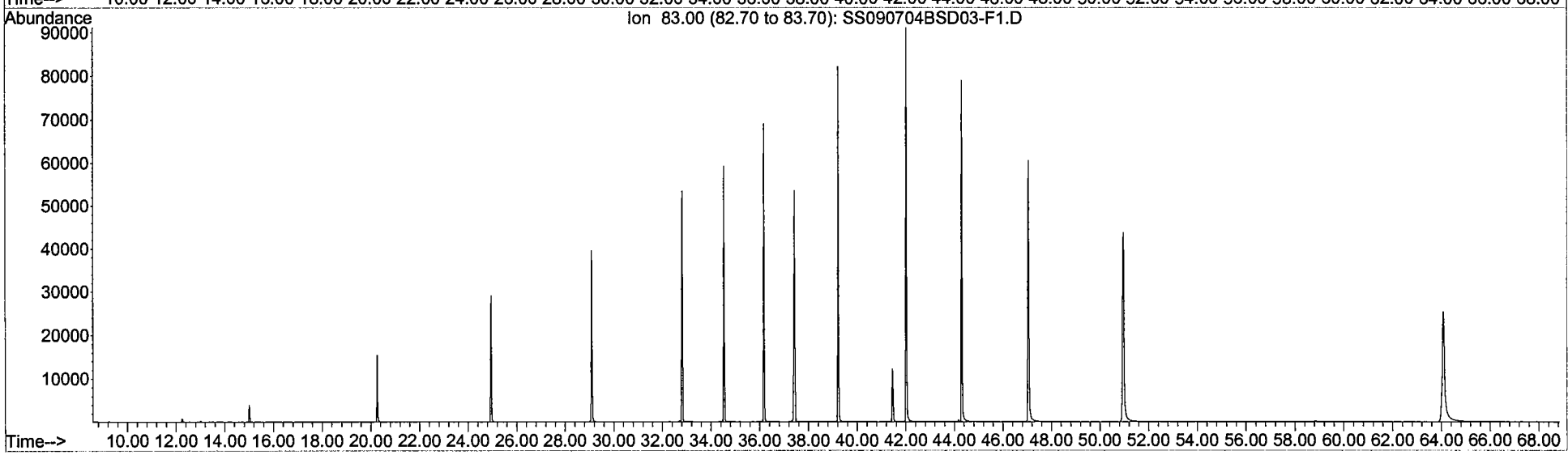




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\SS090704BSD03-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 21 Sep 2004 10:57 pm using AcqMethod PAH30916
Sample Name: SS090704BSD03-RF1
Misc Info : 1X

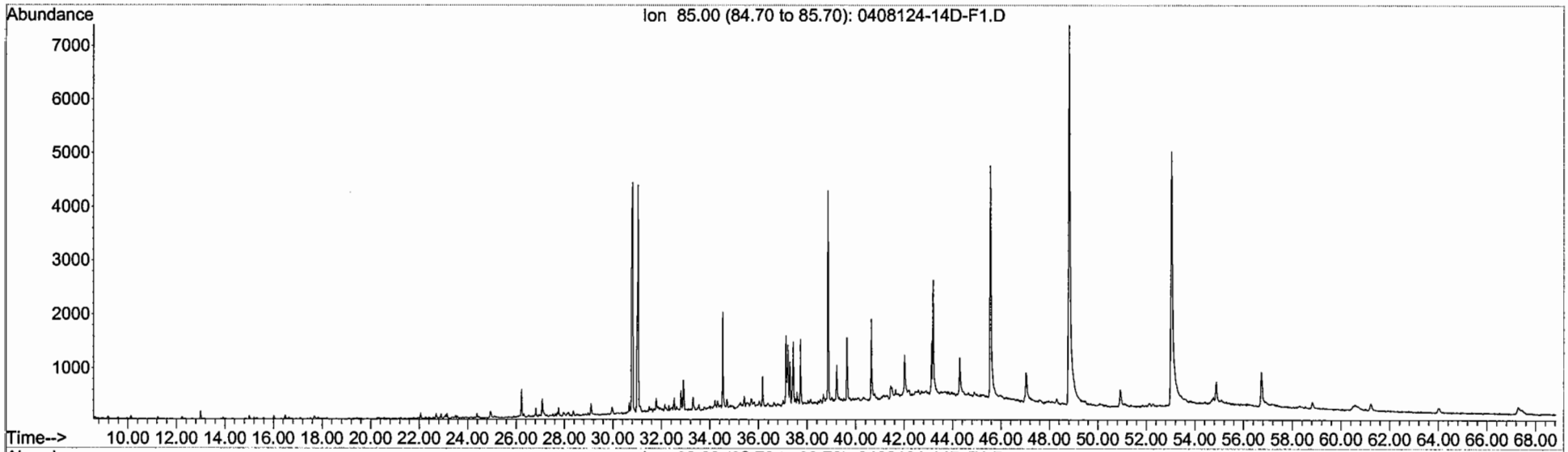
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike Duplicate
SS090704BSD03-F1

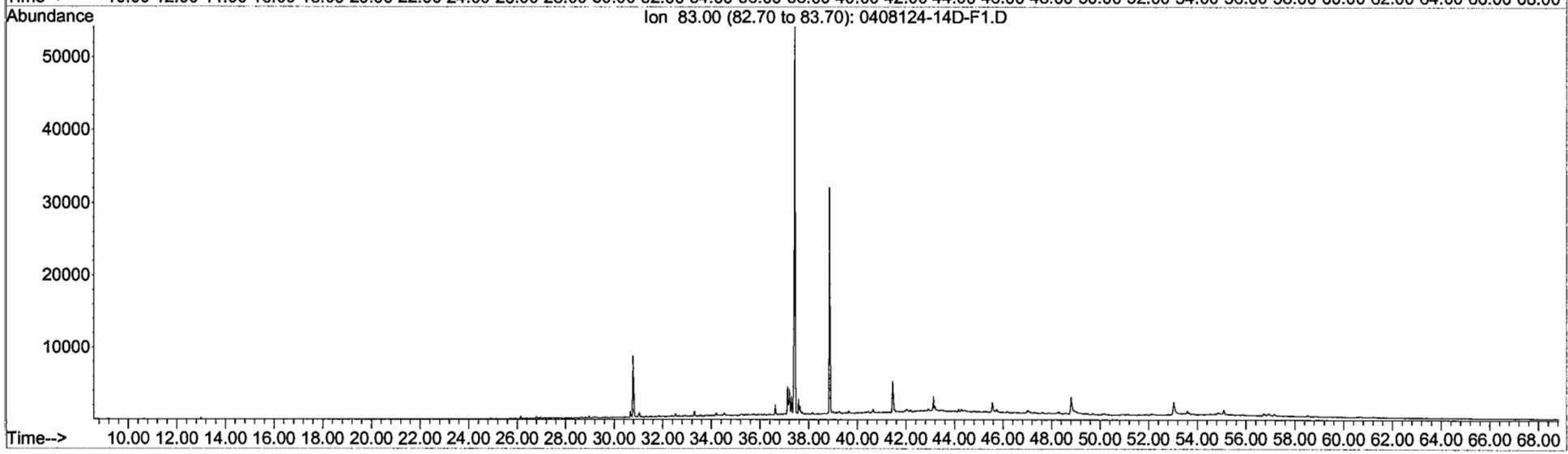




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-14D-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916
Sample Name: 0408124-14D-RF1
Misc Info : 1X

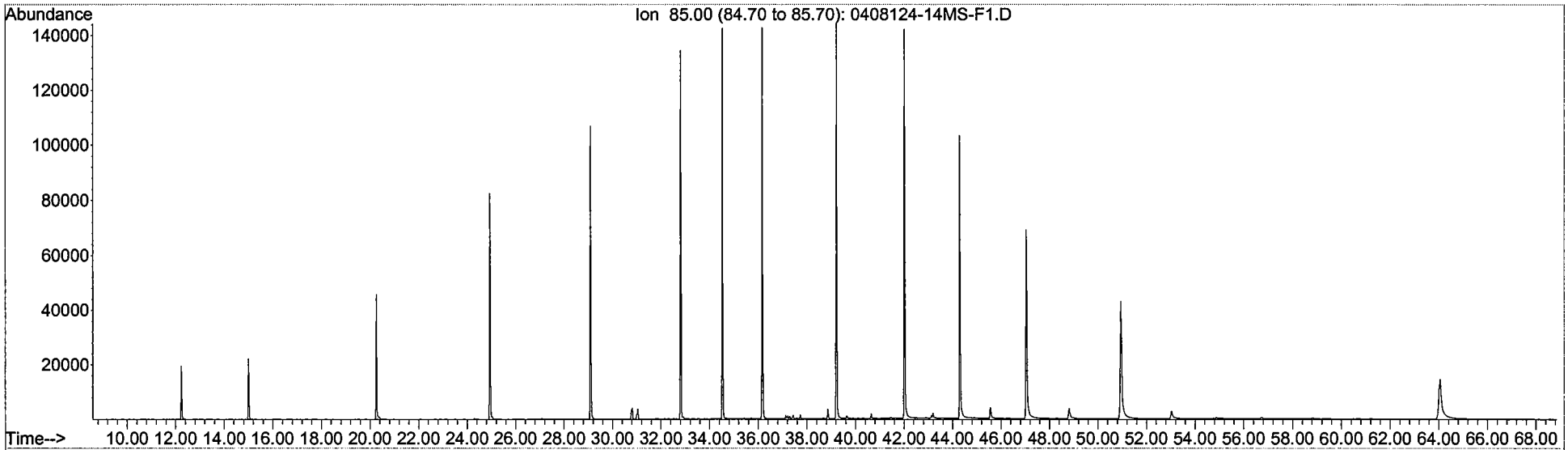
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
DSY-SD-CH01-082604 Duplicate
0408124-14D-F1

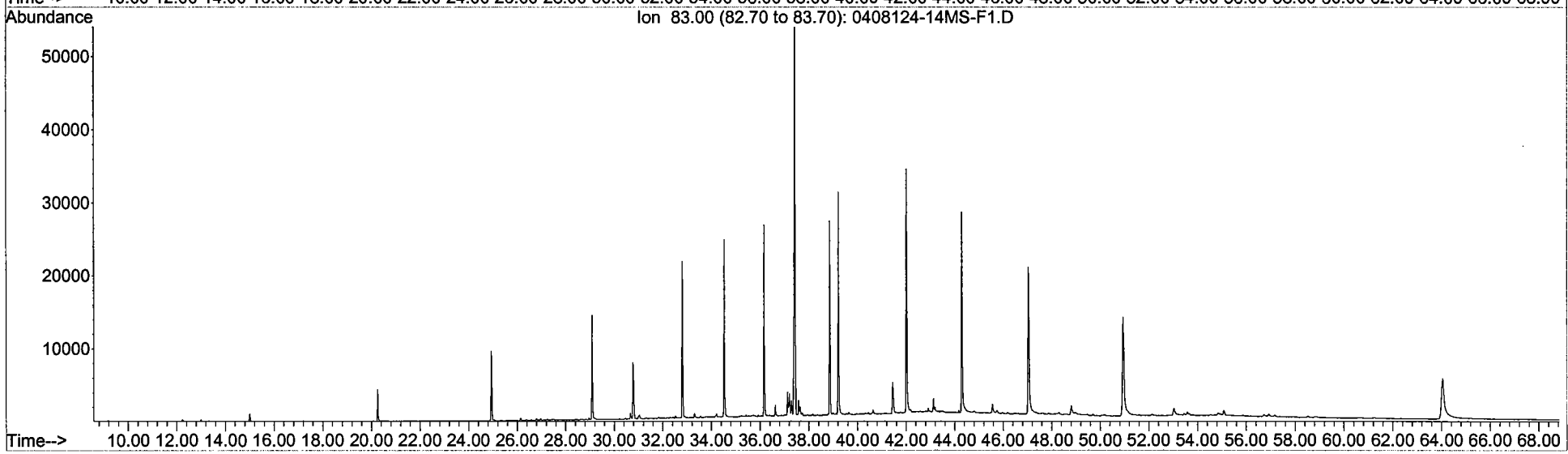




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-14MS-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 10:38 pm using AcqMethod PAH30916
Sample Name: 0408124-14MS-RF1
Misc Info : 1X

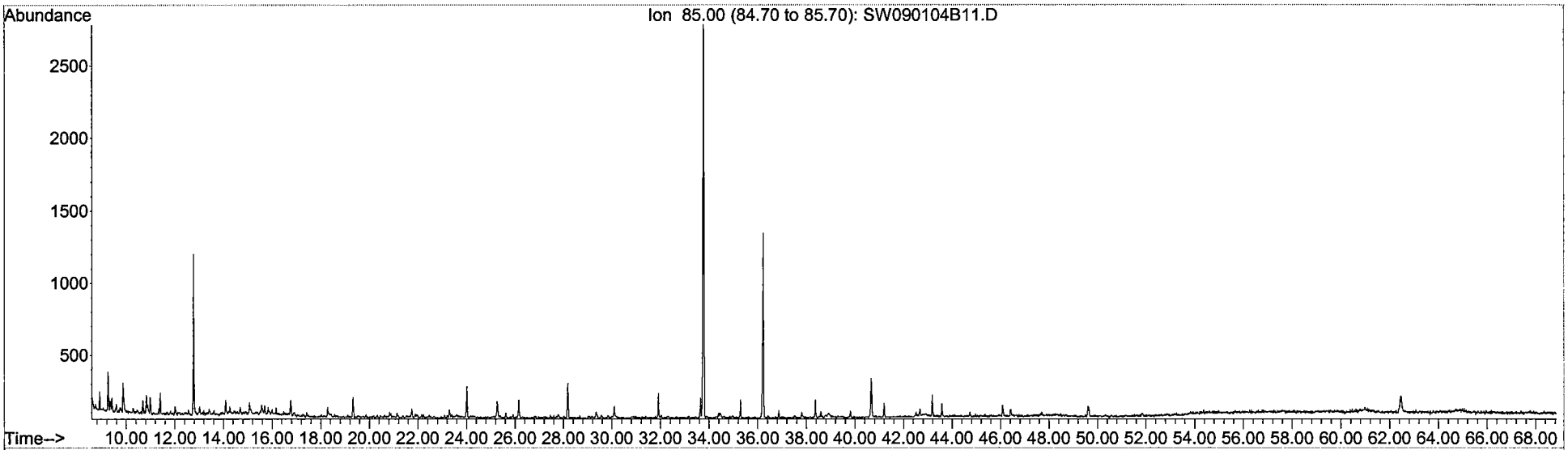
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Matrix Spike of DSY-SD-CH01-082604
0408124-14M-F1

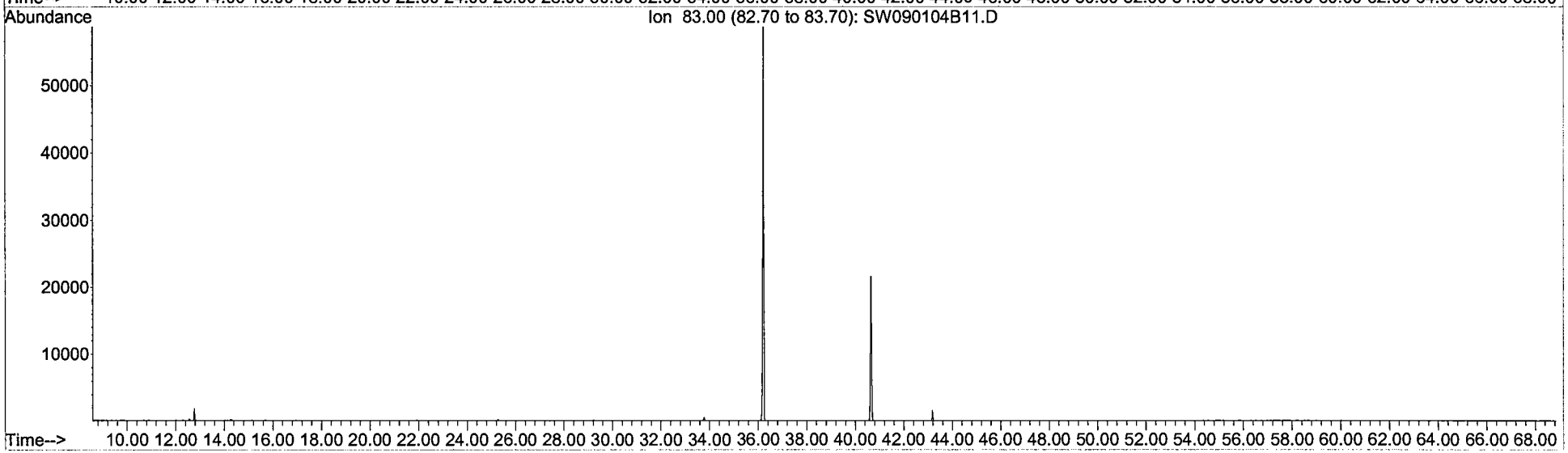




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408122\PAH\SW0
... 90104B11.D
Operator : BL
Instrument : PAHINST1
Acquired : 20 Sep 2004 1:12 pm using AcqMethod PAH10916
Sample Name: SW090104B11
Misc Info : 1X

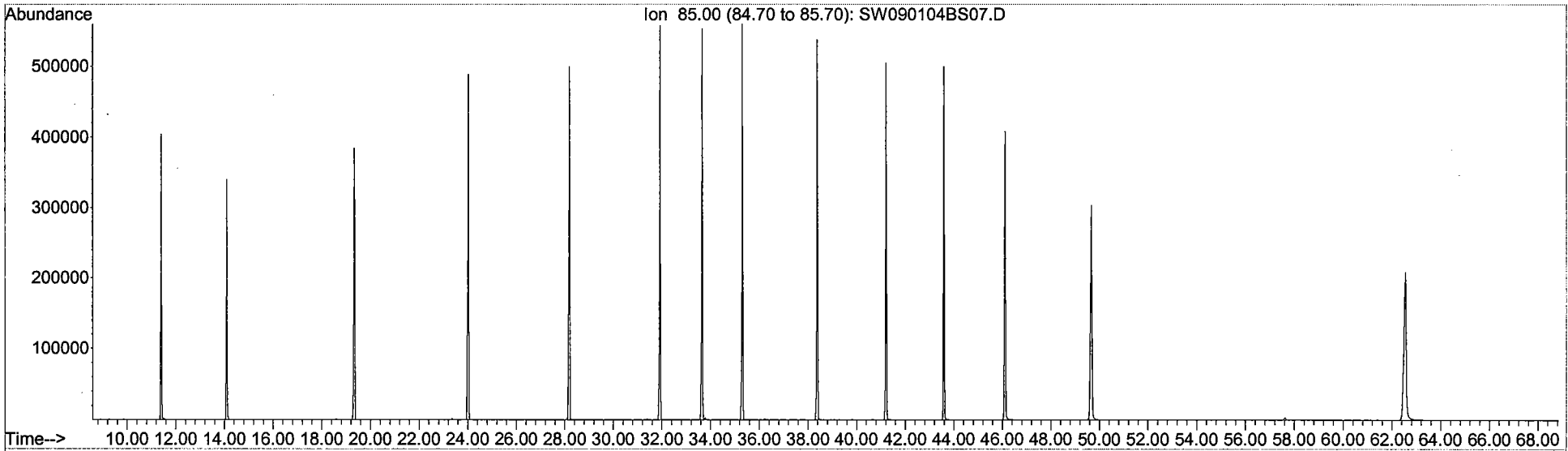
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Procedural Blank
SW090104B11

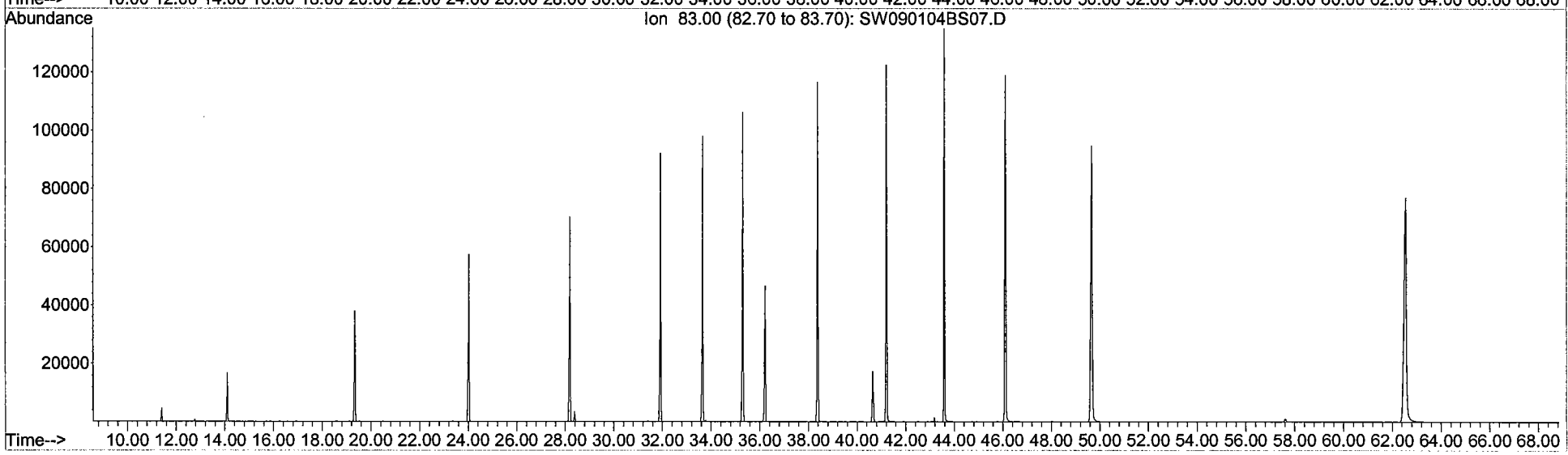




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408122\PAH\SW0
... 90104BS07.D
Operator : BL
Instrument : PAHINST1
Acquired : 20 Sep 2004 2:31 pm using AcqMethod PAH10916
Sample Name: SW090104BS07
Misc Info : 1X

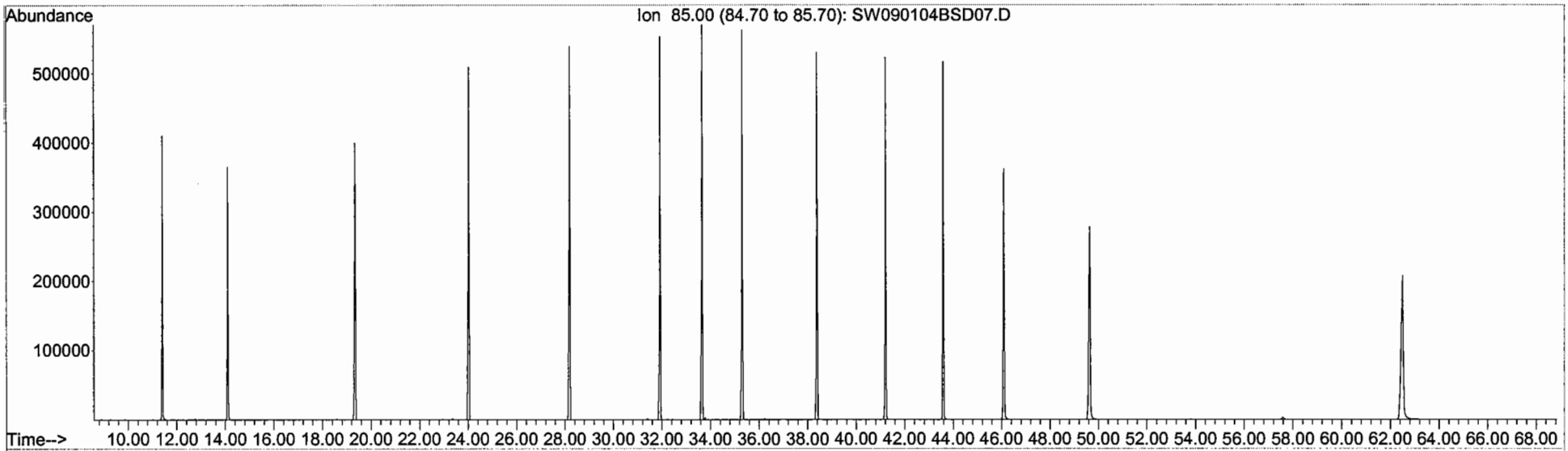
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike
SW090104BS07

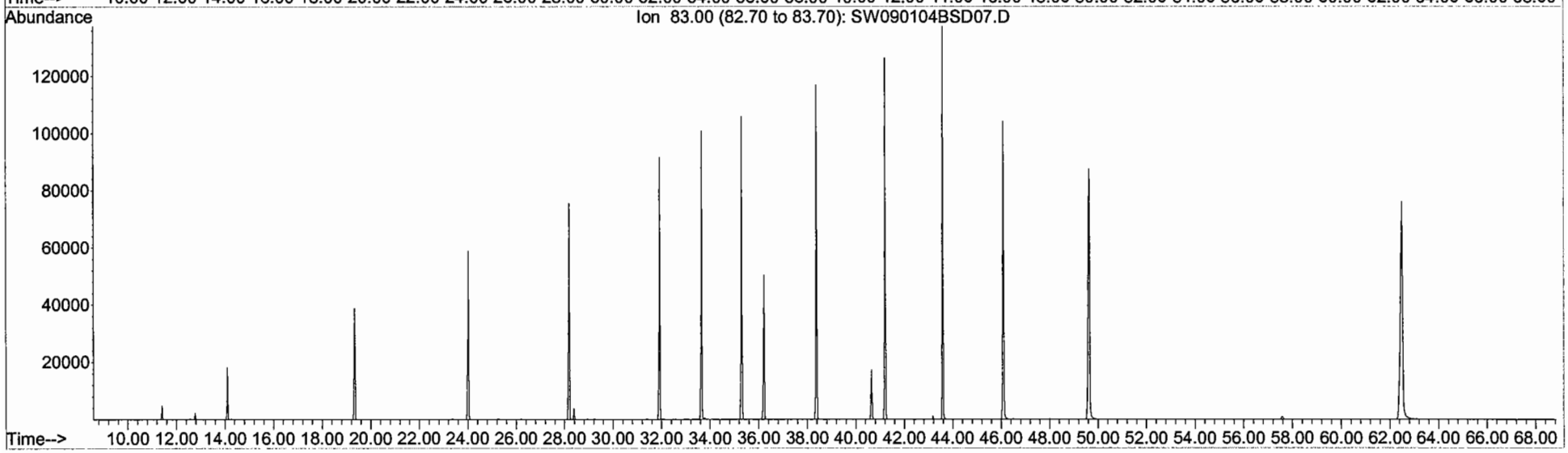




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408122\PAH\SW0
... 90104BSD07.D
Operator : BL
Instrument : PAHINST1
Acquired : 20 Sep 2004 3:50 pm using AcqMethod PAH10916
Sample Name: SW090104BSD07
Misc Info : 1X

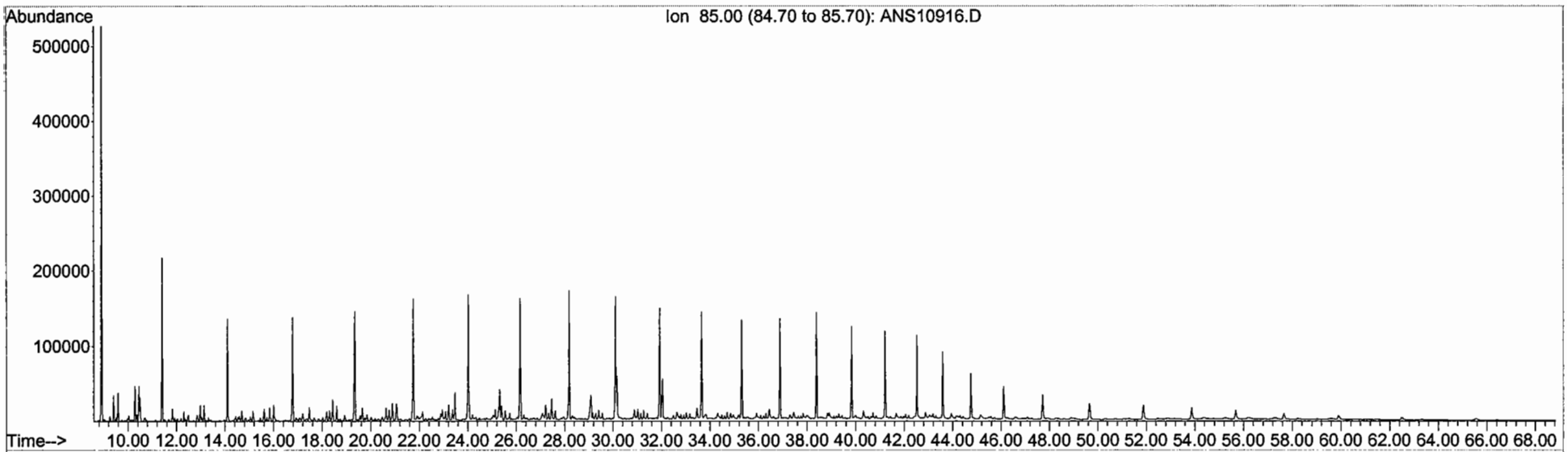
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
Blank Spike Duplicate
SW090104BSD07

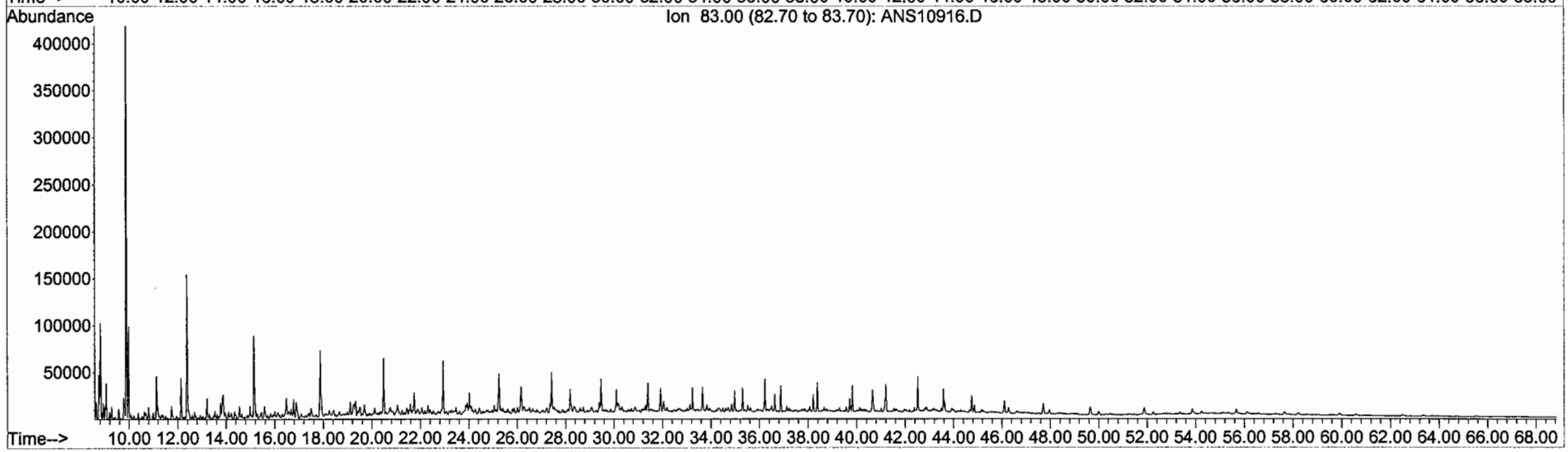




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\PAH\ANS
... 10916.D
Operator : BL
Instrument : PAHINST1
Acquired : 17 Sep 2004 9:04 pm using AcqMethod PAH10916
Sample Name: SS092304AWS01
Misc Info : SW090104A 5.14 ug/mL

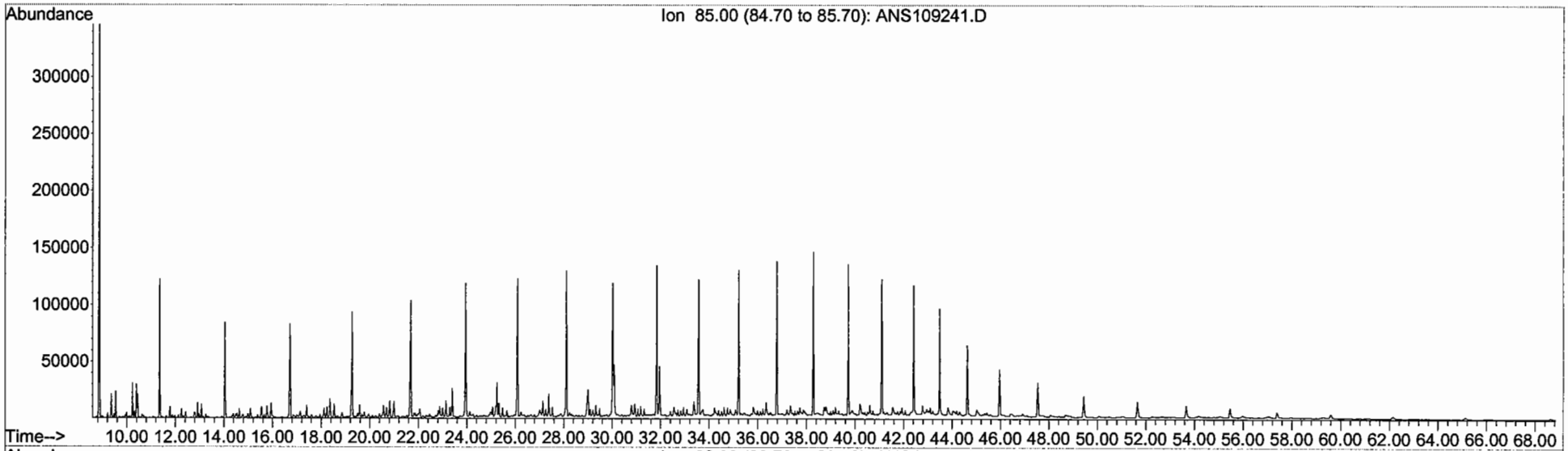
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
North Slope Crude
Reference Oil

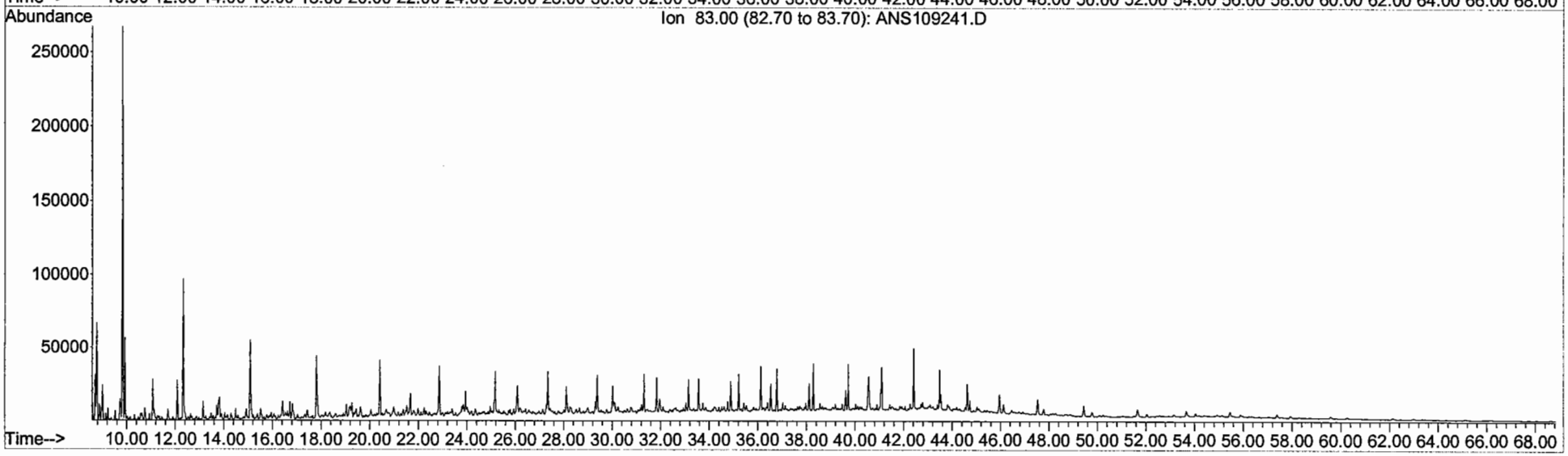




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\ANS109241.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924
Sample Name: SS100104AWS01
Misc Info : SW090104A 5.14 mg/mL

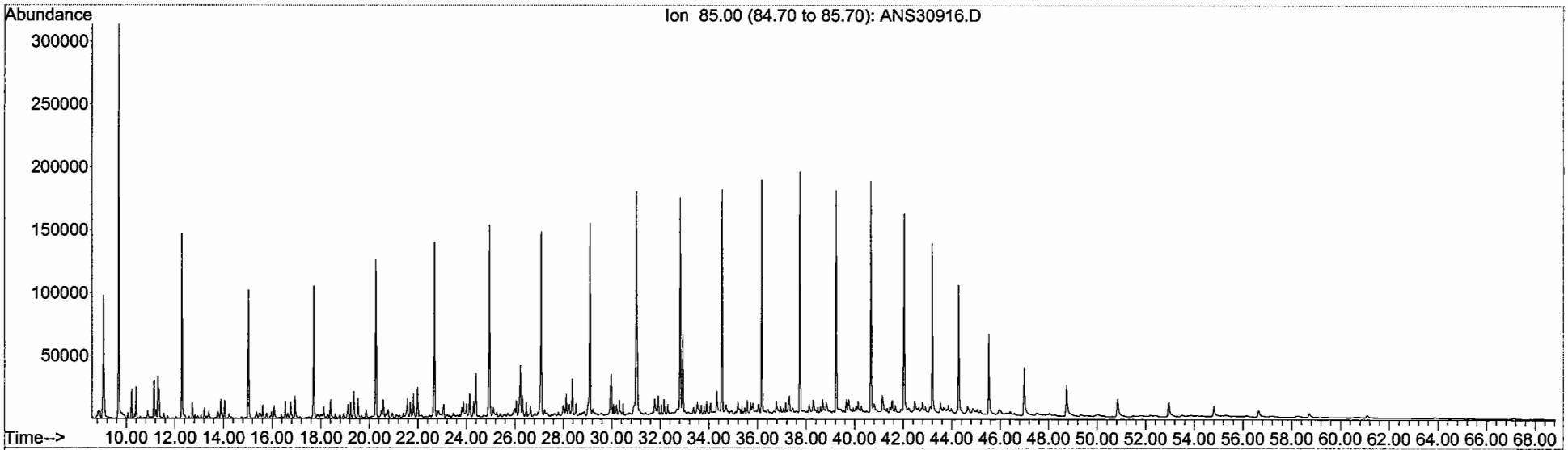
Normal Alkanes/Isoprenoids and Alkylcyclohexanes
North Slope Crude
Reference Oil

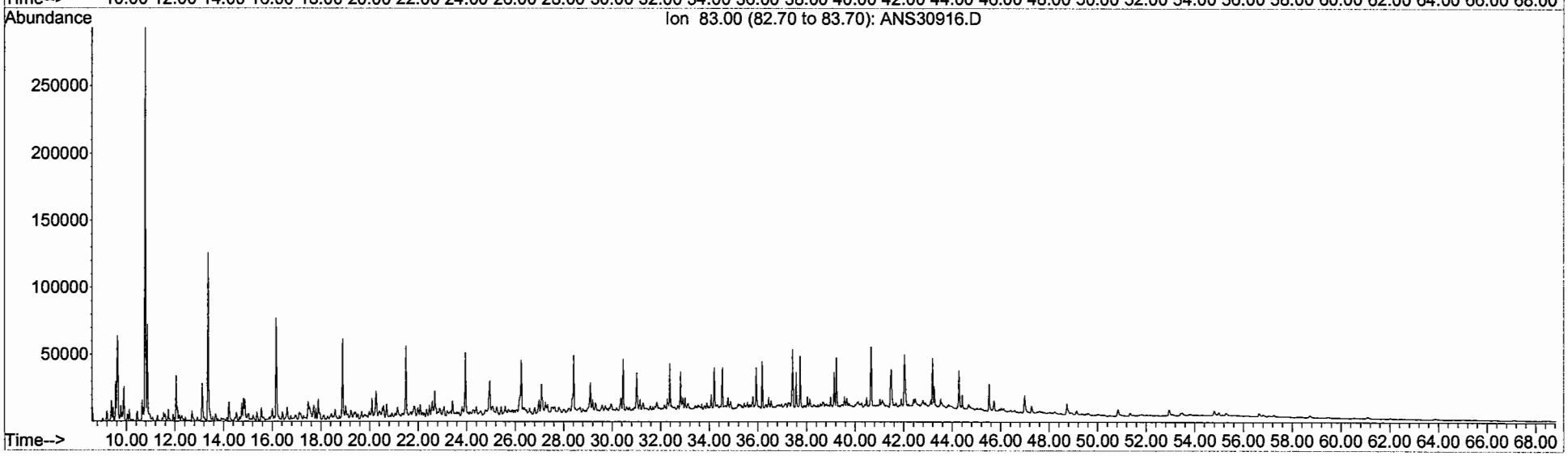




File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\PAH\ANS
... 30916.D
Operator : BL
Instrument : PAHINST3
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916
Sample Name: SS092404AWS01
Misc Info : SW090104A 5.14 ug/mL

Normal Alkanes/Isoprenoids and Alkylcyclohexanes
North Slope Crude
Reference Oil

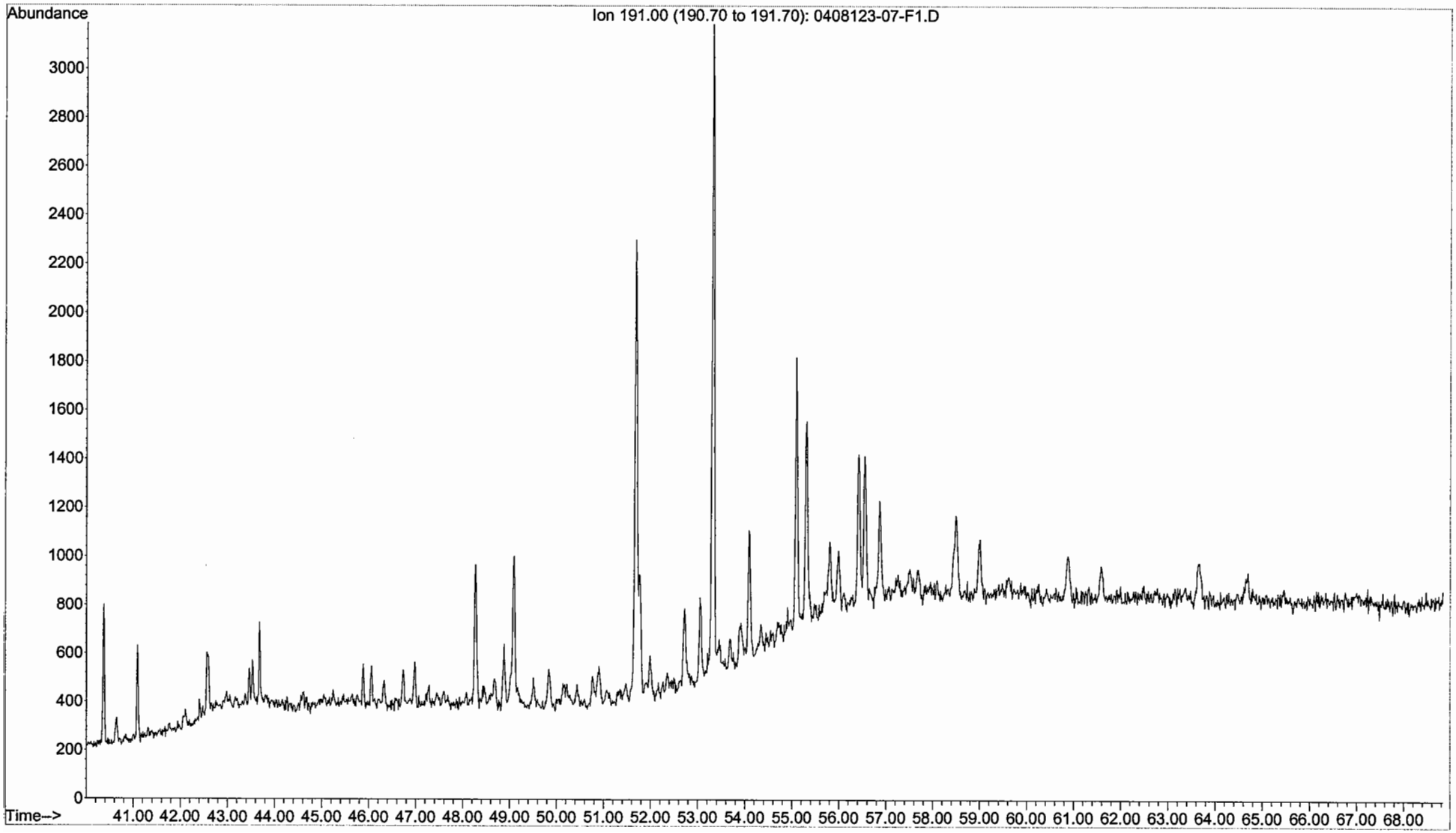




Attachment E
Triterpane Fingerprinting Results by GC/MS/SIM

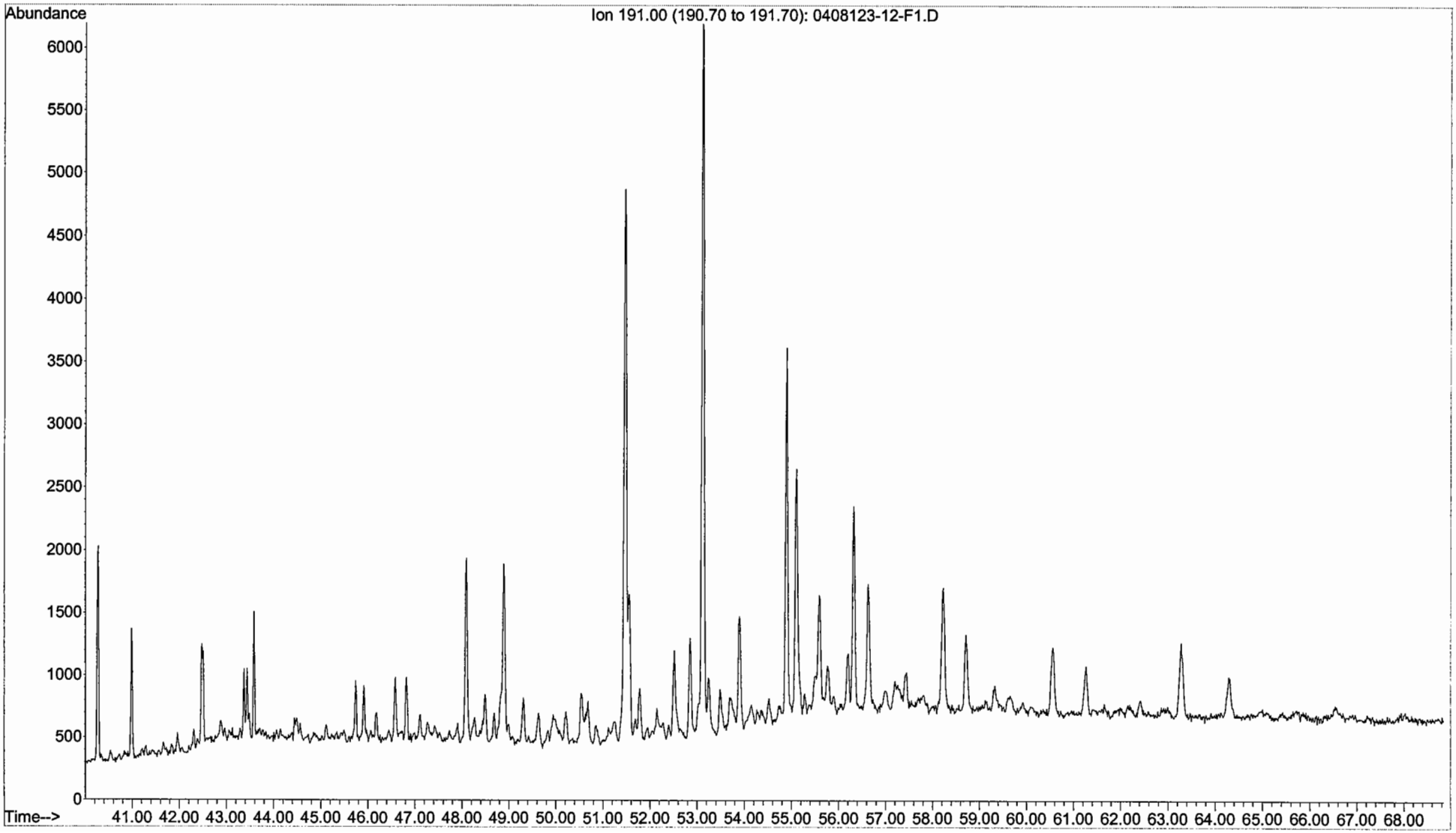
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-07-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916
Sample Name: 0408123-07-RF1
Misc Info : 1X

Triterpanes
DSY-SD-02-082504
0408123-07-F1



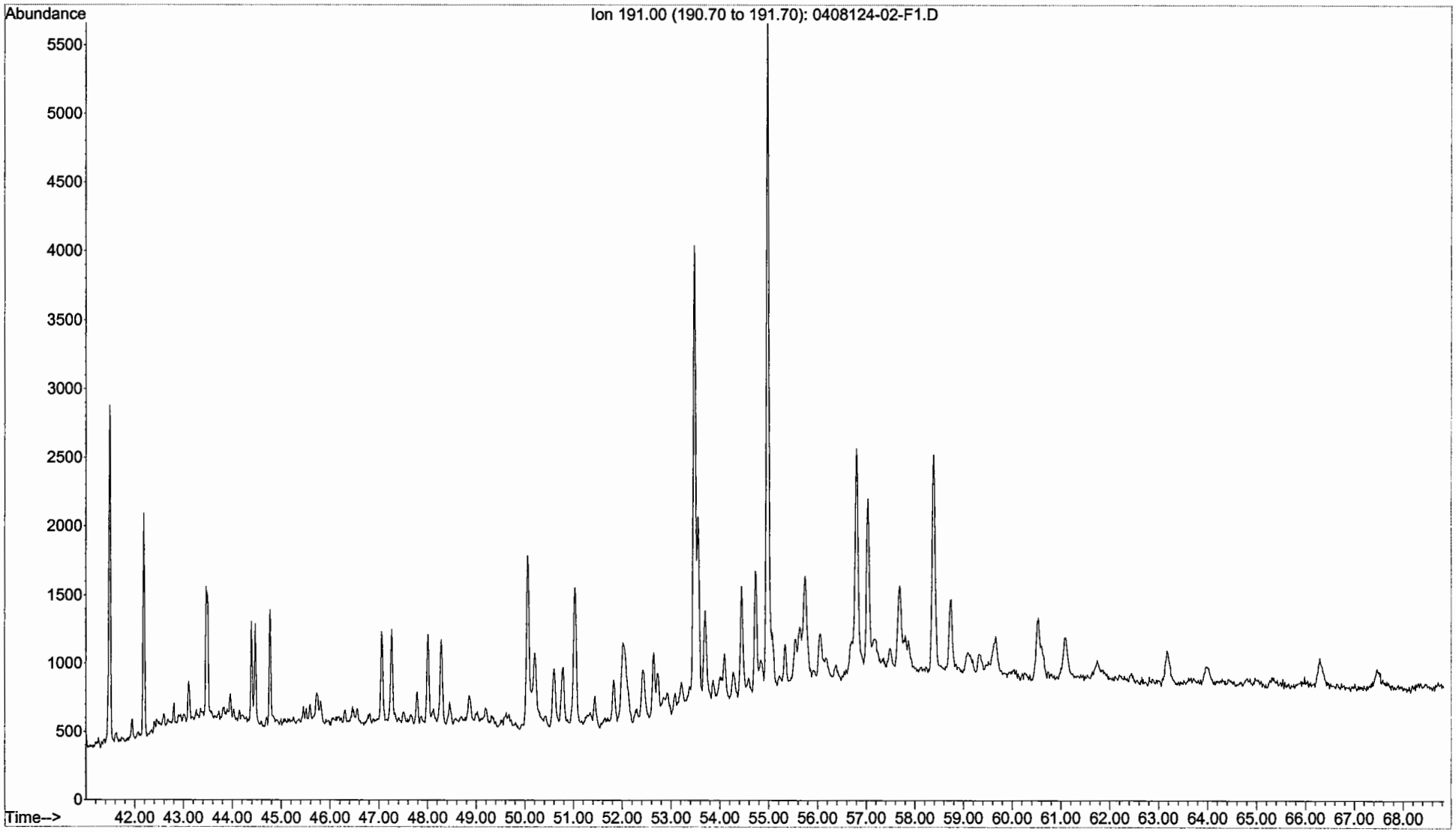
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-12-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924
Sample Name: 0408123-12-RF1
Misc Info : 1X

Triterpanes
DSY-SD-03-082604
0408123-12-F1



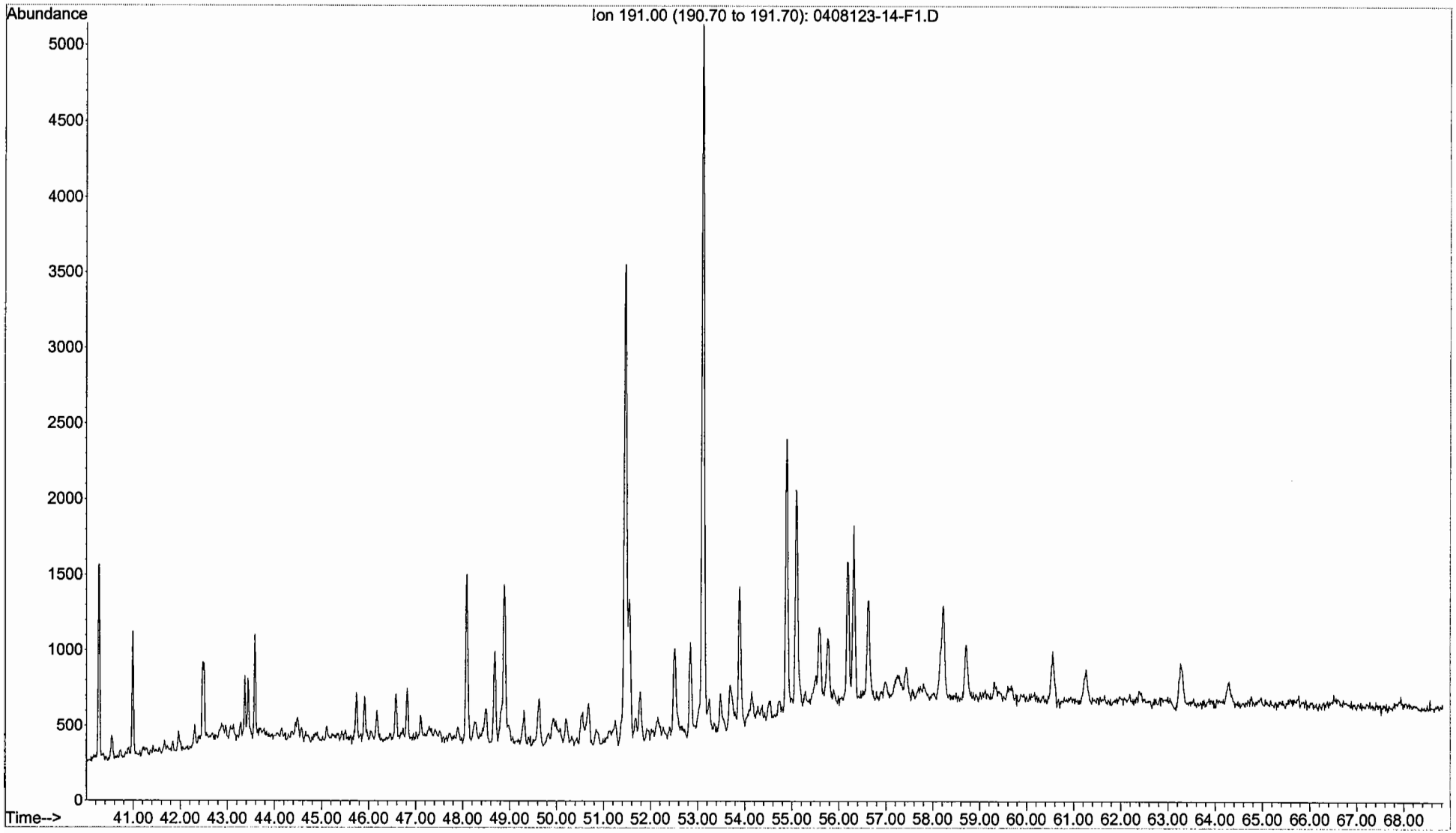
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-02-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916
Sample Name: 0408124-02-RF1
Misc Info : 1X

Triterpanes
DSY-SD-04-082604
0408124-02-F1



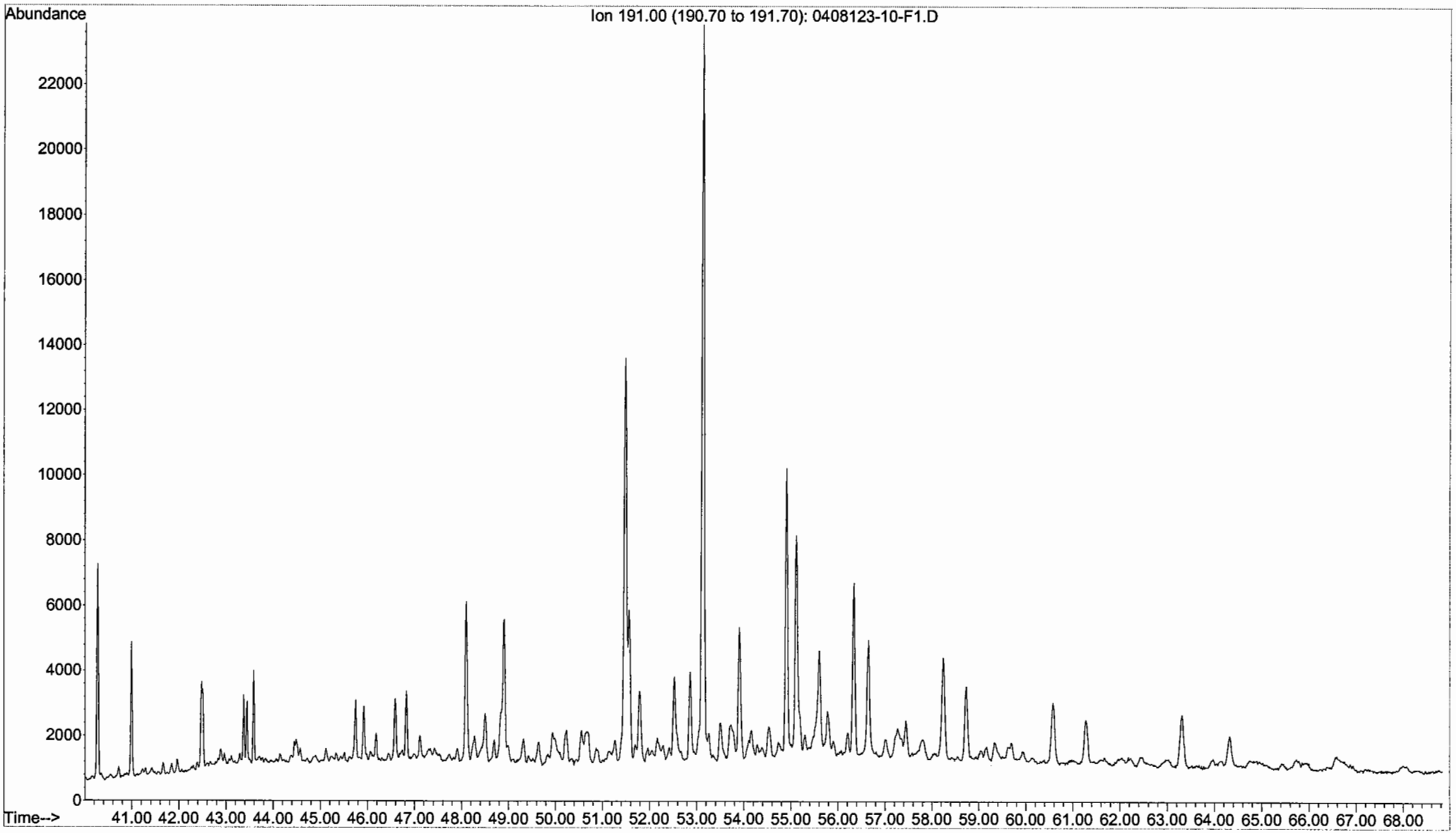
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-14-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924
Sample Name: 0408123-14-RF1
Misc Info : 1X

Triterpanes
DSY-SD-05-082604
0408123-14-F1



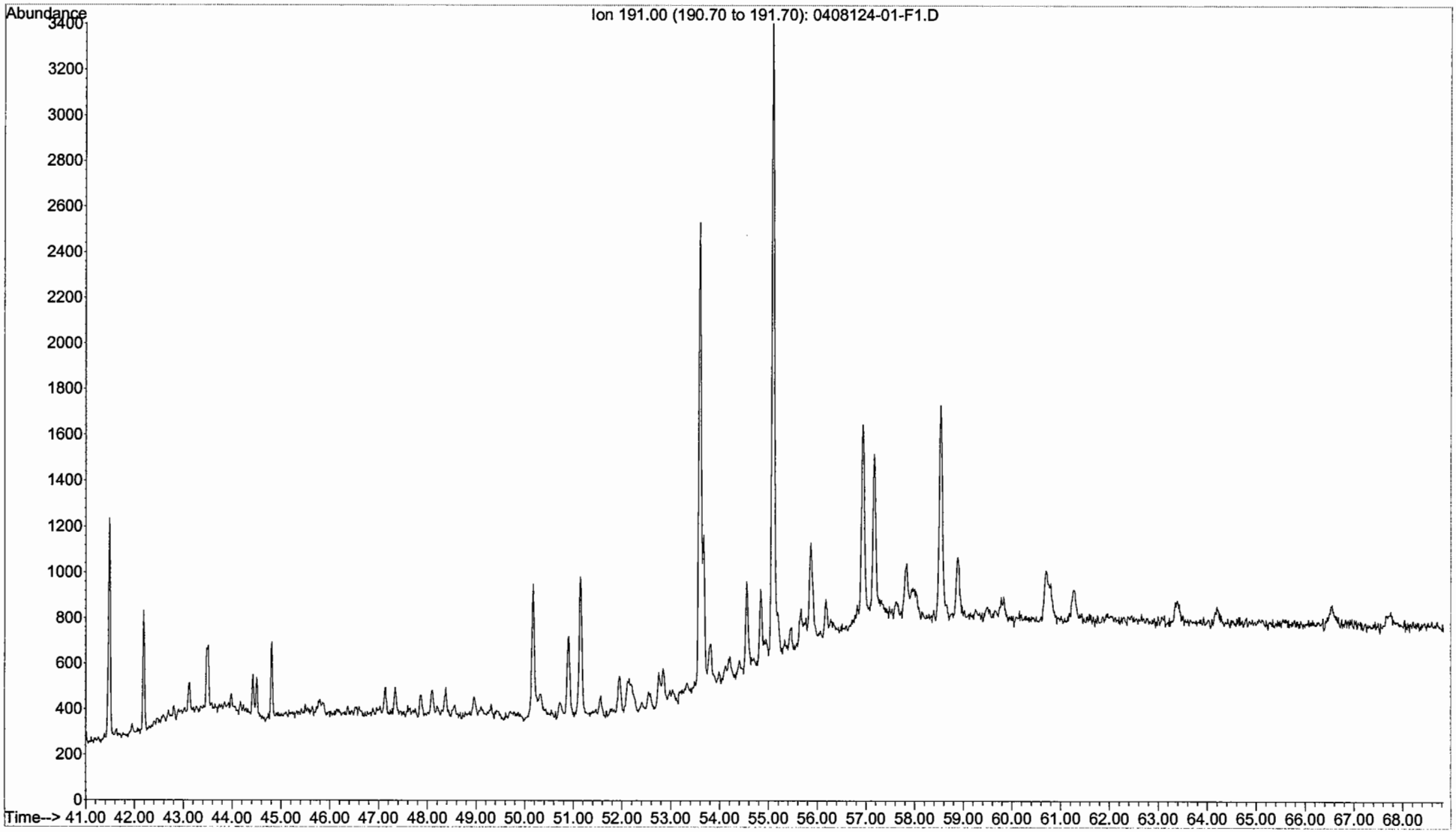
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-10-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924
Sample Name: 0408123-10-RF1
Misc Info : 1X

Triterpanes
DSY-SD-06-082504
0408123-10-F1



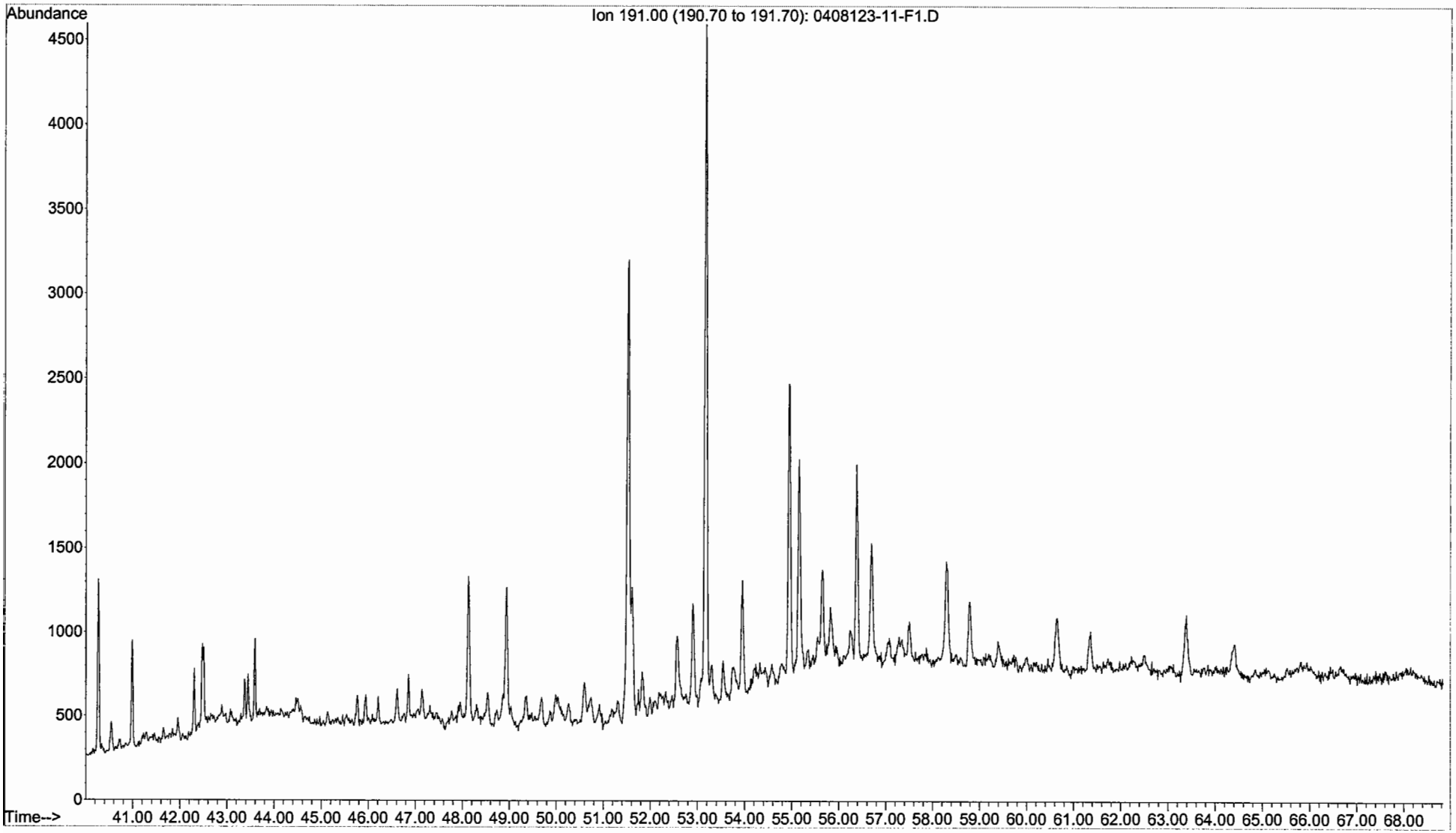
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-01-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916
Sample Name: 0408124-01-RF1
Misc Info : 1X

Triterpanes
DSY-SD-08-082604
0408124-01-F1



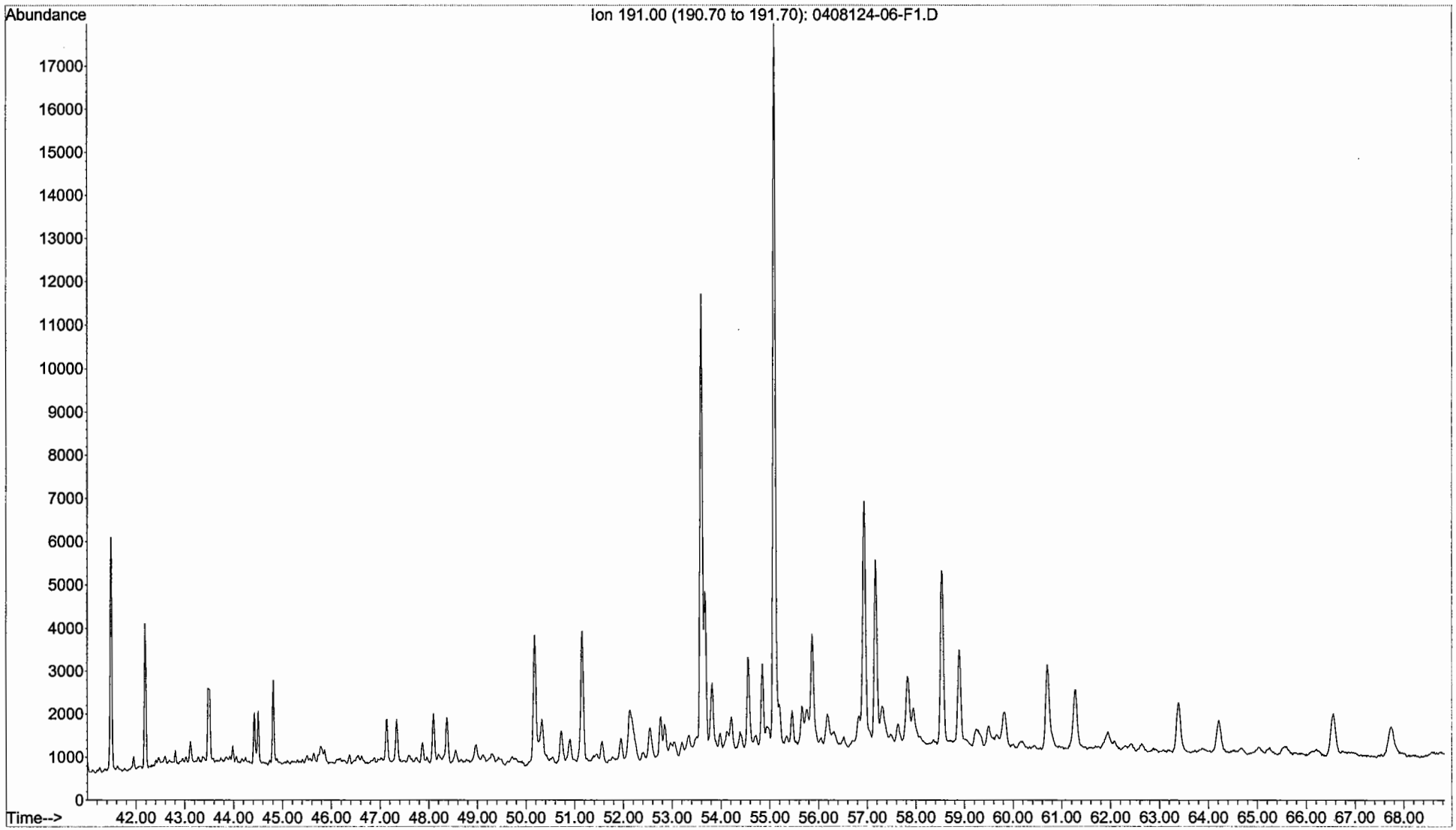
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-11-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924
Sample Name: 0408123-11-RF1
Misc Info : 1X

Triterpanes
DSY-SD-09-082604
0408123-11-F1



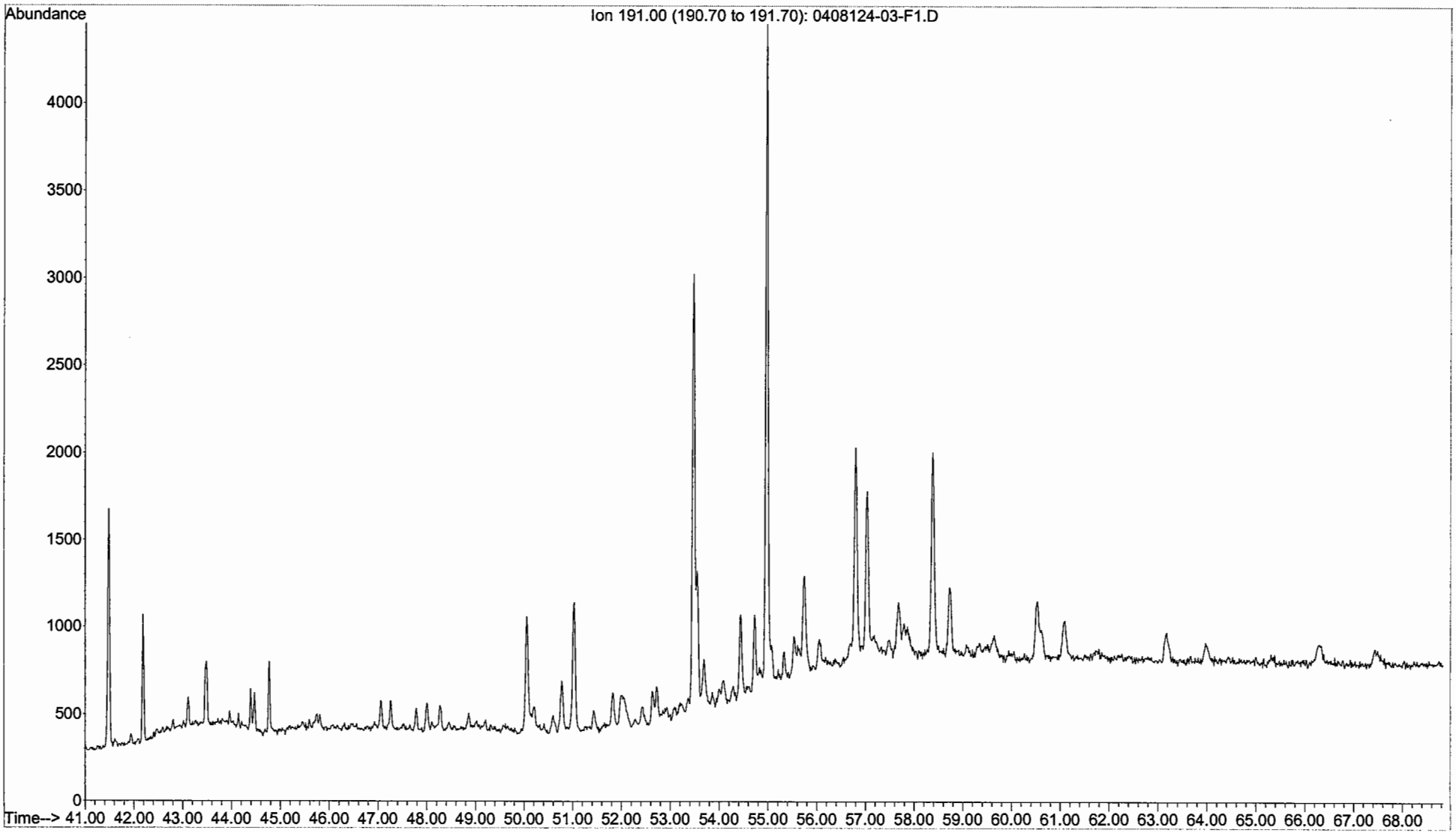
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-06-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916
Sample Name: 0408124-06-RF1
Misc Info : 1X

Triterpanes
DSY-SD-11-082604
0408124-06-F1



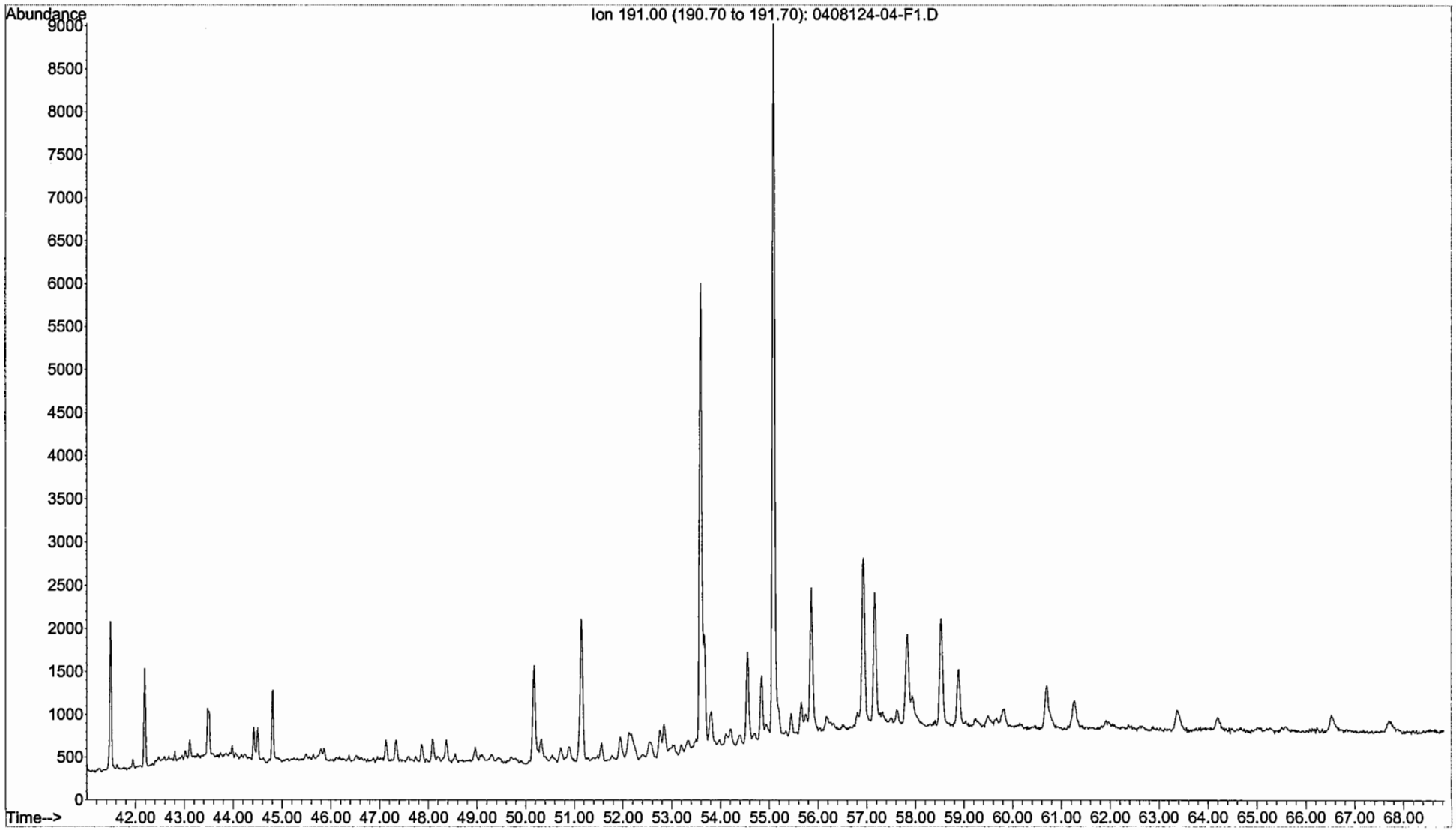
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-03-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916
Sample Name: 0408124-03-RF1
Misc Info : 1X

Triterpanes
DSY-SD-20-082604
0408124-03-F1



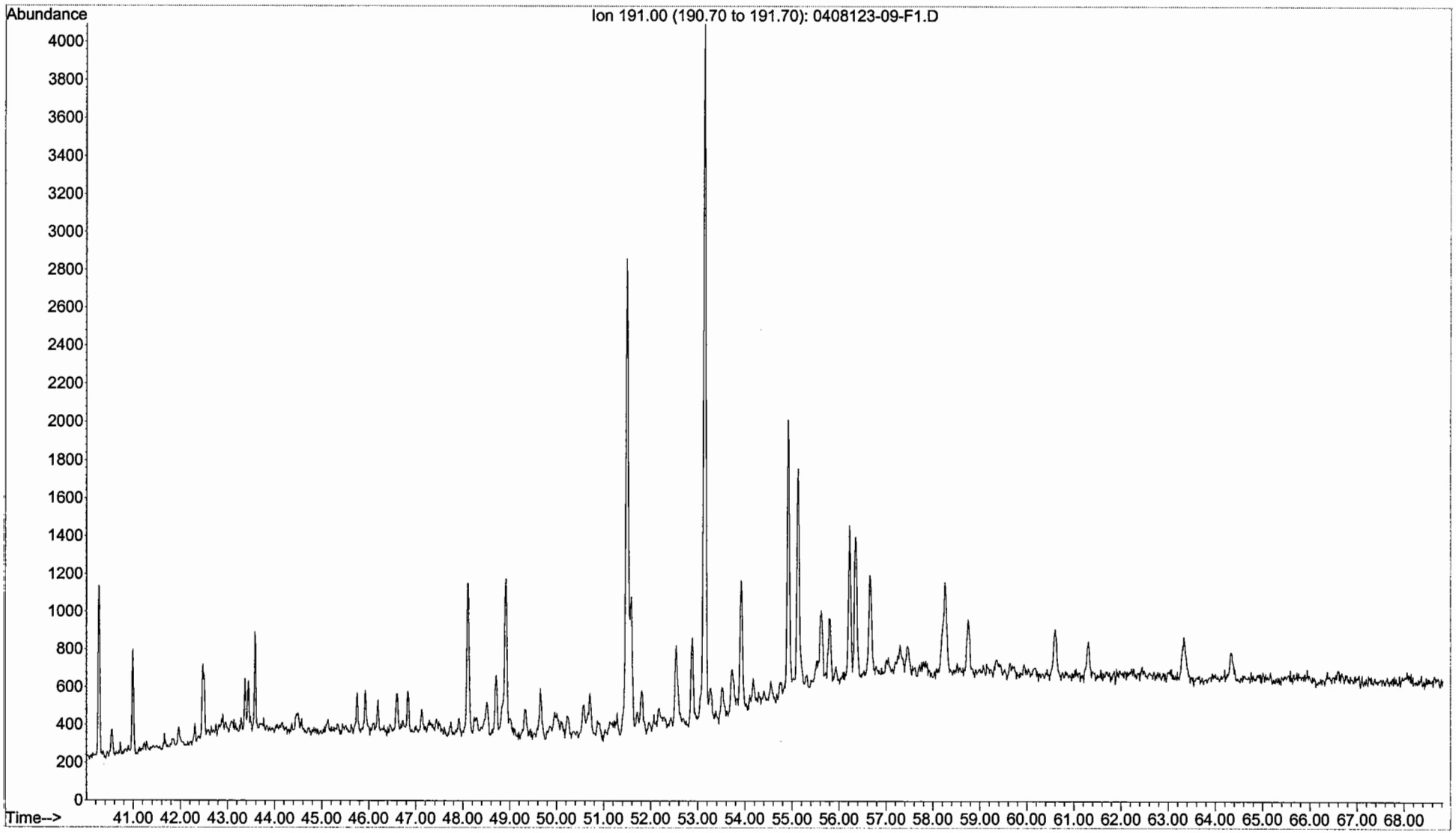
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-04-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916
Sample Name: 0408124-04-RF1
Misc Info : 1X

Triterpanes
DSY-SD-27-082604
0408124-04-F1



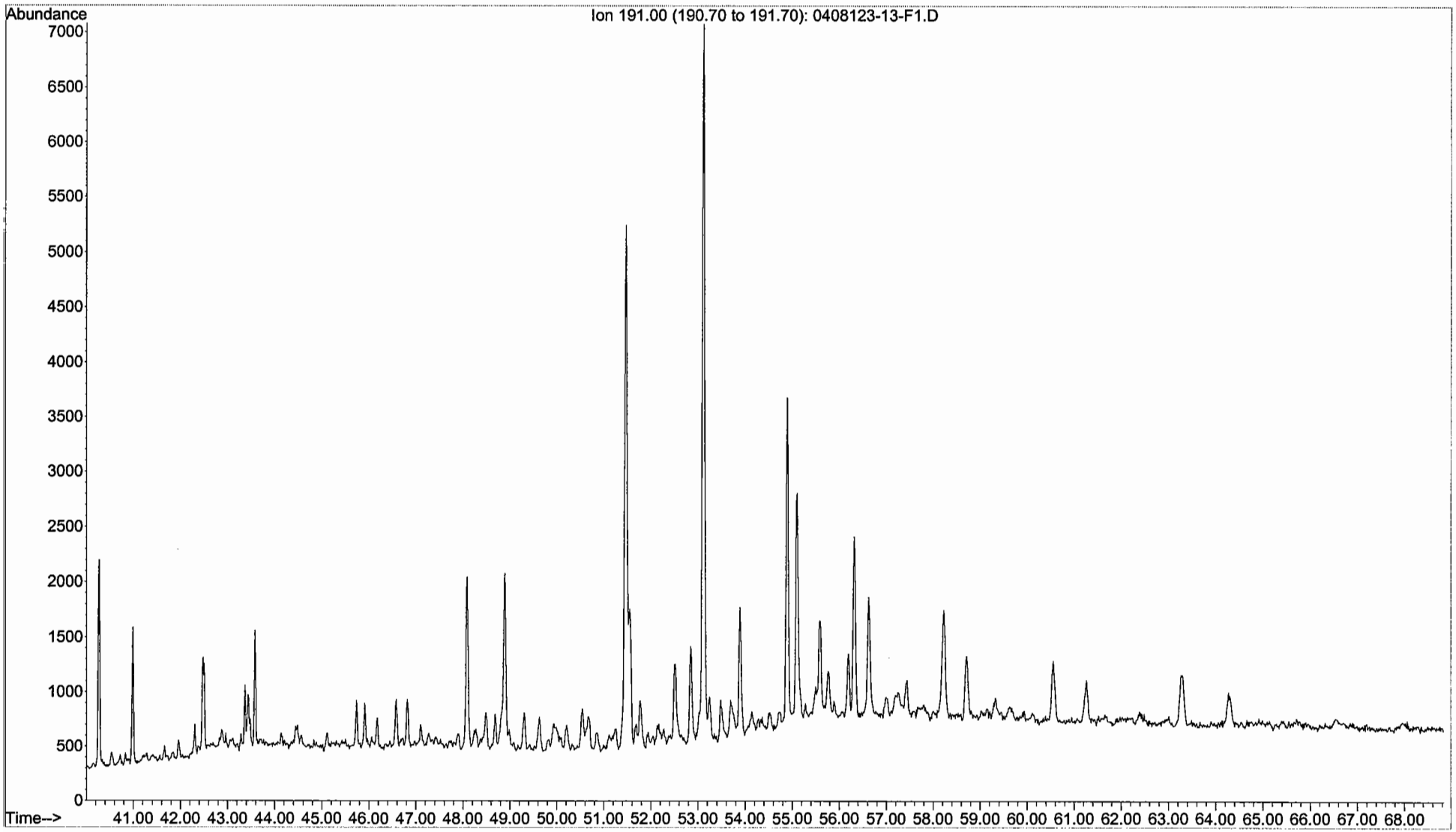
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-09-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924
Sample Name: 0408123-09-RF1
Misc Info : 1X

Triterpanes
DSY-SD-28-082504
0408123-09-F1



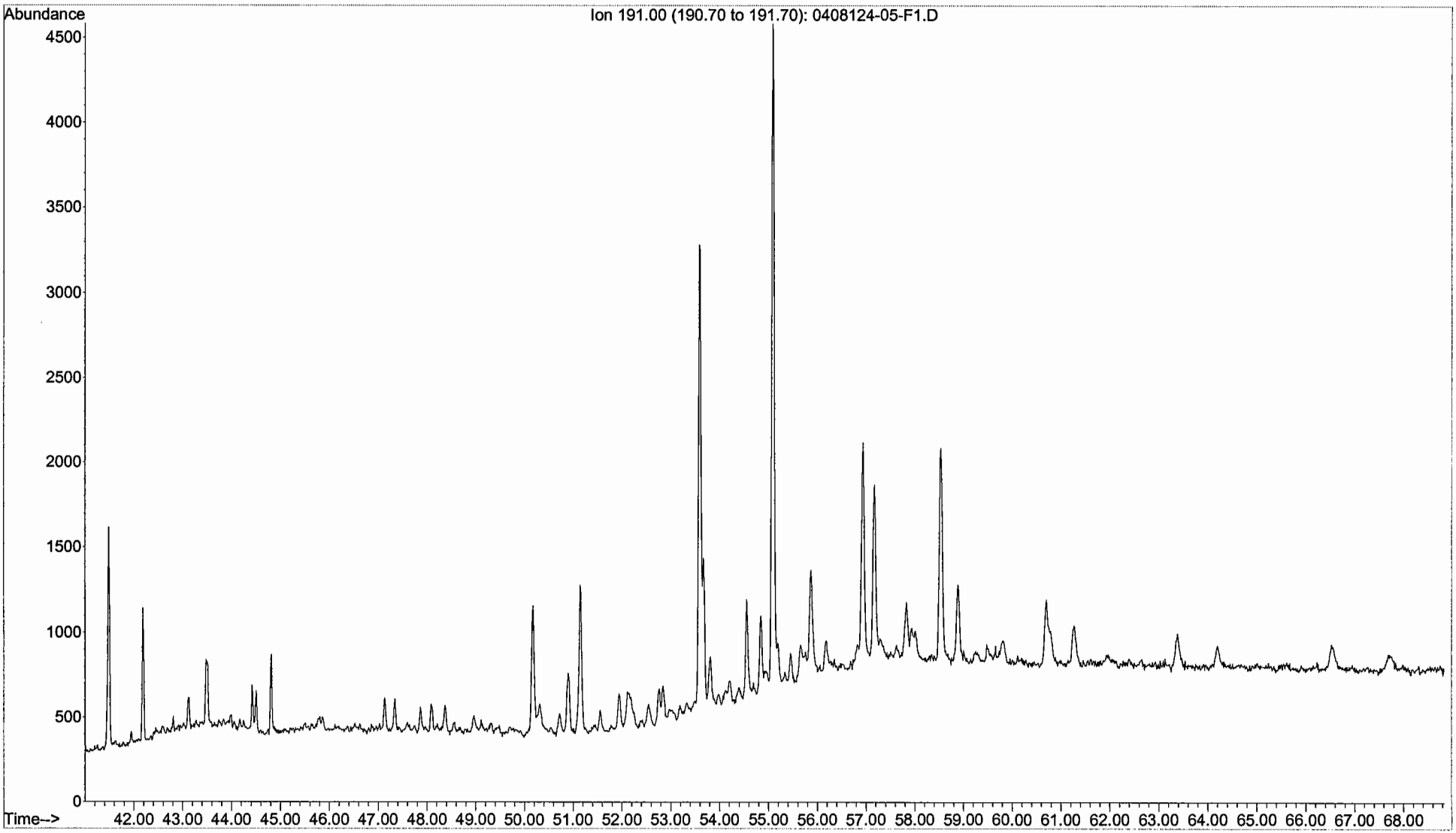
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-13-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924
Sample Name: 0408123-13-RF1
Misc Info : 1X

Triterpanes
DSY-SD-29-082604
0408123-13-F1



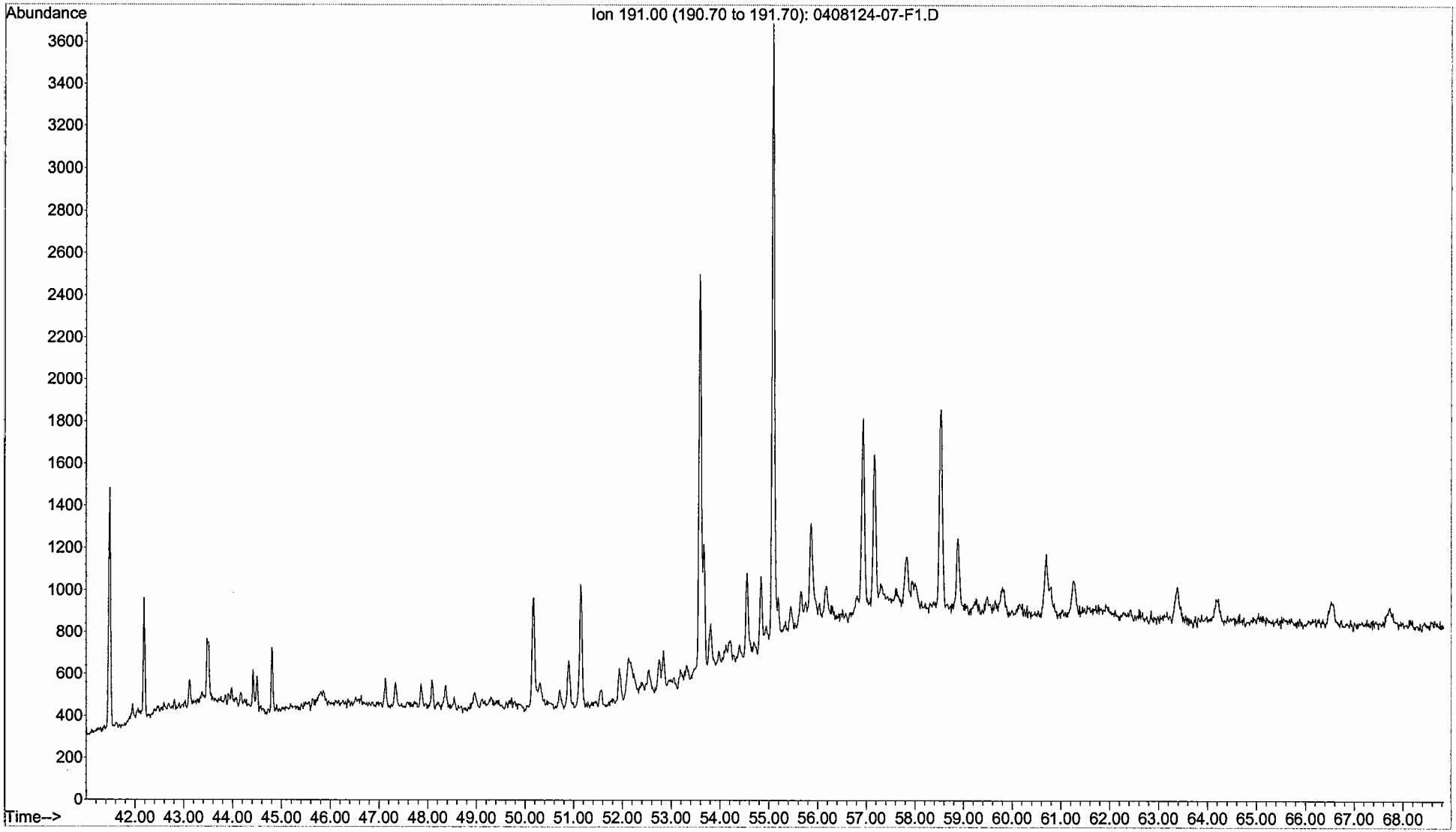
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-05-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916
Sample Name: 0408124-05-RF1
Misc Info : 1X

Triterpanes
DSY-SD-31-082604
0408124-05-F1



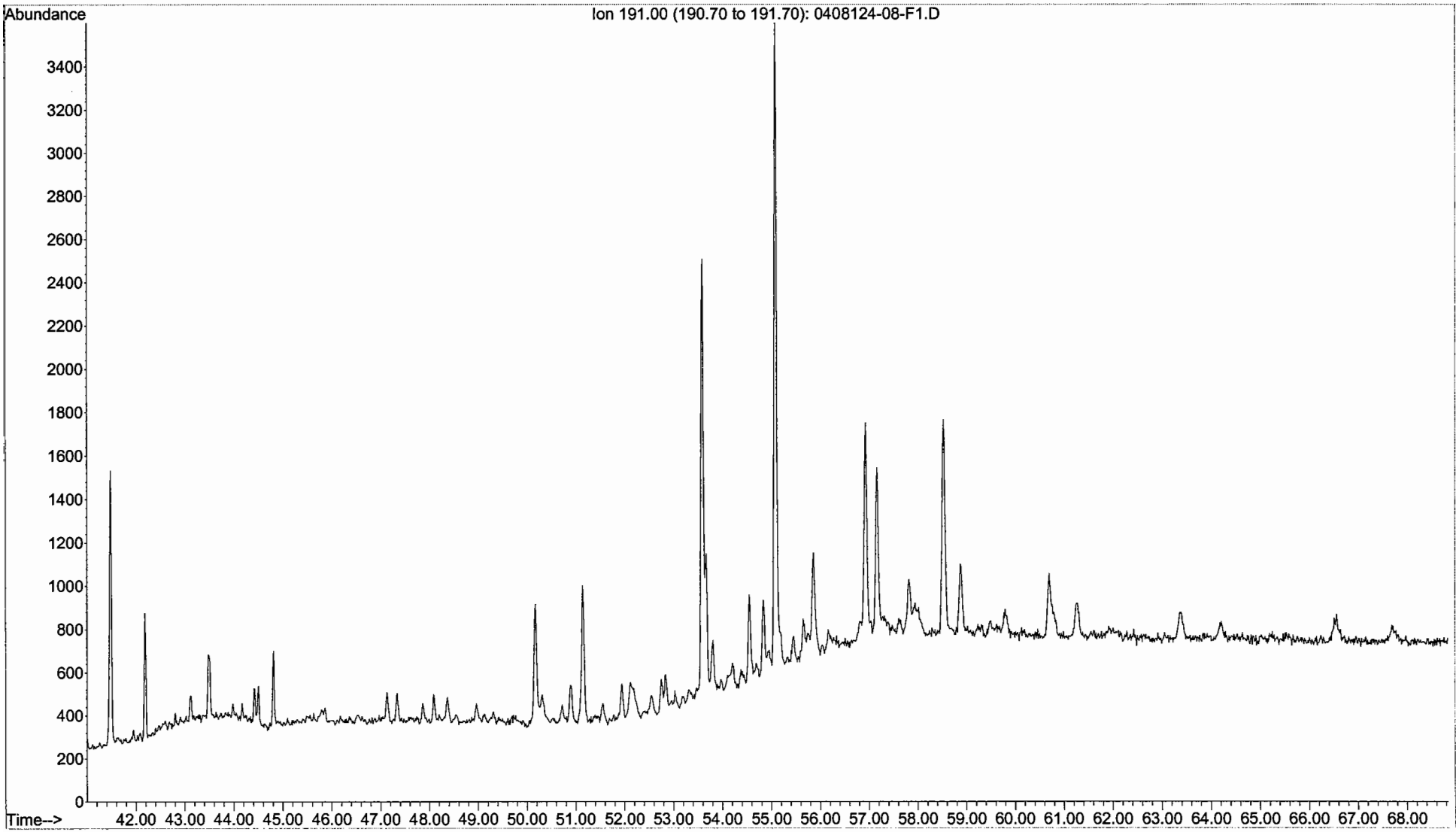
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-07-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916
Sample Name: 0408124-07-RF1
Misc Info : 1X

Triterpanes
DSY-SD-32-082604
0408124-07-F1



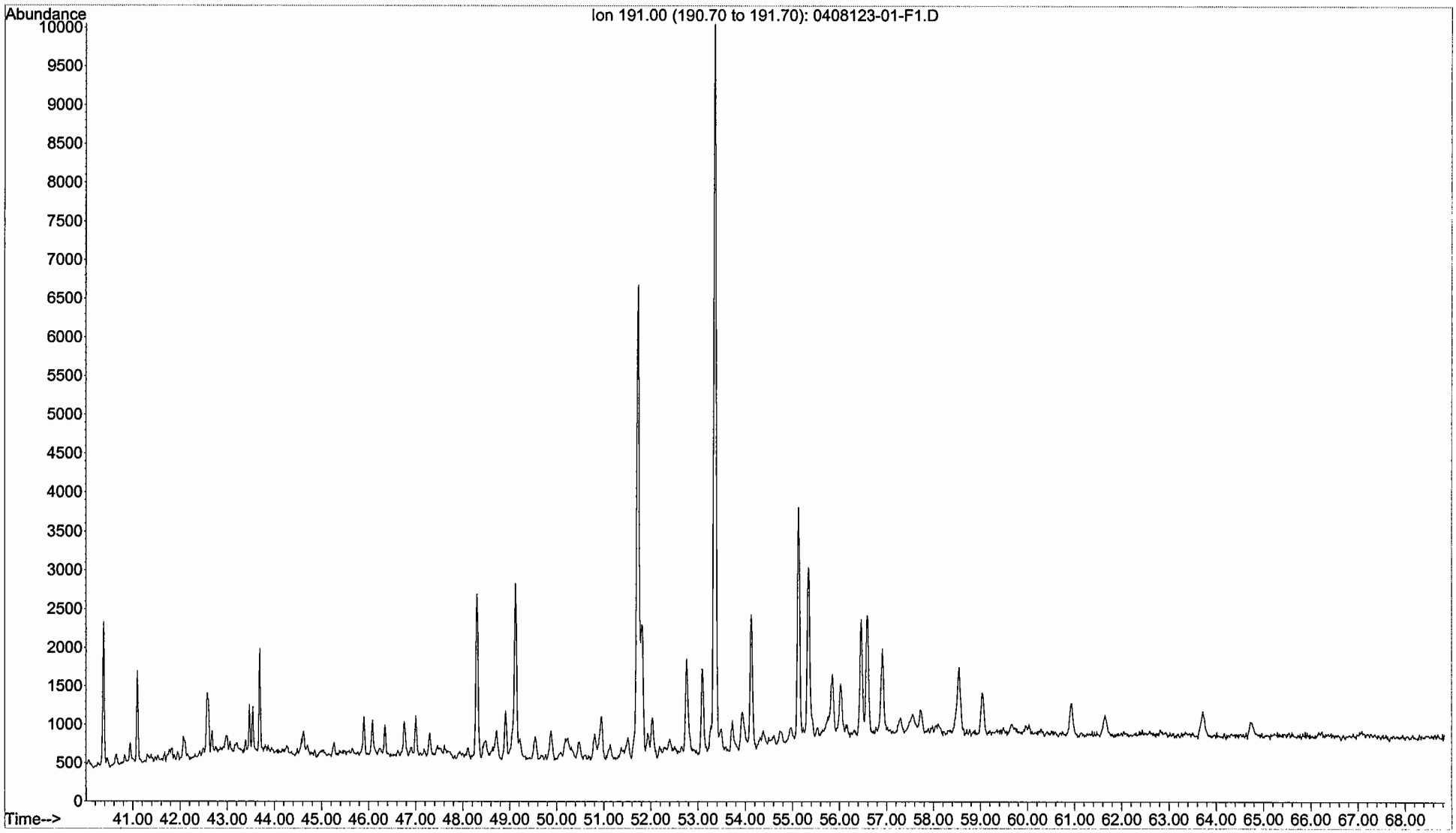
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-08-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916
Sample Name: 0408124-08-RF1
Misc Info : 1X

Triterpanes
DSY-SD-36-082604
0408124-08-F1



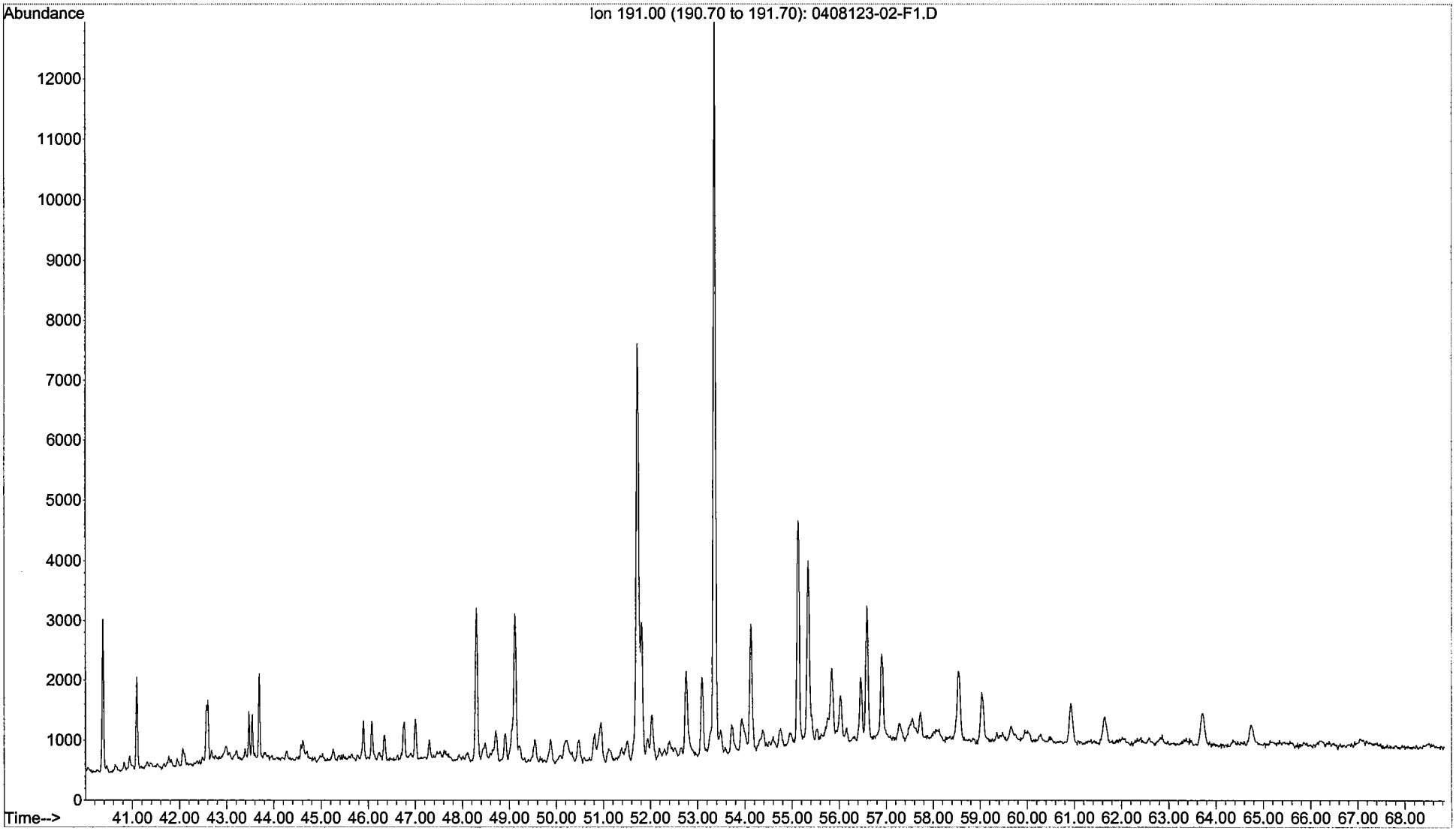
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-01-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916
Sample Name: 0408123-01-RF1
Misc Info : 1X

Triterpanes
DSY-SD-101-0006
0408123-01-F1



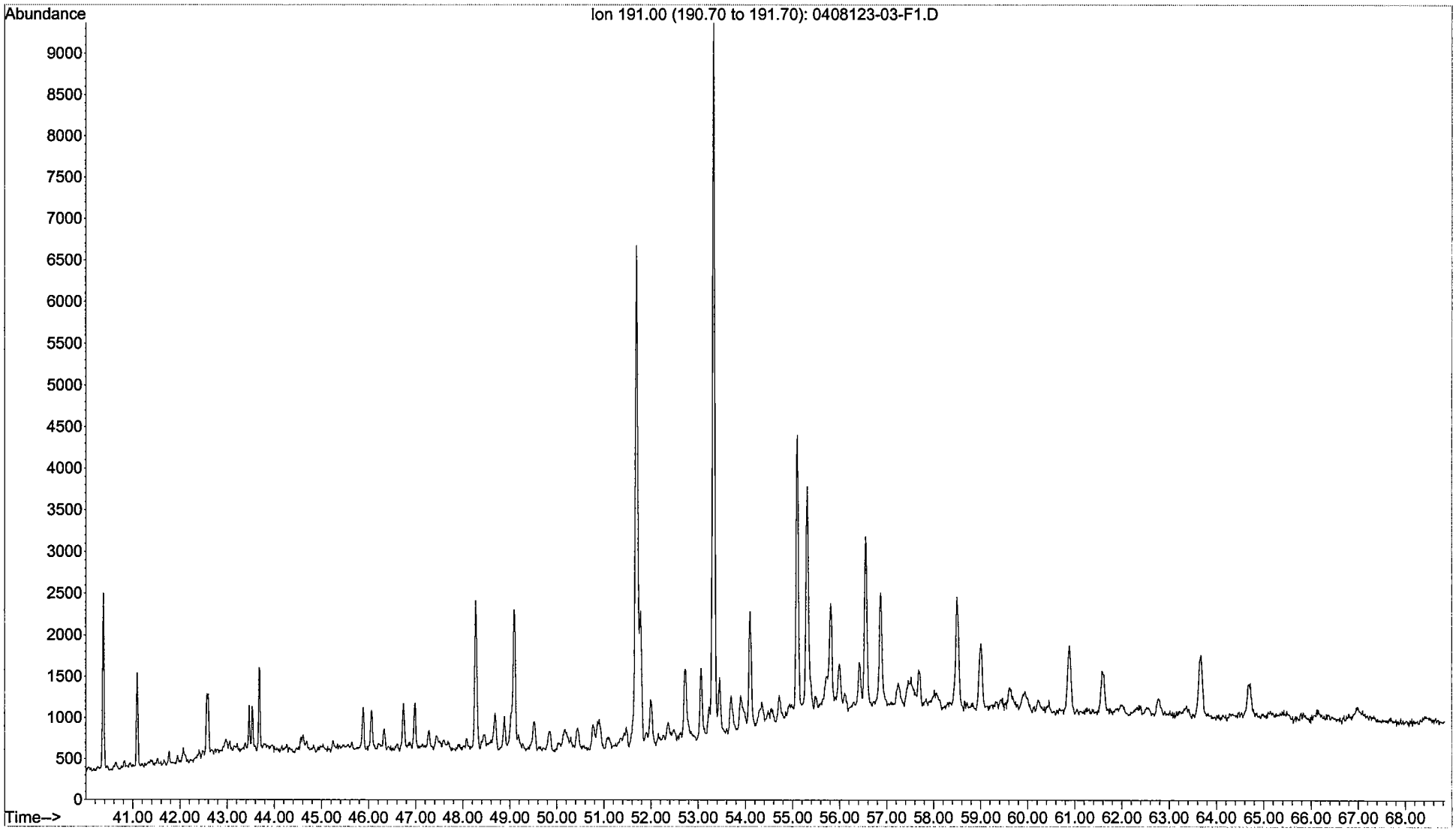
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916
Sample Name: 0408123-02-RF1
Misc Info : 1X

Triterpanes
DSY-SD-101-0612
0408123-02-F1



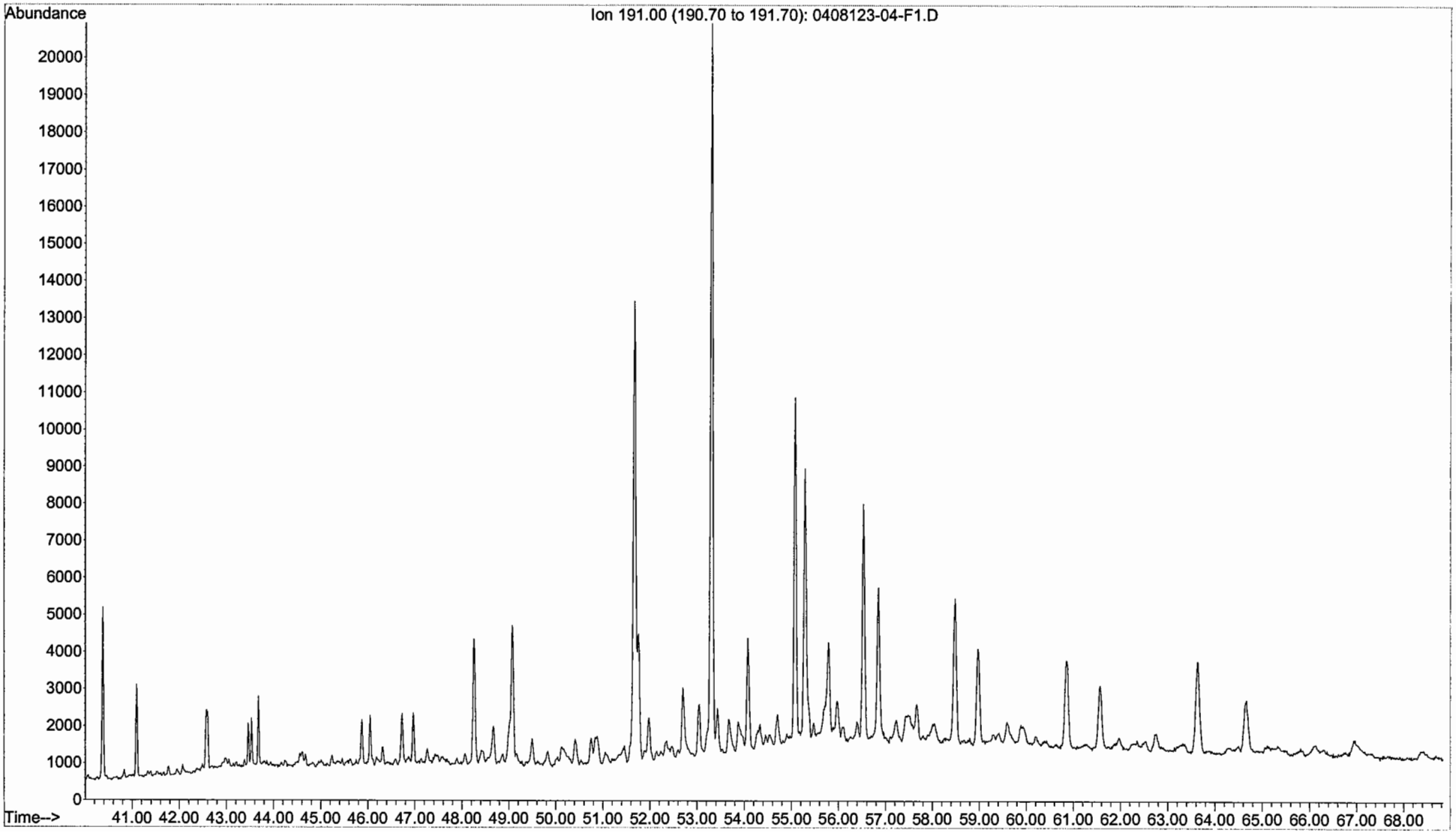
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-03-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916
Sample Name: 0408123-03-RF1
Misc Info : 1X

Triterpanes
DSY-SD-103-0006
0408123-03-F1



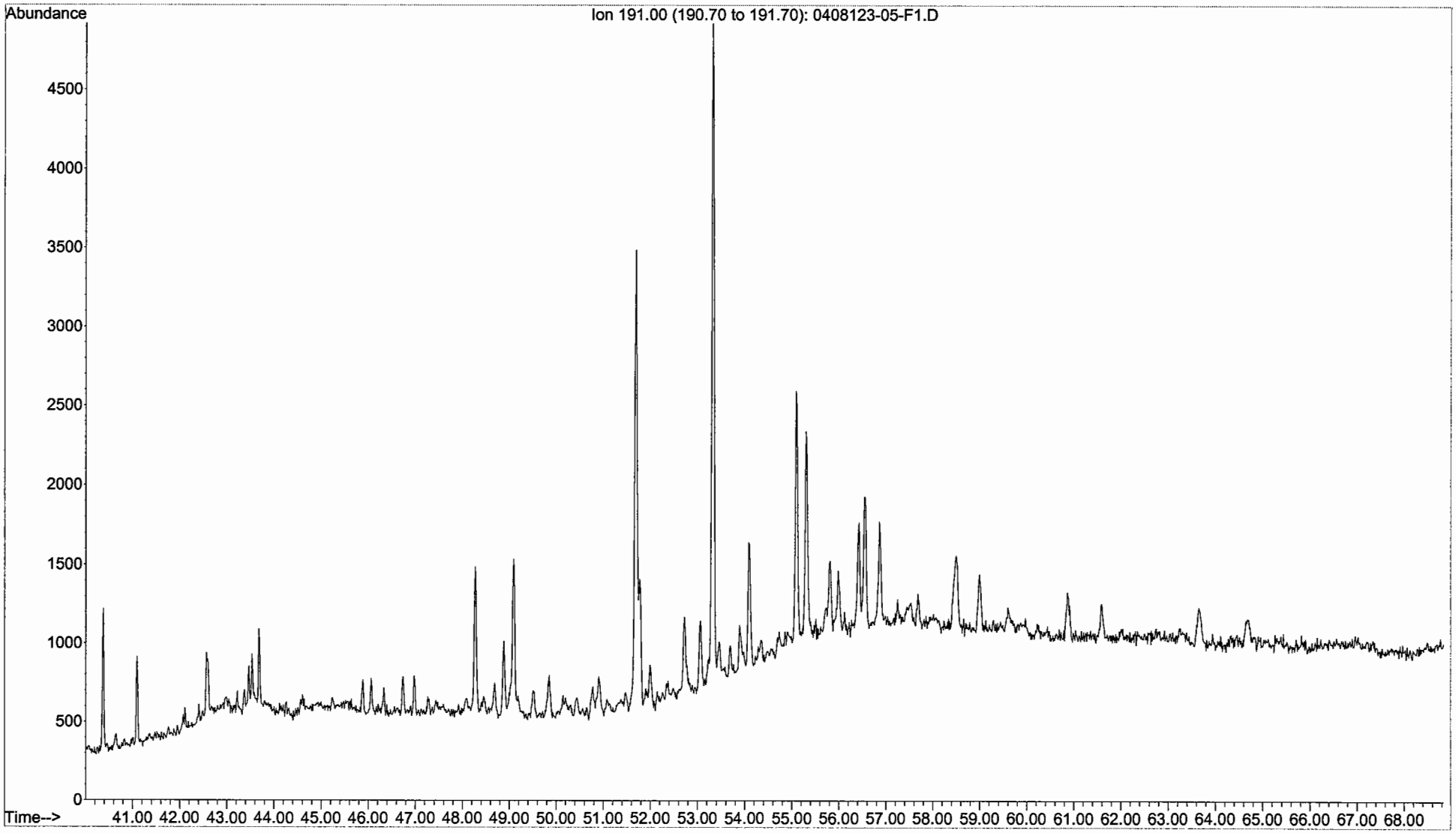
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-04-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916
Sample Name: 0408123-04-RF1
Misc Info : 1X

Triterpanes
DSY-SD-103-0612
0408123-04-F1



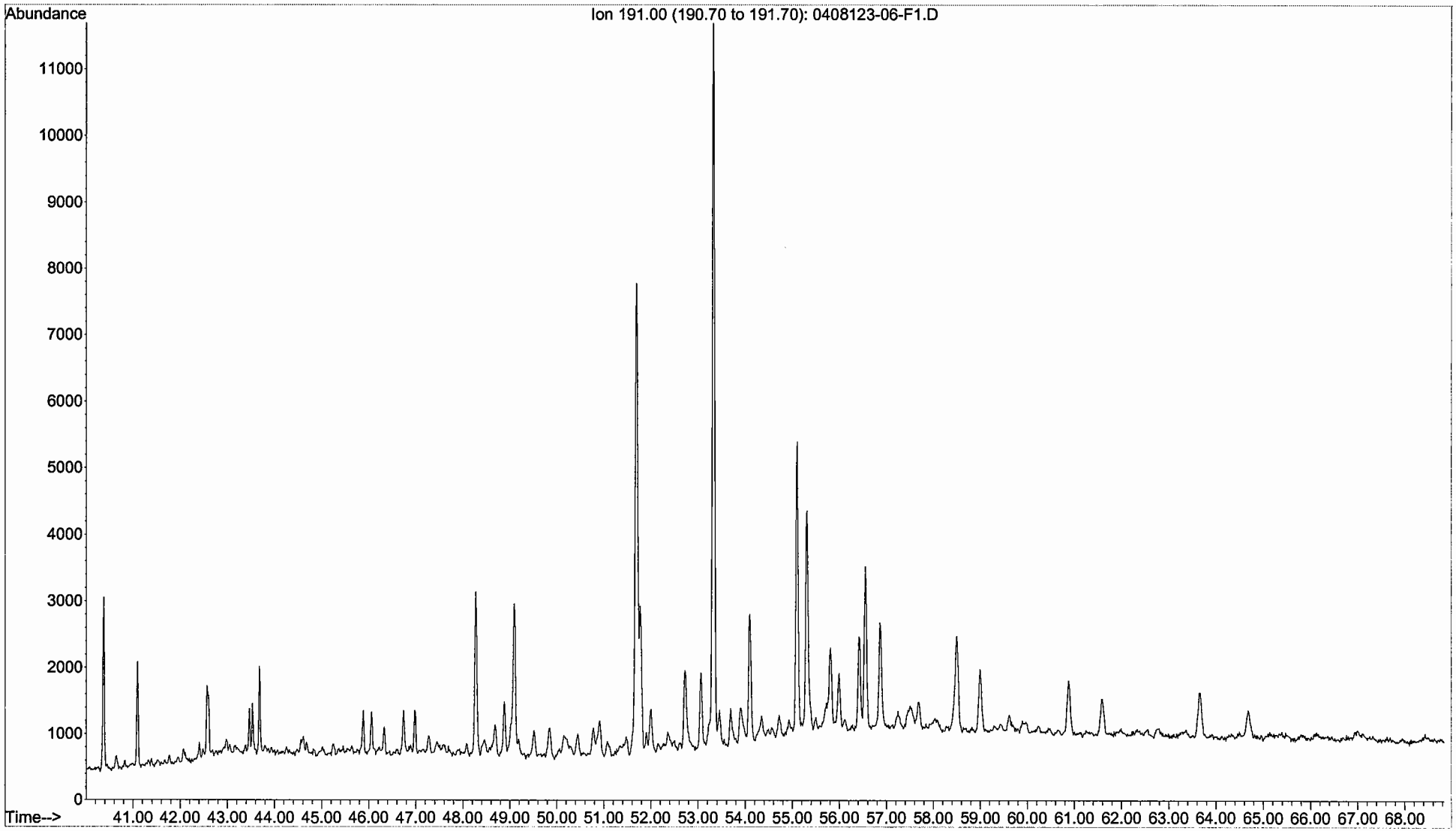
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-05-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916
Sample Name: 0408123-05-RF1
Misc Info : 1X

Triterpanes
DSY-SD-104-0006
0408123-05-F1



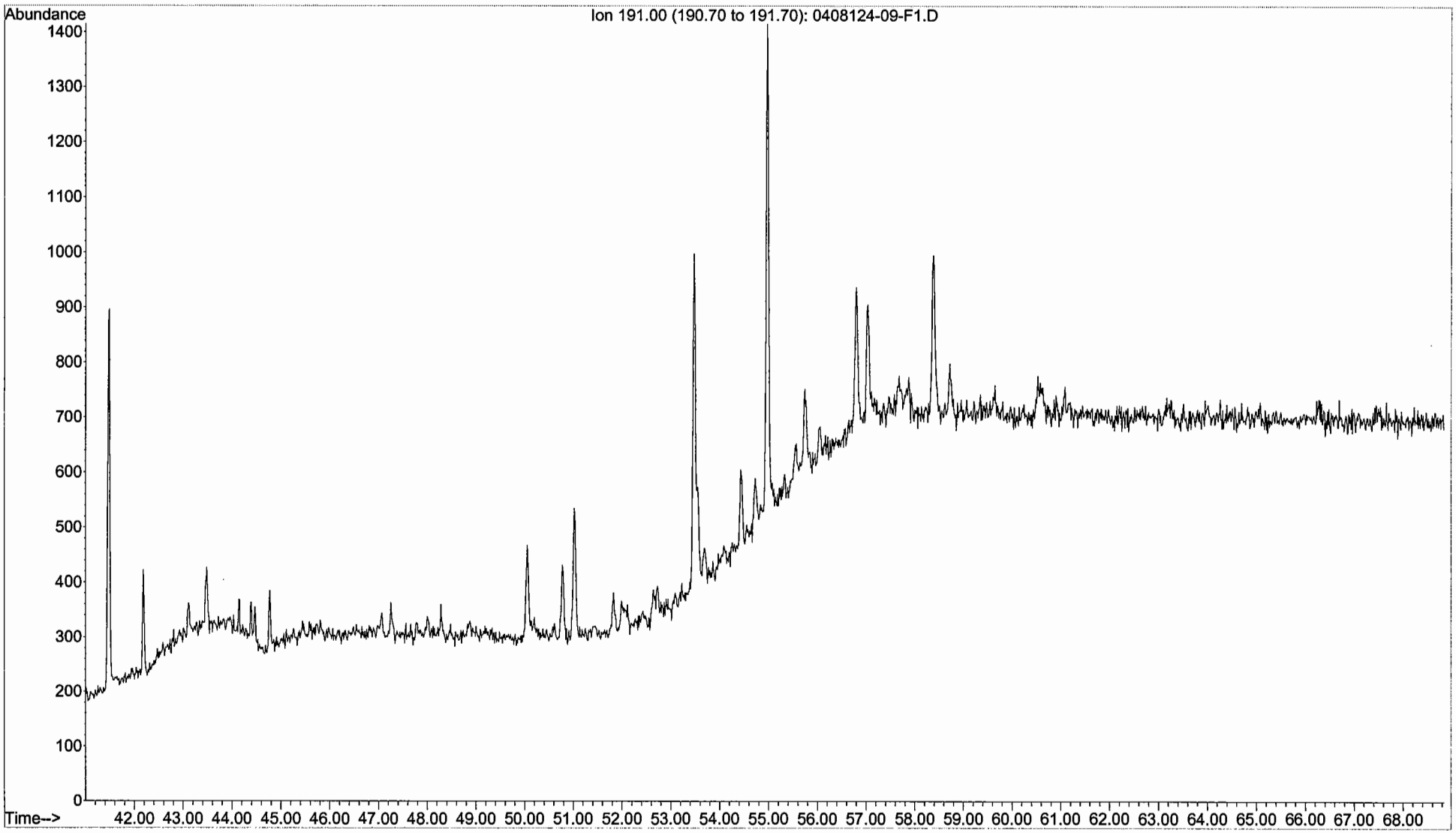
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408123\Biomark
... er\0408123-06-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916
Sample Name: 0408123-06-RF1
Misc Info : 1X

Triterpanes
DSY-SD-104-0612
0408123-06-F1



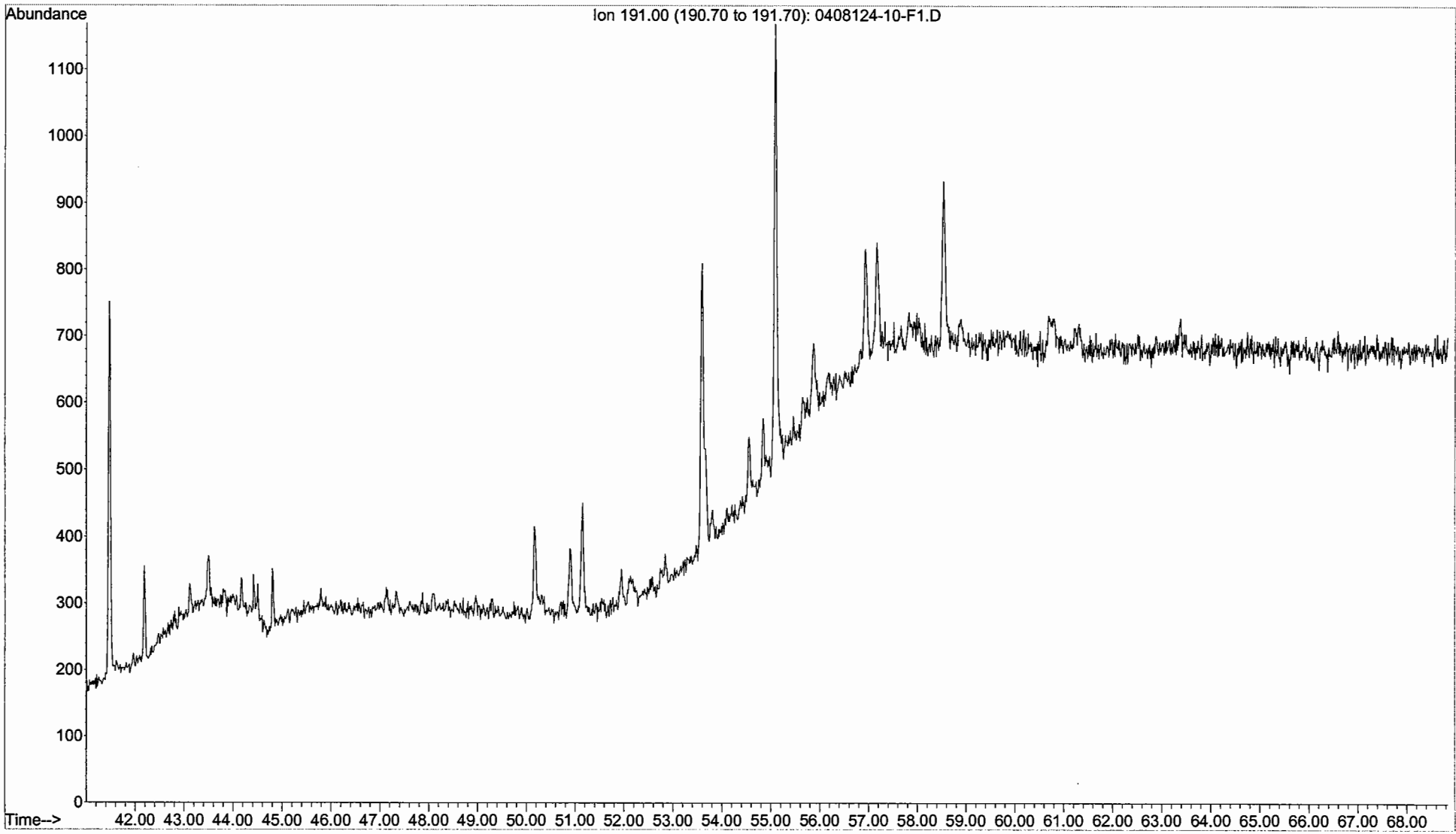
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-09-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916
Sample Name: 0408124-09-RF1
Misc Info : 1X

Triterpanes
DSY-SD-CC01-082604
0408124-09-F1



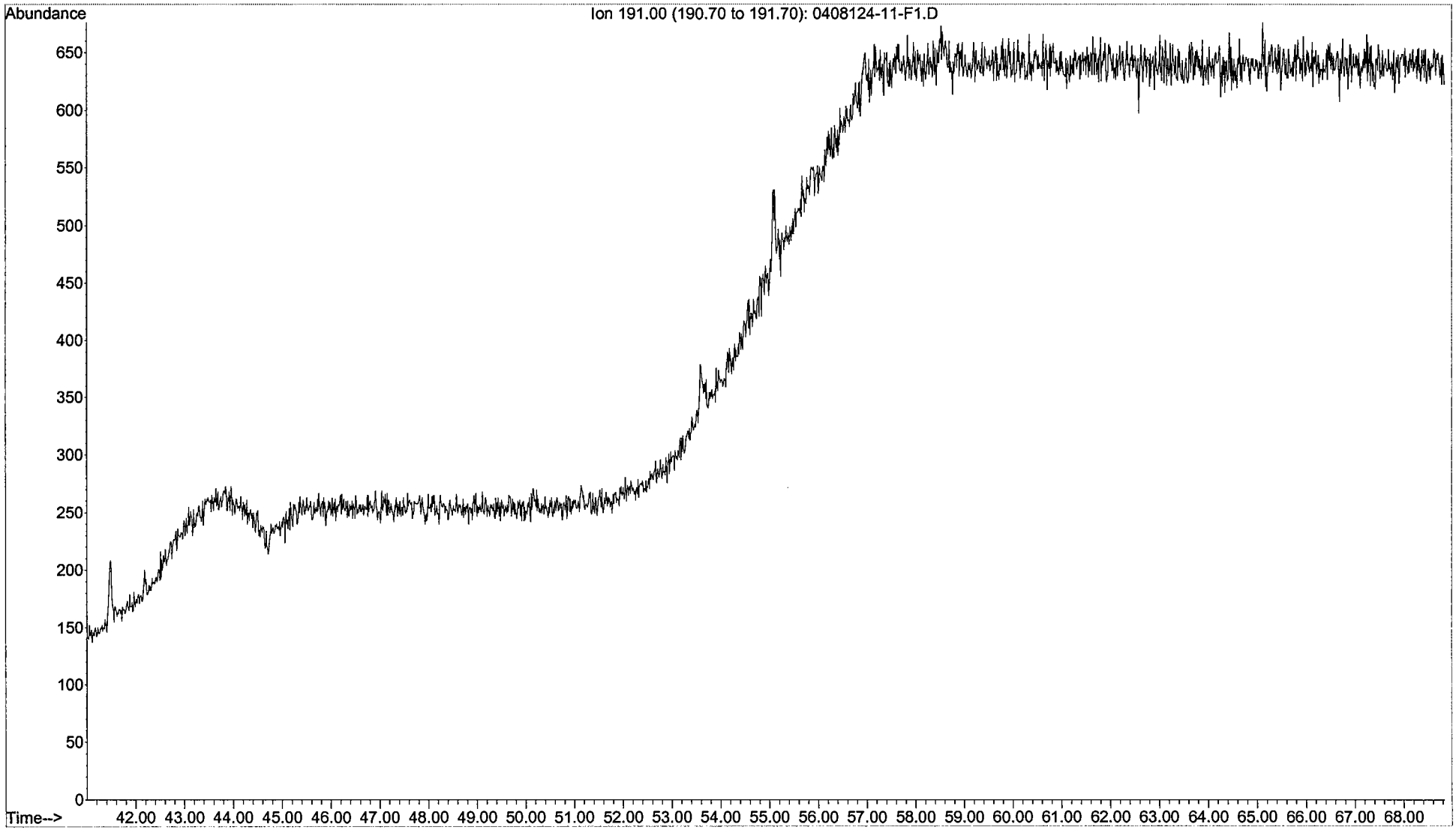
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-10-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916
Sample Name: 0408124-10-RF1
Misc Info : 1X

Triterpanes
DSY-SD-CC02-082604
0408124-10-F1



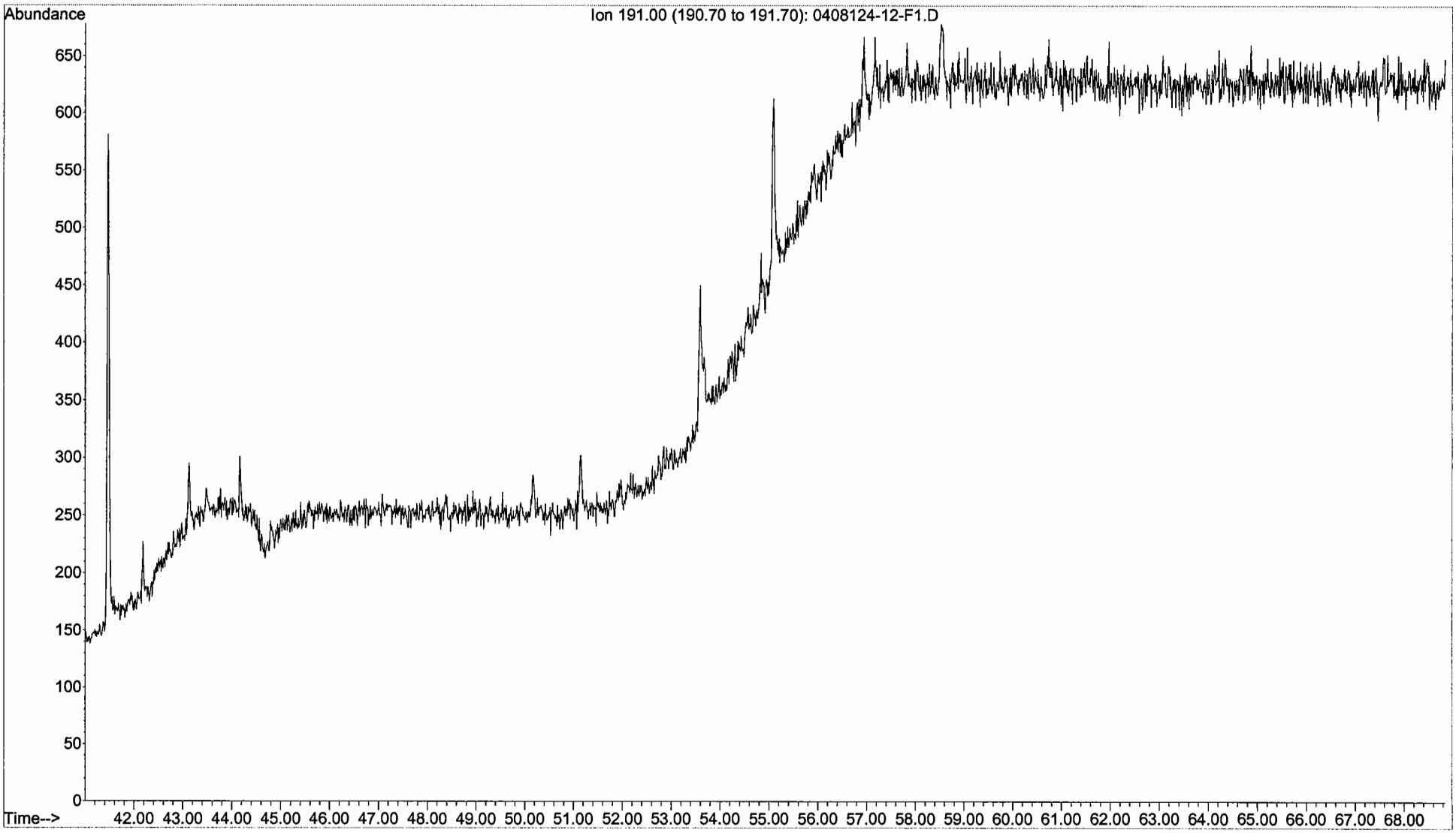
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-11-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916
Sample Name: 0408124-11-RF1
Misc Info : 1X

Triterpanes
DSY-SD-JPC01-082604
0408124-11-F1



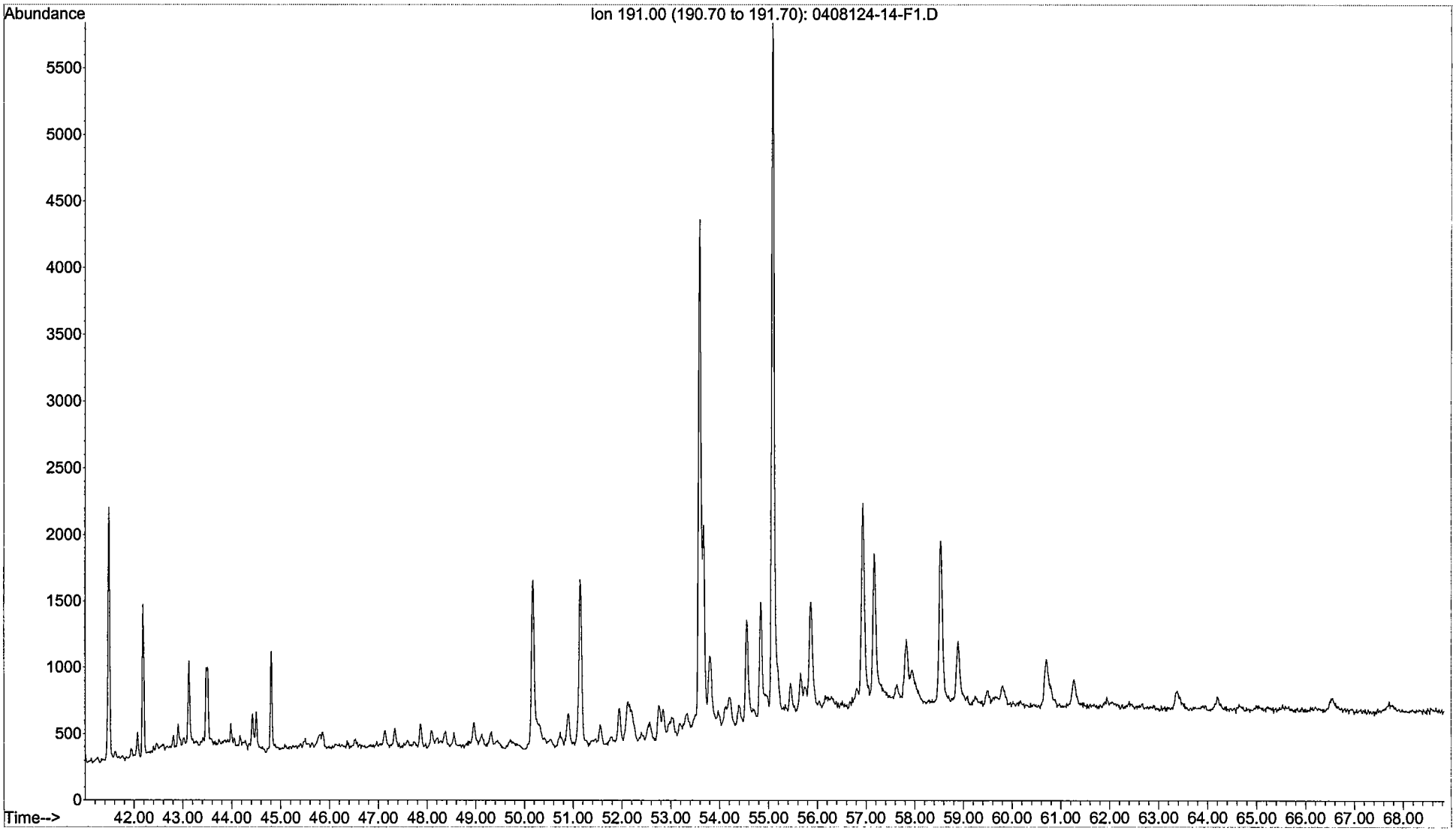
File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-12-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916
Sample Name: 0408124-12-RF1
Misc Info : 1X

Triterpanes
DSY-SD-JPC03-082604
0408124-12-F1



File :\\Boston1\ftp_users\Boston\nfef_whg\Derecktor\0408124\Biomark
... er\0408124-14-F1.D
Operator : BL
Instrument : PAHINST3
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916
Sample Name: 0408124-14-RF1
Misc Info : 1X

Triterpanes
DSY-SD-CH01-082604
0408124-14-F1



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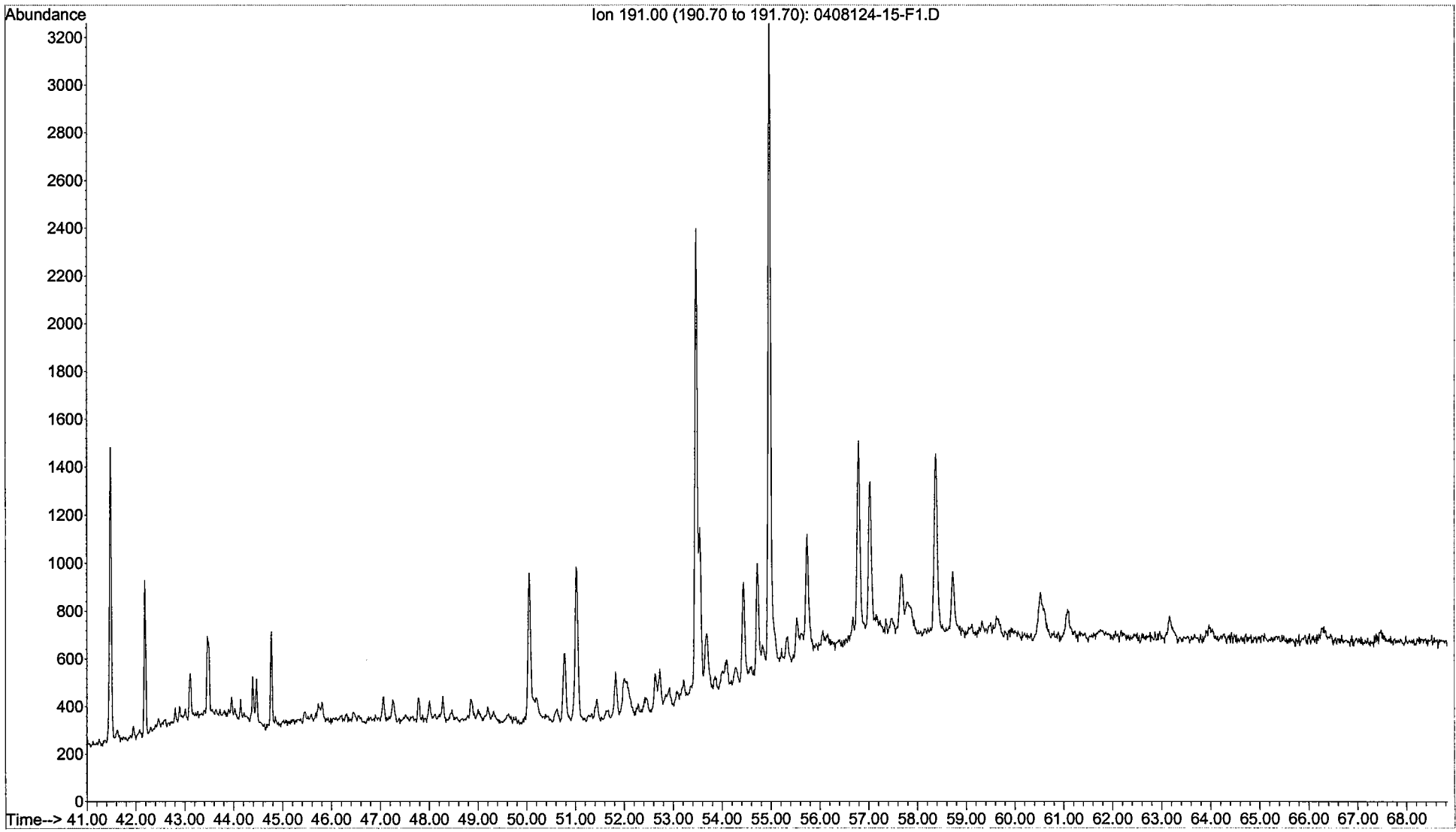
Operator : BL
Instrument : PAHINST3
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916
Sample Name: 0408124-15-RF1
Misc Info : 1X

Triterpanes
DSY-SD-CH02-082604
0408124-15-F1



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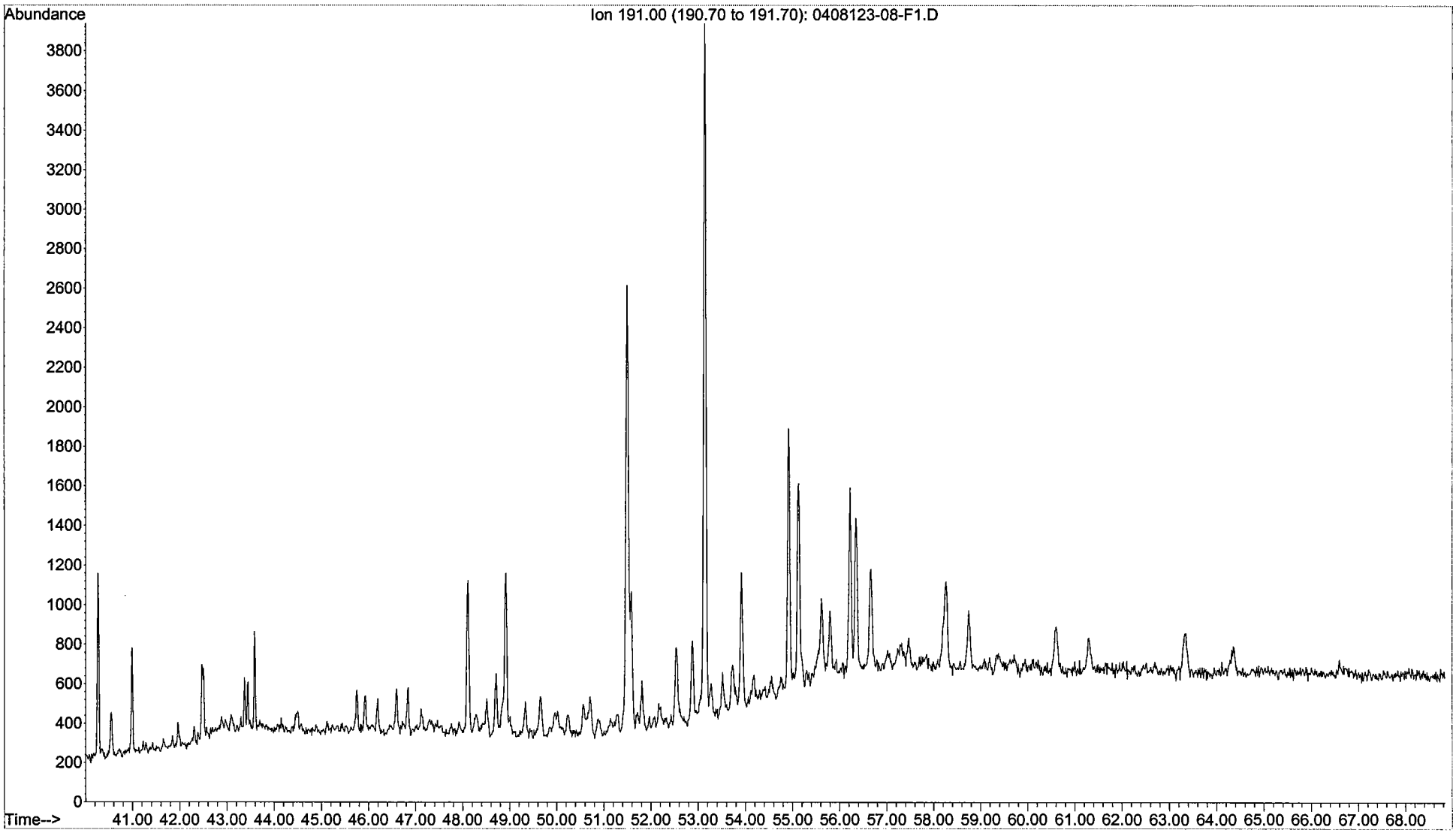
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924
Sample Name: 0408123-08-RF1
Misc Info : 1X

Triterpanes
DSY-SD-DUP01-082504
0408123-08-F1



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Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924
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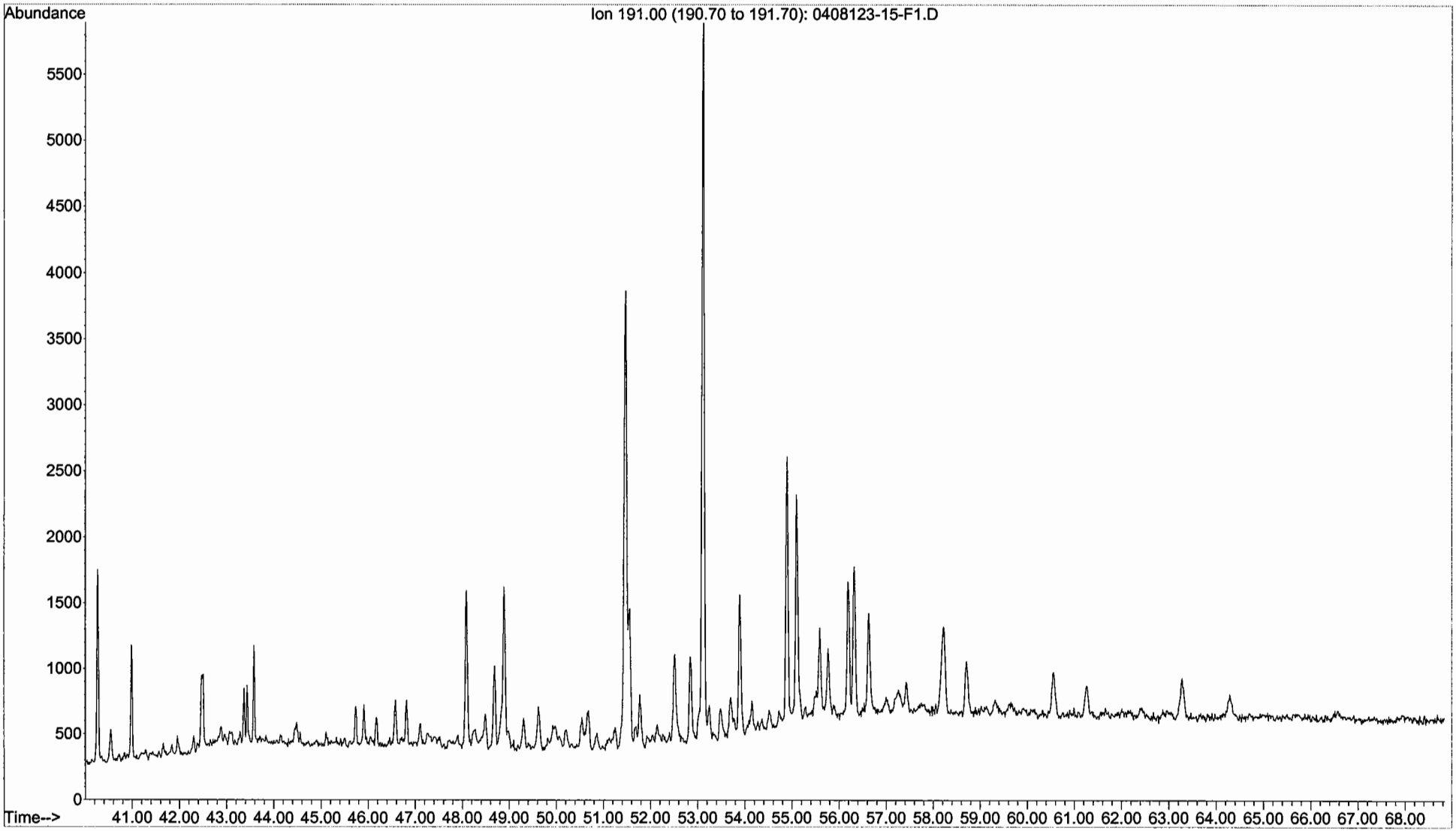
Misc Info : 1X

Triterpanes
DSY-SD-DUP02-082604
0408123-15-F1



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Operator : BL
Instrument : PAHINST3
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Triterpanes
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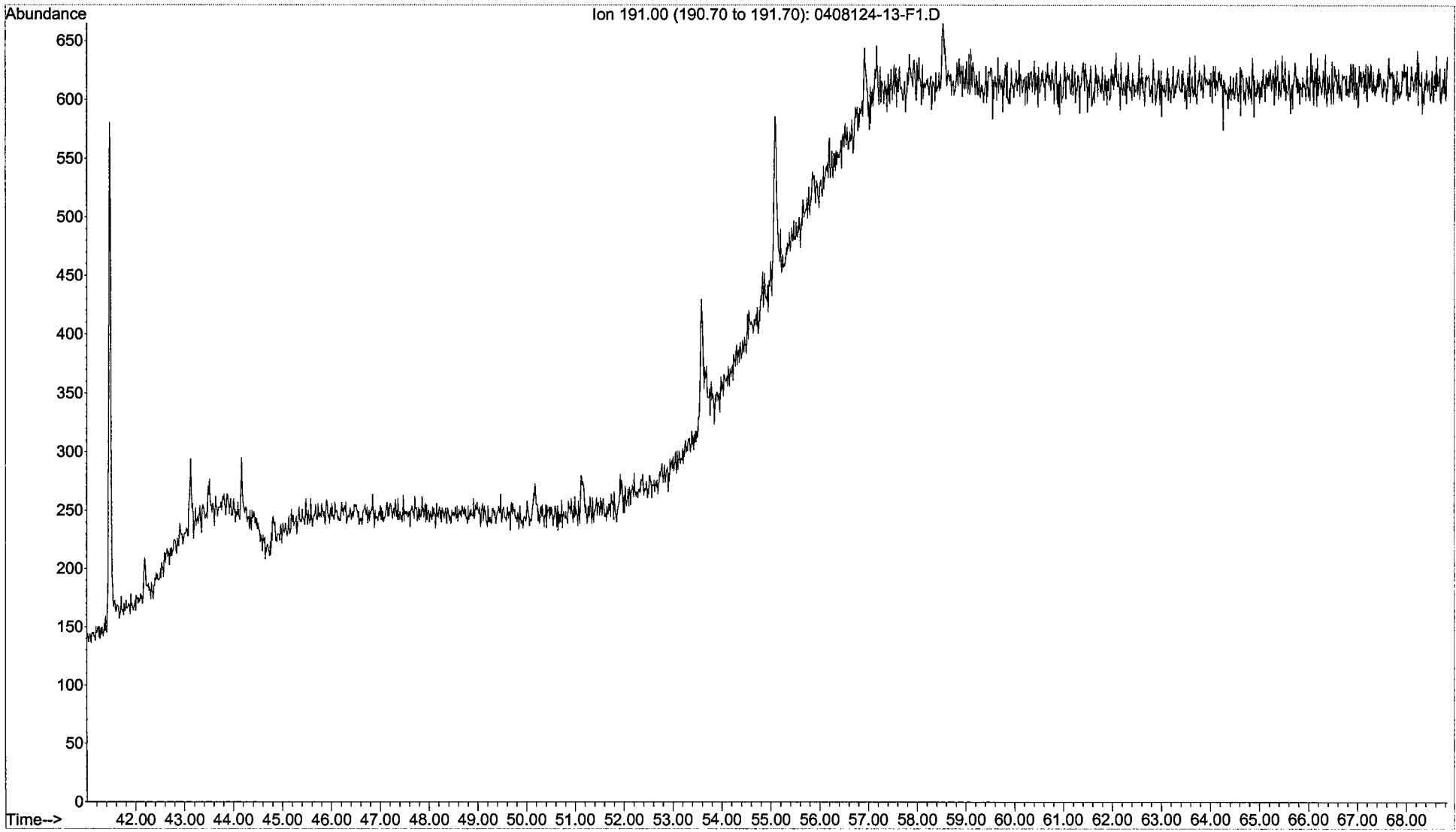
0408124-13-F1



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Sample Name: 0408122-04
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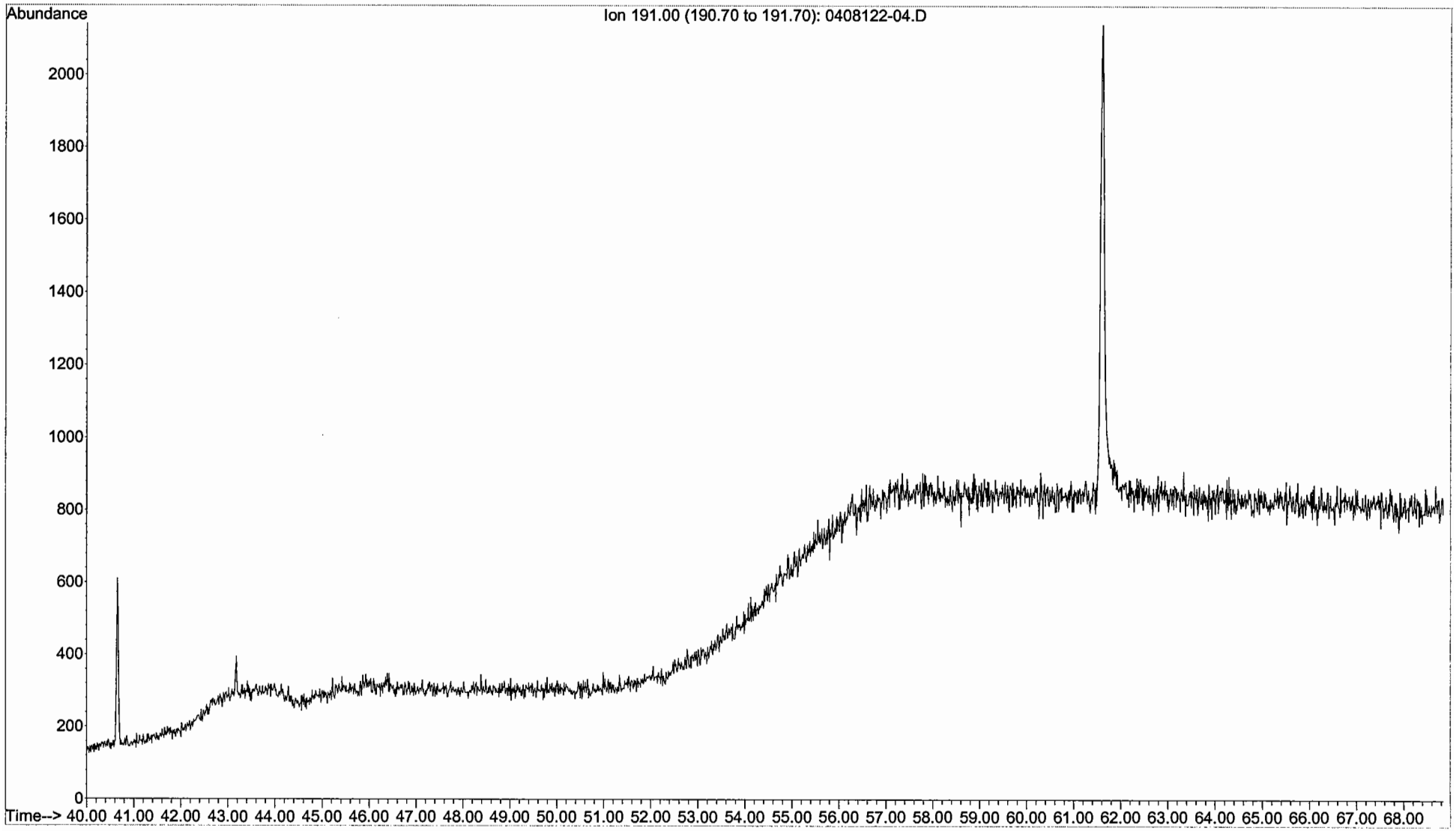
Triterpanes
DSY-SD-FB01-082704
0408122-04



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Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916
Sample Name: SS090704B02-RF1
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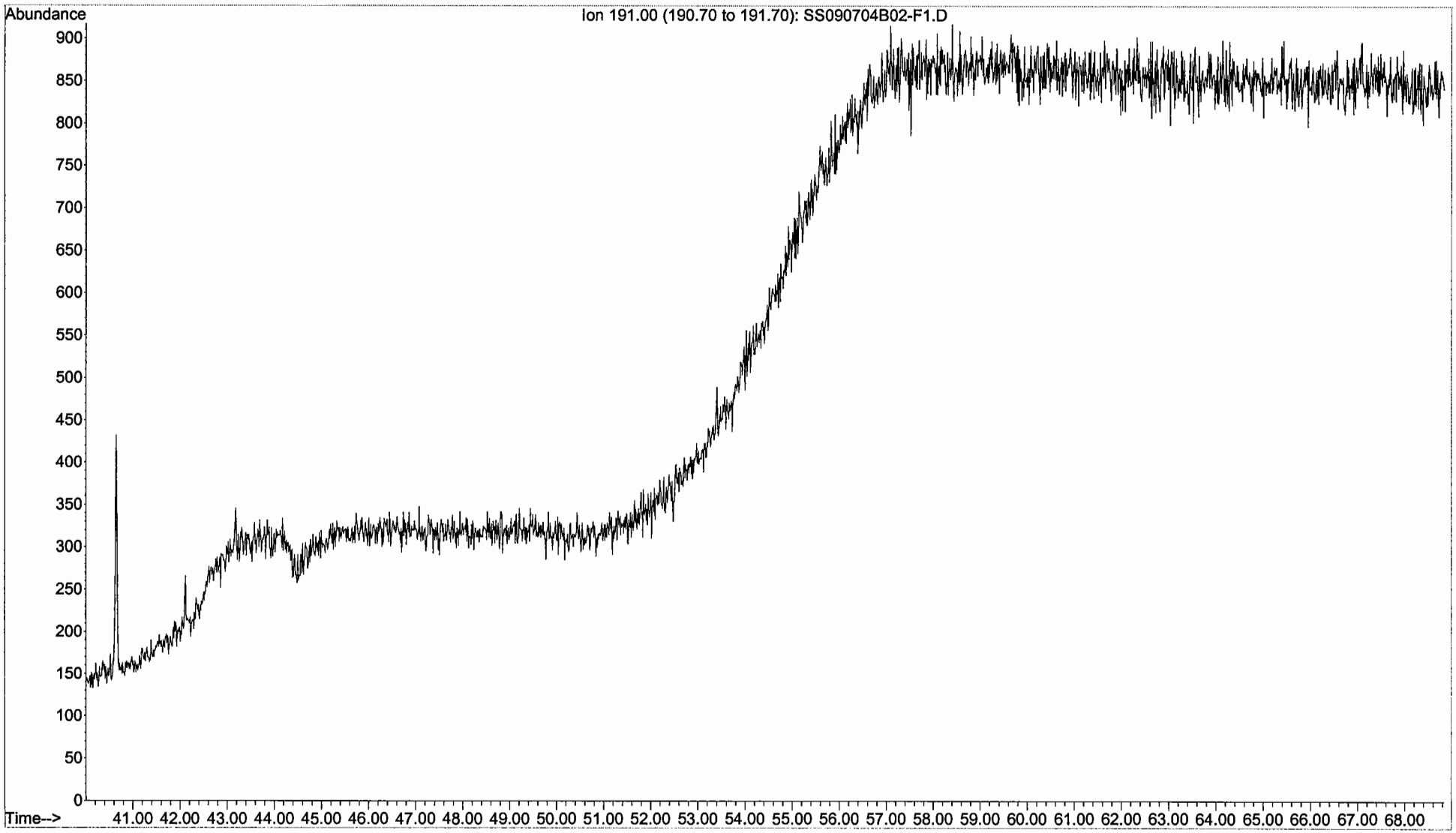
Triterpanes
Procedural Blank
SS090704B02-F1



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... er\SS090704BS02-F1.D
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Instrument : PAHINST1
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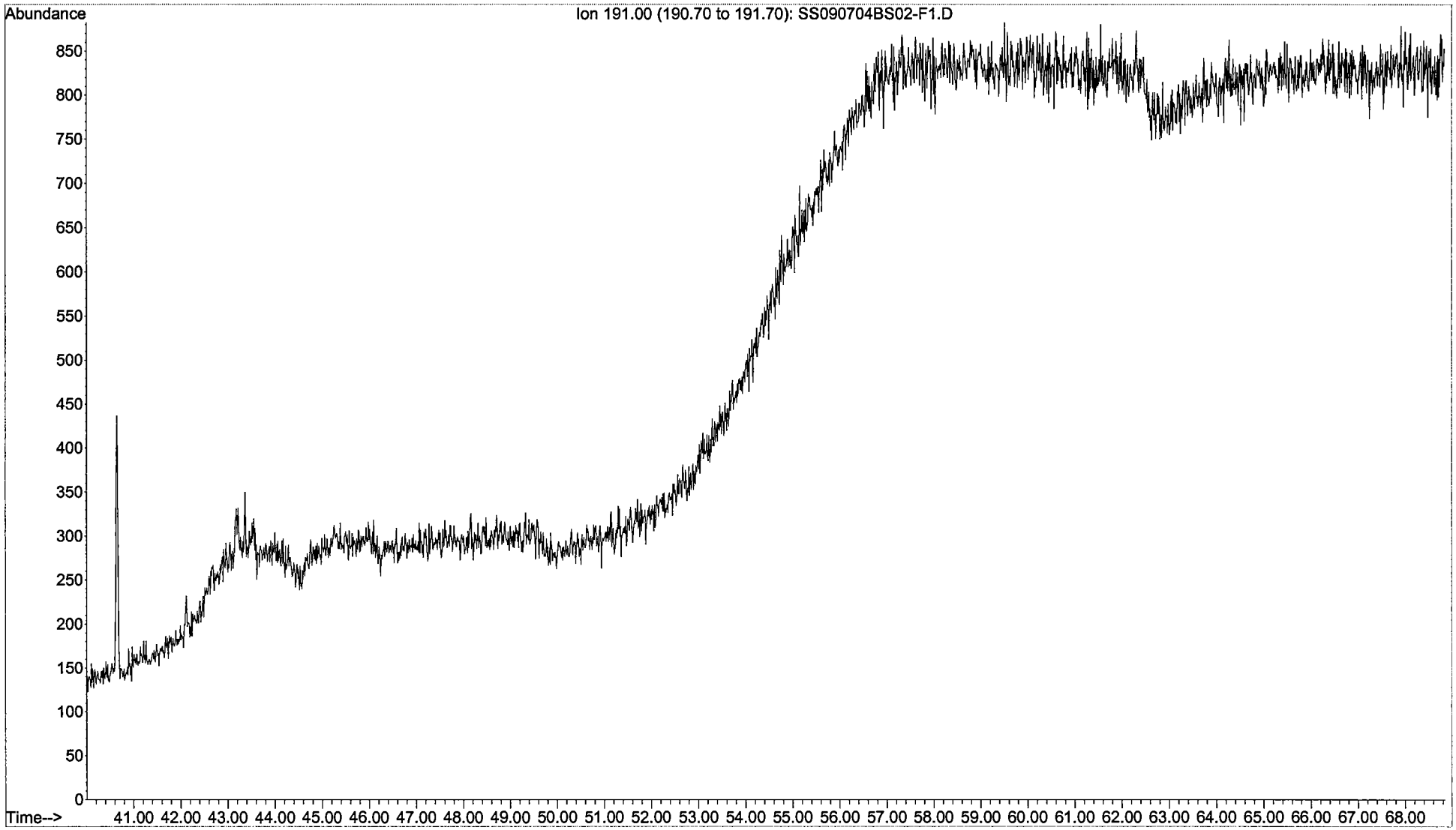
Sample Name: SS090704BS02-RF1
Misc Info : 1X

Triterpanes
Blank Spike
SS090704BS02-F1



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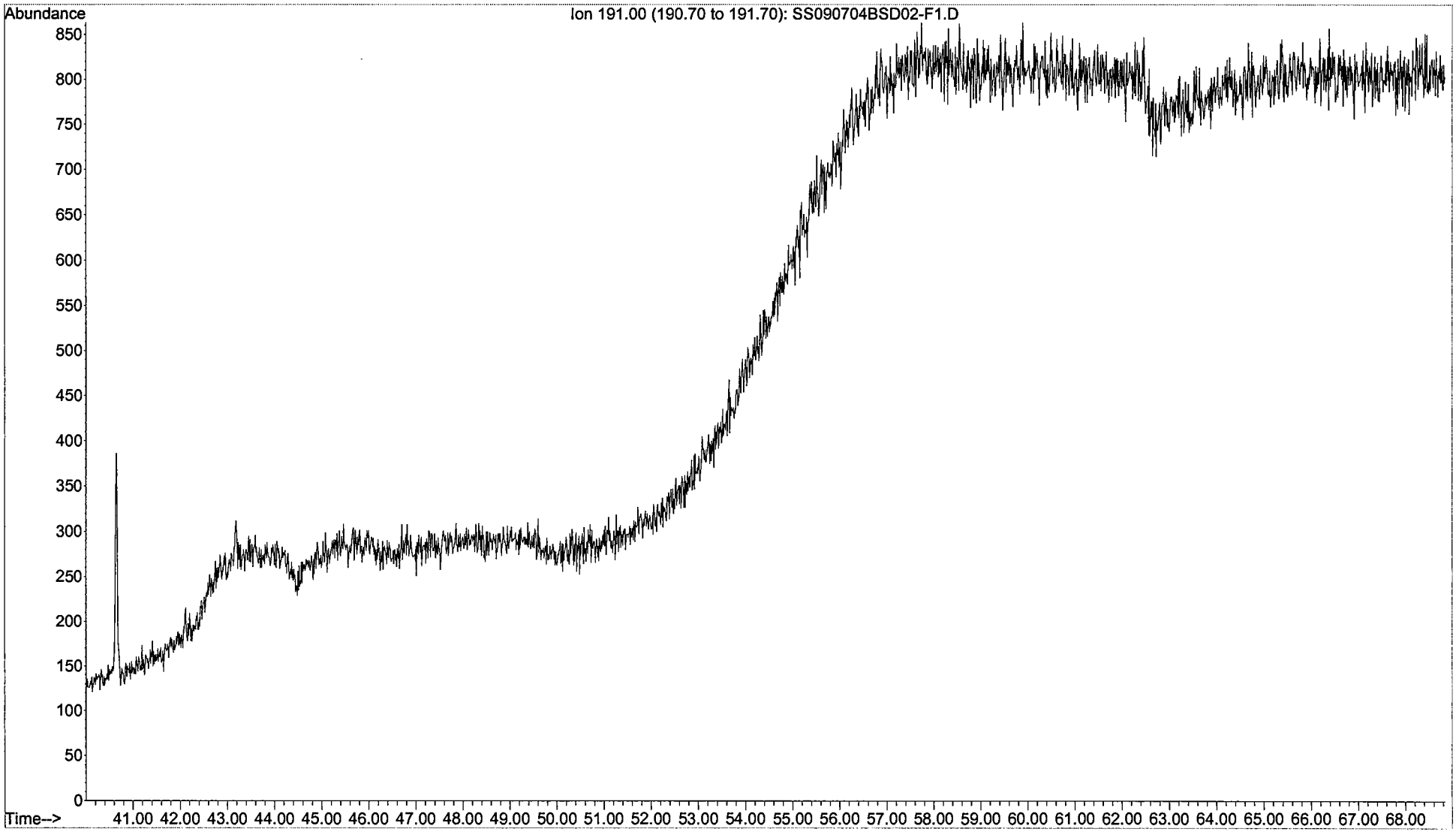
... er\SS090704BSD02-F1.D
Operator : BL
Instrument : PAHINST1
Acquired : 22 Sep 2004 3:04 pm using AcqMethod PAH10916
Sample Name: SS090704BSD02-RF1
Misc Info : 1X

Triterpanes
Blank Spike Duplicate
SS090704BSD02-F1



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Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924
Sample Name: 0408123-11D-RF1
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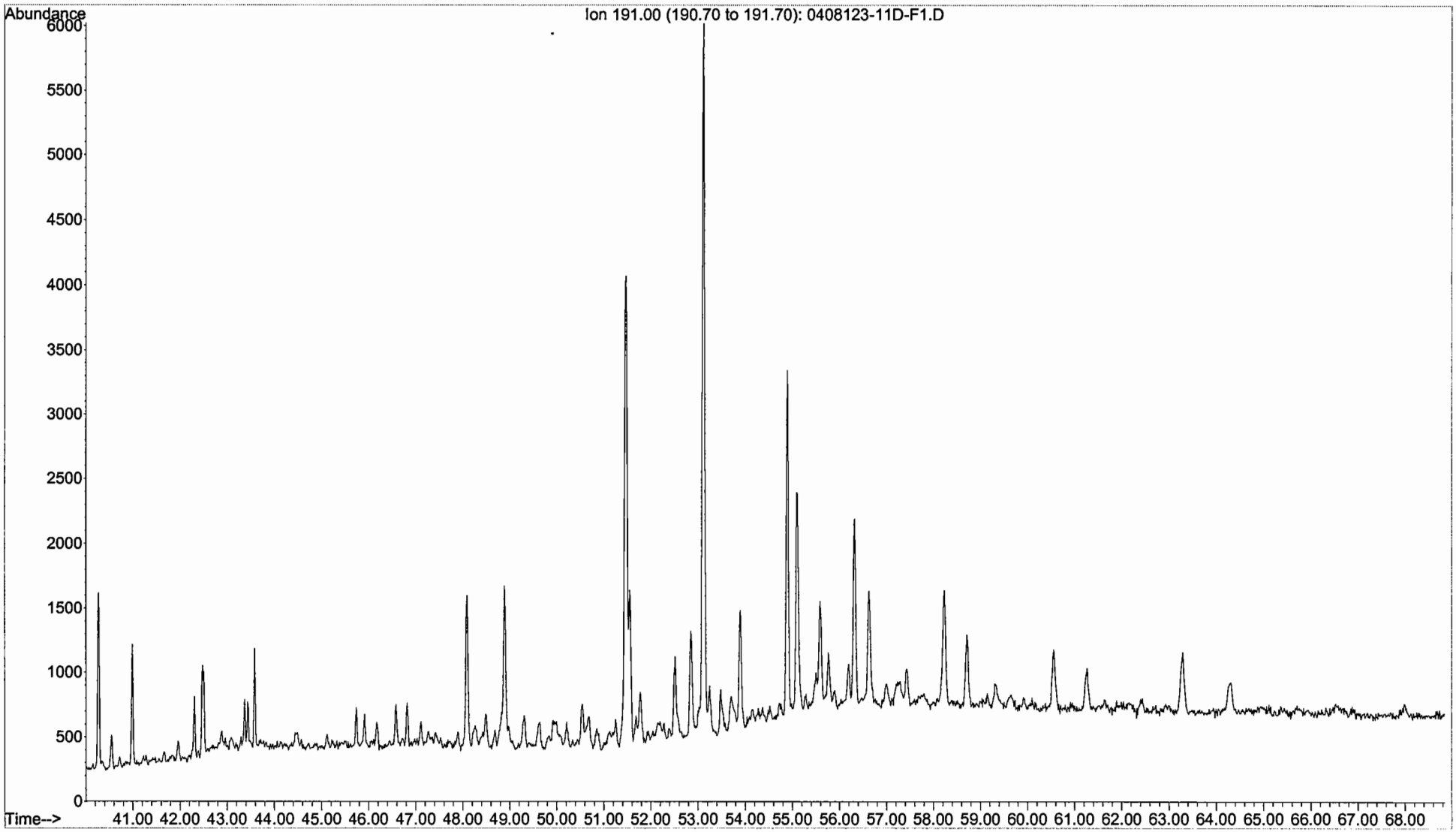
Triterpanes
DSY-SD-09-082604 Duplicate
0408123-11D-F1



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Operator : BL
Instrument : PAHINST1
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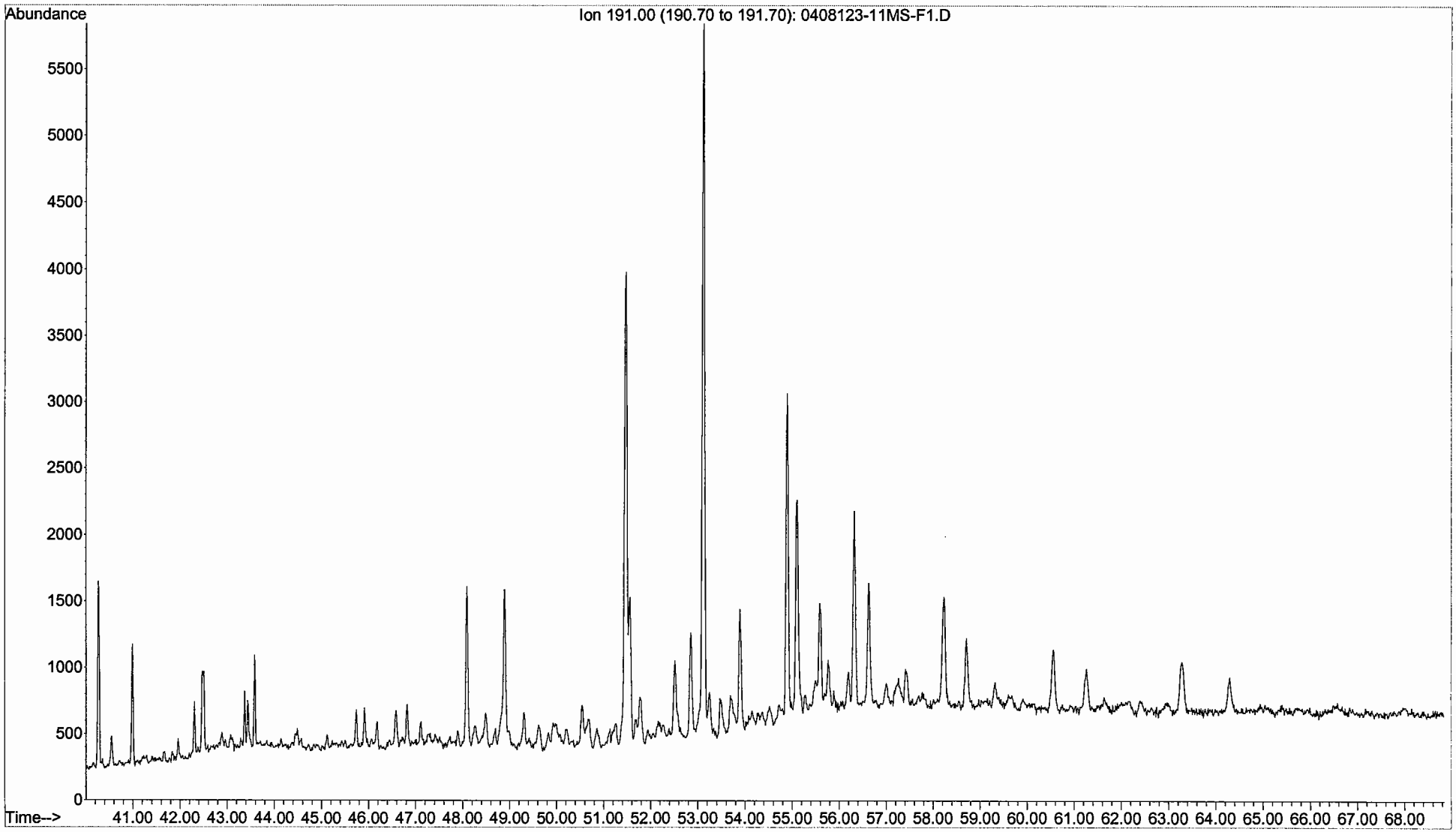
Sample Name: 0408123-11MS-RF1
Misc Info : 1X

Triterpanes
Matrix Spike of DSY-SD-09-082604
0408123-11M-F1



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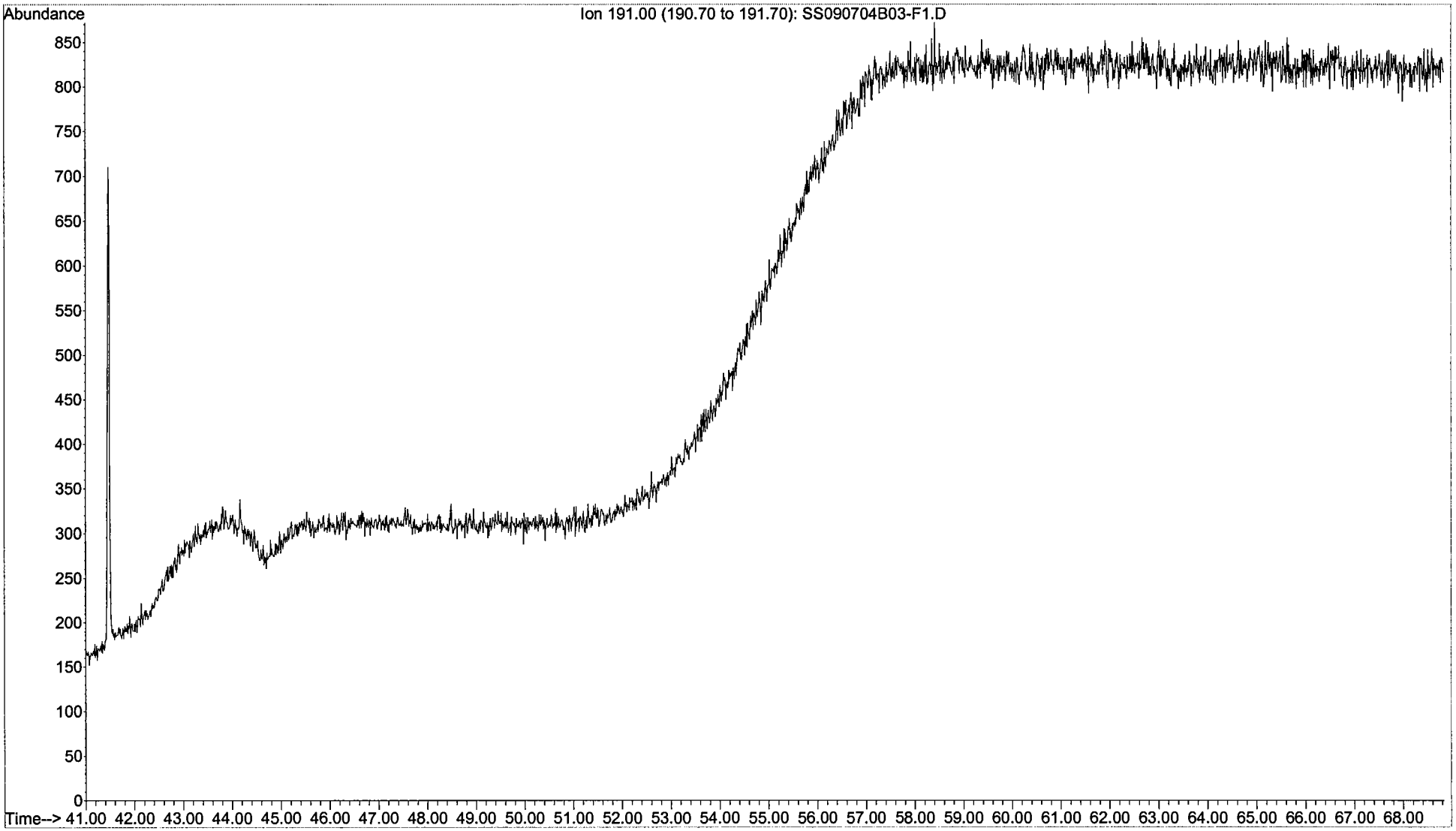
Operator : BL
Instrument : PAHINST3
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916
Sample Name: SS090704B03-RF1
Misc Info : 1X

Triterpanes
Procedural Blank
SS090704B03-F1



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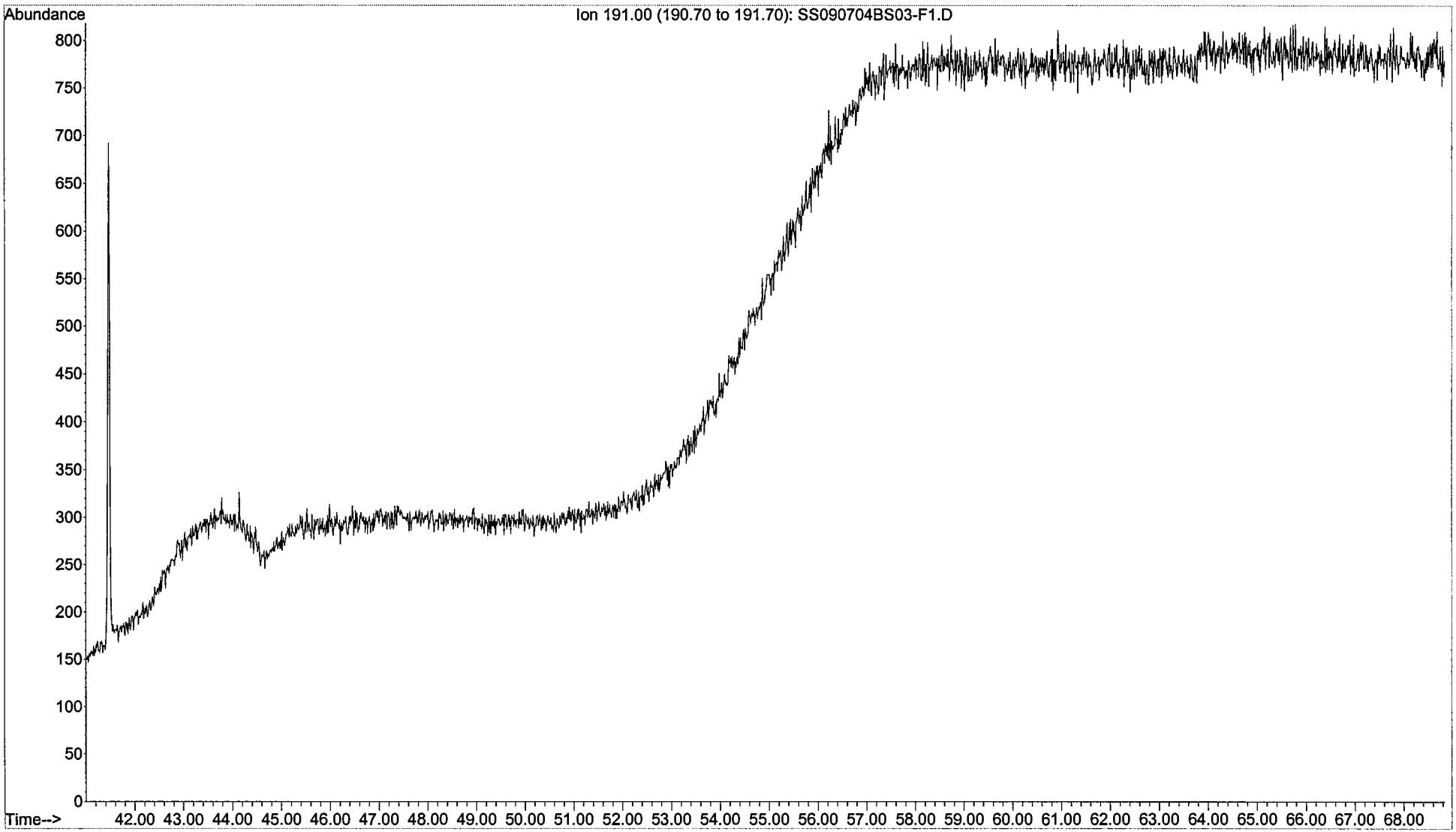
Operator : BL
Instrument : PAHINST3
Acquired : 21 Sep 2004 9:34 pm using AcqMethod PAH30916
Sample Name: SS090704BS03-RF1
Misc Info : 1X

Triterpanes
Blank Spike
SS090704BS03-F1



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Operator    : BL
Instrument  :   PAHINST3
Acquired    : 21 Sep 2004  10:57 pm using AcqMethod PAH30916
Sample Name: SS090704BSD03-RF1
Misc Info   : 1X
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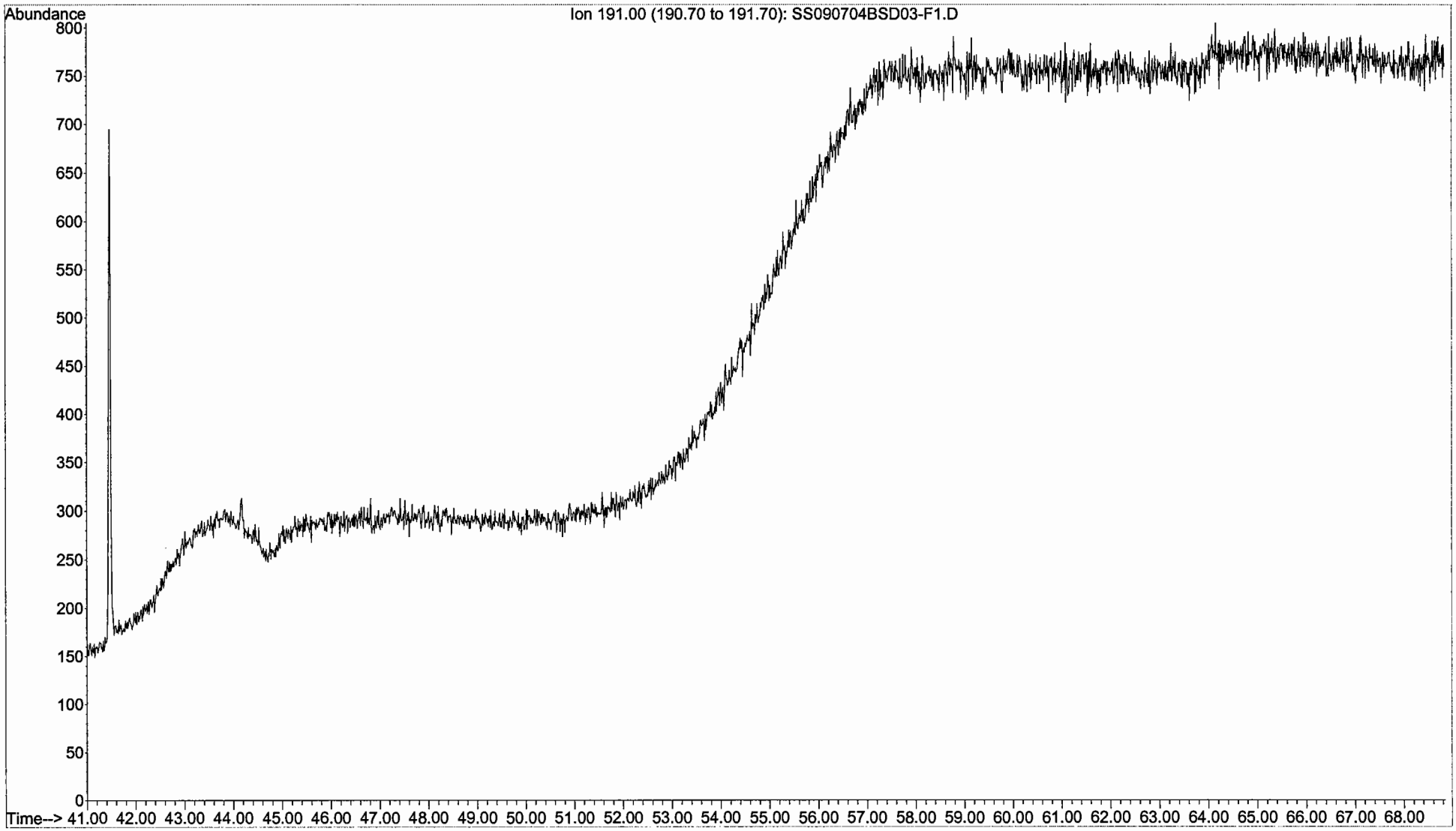
Triterpanes
Blank Spike Duplicate
SS090704BSD03-F1



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Instrument : PAHINST3
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916
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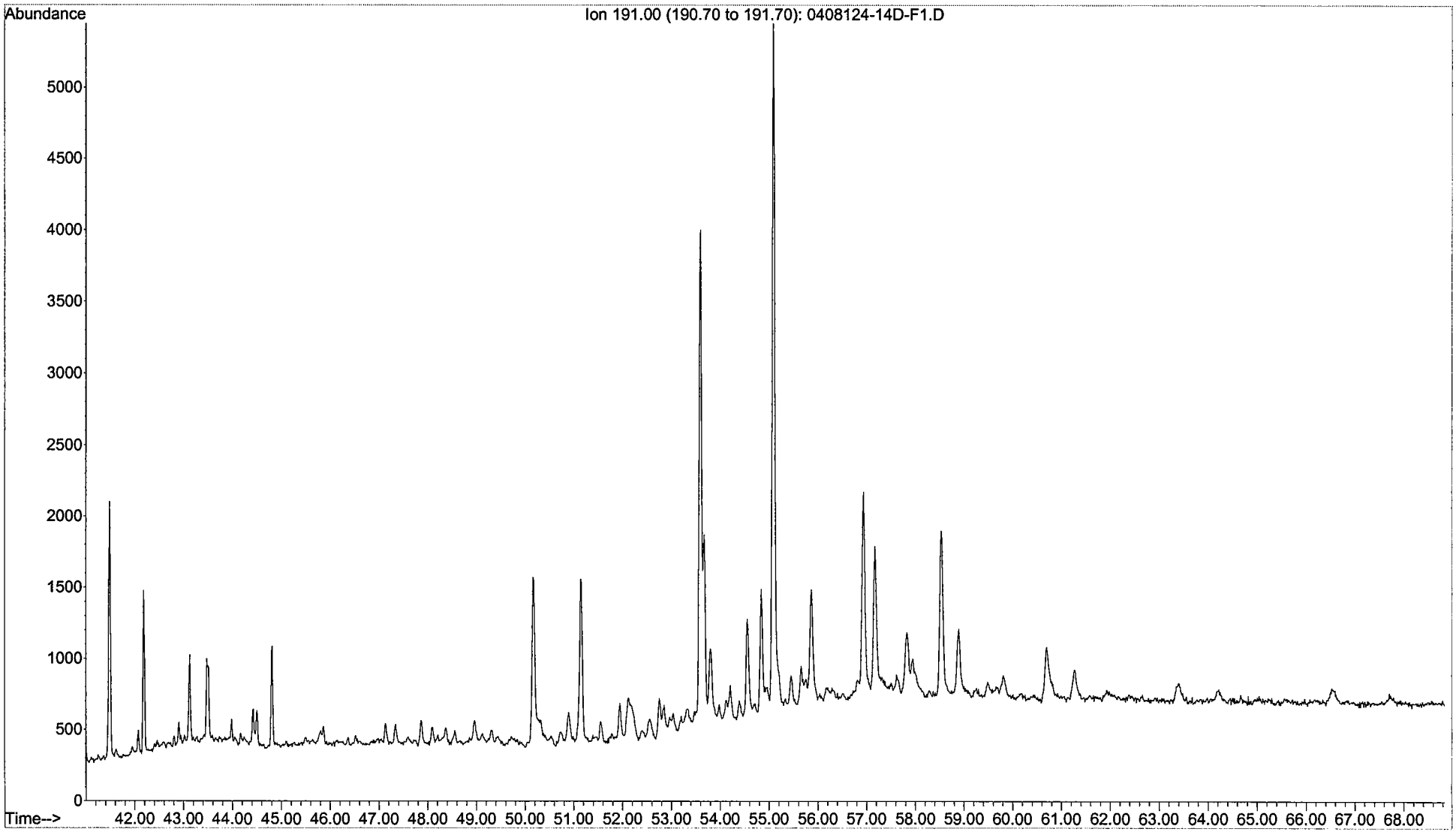
DSY-SD-CH01-082604 Duplicate
0408124-14D-F1



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Operator : BL
Instrument : PAHINST3
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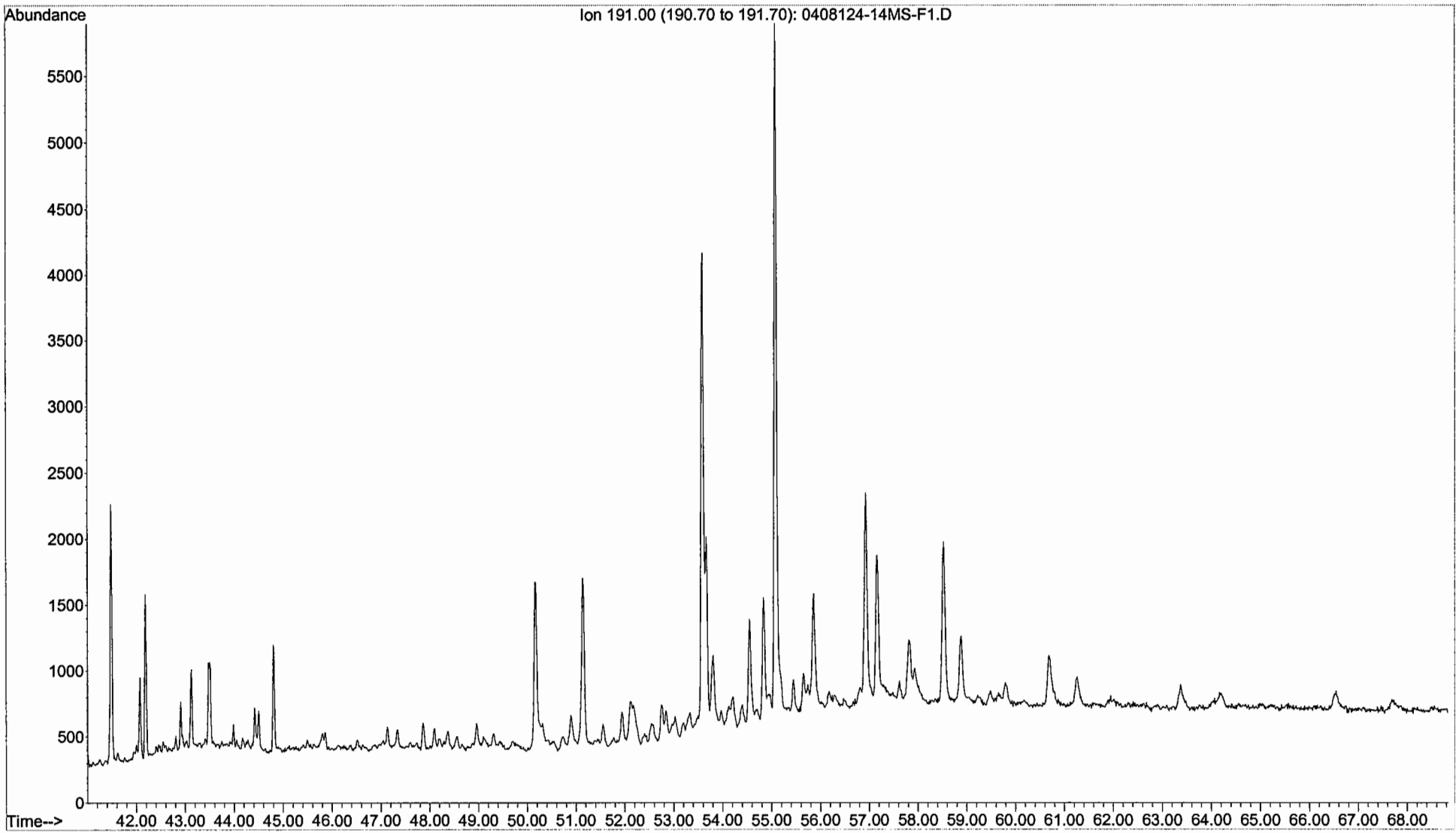
Misc Info : 1X

Triterpanes
Matrix Spike of DSY-SD-CH01-082604
0408124-14M-F1



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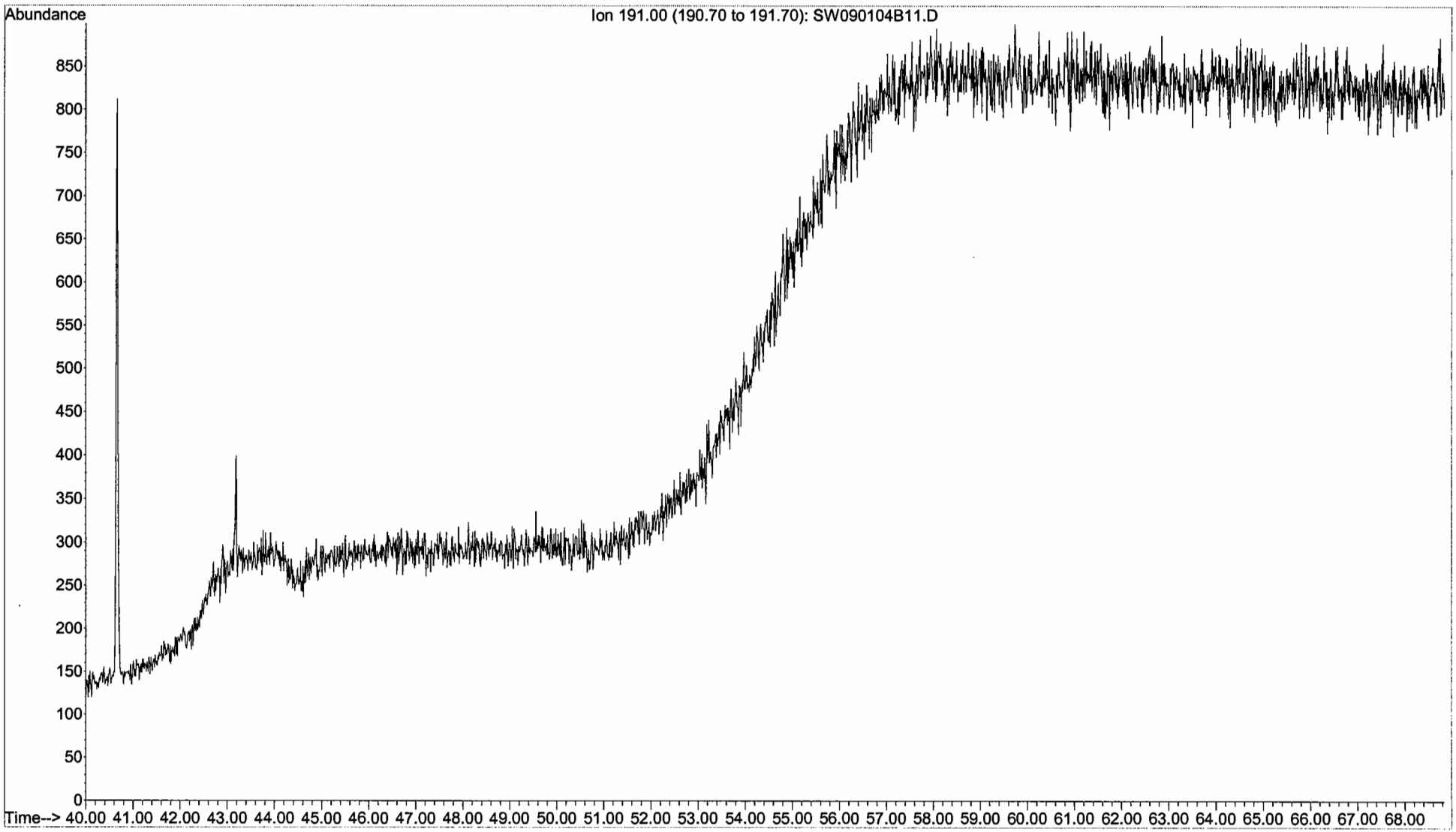
Operator : BL
Instrument : PAHINST1
Acquired : 20 Sep 2004 1:12 pm using AcqMethod PAH10916
Sample Name: SW090104B11
Misc Info : 1X

Triterpanes
Procedural Blank
SW090104B11



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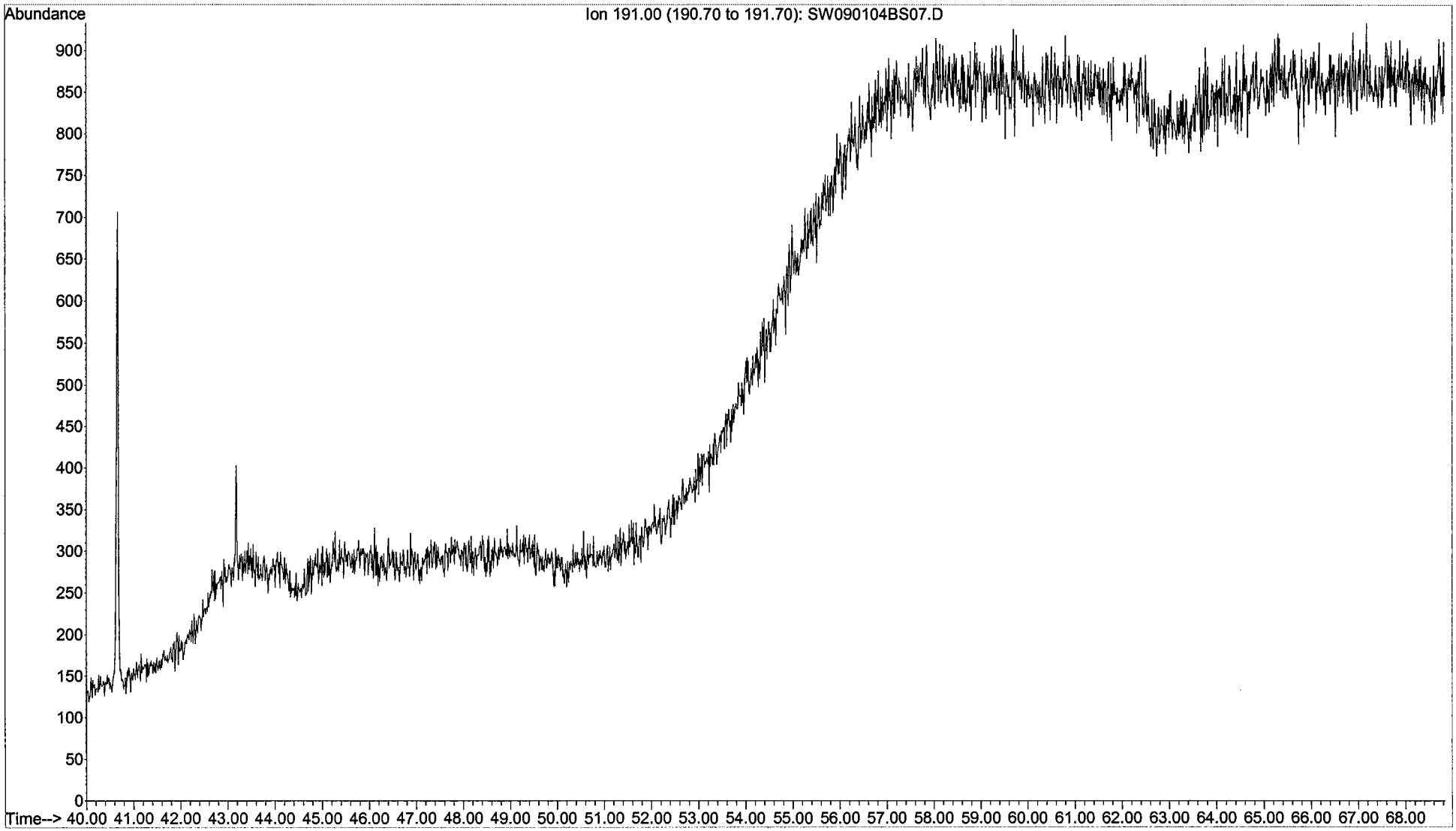
Instrument : PAHINST1
Acquired : 20 Sep 2004 2:31 pm using AcqMethod PAH10916
Sample Name: SW090104BS07
Misc Info : 1X

Triterpanes
Blank Spike
SW090104BS07



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Misc Info : 1X

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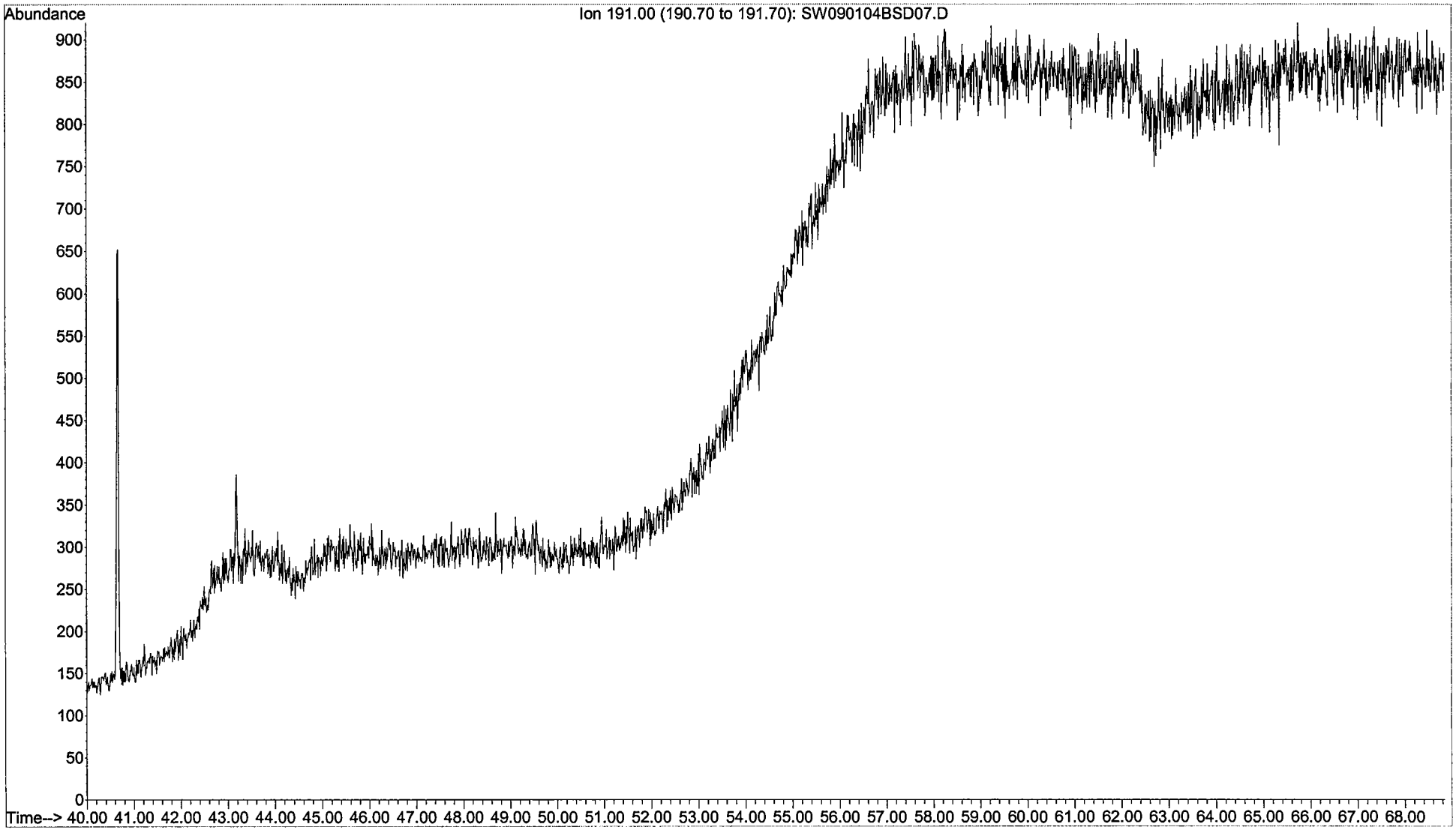
SW090104BSD07



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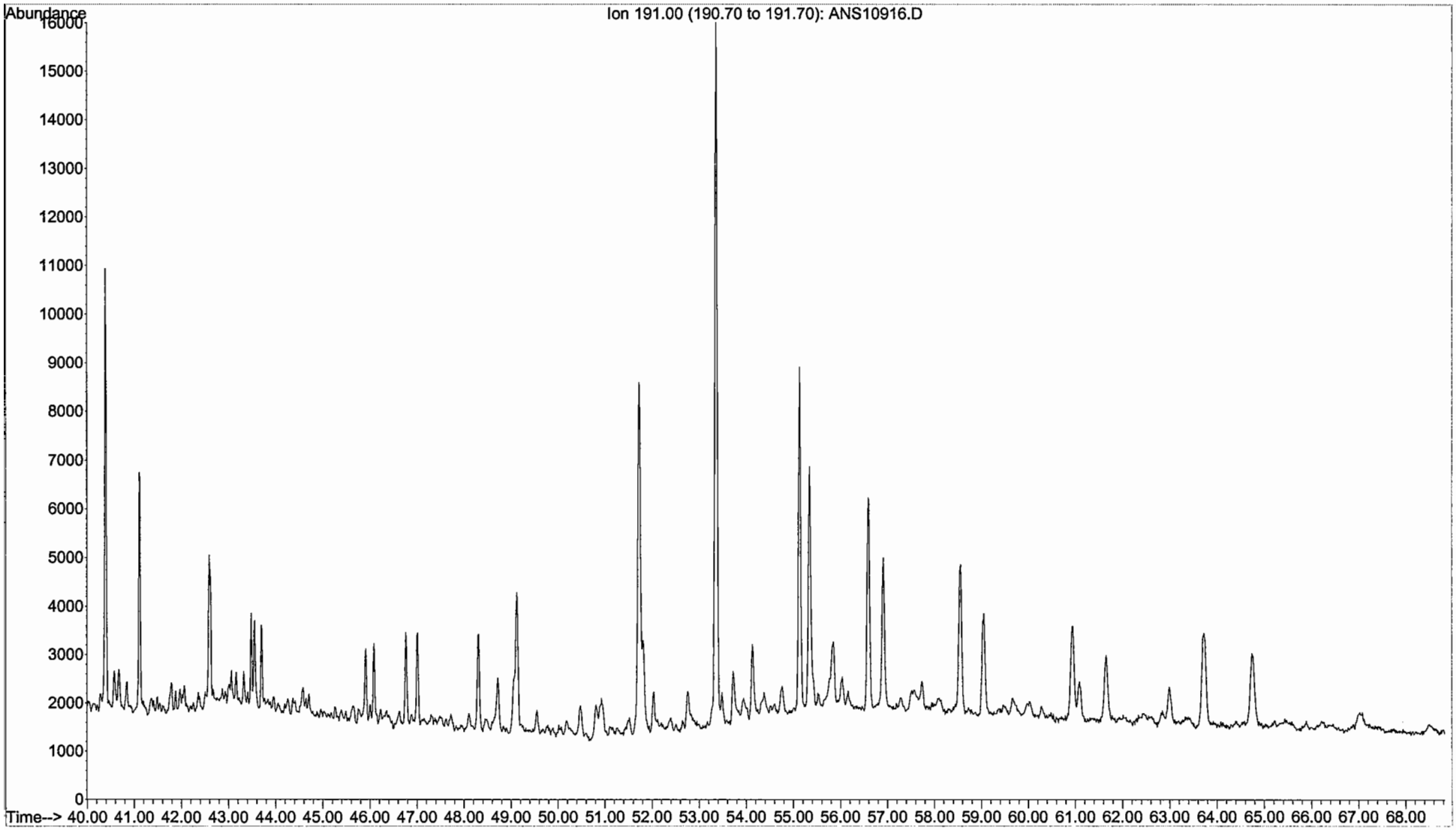
Operator : BL
Instrument : PAHINST1
Acquired : 17 Sep 2004 9:04 pm using AcqMethod PAH10916
Sample Name: SS092304AWS01
Misc Info : SW090104A 5.14 ug/mL

Triterpanes
North Slope Crude
Reference Oil



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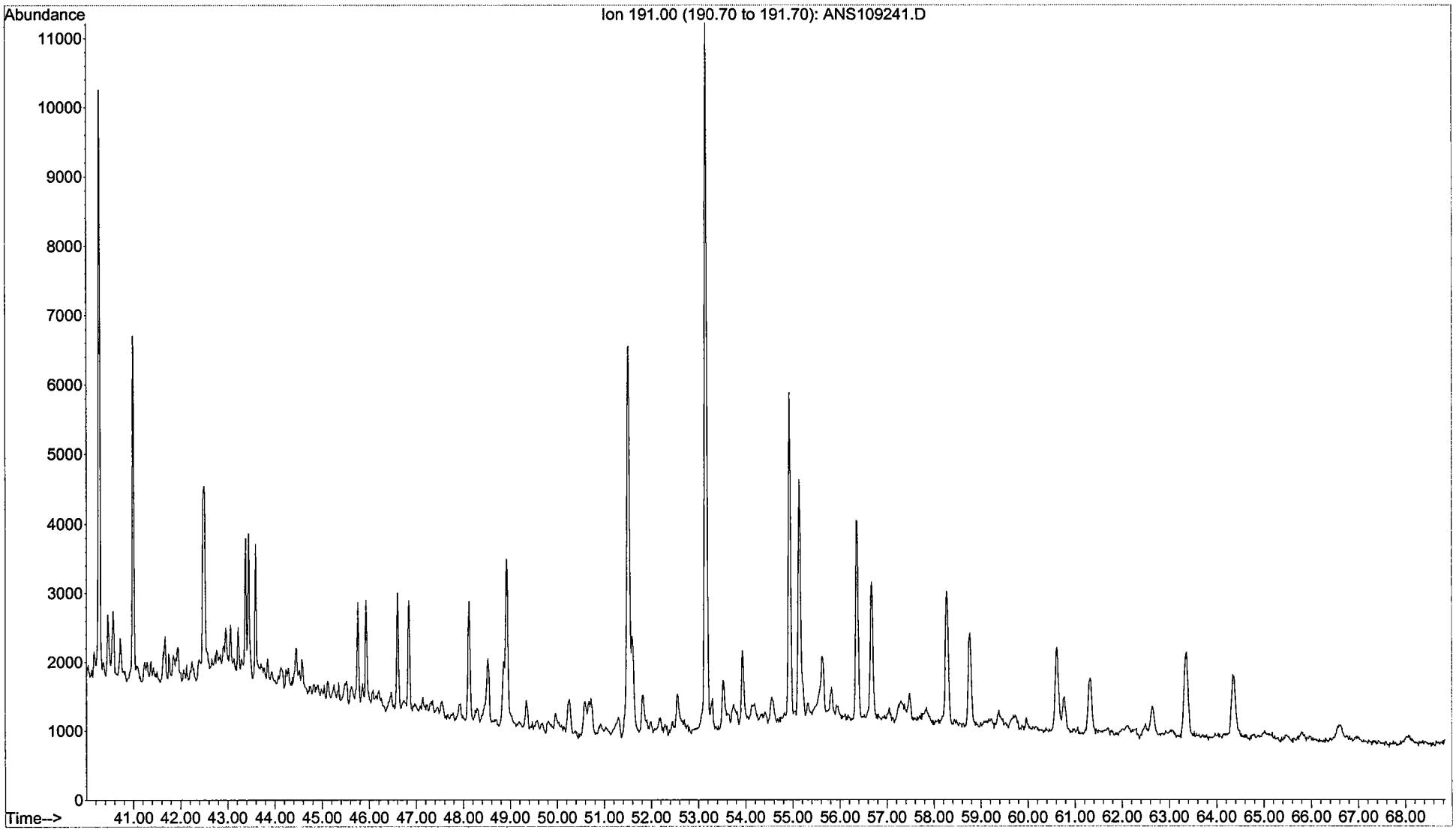
Operator : BL
Instrument : PAHINST1
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924
Sample Name: SS100104AWS01
Misc Info : SW090104A 5.14 mg/mL

Triterpanes
North Slope Crude
Reference Oil



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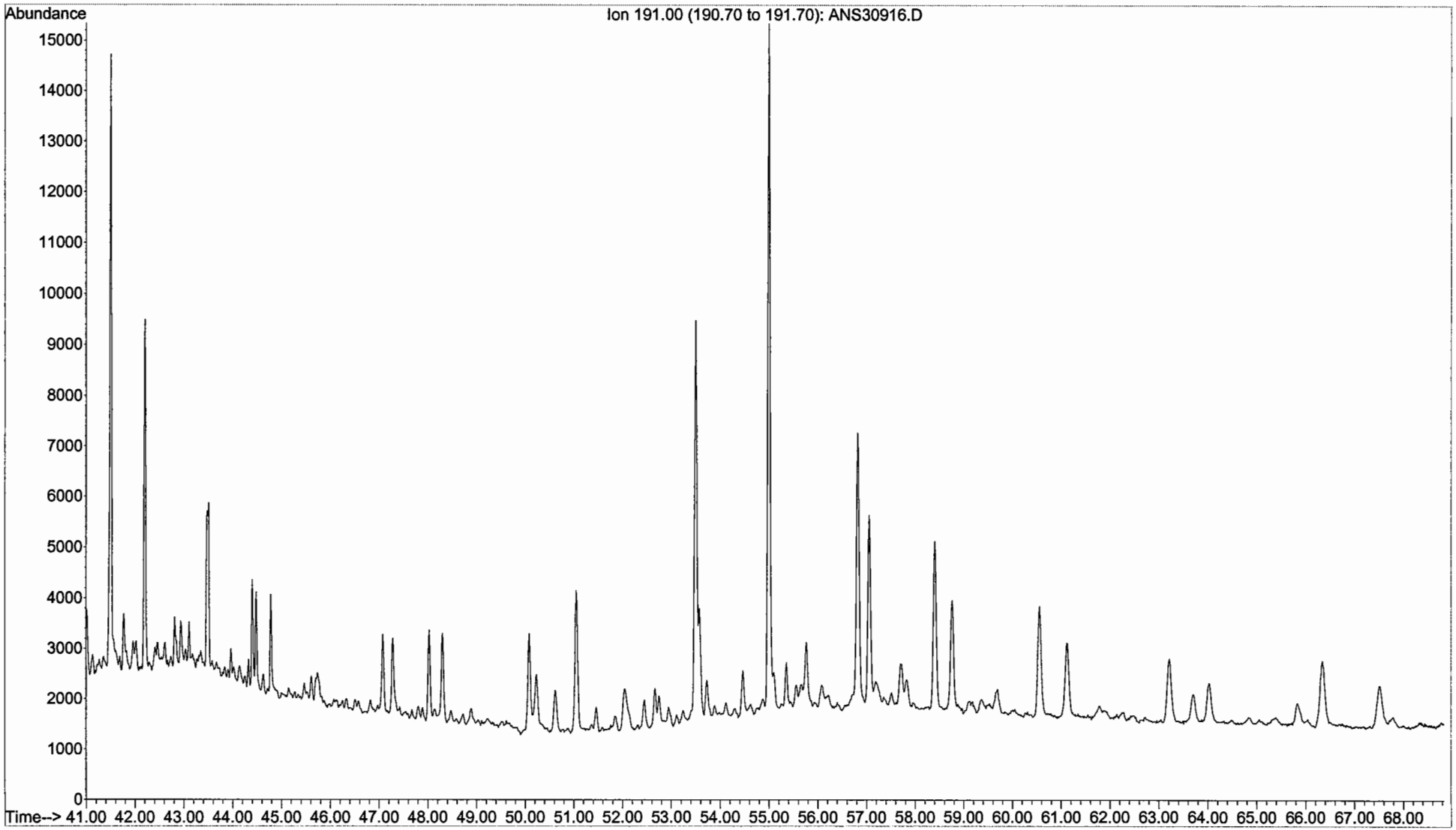
Operator : BL
Instrument : PAHINST3
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916
Sample Name: SS092404AWS01
Misc Info : SW090104A 5.14 ug/mL

Triterpanes
North Slope Crude
Reference Oil



Attachment F
Laboratory Report

Data Delivery Group: ETR0408122

Waters

PAHs
SHCs
Biomarkers

ANALYTICAL REPORT

Prepared for:
NewFields Environmental Forensics Practice
100 Ledgewood Place, Suite 302
Rockland, MA 02370

Project: Derecktor Shipyard
ETR: 0408122
Report Date: October 14, 2004

Certifications and Accreditations
Massachusetts MA030
Connecticut PH-0141
New Hampshire 220602
Rhode Island 64
New Jersey MA015
Maine MA030
New York 11627
Louisiana 03090
Army Corps of Engineers
Department of the Navy
Florida E87814

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375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Sample ID Cross Reference

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408122**

Lab Sample ID	Client Sample ID
0408122-04	DSY-SD-FB01-082704

001

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

CASE NARRATIVE
Woods Hole Group Environmental Laboratories

ETR: 0408122
Project: Derecktor Shipyard

All analyses were performed according to Woods Hole Group Environmental Laboratories' quality assurance program and documented Standard Operating Procedures (SOPs), in conjunction with the Project Workplan *NewFields Derecktor (August 2004)*. The analytical results contained in this report meet all applicable agency and/or NELAC standards, were performed within holding time, and with appropriate quality control measures, except where noted. Blank correction of results is not performed in the laboratory for any parameter. Soil/sediment samples are reported on a dry weight basis unless otherwise noted. Tissue and sediment samples are not certifiable under the NELAC accreditation.

Sample Receipt

1. Although four aqueous samples were received on 8/31/04, per Stephen Emsbo-Mattingly of NewFields Environmental Forensics, only sample DSY-SD-FB01-082704 (0408122-04) was submitted for analysis.

Alkylated Polynuclear Aromatic Hydrocarbons

Polynuclear aromatic hydrocarbons were analyzed following Woods Hole Group SOP *Analysis of Parent and Alkylated Polynuclear Aromatic Hydrocarbons and Selected Heterocyclic Compounds by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring (Revision 2.0, 06/28/02).* Aqueous samples (approximately 1000mL) are spiked with surrogate compounds and extracted by *Method 3510C-Extraction of Water Samples by Separatory Funnel (Revision 2.1, 02/03/03)* using methylene chloride. Solvent extracts are dried over sodium sulfate and concentrated to a nominal 1mL final volume. Qualitative identifications are confirmed by analyzing standards under the same conditions used for samples, comparing mass spectra, GC retention times, and patterns generated from reference oils. Quantification is based on response factors derived from a multi-level initial calibration using internal standard techniques. Alkyl homologues are quantified using the response factor of the parent PAH compound. Modifications to any of the noted SOPs, are documented in the *NewFields Derecktor* Project Workplan. Biomarkers are not processed for any aqueous samples.

1. The aqueous method blank SW090104B11 contained low-level target compounds detected below the reporting limit. Associated field sample results are flagged with "B" qualifiers if the concentration of the analyte in the sample is less than 5X the concentration in the blank.

2. The North Slope Crude reference oil (ANS10916-SS092304AWS01) analyzed after the initial calibration on 09/16/04 had seven analytes outside the 65-135% limits. The North Slope Crude reference oil (ANS1092401-SS100104AWS01) analyzed after the initial calibration on 09/24/04 had five analytes outside the 65-135% limits. Please see the enclosed Form III Spike Recovery Summary for details. Note that these reference values were generated from a different laboratory. The instrumental calibration check standard was within QC limits.

Saturated and Total Petroleum Hydrocarbons

Samples for Saturated and Total Petroleum Hydrocarbons were analyzed following the procedures in Woods Hole Group SOP *Total Petroleum Hydrocarbons by Gas Chromatography/Flame Ionization Detector (Revision 1.1)* Method

Woods Hole Group Environmental Laboratories, 375 Paramount Drive, Suite 2, Raynham, MA 02767, 508-822-9300, whale@whgrp.com

8100/8015mod and SOP *Addendum for Saturated Hydrocarbons, Rev. 1.0, 2004.* Samples were prepared as stated above for the PAH analysis, and according to the *NewFields Derecktor* Workplan. A portion of the final extract was aliquoted for GC/FID analysis. Extracts are analyzed by gas chromatography with flame ionization detection (FID). A multi-level initial calibration over the n-alkane range from C9-C40 was evaluated and quantified using internal standard techniques prior to sample analysis.

1. The aqueous method blank SW090104B11 contained low-level target compounds detected below the reporting limit. Associated field sample results are flagged with "B" qualifiers if the concentration of the analyte in the sample is less than 5X the concentration in the blank.

The enclosed results of analyses are representative of the samples as received by the laboratory. Woods Hole Group Environmental Laboratories makes no representations or certifications as to the method of sample collection, sample identification, or transporting/handling procedures used prior to the receipt of samples by Woods Hole Group Environmental Laboratories. To the best of my knowledge, the information contained in this report is accurate and complete.

Approved by: Elizabeth Porta Title: QA manager Date: 10/14/04

Elizabeth Porta **Quality Assurance Manager**

Alkylated Polynuclear Aromatic Hydrocarbons By Selective Ion Monitoring

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-FB01-082704**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **0408122-04**
Associated Blank: **SW090104B11**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
08/27/04	08/31/04	09/01/04	09/20/04	1000	1	1	CLM

Parameter	Result		Parameter	Result	
Naphthalene	**23**		Fluoranthene	**1.3**	JB
C1-Naphthalenes	**12**		Pyrene	**4.7**	JB
C2-Naphthalenes	**6.0**	J	C1-Fluoranthenes/Pyrenes	1.9	U
C3-Naphthalenes	**20**		C2-Fluoranthenes/Pyrenes	1.9	U
C4-Naphthalenes	**2.8**	J	C3-Fluoranthenes/Pyrenes	1.9	U
Biphenyl	**2.0**	J	C4-Fluoranthenes/Pyrenes	1.9	U
Dibenzofuran	**1.9**	JB	Naphthobenzothiophenes	2.3	U
Acenaphthylene	**2.0**	J	C1-Naphthobenzothiophenes	2.3	U
Acenaphthene	**2.9**	J	C2-Naphthobenzothiophenes	2.3	U
Fluorene	**3.0**	JB	C3-Naphthobenzothiophenes	2.3	U
C1-Fluorenes	2.1	U	C4-Naphthobenzothiophenes	2.3	U
C2-Fluorenes	2.1	U	Benz[a]anthracene	3.1	U
C3-Fluorenes	2.1	U	Chrysene/Triphenylene	1.3	U
Anthracene	**0.75**	JB	C1-Chrysenes	1.3	U
Phenanthrene	2.1	U	C2-Chrysenes	1.3	U
C1-Phenanthrenes/Anthracenes	**5.3**	J	C3-Chrysenes	1.3	U
C2-Phenanthrenes/Anthracenes	2.1	U	C4-Chrysenes	1.3	U
C3-Phenanthrenes/Anthracenes	2.1	U	Benzo[b]fluoranthene	1.6	U
C4-Phenanthrenes/Anthracenes	2.1	U	Benzo[k]fluoranthene	2.6	U
Retene	2.1	U	Benzo[a]fluoranthene	2.6	U
Dibenzothiophene	1.5	U	Benzo[e]pyrene	3.2	U
C1-Dibenzothiophenes	1.5	U	Benzo[a]pyrene	4.9	U
C2-Dibenzothiophenes	1.5	U	Perylene	4.0	U
C3-Dibenzothiophenes	1.5	U	Indeno[1,2,3-cd]pyrene	4.7	U
C4-Dibenzothiophenes	1.5	U	Dibenz[a,h]anthracene	3.7	U
Benzo(b)fluorene	1.9	U	Benzo[g,h,i]perylene	4.1	U

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	68	50-130
Pyrene-d10	76	50-130
Benzo[b]fluoranthene-d12	84	50-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 07:18

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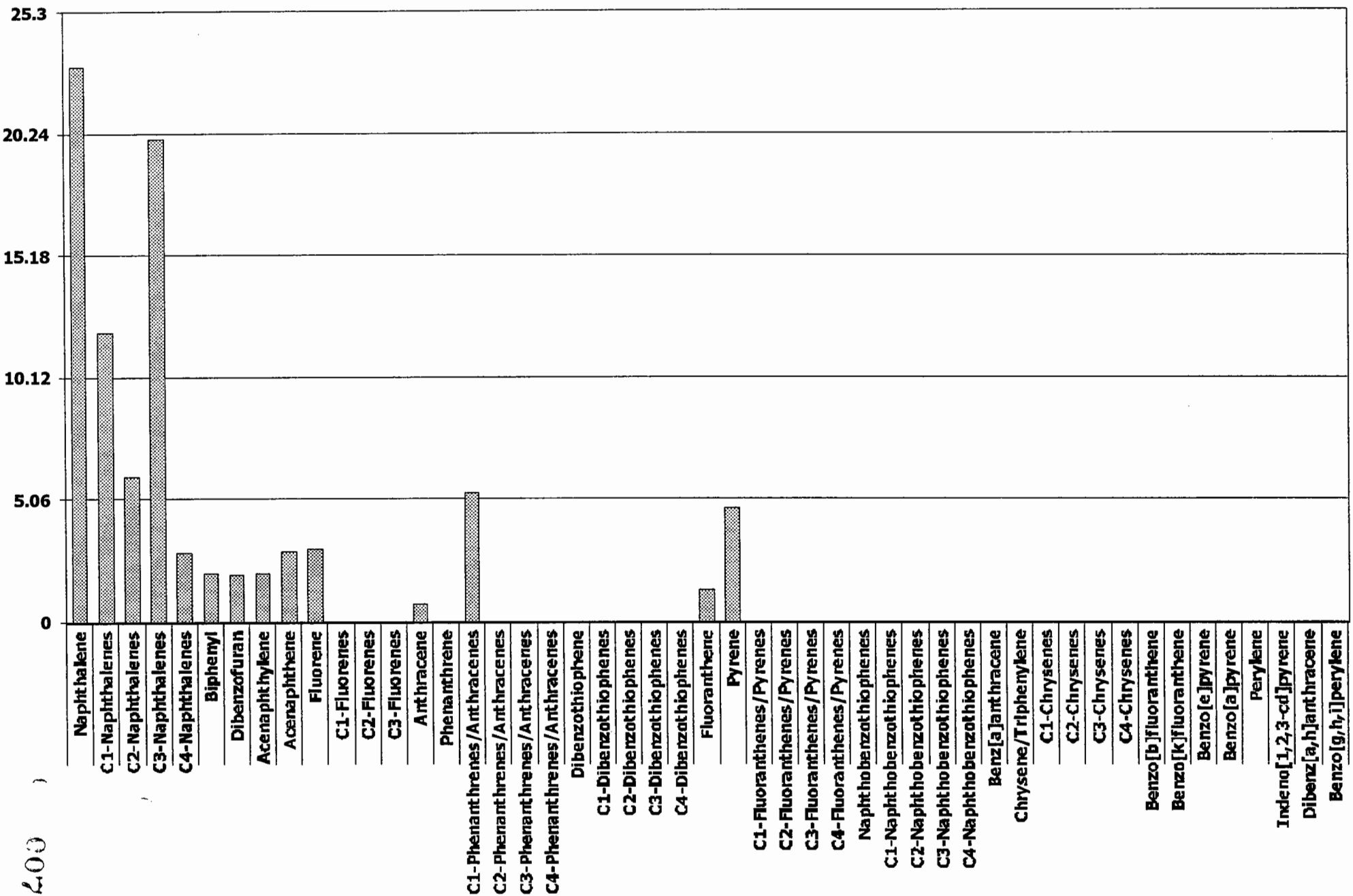
Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-FB01-082704**

Lab ID: **0408122-04**

Concentration: ng/L

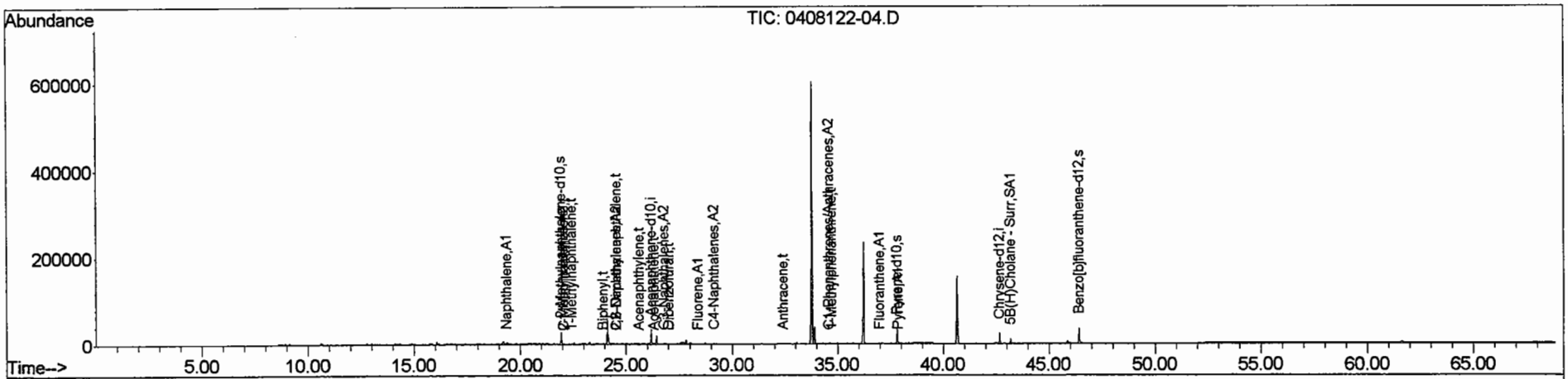


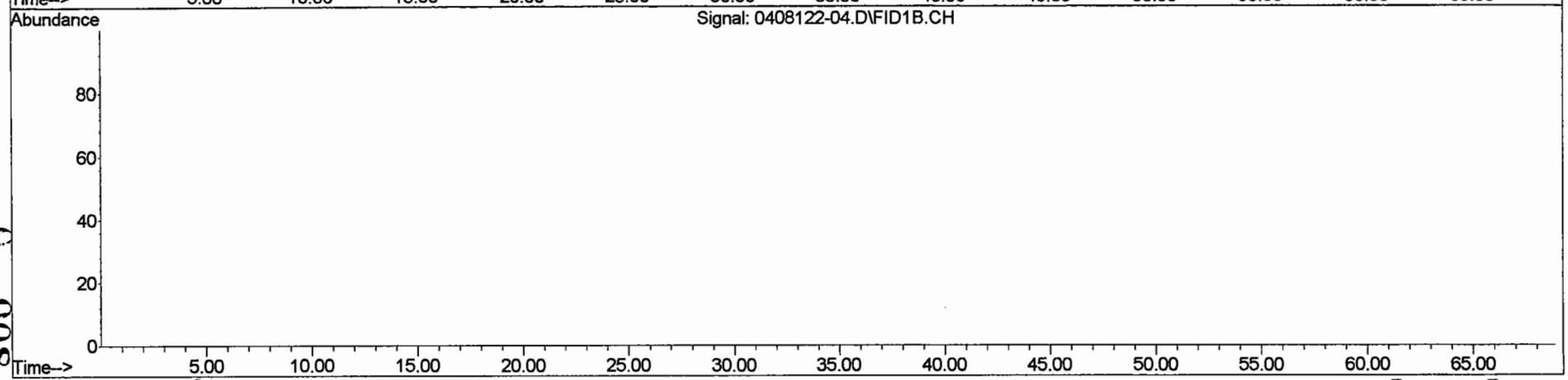
203

Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT20\
Data File : 0408122-04.D
Acq On : 20 Sep 2004 5:11 pm
Operator : BL
Sample : 0408122-04
Misc : 1X
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 21 13:00:25 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104B11**
Associated Blank: **N/A**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/20/04	1000	1	1	CLM

Parameter	Result		Parameter	Result	
Naphthalene	**3.9**	J	Fluoranthene	**2.2**	J
C1-Naphthalenes	2.4	U	Pyrene	**7.6**	J
C2-Naphthalenes	2.4	U	C1-Fluoranthenes/Pyrenes	1.9	U
C3-Naphthalenes	2.4	U	C2-Fluoranthenes/Pyrenes	1.9	U
C4-Naphthalenes	2.4	U	C3-Fluoranthenes/Pyrenes	1.9	U
Biphenyl	1.1	U	C4-Fluoranthenes/Pyrenes	1.9	U
Dibenzofuran	**0.89**	J	Naphthobenzothiophenes	2.3	U
Acenaphthylene	2.6	U	C1-Naphthobenzothiophenes	2.3	U
Acenaphthene	1.7	U	C2-Naphthobenzothiophenes	2.3	U
Fluorene	**2.3**	J	C3-Naphthobenzothiophenes	2.3	U
C1-Fluorenes	2.1	U	C4-Naphthobenzothiophenes	2.3	U
C2-Fluorenes	2.1	U	Benz[a]anthracene	3.1	U
C3-Fluorenes	2.1	U	Chrysene/Triphenylene	1.3	U
Anthracene	**0.67**	J	C1-Chrysenes	1.3	U
Phenanthrene	**3.1**	J	C2-Chrysenes	1.3	U
C1-Phenanthrenes/Anthracenes	2.1	U	C3-Chrysenes	1.3	U
C2-Phenanthrenes/Anthracenes	2.1	U	C4-Chrysenes	1.3	U
C3-Phenanthrenes/Anthracenes	2.1	U	Benzo[b]fluoranthene	1.6	U
C4-Phenanthrenes/Anthracenes	2.1	U	Benzo[k]fluoranthene	2.6	U
Retene	2.1	U	Benzo[a]fluoranthene	2.6	U
Dibenzothiophene	1.5	U	Benzo[e]pyrene	3.2	U
C1-Dibenzothiophenes	1.5	U	Benzo[a]pyrene	4.9	U
C2-Dibenzothiophenes	1.5	U	Perylene	4.0	U
C3-Dibenzothiophenes	1.5	U	Indeno[1,2,3-cd]pyrene	4.7	U
C4-Dibenzothiophenes	1.5	U	Dibenz[a,h]anthracene	3.7	U
Benzo(b)fluorene	1.9	U	Benzo[g,h,i]perylene	4.1	U

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	92	50-130
Pyrene-d10	99	50-130
Benzo[b]fluoranthene-d12	114	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 07:18

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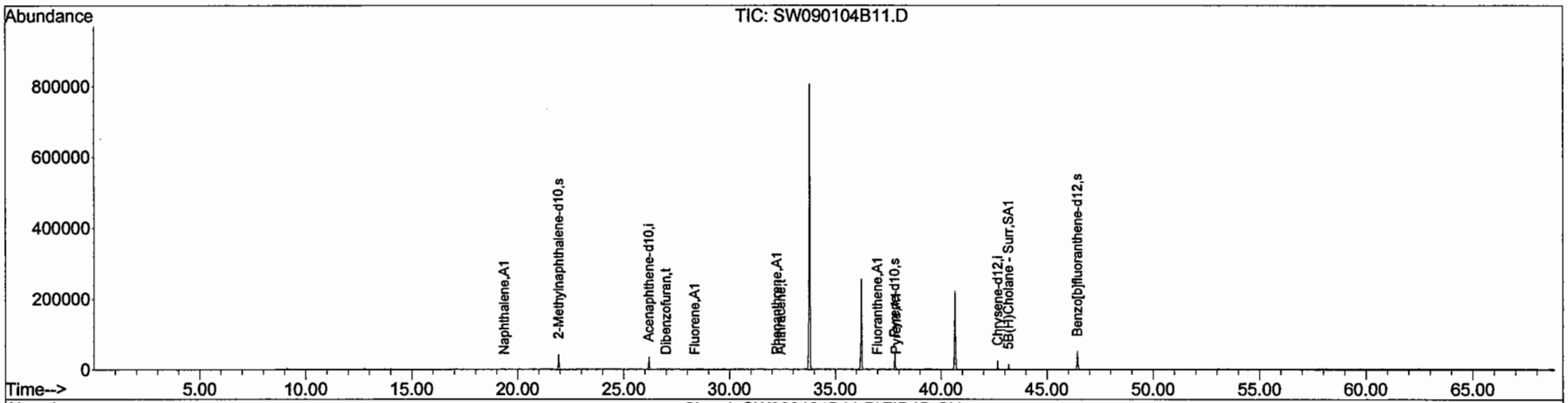
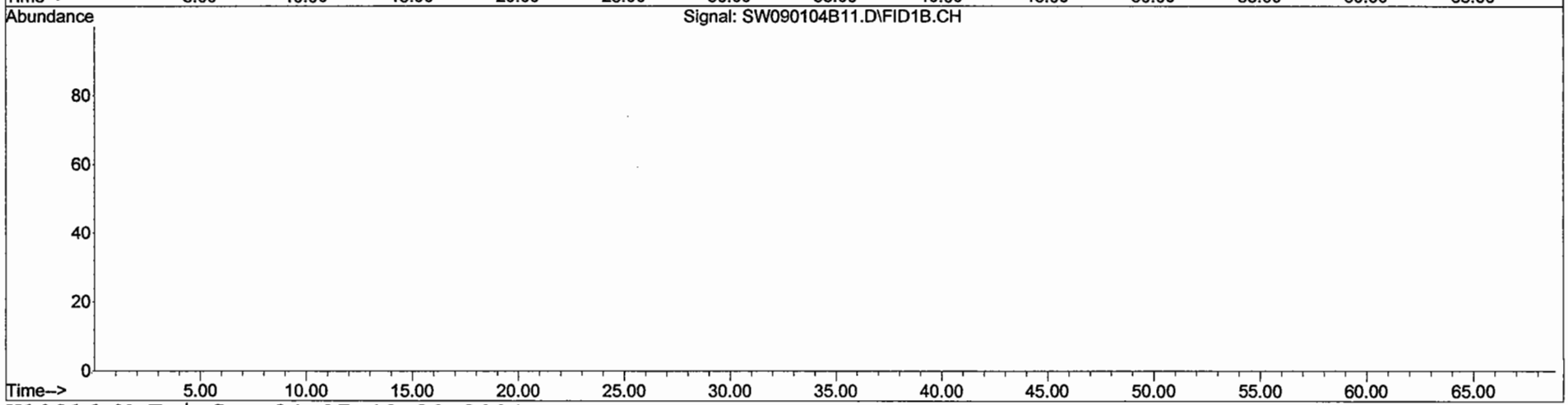
on Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SW090104B11.D
Acq On : 20 Sep 2004 1:12 pm
Operator : BL
Sample : SW090104B11
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 21 11:59:44 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **See Below**
Associated Blank: **SW090104B11**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Analyst
N/A	N/A	09/01/04	CLM

Lab ID: SW090104B11 SW090104BS07 SW090104BSD07

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Naphthalene	3.9		860	86	840	84	3	30	50-130
Acenaphthylene	10	U	770	77	740	74	4	30	50-130
Acenaphthene	10	U	890	89	860	86	4	30	50-130
Fluorene	2.3		840	84	820	82	3	30	50-130
Anthracene	0.67		810	81	760	77	6	30	50-130
Phenanthrene	3.1		900	91	870	87	3	30	50-130
Fluoranthene	2.2		820	82	760	76	8	30	50-130
Pyrene	7.6		910	91	820	82	10	30	50-130
Benz[a]anthracene	10	U	870	87	830	83	5	30	50-130
Chrysene/Triphenylene	10	U	930	93	910	91	3	30	50-130
Benzo[b]fluoranthene	10	U	930	93	900	91	2	30	50-130
Benzo[k]fluoranthene	10	U	940	94	920	92	3	30	50-130
Benzo[a]pyrene	10	U	880	88	840	84	4	30	50-130
Indeno[1,2,3-cd]pyrene	10	U	890	89	870	87	2	30	50-130
Dibenz[a,h]anthracene	10	U	920	92	910	91	1	30	50-130
Benzo[g,h,i]perylene	10	U	930	93	910	91	2	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
2-Methylnaphthalene-d10	96	93	50-130
Pyrene-d10	103	94	50-130
Benzo[b]fluoranthene-d12	103	100	50-130
5B(H)Cholane	89	84	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 07:31

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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104BS07**
Associated Blank: **SW090104B11**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/20/04	1000	1	1	CLM

Parameter	Result		Parameter	Result	
Naphthalene	**860**	S	Fluoranthene	**820**	S
C1-Naphthalenes	**520**		Pyrene	**910**	S
C2-Naphthalenes	2.4	U	C1-Fluoranthenes/Pyrenes	1.9	U
C3-Naphthalenes	2.4	U	C2-Fluoranthenes/Pyrenes	1.9	U
C4-Naphthalenes	2.4	U	C3-Fluoranthenes/Pyrenes	1.9	U
Biphenyl	1.1	U	C4-Fluoranthenes/Pyrenes	1.9	U
Dibenzofuran	**1.4**	JB	Naphthobenzothiophenes	2.3	U
Acenaphthylene	**770**	S	C1-Naphthobenzothiophenes	2.3	U
Acenaphthene	**890**	S	C2-Naphthobenzothiophenes	2.3	U
Fluorene	**840**	S	C3-Naphthobenzothiophenes	2.3	U
C1-Fluorenes	2.1	U	C4-Naphthobenzothiophenes	2.3	U
C2-Fluorenes	2.1	U	Benz[a]anthracene	**870**	S
C3-Fluorenes	2.1	U	Chrysene/Triphenylene	**930**	S
Anthracene	**810**	S	C1-Chrysenes	1.3	U
Phenanthrene	**900**	S	C2-Chrysenes	1.3	U
C1-Phenanthrenes/Anthracenes	**3.1**	J	C3-Chrysenes	1.3	U
C2-Phenanthrenes/Anthracenes	2.1	U	C4-Chrysenes	1.3	U
C3-Phenanthrenes/Anthracenes	2.1	U	Benzo[b]fluoranthene	**930**	S
C4-Phenanthrenes/Anthracenes	2.1	U	Benzo[k]fluoranthene	**940**	S
Retene	2.1	U	Benzo[a]fluoranthene	2.6	U
Dibenzothiophene	**4.7**	J	Benzo[e]pyrene	3.2	U
C1-Dibenzothiophenes	1.5	U	Benzo[a]pyrene	**880**	S
C2-Dibenzothiophenes	1.5	U	Perylene	4.0	U
C3-Dibenzothiophenes	1.5	U	Indeno[1,2,3-cd]pyrene	**890**	S
C4-Dibenzothiophenes	1.5	U	Dibenz[a,h]anthracene	**920**	S
Benzo(b)fluorene	1.9	U	Benzo[g,h,i]perylene	**930**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	96	50-130
Pyrene-d10	103	50-130
Benzo[b]fluoranthene-d12	103	50-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

012

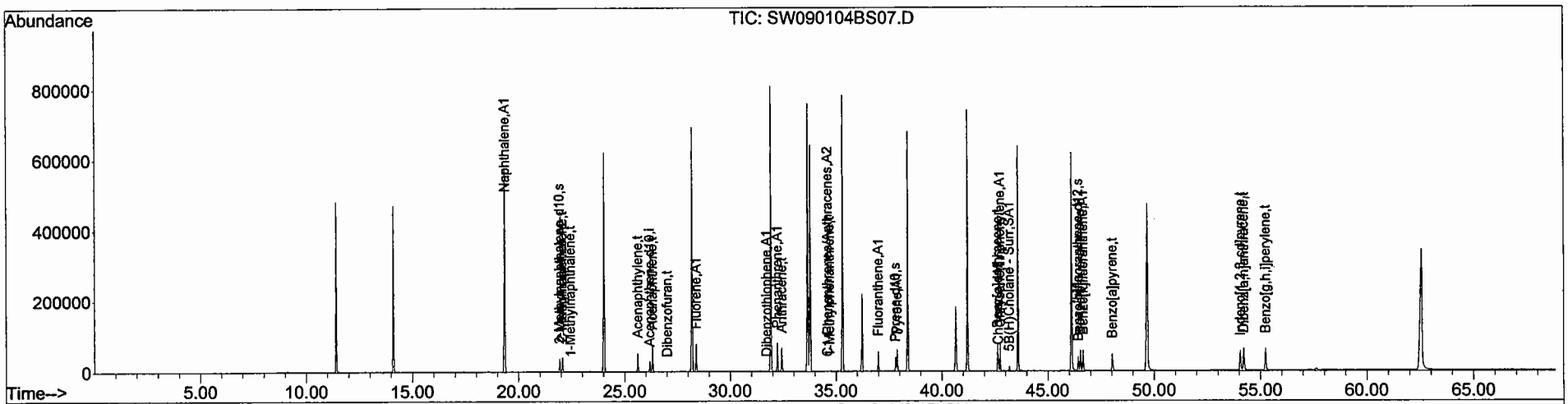
10/07/04 07:18

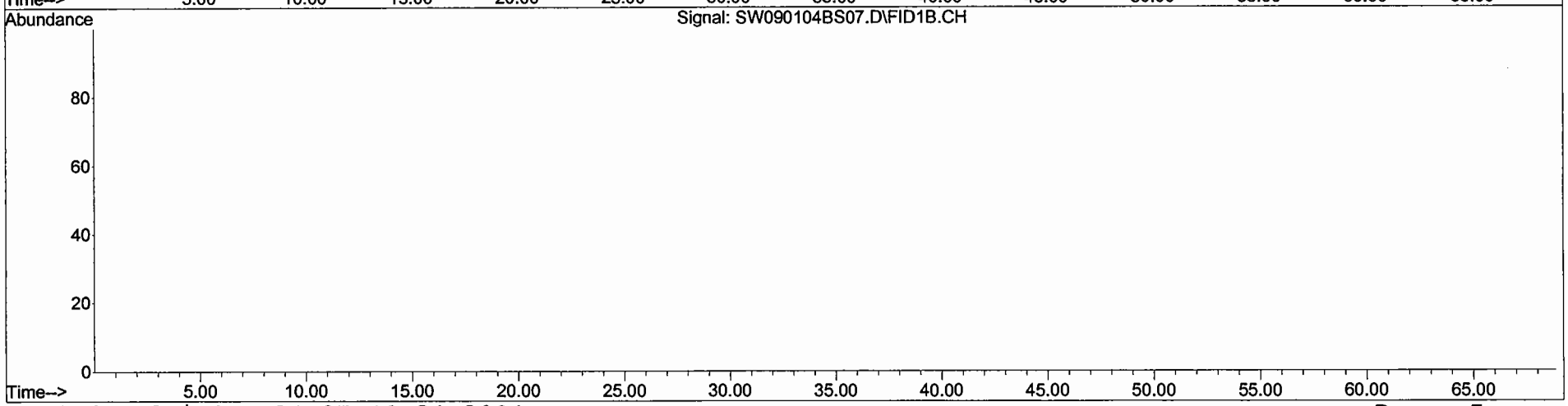
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SW090104BS07.D
Acq On : 20 Sep 2004 2:31 pm
Operator : BL
Sample : SW090104BS07
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 21 12:06:22 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





013

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104BSD07**
Associated Blank: **SW090104B11**
Concentration Units: **ng/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/20/04	1000	1	1	CLM

Parameter	Result		Parameter	Result	
Naphthalene	**840**	S	Fluoranthene	**760**	S
C1-Naphthalenes	**510**		Pyrene	**820**	S
C2-Naphthalenes	2.4	U	C1-Fluoranthenes/Pyrenes	1.9	U
C3-Naphthalenes	2.4	U	C2-Fluoranthenes/Pyrenes	1.9	U
C4-Naphthalenes	2.4	U	C3-Fluoranthenes/Pyrenes	1.9	U
Biphenyl	1.1	U	C4-Fluoranthenes/Pyrenes	1.9	U
Dibenzofuran	**1.0**	JB	Naphthobenzothiophenes	2.3	U
Acenaphthylene	**740**	S	C1-Naphthobenzothiophenes	2.3	U
Acenaphthene	**860**	S	C2-Naphthobenzothiophenes	2.3	U
Fluorene	**820**	S	C3-Naphthobenzothiophenes	2.3	U
C1-Fluorenes	2.1	U	C4-Naphthobenzothiophenes	2.3	U
C2-Fluorenes	2.1	U	Benz[a]anthracene	**830**	S
C3-Fluorenes	2.1	U	Chrysene/Triphenylene	**910**	S
Anthracene	**760**	S	C1-Chrysenes	1.3	U
Phenanthrene	**870**	S	C2-Chrysenes	1.3	U
C1-Phenanthrenes/Anthracenes	**2.3**	J	C3-Chrysenes	1.3	U
C2-Phenanthrenes/Anthracenes	2.1	U	C4-Chrysenes	1.3	U
C3-Phenanthrenes/Anthracenes	2.1	U	Benzo[b]fluoranthene	**900**	S
C4-Phenanthrenes/Anthracenes	2.1	U	Benzo[k]fluoranthene	**920**	S
Retene	2.1	U	Benzo[a]fluoranthene	2.6	U
Dibenzothiophene	**4.7**	J	Benzo[e]pyrene	3.2	U
C1-Dibenzothiophenes	1.5	U	Benzo[a]pyrene	**840**	S
C2-Dibenzothiophenes	1.5	U	Perylene	4.0	U
C3-Dibenzothiophenes	1.5	U	Indeno[1,2,3-cd]pyrene	**870**	S
C4-Dibenzothiophenes	1.5	U	Dibenz[a,h]anthracene	**910**	S
Benzo(b)fluorene	1.9	U	Benzo[g,h,i]perylene	**910**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	93	50-130
Pyrene-d10	94	50-130
Benzo[b]fluoranthene-d12	100	50-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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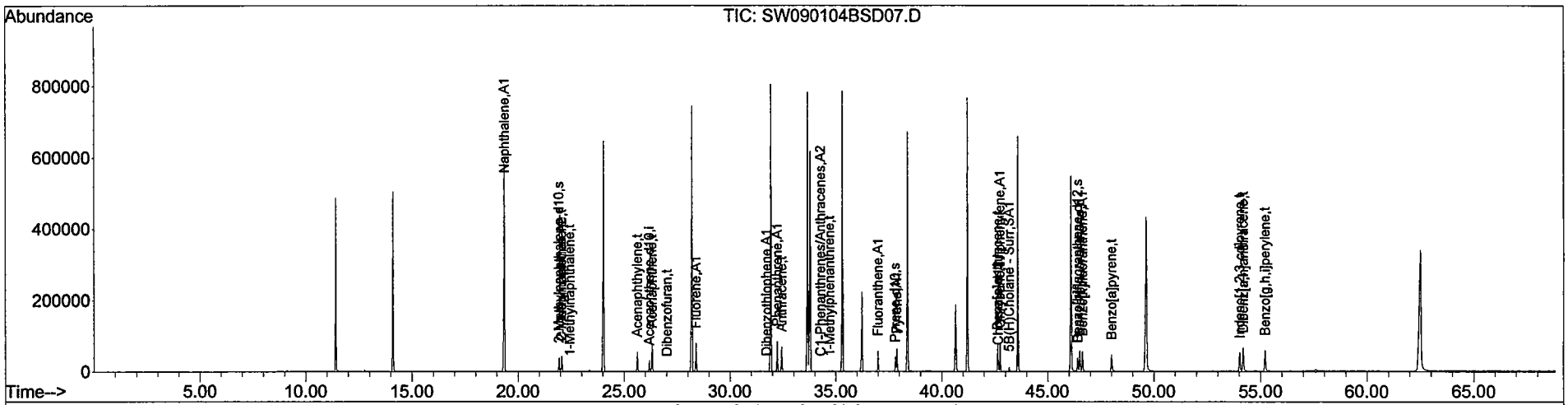
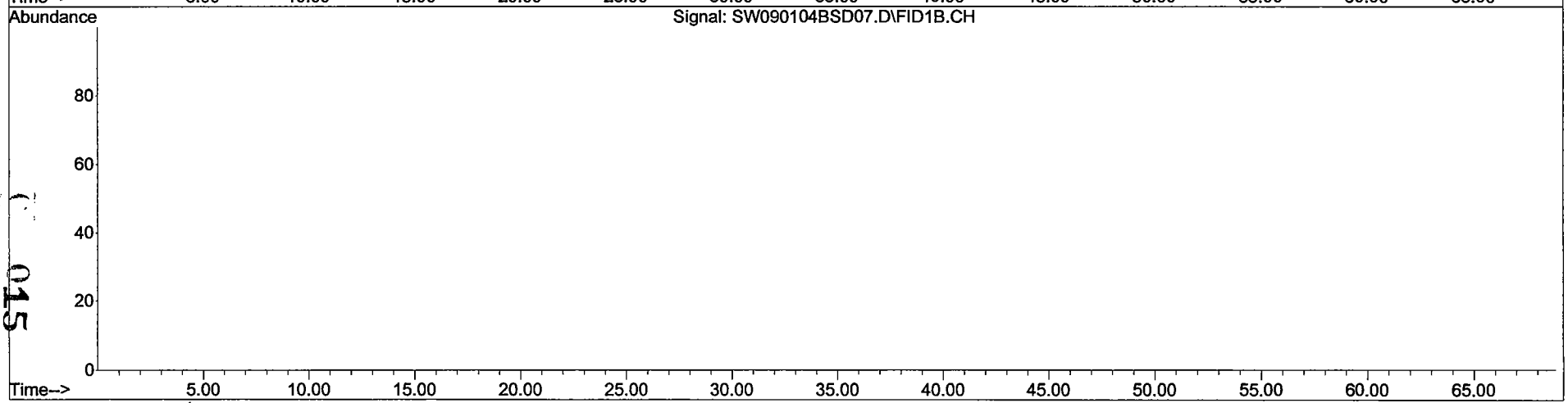
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SW090104BSD07.D
Acq On : 20 Sep 2004 3:50 pm
Operator : BL
Sample : SW090104BSD07
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 21 12:12:16 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Naphthalene	714.43	500	70	65-135
C1-Naphthalenes	1534.53	1000	65	65-135
C2-Naphthalenes	1897.27	1200	62[a]	65-135
C3-Naphthalenes	1436.53	820	57[a]	65-135
C4-Naphthalenes	773.42	460	59[a]	65-135
Biphenyl	216.49	140	66	65-135
Acenaphthene	15.55	14	90	65-135
Fluorene	87.56	71	81	65-135
C1-Fluorenes	219.89	160	75	65-135
C2-Fluorenes	341.2	230	68	65-135
C3-Fluorenes	299.61	220	75	65-135
Phenanthrene	272.58	230	84	65-135
C1-Phenanthrenes/Anthracenes	564.81	440	78	65-135
C2-Phenanthrenes/Anthracenes	660.43	460	70	65-135
C3-Phenanthrenes/Anthracenes	448.76	320	70	65-135
C4-Phenanthrenes/Anthracenes	175.88	130	75	65-135
Dibenzothiophene	218.8	180	80	65-135
C1-Dibenzothiophenes	434.54	240	55[a]	65-135
C2-Dibenzothiophenes	551.44	410	75	65-135
C3-Dibenzothiophenes	460.96	350	77	65-135
C4-Dibenzothiophenes	236.77	160	66	65-135
Fluoranthene	4.26	4.2	99	65-135
Pyrene	15.56	11	71	65-135
C1-Fluoranthenes/Pyrenes	78.43	70	90	65-135
C2-Fluoranthenes/Pyrenes	132.93	99	75	65-135
C3-Fluoranthenes/Pyrenes	111.33	120	103	65-135
Chrysene/Triphenylene	50.99	48	95	65-135
C1-Chrysenes	81.69	83	102	65-135
C2-Chrysenes	95.93	100	109	65-135
C3-Chrysenes	89.87	110	122	65-135
C4-Chrysenes	51.86	55	106	65-135
Benzo[b]fluoranthene	6.54	7.8	119	65-135
Benzo[e]pyrene	12.88	14	107	65-135

10/13/04 15:25

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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Dibenz[a,h]anthracene	1.02	1.9	182[a]	65-135
Benzo[g,h,i]perylene	3.35	5.4	161[a]	65-135
Hopane (T19)	118.8	170	147[a]	65-135

N/A - Not Applicable
[a] - Value outside of QC Limits.

017

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/13/04 15:25

Form I
Alaska North Slope Crude
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/17/04	100	0.05	10	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**500**		Fluoranthene	**4.2**	
C1-Naphthalenes	**1000**		Pyrene	**11**	
C2-Naphthalenes	**1200**		C1-Fluoranthenes/Pyrenes	**70**	
C3-Naphthalenes	**820**		C2-Fluoranthenes/Pyrenes	**99**	
C4-Naphthalenes	**460**		C3-Fluoranthenes/Pyrenes	**120**	
Biphenyl	**140**		C4-Fluoranthenes/Pyrenes	**74**	
Dibenzofuran	**64**		Naphthobenzothiophenes	**56**	
Acenaphthylene	**6.8**		C1-Naphthobenzothiophenes	**140**	
Acenaphthene	**14**		C2-Naphthobenzothiophenes	**170**	
Fluorene	**71**		C3-Naphthobenzothiophenes	**130**	
C1-Fluorenes	**160**		C4-Naphthobenzothiophenes	**84**	
C2-Fluorenes	**230**		Benz[a]anthracene	0.31	U
C3-Fluorenes	**220**		Chrysene/Triphenylene	**48**	
Anthracene	0.26	U	C1-Chrysenes	**83**	
Phenanthrene	**230**		C2-Chrysenes	**100**	
C1-Phenanthrenes/Anthracenes	**440**		C3-Chrysenes	**110**	
C2-Phenanthrenes/Anthracenes	**460**		C4-Chrysenes	**55**	
C3-Phenanthrenes/Anthracenes	**320**		Benzo[b]fluoranthene	**7.8**	
C4-Phenanthrenes/Anthracenes	**130**		Benzo[k]fluoranthene	**0.96**	J
Retene	0.28	U	Benzo[a]fluoranthene	**0.35**	J
Dibenzothiophene	**180**		Benzo[e]pyrene	**14**	
C1-Dibenzothiophenes	**240**		Benzo[a]pyrene	**3.8**	
C2-Dibenzothiophenes	**410**		Perylene	**2.2**	
C3-Dibenzothiophenes	**350**		Indeno[1,2,3-cd]pyrene	0.47	U
C4-Dibenzothiophenes	**160**		Dibenz[a,h]anthracene	**1.9**	J
Benzo(b)fluorene	0.20	U	Benzo[g,h,i]perylene	**5.4**	

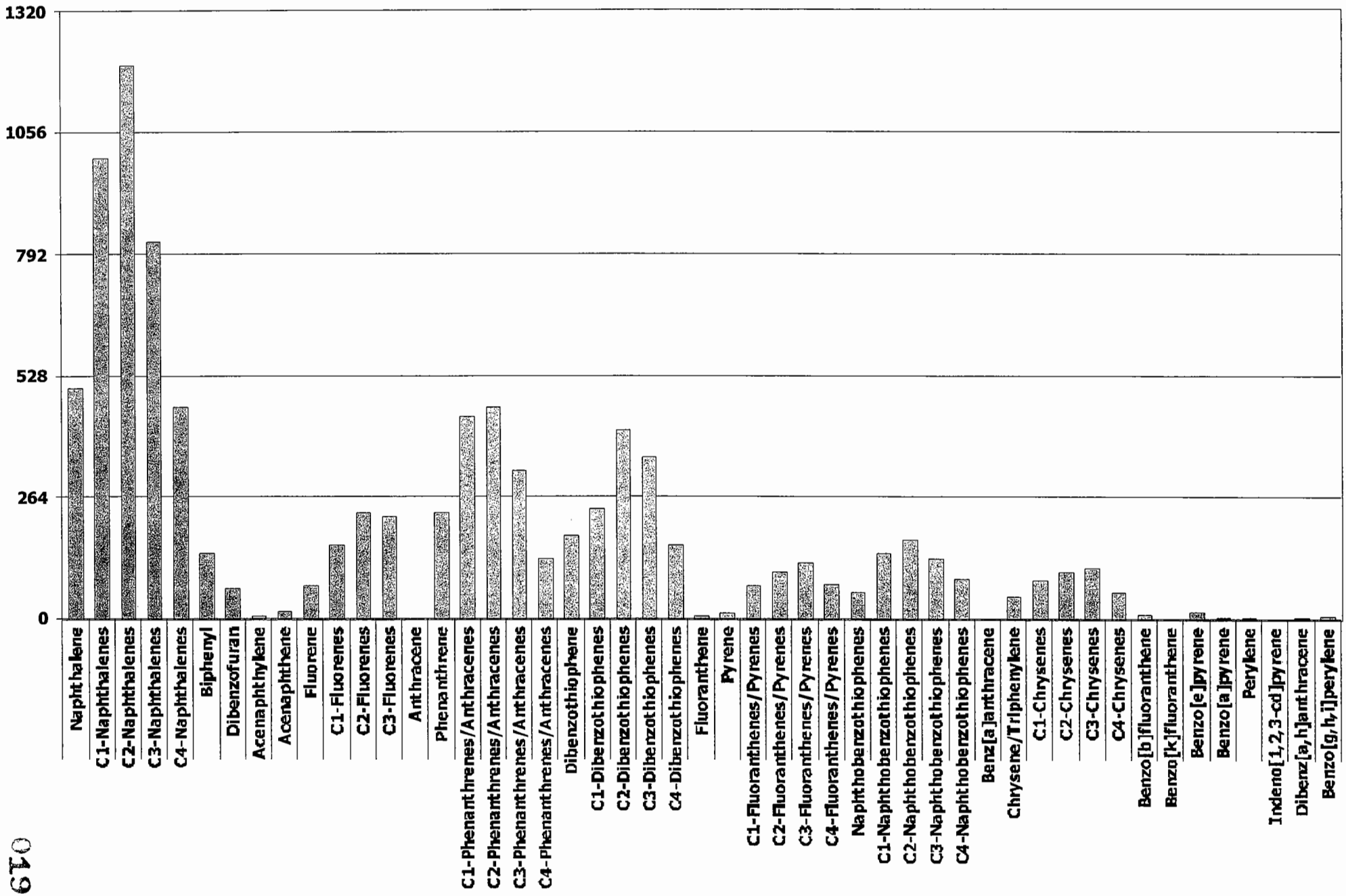
N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **Alaska North Slope Crude** Lab ID: **SS092304AWS01**

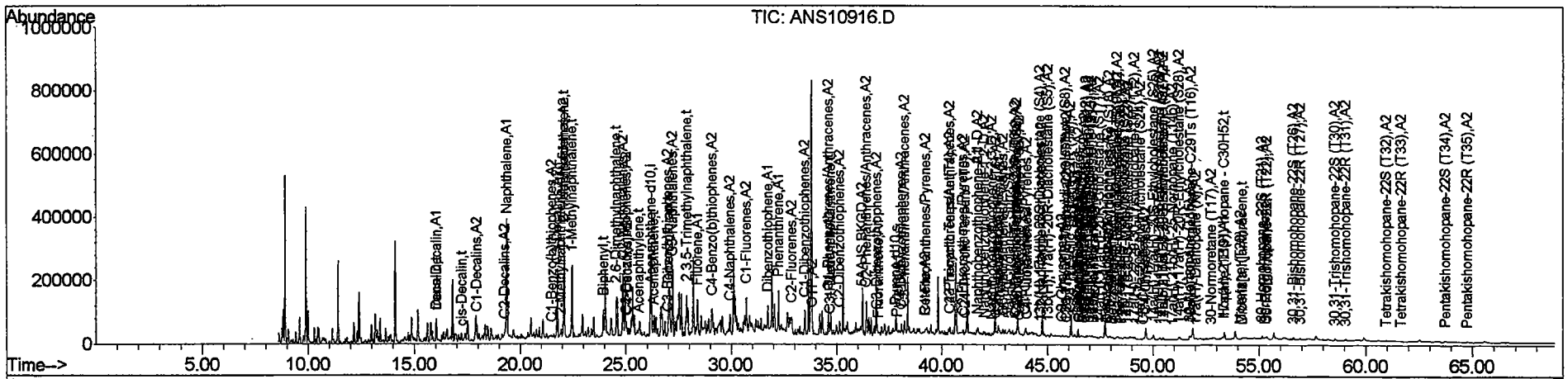
Concentration: mg/Kg

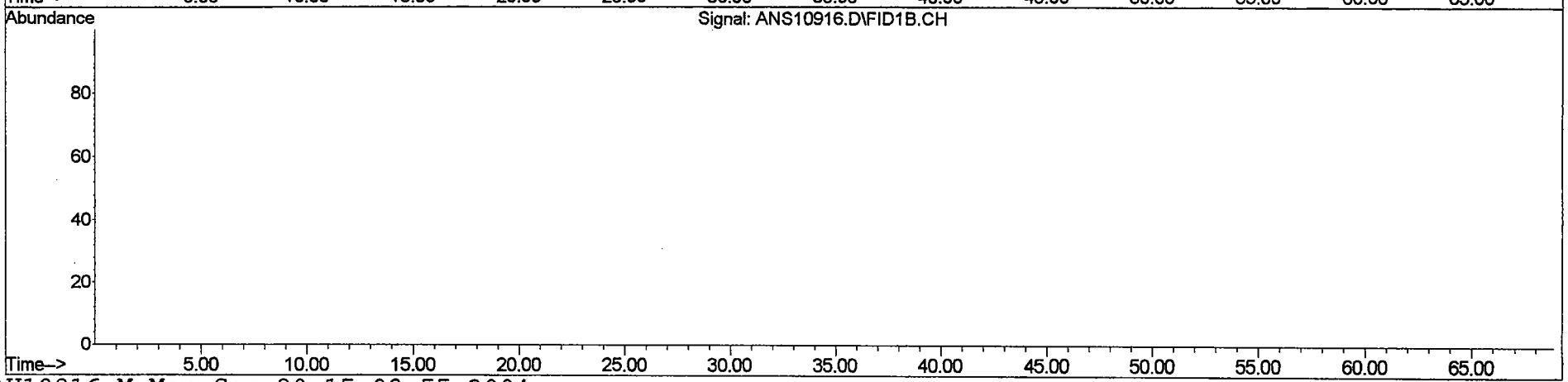


Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : ANS10916.D
Acq On : 17 Sep 2004 9:04 pm
Operator : BL
Sample : ANS10916
Misc : SW090104A 5.14 ug/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 15:09:03 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration





Supporting Quality Control Results

Form IV
Method Blank Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104B11**
Date Analyzed: **09/20/04 13:12**

Client ID	Lab ID	Date/Time Analyzed
LCS	SW090104BS07	09/20/04 14:31
LCSD	SW090104BSD07	09/20/04 15:50
DSY-SD-FB01-082704	0408122-04	09/20/04 17:11

N/A - Not Applicable

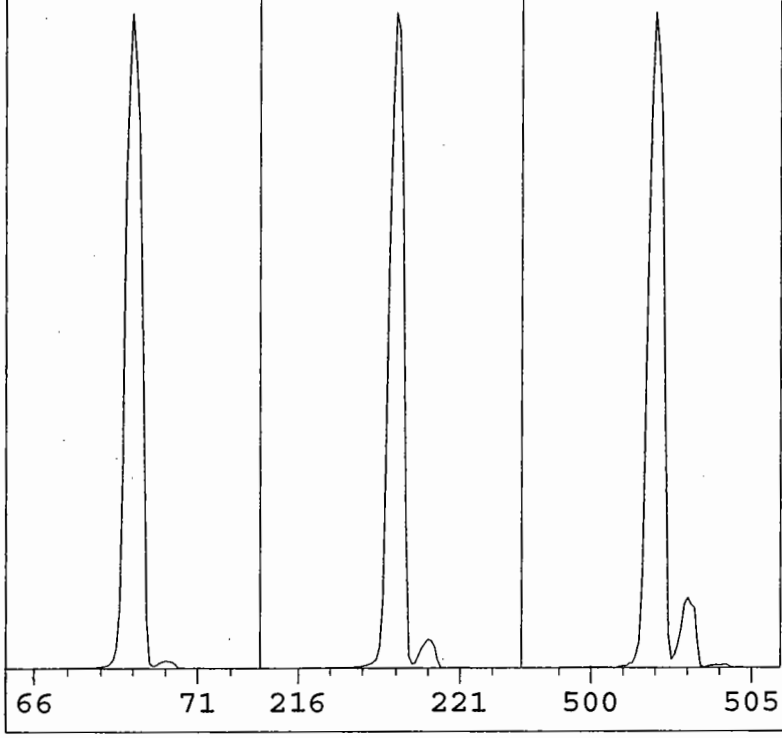
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

5973 QuickTune

Fri Sep 17 09:54:53 2004 Instrument: PAHINST1

C:\MSDCHEM\1\5973N\PFTBA.U BL

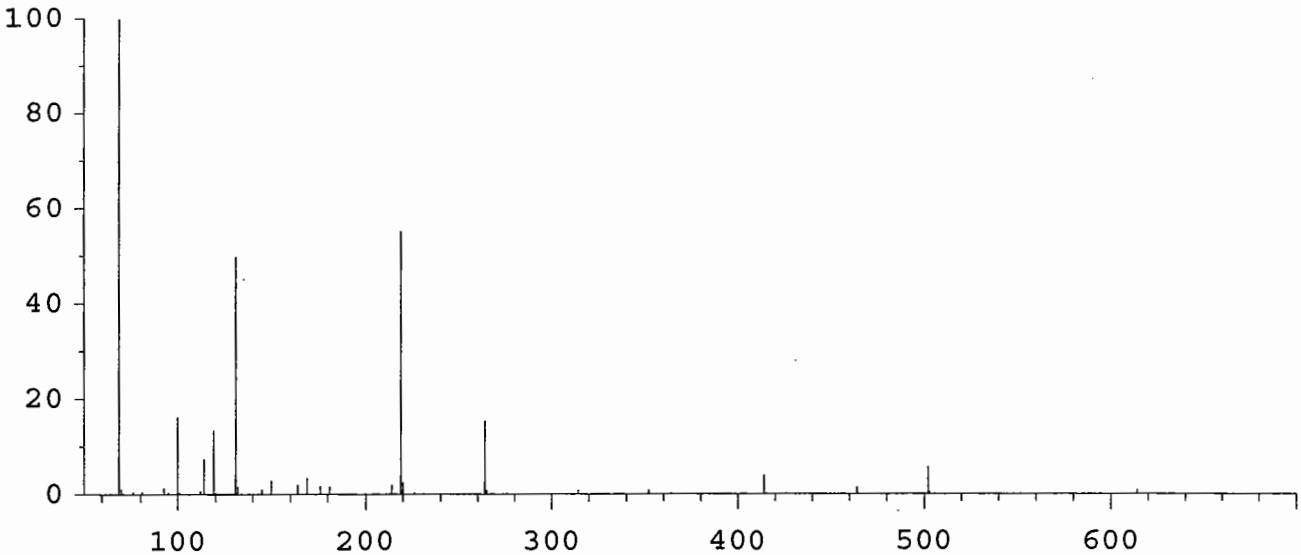
Mass	69.00	Mass	219.00	Mass	502.00
Ab	337654	Ab	193051	Ab	19357
Pw50	0.55	Pw50	0.50	Pw50	0.55



Ion Pol	POS	MassGain	-337
		MassOffs	-9
Emission	34.6	AmuGain	2037
ElEnrgy	69.9	AmuOffs	136
Filament	1	Wid219	-0.043
		DC Pol	NEG
Repeller	26.44		
IonFcus	90.2	HEDEnab	ON
EntLens	0.0	EMVolts	1141
EntOffs	VAR		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 50.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

109 peaks Base: 69.00 Abundance: 301120



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	301120	100.00	70.00	3282	1.09
219.00	166208	55.20	220.00	7442	4.48
502.00	17232	5.72	503.00	1666	9.67

TARGET MASS:	50	69	131	219	414	502
DYNAMIC ENT OFFSET:	17.8	15.3	14.3	14.8	13.1	17.3
TARGET ABUND(%):	1.0	100.0	45.0	55.0	3.5	5.5
ACTUAL TUNE ABUND(%):	1.1	100.0	49.9	55.2	3.9	5.7

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

✓ W.W 9/22/04

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D 10000 = I 109167
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
1)	i	Acenaphthene-d10	----------	----------	----------	ISTD	----------	----------	----------	
2)	t	Decalin	0.261	0.261	0.238	0.254	0.263	0.259	0.259	4.40
3)	A1	trans-Decalin	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
4)	t	cis-Decalin	0.421	0.384	0.351	0.399	0.406	0.398	0.398	6.35
5)	A2	C1-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
6)	A2	C2-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
7)	A2	C3-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
8)	A2	C4-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
9)	A1	Naphthalene	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
10)	A2	C1-Naphthalenes	3.263	2.709	2.551	2.758	2.829	2.737	2.820	7.89
11)	A2	C2-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
12)	A2	C3-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
13)	A2	C4-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
14)	s	2-Methylnaphthale	1.006	1.137	1.124	1.240	1.296	1.272	1.206	10.19
15)	t	2-Methylnaphthale	1.689	1.647	1.565	1.725	1.780	1.714	1.704	4.84
16)	t	1-Methylnaphthale	1.604	1.494	1.414	1.546	1.608	1.559	1.553	5.03
17)	A1	Benzothiophene	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
18)	A2	C1-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
19)	A2	C2-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
20)	A2	C3-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
21)	A2	C4-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
22)	t	Biphenyl	1.836	1.824	1.767	2.006	1.993	2.044	1.948	7.36
23)	t	2,6-Dimethylnapht	1.274	1.189	1.191	1.311	1.375	1.367	1.308	7.49
24)	t	Dibenzofuran	2.167	2.006	1.948	2.179	2.260	2.223	2.158	6.26
25)	t	Acenaphthylene	2.170	2.124	1.997	2.315	2.455	2.539	2.333	11.06
26)	t	Acenaphthene	1.454	1.386	1.335	1.467	1.533	1.504	1.467	5.88
27)	t	2,3,5-Trimethylna	1.150	0.985	0.955	1.058	1.122	1.140	1.089	8.61
28)	A1	Fluorene	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
29)	A2	C1-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
30)	A2	C2-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
31)	A2	C3-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
32)	A1	Dibenzothiophene	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
33)	A2	OTP	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
34)	A2	C1-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
35)	A2	C2-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
36)	A2	C3-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
37)	A2	C4-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
38)	A1	Phenanthrene	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
39)	A2	C1-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
40)	A2	C2-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
41)	A2	5AA IS BKGD	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
42)	A2	C3-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
43)	A2	C4-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
44)	A2	Retene	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
45)	t	Anthracene	2.687	1.579	1.629	1.834	2.025	2.126	2.027	19.35

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
46)	t	Carbazole							0.000#	-1.00
47)	t	1-Methylphenanthr	1.077	1.123	1.120	1.207	1.312	1.371	1.239	11.75
48)	A1	Fluoranthene	3.007	1.710	1.671	1.745	1.941	2.040	2.045	22.79
49)	A2	Benzo(b)fluorene	3.007	1.710	1.671	1.745	1.941	2.040	2.045	22.79
50)	s	Pyrene-d10	0.964	1.053	1.068	1.142	1.252	1.323	1.178	14.29
51)	A1	Pyrene		2.275	1.864	1.804	1.967	1.974	2.002	8.68
52)	A2	C1-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
53)	A2	C2-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
54)	A2	C3-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
55)	A2	C4-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
56)	A1	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
57)	A2	Naphthobenzothiop	1.783	1.611	1.651	1.667	1.825	1.847	1.775	8.42
58)	A2	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
59)	A2	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
60)	A2	C1-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
61)	A2	C2-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
62)	A2	C3-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
63)	A2	C4-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
64)	i	Chrysene-d12	----------ISTD----------							
65)	t	Benz[a]anthracene	1.763	1.503	1.389	1.460	1.528	1.553	1.558	8.56
66)	t	Chrysene	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
67)	A1	Chrysene/Tripheny	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
68)	A2	C1-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
69)	A2	C2-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
70)	A2	BBF-d12 Surr BKGD	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
71)	A2	C3-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
72)	A2	C4-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
73)	s	Benzo[b]fluoranth	0.975	1.085	0.975	1.105	1.146	1.184	1.111	10.62
74)	t	Benzo[b]fluoranth	1.815	1.692	1.496	1.744	1.828	1.805	1.764	8.29
75)	A1	Benzo[k]fluoranth	1.796	1.668	1.505	1.742	1.803	1.788	1.750	7.84
76)	A2	Benzo[a]fluoranth	1.796	1.668	1.505	1.742	1.803	1.788	1.750	7.84
77)	t	Benzo[e]pyrene	1.789	1.652	1.447	1.651	1.710	1.708	1.688	7.69
78)	t	Benzo[a]pyrene	1.787	1.677	1.424	1.652	1.710	1.774	1.709	9.16
79)	t	Perylene	1.755	1.622	1.387	1.624	1.688	1.727	1.668	9.08
80)	t	Indeno[1,2,3-cd]p	1.885	1.722	1.448	1.773	1.797	1.914	1.790	9.83
81)	t	Dibenz[a,h]anthra	1.630	1.611	1.388	1.703	1.743	1.797	1.677	9.26
82)	t	Benzo[g,h,i]peryl	1.848	1.831	1.591	1.942	1.970	2.002	1.885	7.84
83)	t	17a(H),21B(H)-hop	0.821	0.779	0.659	0.713	0.702	0.603	0.703	10.89
84)	A1	Hopane (T19)	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
85)	A2	C23 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
86)	A2	C24 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
87)	A2	C25 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
88)	A2	C24 Tetracyclic T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
89)	A2	C26 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
90)	A2	C26 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
91)	A2	C28 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
92)	A2	C28 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
93)	A2	C29 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
94)	A2	C29 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
95)	A2	18a-22,29,30-Tris	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
96)	A2	17a(H)-22,29,30-T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
97)	A2	17a/b,21b/a 28,30	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
98)	A2	17a(H),21b(H)-25-	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
99)	A2	30-Norhopane (T15	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
100)	A2	18a(H)-30-Norneoh	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
101)	A2	17a(H)-Diahopane	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
102)	A2	30-Normoretane (T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
103)	A2	18a(H)&18b(H)-Ole	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
104)	A2	Moretane (T20)	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
105)	A2	30-Homohopane-22S	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
106)	A2	30-Homohopane-22R	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
107)	A2	30,31-Bishomohopa	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
108)	A2	30,31-Bishomohopa	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
109)	A2	30,31-Trishomohop	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
110)	A2	30,31-Trishomohop	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
111)	A2	Tetrakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
112)	A2	Tetrakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
113)	A2	Pentakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
114)	A2	Pentakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
115)	SA1	5B(H)Cholane - Su	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
116)	A2	13b(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
117)	A2	13b(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
118)	A2	13b,17a-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
119)	A2	14a(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
120)	A2	14a(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
121)	A2	13b,17a-20R-Ethyl	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
122)	A2	13a,17b-20S-Ethyl	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
123)	A2	14a,17a-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
124)	A2	14a,17a-20R-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
125)	A2	14a(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
126)	A2	14a(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
127)	A2	14b(H),17b(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
128)	A2	14b(H),17b(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
129)	A2	14b,17b-20R-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
130)	A2	14b,17b-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
131)	A2	14b(H),17b(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
132)	A2	14b(H),17b(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	109	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.000#	100.0#	0#	-16.01#
4	t	cis-Decalin	0.398	0.000#	100.0#	0#	-17.23#
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.501	11.3	99	0.00
10	A2	C1-Naphthalenes	2.820	2.949	-4.6	116	0.01
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.244	-3.2	109	0.00
15	t	2-Methylnaphthalene	1.704	1.500	12.0	95	0.01
16	t	1-Methylnaphthalene	1.553	1.447	6.8	102	0.00
17	A1	Benzothiophene	2.375	0.000#	100.0#	0#	-19.55#
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.807	7.2	98	0.00
23	t	2,6-Dimethylnaphthalene	1.308	1.198	8.4	99	0.00
24	t	Dibenzofuran	2.158	1.922	10.9	96	0.00
25	t	Acenaphthylene	2.333	1.960	16.0	92	0.00
26	t	Acenaphthene	1.467	1.338	8.8	99	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	0.995	8.6	102	0.00
28	A1	Fluorene	1.583	1.364	13.8	99	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	0.013#	99.4#	1#	0.01
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.852	8.5	100	0.00

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.696	16.3	101	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#
47	t	1-Methylphenanthrene	1.239	1.152	7.0	104	0.00
48	A1	Fluoranthene	2.045	1.671	18.3	104	0.00
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.218	-3.4	116	0.00
51	A1	Pyrene	2.002	1.746	12.8	105	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	0.000#	100.0#	0#	-41.72#
57	A2	Naphthobenzothiophene-2,1-D	1.775	0.000#	100.0#	0#	-41.72#
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	107	0.00
65	t	Benz[a]anthracene	1.558	1.477	5.2	108	-0.01
66	t	Chrysene	1.495	1.398	6.5	99	0.00
67	A1	Chrysene/Triphenylene	1.495	1.398	6.5	99	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.137	-2.3	110	-0.01
74	t	Benzo[b]fluoranthene	1.764	1.608	8.8	99	-0.01
75	A1	Benzo[k]fluoranthene	1.750	1.618	7.5	99	-0.01

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.586	6.0	103	-0.01
78	t	Benzo[a]pyrene	1.709	1.593	6.8	103	-0.02
79	t	Perylene	1.668	1.626	2.5	107	-0.02
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.654	7.6	100	-0.04
81	t	Dibenz[a,h]anthracene	1.677	1.550	7.6	97	-0.04
82	t	Benzo[g,h,i]perylene	1.885	1.747	7.3	96	-0.02
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.000#	100.0#	0#	-53.35#
84	A1	Hopane (T19)	0.711	0.000#	100.0#	0#	-53.35#
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.214	-1.9	116	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092001.D
Acq On : 20 Sep 2004 11:19 am
Operator : BL
Sample : C1092001
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:31:05 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	90	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.497	5.9	88	0.00
4	t	cis-Decalin	0.398	0.381	4.3	86	-0.01
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.626	6.8	86	-0.01
10	A2	C1-Naphthalenes	2.820	0.000#	100.0#	0#	-22.06#
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.231	-2.1	90	0.00
15	t	2-Methylnaphthalene	1.704	1.651	3.1	86	0.00
16	t	1-Methylnaphthalene	1.553	1.499	3.5	87	0.00
17	A1	Benzothiophene	2.375	2.339	1.5	86	-0.01
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.779	8.7	80	-0.01
23	t	2,6-Dimethylnaphthalene	1.308	1.277	2.4	88	-0.01
24	t	Dibenzofuran	2.158	2.041	5.4	85	0.00
25	t	Acenaphthylene	2.333	2.138	8.4	83	0.00
26	t	Acenaphthene	1.467	1.398	4.7	86	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.034	5.1	88	-0.01
28	A1	Fluorene	1.583	1.430	9.7	86	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	2.014	7.5	85	0.00
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.876	7.3	84	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092001.D
Acq On : 20 Sep 2004 11:19 am
Operator : BL
Sample : C1092001
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:31:05 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.668	17.7	82	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#
47	t	1-Methylphenanthrene	1.239	0.000#	100.0#	0#	-34.71#
48	A1	Fluoranthene	2.045	1.853	9.4	96	-0.01
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.137	3.5	90	0.00
51	A1	Pyrene	2.002	1.730	13.6	87	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	1.763	0.7	95	-0.01
57	A2	Naphthobenzothiophene-2,1-D	1.775	1.758	1.0	95	-0.01
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	97	0.00
65	t	Benz[a]anthracene	1.558	1.444	7.3	96	-0.01
66	t	Chrysene	1.495	1.504	-0.6	97	0.00
67	A1	Chrysene/Triphenylene	1.495	1.504	-0.6	97	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.118	-0.6	98	0.00
74	t	Benzo[b]fluoranthene	1.764	1.753	0.6	98	0.00
75	A1	Benzo[k]fluoranthene	1.750	1.731	1.1	97	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092001.D
Acq On : 20 Sep 2004 11:19 am
Operator : BL
Sample : C1092001
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:31:05 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.637	3.0	96	0.00
78	t	Benzo[a]pyrene	1.709	1.578	7.7	93	-0.01
79	t	Perylene	1.668	1.543	7.5	92	0.00
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.549	13.5	85	-0.01
81	t	Dibenz[a,h]anthracene	1.677	1.485	11.4	85	-0.01
82	t	Benzo[g,h,i]perylene	1.885	1.718	8.9	86	0.00
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.678	3.6	92	-0.01
84	A1	Hopane (T19)	0.711	0.678	4.6	92	-0.01
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092001.D
Acq On : 20 Sep 2004 11:19 am
Operator : BL
Sample : C1092001
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:31:05 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.189	10.0	93	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	80	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.522	1.1	82	0.00
4	t	cis-Decalin	0.398	0.403	-1.3	81	-0.01
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.810	0.3	82	0.00
10	A2	C1-Naphthalenes	2.820	0.000#	100.0#	0#	-22.06#
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.241	-2.9	80	0.00
15	t	2-Methylnaphthalene	1.704	1.738	-2.0	81	0.00
16	t	1-Methylnaphthalene	1.553	1.569	-1.0	81	0.00
17	A1	Benzothiophene	2.375	2.467	-3.9	81	-0.01
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.910	2.0	76	-0.01
23	t	2,6-Dimethylnaphthalene	1.308	1.308	0.0	80	-0.01
24	t	Dibenzofuran	2.158	2.152	0.3	79	0.00
25	t	Acenaphthylene	2.333	1.965	15.8	68	0.00
26	t	Acenaphthene	1.467	1.442	1.7	79	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.021	6.2	78	-0.01
28	A1	Fluorene	1.583	1.444	8.8	78	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	2.045	6.1	76	0.00
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.847	8.7	74	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.542	23.9	68	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#
47	t	1-Methylphenanthrene	1.239	0.000#	100.0#	0#	-34.71#
48	A1	Fluoranthene	2.045	1.549	24.3	71	-0.01
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.034	12.2	73	-0.01
51	A1	Pyrene	2.002	1.701	15.0	76	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	1.585	10.8	76	0.00
57	A2	Naphthobenzothiophene-2,1-D	1.775	1.580	11.0	76	0.00
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	85	0.00
65	t	Benz[a]anthracene	1.558	1.224	21.4	72	0.00
66	t	Chrysene	1.495	1.533	-2.5	87	0.00
67	A1	Chrysene/Triphenylene	1.495	1.533	-2.5	87	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.019	8.3	79	-0.03
74	t	Benzo[b]fluoranthene	1.764	1.692	4.1	83	-0.02
75	A1	Benzo[k]fluoranthene	1.750	1.677	4.2	82	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.568	7.1	81	-0.03
78	t	Benzo[a]pyrene	1.709	1.310	23.3	68	-0.04
79	t	Perylene	1.668	1.353	18.9	71	-0.03
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.349	24.6	65	-0.05
81	t	Dibenz[a,h]anthracene	1.677	1.434	14.5	72	-0.05
82	t	Benzo[g,h,i]perylene	1.885	1.633	13.4	72	-0.05
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.579	17.6	69	-0.05
84	A1	Hopane (T19)	0.711	0.579	18.6	69	-0.05
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.162	22.9	70	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

C 038

Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408122**
Lab ID: **C1092001**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		35455	26.19	38995	42.67
Upper Limit:		70910	26.69	77990	43.17
Lower Limit:		17728	25.69	19498	42.17
Client ID	**Lab ID**				
Blank	SW090104B11	42045	26.19	40878	42.67
LCS	SW090104BS07	33358	26.19	37505	42.66
LCSD	SW090104BSD07	36321	26.19	37021	42.66
DSY-SD-FB01-082704	0408122-04	37454	26.19	40187	42.66
CCV	C1092002	31548	26.19	34299	42.66

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

C 039

10/07/04 07:19

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/01/2004 0408119S - OP NEWFIE

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408119-01	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1 0.5/0.5	MP	9/2/04	
0408119-02	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-03	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-04	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-05	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-06	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-07	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-08	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-09	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-10	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408119-11	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-01	SAM	3510C	MP	9/1/04	9/2/04		980	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-02	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-03	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-04	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104B11	B	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104B11	B	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BS07	BS	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BS07	BS	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BSD07	BSD	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BSD07	BSD	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	

Split 1/2 mL for SVOC 9/8/04

040

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/01/2004 0408119S - OP NEWFIE

Lab ID	Notes
0408119-01	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-02	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-03	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-04	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-05	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-06	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-07	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-08	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-09	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-10	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408119-11	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408122-01	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408122-02	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408122-03	1st Prep: pHi=7 for all samples, extracted @ neutral pH
0408122-04	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104B11	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104B11	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104BS07	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104BS07	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104BSD07	1st Prep: pHi=7 for all samples, extracted @ neutral pH
SW090104BSD07	1st Prep: pHi=7 for all samples, extracted @ neutral pH

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/01/2004 0408119S - OP SHC Analyst: MP Witness: JFR

Lab ID	QC Type	OP SHC - surr	Vol OP SHC - surr	Units OP SHC - surr	OP SHC - spk 1	Vol OP SHC - spk 1	Units OP SHC - spk 1	OP SHC - spk 2	Vol OP SHC - spk 2	Units OP SHC - spk 2
0408119-01	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-02	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-03	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-04	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-05	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-06	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-07	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-08	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-09	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-10	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-11	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408122-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SW090104B11	B	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104B11	B	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SW090104BS07	BS	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SW090104BSD07	BSD	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: NwFe SHC /PAH

Standard Type: Surrogate / LCS / MS-MSD

LFB / Other _____

ID# SSW083104B

Conc. SHC - 500 ug/mL / PAH 10 ug/mL

Test: NwFe SHC /PAH

Standard Type: Surrogate / LCS / MS-MSD

LFB / Other _____

ID# SLW090104G

Conc. SHC 500 ug/mL / PAH 10 ug/mL

Test: NwFe Biomarkers

Standard Type Surrogate / LCS / MS-MSD

LFB / Other _____

ID# SSW090104E

Conc. 10 ug/mL

042

Woods Hole Group Environmental Laboratories
Batch Weight Report
09/01/2004

Lab ID	QC Type	0408119S - Sample
0408119-01	SAM	1000
0408119-02	SAM	1000
0408119-03	SAM	1000
0408119-04	SAM	1000
0408119-05	SAM	1000
0408119-06	SAM	1000
0408119-07	SAM	1000
0408119-08	SAM	1000
0408119-09	SAM	1000
0408119-10	SAM	1000
0408119-11	SAM	1000
0408122-01	SAM	980
0408122-02	SAM	1000
0408122-03	SAM	1000
0408122-04	SAM	1000
SW090104B11	B	1000
SW090104B11	B	1000
SW090104BS07BS	OP NEWFIE	1000
SW090104BS07BS	OP NEWFIE	1000
SW090104BS07BS	OP SHC	1000
SW090104BSD07BS	OP NEWFIE	1000
SW090104BSD07BS	OP NEWFIE	1000
SW090104BSD07BS	OP SHC	1000

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46

COPPER: A14601 SULFURIC ACID: 3102030

GLASS WOOL: 4303309989 SODIUM SULFATE: E13478

DIATEMACEOUS EARTH: 00504

043

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/01/2004 0408119S - OP NEWFIE Analyst: MP Witness: JFR

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408119-01	SAM	SSW083104B	100	µl						
0408119-02	SAM	SSW083104B	100	µl						
0408119-03	SAM	SSW083104B	100	µl						
0408119-04	SAM	SSW083104B	100	µl						
0408119-05	SAM	SSW083104B	100	µl						
0408119-06	SAM	SSW083104B	100	µl						
0408119-07	SAM	SSW083104B	100	µl						
0408119-08	SAM	SSW083104B	100	µl						
0408119-09	SAM	SSW083104B	100	µl						
0408119-10	SAM	SSW083104B	100	µl						
0408119-11	SAM	SSW083104B	100	µl						
0408122-01	SAM	SSW083104B	100	µl						
0408122-02	SAM	SSW083104B	100	µl						
0408122-03	SAM	SSW083104B	100	µl						
0408122-04	SAM	SSW083104B	100	µl						
SW090104B11	B	SSW083104B	100	µl						
SW090104B11	B	SSW083104B	100	µl						
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl			

Test: NewFie - PAH / SHC

Standard Type: (Surrogate) / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW 083104B

Conc. PAH - 10 ug/mL / SHC - 500 ug/mL

Test: NewFie PAH / SHC

Standard Type: *Surrogate* / (LCS) / *MS-MSD*

LFB / *Other* _____

ID# SLW090104G

Conc. PAH 10 ug/mL / SHC 500 ug/mL

044

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR SHI
ETR: 0408122

LabID	Extract Vol (uL)	Standard ID and Vial #	Vol IS Added (uL)	Pre-Injection Vol (uL)	Final Volume Equivalent	Spiked By	With'd By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408122-1	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-2	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-3	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-4	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04

Sequence Name: C:\MSDChem\1\sequence\S1091701.S
Comment: Dural column collection
Operator: BL
Data Path: C:\MSDCHEM\1\DATA\SEPT17\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info			
1)	RearSamp	3				
	Datafile		i FID 1 ug/mL			
	Method		PAH10916			
2)	Sample	4	I109161	PAH10916	I109161	
3)	RearSamp	5				
	Datafile		i FID 10 ug/mL			
	Method		PAH10916			
4)	Sample	6	I109162	PAH10916	I109162	
5)	Sample	8	I109163	PAH10916	I109163	
6)	Sample	10	I109164	PAH10916	I109164	
7)	Sample	12	I109165	PAH10916	I109165	
8)	Sample	14	I109166	PAH10916	I109166	
9)	Sample	16	I109167	PAH10916	I109167	
10)	Sample	17	ANS10916	PAH10916	ANS10916	SS092304AWS01
11)	Sample	18	Q10916	PAH10916	Q10916	
12)	Sample	19	SA10916	PAH10916	SA10916	SS092304SA01
13)	Sample	20	SSF10916	PAH10916	SSF10916	SS092304SSF01
14)	Sample	21	C109161	PAH10916	C109161	
15)	Sample	22	B10916	PAH10916	B10916	
16)	Sample	23				
	Datafile		TS090704B05			
	Method		PAH10916			
17)	Sample	24				
	Datafile		TS090704B06 ✓			
	Method		PAH10916			
18)	Sample	25				
	Datafile		TS090704BS05 ✓			
	Method		PAH10916			
19)	Sample	26				
	Datafile		TS090704BSD05 ✓			
	Method		PAH10916			
20)	Sample	27				
	Datafile		0409019-01 ✓			
	Method		PAH10916			
21)	Sample	28				
	Datafile		0409019-01D ✓			
	Method		PAH10916			
22)	Sample	29	C109162	PAH10916	C109162	
23)	Sample	30				
	Datafile		TS083004B06			
	Method		PAH10916			
24)	Sample	31				

046

Datafile		TS083004BS03	
Method		PAH10916	
25) Sample	32		
Datafile		TS083004BSD03	
Method		PAH10916	
26) Sample	33		
Datafile		0408098-01	
Method		PAH10916	
27) Sample	~~33~~		
Datafile	34	0408098-01D	
Method		PAH10916	
28) Sample	29	C109163	PAH10916 C109163

047

Sequence Name: C:\MSDChem\1\sequence\S1092001.S
Comment: Derecktor
Operator: BL
Data Path: C:\MSDCHEM\1\DATA\SEPT20A\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Reprinted cm 9/23/04

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line		Sample Name/Misc Info
1) Sample	1	C1092001 PAH10916 C1092001
2) Sample	2	
Datafile		SW090104B11
Method		PAH10916
3) Sample	3	
Datafile		SW090104BS07
Method		PAH10916
4) Sample	4	
Datafile		SW090104BSD07
Method		PAH10916
5) Sample	5	
Datafile		0408~~119-04~~ 122-04 ms
Method		PAH10916
6) Sample	6	C1092002 PAH10916 C1092002
7) Sample	7	
Datafile		SS090704B02
Method		PAH10916
8) Sample	8	
Datafile		SS090704BS02
Method		PAH10916
9) Sample	9	
Datafile		SS090704BSD02
Method		PAH10916
10) Sample	10	
Datafile		0408123-01
Method		PAH10916
11) Sample	11	
Datafile		0408123-02
Method		PAH10916
12) Sample	12	
Datafile		0408123-03
Method		PAH10916
13) Sample	13	
Datafile		0408123-04
Method		PAH10916
14) Sample	14	
Datafile		0408123-05
Method		PAH10916
15) Sample	15	
Datafile		0408123-06
Method		PAH10916
16) Sample	16	

048

```
     Datafile          0408123-07
     Method            PAH10916
17)  Sample        17  C1092003 PAH10916 C1092003
18) Sample         18
     Datafile          0408123-08
     Method            PAH10916
19) Sample         19
     Datafile          0408123-09
     Method            PAH10916
20) Sample        100
     Datafile          0408048-06E2
     Method            PAH10916
21) Sample         20
     Datafile          0408123-10
     Method            PAH10916
22) Sample         21
     Datafile          0408123-11
     Method            PAH10916
23) Sample         22
     Datafile          0408123-11D
     Method            PAH10916
24) Sample         23
     Datafile          0408123-11M
     Method            PAH10916
25) Sample         24
     Datafile          0408123-12
     Method            PAH10916
26) Sample         25
     Datafile          0408123-13
     Method            PAH10916
27) Sample         26
     Datafile          0408123-14
     Method            PAH10916
28) Sample         27
     Datafile          0408123-15
     Method            PAH10916
29)  Sample        28  C1092004 PAH10916 C1092004
30) Sample         29
     Datafile          SS090704B02-F1
     Method            PAH10916
31) Sample         30
     Datafile          SS090704BS02-F1
     Method            PAH10916
32) Sample         31
     Datafile          SS090704BSD02-F1
     Method            PAH10916
33) Sample         32
     Datafile          0408123-01-F1
     Method            PAH10916
34) Sample         33
     Datafile          0408123-02-F1
     Method            PAH10916
35) Sample         34
     Datafile          0408123-03-F1
     Method            PAH10916
36) Sample         35
     Datafile          0408123-04-F1
     Method            PAH10916
37) Sample         36
     Datafile          0408123-05-F1
```

049

```
     Method              PAH10916
38)  Sample         37
     Datafile            0408123-06-F1
     Method              PAH10916
39)  Sample         38
     Datafile            0408123-07-F1
     Method              PAH10916
40)  Sample         39  C1092005 PAH10916 C1092005
41)  Sample         40
     Datafile            0408123-08-F1
     Method              PAH10916
42)  Sample         41
     Datafile            0408123-09-F1
     Method              PAH10916
43)  Sample         42
     Datafile            0408123-10-F1
     Method              PAH10916
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(050

Sequence Name: C:\MSDChem\1\sequence\S1092001.S

Line Type	Vial	DataFile	Method	Sample Name
44) Sample	43			
Datafile		0408123-11-F1		
Method		PAH10916		
45) Sample	44			
Datafile		0408123-11D-F1		
Method		PAH10916		
46) Sample	45			
Datafile		0408123-11MS-F1		
Method		PAH10916		
47) Sample	46			
Datafile		0408123-12-F1		
Method		PAH10916		
48) Sample	46	DCM	PAH10916	DCM
49) Sample	46	BLANK2	PAH10916	BLANK2
50) Sample	47			
Datafile		0408123-13-F1		
Method		PAH10916		
51) Sample	48			
Datafile		0408123-14-F1		
Method		PAH10916		
52) Sample	49			
Datafile		0408123-15-F1		
Method		PAH10916		
53) Sample	50	C1092006	PAH10916	C1092006

error data collection
scan BLK2 +
Restarted
CY
9/23/04

051

SATURATED AND TOTAL PETROLEUM HYDROCARBONS

Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-FB01-082704**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **0408122-04**
Associated Blank: **SW090104B11**
Concentration Units: **mg/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
08/27/04	08/31/04	09/01/04	09/25/04	1000	1	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	0.0010	U	n-Docosane (C22)	0.0010	U
n-Decane (C10)	0.0010	U	n-Tricosane (C23)	0.0010	U
n-Undecane (C11)	**0.0015**		n-Tetracosane (C24)	0.0010	U
n-Dodecane (C12)	0.0010	U	n-Pentacosane (C25)	0.0010	U
n-Tridecane (C13)	0.0010	U	n-Hexacosane (C26)	**0.00012**	J
2,6,10 Trimethyldodecane (1380)	0.0010	U	n-Heptacosane (C27)	0.0010	U
n-Tetradecane (C14)	0.0010	U	n-Octacosane (C28)	**0.0035**	
2,6,10 Trimethyltridecane (1470)	**0.00012**	J	n-Nonacosane (C29)	0.0010	U
n-Pentadecane (C15)	**0.000040**	J	n-Triacontane (C30)	0.0010	U
n-Hexadecane (C16)	0.0010	U	n-Hentriacontane (C31)	0.0010	U
Norpristane (1650)	**0.0013**		n-Dotriacontane (C32)	0.0010	U
n-Heptadecane (C17)	0.0010	U	n-Tritriacontane (C33)	0.0010	U
Pristane	0.0010	U	n-Tetratriacontane (C34)	0.0010	U
n-Octadecane (C18)	0.0010	U	n-Pentatriacontane (C35)	0.0010	U
Phytane	0.0010	U	n-Hexatriacontane (C36)	0.0010	U
n-Nonadecane (C19)	0.0010	U	n-Heptatriacontane (C37)	0.0010	U
n-Eicosane (C20)	0.0010	U	n-Octatriacontane (C38)	0.0010	U
n-Heneicosane (C21)	0.0010	U	n-Tetracontane (C40)	0.0010	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.0051**	
Total Extractable Material[2]	0.033	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	73	50-130
d50-Tetracosane	74	50-130

10/07/04 12:11

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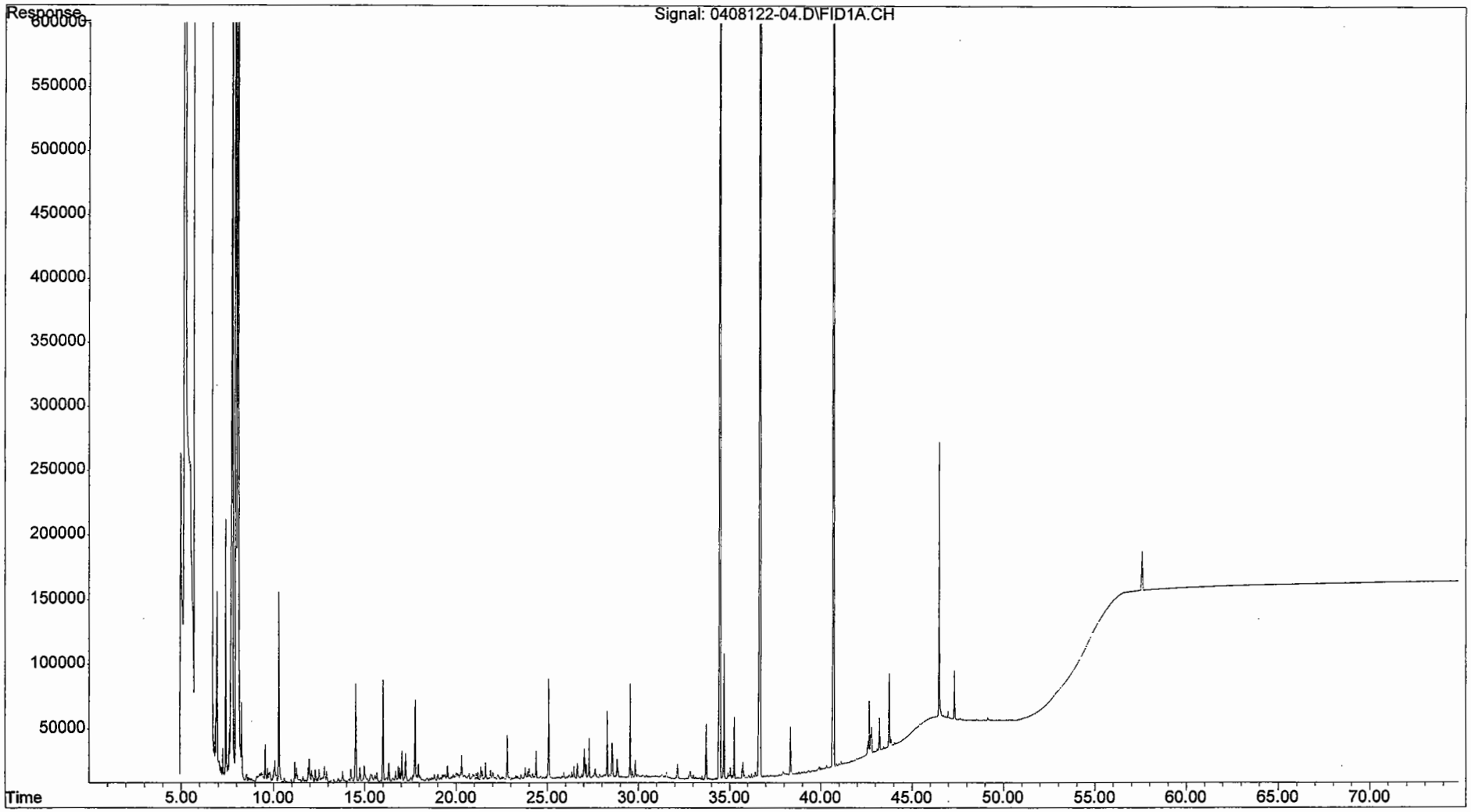
File :C:\MSDChem\1\DATA\SEPT24\0408122-04.D
Operator : NLJr
Acquired : 25 Sep 2004 5:20 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408122-04
Misc Info : 1X
Vial Number: 16



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104B11**
Associated Blank: **N/A**
Concentration Units: **mg/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/25/04	1000	1	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.000020**	J	n-Docosane (C22)	0.0010	U
n-Decane (C10)	0.0010	U	n-Tricosane (C23)	0.0010	U
n-Undecane (C11)	0.0010	U	n-Tetracosane (C24)	0.0010	U
n-Dodecane (C12)	0.0010	U	n-Pentacosane (C25)	0.0010	U
n-Tridecane (C13)	0.0010	U	n-Hexacosane (C26)	0.0010	U
2,6,10 Trimethyldodecane (1380)	0.0010	U	n-Heptacosane (C27)	0.0010	U
n-Tetradecane (C14)	0.0010	U	n-Octacosane (C28)	0.0010	U
2,6,10 Trimethyltridecane (1470)	0.0010	U	n-Nonacosane (C29)	0.0010	U
n-Pentadecane (C15)	0.0010	U	n-Triacontane (C30)	0.0010	U
n-Hexadecane (C16)	0.0010	U	n-Hentriacontane (C31)	0.0010	U
Norpristane (1650)	0.0010	U	n-Dotriacontane (C32)	0.0010	U
n-Heptadecane (C17)	**0.000070**	J	n-Tritriacontane (C33)	0.0010	U
Pristane	0.0010	U	n-Tetratriacontane (C34)	0.0010	U
n-Octadecane (C18)	0.0010	U	n-Pentatriacontane (C35)	0.0010	U
Phytane	0.0010	U	n-Hexatriacontane (C36)	0.0010	U
n-Nonadecane (C19)	0.0010	U	n-Heptatriacontane (C37)	0.0010	U
n-Eicosane (C20)	0.0010	U	n-Octatriacontane (C38)	0.0010	U
n-Heneicosane (C21)	0.0010	U	n-Tetracontane (C40)	0.0010	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.000090**	J
Total Extractable Material[2]	0.033	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	93	50-130
d50-Tetracosane	91	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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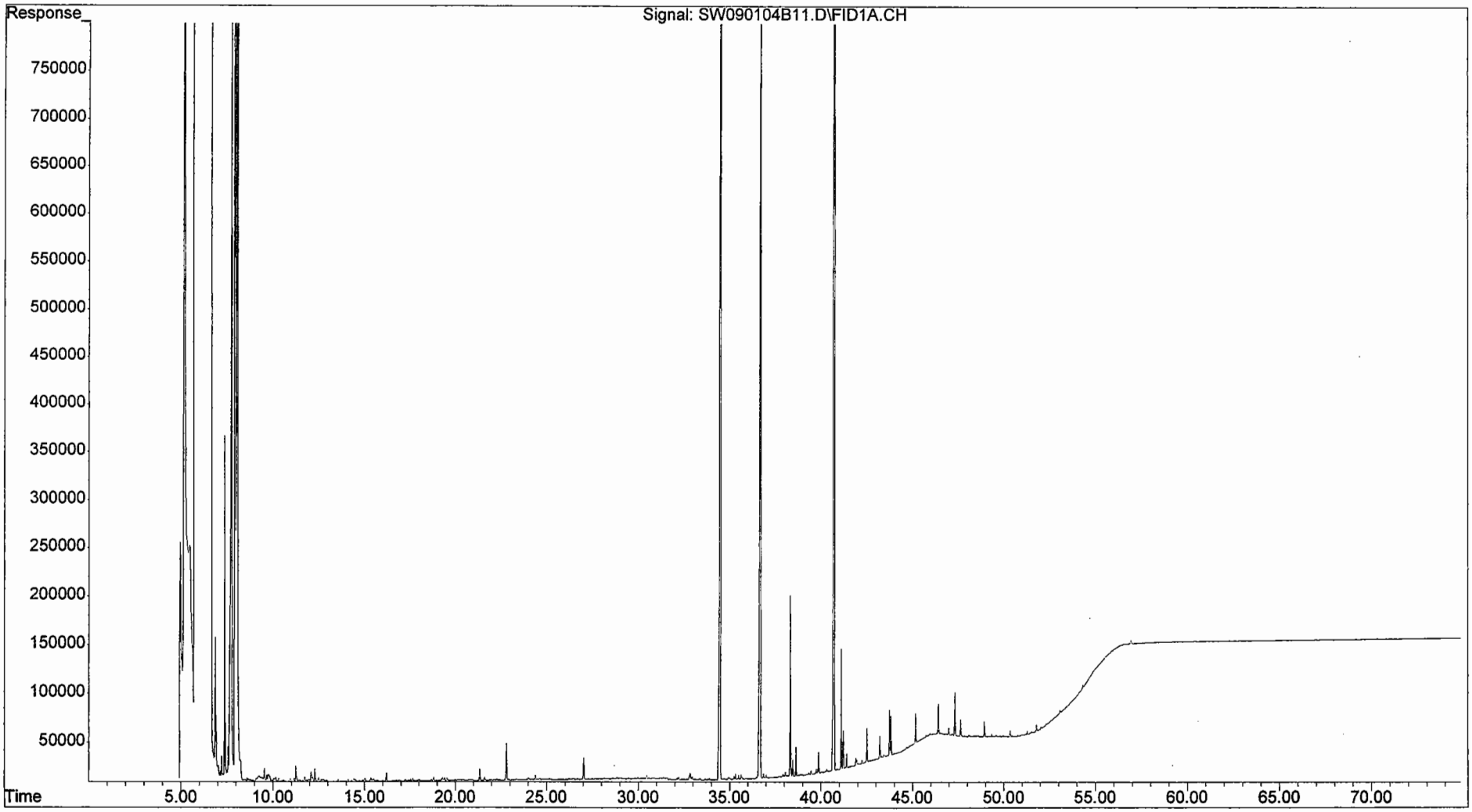
File :O:\Organics\DATA\PAH2\SEPT24\SW090104B11.D
Operator : NLJr
Acquired : 25 Sep 2004 12:46 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SW090104B11
Misc Info : 1X
Vial Number: 13



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104BS07**
Associated Blank: **SW090104B11**
Concentration Units: **mg/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/25/04	1000	1	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.037**	SB	n-Docosane (C22)	**0.050**	S
n-Decane (C10)	**0.042**	S	n-Tricosane (C23)	0.0010	U
n-Undecane (C11)	0.0010	U	n-Tetracosane (C24)	**0.052**	S
n-Dodecane (C12)	**0.045**	S	n-Pentacosane (C25)	0.0010	U
n-Tridecane (C13)	0.0010	U	n-Hexacosane (C26)	**0.048**	S
2,6,10 Trimethyldodecane (1380)	0.0010	U	n-Heptacosane (C27)	0.0010	U
n-Tetradecane (C14)	**0.046**	S	n-Octacosane (C28)	**0.050**	S
2,6,10 Trimethyltridecane (1470)	0.0010	U	n-Nonacosane (C29)	0.0010	U
n-Pentadecane (C15)	0.0010	U	n-Triacontane (C30)	**0.049**	S
n-Hexadecane (C16)	**0.048**	S	n-Hentriacontane (C31)	0.0010	U
Norpristane (1650)	0.0010	U	n-Dotriacontane (C32)	0.0010	U
n-Heptadecane (C17)	0.0010	U	n-Tritriacontane (C33)	0.0010	U
Pristane	0.0010	U	n-Tetratriacontane (C34)	0.0010	U
n-Octadecane (C18)	**0.048**	S	n-Pentatriacontane (C35)	0.0010	U
Phytane	0.0010	U	n-Hexatriacontane (C36)	**0.044**	S
n-Nonadecane (C19)	**0.049**	S	n-Heptatriacontane (C37)	0.0010	U
n-Eicosane (C20)	**0.049**	S	n-Octatriacontane (C38)	0.0010	U
n-Heneicosane (C21)	0.0010	U	n-Tetracontane (C40)	0.0010	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.66**
Total Extractable Material[2]	**0.18**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	93	50-130
d50-Tetracosane	91	50-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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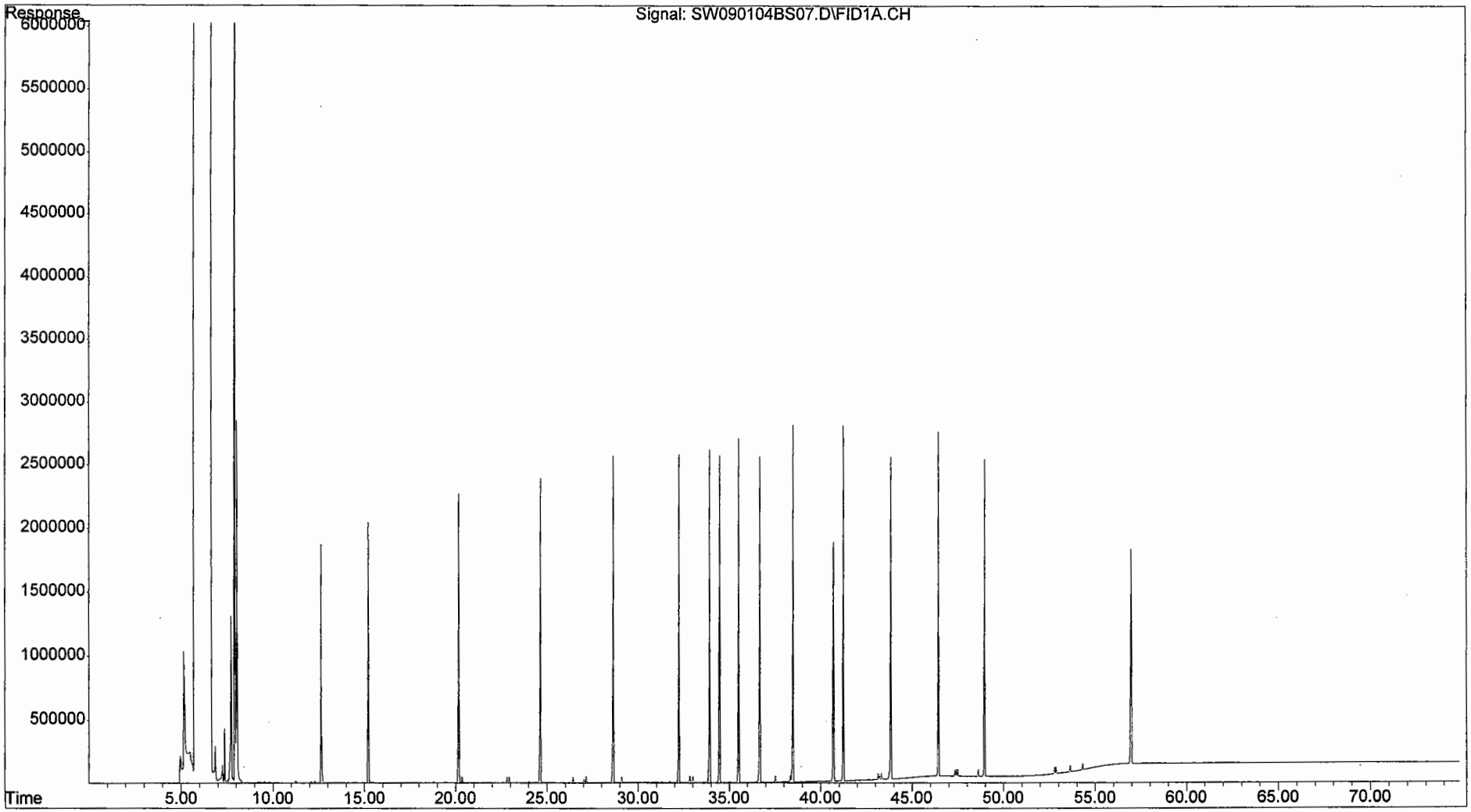
File :O:\Organics\DATA\PAH2\SEPT24\SW090104BS07.D
Operator : NLJr
Acquired : 25 Sep 2004 2:16 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SW090104BS07
Misc Info : 1X
Vial Number: 14



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104BSD07**
Associated Blank: **SW090104B11**
Concentration Units: **mg/L**

Date Collected	Date Received	Date Extracted	Date Analyzed	Sample Amount (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/01/04	09/25/04	1000	1	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.041**	SB	n-Docosane (C22)	**0.051**	S
n-Decane (C10)	**0.046**	S	n-Tricosane (C23)	0.0010	U
n-Undecane (C11)	0.0010	U	n-Tetracosane (C24)	**0.053**	S
n-Dodecane (C12)	**0.048**	S	n-Pentacosane (C25)	0.0010	U
n-Tridecane (C13)	0.0010	U	n-Hexacosane (C26)	**0.050**	S
2,6,10 Trimethyldodecane (1380)	0.0010	U	n-Heptacosane (C27)	0.0010	U
n-Tetradecane (C14)	**0.046**	S	n-Octacosane (C28)	**0.052**	S
2,6,10 Trimethyltridecane (1470)	0.0010	U	n-Nonacosane (C29)	0.0010	U
n-Pentadecane (C15)	0.0010	U	n-Triacontane (C30)	**0.051**	S
n-Hexadecane (C16)	**0.047**	S	n-Hentriacontane (C31)	0.0010	U
Norpristane (1650)	0.0010	U	n-Dotriacontane (C32)	0.0010	U
n-Heptadecane (C17)	0.0010	U	n-Tritriacontane (C33)	0.0010	U
Pristane	0.0010	U	n-Tetratriacontane (C34)	0.0010	U
n-Octadecane (C18)	**0.047**	S	n-Pentatriacontane (C35)	0.0010	U
Phytane	0.0010	U	n-Hexatriacontane (C36)	**0.045**	S
n-Nonadecane (C19)	**0.048**	S	n-Heptatriacontane (C37)	0.0010	U
n-Eicosane (C20)	**0.049**	S	n-Octatriacontane (C38)	0.0010	U
n-Heneicosane (C21)	0.0010	U	n-Tetracontane (C40)	0.0010	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.67**
Total Extractable Material[2]	**0.15**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	91	50-130
d50-Tetracosane	92	50-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 12:11

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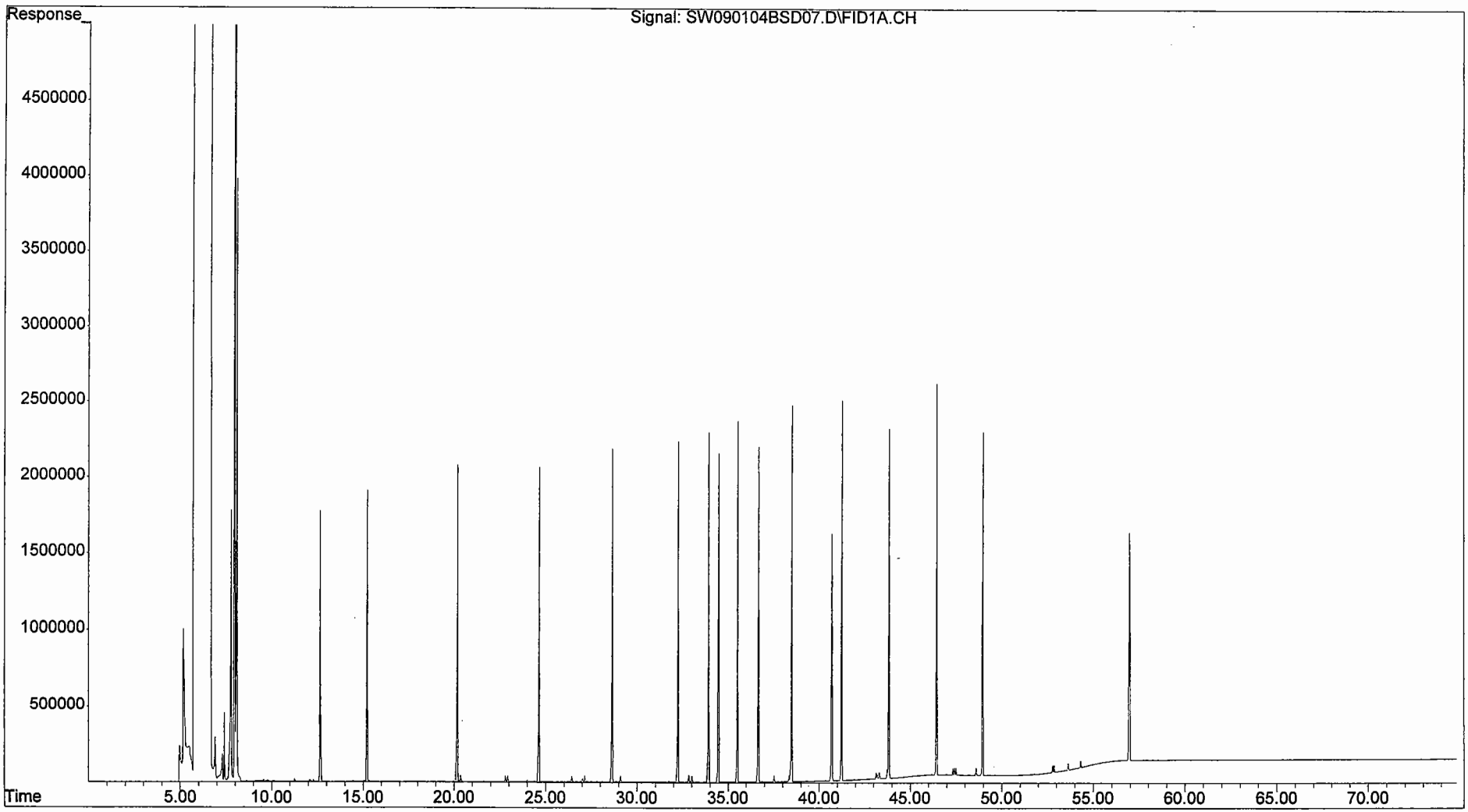
File :O:\Organics\DATA\PAH2\SEPT24\SW090104BSD07.D
Operator : NLJr
Acquired : 25 Sep 2004 3:48 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SW090104BSD07
Misc Info : 1X
Vial Number: 15



Form III
Spike Recovery Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Water**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **See Below**
Associated Blank: **SW090104B11**
Concentration Units: **mg/L**

Date Collected	Date Received	Date Extracted	Analyst
N/A	N/A	09/01/04	NLJr

Lab ID: SW090104B11 SW090104BS07 SW090104BSD07

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
n-Nonane (C9)	0.000020		0.037	73	0.041	83	12	30	50-130
n-Decane (C10)	0.0010	U	0.042	85	0.046	93	9	30	50-130
n-Dodecane (C12)	0.0010	U	0.045	90	0.048	95	5	30	50-130
n-Tetradecane (C14)	0.0010	U	0.046	92	0.046	92	0	30	50-130
n-Hexadecane (C16)	0.0010	U	0.048	95	0.047	93	2	30	50-130
n-Octadecane (C18)	0.0010	U	0.048	96	0.047	94	1	30	50-130
n-Nonadecane (C19)	0.0010	U	0.049	97	0.048	97	0	30	50-130
n-Eicosane (C20)	0.0010	U	0.049	99	0.049	99	0	30	50-130
n-Docosane (C22)	0.0010	U	0.050	100	0.051	101	2	30	50-130
n-Tetracosane (C24)	0.0010	U	0.052	103	0.053	106	3	30	50-130
n-Hexacosane (C26)	0.0010	U	0.048	96	0.050	99	3	30	50-130
n-Octacosane (C28)	0.0010	U	0.050	100	0.052	103	3	30	50-130
n-Triacontane (C30)	0.0010	U	0.049	98	0.051	103	4	30	50-130
n-Hexatriacontane (C36)	0.0010	U	0.044	88	0.045	90	3	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
ortho-Terphenyl	93	91	50-130
d50-Tetracosane	91	92	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

061

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 09:10

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Supporting Quality Control Results

Form II
Surrogate Recovery
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408122**
Matrix: **Water**

Case: **N/A** SDG: **N/A**

Client ID	Lab ID	ortho-Terphenyl	d50-Tetracosane
Blank	SW090104B11	93	91
LCS	SW090104BS07	93	91
LCSD	SW090104BSD07	91	92
DSY-SD-FB01-082704	0408122-04	73	74

N/A - Not Applicable

Surrogate	QC Limit
ortho-Terphenyl	50-130
d50-Tetracosane	50-130

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Form IV
Method Blank Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **SW090104B11**
Date Analyzed: **09/25/04 12:46**

Client ID	Lab ID	Date/Time Analyzed
LCS	SW090104BS07	09/25/04 14:16
LCSD	SW090104BSD07	09/25/04 15:48
DSY-SD-FB01-082704	0408122-04	09/25/04 17:20

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408122**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Nonane (C9)	1.04	0.95	0.94	0.88	0.79	0.92	10.0
n-Decane (C10)	1.00	0.93	0.94	0.88	0.80	0.91	8.3
n-Undecane (C11)	1.02	0.93	0.93	0.87	0.81	0.91	8.5
n-Dodecane (C12)	1.00	0.90	0.93	0.87	0.81	0.90	7.9
n-Tridecane (C13)	1.00	0.90	0.93	0.86	0.82	0.90	7.7
2,6,10 Trimethyldodecane (1380)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
n-Tetradecane (C14)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
2,6,10 Trimethyltridecane (1470)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Pentadecane (C15)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Hexadecane (C16)	1.00	0.87	0.94	0.86	0.85	0.91	7.2
Norpristane (1650)	1.10	0.90	0.99	0.92	0.90	0.96	9.0
n-Heptadecane (C17)	1.01	0.90	0.99	0.92	0.90	0.95	5.7
Pristane	1.06	0.91	0.97	0.88	0.86	0.94	8.5
n-Octadecane (C18)	1.01	0.90	0.98	0.89	0.88	0.93	6.5
Phytane	1.03	0.91	0.99	0.89	0.88	0.94	7.0
n-Nonadecane (C19)	1.04	0.90	0.97	0.87	0.88	0.93	7.8
n-Eicosane (C20)	1.01	0.90	0.98	0.88	0.88	0.93	6.3
n-Heneicosane (C21)	1.04	0.94	1.00	0.93	0.91	0.96	5.9
n-Docosane (C22)	1.05	0.94	1.01	0.93	0.91	0.97	6.0
n-Tricosane (C23)	1.04	0.94	1.01	0.93	0.90	0.96	5.8
n-Tetracosane (C24)	0.98	0.91	0.96	0.89	0.86	0.92	5.6
n-Pentacosane (C25)	1.06	0.96	1.01	0.94	0.90	0.97	6.2
n-Hexacosane (C26)	1.09	0.99	1.04	0.97	0.92	1.00	6.5
n-Heptacosane (C27)	1.04	0.96	1.02	0.94	0.89	0.97	6.4
n-Octacosane (C28)	1.07	0.98	1.03	0.95	0.90	0.99	6.9
n-Nonacosane (C29)	1.08	1.00	1.04	0.96	0.90	0.99	6.9
n-Triacontane (C30)	1.09	1.00	1.04	0.96	0.90	1.00	7.2
n-Hentriacontane (C31)	1.04	0.97	1.00	0.92	0.87	0.96	7.2
n-Dotriacontane (C32)	1.08	1.02	1.04	0.96	0.90	1.00	7.1
n-Tritriacontane (C33)	1.02	0.97	0.98	0.91	0.85	0.95	7.1
n-Tetratriacontane (C34)	1.09	1.03	1.06	0.98	0.91	1.01	6.8
n-Pentatriacontane (C35)	1.06	1.01	1.06	0.95	0.90	1.00	7.2
n-Hexatriacontane (C36)	1.14	1.04	1.07	0.99	0.95	1.04	7.2

N/A - Not Applicable

10/07/04 16:39

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408122**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Heptatriacontane (C37)	1.09	1.01	1.05	0.97	0.94	1.01	6.0
n-Octatriacontane (C38)	1.01	0.97	1.03	0.96	0.93	0.98	4.0
n-Nonatriacontane (C39)	0.079	0.071	0.077	0.072	0.071	0.074	5.0
n-Tetracontane (C40)	0.79	0.88	1.00	0.95	0.94	0.91	9.1
ortho-Terphenyl	1.14	1.04	1.08	0.96	0.96	1.04	7.6
d50-Tetracosane	0.99	0.99	0.98	0.91	0.88	0.95	5.7
Total Extractable Material[2]	1.10	1.01	1.06	0.97	1.10	1.05	5.4
Average RSD							7.0

N/A - Not Applicable

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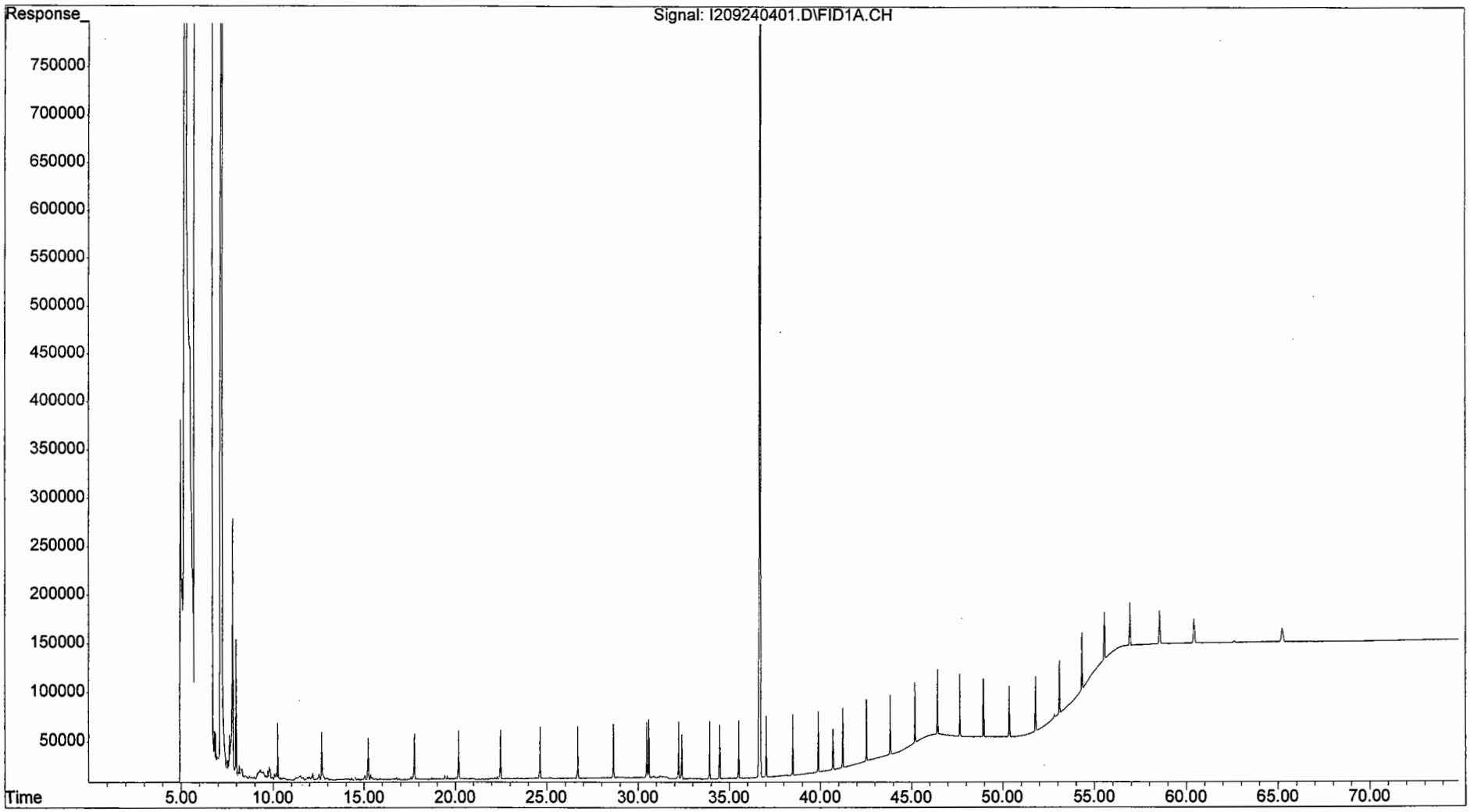
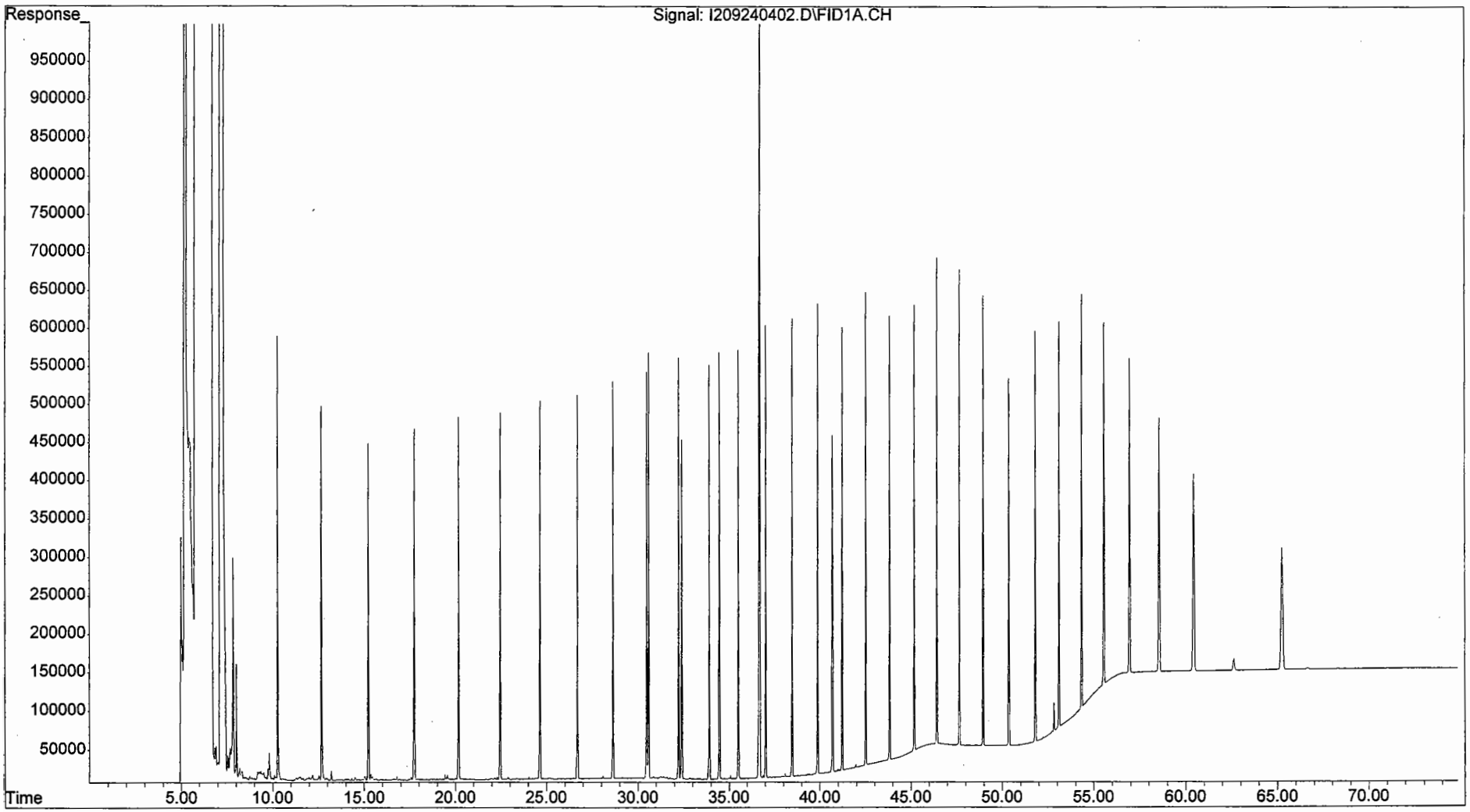
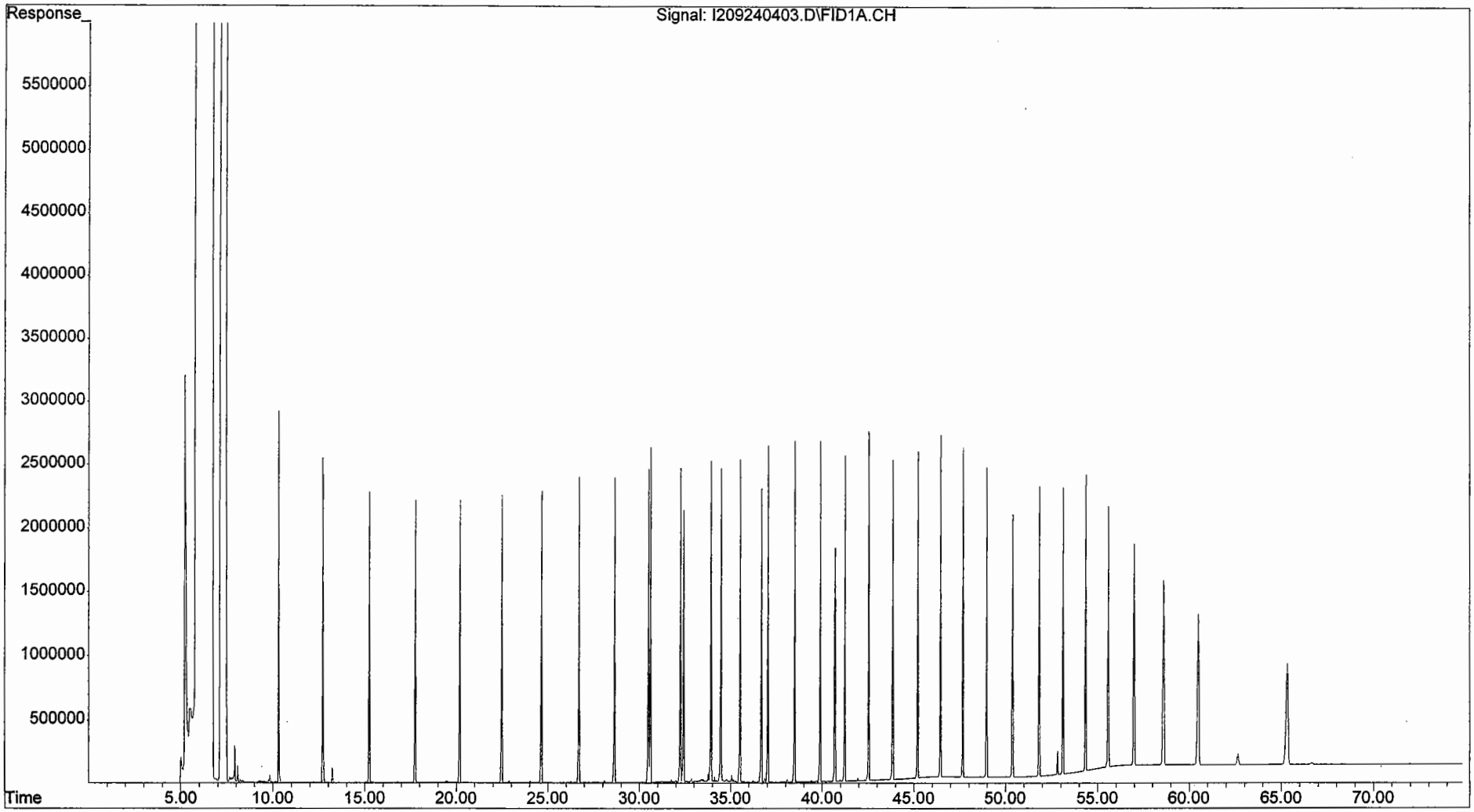
File :O:\Organics\DATA\PAH2\SEPT24\I209240401.D
Operator : NLJr
Acquired : 24 Sep 2004 9:51 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240401
Misc Info : HW081604C 1ug/mL
Vial Number: 3



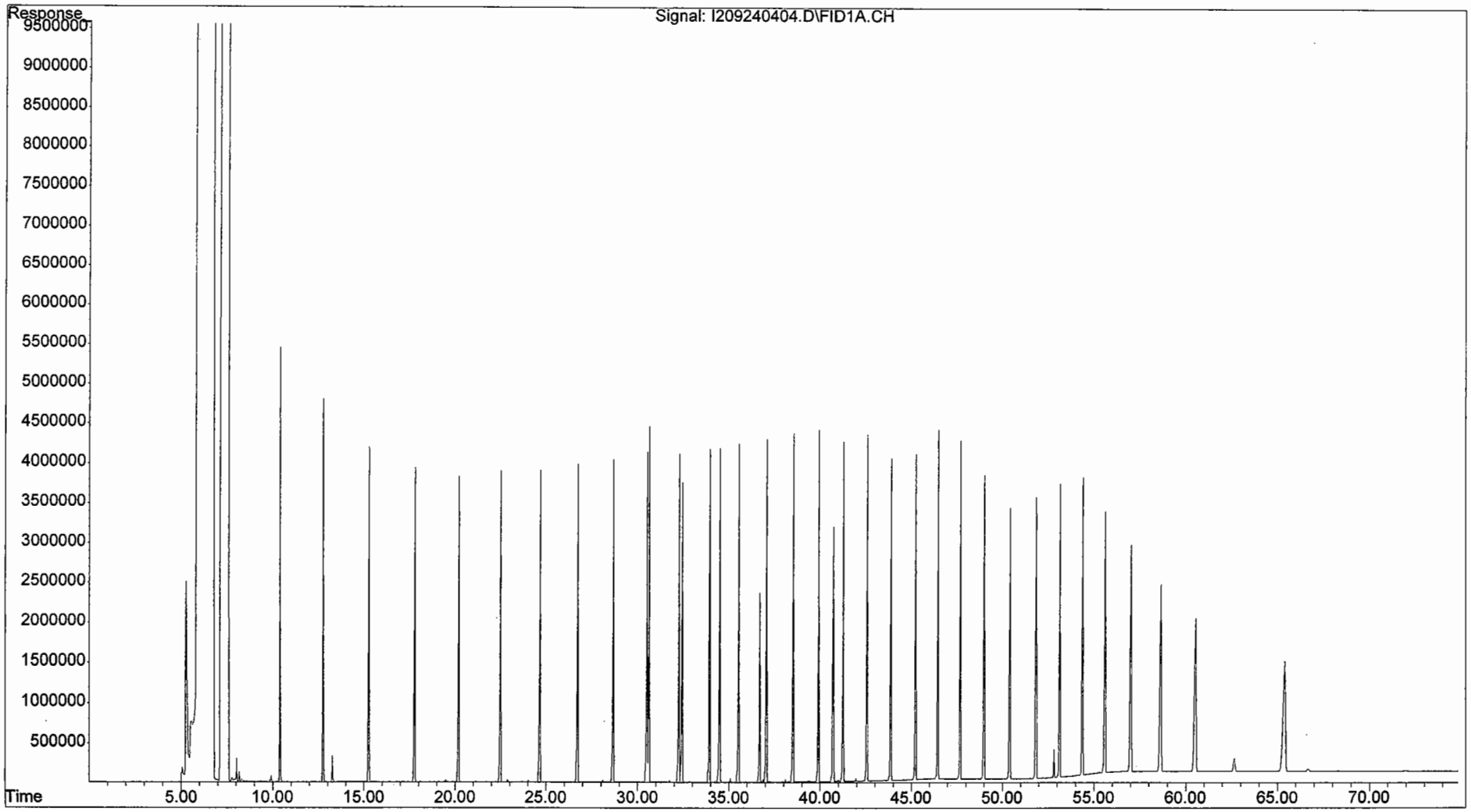
File :O:\Organics\DATA\PAH2\SEPT24\I209240402.D
Operator : NLJr
Acquired : 24 Sep 2004 11:20 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240402
Misc Info : HW081604D 10ug/mL
Vial Number: 4



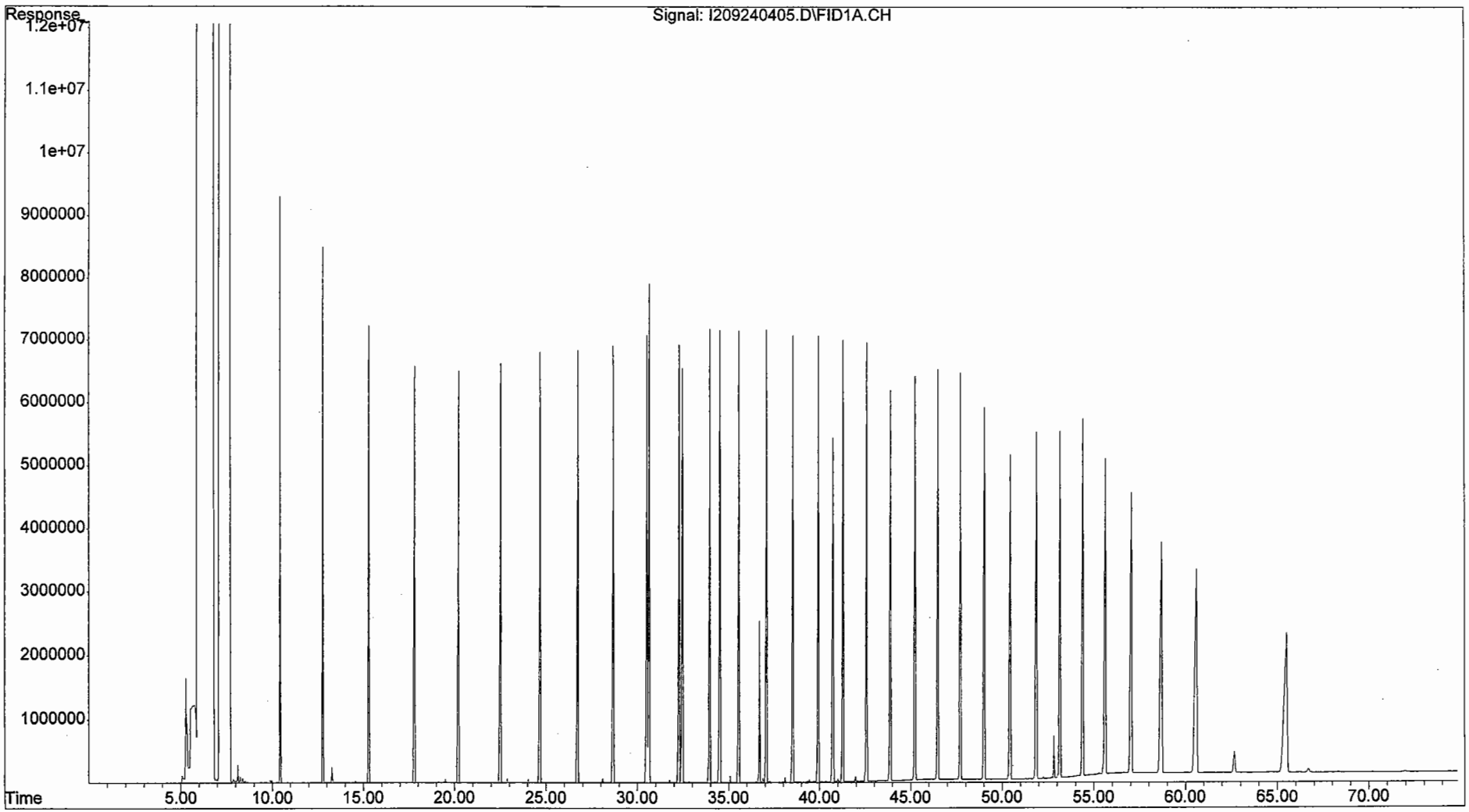
File :O:\Organics\DATA\PAH2\SEPT24\I209240403.D
Operator : NLJr
Acquired : 25 Sep 2004 12:48 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240403
Misc Info : HW081604E 50ug/mL
Vial Number: 5



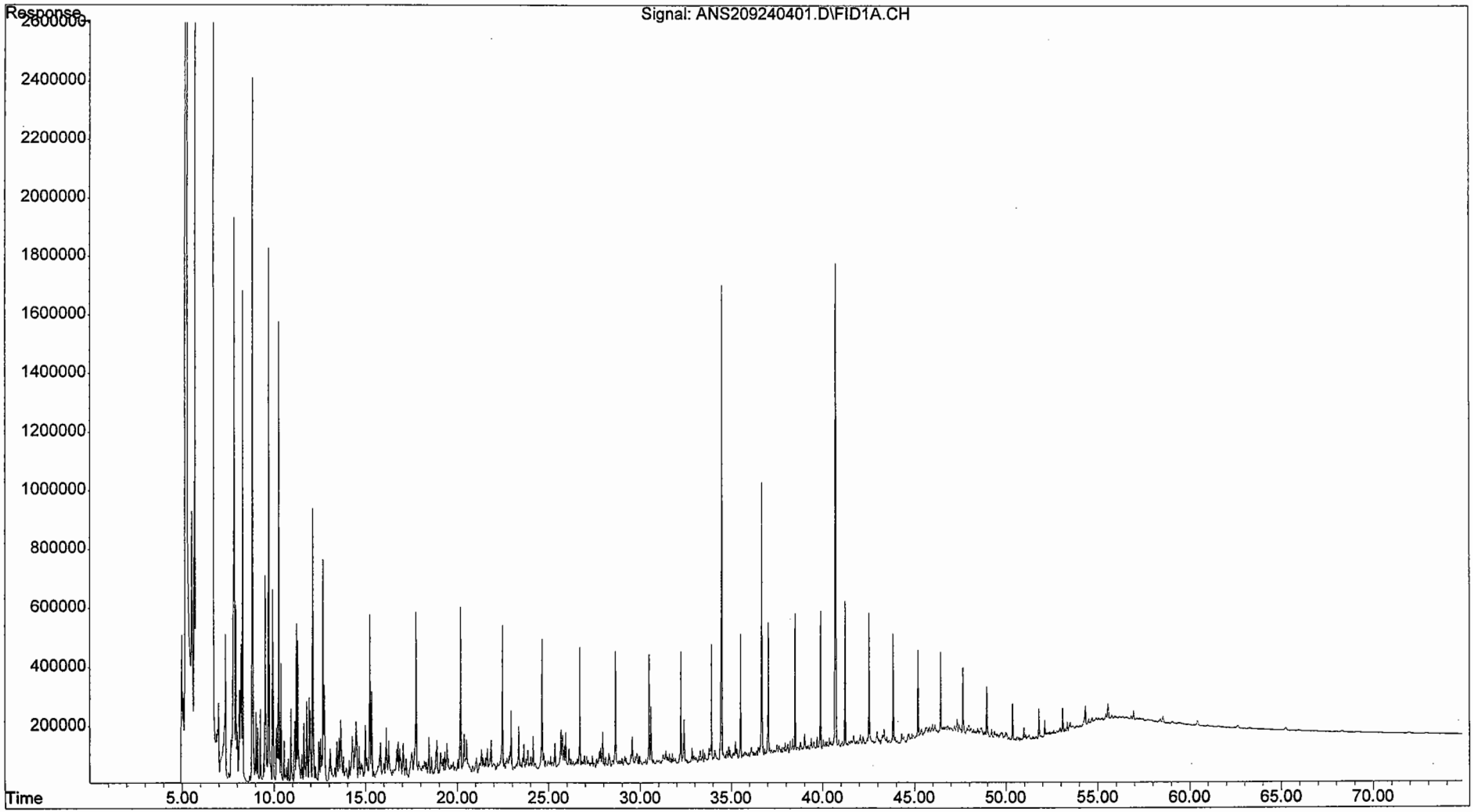
File :O:\Organics\DATA\PAH2\SEPT24\I209240404.D
Operator : NLJr
Acquired : 25 Sep 2004 2:17 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240404
Misc Info : HW081604F 100ug/mL
Vial Number: 6



File :O:\Organics\DATA\PAH2\SEPT24\I209240405.D
Operator : NLJr
Acquired : 25 Sep 2004 3:46 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240405
Misc Info : HW081604G 200ug/mL
Vial Number: 7



File :O:\Organics\DATA\PAH2\SEPT24\ANS209240401.D
Operator : NLJr
Acquired : 25 Sep 2004 6:43 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: ANS209240401
Misc Info : SW090104A 5.14mg/mL
Vial Number: 9



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **C209240401**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	50.56	1.1	25
n-Decane (C10)	50.00	51.07	2.1	25
n-Undecane (C11)	50.00	50.76	1.5	25
n-Dodecane (C12)	50.00	51.00	2.0	25
n-Tridecane (C13)	50.00	51.15	2.3	25
n-Tetradecane (C14)	50.00	51.49	3.0	25
n-Pentadecane (C15)	50.00	51.70	3.4	25
n-Hexadecane (C16)	50.00	51.89	3.8	25
n-Heptadecane (C17)	50.00	52.05	4.1	25
Pristane	50.00	51.67	3.3	25
n-Octadecane (C18)	50.00	52.57	5.1	25
Phytane	50.00	52.54	5.1	25
n-Nonadecane (C19)	50.00	52.83	5.7	25
n-Eicosane (C20)	50.00	52.64	5.3	25
n-Heneicosane (C21)	50.00	52.24	4.5	25
n-Docosane (C22)	50.00	52.39	4.8	25
n-Tricosane (C23)	50.00	52.56	5.1	25
n-Tetracosane (C24)	50.00	52.77	5.5	25
n-Pentacosane (C25)	50.00	52.72	5.4	25
n-Hexacosane (C26)	50.00	52.88	5.8	25
n-Heptacosane (C27)	50.00	52.92	5.8	25
n-Octacosane (C28)	50.00	53.09	6.2	25
n-Nonacosane (C29)	50.00	53.30	6.6	25
n-Triacontane (C30)	50.00	53.23	6.5	25
n-Hentriacontane (C31)	50.00	53.32	6.6	25
n-Dotriacontane (C32)	50.00	53.42	6.8	25
n-Tritriacontane (C33)	50.00	53.50	7.0	25
n-Tetratriacontane (C34)	50.00	53.24	6.5	25
n-Pentatriacontane (C35)	50.00	53.08	6.2	25
n-Hexatriacontane (C36)	50.00	53.02	6.0	25
n-Heptatriacontane (C37)	50.00	53.37	6.7	25
n-Octatriacontane (C38)	50.00	54.35	8.7	25
n-Tetracontane (C40)	50.00	58.61	17.2	25
ortho-Terphenyl	50.00	52.46	4.9	25
d50-Tetracosane	50.00	51.93	3.9	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.08

N/A - Not Applicable

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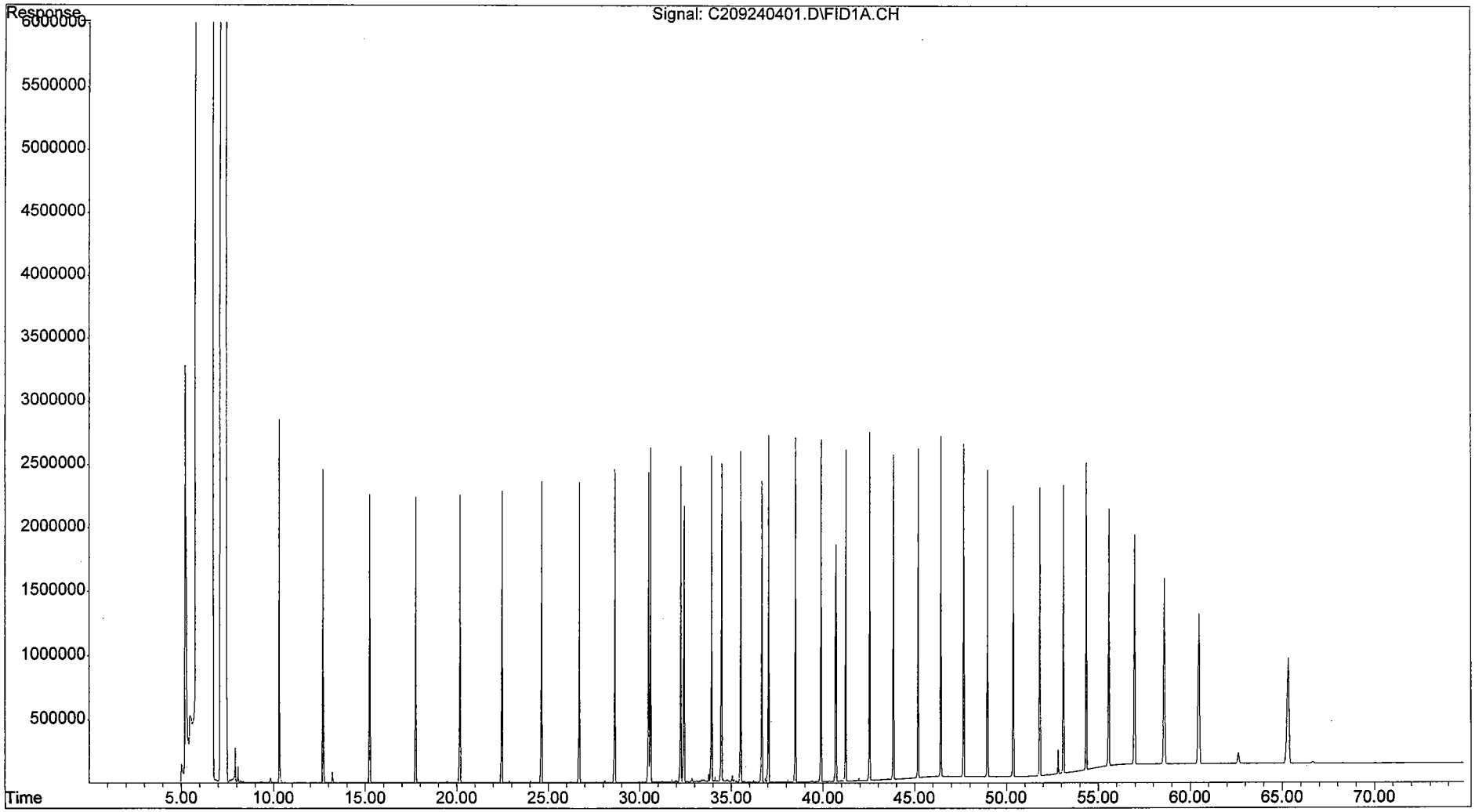
File :O:\Organics\DATA\PAH2\SEPT24\C209240401.D
Operator : NLJr
Acquired : 25 Sep 2004 9:41 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240401
Misc Info : HW081604E 50ug/mL
Vial Number: 11



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408122**
Lab ID: **C209240402**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	54.17	8.3	25
n-Decane (C10)	50.00	54.35	8.7	25
n-Undecane (C11)	50.00	53.45	6.9	25
n-Dodecane (C12)	50.00	53.03	6.1	25
n-Tridecane (C13)	50.00	52.43	4.9	25
n-Tetradecane (C14)	50.00	52.15	4.3	25
n-Pentadecane (C15)	50.00	51.94	3.9	25
n-Hexadecane (C16)	50.00	51.89	3.8	25
n-Heptadecane (C17)	50.00	52.18	4.4	25
Pristane	50.00	51.66	3.3	25
n-Octadecane (C18)	50.00	52.57	5.1	25
Phytane	50.00	52.71	5.4	25
n-Nonadecane (C19)	50.00	52.89	5.8	25
n-Eicosane (C20)	50.00	52.90	5.8	25
n-Heneicosane (C21)	50.00	52.85	5.7	25
n-Docosane (C22)	50.00	53.13	6.3	25
n-Tricosane (C23)	50.00	53.56	7.1	25
n-Tetracosane (C24)	50.00	53.96	7.9	25
n-Pentacosane (C25)	50.00	54.04	8.1	25
n-Hexacosane (C26)	50.00	54.30	8.6	25
n-Heptacosane (C27)	50.00	54.54	9.1	25
n-Octacosane (C28)	50.00	55.64	11.3	25
n-Nonacosane (C29)	50.00	55.09	10.2	25
n-Triacontane (C30)	50.00	55.09	10.2	25
n-Hentriacontane (C31)	50.00	55.29	10.6	25
n-Dotriacontane (C32)	50.00	55.48	11.0	25
n-Tritriacontane (C33)	50.00	55.72	11.4	25
n-Tetratriacontane (C34)	50.00	55.33	10.7	25
n-Pentatriacontane (C35)	50.00	55.17	10.3	25
n-Hexatriacontane (C36)	50.00	54.97	9.9	25
n-Heptatriacontane (C37)	50.00	55.13	10.3	25
n-Octatriacontane (C38)	50.00	55.78	11.6	25
n-Tetracontane (C40)	50.00	59.42	18.8	25
ortho-Terphenyl	50.00	52.23	4.5	25
d50-Tetracosane	50.00	53.06	6.1	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.12

N/A - Not Applicable

10/07/04 16:19

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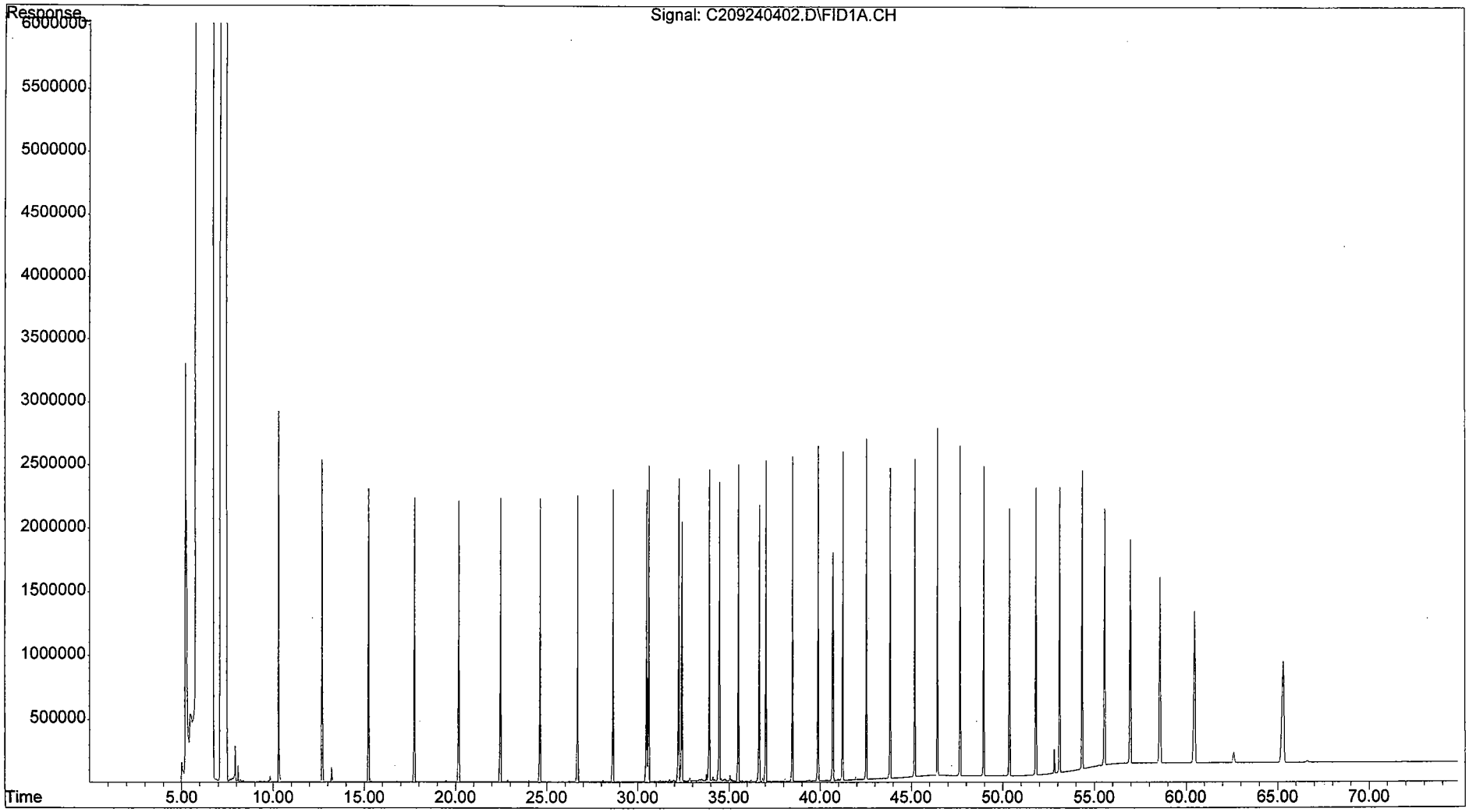
File :O:\Organics\DATA\PAH2\SEPT24\C209240402.D
Operator : NLJr
Acquired : 25 Sep 2004 8:24 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240402
Misc Info : HW081604E 50ug/mL
Vial Number: 18



Woods Hole Group Environmental Laboratories
Batch Weight Report
09/01/2004

Lab ID	QC Type	0408119S - Sample
0408119-01	SAM	1000
0408119-02	SAM	1000
0408119-03	SAM	1000
0408119-04	SAM	1000
0408119-05	SAM	1000
0408119-06	SAM	1000
0408119-07	SAM	1000
0408119-08	SAM	1000
0408119-09	SAM	1000
0408119-10	SAM	1000
0408119-11	SAM	1000
0408122-01	SAM	980
0408122-02	SAM	1000
0408122-03	SAM	1000
0408122-04	SAM	1000
SW090104B11	B	1000
SW090104B11	B	1000
SW090104BS07BS	OP NEWFIE	1000
SW090104BS07BS	OP NEWFIE	1000
SW090104BS07BS	OP SHC	1000
SW090104BSD07BS	OP NEWFIE	1000
SW090104BSD07BS	OP NEWFIE	1000
SW090104BSD07BS	OP SHC	1000

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46

COPPER: A14601 SULFURIC ACID: 3102030

GLASS WOOL: 4303309989 SODIUM SULFATE: E13478

DIATEMACEOUS EARTH: 00504

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/01/2004 0408119S - OP SHC

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408122-01	SAM	3510C	MP	9/1/04	9/2/04		980	1	False	MP	9/1/04	KD Flask	1 0.5/0.5	MP	9/2/04	
0408122-02	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-03	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
0408122-04	SAM	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104B11	B	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BS07	BS	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	
SW090104BSD07	BSD	3510C	MP	9/1/04	9/2/04		1000	1	False	MP	9/1/04	KD Flask	1	MP	9/2/04	

Split off 1/2mL per SHC
9/8/04

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Woods Hole Group Environmental Laboratories
Batch Prep Report
09/01/2004 0408119S - OP SHC

Lab ID	Notes
0408122-01	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
0408122-02	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
0408122-03	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
0408122-04	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
SW090104B11	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
SW090104BS07	1st Prep: pHi=7 for all samploes, extracted @ neutral pH
SW090104BSD07	1st Prep: pHi=7 for all samploes, extracted @ neutral pH

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/01/2004 0408119S - OP SHC Analyst: MP Witness: JFR

Lab ID	QC Type	OP SHC - surr	Vol OP SHC - surr	Units OP SHC - surr	OP SHC - spk 1	Vol OP SHC - spk 1	Units OP SHC - spk 1	OP SHC - spk 2	Vol OP SHC - spk 2	Units OP SHC - spk 2
0408119-01	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-02	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-03	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-04	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-05	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-06	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-07	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-08	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-09	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-10	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408119-11	SAM	-99	-99	-99	-99	-99	-99	-99	-99	-99
0408122-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408122-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SW090104B11	B	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104B11	B	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SW090104BS07	BS	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SW090104BSD07	BSD	-99	-99	-99	-99	-99	-99	-99	-99	-99
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: NwFr SHC /PAH

Standard Type: (Surrogate) / LCS / MS-MSD

LFB / Other _____

ID# SSW083104B

Conc. SHC - 500 µg/mL / PAH 10 µg/mL

Test: NwFr SHC /PAH

Standard Type: Surrogate / (LCS) / MS-MSD

LFB / Other _____

ID# SLW090104G

Conc. SHC 500 µg/mL / PAH 10 µg/mL

Test: NwFr Biomarker

Standard Type: (Surrogate) / LCS / MS-MSD

LFB / Other _____

ID# SSW090104E

Conc. 10 µg/mL

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Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/01/2004 0408119S - OP NEWFIE Analyst: MP Witness: JFR

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408119-01	SAM	SSW083104B	100	µl						
0408119-02	SAM	SSW083104B	100	µl						
0408119-03	SAM	SSW083104B	100	µl						
0408119-04	SAM	SSW083104B	100	µl						
0408119-05	SAM	SSW083104B	100	µl						
0408119-06	SAM	SSW083104B	100	µl						
0408119-07	SAM	SSW083104B	100	µl						
0408119-08	SAM	SSW083104B	100	µl						
0408119-09	SAM	SSW083104B	100	µl						
0408119-10	SAM	SSW083104B	100	µl						
0408119-11	SAM	SSW083104B	100	µl						
0408122-01	SAM	SSW083104B	100	µl						
0408122-02	SAM	SSW083104B	100	µl						
0408122-03	SAM	SSW083104B	100	µl						
0408122-04	SAM	SSW083104B	100	µl						
SW090104B11	B	SSW083104B	100	µl						
SW090104B11	B	SSW083104B	100	µl						
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BS07	BS	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl			
SW090104BSD07	BSD	SSW083104B	100	µl	SLW090104G	100	µl			

Test: NewFie - PAH / SHC

Standard Type: (Surrogate) / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW 083104B

Conc. PAH - 10 µg/mL / SHC - 500 µg/mL

Test: NewFie PAH / SHC

Standard Type: *Surrogate* / (LCS) / *MS-MSD*

LFB / *Other* _____

ID# SLW090104G

Conc. PAH 10 µg/mL / SHC 500 µg/mL

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR SHI
ETR: 0408122

Lab ID	Extract Vol (uL)	Standard ID and Vial #	Vol IS Added (uL)	Pre-Injection Vol (uL)	Final Volume Equivalent	Spiked By	Witnd By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408122-1	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-2	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-3	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04
0408122-4	900	SSW083104D	100	1000	1000	JR		500	500	9/3/04

```
   Sequence Name: C:\MSDChem\3\sequence\S209240401.S
         Comment:
        Operator: NLJr
       Data Path: C:\MSDChem\2\DATA\SEPT24\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
     (X) Full Method             (X) Inject Anyway
     ( ) Reprocessing Only       ( ) Don't Inject

   ----------------------------------------------------------------------
   Line                      Sample Name/Misc Info
 1) Sample          1
     Datafile          PRIMER01
     Method            MS2SHC092404REV02
 2) Sample          2
     Datafile          IB209240401
     Method            MS2SHC092404REV02
 3) Sample          3
     Datafile          I209240401
     Method            MS2SHC092404REV02
 4) Sample          4
     Datafile          I209240402
     Method            MS2SHC092404REV02
 5) Sample          5
     Datafile          I209240403
     Method            MS2SHC092404REV02
 6) Sample          6
     Datafile          I209240404
     Method            MS2SHC092404REV02
 7) Sample          7
     Datafile          I209240405
     Method            MS2SHC092404REV02
 8) Sample          8
     Datafile          IB209240402
     Method            MS2SHC092404REV02
 9) Sample          9
     Datafile          ANS209240401
     Method            MS2SHC092404REV02
10) Sample         10
     Datafile          Q209240401
     Method            MS2SHC092404REV02
11) Sample         11
     Datafile          C209240401
     Method            MS2SHC092404REV02
12) Sample         12
     Datafile          IB209240403
     Method            MS2SHC092404REV02
13) Sample         13
     Datafile          SW090104B11
     Method            MS2SHC092404REV02
14) Sample         14
     Datafile          SW090104BS07
     Method            MS2SHC092404REV02
```

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15) Sample 15
Datafile SW090104BSD07
Method MS2SHC092404REV02
16) Sample 16
Datafile 0408122-04
Method MS2SHC092404REV02
17) Sample 17
Datafile IB209240404
Method MS2SHC092404REV02
18) Sample 18
Datafile C209240402
Method MS2SHC092404REV02
19) Sample 19
Datafile IB209240405
Method MS2SHC092404REV02
20) Sample 20
Datafile SS090704B02
Method MS2SHC092404REV02
21) Sample 21
Datafile SS090704BS02
Method MS2SHC092404REV02
22) Sample 22
Datafile SS090704BSD02
Method MS2SHC092404REV02
23) Sample 23
Datafile 0408123-01
Method MS2SHC092404REV02
24) Sample 24
Datafile 0408123-02
Method MS2SHC092404REV02
25) Sample 25
Datafile 0408123-03
Method MS2SHC092404REV02
26) Sample 26
Datafile 0408123-04
Method MS2SHC092404REV02
27) Sample 27
Datafile 0408123-05
Method MS2SHC092404REV02
28) Sample 28
Datafile 0408123-06
Method MS2SHC092404REV02
29) Sample 29
Datafile 0408123-07
Method MS2SHC092404REV02
30) Sample 30
Datafile IB209240406
Method MS2SHC092404REV02
31) Sample 31
Datafile C209240403
Method MS2SHC092404REV02
32) Sample 32
Datafile IB209240407
Method MS2SHC092404REV02
33) Sample 33
Datafile 0408123-08
Method MS2SHC092404REV02
34) Sample 34
Datafile 0408123-09
Method MS2SHC092404REV02

35) Sample 35
Datafile 0408123-10
Method MS2SHC092404REV02
36) Sample 36
Datafile 0408123-11
Method MS2SHC092404REV02
37) Sample 37
Datafile 0408123-11D
Method MS2SHC092404REV02
38) Sample 38
Datafile 0408123-11M
Method MS2SHC092404REV02
39) Sample 39
Datafile 0408123-12
Method MS2SHC092404REV02
40) Sample 40
Datafile 0408123-13
Method MS2SHC092404REV02
41) Sample 41
Datafile 0408123-14
Method MS2SHC092404REV02
42) Sample 42
Datafile 0408123-15
Method MS2SHC092404REV02
43) Sample 43
Datafile IB209240408
Method MS2SHC092404REV02

Sequence Name: C:\MSDChem\3\sequence\S209240401.S

Line Type	Vial	DataFile	Method	Sample Name
44) Sample	44			
Datafile		C209240404		
Method		MS2SHC092404REV02		
45) Sample	45			
Datafile		IB209240409		
Method		MS2SHC092404REV02		
46) Sample	46			
Datafile		SS090704B03		
Method		MS2SHC092404REV02		
47) Sample	47			
Datafile		SS090704BS03		
Method		MS2SHC092404REV02		
48) Sample	48			
Datafile		SS090704BSD03		
Method		MS2SHC092404REV02		
49) Sample	49			
Datafile		0408124-01		
Method		MS2SHC092404REV02		
50) Sample	50			
Datafile		0408124-02		
Method		MS2SHC092404REV02		
51) Sample	51			
Datafile		0408124-03		
Method		MS2SHC092404REV02		
52) Sample	52			
Datafile		0408124-04		
Method		MS2SHC092404REV02		
53) Sample	53			
Datafile		0408124-05		
Method		MS2SHC092404REV02		
54) Sample	54			
Datafile		0408124-06		
Method		MS2SHC092404REV02		
55) Sample	55			
Datafile		0408124-07		
Method		MS2SHC092404REV02		
56) Sample	56			
Datafile		IB209240410		
Method		MS2SHC092404REV02		
57) Sample	57			
Datafile		C209240405		
Method		MS2SHC092404REV02		
58) Sample	58			
Datafile		IB209240411		
Method		MS2SHC092404REV02		
59) Sample	59			
Datafile		0408124-08		
Method		MS2SHC092404REV02		
60) Sample	60			
Datafile		0408124-09		
Method		MS2SHC092404REV02		
61) Sample	61			
Datafile		0408124-10		
Method		MS2SHC092404REV02		
62) Sample	62			
Datafile		0408124-11		

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	Method	MS2SHC092404REV02
63)	Sample	63
	Datafile	0408124-12
	Method	MS2SHC092404REV02
64)	Sample	64
	Datafile	0408124-13
	Method	MS2SHC092404REV02
65)	Sample	65
	Datafile	0408124-14
	Method	MS2SHC092404REV02
66)	Sample	66
	Datafile	0408124-14D
	Method	MS2SHC092404REV02
67)	Sample	67
	Datafile	0408124-14M
	Method	MS2SHC092404REV02
68)	Sample	68
	Datafile	0408124-15
	Method	MS2SHC092404REV02
69)	Sample	69
	Datafile	IB209240412
	Method	MS2SHC092404REV02
70)	Sample	70
	Datafile	C209240406
	Method	MS2SHC092404REV02
71)	Sample	1
	Datafile	JEFFTEST01
	Method	MS2SHC092404REV02
72)	Sample	2
	Datafile	JEFFTEST02
	Method	MS2SHC092404REV02
73)	Sample	2
	Datafile	JEFFTEST03
	Method	MS2SHC092404REV02

9/24/04

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CHAIN OF CUSTODY RECORDS

0408122

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/30/04

Carrier: FedEx

Airbill No.: 8455 0072 7886

No. of Coolers: 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber		1 Liter Amber		
Analysis	**Analysis**	**Analysis**	**Analysis**	**Analysis**
Forensic PAH/TPH		Forensic PAH/TBH		

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Preservative: Ice	Preservative	Preservative: Ice	Preservative	Preservative
	Sed	8/26 1410	DSY-SD-CC02-082604			1				
		1440	JPC01-			1				
		1515	JPC03-			1				
		1526	DUP03			1				
		1540	CH01		QC	2		~~2~~ KTO		extra J01.
	Sed	8/26 1600	CH02-082604			1		~~1~~ KTO		
-1	Ag	8/25 1627	RB01-082504					1		
-2	Ag	8/26 1930	RB02-082604					1		
-3	Ag	8/26 1950	RB03 082604					1		
-4	Ag	8/27 1030	DSY-SD-FB01-082704					1		
			KTO 8/30/04							

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400	Fed Ex	YES NO	Use DSY-SD-09-082604 and DSY-SD-CH01-082604 for Lab QC
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	
Fed Ex	8/31/04 9:30	K Bates		

Tt NUS Form 0022

680

№ 03049

Sample Receipt Checklist

Client: NEWFE		**Receipt Date:** 8/31/04	
Project: DERECKTOR Shipyard		**Log-in Date:**	
ETR #: 0408122		**Inspection by:** MG / KJB	**Login by:** MK

ALL SECTIONS BELOW MUST BE COMPLETED

Comments / Notes

Were samples shipped? (Yes, FedEx) / UPS / Other:_____
No, WHG Courier pick-up / Hand delivered

Is bill of lading retained? Yes, Tracking #: Attached
No, Unavailable / NA

Number of coolers received for this project delivery: 1

Indicate cooler temperature upon opening (if multiple coolers, record all temps):

Note: If all coolers are 2-6°C, use one checklist, if NOT, use separate checklists and note all samples received *above* 6°C.

Cooler 1:
Temperature(s) taken from: 6° IR Gun, 6° Temp. Blank, / NA

Were samples received on ice? Yes / No

Chain-of-Custody present? (Yes) / No
Complete? (Yes) / No

Custody seals present on Cooler? (Yes) / No
on Bottles? Yes / No
Intact? (Yes) / No / NA
Note: Affix custody seals to back of this page.

Were sample containers intact? Yes / (No) If No, list samples: →

Did VOA/VPH waters contain headspace (>5mm)? Yes / No / (NA) If Yes, list samples: →

Were 5035 VOA soils, or VPH soils, *covered* with MeOH? Yes / No / (NA)
If No, list samples: →

Was a sufficient amount of sample received for each test indicated on the COC?
(Yes) / No If No, list samples: →

If chemical preservation is appropriate -
Were samples field preserved? Yes / No / (NA)
☐ C=HCl ☐ M=MeOH ☐ S=H_2SO4
☐ H=NaOH ☐ N=HNO_3 ☐ Other:_____ ☐ U= Unknown

Preservation (pH) verified at lab for *EVERY* bottle? (Not: VOA / VPH / Sulfide)
YES: <2 or >12 (CN) or NO (NA)
If No, why?:

Were samples received within hold time? (Yes) / No If No, list samples: →

Discrepancy between samples rec'd & COC ? Yes (No) If Yes, list samples: →

Was the Project Manager notified of any other problems? Yes / No / (NA)

Project Manager Acknowledgement: EMP Date: 9/1/04

Sample storage refrigerator #: G3

Sample storage freezer #:_____

Cooler 2:_____ Cooler 3:_____
Cooler 4:_____ Cooler 5:_____
Cooler 6:_____ Cooler 7:_____

More:_____

2 jars had cracked lids (1 on each)
DSY-S003-082604
DSY-SD 28-082504

Chemical preservation OK for ALL samples?
Yes / No / (N/A)

If No, list samples below:

Please use back for any additional notes!

This portion can be removed for recipient's records.

8/30/04 FedEx Tracking Number [illegible]

K. O'Neill Phone 978 658-7899

TETRA TECH NUS INC

55 JONSPIN RD

Dept./Floor/Suite/Room

WILMINGTON State MA ZIP 01887-1020

Internal Billing Reference BOS*1611-0522

CUSTODY SEAL

UNITED STATES

ENTAL PROTECTION

CUSTODY SEAL

Attachment G
Laboratory Report

Data Delivery Group: ETR0408123

Sediments

PAHs
SHCs
Biomarkers
TOC

Woods Hole Group

ANALYTICAL REPORT

Prepared for:
NewFields Environmental Forensics Practice
100 Ledgewood Place, Suite 302
Rockland, MA 02370

Project: Derecktor Shipyard
ETR: 0408123
Report Date: October 13, 2004

Certifications and Accreditations
Massachusetts MA030
Connecticut PH-0141
New Hampshire 220602
Rhode Island 64
New Jersey MA015
Maine MA030
New York 11627
Louisiana 03090
Army Corps of Engineers
Department of the Navy
Florida E87814

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Accredited in accordance with nelac

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Sample ID Cross Reference

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**

Lab Sample ID	Client Sample ID
0408123-01	DSY-SD-101-0006
0408123-02	DSY-SD-101-0612
0408123-03	DSY-SD-103-0006
0408123-04	DSY-SD-103-0612
0408123-05	DSY-SD-104-0006
0408123-06	DSY-SD-104-0612
0408123-07	DSY-SD-02-082504
0408123-08	DSY-SD-DUP01-082504
0408123-09	DSY-SD-28-082504
0408123-10	DSY-SD-06-082504
0408123-11	DSY-SD-09-082604
0408123-12	DSY-SD-03-082604
0408123-13	DSY-SD-29-082604
0408123-14	DSY-SD-05-082604
0408123-15	DSY-SD-DUP02-082604

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

CASE NARRATIVE

Woods Hole Group Environmental Laboratories

ETR: 0408123
Project: Derecktor Shipyard

All analyses were performed according to Woods Hole Group Environmental Laboratories' quality assurance program and documented Standard Operating Procedures (SOPs), in conjunction with the Project Workplan *NewFields Derecktor (August 2004)*. The analytical results contained in this report meet all applicable agency and/or NELAC standards, were performed within holding time, and with appropriate quality control measures, except where noted. Blank correction of results is not performed in the laboratory for any parameter. Soil/sediment samples are reported on a dry weight basis unless otherwise noted. Tissue and sediment samples are not certifiable under the NELAC accreditation.

Sample Preparation

1. All samples were centrifuged prior to the determination of the percent solids in order to achieve solids values greater than 50%. In some cases the resulting percent solids were still below 50%.

Alkylated Polynuclear Aromatic Hydrocarbons and Biomarkers

Polynuclear aromatic hydrocarbons were analyzed following Woods Hole Group SOP *Analysis of Parent and Alkylated Polynuclear Aromatic Hydrocarbons and Selected Heterocyclic Compounds by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring (Revision 2.0, 06/28/02)*. Soil samples (approximately 30g) are spiked with surrogate compounds and extracted by *Shaker Table Extraction (Revision 0.0, 02/20/02)*. Solvent extracts are dried over sodium sulfate and concentrated to an appropriate final volume based on potential hydrocarbon content determined by gravimetric weight. A pre-determined volume of the extract is taken to a final effective volume determined by this gravimetric weight and submitted for polynuclear aromatic hydrocarbons. An additional portion was silica fractionated for Biomarker analysis and again, a volume of the extract was taken to a final effective volume determined by the gravimetric weight. Qualitative identifications are confirmed by analyzing standards under the same conditions used for samples, comparing mass spectra, GC retention times, and patterns generated from reference oils. Quantification is based on response factors derived from a multi-level initial calibration using internal standard techniques. Alkyl homologues are quantified using the response factor of the parent PAH compound. Modifications to any of the noted SOPs, are documented in the *NewFields Derecktor* Project Workplan.

1. The soil method blank SS090704B02 contained low-level target compounds detected below the reporting limit. Associated field sample results are flagged with "B" qualifiers if the concentration of the analyte in the sample is less than 5X the concentration in the blank.

2. The North Slope Crude reference oil (ANS10916-SS092304AWS01) analyzed after the initial calibration on 09/16/04 had seven analytes outside the 65-135% limits. The North Slope Crude reference oil (ANS1092401-SS100104AWS01) analyzed after the initial calibration on 09/24/04 had five analytes outside the 65-135% limits. Please see the enclosed Form III Spike Recovery Summary for details. Note that these reference values were generated from a different laboratory. The instrumental calibration check standard was within QC limits.

3. The duplicate analysis of sample DSY-SD-09-082604 (0408123-11 and -11D) has the relative percent difference for many analytes above the 30% QC limit for polynuclear aromatic hydrocarbons and biomarkers. All integrations for these

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analytes in the native sample and the sample duplicate were reviewed and found to be appropriate. Additionally, the matrix spike on this sample (0408123-11M) also exhibited five compounds recovered below the 50% QC limit. Again, all integrations were reviewed and found to be appropriate. It should be noted that the laboratory control spike and laboratory control spike duplicate had all compounds within the percent recovery and %RPD QC limits.

4. The continuing calibration C1092004 exhibited Napthobenzothiophenes at 26.4%D and Benzo(g,h,i)perylene at 25.0%D. These compounds represent less than 10% of all analytes, and the percent deviation although greater than 25%D, was less than 35%D, which meets the laboratory acceptance criteria.

5. The continuing calibration C1092005 exhibited Indeno(1,2,3-cd)pyrene at 25.4%D and Benzo(g,h,i)perylene at 26.6%D. These compounds represent less than 10% of all analytes, and the percent deviation although greater than 25%D, was less than 35%D, which meets the laboratory acceptance criteria.

Saturated and Total Petroleum Hydrocarbons

Samples for Saturated and Total Petroleum Hydrocarbons were analyzed following the procedures in Woods Hole Group SOP *Total Petroleum Hydrocarbons by Gas Chromatography/Flame Ionization Detector (Revision 1.1)* Method 8100/8015mod and SOP *Addendum for Saturated Hydrocarbons, Rev. 1.0, 2004.* Samples were prepared as stated above for the PAH analysis, and according to the *NewFields Derecktor* Workplan. A portion of the final extract was aliquoted for GC/FID analysis. Extracts are analyzed by gas chromatography with flame ionization detection (FID). A multi-level initial calibration over the n-alkane range from C9-C40 was evaluated and quantified using internal standard techniques prior to sample analysis.

1. The duplicate analysis of sample DSY-SD-09-082604 (0408123-11 and -11D) has the relative percent difference for several analytes above the 30% QC limit for saturated hydrocarbons. The analytes with high RPD values are those that were detected below the reporting limits. All integrations for these analytes in the native sample and the sample duplicate were reviewed and found to be appropriate.

Total Organic Carbon

Total organic carbon was analyzed following Woods Hole group SOP *Total Organic Carbon in Soil and Sediment (Revision 2.0)* modified from Method 9060. The solid sample (approximately 5mg) was dried, acidified with phosphoric acid, loaded into an aluminum tin, and introduced into a furnace for combustion in a pure oxygen environment. CO_2 was produced in the combustion zone and non-target elements were removed by scrubbing reagents. The resulting CO_2 gas was de-pressurized through a column where it was detected as a function of its thermal conductivity. The amount of CO_2 derived from the sample is directly proportional to the concentration of organic carbonaceous material in the sample.

1. All quality control parameters met the specified criteria.

The enclosed results of analyses are representative of the samples as received by the laboratory. Woods Hole Group Environmental Laboratories makes no representations or certifications as to the method of sample collection, sample identification, or transporting/handling procedures used prior to the receipt of samples by Woods Hole Group Environmental Laboratories. To the best of my knowledge, the information contained in this report is accurate and complete.

Approved by: Elizabeth Porta Title: QA Manager Date: 10/13/04

Elizabeth Porta **Quality Assurance Manager**

4

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Alkylated Polynuclear Aromatic Hydrocarbons By Selective Ion Monitoring

4-A

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-01**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/20/04	56.5	30.29	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	31	Fluoranthene	350
C1-Naphthalenes	18	Pyrene	700
C2-Naphthalenes	32	C1-Fluoranthenes/Pyrenes	380
C3-Naphthalenes	23	C2-Fluoranthenes/Pyrenes	170
C4-Naphthalenes	23	C3-Fluoranthenes/Pyrenes	80
Biphenyl	8.5	C4-Fluoranthenes/Pyrenes	41
Dibenzofuran	14	Naphthobenzothiophenes	100
Acenaphthylene	70	C1-Naphthobenzothiophenes	56
Acenaphthene	15	C2-Naphthobenzothiophenes	48
Fluorene	29	C3-Naphthobenzothiophenes	32
C1-Fluorenes	18	C4-Naphthobenzothiophenes	20
C2-Fluorenes	24	Benz[a]anthracene	310
C3-Fluorenes	37	Chrysene/Triphenylene	410
Anthracene	130	C1-Chrysenes	220
Phenanthrene	190	C2-Chrysenes	110
C1-Phenanthrenes/Anthracenes	150	C3-Chrysenes	80
C2-Phenanthrenes/Anthracenes	100	C4-Chrysenes	30
C3-Phenanthrenes/Anthracenes	59	Benzo[b]fluoranthene	350
C4-Phenanthrenes/Anthracenes	38	Benzo[k]fluoranthene	170
Retene	0.42 U	Benzo[a]fluoranthene	72
Dibenzothiophene	14	Benzo[e]pyrene	280
C1-Dibenzothiophenes	16	Benzo[a]pyrene	350
C2-Dibenzothiophenes	27	Perylene	170
C3-Dibenzothiophenes	26	Indeno[1,2,3-cd]pyrene	200
C4-Dibenzothiophenes	15	Dibenz[a,h]anthracene	53
Benzo(b)fluorene	0.30 U	Benzo[g,h,i]perylene	200

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	87	50-130
Pyrene-d10	95	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:20

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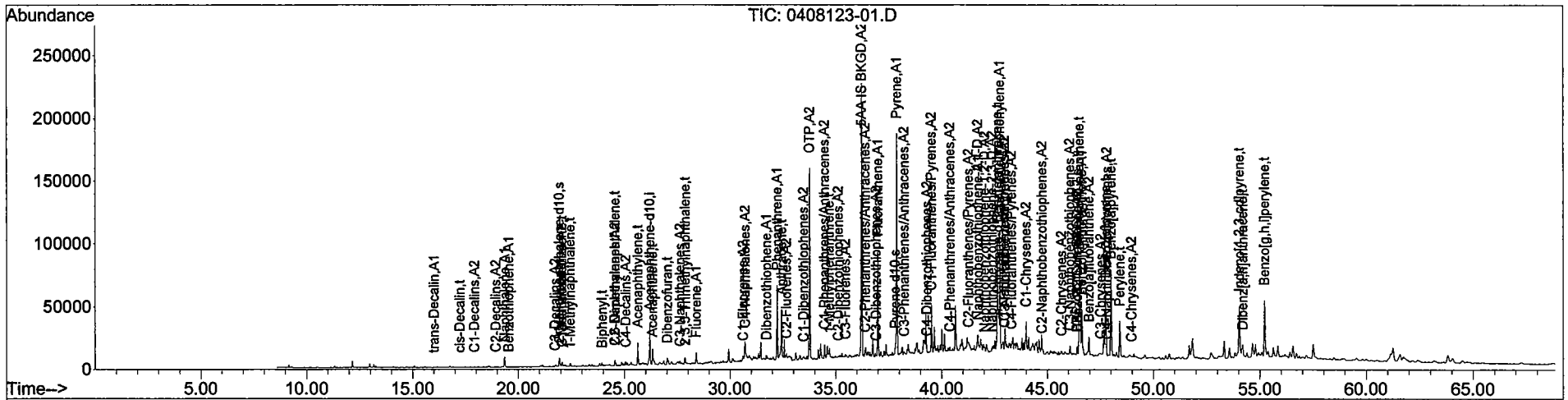
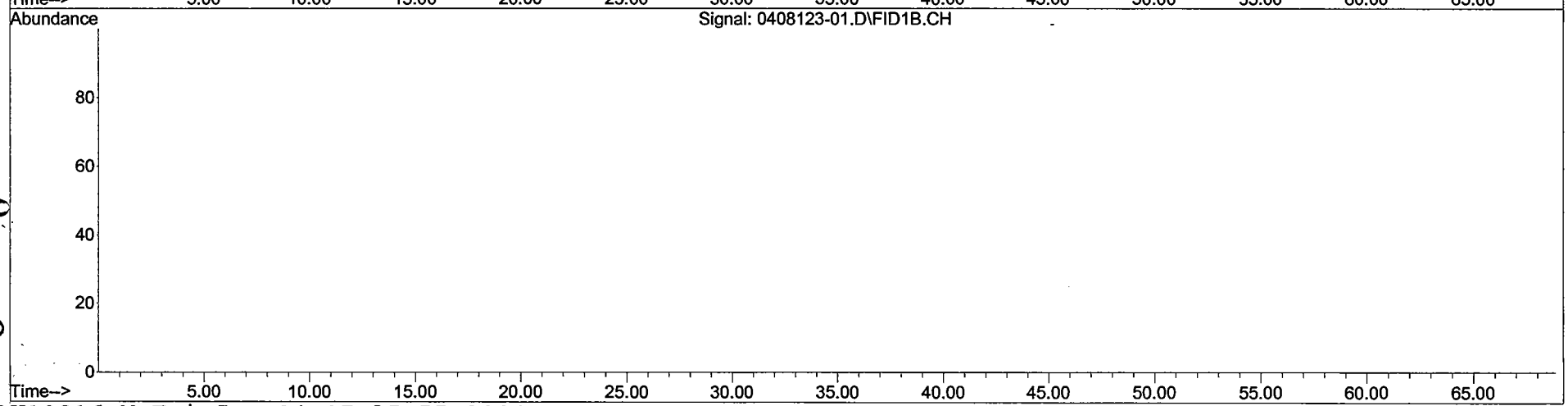
:ion Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-01.D
Acq On : 20 Sep 2004 11:44 pm
Operator : BL
Sample : 0408123-01
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 22 14:19:58 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-02**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	55.6	30.60	8	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	60	Fluoranthene	740
C1-Naphthalenes	38	Pyrene	2700
C2-Naphthalenes	65	C1-Fluoranthenes/Pyrenes	1000
C3-Naphthalenes	47	C2-Fluoranthenes/Pyrenes	380
C4-Naphthalenes	37	C3-Fluoranthenes/Pyrenes	220
Biphenyl	18	C4-Fluoranthenes/Pyrenes	120
Dibenzofuran	33	Naphthobenzothiophenes	250
Acenaphthylene	140	C1-Naphthobenzothiophenes	130
Acenaphthene	30	C2-Naphthobenzothiophenes	130
Fluorene	81	C3-Naphthobenzothiophenes	120
C1-Fluorenes	43	C4-Naphthobenzothiophenes	69
C2-Fluorenes	45	Benz[a]anthracene	800
C3-Fluorenes	85	Chrysene/Triphenylene	1200
Anthracene	340	C1-Chrysenes	470
Phenanthrene	400	C2-Chrysenes	250
C1-Phenanthrenes/Anthracenes	300	C3-Chrysenes	210
C2-Phenanthrenes/Anthracenes	200	C4-Chrysenes	91
C3-Phenanthrenes/Anthracenes	140	Benzo[b]fluoranthene	900
C4-Phenanthrenes/Anthracenes	98	Benzo[k]fluoranthene	420
Retene	0.68 U	Benzo[a]fluoranthene	160
Dibenzothiophene	26	Benzo[e]pyrene	600
C1-Dibenzothiophenes	26	Benzo[a]pyrene	780
C2-Dibenzothiophenes	46	Perylene	260
C3-Dibenzothiophenes	64	Indeno[1,2,3-cd]pyrene	410
C4-Dibenzothiophenes	68	Dibenz[a,h]anthracene	110
Benzo(b)fluorene	0.47 U	Benzo[g,h,i]perylene	390

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	80	50-130
Pyrene-d10	88	50-130
Benzo[b]fluoranthene-d12	102	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

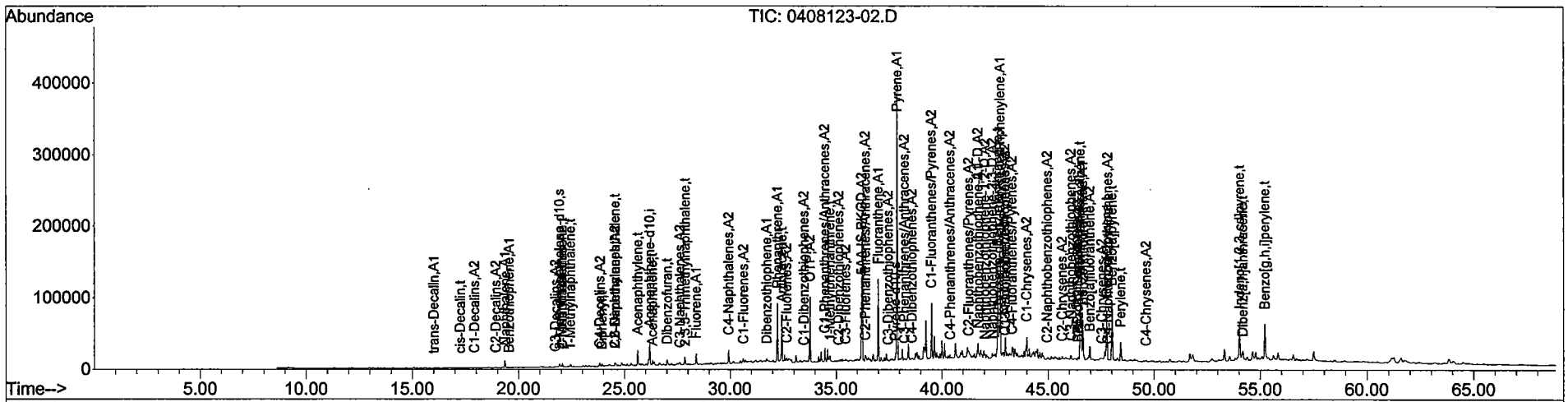
0 7

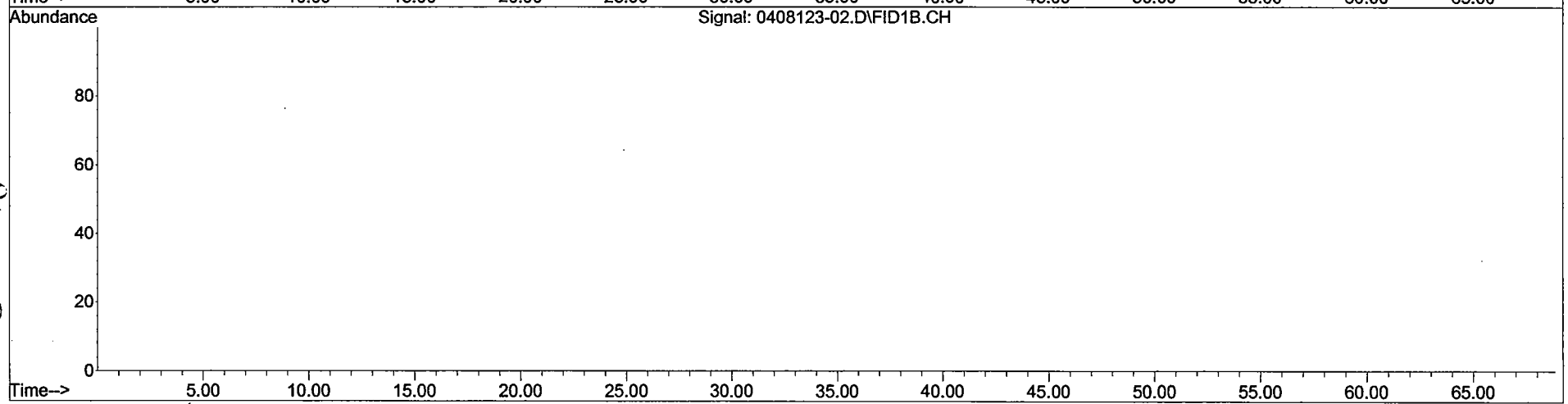
10/07/04 09:20

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-02.D
Acq On : 21 Sep 2004 1:03 am
Operator : BL
Sample : 0408123-02
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 22 14:21:10 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-03**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	42.8	30.39	8	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	34	Fluoranthene	1500
C1-Naphthalenes	22	Pyrene	3000
C2-Naphthalenes	98	C1-Fluoranthenes/Pyrenes	1100
C3-Naphthalenes	28	C2-Fluoranthenes/Pyrenes	380
C4-Naphthalenes	34	C3-Fluoranthenes/Pyrenes	210
Biphenyl	12	C4-Fluoranthenes/Pyrenes	120
Dibenzofuran	31	Naphthobenzothiophenes	290
Acenaphthylene	85	C1-Naphthobenzothiophenes	140
Acenaphthene	62	C2-Naphthobenzothiophenes	140
Fluorene	72	C3-Naphthobenzothiophenes	130
C1-Fluorenes	30	C4-Naphthobenzothiophenes	89
C2-Fluorenes	41	Benz[a]anthracene	1200
C3-Fluorenes	110	Chrysene/Triphenylene	1200
Anthracene	350	C1-Chrysenes	460
Phenanthrene	370	C2-Chrysenes	230
C1-Phenanthrenes/Anthracenes	240	C3-Chrysenes	200
C2-Phenanthrenes/Anthracenes	190	C4-Chrysenes	96
C3-Phenanthrenes/Anthracenes	140	Benzo[b]fluoranthene	990
C4-Phenanthrenes/Anthracenes	110	Benzo[k]fluoranthene	480
Retene	0.89 U	Benzo[a]fluoranthene	160
Dibenzothiophene	24	Benzo[e]pyrene	670
C1-Dibenzothiophenes	20	Benzo[a]pyrene	830
C2-Dibenzothiophenes	58	Perylene	230
C3-Dibenzothiophenes	120	Indeno[1,2,3-cd]pyrene	440
C4-Dibenzothiophenes	82	Dibenz[a,h]anthracene	120
Benzo(b)fluorene	0.62 U	Benzo[g,h,i]perylene	390

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	84	50-130
Pyrene-d10	87	50-130
Benzo[b]fluoranthene-d12	96	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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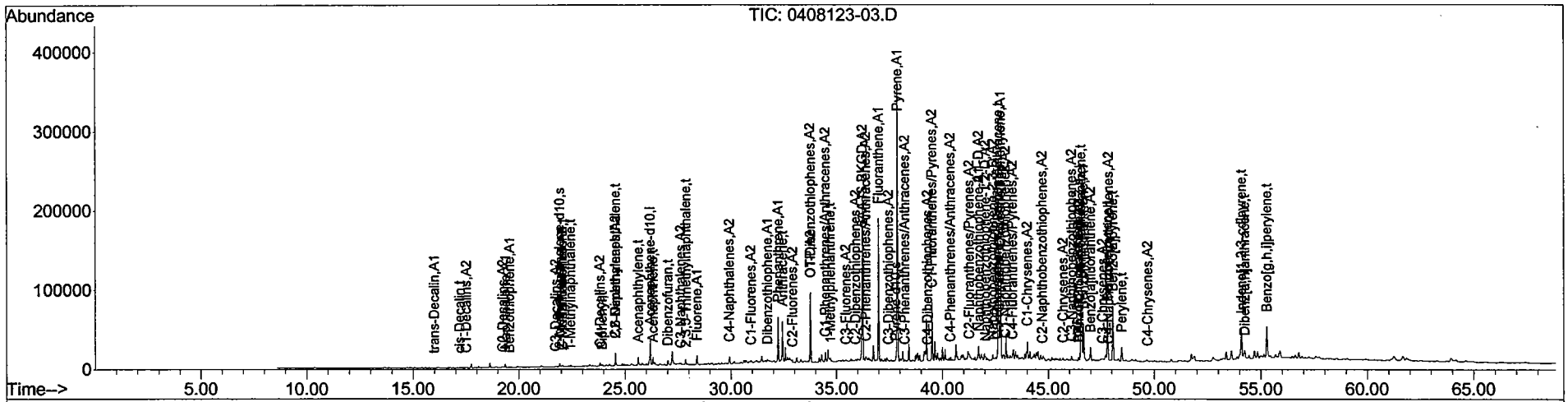
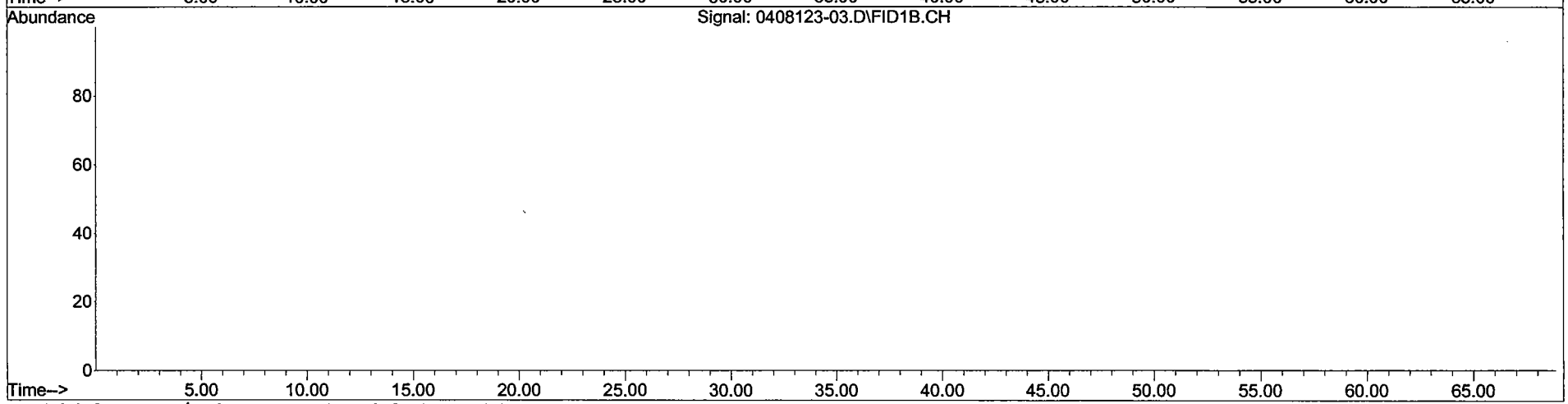
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-03.D
Acq On : 21 Sep 2004 2:21 am
Operator : BL
Sample : 0408123-03
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 24 07:26:41 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





10

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-04**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	48.3	30.29	20	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	98	Fluoranthene	13000
C1-Naphthalenes	130	Pyrene	12000
C2-Naphthalenes	200	C1-Fluoranthenes/Pyrenes	4300
C3-Naphthalenes	140	C2-Fluoranthenes/Pyrenes	1400
C4-Naphthalenes	250	C3-Fluoranthenes/Pyrenes	950
Biphenyl	28	C4-Fluoranthenes/Pyrenes	560
Dibenzofuran	160	Naphthobenzothiophenes	1100
Acenaphthylene	200	C1-Naphthobenzothiophenes	690
Acenaphthene	750	C2-Naphthobenzothiophenes	880
Fluorene	290	C3-Naphthobenzothiophenes	810
C1-Fluorenes	190	C4-Naphthobenzothiophenes	500
C2-Fluorenes	450	Benz[a]anthracene	3800
C3-Fluorenes	900	Chrysene/Triphenylene	3700
Anthracene	1200	C1-Chrysenes	1400
Phenanthrene	1400	C2-Chrysenes	930
C1-Phenanthrenes/Anthracenes	1300	C3-Chrysenes	820
C2-Phenanthrenes/Anthracenes	1200	C4-Chrysenes	440
C3-Phenanthrenes/Anthracenes	1100	Benzo[b]fluoranthene	2300
C4-Phenanthrenes/Anthracenes	690	Benzo[k]fluoranthene	1100
Retene	2.0 U	Benzo[a]fluoranthene	380
Dibenzothiophene	130	Benzo[e]pyrene	1500
C1-Dibenzothiophenes	140	Benzo[a]pyrene	2000
C2-Dibenzothiophenes	800	Perylene	540
C3-Dibenzothiophenes	1300	Indeno[1,2,3-cd]pyrene	910
C4-Dibenzothiophenes	710	Dibenz[a,h]anthracene	250
Benzo(b)fluorene	1.4 U	Benzo[g,h,i]perylene	830

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	109	50-130
Pyrene-d10	111	50-130
Benzo[b]fluoranthene-d12	90	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:20

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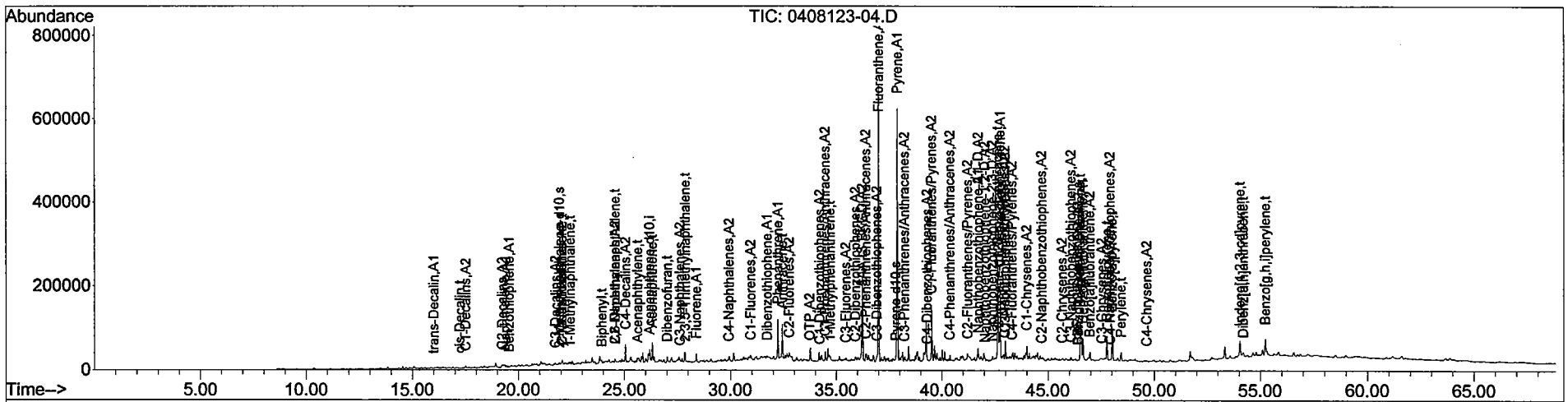
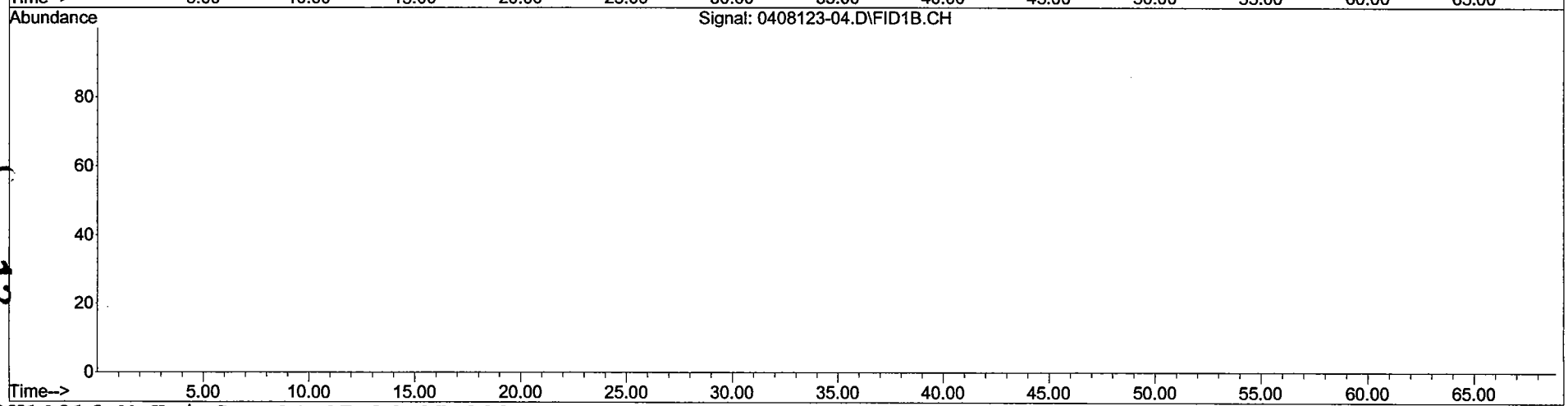
:ion Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-04.D
Acq On : 21 Sep 2004 3:40 am
Operator : BL
Sample : 0408123-04
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 22 14:23:43 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-05**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	33.8	30.41	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	22	Fluoranthene	260
C1-Naphthalenes	15	Pyrene	340
C2-Naphthalenes	94	C1-Fluoranthenes/Pyrenes	170
C3-Naphthalenes	16	C2-Fluoranthenes/Pyrenes	86
C4-Naphthalenes	12	C3-Fluoranthenes/Pyrenes	60
Biphenyl	7.0	C4-Fluoranthenes/Pyrenes	34
Dibenzofuran	11	Naphthobenzothiophenes	47
Acenaphthylene	29	C1-Naphthobenzothiophenes	30
Acenaphthene	10	C2-Naphthobenzothiophenes	30
Fluorene	17	C3-Naphthobenzothiophenes	29
C1-Fluorenes	9.8	C4-Naphthobenzothiophenes	28
C2-Fluorenes	15	Benz[a]anthracene	200
C3-Fluorenes	20	Chrysene/Triphenylene	240
Anthracene	61	C1-Chrysenes	110
Phenanthrene	130	C2-Chrysenes	77
C1-Phenanthrenes/Anthracenes	73	C3-Chrysenes	70
C2-Phenanthrenes/Anthracenes	67	C4-Chrysenes	53
C3-Phenanthrenes/Anthracenes	29	Benzo[b]fluoranthene	220
C4-Phenanthrenes/Anthracenes	18	Benzo[k]fluoranthene	110
Retene	0.71 U	Benzo[a]fluoranthene	42
Dibenzothiophene	9.4	Benzo[e]pyrene	180
C1-Dibenzothiophenes	7.8	Benzo[a]pyrene	210
C2-Dibenzothiophenes	15	Perylene	68
C3-Dibenzothiophenes	12	Indeno[1,2,3-cd]pyrene	140
C4-Dibenzothiophenes	13	Dibenz[a,h]anthracene	35
Benzo(b)fluorene	0.49 U	Benzo[g,h,i]perylene	140

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	79	50-130
Pyrene-d10	81	50-130
Benzo[b]fluoranthene-d12	95	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:20

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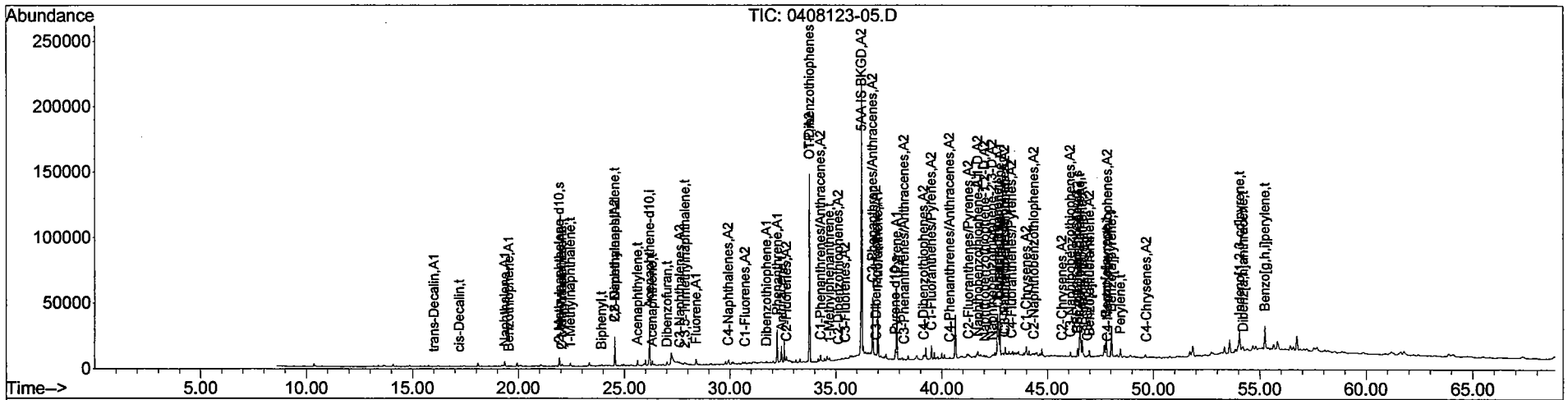
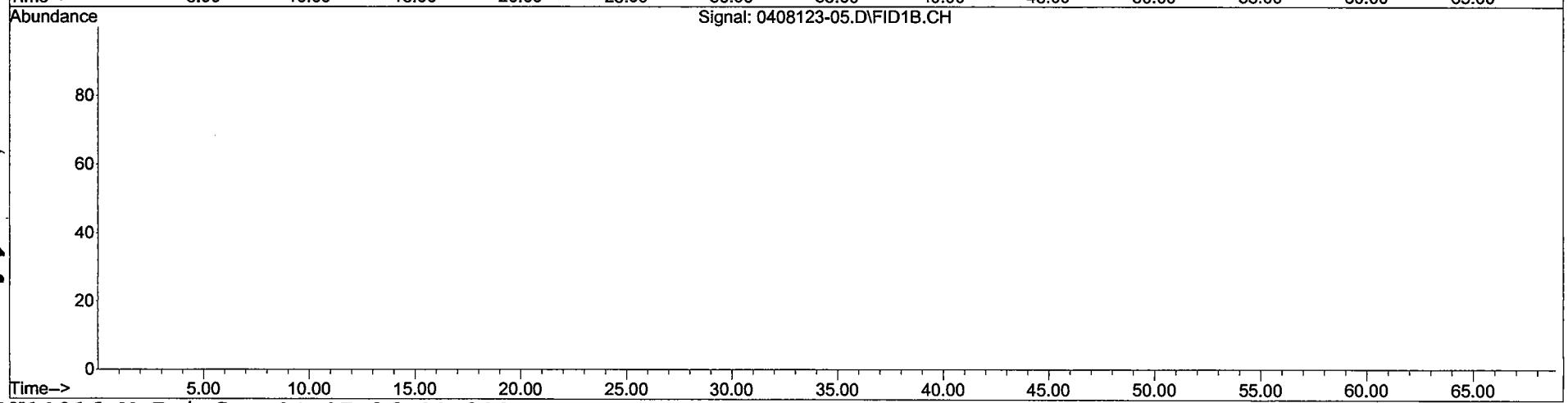
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-05.D
Acq On : 21 Sep 2004 4:59 am
Operator : BL
Sample : 0408123-05
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 21 15:54:50 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





14

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-06**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	35.7	30.29	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	24	Fluoranthene	420
C1-Naphthalenes	19	Pyrene	630
C2-Naphthalenes	44	C1-Fluoranthenes/Pyrenes	310
C3-Naphthalenes	20	C2-Fluoranthenes/Pyrenes	140
C4-Naphthalenes	16	C3-Fluoranthenes/Pyrenes	86
Biphenyl	8.5	C4-Fluoranthenes/Pyrenes	53
Dibenzofuran	18	Naphthobenzothiophenes	96
Acenaphthylene	42	C1-Naphthobenzothiophenes	52
Acenaphthene	18	C2-Naphthobenzothiophenes	50
Fluorene	40	C3-Naphthobenzothiophenes	42
C1-Fluorenes	15	C4-Naphthobenzothiophenes	36
C2-Fluorenes	19	Benz[a]anthracene	370
C3-Fluorenes	36	Chrysene/Triphenylene	440
Anthracene	110	C1-Chrysenes	180
Phenanthrene	230	C2-Chrysenes	99
C1-Phenanthrenes/Anthracenes	120	C3-Chrysenes	94
C2-Phenanthrenes/Anthracenes	84	C4-Chrysenes	55
C3-Phenanthrenes/Anthracenes	46	Benzo[b]fluoranthene	350
C4-Phenanthrenes/Anthracenes	32	Benzo[k]fluoranthene	180
Retene	0.67 U	Benzo[a]fluoranthene	61
Dibenzothiophene	14	Benzo[e]pyrene	270
C1-Dibenzothiophenes	12	Benzo[a]pyrene	330
C2-Dibenzothiophenes	23	Perylene	120
C3-Dibenzothiophenes	31	Indeno[1,2,3-cd]pyrene	210
C4-Dibenzothiophenes	20	Dibenz[a,h]anthracene	52
Benzo(b)fluorene	0.47 U	Benzo[g,h,i]perylene	200

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	75	50-130
Pyrene-d10	84	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

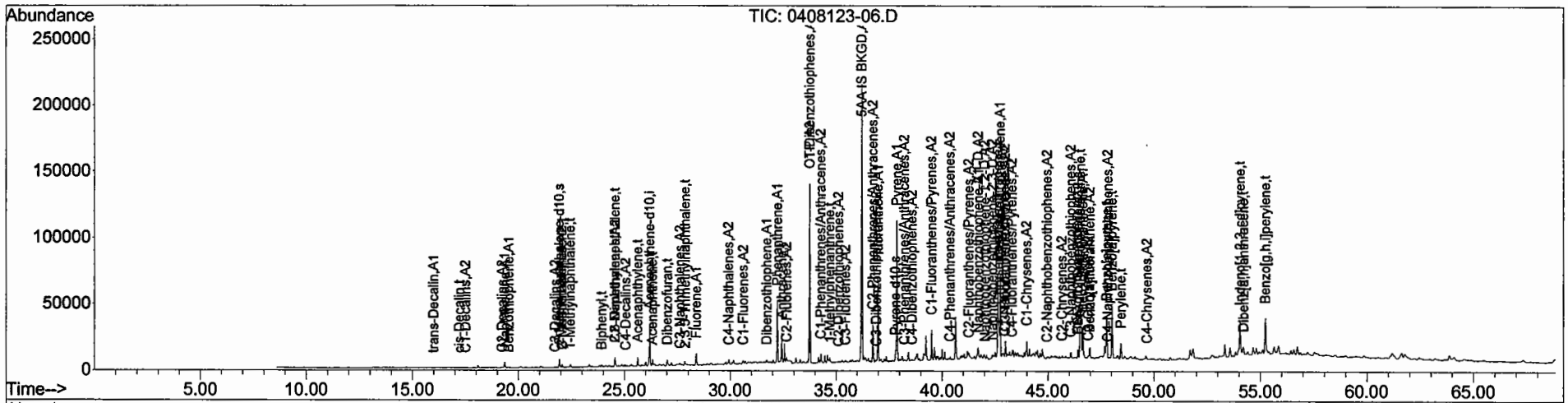
10/07/04 09:21

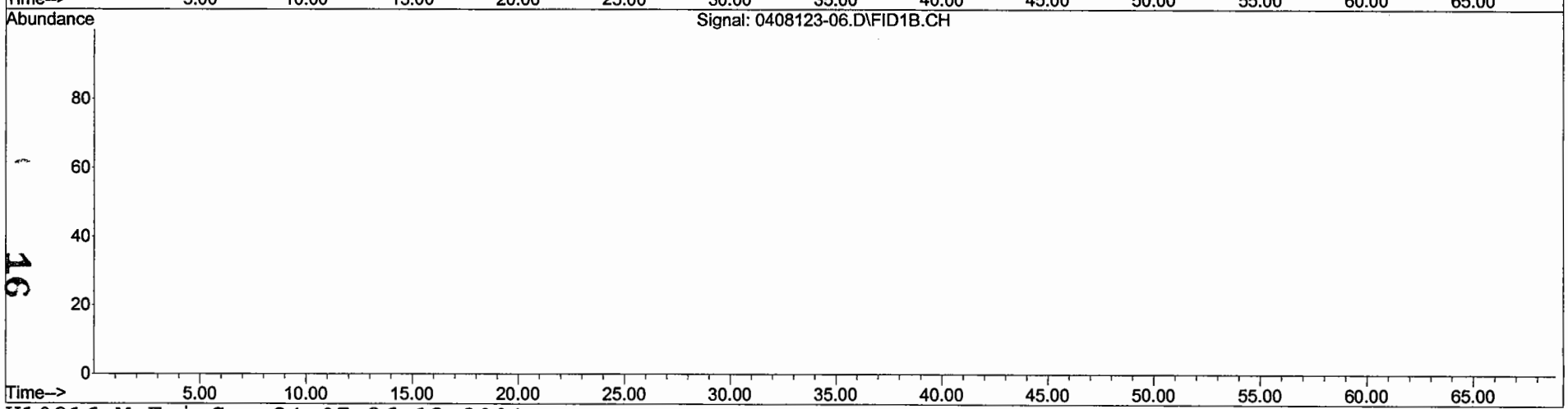
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-06.D
Acq On : 21 Sep 2004 6:18 am
Operator : BL
Sample : 0408123-06
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 21 16:06:16 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-02-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-07**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	30.3	30.28	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	18	Fluoranthene	280
C1-Naphthalenes	16	Pyrene	270
C2-Naphthalenes	63	C1-Fluoranthenes/Pyrenes	140
C3-Naphthalenes	13	C2-Fluoranthenes/Pyrenes	70
C4-Naphthalenes	8.3	C3-Fluoranthenes/Pyrenes	48
Biphenyl	5.4	C4-Fluoranthenes/Pyrenes	30
Dibenzofuran	11	Naphthobenzothiophenes	45
Acenaphthylene	27	C1-Naphthobenzothiophenes	27
Acenaphthene	12	C2-Naphthobenzothiophenes	28
Fluorene	18	C3-Naphthobenzothiophenes	26
C1-Fluorenes	7.6	C4-Naphthobenzothiophenes	26
C2-Fluorenes	13	Benz[a]anthracene	170
C3-Fluorenes	19	Chrysene/Triphenylene	240
Anthracene	59	C1-Chrysenes	100
Phenanthrene	120	C2-Chrysenes	59
C1-Phenanthrenes/Anthracenes	67	C3-Chrysenes	64
C2-Phenanthrenes/Anthracenes	54	C4-Chrysenes	54
C3-Phenanthrenes/Anthracenes	24	Benzo[b]fluoranthene	200
C4-Phenanthrenes/Anthracenes	15	Benzo[k]fluoranthene	98
Retene	0.63 U	Benzo[a]fluoranthene	36
Dibenzothiophene	8.8	Benzo[e]pyrene	160
C1-Dibenzothiophenes	6.8	Benzo[a]pyrene	190
C2-Dibenzothiophenes	11	Perylene	54
C3-Dibenzothiophenes	9.2	Indeno[1,2,3-cd]pyrene	130
C4-Dibenzothiophenes	5.8	Dibenz[a,h]anthracene	31
Benzo(b)fluorene	0.44 U	Benzo[g,h,i]perylene	130

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	71	50-130
Pyrene-d10	75	50-130
Benzo[b]fluoranthene-d12	91	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

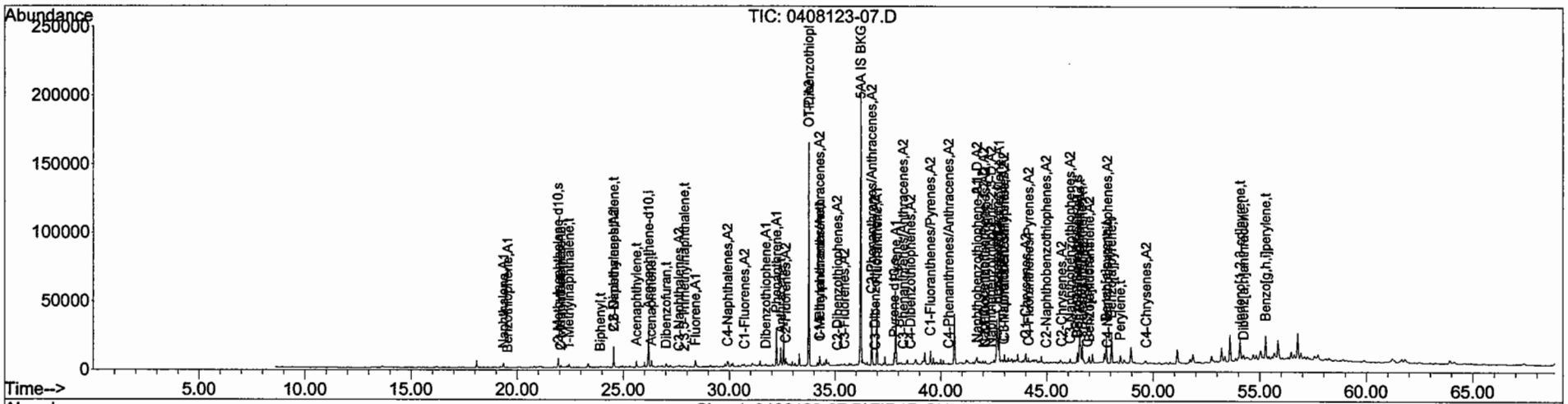
10/07/04 09:21

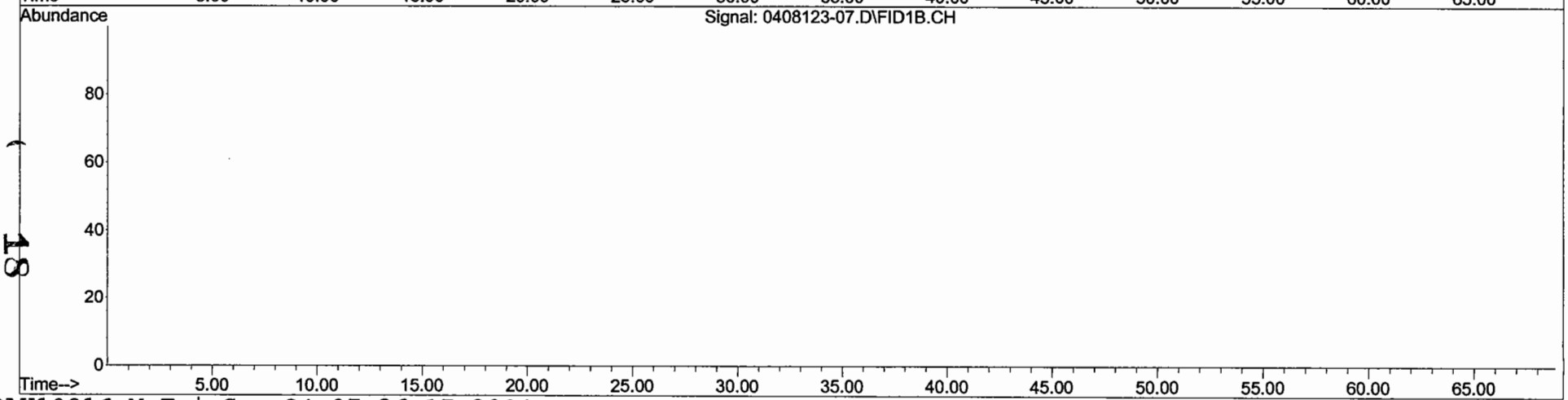
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-07.D
Acq On : 21 Sep 2004 7:37 am
Operator : BL
Sample : 0408123-07
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 24 07:28:12 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP01-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-08**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	30.5	30.96	2.5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	14	Fluoranthene	220
C1-Naphthalenes	12	Pyrene	210
C2-Naphthalenes	49	C1-Fluoranthenes/Pyrenes	110
C3-Naphthalenes	9.5	C2-Fluoranthenes/Pyrenes	62
C4-Naphthalenes	6.6	C3-Fluoranthenes/Pyrenes	35
Biphenyl	4.0	C4-Fluoranthenes/Pyrenes	20
Dibenzofuran	8.0	Naphthobenzothiophenes	33
Acenaphthylene	20	C1-Naphthobenzothiophenes	20
Acenaphthene	7.4	C2-Naphthobenzothiophenes	22
Fluorene	12	C3-Naphthobenzothiophenes	21
C1-Fluorenes	5.3	C4-Naphthobenzothiophenes	18
C2-Fluorenes	9.7	Benz[a]anthracene	130
C3-Fluorenes	13	Chrysene/Triphenylene	160
Anthracene	43	C1-Chrysenes	72
Phenanthrene	80	C2-Chrysenes	43
C1-Phenanthrenes/Anthracenes	50	C3-Chrysenes	50
C2-Phenanthrenes/Anthracenes	40	C4-Chrysenes	37
C3-Phenanthrenes/Anthracenes	17	Benzo[b]fluoranthene	150
C4-Phenanthrenes/Anthracenes	11	Benzo[k]fluoranthene	74
Retene	0.38 U	Benzo[a]fluoranthene	25
Dibenzothiophene	6.2	Benzo[e]pyrene	110
C1-Dibenzothiophenes	4.1	Benzo[a]pyrene	140
C2-Dibenzothiophenes	7.9	Perylene	38
C3-Dibenzothiophenes	7.7	Indeno[1,2,3-cd]pyrene	95
C4-Dibenzothiophenes	5.8	Dibenz[a,h]anthracene	22
Benzo(b)fluorene	0.27 U	Benzo[g,h,i]perylene	92

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	71	50-130
Pyrene-d10	81	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

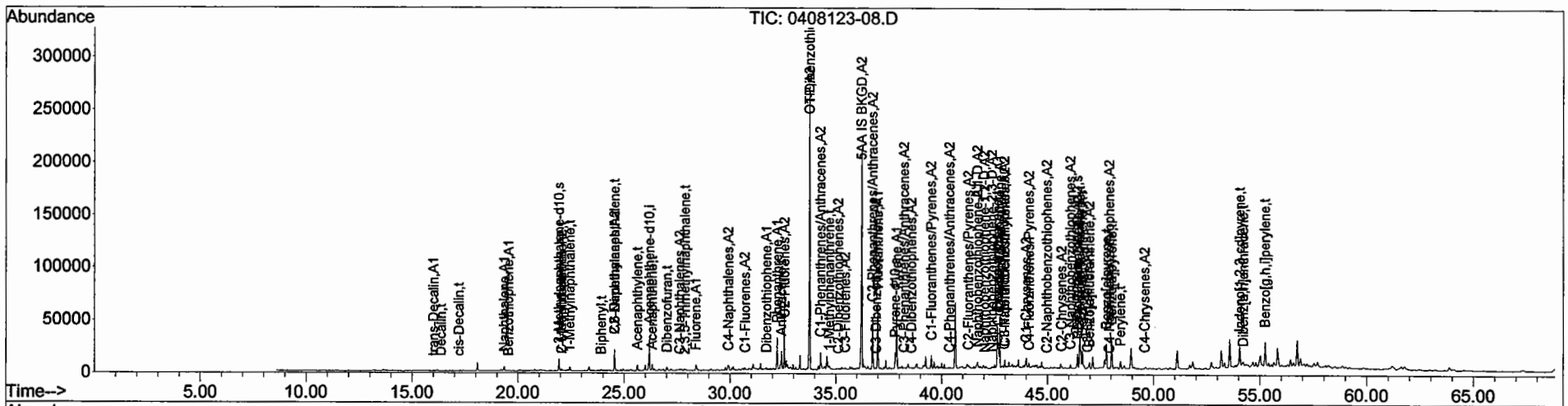
10/07/04 09:21

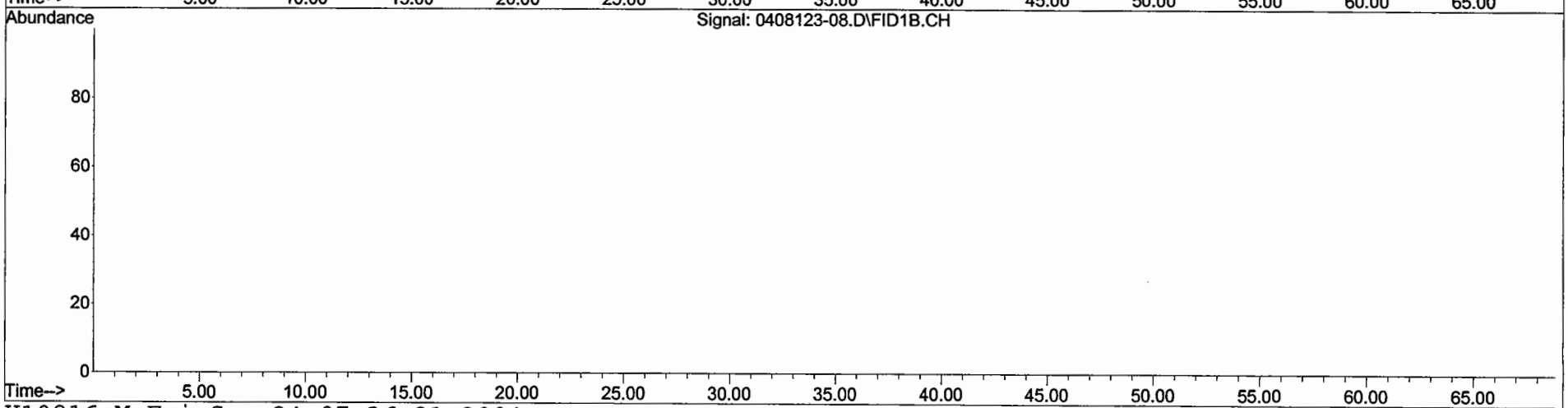
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-08.D
Acq On : 21 Sep 2004 10:14 am
Operator : BL
Sample : 0408123-08
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 24 07:28:33 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-28-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-09**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	33.9	30.96	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	19	Fluoranthene	290
C1-Naphthalenes	15	Pyrene	280
C2-Naphthalenes	82	C1-Fluoranthenes/Pyrenes	140
C3-Naphthalenes	14	C2-Fluoranthenes/Pyrenes	92
C4-Naphthalenes	10	C3-Fluoranthenes/Pyrenes	54
Biphenyl	6.8	C4-Fluoranthenes/Pyrenes	31
Dibenzofuran	12	Naphthobenzothiophenes	46
Acenaphthylene	26	C1-Naphthobenzothiophenes	26
Acenaphthene	16	C2-Naphthobenzothiophenes	32
Fluorene	21	C3-Naphthobenzothiophenes	31
C1-Fluorenes	8.6	C4-Naphthobenzothiophenes	30
C2-Fluorenes	14	Benz[a]anthracene	180
C3-Fluorenes	22	Chrysene/Triphenylene	220
Anthracene	65	C1-Chrysenes	100
Phenanthrene	140	C2-Chrysenes	69
C1-Phenanthrenes/Anthracenes	81	C3-Chrysenes	74
C2-Phenanthrenes/Anthracenes	57	C4-Chrysenes	53
C3-Phenanthrenes/Anthracenes	24	Benzo[b]fluoranthene	220
C4-Phenanthrenes/Anthracenes	11	Benzo[k]fluoranthene	100
Retene	0.55 U	Benzo[a]fluoranthene	36
Dibenzothiophene	9.7	Benzo[e]pyrene	160
C1-Dibenzothiophenes	7.5	Benzo[a]pyrene	200
C2-Dibenzothiophenes	12	Perylene	54
C3-Dibenzothiophenes	11	Indeno[1,2,3-cd]pyrene	140
C4-Dibenzothiophenes	8.2	Dibenz[a,h]anthracene	32
Benzo(b)fluorene	0.39 U	Benzo[g,h,i]perylene	140

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	71	50-130
Pyrene-d10	82	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

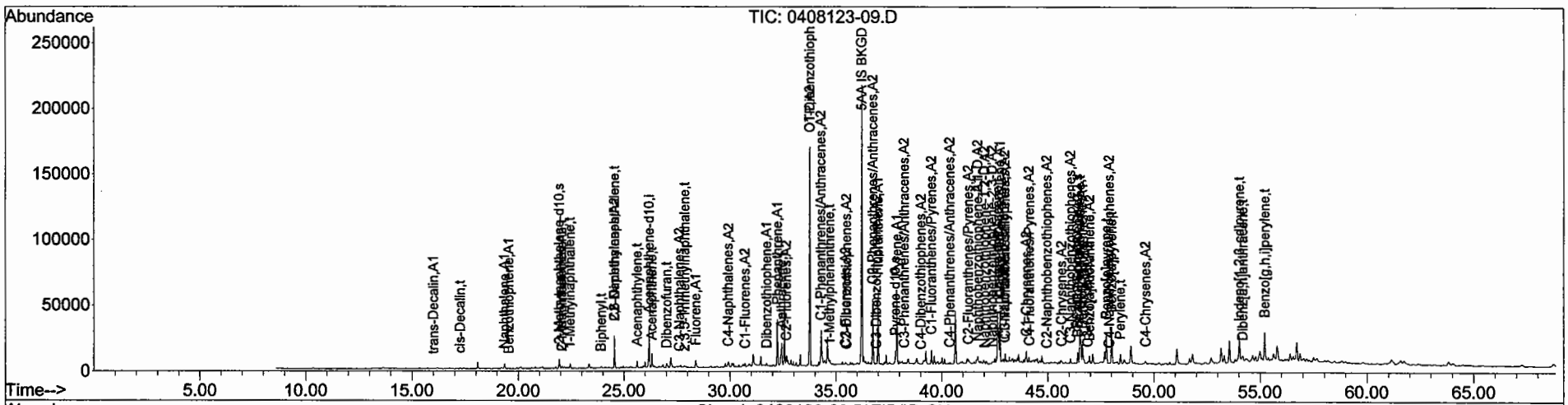
10/07/04 09:21

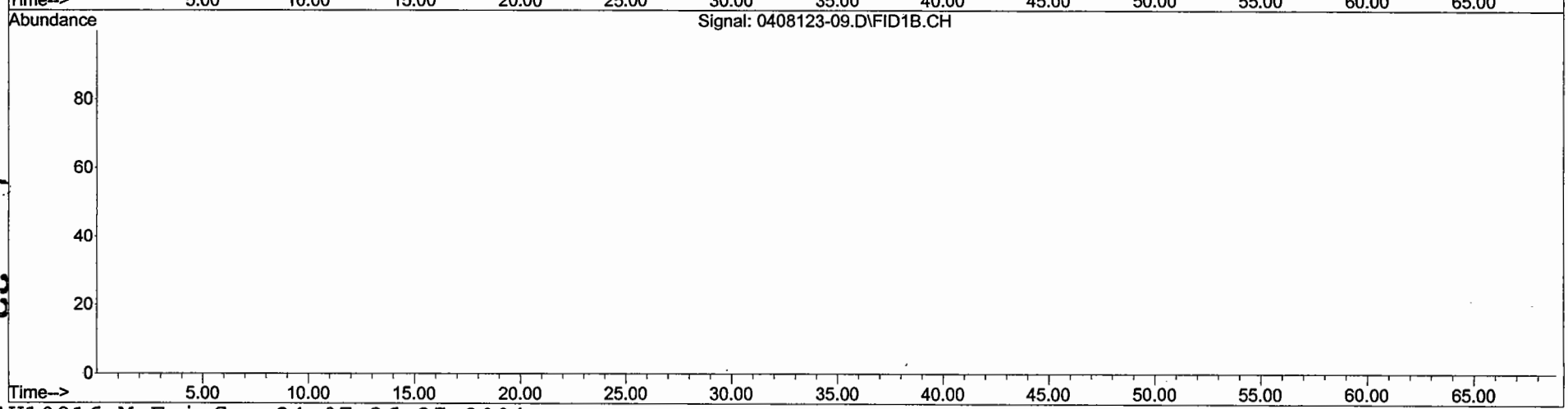
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-09.D
Acq On : 21 Sep 2004 11:33 am
Operator : BL
Sample : 0408123-09
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 24 07:29:10 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-06-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-10**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/21/04	44.7	30.20	8	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	32	Fluoranthene	430
C1-Naphthalenes	24	Pyrene	600
C2-Naphthalenes	52	C1-Fluoranthenes/Pyrenes	460
C3-Naphthalenes	30	C2-Fluoranthenes/Pyrenes	460
C4-Naphthalenes	44	C3-Fluoranthenes/Pyrenes	470
Biphenyl	8.3	C4-Fluoranthenes/Pyrenes	300
Dibenzofuran	17	Naphthobenzothiophenes	83
Acenaphthylene	49	C1-Naphthobenzothiophenes	110
Acenaphthene	21	C2-Naphthobenzothiophenes	310
Fluorene	34	C3-Naphthobenzothiophenes	450
C1-Fluorenes	22	C4-Naphthobenzothiophenes	350
C2-Fluorenes	38	Benz[a]anthracene	270
C3-Fluorenes	71	Chrysene/Triphenylene	340
Anthracene	110	C1-Chrysenes	240
Phenanthrene	250	C2-Chrysenes	410
C1-Phenanthrenes/Anthracenes	130	C3-Chrysenes	630
C2-Phenanthrenes/Anthracenes	110	C4-Chrysenes	360
C3-Phenanthrenes/Anthracenes	91	Benzo[b]fluoranthene	360
C4-Phenanthrenes/Anthracenes	160	Benzo[k]fluoranthene	170
Retene	0.86 U	Benzo[a]fluoranthene	65
Dibenzothiophene	17	Benzo[e]pyrene	320
C1-Dibenzothiophenes	18	Benzo[a]pyrene	350
C2-Dibenzothiophenes	30	Perylene	87
C3-Dibenzothiophenes	33	Indeno[1,2,3-cd]pyrene	230
C4-Dibenzothiophenes	72	Dibenz[a,h]anthracene	64
Benzo(b)fluorene	0.60 U	Benzo[g,h,i]perylene	250

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	87	50-130
Pyrene-d10	92	50-130
Benzo[b]fluoranthene-d12	102	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

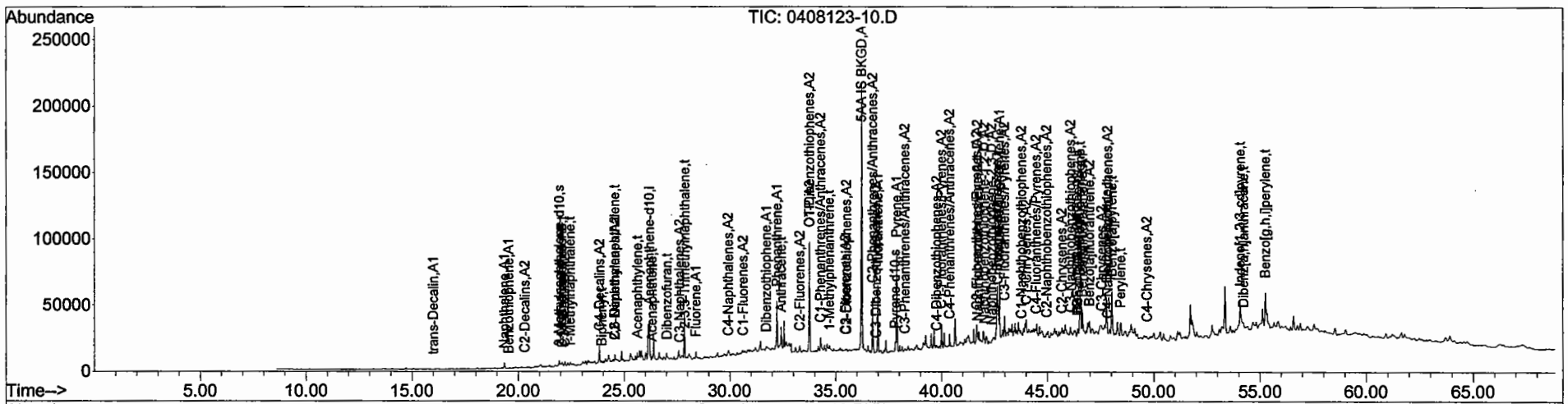
10/07/04 09:21

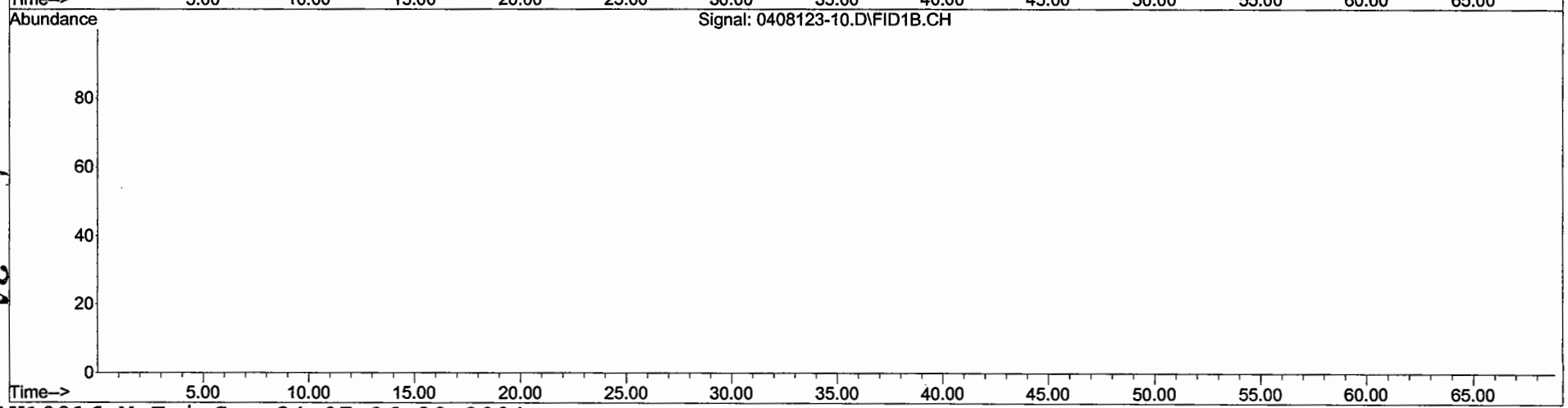
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-10.D
Acq On : 21 Sep 2004 2:11 pm
Operator : BL
Sample : 0408123-10
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 24 07:29:32 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	83.6	30.75	4	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	2.5		Fluoranthene	91
C1-Naphthalenes	2.4		Pyrene	88
C2-Naphthalenes	8.3		C1-Fluoranthenes/Pyrenes	50
C3-Naphthalenes	3.7		C2-Fluoranthenes/Pyrenes	36
C4-Naphthalenes	2.7		C3-Fluoranthenes/Pyrenes	29
Biphenyl	0.71	J	C4-Fluoranthenes/Pyrenes	17
Dibenzofuran	2.6		Naphthobenzothiophenes	17
Acenaphthylene	7.1		C1-Naphthobenzothiophenes	11
Acenaphthene	5.0		C2-Naphthobenzothiophenes	14
Fluorene	5.4		C3-Naphthobenzothiophenes	20
C1-Fluorenes	3.1		C4-Naphthobenzothiophenes	21
C2-Fluorenes	5.9		Benz[a]anthracene	65
C3-Fluorenes	8.8		Chrysene/Triphenylene	79
Anthracene	17		C1-Chrysenes	39
Phenanthrene	53		C2-Chrysenes	27
C1-Phenanthrenes/Anthracenes	36		C3-Chrysenes	35
C2-Phenanthrenes/Anthracenes	19		C4-Chrysenes	27
C3-Phenanthrenes/Anthracenes	11		Benzo[b]fluoranthene	70
C4-Phenanthrenes/Anthracenes	9.0		Benzo[k]fluoranthene	36
Retene	0.23	U	Benzo[a]fluoranthene	13
Dibenzothiophene	3.1		Benzo[e]pyrene	56
C1-Dibenzothiophenes	4.1		Benzo[a]pyrene	70
C2-Dibenzothiophenes	5.9		Perylene	18
C3-Dibenzothiophenes	5.2		Indeno[1,2,3-cd]pyrene	47
C4-Dibenzothiophenes	3.8		Dibenz[a,h]anthracene	12
Benzo(b)fluorene	0.16	U	Benzo[g,h,i]perylene	51

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	81	50-130
Pyrene-d10	88	50-130
Benzo[b]fluoranthene-d12	103	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:21

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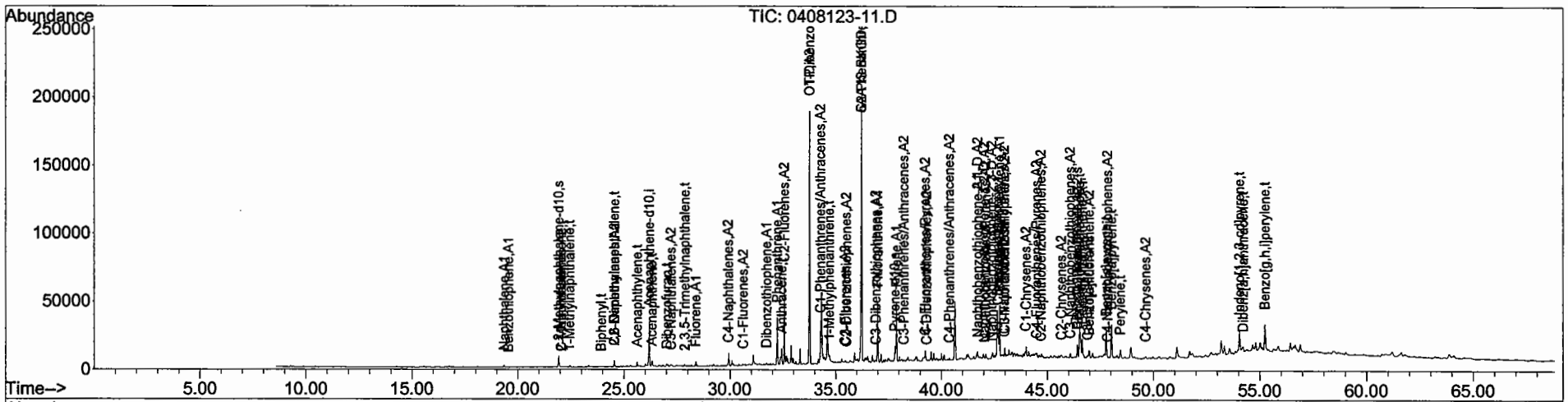
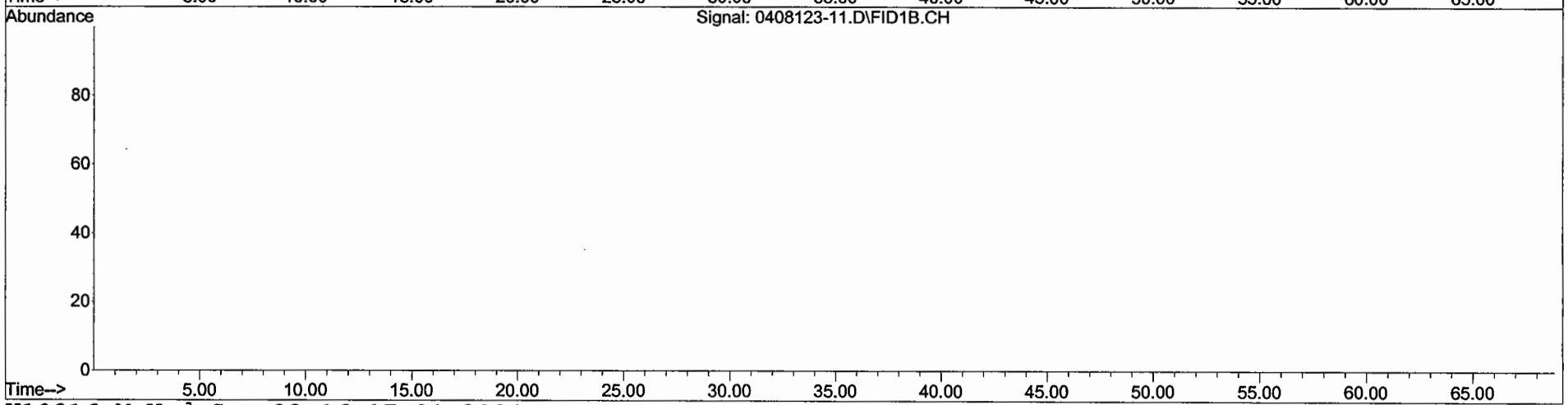
:ion Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT20\
Data File : 0408123-11.D
Acq On : 21 Sep 2004 3:30 pm
Operator : BL
Sample : 0408123-11
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 22 16:15:49 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





26

Form I
Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 D**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	83.6	30.31	2.5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	1.8	Fluoranthene	74
C1-Naphthalenes	1.8	Pyrene	70
C2-Naphthalenes	6.9	C1-Fluoranthenes/Pyrenes	36
C3-Naphthalenes	2.9	C2-Fluoranthenes/Pyrenes	31
C4-Naphthalenes	2.2	C3-Fluoranthenes/Pyrenes	23
Biphenyl	0.52 J	C4-Fluoranthenes/Pyrenes	12
Dibenzofuran	1.4	Naphthobenzothiophenes	13
Acenaphthylene	6.1	C1-Naphthobenzothiophenes	9.1
Acenaphthene	2.4	C2-Naphthobenzothiophenes	11
Fluorene	2.9	C3-Naphthobenzothiophenes	17
C1-Fluorenes	2.0	C4-Naphthobenzothiophenes	18
C2-Fluorenes	4.8	Benz[a]anthracene	42
C3-Fluorenes	7.1	Chrysene/Triphenylene	52
Anthracene	12	C1-Chrysenes	28
Phenanthrene	32	C2-Chrysenes	21
C1-Phenanthrenes/Anthracenes	28	C3-Chrysenes	30
C2-Phenanthrenes/Anthracenes	14	C4-Chrysenes	23
C3-Phenanthrenes/Anthracenes	6.7	Benzo[b]fluoranthene	48
C4-Phenanthrenes/Anthracenes	3.7	Benzo[k]fluoranthene	23
Retene	0.14 U	Benzo[a]fluoranthene	8.4
Dibenzothiophene	1.9	Benzo[e]pyrene	39
C1-Dibenzothiophenes	2.0	Benzo[a]pyrene	46
C2-Dibenzothiophenes	4.3	Perylene	12
C3-Dibenzothiophenes	3.5	Indeno[1,2,3-cd]pyrene	32
C4-Dibenzothiophenes	2.3	Dibenz[a,h]anthracene	8.9
Benzo(b)fluorene	0.10 U	Benzo[g,h,i]perylene	36

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	79	50-130
Pyrene-d10	88	50-130
Benzo[b]fluoranthene-d12	99	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

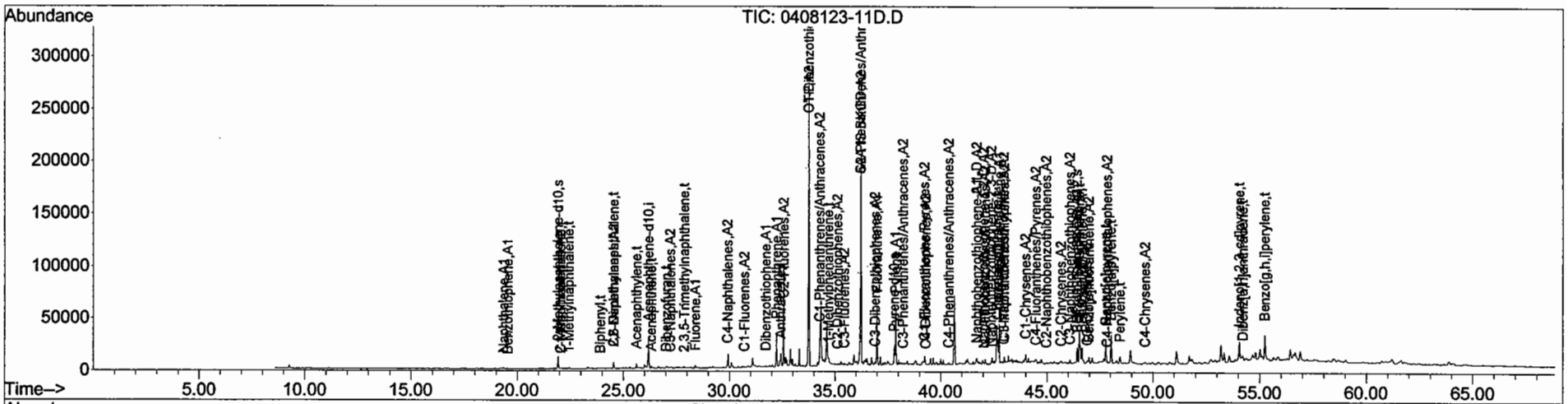
10/07/04 09:21

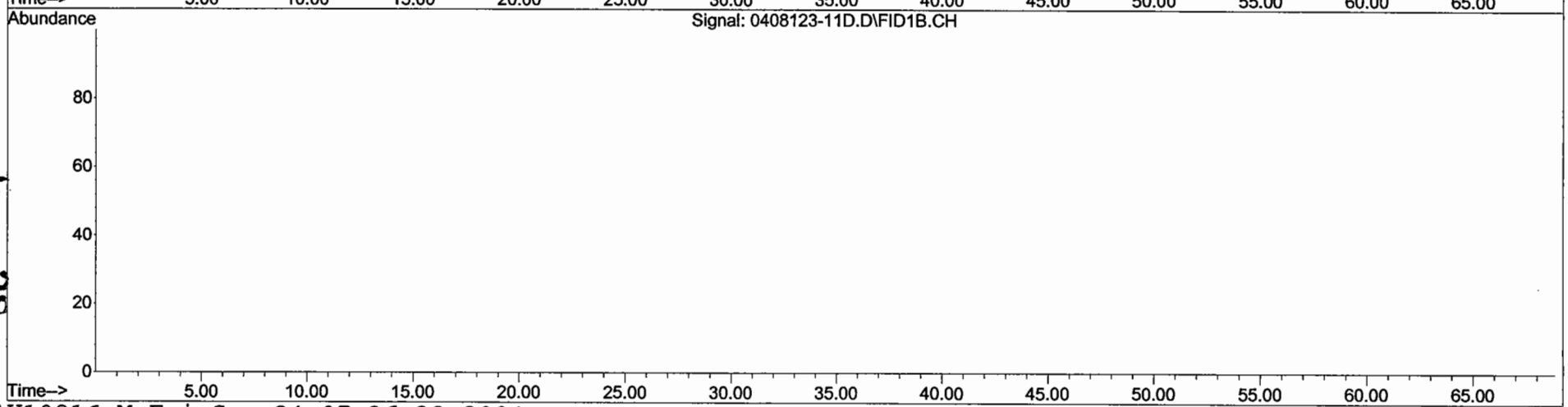
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-11D.D
Acq On : 21 Sep 2004 4:49 pm
Operator : BL
Sample : 0408123-11D
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 24 07:30:21 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
Naphthalene	2.5	1.8	32[a]	30
C1-Naphthalenes	2.4	1.8	29	30
C2-Naphthalenes	8.3	6.9	19	30
C3-Naphthalenes	3.7	2.9	24	30
C4-Naphthalenes	2.7	2.2	18	30
Biphenyl	0.71 J	0.52 J	32[a]	30
Dibenzofuran	2.6	1.4	65[a]	30
Acenaphthylene	7.1	6.1	16	30
Acenaphthene	5.0	2.4	69[a]	30
Fluorene	5.4	2.9	60[a]	30
C1-Fluorenes	3.1	2.0	44[a]	30
C2-Fluorenes	5.9	4.8	20	30
C3-Fluorenes	8.8	7.1	21	30
Anthracene	17	12	35[a]	30
Phenanthrene	53	32	50[a]	30
C1-Phenanthrenes/Anthracenes	36	28	27	30
C2-Phenanthrenes/Anthracenes	19	14	30	30
C3-Phenanthrenes/Anthracenes	11	6.7	47[a]	30
C4-Phenanthrenes/Anthracenes	9.0	3.7	84[a]	30
Retene	0.23 U	0.14 U	N/A	30
Dibenzothiophene	3.1	1.9	48[a]	30
C1-Dibenzothiophenes	4.1	2.0	71[a]	30
C2-Dibenzothiophenes	5.9	4.3	33[a]	30
C3-Dibenzothiophenes	5.2	3.5	39[a]	30
C4-Dibenzothiophenes	3.8	2.3	50[a]	30
Benzo(b)fluorene	0.16 U	0.10 U	N/A	30
Fluoranthene	91	74	21	30
Pyrene	88	70	23	30
C1-Fluoranthenes/Pyrenes	50	36	32[a]	30
C2-Fluoranthenes/Pyrenes	36	31	14	30
C3-Fluoranthenes/Pyrenes	29	23	24	30
C4-Fluoranthenes/Pyrenes	17	12	34[a]	30
Naphthobenzothiophenes	17	13	29	30
C1-Naphthobenzothiophenes	11	9.1	22	30
C2-Naphthobenzothiophenes	14	11	19	30

N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
C3-Naphthobenzothiophenes	**20**	**17**	15	30
C4-Naphthobenzothiophenes	**21**	**18**	14	30
Benz[a]anthracene	**65**	**42**	43[a]	30
Chrysene/Triphenylene	**79**	**52**	41[a]	30
C1-Chrysenes	**39**	**28**	31[a]	30
C2-Chrysenes	**27**	**21**	27	30
C3-Chrysenes	**35**	**30**	17	30
C4-Chrysenes	**27**	**23**	19	30
Benzo[b]fluoranthene	**70**	**48**	38[a]	30
Benzo[k]fluoranthene	**36**	**23**	43[a]	30
Benzo[a]fluoranthene	**13**	**8.4**	40[a]	30
Benzo[e]pyrene	**56**	**39**	36[a]	30
Benzo[a]pyrene	**70**	**46**	42[a]	30
Perylene	**18**	**12**	40[a]	30
Indeno[1,2,3-cd]pyrene	**47**	**32**	37[a]	30
Dibenz[a,h]anthracene	**12**	**8.9**	32[a]	30
Benzo[g,h,i]perylene	**51**	**36**	34[a]	30

Surrogate	% Recovery		Acceptance Range (%)
2-Methylnaphthalene-d10	81	79	50-130
Pyrene-d10	88	88	50-130
Benzo[b]fluoranthene-d12	103	99	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/07/04 10:11

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Form I
Matrix Spike
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 M**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	83.6	30.28	2.5	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	33	S	Fluoranthene	120	S
C1-Naphthalenes	22		Pyrene	120	S
C2-Naphthalenes	7.9		C1-Fluoranthenes/Pyrenes	44	
C3-Naphthalenes	4.9		C2-Fluoranthenes/Pyrenes	39	
C4-Naphthalenes	3.4		C3-Fluoranthenes/Pyrenes	27	
Biphenyl	0.65	J	C4-Fluoranthenes/Pyrenes	16	
Dibenzofuran	2.2		Naphthobenzothiophenes	16	
Acenaphthylene	40	S	C1-Naphthobenzothiophenes	11	
Acenaphthene	38	S	C2-Naphthobenzothiophenes	14	
Fluorene	37	S	C3-Naphthobenzothiophenes	18	
C1-Fluorenes	2.4		C4-Naphthobenzothiophenes	20	
C2-Fluorenes	4.5		Benz[a]anthracene	86	S
C3-Fluorenes	7.6		Chrysene/Triphenylene	95	S
Anthracene	49	S	C1-Chrysenes	32	
Phenanthrene	81	S	C2-Chrysenes	25	
C1-Phenanthrenes/Anthracenes	34		C3-Chrysenes	32	
C2-Phenanthrenes/Anthracenes	18		C4-Chrysenes	22	
C3-Phenanthrenes/Anthracenes	9.2		Benzo[b]fluoranthene	84	S
C4-Phenanthrenes/Anthracenes	6.3		Benzo[k]fluoranthene	63	S
Retene	0.14	U	Benzo[a]fluoranthene	9.4	
Dibenzothiophene	3.3		Benzo[e]pyrene	42	
C1-Dibenzothiophenes	4.0		Benzo[a]pyrene	85	S
C2-Dibenzothiophenes	5.4		Perylene	13	
C3-Dibenzothiophenes	4.7		Indeno[1,2,3-cd]pyrene	66	S
C4-Dibenzothiophenes	2.9		Dibenz[a,h]anthracene	42	S
Benzo(b)fluorene	0.10	U	Benzo[g,h,i]perylene	68	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	87	50-130
Pyrene-d10	96	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 09:21

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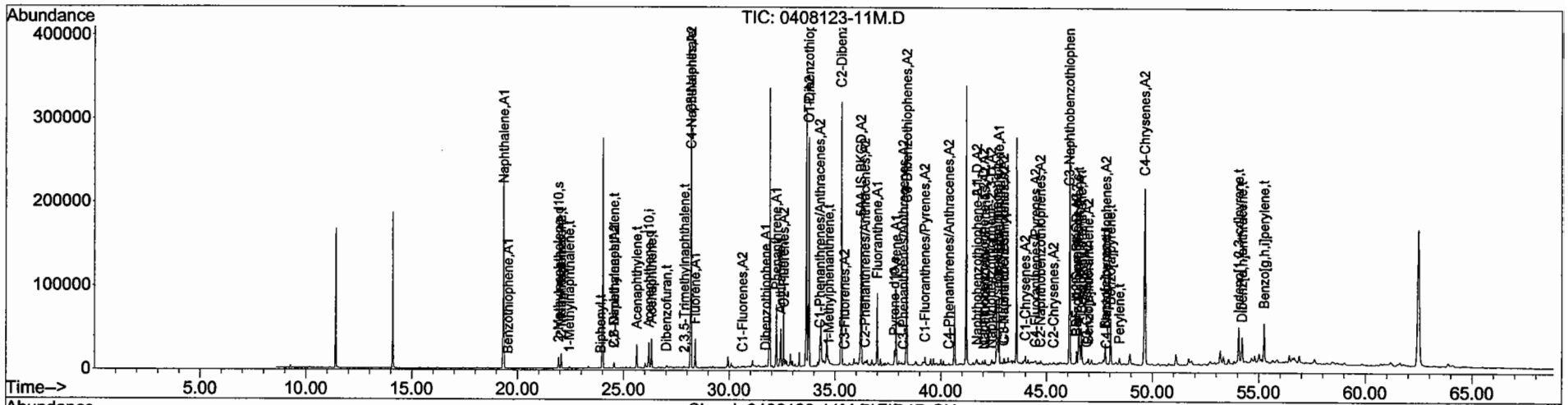
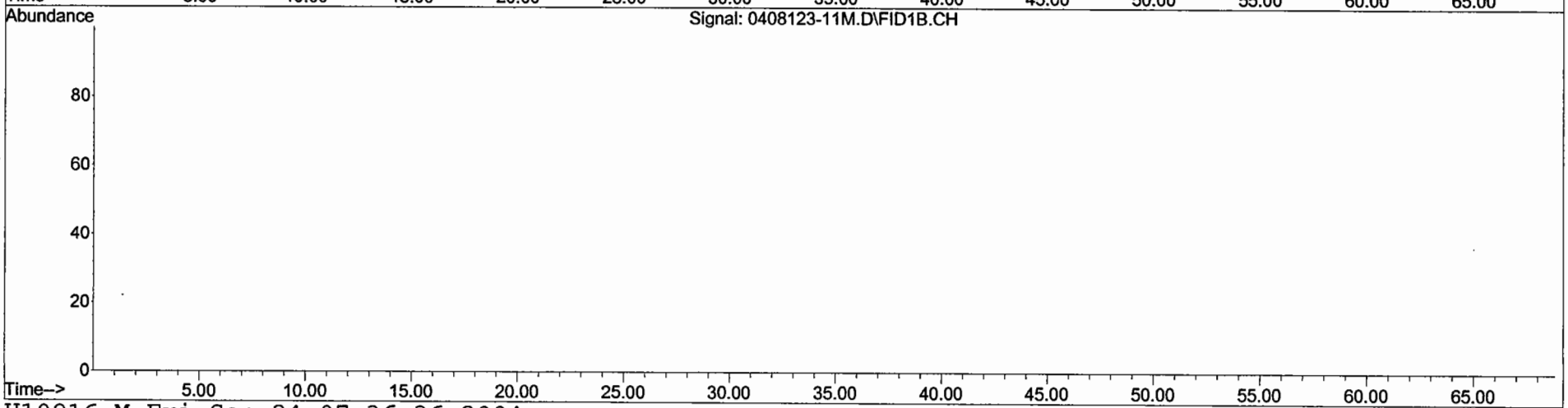
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-11M.D
Acq On : 21 Sep 2004 6:07 pm
Operator : BL
Sample : 0408123-11M
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 24 07:30:44 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **See Below**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	Cass

	0408123-11	0408123-11		
Parameter	**Sample Conc.**	**Matrix Spike Conc.**	**% Recovery**	**% Recovery Limits**
Naphthalene	2.5	33	78	50-150
Acenaphthylene	7.1	40	84	50-150
Acenaphthene	5.0	38	82	50-150
Fluorene	5.4	37	79	50-150
Anthracene	17	49	81	50-150
Phenanthrene	53	81	70	50-150
Fluoranthene	91	120	67	50-150
Pyrene	88	120	77	50-150
Benz[a]anthracene	65	86	53	50-150
Chrysene/Triphenylene	79	95	41[a]	50-150
Benzo[b]fluoranthene	70	84	35[a]	50-150
Benzo[k]fluoranthene	36	63	68	50-150
Benzo[a]pyrene	70	85	38[a]	50-150
Indeno[1,2,3-cd]pyrene	47	66	49[a]	50-150
Dibenz[a,h]anthracene	12	42	76	50-150
Benzo[g,h,i]perylene	51	68	44[a]	50-150

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	87	50-130
Pyrene-d10	96	50-130
Benzo[b]fluoranthene-d12	98	50-130
5B(H)Cholane	N/A	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 09:13

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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-12**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	48.5	30.44	10	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	120		Fluoranthene	3600
C1-Naphthalenes	86		Pyrene	3400
C2-Naphthalenes	130		C1-Fluoranthenes/Pyrenes	1700
C3-Naphthalenes	79		C2-Fluoranthenes/Pyrenes	940
C4-Naphthalenes	48		C3-Fluoranthenes/Pyrenes	480
Biphenyl	24		C4-Fluoranthenes/Pyrenes	300
Dibenzofuran	150		Naphthobenzothiophenes	530
Acenaphthylene	150		C1-Naphthobenzothiophenes	230
Acenaphthene	280		C2-Naphthobenzothiophenes	220
Fluorene	310		C3-Naphthobenzothiophenes	230
C1-Fluorenes	99		C4-Naphthobenzothiophenes	200
C2-Fluorenes	92		Benz[a]anthracene	2000
C3-Fluorenes	210		Chrysene/Triphenylene	2400
Anthracene	670		C1-Chrysenes	930
Phenanthrene	2600		C2-Chrysenes	510
C1-Phenanthrenes/Anthracenes	950		C3-Chrysenes	470
C2-Phenanthrenes/Anthracenes	430		C4-Chrysenes	270
C3-Phenanthrenes/Anthracenes	180		Benzo[b]fluoranthene	1700
C4-Phenanthrenes/Anthracenes	110		Benzo[k]fluoranthene	910
Retene	0.98	U	Benzo[a]fluoranthene	320
Dibenzothiophene	140		Benzo[e]pyrene	1400
C1-Dibenzothiophenes	88		Benzo[a]pyrene	1800
C2-Dibenzothiophenes	90		Perylene	460
C3-Dibenzothiophenes	67		Indeno[1,2,3-cd]pyrene	1000
C4-Dibenzothiophenes	48		Dibenz[a,h]anthracene	270
Benzo(b)fluorene	0.68	U	Benzo[g,h,i]perylene	950

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	77	50-130
Pyrene-d10	90	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

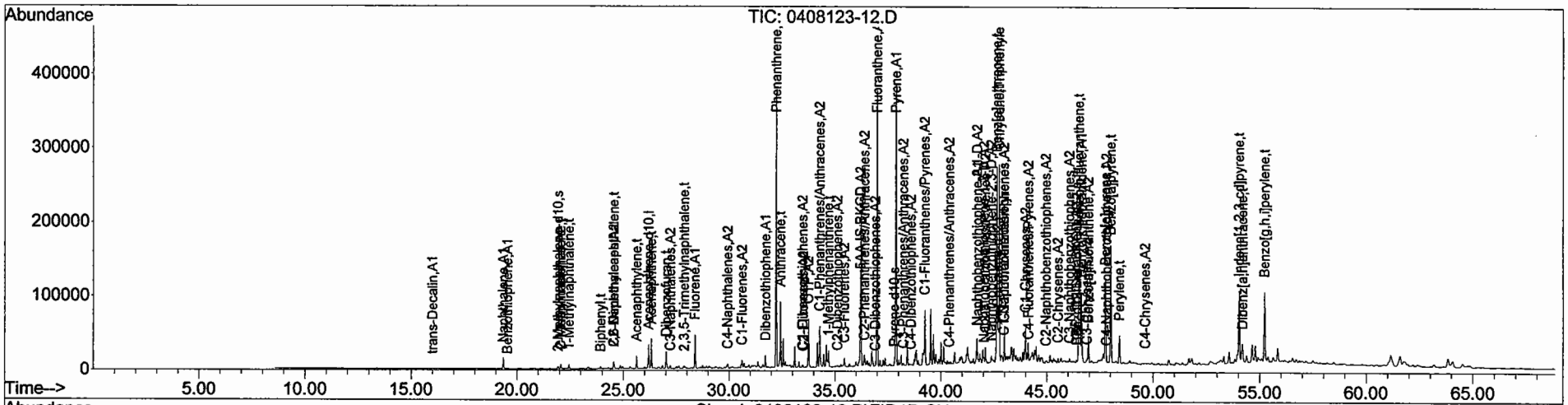
10/07/04 09:22

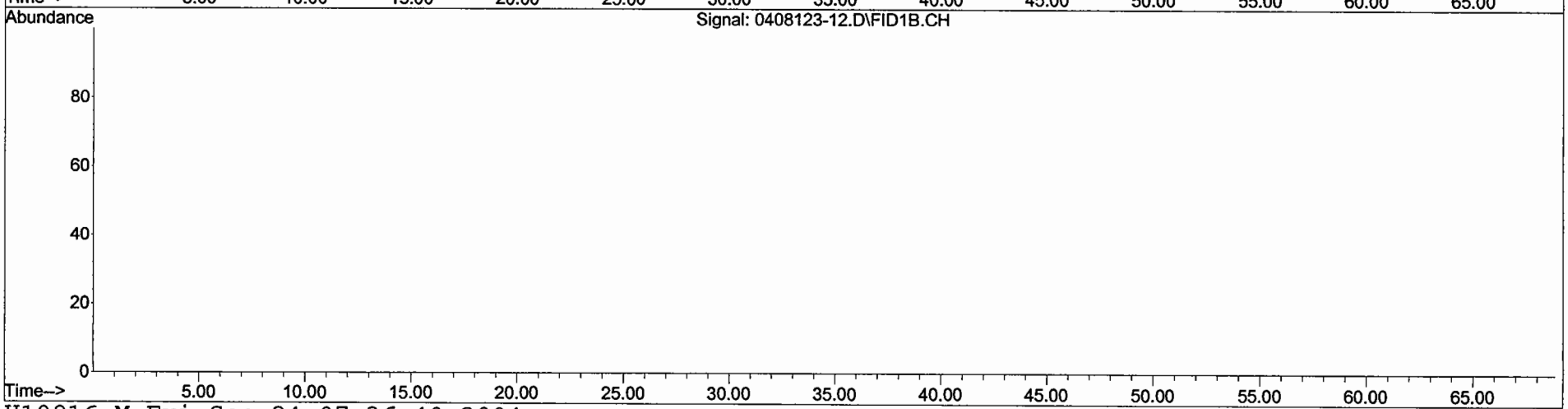
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-12.D
Acq On : 21 Sep 2004 7:26 pm
Operator : BL
Sample : 0408123-12
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Sep 22 16:53:02 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-29-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-13**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	37.0	30.45	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	37	Fluoranthene	2500
C1-Naphthalenes	33	Pyrene	2400
C2-Naphthalenes	94	C1-Fluoranthenes/Pyrenes	1400
C3-Naphthalenes	47	C2-Fluoranthenes/Pyrenes	600
C4-Naphthalenes	30	C3-Fluoranthenes/Pyrenes	350
Biphenyl	12	C4-Fluoranthenes/Pyrenes	200
Dibenzofuran	60	Naphthobenzothiophenes	400
Acenaphthylene	110	C1-Naphthobenzothiophenes	160
Acenaphthene	140	C2-Naphthobenzothiophenes	130
Fluorene	160	C3-Naphthobenzothiophenes	160
C1-Fluorenes	63	C4-Naphthobenzothiophenes	160
C2-Fluorenes	61	Benz[a]anthracene	1500
C3-Fluorenes	120	Chrysene/Triphenylene	1800
Anthracene	440	C1-Chrysenes	650
Phenanthrene	1200	C2-Chrysenes	330
C1-Phenanthrenes/Anthracenes	560	C3-Chrysenes	350
C2-Phenanthrenes/Anthracenes	300	C4-Chrysenes	250
C3-Phenanthrenes/Anthracenes	120	Benzo[b]fluoranthene	1400
C4-Phenanthrenes/Anthracenes	85	Benzo[k]fluoranthene	660
Retene	0.64 U	Benzo[a]fluoranthene	240
Dibenzothiophene	67	Benzo[e]pyrene	920
C1-Dibenzothiophenes	50	Benzo[a]pyrene	1300
C2-Dibenzothiophenes	53	Perylene	330
C3-Dibenzothiophenes	46	Indeno[1,2,3-cd]pyrene	670
C4-Dibenzothiophenes	34	Dibenz[a,h]anthracene	180
Benzo(b)fluorene	0.45 U	Benzo[g,h,i]perylene	640

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	73	50-130
Pyrene-d10	84	50-130
Benzo[b]fluoranthene-d12	89	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:22

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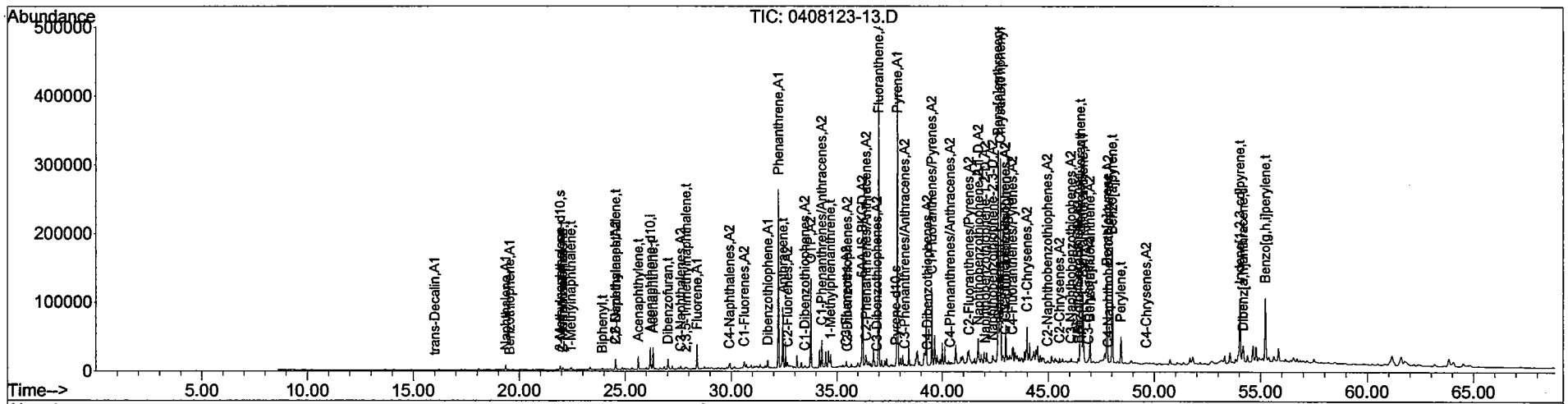
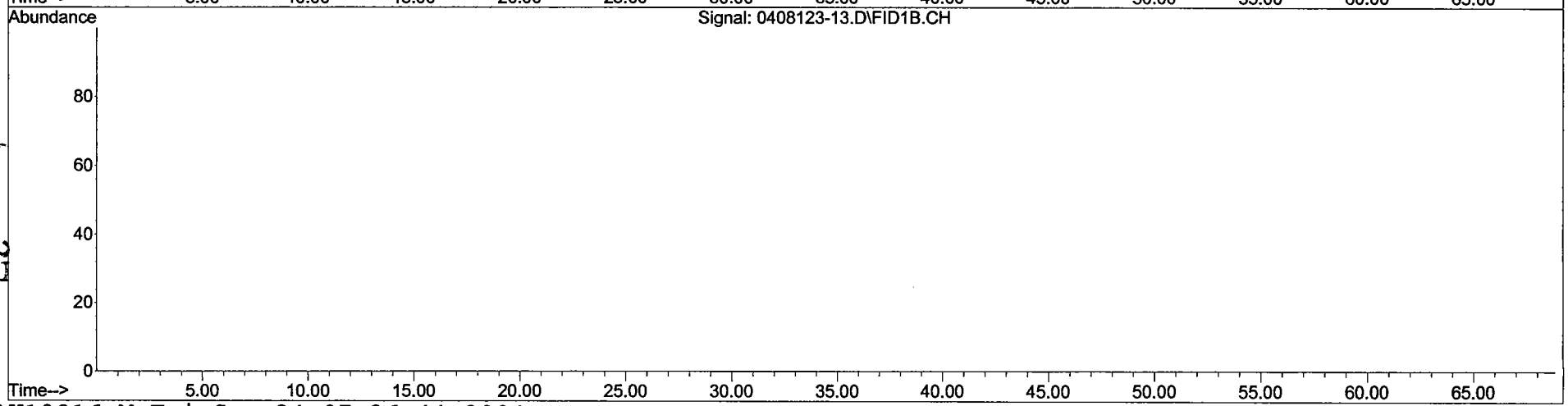
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-13.D
Acq On : 21 Sep 2004 8:45 pm
Operator : BL
Sample : 0408123-13
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Sep 24 07:31:18 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-05-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-14**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	41.2	30.58	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	19	Fluoranthene	220
C1-Naphthalenes	15	Pyrene	240
C2-Naphthalenes	40	C1-Fluoranthenes/Pyrenes	150
C3-Naphthalenes	14	C2-Fluoranthenes/Pyrenes	89
C4-Naphthalenes	9.5	C3-Fluoranthenes/Pyrenes	67
Biphenyl	5.7	C4-Fluoranthenes/Pyrenes	37
Dibenzofuran	8.9	Naphthobenzothiophenes	42
Acenaphthylene	33	C1-Naphthobenzothiophenes	31
Acenaphthene	8.9	C2-Naphthobenzothiophenes	36
Fluorene	15	C3-Naphthobenzothiophenes	37
C1-Fluorenes	9.5	C4-Naphthobenzothiophenes	34
C2-Fluorenes	15	Benz[a]anthracene	140
C3-Fluorenes	19	Chrysene/Triphenylene	180
Anthracene	55	C1-Chrysenes	100
Phenanthrene	100	C2-Chrysenes	67
C1-Phenanthrenes/Anthracenes	64	C3-Chrysenes	74
C2-Phenanthrenes/Anthracenes	57	C4-Chrysenes	45
C3-Phenanthrenes/Anthracenes	26	Benzo[b]fluoranthene	180
C4-Phenanthrenes/Anthracenes	16	Benzo[k]fluoranthene	83
Retene	0.46 U	Benzo[a]fluoranthene	33
Dibenzothiophene	7.6	Benzo[e]pyrene	140
C1-Dibenzothiophenes	5.9	Benzo[a]pyrene	160
C2-Dibenzothiophenes	13	Perylene	46
C3-Dibenzothiophenes	16	Indeno[1,2,3-cd]pyrene	110
C4-Dibenzothiophenes	14	Dibenz[a,h]anthracene	26
Benzo(b)fluorene	0.32 U	Benzo[g,h,i]perylene	100

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	78	50-130
Pyrene-d10	91	50-130
Benzo[b]fluoranthene-d12	91	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

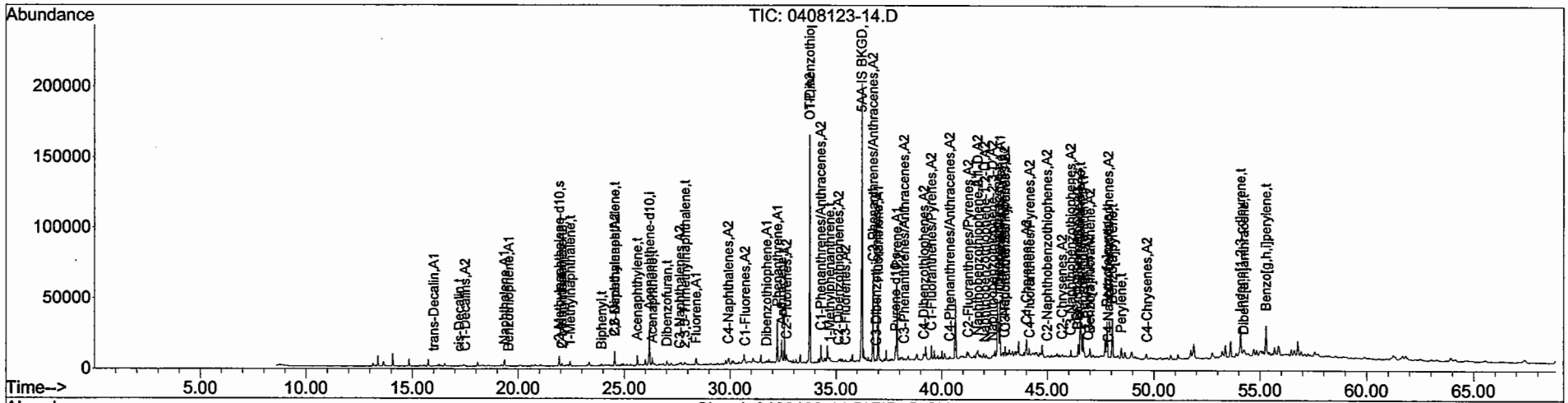
10/07/04 09:22

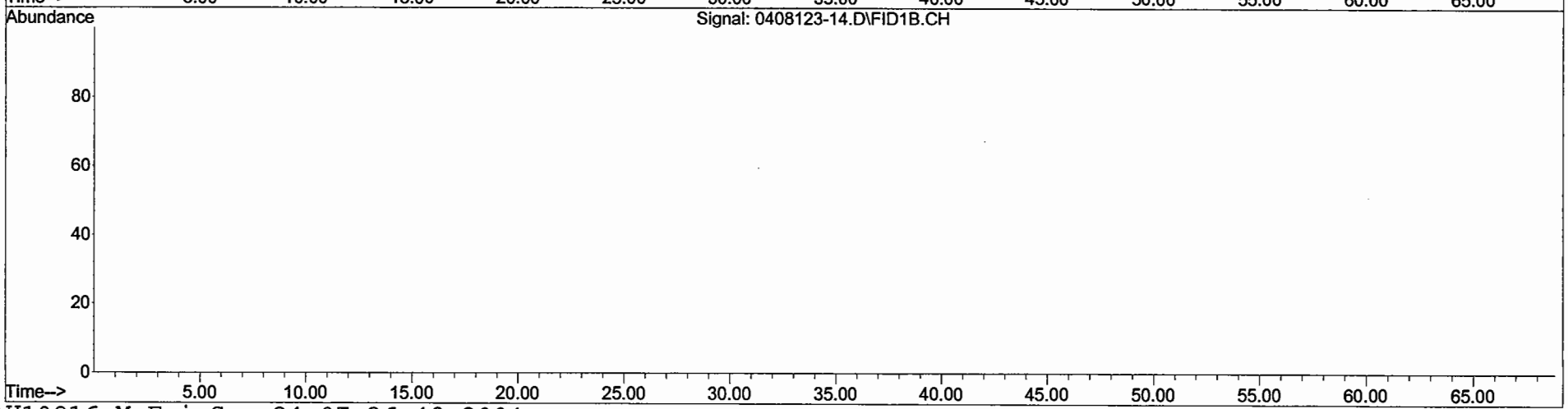
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : 0408123-14.D
Acq On : 22 Sep 2004 8:28 am
Operator : BL
Sample : 0408123-14
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Sep 24 07:32:04 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-15**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	41.4	30.54	2.5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	12	Fluoranthene	190
C1-Naphthalenes	9.2	Pyrene	210
C2-Naphthalenes	25	C1-Fluoranthenes/Pyrenes	110
C3-Naphthalenes	9.4	C2-Fluoranthenes/Pyrenes	81
C4-Naphthalenes	6.1	C3-Fluoranthenes/Pyrenes	62
Biphenyl	3.8	C4-Fluoranthenes/Pyrenes	38
Dibenzofuran	7.0	Naphthobenzothiophenes	36
Acenaphthylene	23	C1-Naphthobenzothiophenes	25
Acenaphthene	7.6	C2-Naphthobenzothiophenes	34
Fluorene	12	C3-Naphthobenzothiophenes	34
C1-Fluorenes	6.4	C4-Naphthobenzothiophenes	28
C2-Fluorenes	9.3	Benz[a]anthracene	110
C3-Fluorenes	16	Chrysene/Triphenylene	150
Anthracene	46	C1-Chrysenes	78
Phenanthrene	93	C2-Chrysenes	67
C1-Phenanthrenes/Anthracenes	53	C3-Chrysenes	69
C2-Phenanthrenes/Anthracenes	45	C4-Chrysenes	38
C3-Phenanthrenes/Anthracenes	19	Benzo[b]fluoranthene	150
C4-Phenanthrenes/Anthracenes	13	Benzo[k]fluoranthene	70
Retene	0.29 U	Benzo[a]fluoranthene	26
Dibenzothiophene	6.5	Benzo[e]pyrene	110
C1-Dibenzothiophenes	5.2	Benzo[a]pyrene	130
C2-Dibenzothiophenes	8.8	Perylene	34
C3-Dibenzothiophenes	8.7	Indeno[1,2,3-cd]pyrene	78
C4-Dibenzothiophenes	6.8	Dibenz[a,h]anthracene	20
Benzo(b)fluorene	0.20 U	Benzo[g,h,i]perylene	81

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	65	50-130
Pyrene-d10	89	50-130
Benzo[b]fluoranthene-d12	87	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:22

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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**0.22**	J	Fluoranthene	**0.054**	J
C1-Naphthalenes	**0.089**	J	Pyrene	**0.26**	J
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	0.12	U	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	0.077	U	C2-Naphthobenzothiophenes	0.081	U
Fluorene	**0.063**	J	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	0.10	U
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	0.072	U
Anthracene	0.089	U	C1-Chrysenes	0.072	U
Phenanthrene	**0.10**	J	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	0.097	U	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	0.071	U
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	0.14	U
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	0.074	U	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	0.093	U
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	0.16	U
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	0.13	U
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	0.12	U

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	66	50-130
Pyrene-d10	91	50-130
Benzo[b]fluoranthene-d12	92	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:20

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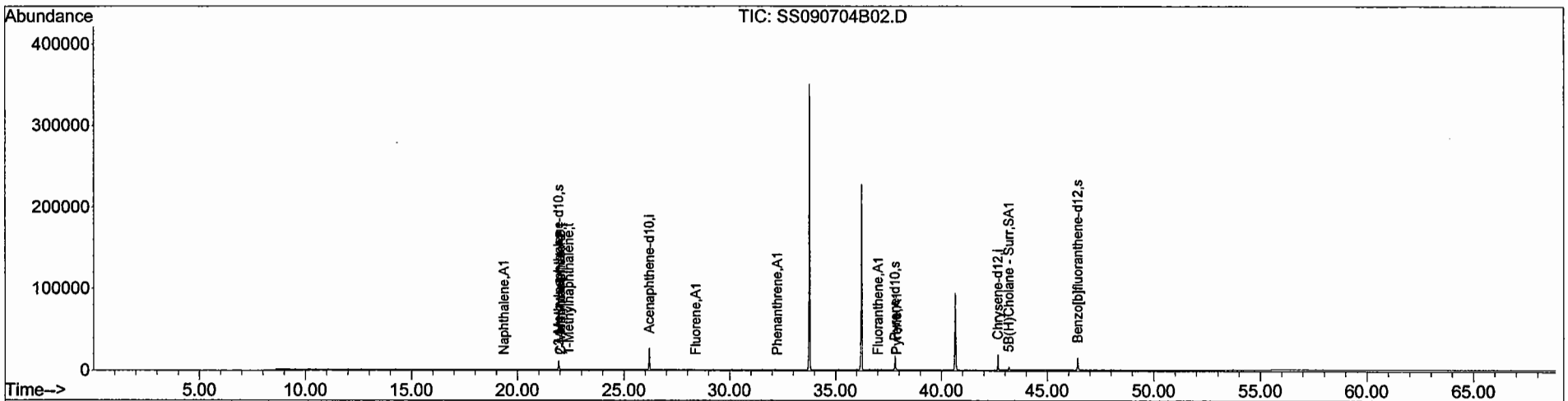
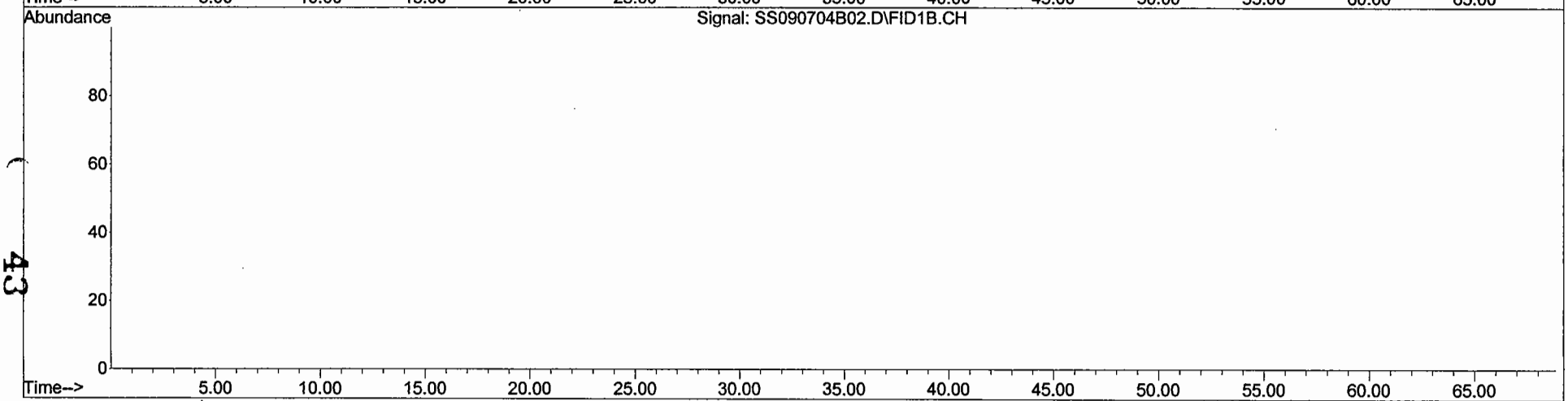
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SS090704B02.D
Acq On : 20 Sep 2004 7:48 pm
Operator : BL
Sample : SS090704B02
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 21 12:27:16 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **See Below**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	09/07/04	100	Cass

Lab ID: SS090704B02 SS090704BS02 SS090704BSD02

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Naphthalene	0.22		29	86	28	85	1	30	50-130
Acenaphthylene	0.67	U	21	63	21	63	1	30	50-130
Acenaphthene	0.67	U	30	89	28	86	3	30	50-130
Fluorene	0.063		28	85	28	83	2	30	50-130
Anthracene	0.67	U	25	75	24	73	3	30	50-130
Phenanthrene	0.10		31	92	30	88	4	30	50-130
Fluoranthene	0.054		26	76	24	72	6	30	50-130
Pyrene	0.26		28	84	27	81	4	30	50-130
Benz[a]anthracene	0.67	U	25	74	25	75	2	30	50-130
Chrysene/Triphenylene	0.67	U	31	92	30	91	1	30	50-130
Benzo[b]fluoranthene	0.67	U	31	92	30	90	3	30	50-130
Benzo[k]fluoranthene	0.67	U	31	93	30	91	3	30	50-130
Benzo[a]pyrene	0.67	U	24	71	24	71	0	30	50-130
Indeno[1,2,3-cd]pyrene	0.67	U	24	73	24	73	0	30	50-130
Dibenz[a,h]anthracene	0.67	U	28	82	27	80	3	30	50-130
Benzo[g,h,i]perylene	0.67	U	28	85	28	83	3	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
2-Methylnaphthalene-d10	76	80	50-130
Pyrene-d10	93	89	50-130
Benzo[b]fluoranthene-d12	104	101	50-130
5B(H)Cholane	55	59	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 09:03

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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704BS02**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**29**	S	Fluoranthene	**26**	S
C1-Naphthalenes	**17**		Pyrene	**28**	S
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	**21**	S	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	**30**	S	C2-Naphthobenzothiophenes	0.081	U
Fluorene	**28**	S	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	**25**	S
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	**31**	S
Anthracene	**25**	S	C1-Chrysenes	0.072	U
Phenanthrene	**31**	S	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	0.097	U	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	**31**	S
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	**31**	S
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	**0.17**	J	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	**24**	S
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	**24**	S
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	**28**	S
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	**28**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	76	50-130
Pyrene-d10	93	50-130
Benzo[b]fluoranthene-d12	104	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

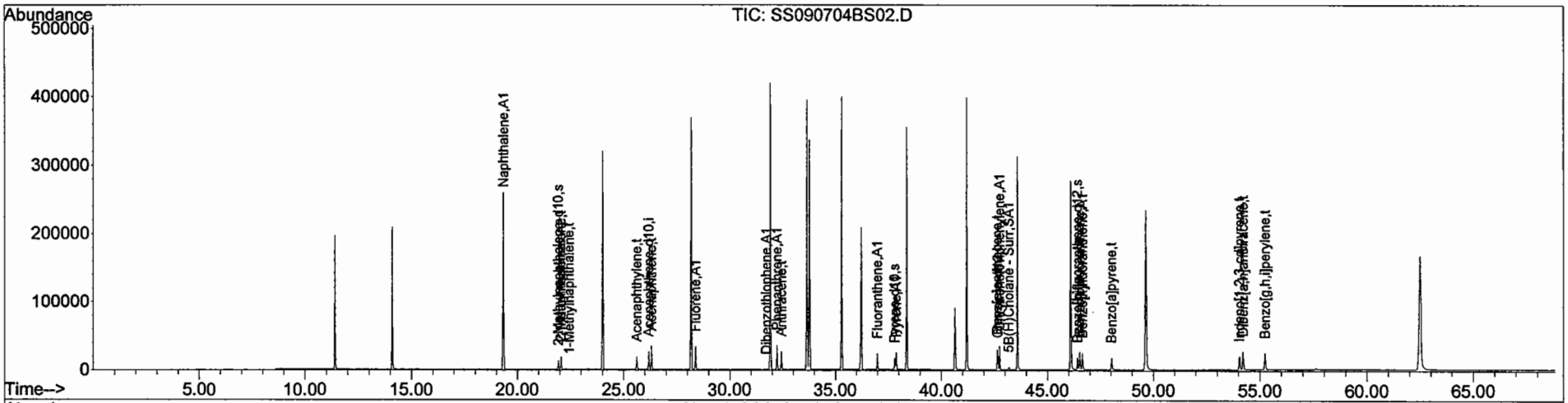
10/07/04 09:20

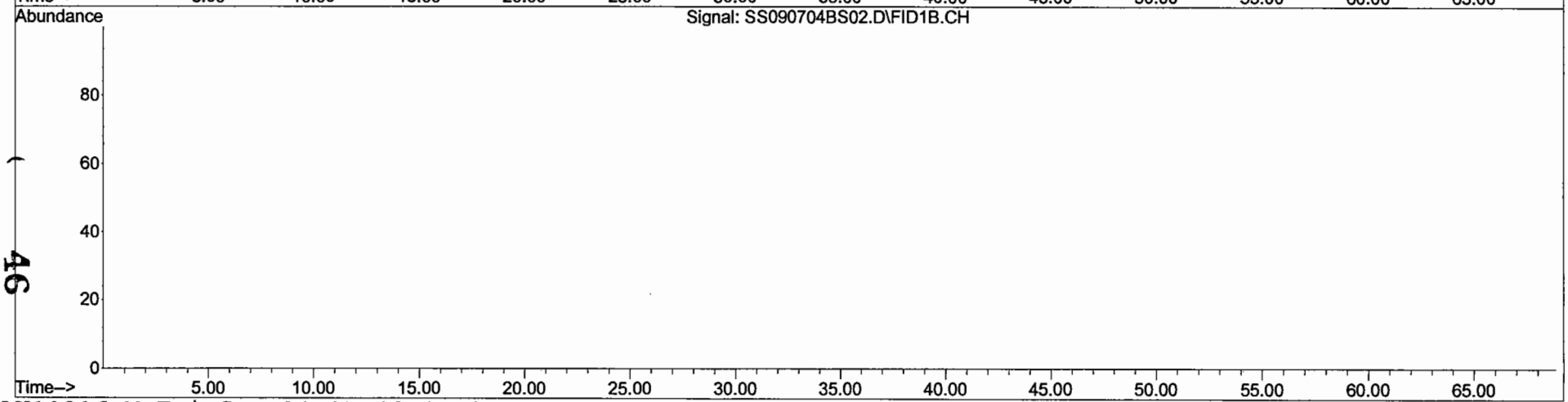
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SS090704BS02.D
Acq On : 20 Sep 2004 9:06 pm
Operator : BL
Sample : SS090704BS02
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 21 12:32:05 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704BSD02**
Associated Blank: **SS090704B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**28**	S	Fluoranthene	**24**	S
C1-Naphthalenes	**17**		Pyrene	**27**	S
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	**21**	S	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	**28**	S	C2-Naphthobenzothiophenes	0.081	U
Fluorene	**28**	S	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	**25**	S
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	**30**	S
Anthracene	**24**	S	C1-Chrysenes	0.072	U
Phenanthrene	**30**	S	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	0.097	U	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	**30**	S
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	**30**	S
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	**0.15**	J	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	**24**	S
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	**24**	S
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	**27**	S
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	**28**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	80	50-130
Pyrene-d10	89	50-130
Benzo[b]fluoranthene-d12	101	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 09:20

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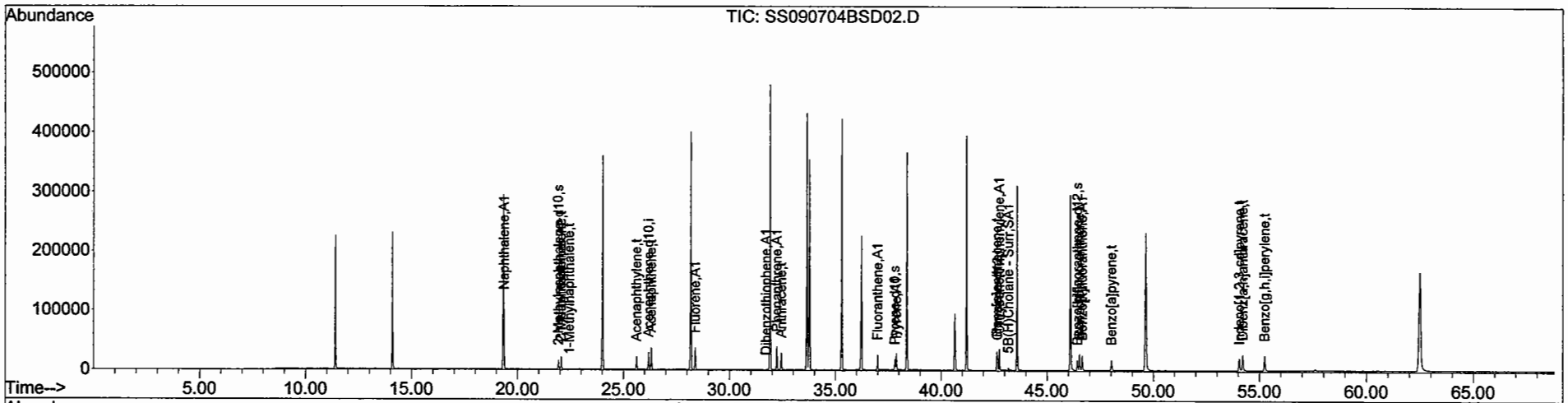
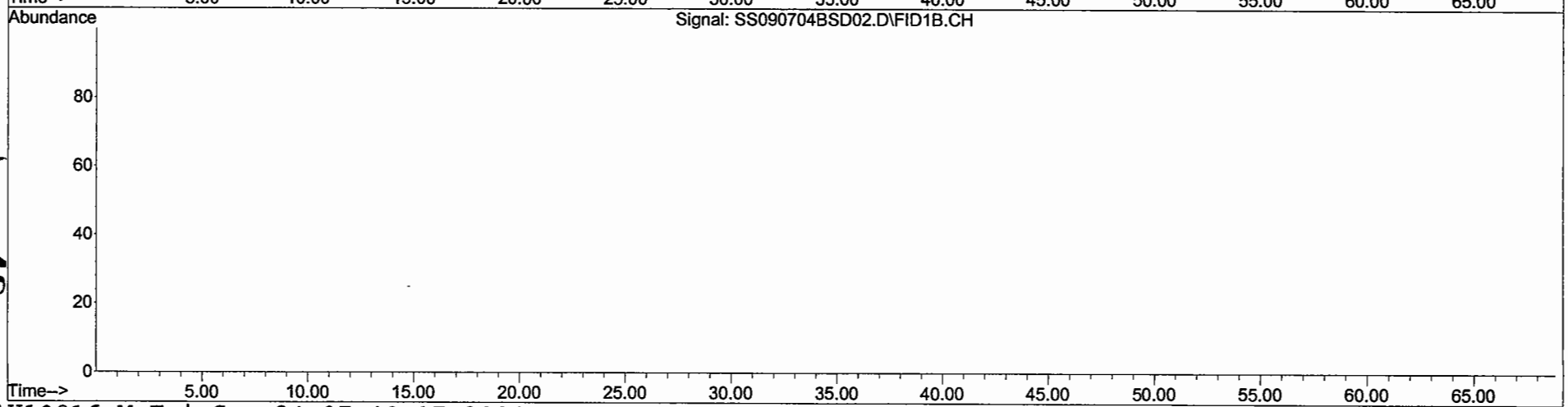
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20\
Data File : SS090704BSD02.D
Acq On : 20 Sep 2004 10:25 pm
Operator : BL
Sample : SS090704BSD02
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 21 12:36:22 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Naphthalene	714.43	500	70	65-135
C1-Naphthalenes	1534.53	1000	65	65-135
C2-Naphthalenes	1897.27	1200	62[a]	65-135
C3-Naphthalenes	1436.53	820	57[a]	65-135
C4-Naphthalenes	773.42	460	59[a]	65-135
Biphenyl	216.49	140	66	65-135
Acenaphthene	15.55	14	90	65-135
Fluorene	87.56	71	81	65-135
C1-Fluorenes	219.89	160	75	65-135
C2-Fluorenes	341.2	230	68	65-135
C3-Fluorenes	299.61	220	75	65-135
Phenanthrene	272.58	230	84	65-135
C1-Phenanthrenes/Anthracenes	564.81	440	78	65-135
C2-Phenanthrenes/Anthracenes	660.43	460	70	65-135
C3-Phenanthrenes/Anthracenes	448.76	320	70	65-135
C4-Phenanthrenes/Anthracenes	175.88	130	75	65-135
Dibenzothiophene	218.8	180	80	65-135
C1-Dibenzothiophenes	434.54	240	55[a]	65-135
C2-Dibenzothiophenes	551.44	410	75	65-135
C3-Dibenzothiophenes	460.96	350	77	65-135
C4-Dibenzothiophenes	236.77	160	66	65-135
Fluoranthene	4.26	4.2	99	65-135
Pyrene	15.56	11	71	65-135
C1-Fluoranthenes/Pyrenes	78.43	70	90	65-135
C2-Fluoranthenes/Pyrenes	132.93	99	75	65-135
C3-Fluoranthenes/Pyrenes	111.33	120	103	65-135
Chrysene/Triphenylene	50.99	48	95	65-135
C1-Chrysenes	81.69	83	102	65-135
C2-Chrysenes	95.93	100	109	65-135
C3-Chrysenes	89.87	110	122	65-135
C4-Chrysenes	51.86	55	106	65-135
Benzo[b]fluoranthene	6.54	7.8	119	65-135
Benzo[e]pyrene	12.88	14	107	65-135

10/13/04 15:23

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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Dibenz[a,h]anthracene	1.02	1.9	182[a]	65-135
Benzo[g,h,i]perylene	3.35	5.4	161[a]	65-135
Hopane (T19)	118.8	170	147[a]	65-135

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/13/04 15:23

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Form I
Alaska North Slope Crude
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/17/04	100	0.05	10	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	500		Fluoranthene	4.2	
C1-Naphthalenes	1000		Pyrene	11	
C2-Naphthalenes	1200		C1-Fluoranthenes/Pyrenes	70	
C3-Naphthalenes	820		C2-Fluoranthenes/Pyrenes	99	
C4-Naphthalenes	460		C3-Fluoranthenes/Pyrenes	120	
Biphenyl	140		C4-Fluoranthenes/Pyrenes	74	
Dibenzofuran	64		Naphthobenzothiophenes	56	
Acenaphthylene	6.8		C1-Naphthobenzothiophenes	140	
Acenaphthene	14		C2-Naphthobenzothiophenes	170	
Fluorene	71		C3-Naphthobenzothiophenes	130	
C1-Fluorenes	160		C4-Naphthobenzothiophenes	84	
C2-Fluorenes	230		Benz[a]anthracene	0.31	U
C3-Fluorenes	220		Chrysene/Triphenylene	48	
Anthracene	0.26	U	C1-Chrysenes	83	
Phenanthrene	230		C2-Chrysenes	100	
C1-Phenanthrenes/Anthracenes	440		C3-Chrysenes	110	
C2-Phenanthrenes/Anthracenes	460		C4-Chrysenes	55	
C3-Phenanthrenes/Anthracenes	320		Benzo[b]fluoranthene	7.8	
C4-Phenanthrenes/Anthracenes	130		Benzo[k]fluoranthene	0.96	J
Retene	0.28	U	Benzo[a]fluoranthene	0.35	J
Dibenzothiophene	180		Benzo[e]pyrene	14	
C1-Dibenzothiophenes	240		Benzo[a]pyrene	3.8	
C2-Dibenzothiophenes	410		Perylene	2.2	
C3-Dibenzothiophenes	350		Indeno[1,2,3-cd]pyrene	0.47	U
C4-Dibenzothiophenes	160		Dibenz[a,h]anthracene	1.9	J
Benzo(b)fluorene	0.20	U	Benzo[g,h,i]perylene	5.4	

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/13/04 15:23

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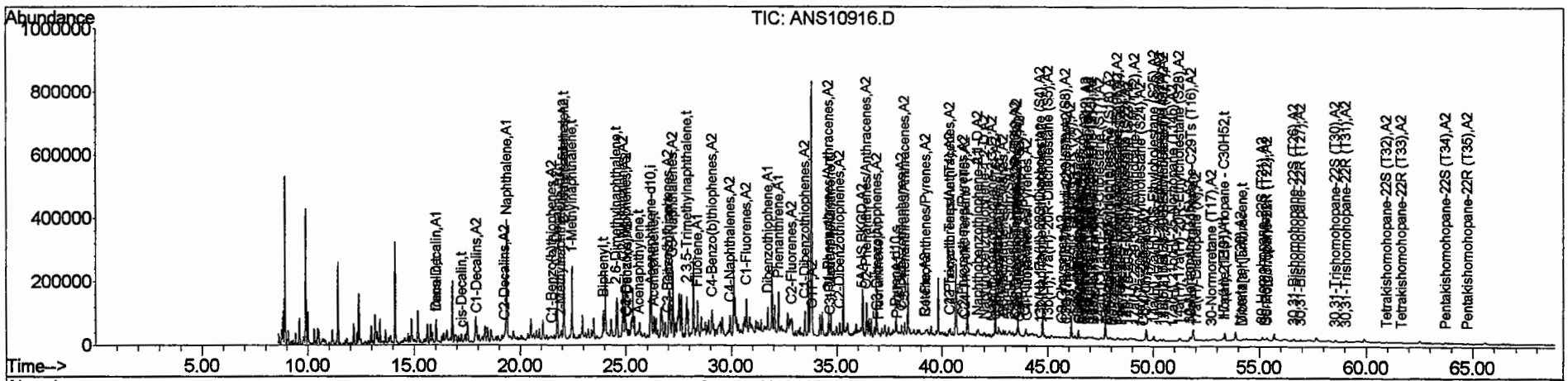
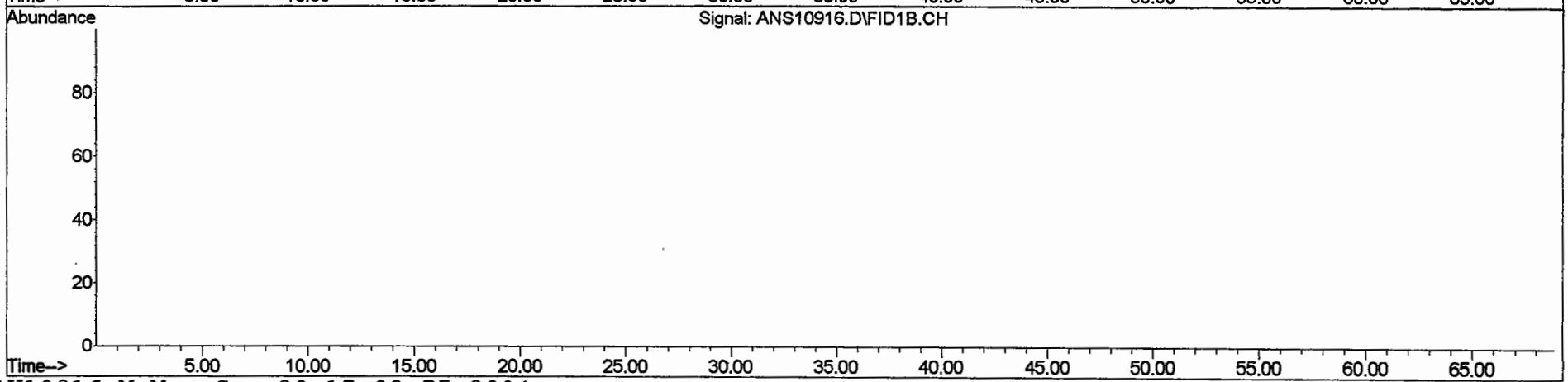
Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : ANS10916.D
Acq On : 17 Sep 2004 9:04 pm
Operator : BL
Sample : ANS10916
Misc : SW090104A 5.14 ug/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 15:09:03 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration





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Steranes and Triterpanes

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-01F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	56.5	30.29	5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	21	30,31-Bishomohopane-22R (T27)	21
C24 Tricyclic Terpane (T5)	12	30,31-Trishomohopane-22S (T30)	24
C25 Tricyclic Terpane (T6)	13	30,31-Trishomohopane-22R (T31)	12
C24 Tetracyclic Terpane (T6a)	12	Tetrakishomohopane-22S (T32)	11
C26 Tricyclic Terpane-22S (T6b)	4.6	Tetrakishomohopane-22R (T33)	8.2
C26 Tricyclic Terpane-22R (T6c)	5.3	Pentakishomohopane-22S (T34)	12
C28 Tricyclic Terpane-22S (T7)	6.9	Pentakishomohopane-22R (T35)	7.7
C28 Tricyclic Terpane-22R (T8)	6.2	13b(H),17a(H)-20S-Diacholestane (S4)	33
C29 Tricyclic Terpane-22S (T9)	7.4	13b(H),17a(H)-20R-Diacholestane (S5)	25
C29 Tricyclic Terpane-22R (T10)	6.7	13b,17a-20S-Methyldiacholestane (S8)	15
18a-22,29,30-Trisnorneohopane-TS (T11)	34	14a(H),17a(H)-20S-Cholestane (S12)	20
17a(H)-22,29,30-Trisnorhopane-TM (T12)	40	14a(H),17a(H)-20R-Cholestane (S17)	48
17a/b,21b/a 28,30-Bisnorhopane (T14a)	4.9	13b,17a-20R-Ethyldiacholestane (S18)	22
17a(H),21b(H)-25-Norhopane (T14b)	20	13a,17b-20S-Ethyldiacholestane (S19)	17
30-Norhopane (T15)	120	14a,17a-20S-Methylcholestane (S20)	19
18a(H)-30-Norneohopane-C29Ts (T16)	27	14a,17a-20R-Methylcholestane (S24)	17
17a(H)-Diahopane (X)	10	14a(H),17a(H)-20S-Ethylcholestane (S25)	16
30-Normoretane (T17)	24	14a(H),17a(H)-20R-Ethylcholestane (S28)	26
18a(H)&18b(H)-Oleananes (T18)	18	14b(H),17b(H)-20R-Cholestane (S14)	34
Hopane (T19)	160	14b(H),17b(H)-20S-Cholestane (S15)	25
Moretane (T20)	31	14b,17b-20R-Methylcholestane (S22)	24
30-Homohopane-22S (T21)	50	14b,17b-20S-Methylcholestane (S23)	23
30-Homohopane-22R (T22)	43	14b(H),17b(H)-20R-Ethylcholestane (S26)	43
30,31-Bishomohopane-22S (T26)	29	14b(H),17b(H)-20S-Ethylcholestane (S27)	35

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	82	50-130

N/A - Not Applicable

10/07/04 10:52

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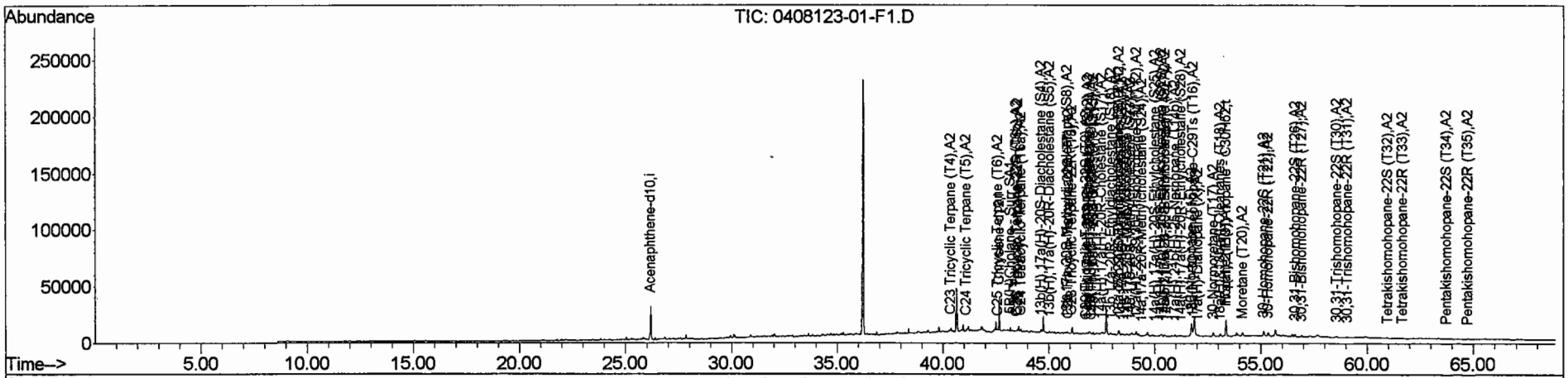
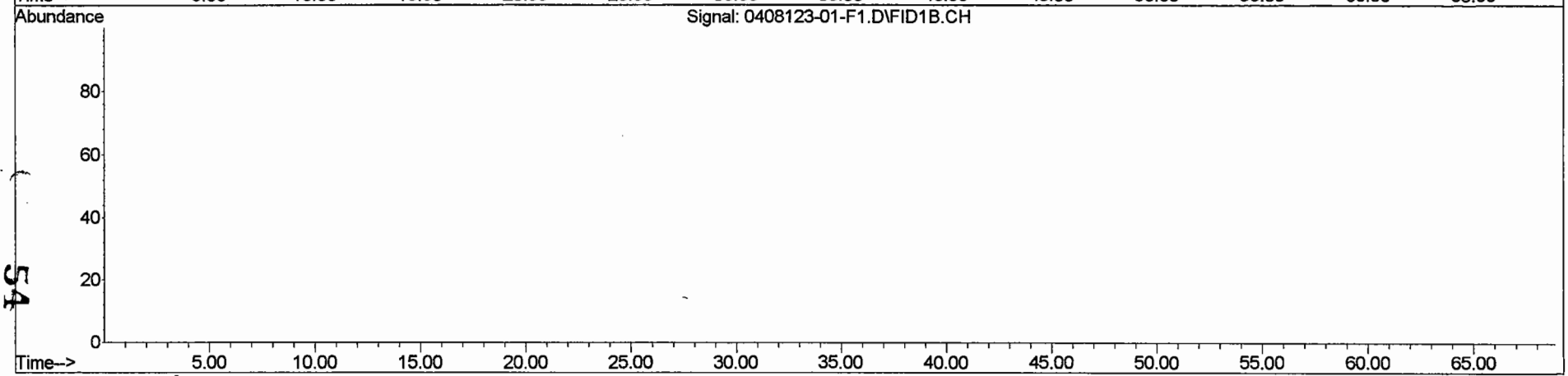
Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT20A\
Data File : 0408123-01-F1.D
Acq On : 22 Sep 2004 4:23 pm
Operator : BL
Sample : 0408123-01-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Sep 30 07:26:53 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-02F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	55.6	30.60	8	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	45	30,31-Bishomohopane-22R (T27)	43
C24 Tricyclic Terpane (T5)	27	30,31-Trishomohopane-22S (T30)	49
C25 Tricyclic Terpane (T6)	28	30,31-Trishomohopane-22R (T31)	37
C24 Tetracyclic Terpane (T6a)	22	Tetrakishomohopane-22S (T32)	30
C26 Tricyclic Terpane-22S (T6b)	11	Tetrakishomohopane-22R (T33)	22
C26 Tricyclic Terpane-22R (T6c)	9.7	Pentakishomohopane-22S (T34)	27
C28 Tricyclic Terpane-22S (T7)	13	Pentakishomohopane-22R (T35)	17
C28 Tricyclic Terpane-22R (T8)	13	13b(H),17a(H)-20S-Diacholestane (S4)	78
C29 Tricyclic Terpane-22S (T9)	14	13b(H),17a(H)-20R-Diacholestane (S5)	47
C29 Tricyclic Terpane-22R (T10)	15	13b,17a-20S-Methyldiacholestane (S8)	38
18a-22,29,30-Trisnorneohopane-TS (T11)	66	14a(H),17a(H)-20S-Cholestane (S12)	41
17a(H)-22,29,30-Trisnorhopane-TM (T12)	68	14a(H),17a(H)-20R-Cholestane (S17)	99
17a/b,21b/a 28,30-Bisnorhopane (T14a)	14	13b,17a-20R-Ethyldiacholestane (S18)	53
17a(H),21b(H)-25-Norhopane (T14b)	37	13a,17b-20S-Ethyldiacholestane (S19)	35
30-Norhopane (T15)	230	14a,17a-20S-Methylcholestane (S20)	46
18a(H)-30-Norneohopane-C29Ts (T16)	54	14a,17a-20R-Methylcholestane (S24)	36
17a(H)-Diahopane (X)	25	14a(H),17a(H)-20S-Ethylcholestane (S25)	36
30-Normoretane (T17)	51	14a(H),17a(H)-20R-Ethylcholestane (S28)	54
18a(H)&18b(H)-Oleananes (T18)	42	14b(H),17b(H)-20R-Cholestane (S14)	68
Hopane (T19)	310	14b(H),17b(H)-20S-Cholestane (S15)	44
Moretane (T20)	63	14b,17b-20R-Methylcholestane (S22)	52
30-Homohopane-22S (T21)	100	14b,17b-20S-Methylcholestane (S23)	47
30-Homohopane-22R (T22)	94	14b(H),17b(H)-20R-Ethylcholestane (S26)	87
30,31-Bishomohopane-22S (T26)	65	14b(H),17b(H)-20S-Ethylcholestane (S27)	66

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	79	50-130

N/A - Not Applicable

10/07/04 10:54

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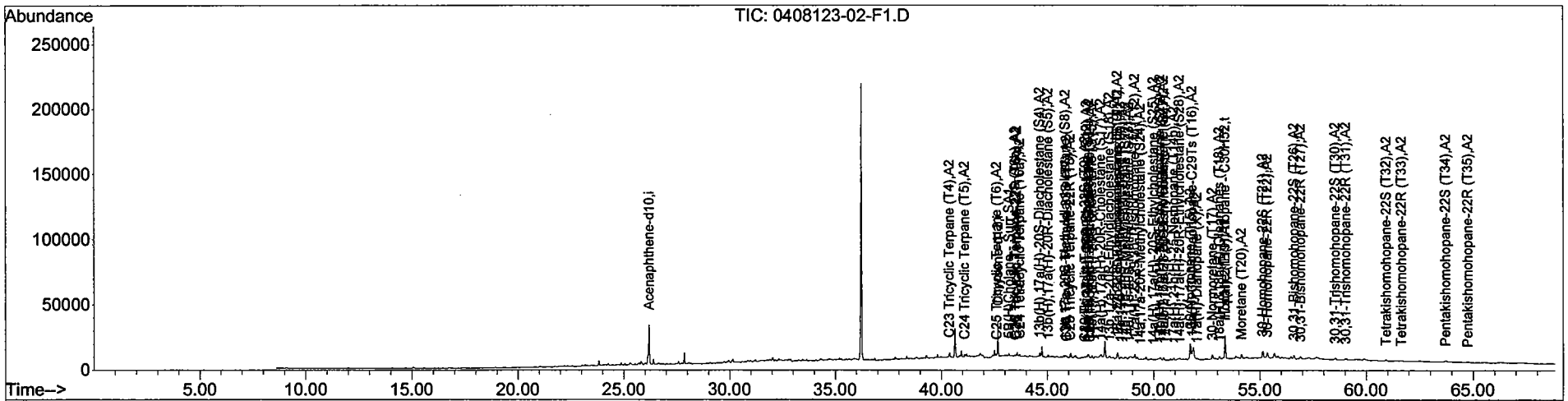
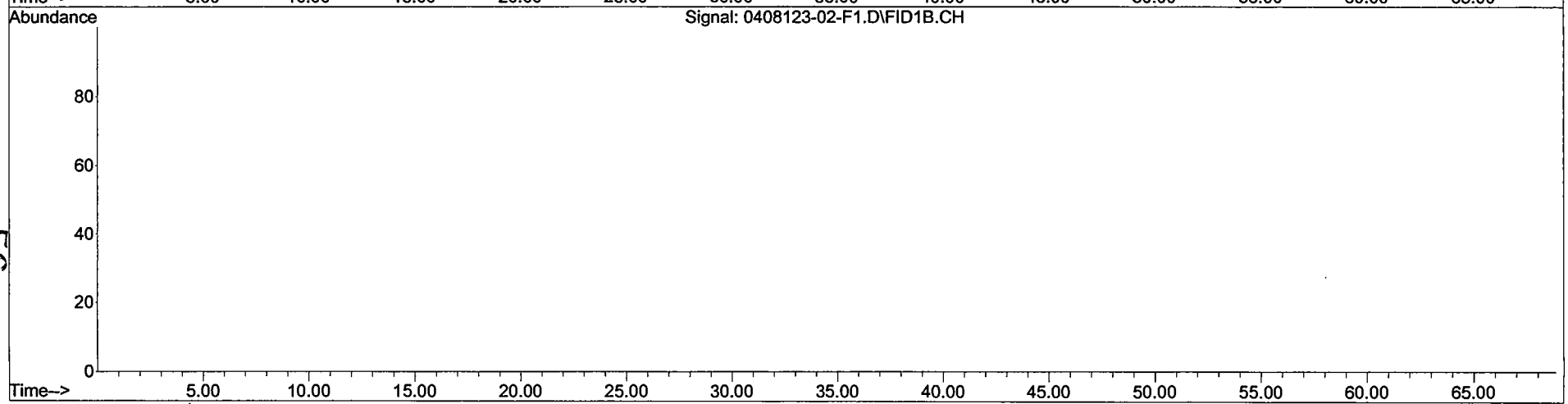
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-02-F1.D
Acq On : 22 Sep 2004 5:43 pm
Operator : BL
Sample : 0408123-02-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Sep 23 09:20:30 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-03F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	42.8	30.39	8	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	48	30,31-Bishomohopane-22R (T27)	54
C24 Tricyclic Terpane (T5)	25	30,31-Trishomohopane-22S (T30)	70
C25 Tricyclic Terpane (T6)	28	30,31-Trishomohopane-22R (T31)	40
C24 Tetracyclic Terpane (T6a)	23	Tetrakishomohopane-22S (T32)	45
C26 Tricyclic Terpane-22S (T6b)	9.5	Tetrakishomohopane-22R (T33)	32
C26 Tricyclic Terpane-22R (T6c)	11	Pentakishomohopane-22S (T34)	46
C28 Tricyclic Terpane-22S (T7)	14	Pentakishomohopane-22R (T35)	28
C28 Tricyclic Terpane-22R (T8)	16	13b(H),17a(H)-20S-Diacholestane (S4)	52
C29 Tricyclic Terpane-22S (T9)	20	13b(H),17a(H)-20R-Diacholestane (S5)	36
C29 Tricyclic Terpane-22R (T10)	16	13b,17a-20S-Methyldiacholestane (S8)	29
18a-22,29,30-Trisnorneohopane-TS (T11)	62	14a(H),17a(H)-20S-Cholestane (S12)	30
17a(H)-22,29,30-Trisnorhopane-TM (T12)	56	14a(H),17a(H)-20R-Cholestane (S17)	85
17a/b,21b/a 28,30-Bisnorhopane (T14a)	12	13b,17a-20R-Ethyldiacholestane (S18)	41
17a(H),21b(H)-25-Norhopane (T14b)	36	13a,17b-20S-Ethyldiacholestane (S19)	23
30-Norhopane (T15)	240	14a,17a-20S-Methylcholestane (S20)	37
18a(H)-30-Norneohopane-C29Ts (T16)	45	14a,17a-20R-Methylcholestane (S24)	35
17a(H)-Diahopane (X)	24	14a(H),17a(H)-20S-Ethylcholestane (S25)	34
30-Normoretane (T17)	37	14a(H),17a(H)-20R-Ethylcholestane (S28)	53
18a(H)&18b(H)-Oleananes (T18)	32	14b(H),17b(H)-20R-Cholestane (S14)	53
Hopane (T19)	260	14b(H),17b(H)-20S-Cholestane (S15)	41
Moretane (T20)	51	14b,17b-20R-Methylcholestane (S22)	50
30-Homohopane-22S (T21)	110	14b,17b-20S-Methylcholestane (S23)	46
30-Homohopane-22R (T22)	110	14b(H),17b(H)-20R-Ethylcholestane (S26)	84
30,31-Bishomohopane-22S (T26)	76	14b(H),17b(H)-20S-Ethylcholestane (S27)	69

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	83	50-130

N/A - Not Applicable

10/07/04 10:54

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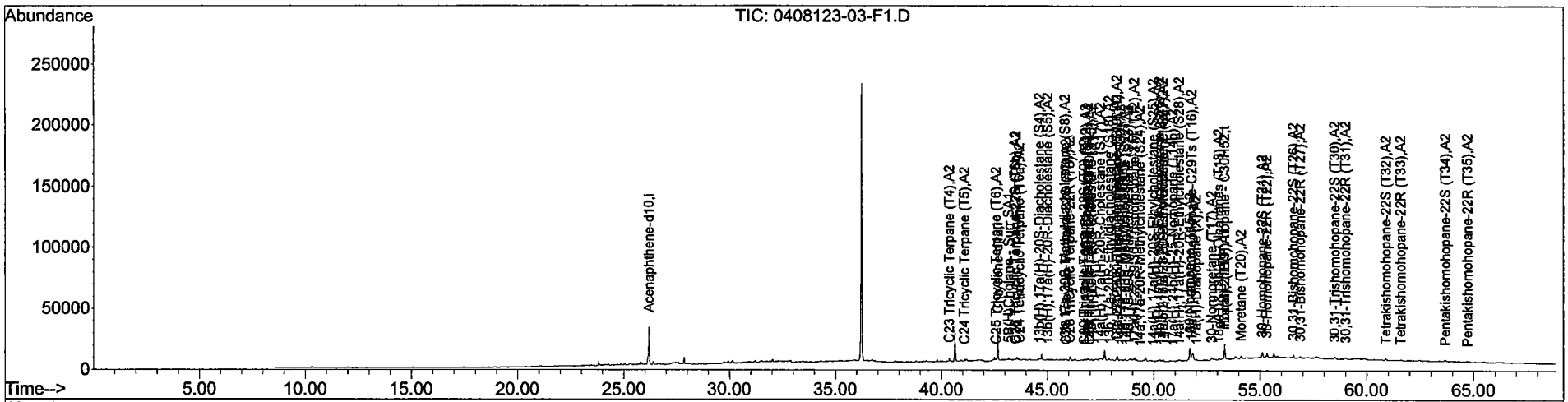
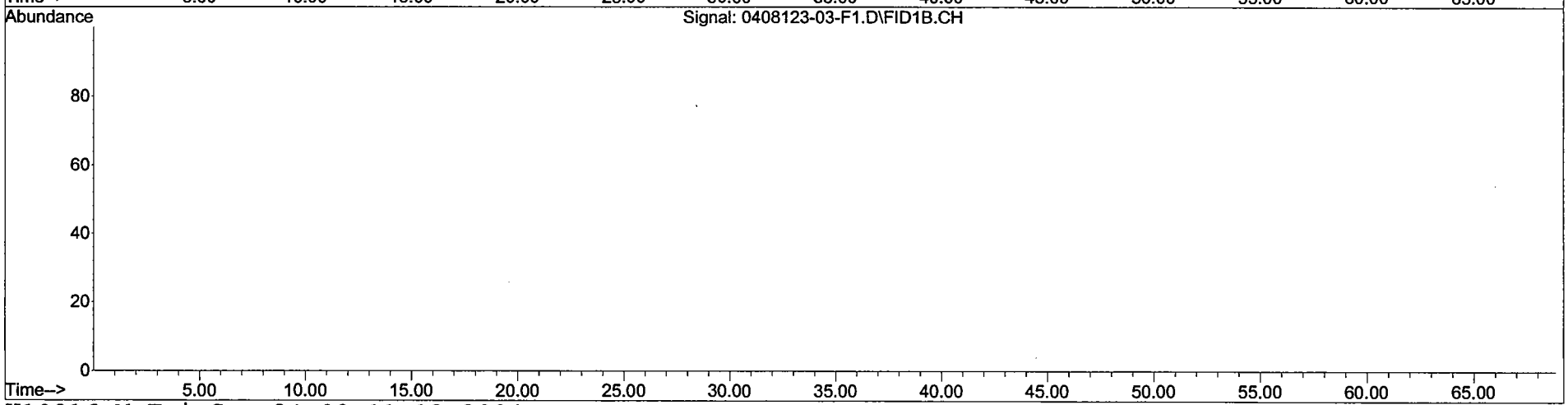
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-03-F1.D
Acq On : 22 Sep 2004 7:02 pm
Operator : BL
Sample : 0408123-03-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 23 09:21:53 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-04F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	48.3	30.29	20	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**220**	30,31-Bishomohopane-22R (T27)	**370**
C24 Tricyclic Terpane (T5)	**120**	30,31-Trishomohopane-22S (T30)	**380**
C25 Tricyclic Terpane (T6)	**130**	30,31-Trishomohopane-22R (T31)	**260**
C24 Tetracyclic Terpane (T6a)	**78**	Tetrakishomohopane-22S (T32)	**280**
C26 Tricyclic Terpane-22S (T6b)	**50**	Tetrakishomohopane-22R (T33)	**200**
C26 Tricyclic Terpane-22R (T6c)	**52**	Pentakishomohopane-22S (T34)	**310**
C28 Tricyclic Terpane-22S (T7)	**64**	Pentakishomohopane-22R (T35)	**200**
C28 Tricyclic Terpane-22R (T8)	**65**	13b(H),17a(H)-20S-Diacholestane (S4)	**330**
C29 Tricyclic Terpane-22S (T9)	**85**	13b(H),17a(H)-20R-Diacholestane (S5)	**210**
C29 Tricyclic Terpane-22R (T10)	**78**	13b,17a-20S-Methyldiacholestane (S8)	**180**
18a-22,29,30-Trisnorneohopane-TS (T11)	**260**	14a(H),17a(H)-20S-Cholestane (S12)	**210**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**260**	14a(H),17a(H)-20R-Cholestane (S17)	**510**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**68**	13b,17a-20R-Ethyldiacholestane (S18)	**220**
17a(H),21b(H)-25-Norhopane (T14b)	**180**	13a,17b-20S-Ethyldiacholestane (S19)	**170**
30-Norhopane (T15)	**1100**	14a,17a-20S-Methylcholestane (S20)	**200**
18a(H)-30-Norneohopane-C29Ts (T16)	**230**	14a,17a-20R-Methylcholestane (S24)	**210**
17a(H)-Diahopane (X)	**100**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**220**
30-Normoretane (T17)	**170**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**330**
18a(H)&18b(H)-Oleananes (T18)	**120**	14b(H),17b(H)-20R-Cholestane (S14)	**340**
Hopane (T19)	**1400**	14b(H),17b(H)-20S-Cholestane (S15)	**260**
Moretane (T20)	**240**	14b,17b-20R-Methylcholestane (S22)	**330**
30-Homohopane-22S (T21)	**680**	14b,17b-20S-Methylcholestane (S23)	**280**
30-Homohopane-22R (T22)	**640**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**550**
30,31-Bishomohopane-22S (T26)	**500**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**440**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	79	50-130

N/A - Not Applicable

10/07/04 11:06

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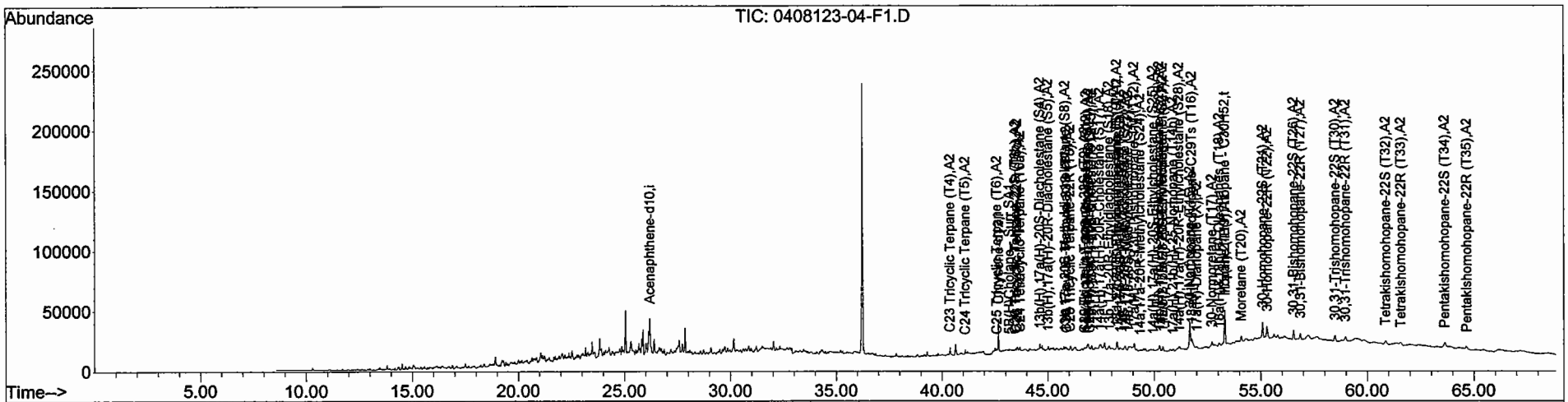
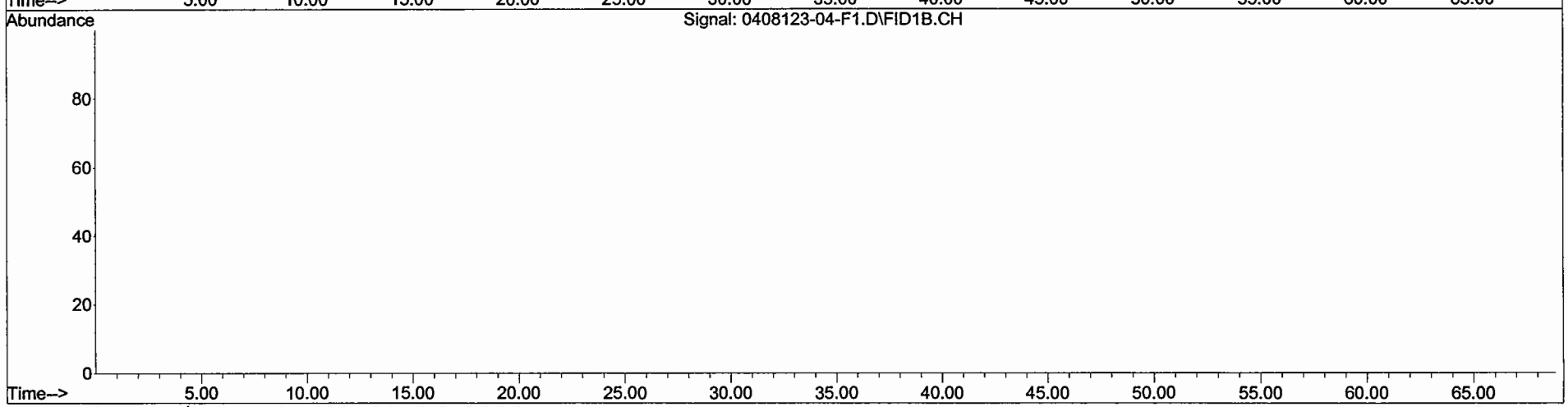
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-04-F1.D
Acq On : 22 Sep 2004 8:21 pm
Operator : BL
Sample : 0408123-04-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Sep 23 09:27:18 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-05F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	33.8	30.41	5	1	Cass

Parameter	Result		Parameter	Result
C23 Tricyclic Terpane (T4)	16		30,31-Bishomohopane-22R (T27)	18
C24 Tricyclic Terpane (T5)	10		30,31-Trishomohopane-22S (T30)	26
C25 Tricyclic Terpane (T6)	12		30,31-Trishomohopane-22R (T31)	13
C24 Tetracyclic Terpane (T6a)	8.4		Tetrakishomohopane-22S (T32)	12
C26 Tricyclic Terpane-22S (T6b)	3.9	J	Tetrakishomohopane-22R (T33)	6.1
C26 Tricyclic Terpane-22R (T6c)	4.7	J	Pentakishomohopane-22S (T34)	15
C28 Tricyclic Terpane-22S (T7)	4.6	J	Pentakishomohopane-22R (T35)	9.8
C28 Tricyclic Terpane-22R (T8)	4.8	J	13b(H),17a(H)-20S-Diacholestane (S4)	24
C29 Tricyclic Terpane-22S (T9)	5.6		13b(H),17a(H)-20R-Diacholestane (S5)	13
C29 Tricyclic Terpane-22R (T10)	5.3		13b,17a-20S-Methyldiacholestane (S8)	11
18a-22,29,30-Trisnorneohopane-TS (T11)	23		14a(H),17a(H)-20S-Cholestane (S12)	18
17a(H)-22,29,30-Trisnorhopane-TM (T12)	22		14a(H),17a(H)-20R-Cholestane (S17)	34
17a/b,21b/a 28,30-Bisnorhopane (T14a)	4.1	J	13b,17a-20R-Ethyldiacholestane (S18)	16
17a(H),21b(H)-25-Norhopane (T14b)	16		13a,17b-20S-Ethyldiacholestane (S19)	17
30-Norhopane (T15)	89		14a,17a-20S-Methylcholestane (S20)	16
18a(H)-30-Norneohopane-C29Ts (T16)	22		14a,17a-20R-Methylcholestane (S24)	11
17a(H)-Diahopane (X)	9.6		14a(H),17a(H)-20S-Ethylcholestane (S25)	17
30-Normoretane (T17)	16		14a(H),17a(H)-20R-Ethylcholestane (S28)	18
18a(H)&18b(H)-Oleananes (T18)	14		14b(H),17b(H)-20R-Cholestane (S14)	24
Hopane (T19)	120		14b(H),17b(H)-20S-Cholestane (S15)	18
Moretane (T20)	23		14b,17b-20R-Methylcholestane (S22)	23
30-Homohopane-22S (T21)	44		14b,17b-20S-Methylcholestane (S23)	20
30-Homohopane-22R (T22)	37		14b(H),17b(H)-20R-Ethylcholestane (S26)	37
30,31-Bishomohopane-22S (T26)	27		14b(H),17b(H)-20S-Ethylcholestane (S27)	34

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

10/07/04 11:07

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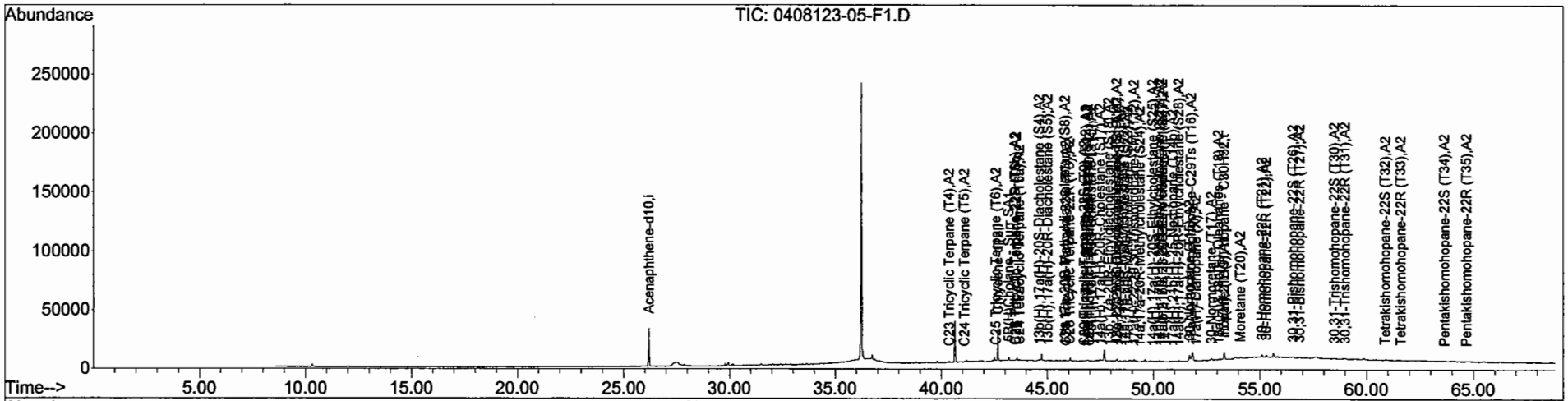
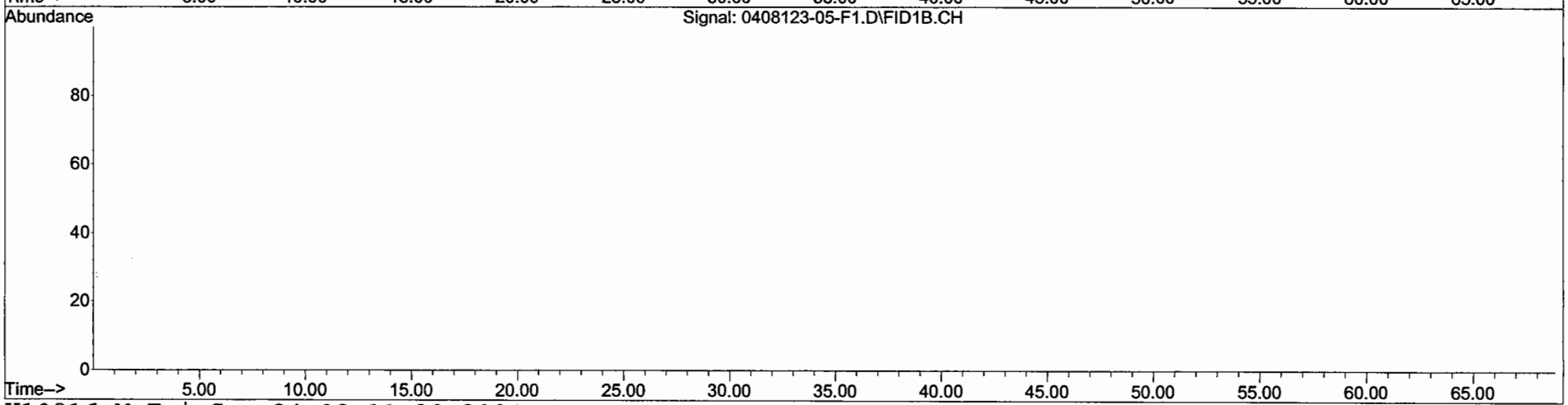
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-05-F1.D
Acq On : 22 Sep 2004 9:40 pm
Operator : BL
Sample : 0408123-05-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Sep 23 09:32:50 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-06F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/22/04	35.7	30.29	5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**26**	30,31-Bishomohopane-22R (T27)	**32**
C24 Tricyclic Terpane (T5)	**16**	30,31-Trishomohopane-22S (T30)	**36**
C25 Tricyclic Terpane (T6)	**16**	30,31-Trishomohopane-22R (T31)	**19**
C24 Tetracyclic Terpane (T6a)	**14**	Tetrakishomohopane-22S (T32)	**18**
C26 Tricyclic Terpane-22S (T6b)	**6.5**	Tetrakishomohopane-22R (T33)	**13**
C26 Tricyclic Terpane-22R (T6c)	**6.2**	Pentakishomohopane-22S (T34)	**17**
C28 Tricyclic Terpane-22S (T7)	**8.3**	Pentakishomohopane-22R (T35)	**11**
C28 Tricyclic Terpane-22R (T8)	**7.6**	13b(H),17a(H)-20S-Diacholestane (S4)	**34**
C29 Tricyclic Terpane-22S (T9)	**9.6**	13b(H),17a(H)-20R-Diacholestane (S5)	**23**
C29 Tricyclic Terpane-22R (T10)	**7.9**	13b,17a-20S-Methyldiacholestane (S8)	**19**
18a-22,29,30-Trisnorneohopane-TS (T11)	**37**	14a(H),17a(H)-20S-Cholestane (S12)	**22**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**34**	14a(H),17a(H)-20R-Cholestane (S17)	**59**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**6.3**	13b,17a-20R-Ethyldiacholestane (S18)	**27**
17a(H),21b(H)-25-Norhopane (T14b)	**18**	13a,17b-20S-Ethyldiacholestane (S19)	**18**
30-Norhopane (T15)	**130**	14a,17a-20S-Methylcholestane (S20)	**26**
18a(H)-30-Norneohopane-C29Ts (T16)	**27**	14a,17a-20R-Methylcholestane (S24)	**19**
17a(H)-Diahopane (X)	**12**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**27**
30-Normoretane (T17)	**27**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**31**
18a(H)&18b(H)-Oleananes (T18)	**19**	14b(H),17b(H)-20R-Cholestane (S14)	**42**
Hopane (T19)	**160**	14b(H),17b(H)-20S-Cholestane (S15)	**29**
Moretane (T20)	**32**	14b,17b-20R-Methylcholestane (S22)	**36**
30-Homohopane-22S (T21)	**65**	14b,17b-20S-Methylcholestane (S23)	**28**
30-Homohopane-22R (T22)	**60**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**61**
30,31-Bishomohopane-22S (T26)	**41**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**46**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	80	50-130

N/A - Not Applicable

10/07/04 11:07

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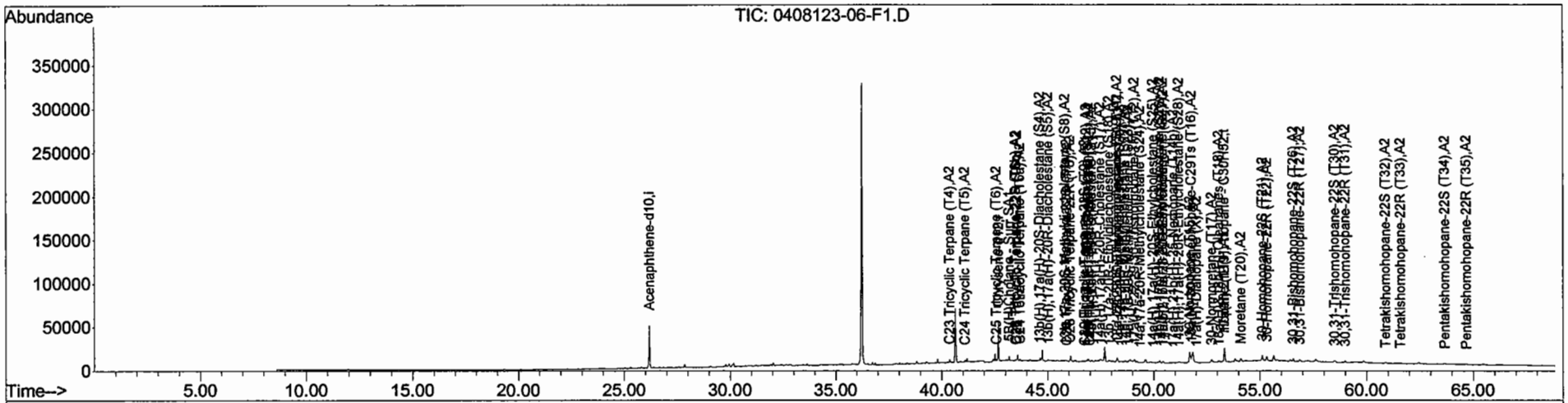
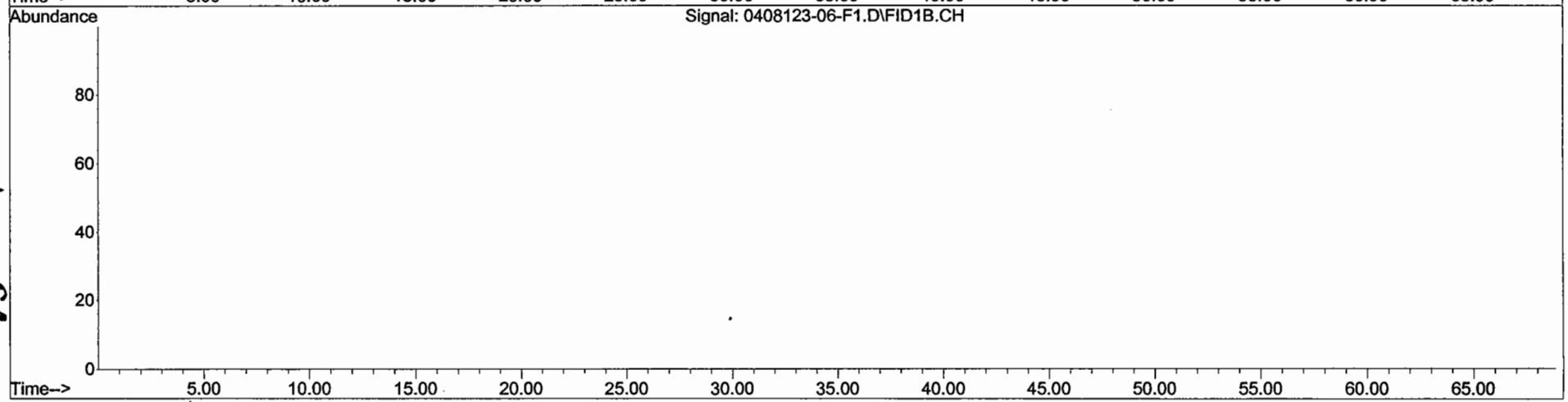
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-06-F1.D
Acq On : 22 Sep 2004 10:59 pm
Operator : BL
Sample : 0408123-06-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Sep 23 09:38:05 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-02-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-07F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/23/04	30.3	30.28	4	1	Cass

Parameter	Result	
C23 Tricyclic Terpane (T4)	11	
C24 Tricyclic Terpane (T5)	7.5	
C25 Tricyclic Terpane (T6)	7.9	
C24 Tetracyclic Terpane (T6a)	5.4	
C26 Tricyclic Terpane-22S (T6b)	3.0	J
C26 Tricyclic Terpane-22R (T6c)	3.4	J
C28 Tricyclic Terpane-22S (T7)	3.4	J
C28 Tricyclic Terpane-22R (T8)	3.3	J
C29 Tricyclic Terpane-22S (T9)	3.8	J
C29 Tricyclic Terpane-22R (T10)	4.6	
18a-22,29,30-Trisnorneohopane-TS (T11)	17	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	14	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	2.7	J
17a(H),21b(H)-25-Norhopane (T14b)	8.5	
30-Norhopane (T15)	60	
18a(H)-30-Norneohopane-C29Ts (T16)	12	
17a(H)-Diahopane (X)	3.6	J
30-Normoretane (T17)	11	
18a(H)&18b(H)-Oleananes (T18)	9.6	
Hopane (T19)	74	
Moretane (T20)	16	
30-Homohopane-22S (T21)	29	
30-Homohopane-22R (T22)	26	
30,31-Bishomohopane-22S (T26)	18	

Parameter	Result
30,31-Bishomohopane-22R (T27)	12
30,31-Trishomohopane-22S (T30)	17
30,31-Trishomohopane-22R (T31)	7.9
Tetrakishomohopane-22S (T32)	9.0
Tetrakishomohopane-22R (T33)	6.0
Pentakishomohopane-22S (T34)	11
Pentakishomohopane-22R (T35)	6.6
13b(H),17a(H)-20S-Diacholestane (S4)	15
13b(H),17a(H)-20R-Diacholestane (S5)	7.9
13b,17a-20S-Methyldiacholestane (S8)	9.0
14a(H),17a(H)-20S-Cholestane (S12)	11
14a(H),17a(H)-20R-Cholestane (S17)	23
13b,17a-20R-Ethyldiacholestane (S18)	9.7
13a,17b-20S-Ethyldiacholestane (S19)	8.6
14a,17a-20S-Methylcholestane (S20)	8.8
14a,17a-20R-Methylcholestane (S24)	9.3
14a(H),17a(H)-20S-Ethylcholestane (S25)	13
14a(H),17a(H)-20R-Ethylcholestane (S28)	14
14b(H),17b(H)-20R-Cholestane (S14)	18
14b(H),17b(H)-20S-Cholestane (S15)	12
14b,17b-20R-Methylcholestane (S22)	15
14b,17b-20S-Methylcholestane (S23)	12
14b(H),17b(H)-20R-Ethylcholestane (S26)	27
14b(H),17b(H)-20S-Ethylcholestane (S27)	22

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	69	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

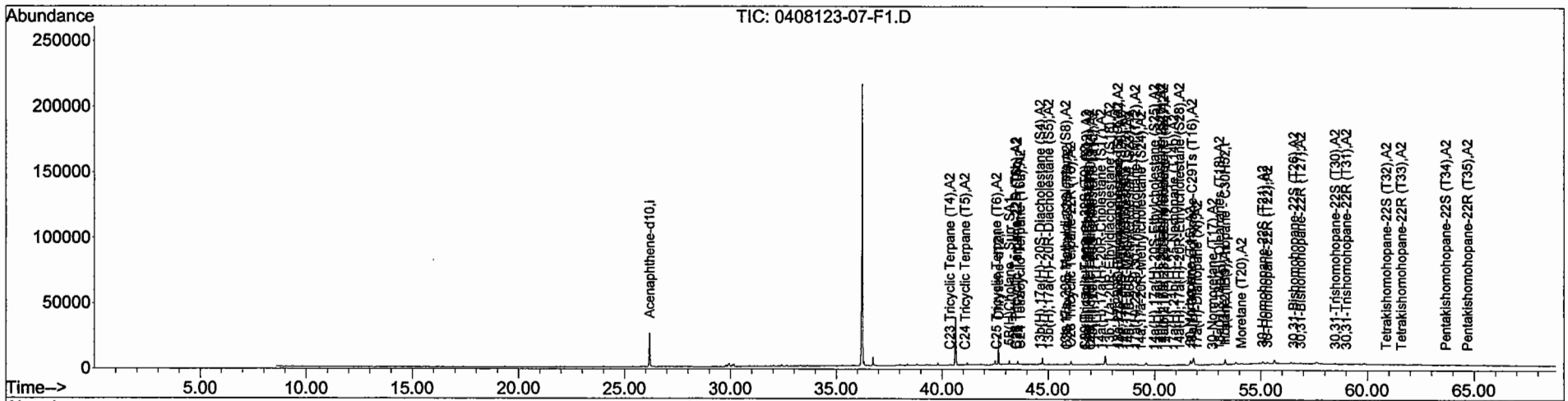
10/07/04 11:07

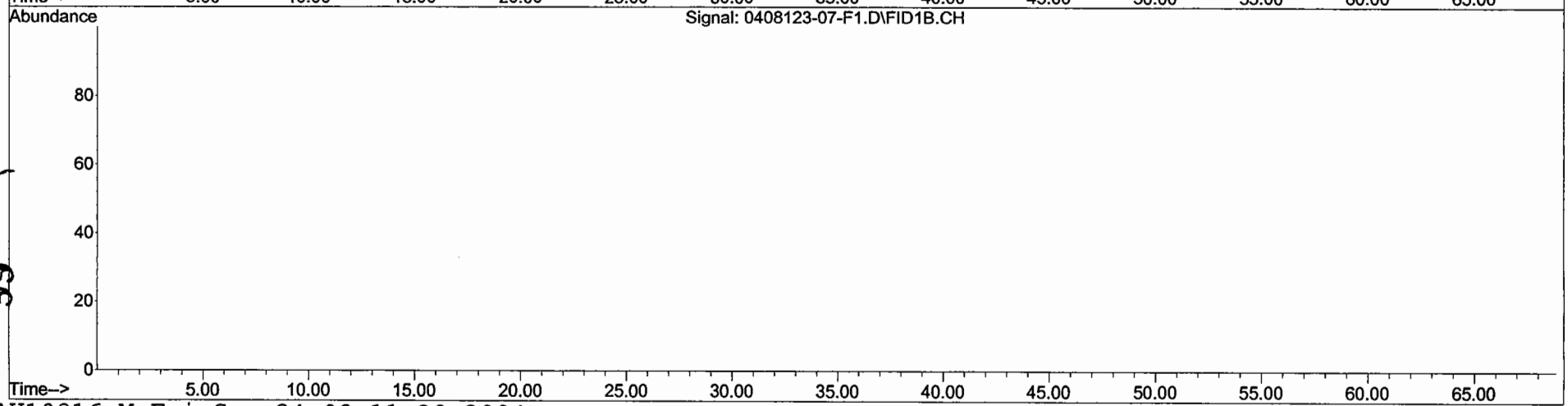
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : 0408123-07-F1.D
Acq On : 23 Sep 2004 12:18 am
Operator : BL
Sample : 0408123-07-F1
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Sep 23 09:45:10 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration





Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP01-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-08F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/25/04	30.5	30.96	2.5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	12	30,31-Bishomohopane-22R (T27)	12
C24 Tricyclic Terpane (T5)	7.5	30,31-Trishomohopane-22S (T30)	16
C25 Tricyclic Terpane (T6)	8.5	30,31-Trishomohopane-22R (T31)	7.4
C24 Tetracyclic Terpane (T6a)	5.8	Tetrakishomohopane-22S (T32)	9.2
C26 Tricyclic Terpane-22S (T6b)	2.7	Tetrakishomohopane-22R (T33)	4.4
C26 Tricyclic Terpane-22R (T6c)	2.7	Pentakishomohopane-22S (T34)	9.4
C28 Tricyclic Terpane-22S (T7)	3.6	Pentakishomohopane-22R (T35)	5.5
C28 Tricyclic Terpane-22R (T8)	3.4	13b(H),17a(H)-20S-Diacholestane (S4)	12
C29 Tricyclic Terpane-22S (T9)	3.4	13b(H),17a(H)-20R-Diacholestane (S5)	7.3
C29 Tricyclic Terpane-22R (T10)	3.5	13b,17a-20S-Methyldiacholestane (S8)	5.9
18a-22,29,30-Trisnorneohopane-TS (T11)	15	14a(H),17a(H)-20S-Cholestane (S12)	7.8
17a(H)-22,29,30-Trisnorhopane-TM (T12)	15	14a(H),17a(H)-20R-Cholestane (S17)	15
17a/b,21b/a 28,30-Bisnorhopane (T14a)	3.2	13b,17a-20R-Ethyldiacholestane (S18)	8.8
17a(H),21b(H)-25-Norhopane (T14b)	10	13a,17b-20S-Ethyldiacholestane (S19)	5.3
30-Norhopane (T15)	55	14a,17a-20S-Methylcholestane (S20)	8.1
18a(H)-30-Norneohopane-C29Ts (T16)	11	14a,17a-20R-Methylcholestane (S24)	6.6
17a(H)-Diahopane (X)	5.0	14a(H),17a(H)-20S-Ethylcholestane (S25)	9.3
30-Normoretane (T17)	11	14a(H),17a(H)-20R-Ethylcholestane (S28)	8.7
18a(H)&18b(H)-Oleananes (T18)	9.1	14b(H),17b(H)-20R-Cholestane (S14)	13
Hopane (T19)	70	14b(H),17b(H)-20S-Cholestane (S15)	9.0
Moretane (T20)	15	14b,17b-20R-Methylcholestane (S22)	11
30-Homohopane-22S (T21)	26	14b,17b-20S-Methylcholestane (S23)	10
30-Homohopane-22R (T22)	25	14b(H),17b(H)-20R-Ethylcholestane (S26)	18
30,31-Bishomohopane-22S (T26)	17	14b(H),17b(H)-20S-Ethylcholestane (S27)	14

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	82	50-130

N/A - Not Applicable

10/07/04 11:07

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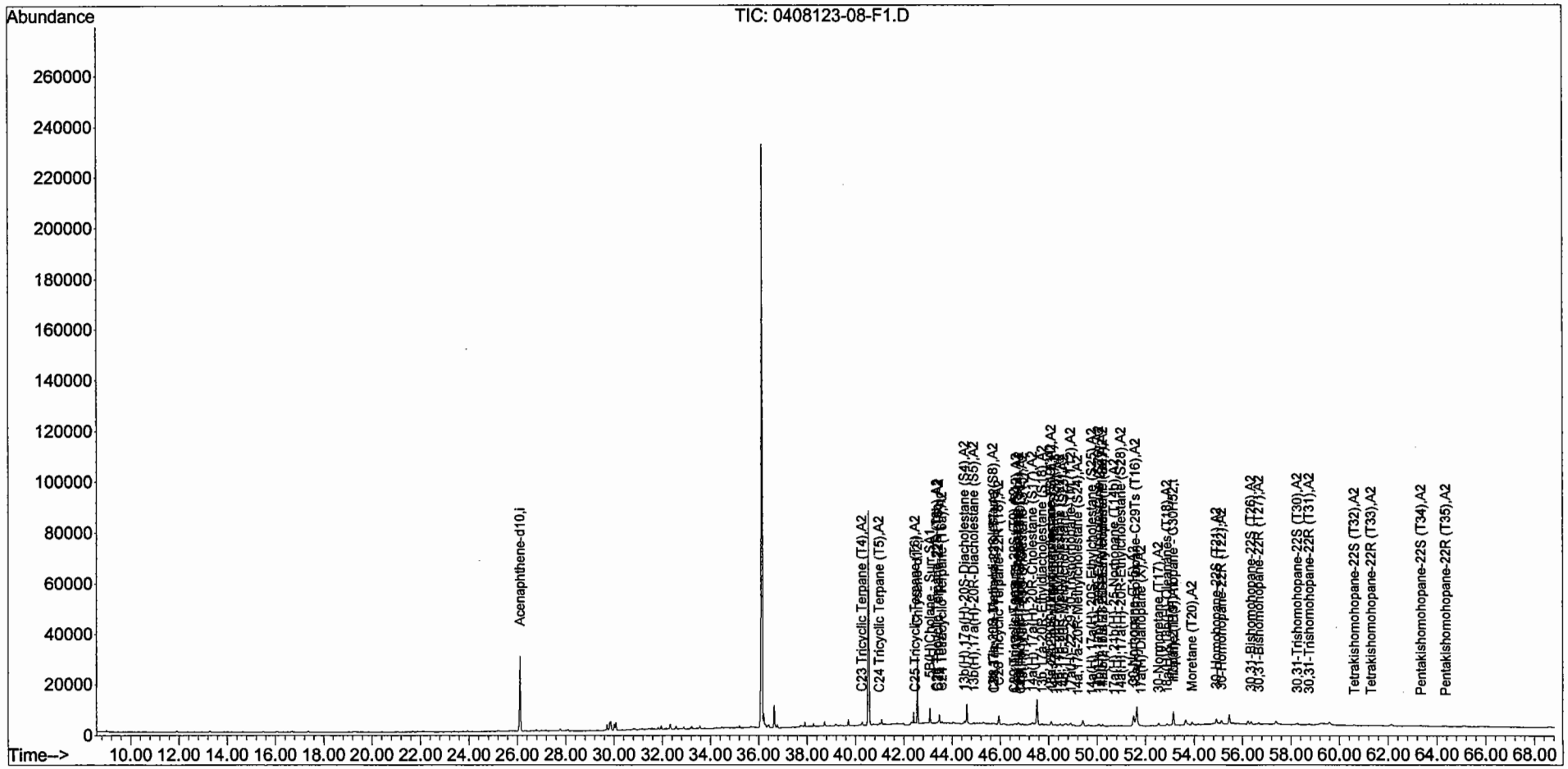
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-08-F1.D
Acq On : 25 Sep 2004 10:57 am
Operator : BL
Sample : 0408123-08-F1
Misc : 1X
ALS Vial : 40 Sample Multiplier: 1

Quant Time: Sep 28 21:42:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-28-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-09F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/25/04	33.9	30.96	4	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**19**	30,31-Bishomohopane-22R (T27)	**20**
C24 Tricyclic Terpane (T5)	**12**	30,31-Trishomohopane-22S (T30)	**25**
C25 Tricyclic Terpane (T6)	**13**	30,31-Trishomohopane-22R (T31)	**11**
C24 Tetracyclic Terpane (T6a)	**10**	Tetrakishomohopane-22S (T32)	**13**
C26 Tricyclic Terpane-22S (T6b)	**5.0**	Tetrakishomohopane-22R (T33)	**9.4**
C26 Tricyclic Terpane-22R (T6c)	**4.7**	Pentakishomohopane-22S (T34)	**13**
C28 Tricyclic Terpane-22S (T7)	**4.1**	Pentakishomohopane-22R (T35)	**7.2**
C28 Tricyclic Terpane-22R (T8)	**4.6**	13b(H),17a(H)-20S-Diacholestane (S4)	**19**
C29 Tricyclic Terpane-22S (T9)	**5.7**	13b(H),17a(H)-20R-Diacholestane (S5)	**10**
C29 Tricyclic Terpane-22R (T10)	**5.1**	13b,17a-20S-Methyldiacholestane (S8)	**8.4**
18a-22,29,30-Trisnorneohopane-TS (T11)	**23**	14a(H),17a(H)-20S-Cholestane (S12)	**12**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**23**	14a(H),17a(H)-20R-Cholestane (S17)	**26**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**4.4**	13b,17a-20R-Ethyldiacholestane (S18)	**13**
17a(H),21b(H)-25-Norhopane (T14b)	**15**	13a,17b-20S-Ethyldiacholestane (S19)	**9.0**
30-Norhopane (T15)	**87**	14a,17a-20S-Methylcholestane (S20)	**12**
18a(H)-30-Norneohopane-C29Ts (T16)	**17**	14a,17a-20R-Methylcholestane (S24)	**8.8**
17a(H)-Diahopane (X)	**8.8**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**11**
30-Normoretane (T17)	**16**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**13**
18a(H)&18b(H)-Oleananes (T18)	**14**	14b(H),17b(H)-20R-Cholestane (S14)	**20**
Hopane (T19)	**110**	14b(H),17b(H)-20S-Cholestane (S15)	**15**
Moretane (T20)	**23**	14b,17b-20R-Methylcholestane (S22)	**19**
30-Homohopane-22S (T21)	**40**	14b,17b-20S-Methylcholestane (S23)	**15**
30-Homohopane-22R (T22)	**36**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**29**
30,31-Bishomohopane-22S (T26)	**26**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**23**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	83	50-130

N/A - Not Applicable

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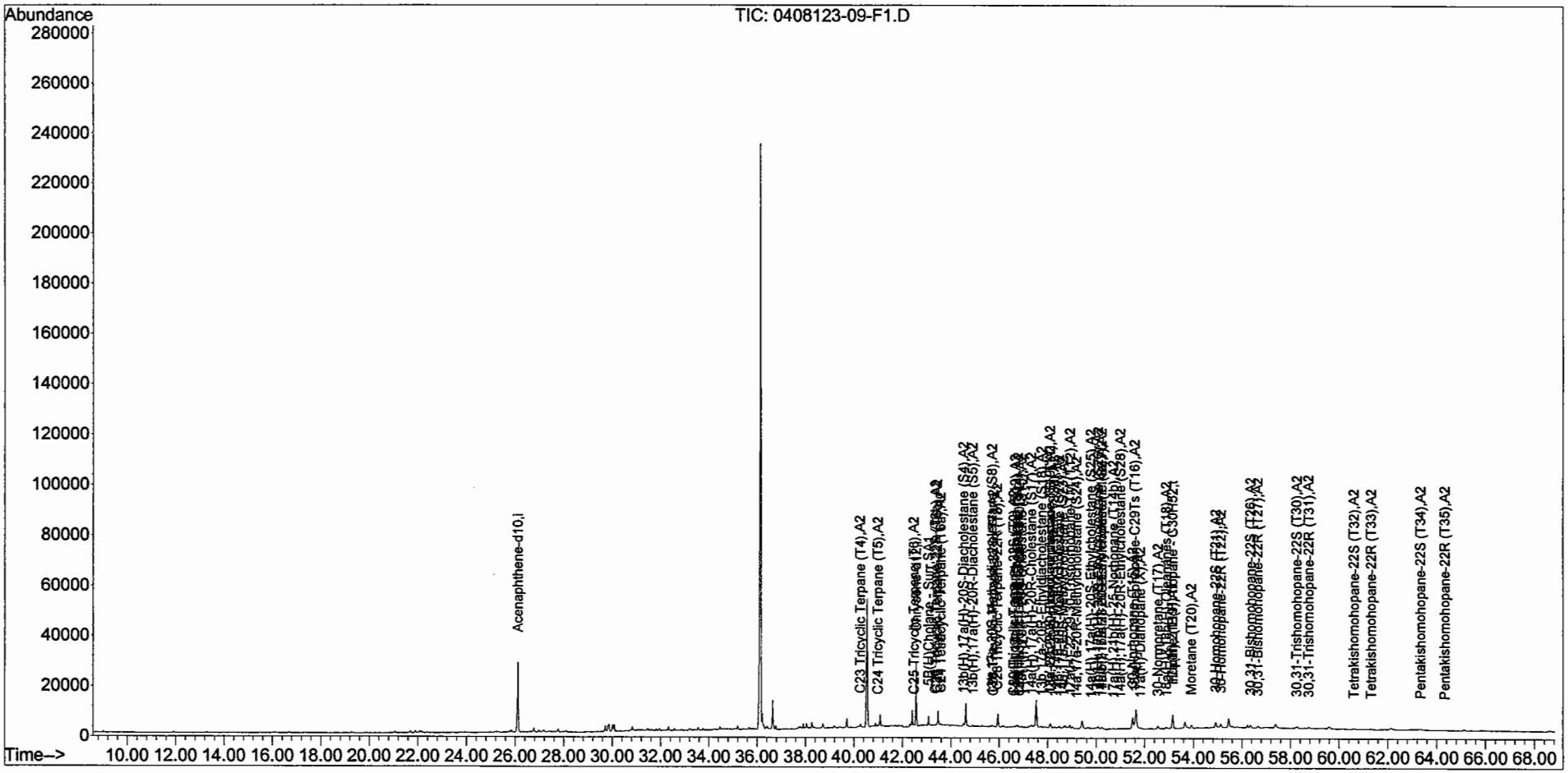
Quantitation Report (QT Reviewed

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-09-F1.D
Acq On : 25 Sep 2004 12:16 pm
Operator : BL
Sample : 0408123-09-F1
Misc : 1X
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Sep 28 21:43:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-06-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-10F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/25/04	44.7	30.20	8	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**200**	30,31-Bishomohopane-22R (T27)	**180**
C24 Tricyclic Terpane (T5)	**110**	30,31-Trishomohopane-22S (T30)	**200**
C25 Tricyclic Terpane (T6)	**130**	30,31-Trishomohopane-22R (T31)	**130**
C24 Tetracyclic Terpane (T6a)	**74**	Tetrakishomohopane-22S (T32)	**140**
C26 Tricyclic Terpane-22S (T6b)	**46**	Tetrakishomohopane-22R (T33)	**94**
C26 Tricyclic Terpane-22R (T6c)	**46**	Pentakishomohopane-22S (T34)	**120**
C28 Tricyclic Terpane-22S (T7)	**63**	Pentakishomohopane-22R (T35)	**75**
C28 Tricyclic Terpane-22R (T8)	**59**	13b(H),17a(H)-20S-Diacholestane (S4)	**210**
C29 Tricyclic Terpane-22S (T9)	**79**	13b(H),17a(H)-20R-Diacholestane (S5)	**140**
C29 Tricyclic Terpane-22R (T10)	**72**	13b,17a-20S-Methyldiacholestane (S8)	**130**
18a-22,29,30-Trisnorneohopane-TS (T11)	**210**	14a(H),17a(H)-20S-Cholestane (S12)	**120**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**180**	14a(H),17a(H)-20R-Cholestane (S17)	**330**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**54**	13b,17a-20R-Ethyldiacholestane (S18)	**150**
17a(H),21b(H)-25-Norhopane (T14b)	**150**	13a,17b-20S-Ethyldiacholestane (S19)	**95**
30-Norhopane (T15)	**660**	14a,17a-20S-Methylcholestane (S20)	**140**
18a(H)-30-Norneohopane-C29Ts (T16)	**200**	14a,17a-20R-Methylcholestane (S24)	**130**
17a(H)-Diahopane (X)	**120**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**120**
30-Normoretane (T17)	**160**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**170**
18a(H)&18b(H)-Oleananes (T18)	**120**	14b(H),17b(H)-20R-Cholestane (S14)	**220**
Hopane (T19)	**1000**	14b(H),17b(H)-20S-Cholestane (S15)	**160**
Moretane (T20)	**200**	14b,17b-20R-Methylcholestane (S22)	**200**
30-Homohopane-22S (T21)	**380**	14b,17b-20S-Methylcholestane (S23)	**180**
30-Homohopane-22R (T22)	**360**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**290**
30,31-Bishomohopane-22S (T26)	**250**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**230**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	91	50-130

N/A - Not Applicable

10/07/04 11:08

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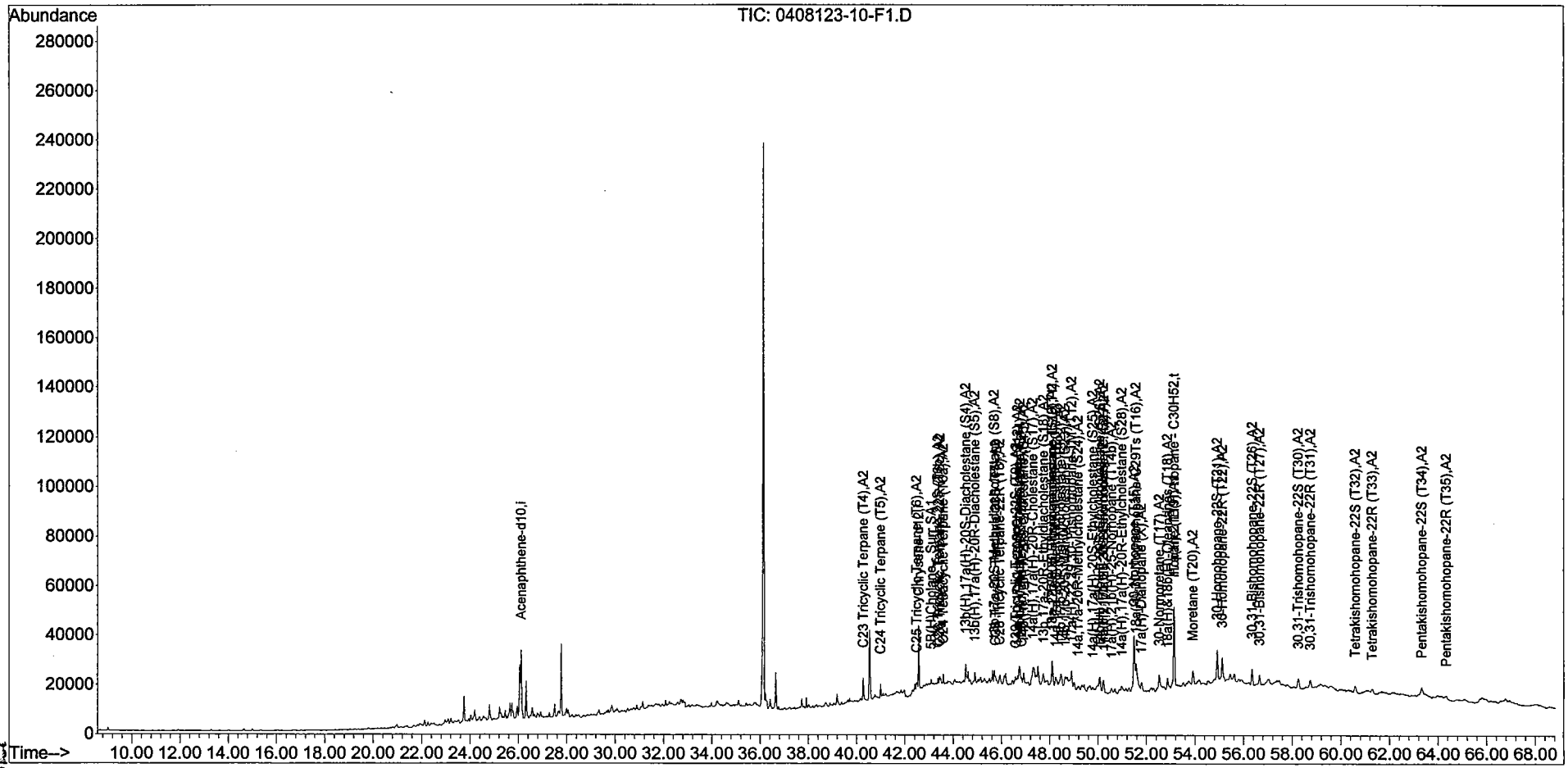
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-10-F1.D
Acq On : 25 Sep 2004 1:35 pm
Operator : BL
Sample : 0408123-10-F1
Misc : 1X
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Sep 28 21:44:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	83.6	30.75	4	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	7.9	30,31-Bishomohopane-22R (T27)	8.9
C24 Tricyclic Terpane (T5)	5.0	30,31-Trishomohopane-22S (T30)	10
C25 Tricyclic Terpane (T6)	6.6	30,31-Trishomohopane-22R (T31)	5.6
C24 Tetracyclic Terpane (T6a)	3.4	Tetrakishomohopane-22S (T32)	6.0
C26 Tricyclic Terpane-22S (T6b)	1.9	Tetrakishomohopane-22R (T33)	3.3
C26 Tricyclic Terpane-22R (T6c)	1.9	Pentakishomohopane-22S (T34)	8.0
C28 Tricyclic Terpane-22S (T7)	1.6	Pentakishomohopane-22R (T35)	4.0
C28 Tricyclic Terpane-22R (T8)	1.6	13b(H),17a(H)-20S-Diacholestane (S4)	4.9
C29 Tricyclic Terpane-22S (T9)	2.3	13b(H),17a(H)-20R-Diacholestane (S5)	2.5
C29 Tricyclic Terpane-22R (T10)	2.5	13b,17a-20S-Methyldiacholestane (S8)	4.4
18a-22,29,30-Trisnorneohopane-TS (T11)	8.9	14a(H),17a(H)-20S-Cholestane (S12)	3.9
17a(H)-22,29,30-Trisnorhopane-TM (T12)	9.1	14a(H),17a(H)-20R-Cholestane (S17)	12
17a/b,21b/a 28,30-Bisnorhopane (T14a)	2.1	13b,17a-20R-Ethyldiacholestane (S18)	6.8
17a(H),21b(H)-25-Norhopane (T14b)	7.1	13a,17b-20S-Ethyldiacholestane (S19)	3.2
30-Norhopane (T15)	38	14a,17a-20S-Methylcholestane (S20)	5.4
18a(H)-30-Norneohopane-C29Ts (T16)	8.8	14a,17a-20R-Methylcholestane (S24)	5.2
17a(H)-Diahopane (X)	3.3	14a(H),17a(H)-20S-Ethylcholestane (S25)	6.9
30-Normoretane (T17)	7.6	14a(H),17a(H)-20R-Ethylcholestane (S28)	6.8
18a(H)&18b(H)-Oleananes (T18)	7.2	14b(H),17b(H)-20R-Cholestane (S14)	6.0
Hopane (T19)	46	14b(H),17b(H)-20S-Cholestane (S15)	4.3
Moretane (T20)	7.6	14b,17b-20R-Methylcholestane (S22)	7.8
30-Homohopane-22S (T21)	21	14b,17b-20S-Methylcholestane (S23)	6.9
30-Homohopane-22R (T22)	16	14b(H),17b(H)-20R-Ethylcholestane (S26)	13
30,31-Bishomohopane-22S (T26)	13	14b(H),17b(H)-20S-Ethylcholestane (S27)	11

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	91	50-130

N/A - Not Applicable

10/07/04 11:08

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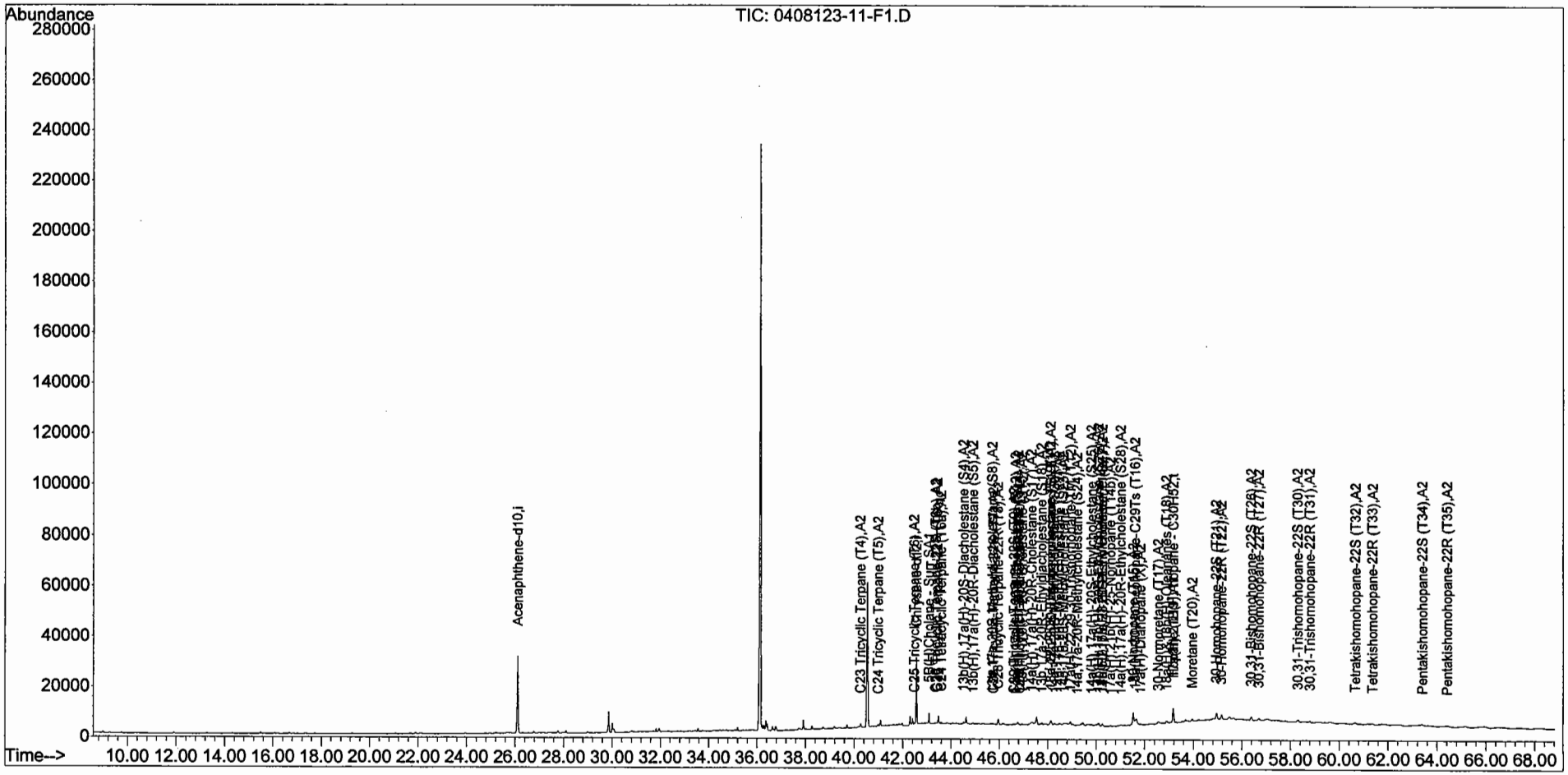
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-11-F1.D
Acq On : 25 Sep 2004 2:54 pm
Operator : BL
Sample : 0408123-11-F1
Misc : 1X
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Sep 28 21:46:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



Form I
Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11F1 D**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	83.6	30.31	2.5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	7.2	30,31-Bishomohopane-22R (T27)	7.8
C24 Tricyclic Terpane (T5)	4.5	30,31-Trishomohopane-22S (T30)	8.8
C25 Tricyclic Terpane (T6)	5.9	30,31-Trishomohopane-22R (T31)	5.6
C24 Tetracyclic Terpane (T6a)	3.0	Tetrakishomohopane-22S (T32)	5.2
C26 Tricyclic Terpane-22S (T6b)	1.6	Tetrakishomohopane-22R (T33)	3.5
C26 Tricyclic Terpane-22R (T6c)	1.3	Pentakishomohopane-22S (T34)	5.8
C28 Tricyclic Terpane-22S (T7)	1.5	Pentakishomohopane-22R (T35)	4.0
C28 Tricyclic Terpane-22R (T8)	1.4	13b(H),17a(H)-20S-Diacholestane (S4)	4.0
C29 Tricyclic Terpane-22S (T9)	1.9	13b(H),17a(H)-20R-Diacholestane (S5)	2.6
C29 Tricyclic Terpane-22R (T10)	1.9	13b,17a-20S-Methyldiacholestane (S8)	2.4
18a-22,29,30-Trisnorneohopane-TS (T11)	8.6	14a(H),17a(H)-20S-Cholestane (S12)	3.8
17a(H)-22,29,30-Trisnorhopane-TM (T12)	8.8	14a(H),17a(H)-20R-Cholestane (S17)	10
17a/b,21b/a 28,30-Bisnorhopane (T14a)	1.5	13b,17a-20R-Ethyldiacholestane (S18)	4.8
17a(H),21b(H)-25-Norhopane (T14b)	5.2	13a,17b-20S-Ethyldiacholestane (S19)	3.6
30-Norhopane (T15)	33	14a,17a-20S-Methylcholestane (S20)	4.8
18a(H)-30-Norneohopane-C29Ts (T16)	8.1	14a,17a-20R-Methylcholestane (S24)	3.6
17a(H)-Diahopane (X)	3.3	14a(H),17a(H)-20S-Ethylcholestane (S25)	6.0
30-Normoretane (T17)	5.9	14a(H),17a(H)-20R-Ethylcholestane (S28)	6.6
18a(H)&18b(H)-Oleananes (T18)	6.8	14b(H),17b(H)-20R-Cholestane (S14)	5.9
Hopane (T19)	41	14b(H),17b(H)-20S-Cholestane (S15)	3.9
Moretane (T20)	7.2	14b,17b-20R-Methylcholestane (S22)	7.3
30-Homohopane-22S (T21)	18	14b,17b-20S-Methylcholestane (S23)	6.0
30-Homohopane-22R (T22)	14	14b(H),17b(H)-20R-Ethylcholestane (S26)	11
30,31-Bishomohopane-22S (T26)	12	14b(H),17b(H)-20S-Ethylcholestane (S27)	9.1

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	83	50-130

N/A - Not Applicable

10/07/04 11:08

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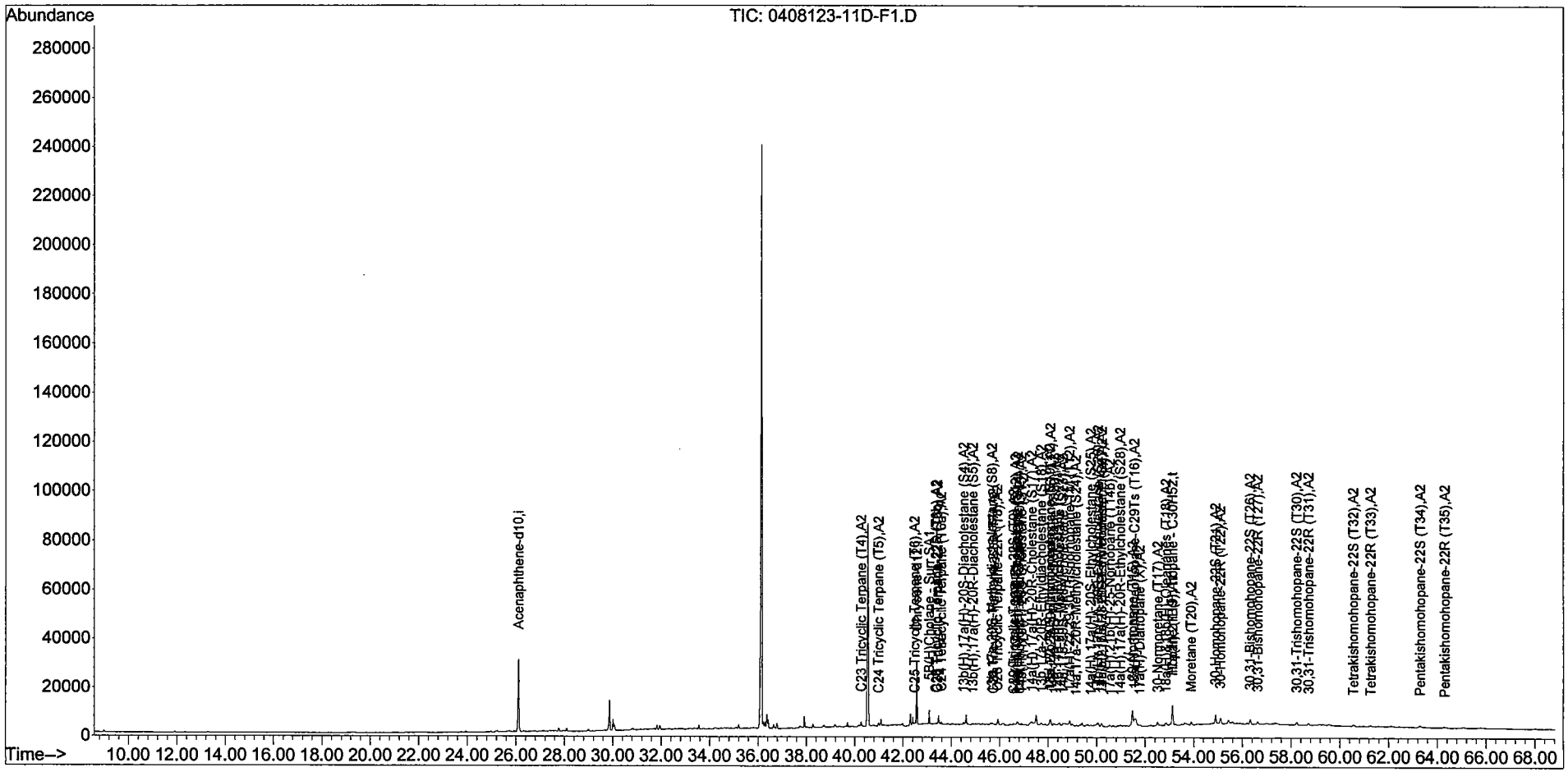
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-11D-F1.D
Acq On : 25 Sep 2004 4:13 pm
Operator : BL
Sample : 0408123-11D-F1
Misc : 1X
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Sep 28 21:47:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



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Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
C23 Tricyclic Terpane (T4)	7.9	7.2	9	30
C24 Tricyclic Terpane (T5)	5.0	4.5	9	30
C25 Tricyclic Terpane (T6)	6.6	5.9	12	30
C24 Tetracyclic Terpane (T6a)	3.4	3.0	13	30
C26 Tricyclic Terpane-22S (T6b)	1.9	1.6	17	30
C26 Tricyclic Terpane-22R (T6c)	1.9	1.3	38[a]	30
C28 Tricyclic Terpane-22S (T7)	1.6	1.5	9	30
C28 Tricyclic Terpane-22R (T8)	1.6	1.4	17	30
C29 Tricyclic Terpane-22S (T9)	2.3	1.9	20	30
C29 Tricyclic Terpane-22R (T10)	2.5	1.9	23	30
18a-22,29,30-Trisnorneohopane-TS (T11)	8.9	8.6	3	30
17a(H)-22,29,30-Trisnorhopane-TM (T12)	9.1	8.8	3	30
17a/b,21b/a 28,30-Bisnorhopane (T14a)	2.1	1.5	35[a]	30
17a(H),21b(H)-25-Norhopane (T14b)	7.1	5.2	30	30
30-Norhopane (T15)	38	33	13	30
18a(H)-30-Norneohopane-C29Ts (T16)	8.8	8.1	9	30
17a(H)-Diahopane (X)	3.3	3.3	0	30
30-Normoretane (T17)	7.6	5.9	26	30
18a(H)&18b(H)-Oleananes (T18)	7.2	6.8	6	30
Hopane (T19)	46	41	12	30
Moretane (T20)	7.6	7.2	5	30
30-Homohopane-22S (T21)	21	18	13	30
30-Homohopane-22R (T22)	16	14	10	30
30,31-Bishomohopane-22S (T26)	13	12	11	30
30,31-Bishomohopane-22R (T27)	8.9	7.8	14	30
30,31-Trishomohopane-22S (T30)	10	8.8	18	30
30,31-Trishomohopane-22R (T31)	5.6	5.6	1	30
Tetrakishomohopane-22S (T32)	6.0	5.2	14	30
Tetrakishomohopane-22R (T33)	3.3	3.5	7	30
Pentakishomohopane-22S (T34)	8.0	5.8	32[a]	30
Pentakishomohopane-22R (T35)	4.0	4.0	0	30
13b(H),17a(H)-20S-Diacholestane (S4)	4.9	4.0	21	30
13b(H),17a(H)-20R-Diacholestane (S5)	2.5	2.6	5	30
13b,17a-20S-Methyldiacholestane (S8)	4.4	2.4	58[a]	30
14a(H),17a(H)-20S-Cholestane (S12)	3.9	3.8	4	30

N/A - Not Applicable
[a] - Value outside of QC Limits.

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Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
14a(H),17a(H)-20R-Cholestane (S17)	**12**	**10**	19	30
13b,17a-20R-Ethyldiacholestane (S18)	**6.8**	**4.8**	34[a]	30
13a,17b-20S-Ethyldiacholestane (S19)	**3.2**	**3.6**	13	30
14a,17a-20S-Methylcholestane (S20)	**5.4**	**4.8**	12	30
14a,17a-20R-Methylcholestane (S24)	**5.2**	**3.6**	36[a]	30
14a(H),17a(H)-20S-Ethylcholestane (S25)	**6.9**	**6.0**	14	30
14a(H),17a(H)-20R-Ethylcholestane (S28)	**6.8**	**6.6**	4	30
14b(H),17b(H)-20R-Cholestane (S14)	**6.0**	**5.9**	2	30
14b(H),17b(H)-20S-Cholestane (S15)	**4.3**	**3.9**	9	30
14b,17b-20R-Methylcholestane (S22)	**7.8**	**7.3**	6	30
14b,17b-20S-Methylcholestane (S23)	**6.9**	**6.0**	13	30
14b(H),17b(H)-20R-Ethylcholestane (S26)	**13**	**11**	13	30
14b(H),17b(H)-20S-Ethylcholestane (S27)	**11**	**9.1**	20	30

Surrogate	% Recovery		Acceptance Range (%)
5B(H)Cholane	91	83	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/07/04 11:09

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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-12F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	48.5	30.44	10	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**64**	30,31-Bishomohopane-22R (T27)	**69**
C24 Tricyclic Terpane (T5)	**38**	30,31-Trishomohopane-22S (T30)	**70**
C25 Tricyclic Terpane (T6)	**46**	30,31-Trishomohopane-22R (T31)	**42**
C24 Tetracyclic Terpane (T6a)	**30**	Tetrakishomohopane-22S (T32)	**48**
C26 Tricyclic Terpane-22S (T6b)	**18**	Tetrakishomohopane-22R (T33)	**31**
C26 Tricyclic Terpane-22R (T6c)	**18**	Pentakishomohopane-22S (T34)	**55**
C28 Tricyclic Terpane-22S (T7)	**18**	Pentakishomohopane-22R (T35)	**31**
C28 Tricyclic Terpane-22R (T8)	**20**	13b(H),17a(H)-20S-Diacholestane (S4)	**46**
C29 Tricyclic Terpane-22S (T9)	**26**	13b(H),17a(H)-20R-Diacholestane (S5)	**29**
C29 Tricyclic Terpane-22R (T10)	**24**	13b,17a-20S-Methyldiacholestane (S8)	**22**
18a-22,29,30-Trisnorneohopane-TS (T11)	**76**	14a(H),17a(H)-20S-Cholestane (S12)	**34**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**72**	14a(H),17a(H)-20R-Cholestane (S17)	**76**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**16**	13b,17a-20R-Ethyldiacholestane (S18)	**37**
17a(H),21b(H)-25-Norhopane (T14b)	**44**	13a,17b-20S-Ethyldiacholestane (S19)	**37**
30-Norhopane (T15)	**280**	14a,17a-20S-Methylcholestane (S20)	**37**
18a(H)-30-Norneohopane-C29Ts (T16)	**60**	14a,17a-20R-Methylcholestane (S24)	**34**
17a(H)-Diahopane (X)	**24**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**48**
30-Normoretane (T17)	**43**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**56**
18a(H)&18b(H)-Oleananes (T18)	**42**	14b(H),17b(H)-20R-Cholestane (S14)	**54**
Hopane (T19)	**320**	14b(H),17b(H)-20S-Cholestane (S15)	**43**
Moretane (T20)	**56**	14b,17b-20R-Methylcholestane (S22)	**52**
30-Homohopane-22S (T21)	**140**	14b,17b-20S-Methylcholestane (S23)	**50**
30-Homohopane-22R (T22)	**130**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**98**
30,31-Bishomohopane-22S (T26)	**87**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**78**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	92	50-130

N/A - Not Applicable

10/07/04 11:09

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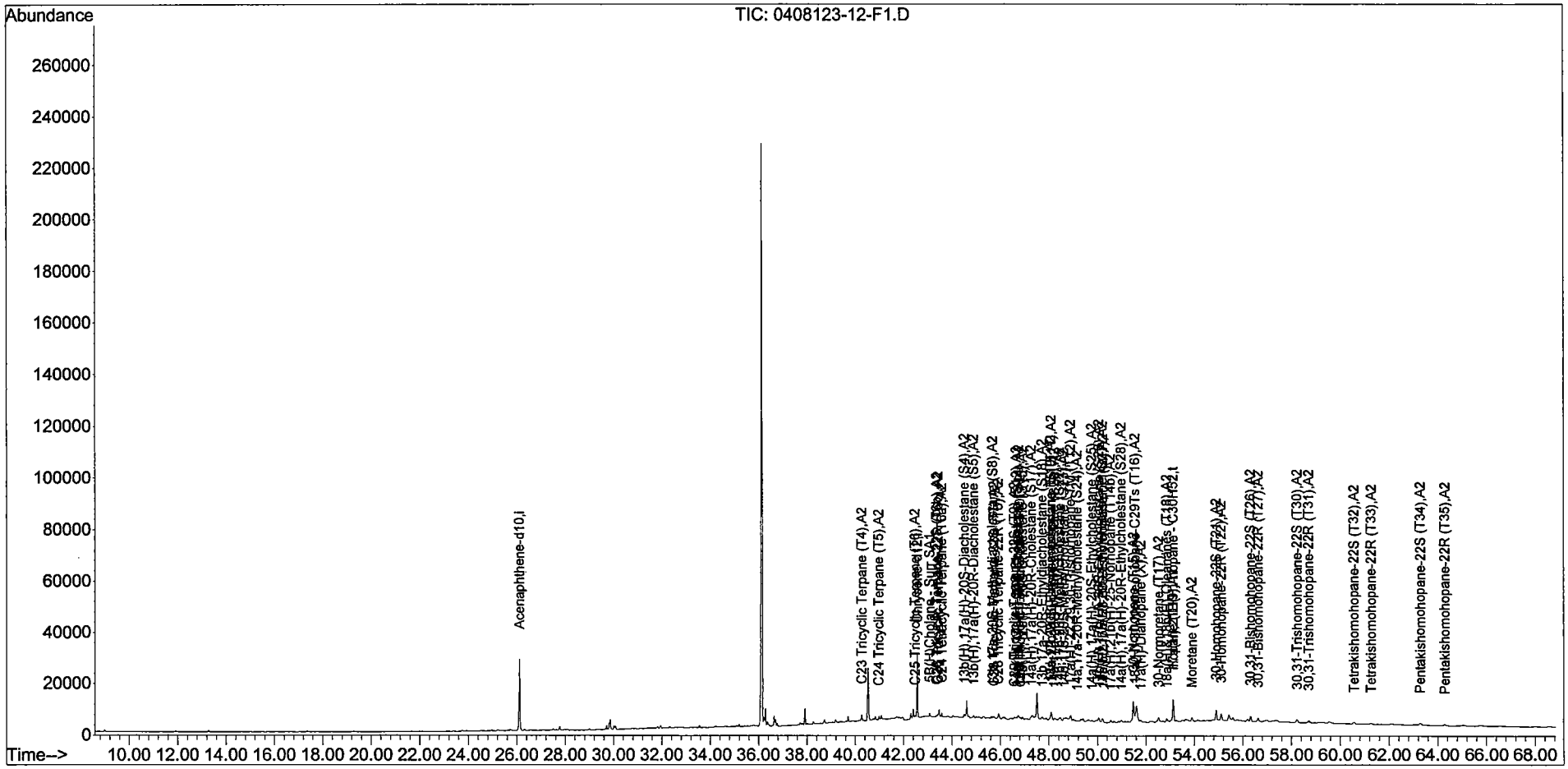
Quantitation Report (QT Reviewed

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-12-F1.D
Acq On : 25 Sep 2004 6:52 pm
Operator : BL
Sample : 0408123-12-F1
Misc : 1X
ALS Vial : 46 Sample Multiplier: 1

Quant Time: Sep 28 21:49:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-29-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-13F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	37.0	30.45	5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**45**	30,31-Bishomohopane-22R (T27)	**46**
C24 Tricyclic Terpane (T5)	**27**	30,31-Trishomohopane-22S (T30)	**47**
C25 Tricyclic Terpane (T6)	**30**	30,31-Trishomohopane-22R (T31)	**27**
C24 Tetracyclic Terpane (T6a)	**20**	Tetrakishomohopane-22S (T32)	**26**
C26 Tricyclic Terpane-22S (T6b)	**11**	Tetrakishomohopane-22R (T33)	**19**
C26 Tricyclic Terpane-22R (T6c)	**12**	Pentakishomohopane-22S (T34)	**30**
C28 Tricyclic Terpane-22S (T7)	**10**	Pentakishomohopane-22R (T35)	**18**
C28 Tricyclic Terpane-22R (T8)	**11**	13b(H),17a(H)-20S-Diacholestane (S4)	**33**
C29 Tricyclic Terpane-22S (T9)	**13**	13b(H),17a(H)-20R-Diacholestane (S5)	**19**
C29 Tricyclic Terpane-22R (T10)	**13**	13b,17a-20S-Methyldiacholestane (S8)	**16**
18a-22,29,30-Trisnorneohopane-TS (T11)	**50**	14a(H),17a(H)-20S-Cholestane (S12)	**21**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**46**	14a(H),17a(H)-20R-Cholestane (S17)	**54**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**9.2**	13b,17a-20R-Ethyldiacholestane (S18)	**22**
17a(H),21b(H)-25-Norhopane (T14b)	**30**	13a,17b-20S-Ethyldiacholestane (S19)	**21**
30-Norhopane (T15)	**180**	14a,17a-20S-Methylcholestane (S20)	**25**
18a(H)-30-Norneohopane-C29Ts (T16)	**43**	14a,17a-20R-Methylcholestane (S24)	**21**
17a(H)-Diahopane (X)	**17**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**31**
30-Normoretane (T17)	**29**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**34**
18a(H)&18b(H)-Oleananes (T18)	**31**	14b(H),17b(H)-20R-Cholestane (S14)	**37**
Hopane (T19)	**220**	14b(H),17b(H)-20S-Cholestane (S15)	**28**
Moretane (T20)	**41**	14b,17b-20R-Methylcholestane (S22)	**36**
30-Homohopane-22S (T21)	**95**	14b,17b-20S-Methylcholestane (S23)	**37**
30-Homohopane-22R (T22)	**76**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**64**
30,31-Bishomohopane-22S (T26)	**58**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**51**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

N/A - Not Applicable

10/07/04 11:09

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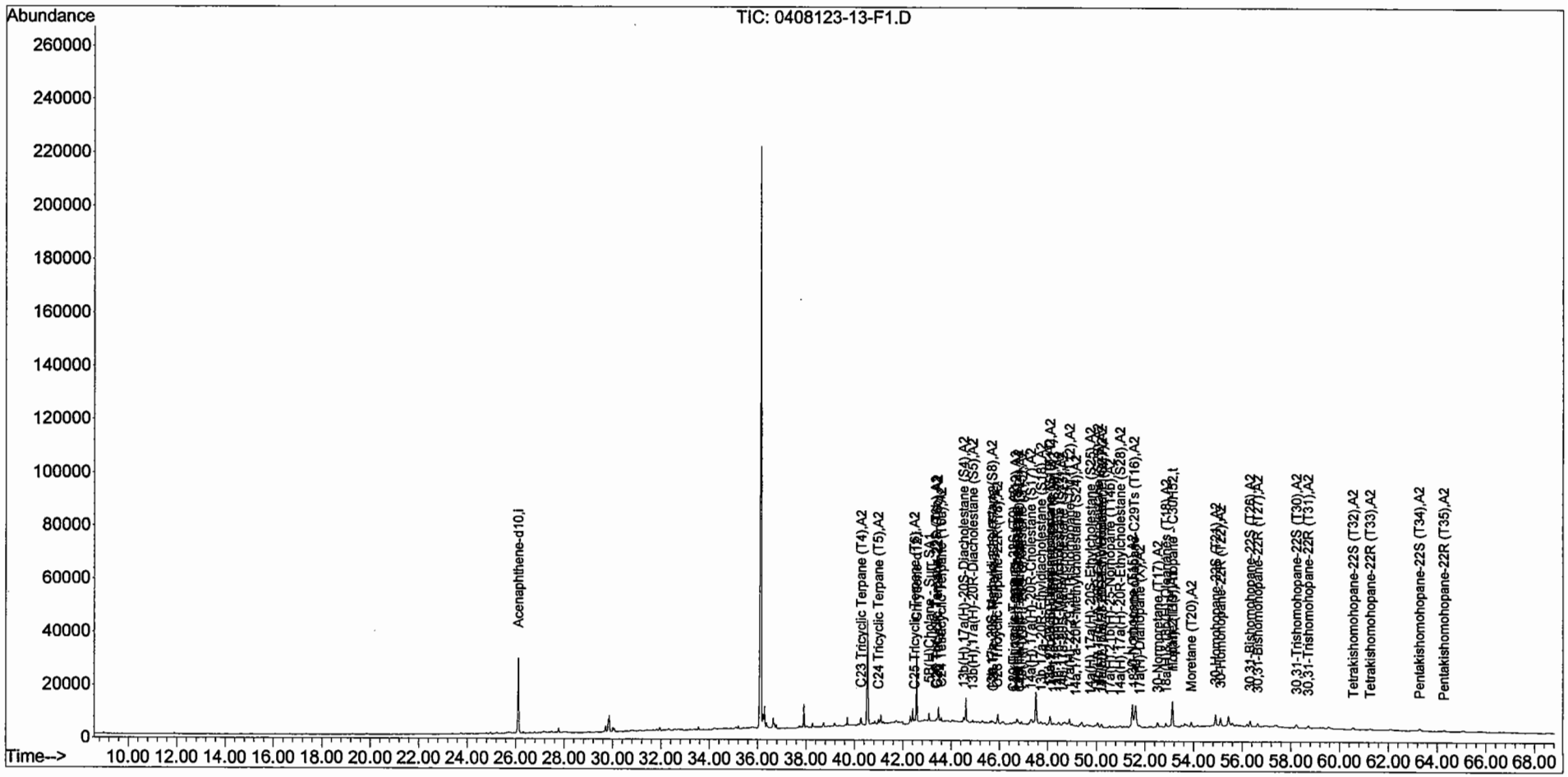
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-13-F1.D
Acq On : 25 Sep 2004 8:11 pm
Operator : BL
Sample : 0408123-13-F1
Misc : 1X
ALS Vial : 47 Sample Multiplier: 1

Quant Time: Sep 28 21:50:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-05-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-14F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	41.2	30.58	4	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	21	30,31-Bishomohopane-22R (T27)	22
C24 Tricyclic Terpane (T5)	13	30,31-Trishomohopane-22S (T30)	25
C25 Tricyclic Terpane (T6)	13	30,31-Trishomohopane-22R (T31)	13
C24 Tetracyclic Terpane (T6a)	11	Tetrakishomohopane-22S (T32)	14
C26 Tricyclic Terpane-22S (T6b)	5.9	Tetrakishomohopane-22R (T33)	9.4
C26 Tricyclic Terpane-22R (T6c)	5.7	Pentakishomohopane-22S (T34)	14
C28 Tricyclic Terpane-22S (T7)	5.9	Pentakishomohopane-22R (T35)	8.1
C28 Tricyclic Terpane-22R (T8)	6.3	13b(H),17a(H)-20S-Diacholestane (S4)	21
C29 Tricyclic Terpane-22S (T9)	6.2	13b(H),17a(H)-20R-Diacholestane (S5)	13
C29 Tricyclic Terpane-22R (T10)	6.5	13b,17a-20S-Methyldiacholestane (S8)	12
18a-22,29,30-Trisnorneohopane-TS (T11)	26	14a(H),17a(H)-20S-Cholestane (S12)	14
17a(H)-22,29,30-Trisnorhopane-TM (T12)	26	14a(H),17a(H)-20R-Cholestane (S17)	30
17a/b,21b/a 28,30-Bisnorhopane (T14a)	4.7	13b,17a-20R-Ethyldiacholestane (S18)	13
17a(H),21b(H)-25-Norhopane (T14b)	16	13a,17b-20S-Ethyldiacholestane (S19)	10
30-Norhopane (T15)	94	14a,17a-20S-Methylcholestane (S20)	13
18a(H)-30-Norneohopane-C29Ts (T16)	23	14a,17a-20R-Methylcholestane (S24)	9.8
17a(H)-Diahopane (X)	8.5	14a(H),17a(H)-20S-Ethylcholestane (S25)	12
30-Normoretane (T17)	19	14a(H),17a(H)-20R-Ethylcholestane (S28)	13
18a(H)&18b(H)-Oleananes (T18)	16	14b(H),17b(H)-20R-Cholestane (S14)	24
Hopane (T19)	120	14b(H),17b(H)-20S-Cholestane (S15)	16
Moretane (T20)	25	14b,17b-20R-Methylcholestane (S22)	18
30-Homohopane-22S (T21)	44	14b,17b-20S-Methylcholestane (S23)	15
30-Homohopane-22R (T22)	39	14b(H),17b(H)-20R-Ethylcholestane (S26)	33
30,31-Bishomohopane-22S (T26)	27	14b(H),17b(H)-20S-Ethylcholestane (S27)	23

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	86	50-130

N/A - Not Applicable

10/07/04 11:10

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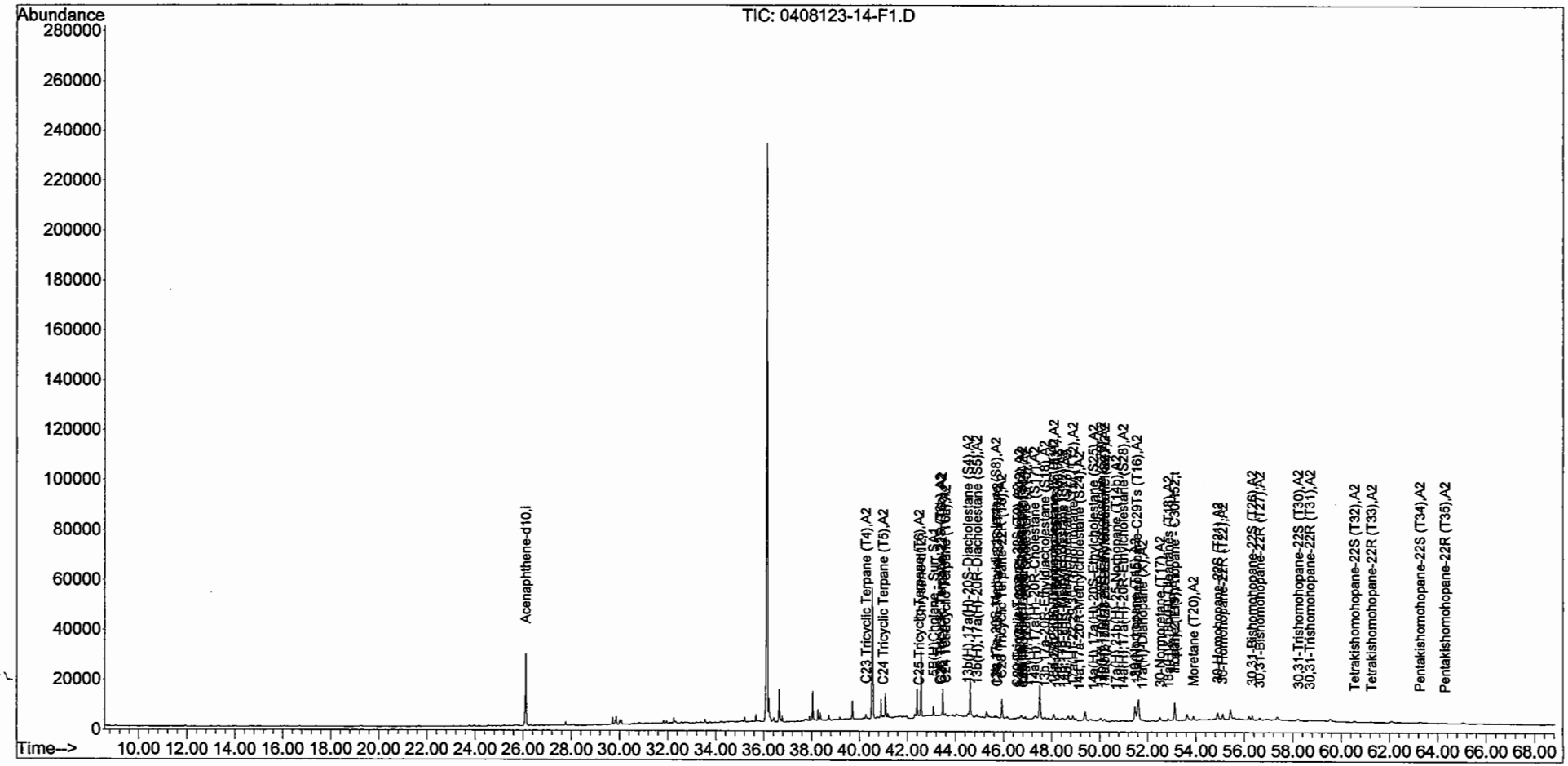
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-14-F1.D
Acq On : 25 Sep 2004 9:30 pm
Operator : BL
Sample : 0408123-14-F1
Misc : 1X
ALS Vial : 48 Sample Multiplier: 1

Quant Time: Sep 28 21:51:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-15F1**
Associated Blank: **SS090704B02F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/25/04	41.4	30.54	2.5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	14	30,31-Bishomohopane-22R (T27)	12
C24 Tricyclic Terpane (T5)	8.4	30,31-Trishomohopane-22S (T30)	17
C25 Tricyclic Terpane (T6)	9.4	30,31-Trishomohopane-22R (T31)	8.6
C24 Tetracyclic Terpane (T6a)	6.1	Tetrakishomohopane-22S (T32)	8.2
C26 Tricyclic Terpane-22S (T6b)	3.8	Tetrakishomohopane-22R (T33)	5.4
C26 Tricyclic Terpane-22R (T6c)	3.8	Pentakishomohopane-22S (T34)	8.2
C28 Tricyclic Terpane-22S (T7)	3.2	Pentakishomohopane-22R (T35)	4.6
C28 Tricyclic Terpane-22R (T8)	3.4	13b(H),17a(H)-20S-Diacholestane (S4)	15
C29 Tricyclic Terpane-22S (T9)	3.9	13b(H),17a(H)-20R-Diacholestane (S5)	7.6
C29 Tricyclic Terpane-22R (T10)	4.0	13b,17a-20S-Methyldiacholestane (S8)	6.8
18a-22,29,30-Trisnorneohopane-TS (T11)	16	14a(H),17a(H)-20S-Cholestane (S12)	9.0
17a(H)-22,29,30-Trisnorhopane-TM (T12)	15	14a(H),17a(H)-20R-Cholestane (S17)	18
17a/b,21b/a 28,30-Bisnorhopane (T14a)	2.4	13b,17a-20R-Ethyldiacholestane (S18)	9.5
17a(H),21b(H)-25-Norhopane (T14b)	8.9	13a,17b-20S-Ethyldiacholestane (S19)	6.9
30-Norhopane (T15)	60	14a,17a-20S-Methylcholestane (S20)	8.5
18a(H)-30-Norneohopane-C29Ts (T16)	14	14a,17a-20R-Methylcholestane (S24)	6.6
17a(H)-Diahopane (X)	6.4	14a(H),17a(H)-20S-Ethylcholestane (S25)	8.0
30-Normoretane (T17)	12	14a(H),17a(H)-20R-Ethylcholestane (S28)	8.4
18a(H)&18b(H)-Oleananes (T18)	9.9	14b(H),17b(H)-20R-Cholestane (S14)	13
Hopane (T19)	78	14b(H),17b(H)-20S-Cholestane (S15)	9.6
Moretane (T20)	16	14b,17b-20R-Methylcholestane (S22)	12
30-Homohopane-22S (T21)	27	14b,17b-20S-Methylcholestane (S23)	10
30-Homohopane-22R (T22)	27	14b(H),17b(H)-20R-Ethylcholestane (S26)	20
30,31-Bishomohopane-22S (T26)	18	14b(H),17b(H)-20S-Ethylcholestane (S27)	16

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	82	50-130

N/A - Not Applicable

10/07/04 11:10

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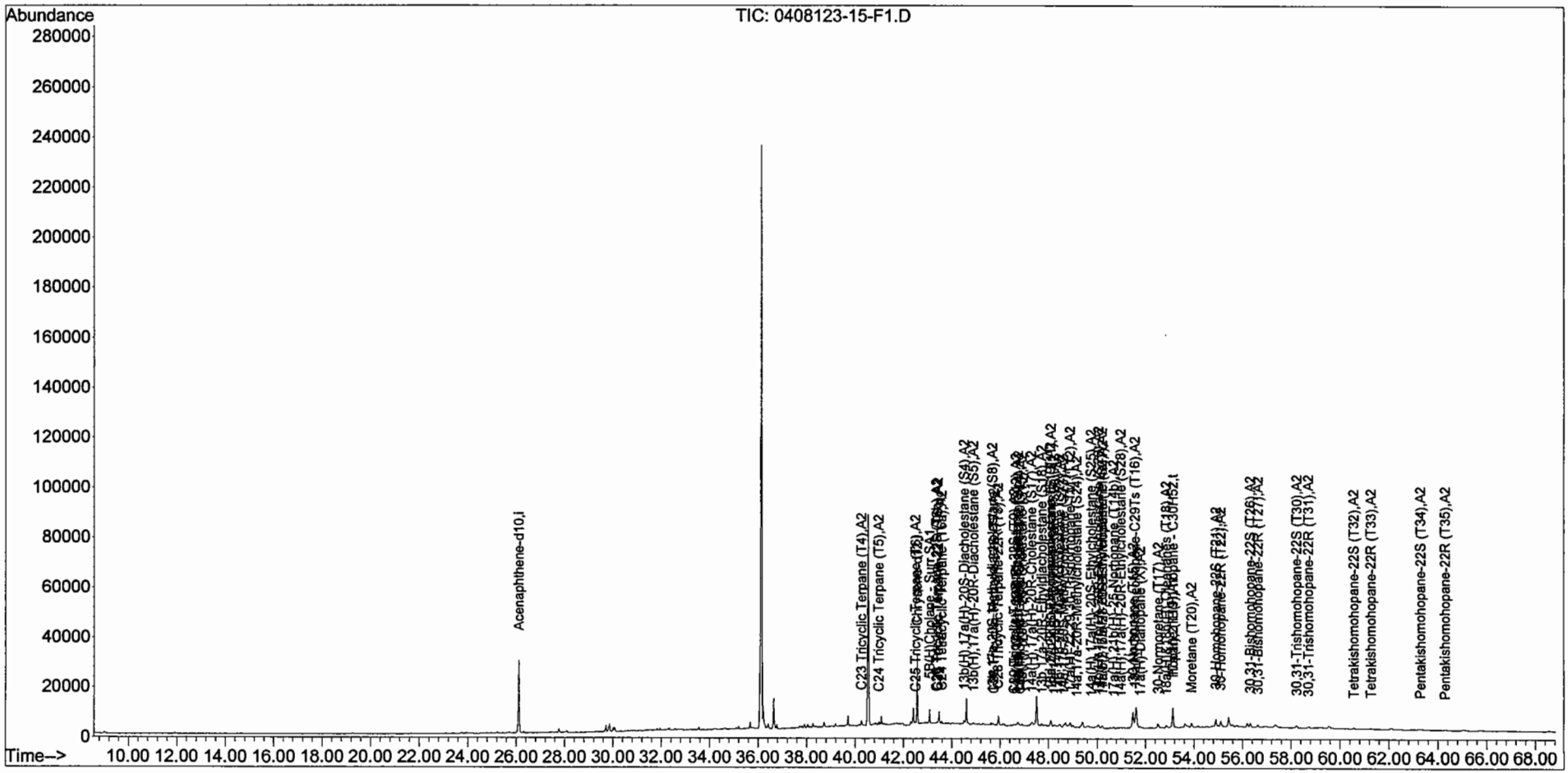
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT24\
Data File : 0408123-15-F1.D
Acq On : 25 Sep 2004 10:49 pm
Operator : BL
Sample : 0408123-15-F1
Misc : 1X
ALS Vial : 49 Sample Multiplier: 1

Quant Time: Sep 28 21:53:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #1\METHODS-SEQ\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration



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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02F1**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/22/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	0.19	U	30,31-Bishomohopane-22R (T27)	0.19	U
C24 Tricyclic Terpane (T5)	0.19	U	30,31-Trishomohopane-22S (T30)	0.19	U
C25 Tricyclic Terpane (T6)	0.19	U	30,31-Trishomohopane-22R (T31)	0.19	U
C24 Tetracyclic Terpane (T6a)	0.19	U	Tetrakishomohopane-22S (T32)	0.19	U
C26 Tricyclic Terpane-22S (T6b)	0.19	U	Tetrakishomohopane-22R (T33)	0.19	U
C26 Tricyclic Terpane-22R (T6c)	0.19	U	Pentakishomohopane-22S (T34)	0.19	U
C28 Tricyclic Terpane-22S (T7)	0.19	U	Pentakishomohopane-22R (T35)	0.19	U
C28 Tricyclic Terpane-22R (T8)	0.19	U	13b(H),17a(H)-20S-Diacholestane (S4)	0.19	U
C29 Tricyclic Terpane-22S (T9)	0.19	U	13b(H),17a(H)-20R-Diacholestane (S5)	0.19	U
C29 Tricyclic Terpane-22R (T10)	0.19	U	13b,17a-20S-Methyldiacholestane (S8)	0.19	U
18a-22,29,30-Trisnorneohopane-TS (T11)	0.19	U	14a(H),17a(H)-20S-Cholestane (S12)	0.19	U
17a(H)-22,29,30-Trisnorhopane-TM (T12)	0.19	U	14a(H),17a(H)-20R-Cholestane (S17)	0.19	U
17a/b,21b/a 28,30-Bisnorhopane (T14a)	0.19	U	13b,17a-20R-Ethyldiacholestane (S18)	0.19	U
17a(H),21b(H)-25-Norhopane (T14b)	0.19	U	13a,17b-20S-Ethyldiacholestane (S19)	0.19	U
30-Norhopane (T15)	0.19	U	14a,17a-20S-Methylcholestane (S20)	0.19	U
18a(H)-30-Norneohopane-C29Ts (T16)	0.19	U	14a,17a-20R-Methylcholestane (S24)	0.19	U
17a(H)-Diahopane (X)	0.19	U	14a(H),17a(H)-20S-Ethylcholestane (S25)	0.19	U
30-Normoretane (T17)	0.19	U	14a(H),17a(H)-20R-Ethylcholestane (S28)	0.19	U
18a(H)&18b(H)-Oleananes (T18)	0.19	U	14b(H),17b(H)-20R-Cholestane (S14)	0.19	U
Hopane (T19)	0.19	U	14b(H),17b(H)-20S-Cholestane (S15)	0.19	U
Moretane (T20)	0.19	U	14b,17b-20R-Methylcholestane (S22)	0.19	U
30-Homohopane-22S (T21)	0.19	U	14b,17b-20S-Methylcholestane (S23)	0.19	U
30-Homohopane-22R (T22)	0.19	U	14b(H),17b(H)-20R-Ethylcholestane (S26)	0.19	U
30,31-Bishomohopane-22S (T26)	0.19	U	14b(H),17b(H)-20S-Ethylcholestane (S27)	0.19	U

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	60	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 10:52

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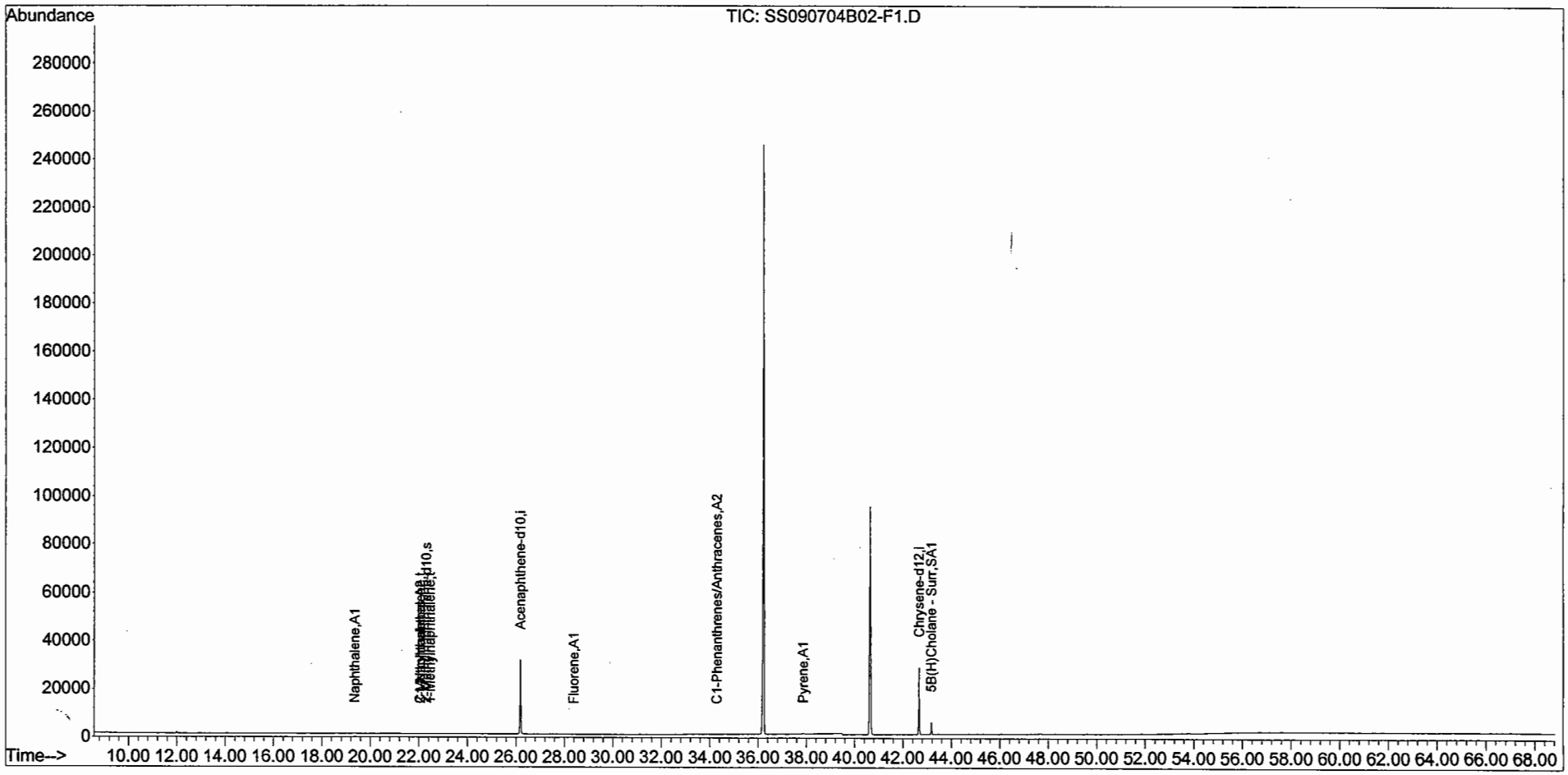
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH1\SEPT20A\
Data File : SS090704B02-F1.D
Acq On : 22 Sep 2004 12:25 pm
Operator : BL
Sample : SS090704B02-F1
Misc : 1X
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Sep 22 17:49:00 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration



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Form I
Alaska North Slope Crude
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS092304AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/17/04	100	0.05	10	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	76	30,31-Bishomohopane-22R (T27)	42
C24 Tricyclic Terpane (T5)	40	30,31-Trishomohopane-22S (T30)	48
C25 Tricyclic Terpane (T6)	35	30,31-Trishomohopane-22R (T31)	35
C24 Tetracyclic Terpane (T6a)	14	Tetrakishomohopane-22S (T32)	38
C26 Tricyclic Terpane-22S (T6b)	13	Tetrakishomohopane-22R (T33)	28
C26 Tricyclic Terpane-22R (T6c)	17	Pentakishomohopane-22S (T34)	46
C28 Tricyclic Terpane-22S (T7)	14	Pentakishomohopane-22R (T35)	34
C28 Tricyclic Terpane-22R (T8)	14	13b(H),17a(H)-20S-Diacholestane (S4)	52
C29 Tricyclic Terpane-22S (T9)	19	13b(H),17a(H)-20R-Diacholestane (S5)	36
C29 Tricyclic Terpane-22R (T10)	18	13b,17a-20S-Methyldiacholestane (S8)	27
18a-22,29,30-Trisnorneohopane-TS (T11)	24	14a(H),17a(H)-20S-Cholestane (S12)	37
17a(H)-22,29,30-Trisnorhopane-TM (T12)	30	14a(H),17a(H)-20R-Cholestane (S17)	82
17a/b,21b/a 28,30-Bisnorhopane (T14a)	9.0	13b,17a-20R-Ethyldiacholestane (S18)	37
17a(H),21b(H)-25-Norhopane (T14b)	28	13a,17b-20S-Ethyldiacholestane (S19)	28
30-Norhopane (T15)	110	14a,17a-20S-Methylcholestane (S20)	31
18a(H)-30-Norneohopane-C29Ts (T16)	21	14a,17a-20R-Methylcholestane (S24)	39
17a(H)-Diahopane (X)	11	14a(H),17a(H)-20S-Ethylcholestane (S25)	63
30-Normoretane (T17)	9.9	14a(H),17a(H)-20R-Ethylcholestane (S28)	70
18a(H)&18b(H)-Oleananes (T18)	0.55 U	14b(H),17b(H)-20R-Cholestane (S14)	75
Hopane (T19)	170	14b(H),17b(H)-20S-Cholestane (S15)	50
Moretane (T20)	22	14b,17b-20R-Methylcholestane (S22)	60
30-Homohopane-22S (T21)	81	14b,17b-20S-Methylcholestane (S23)	49
30-Homohopane-22R (T22)	69	14b(H),17b(H)-20R-Ethylcholestane (S26)	90
30,31-Bishomohopane-22S (T26)	59	14b(H),17b(H)-20S-Ethylcholestane (S27)	69

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 09:32

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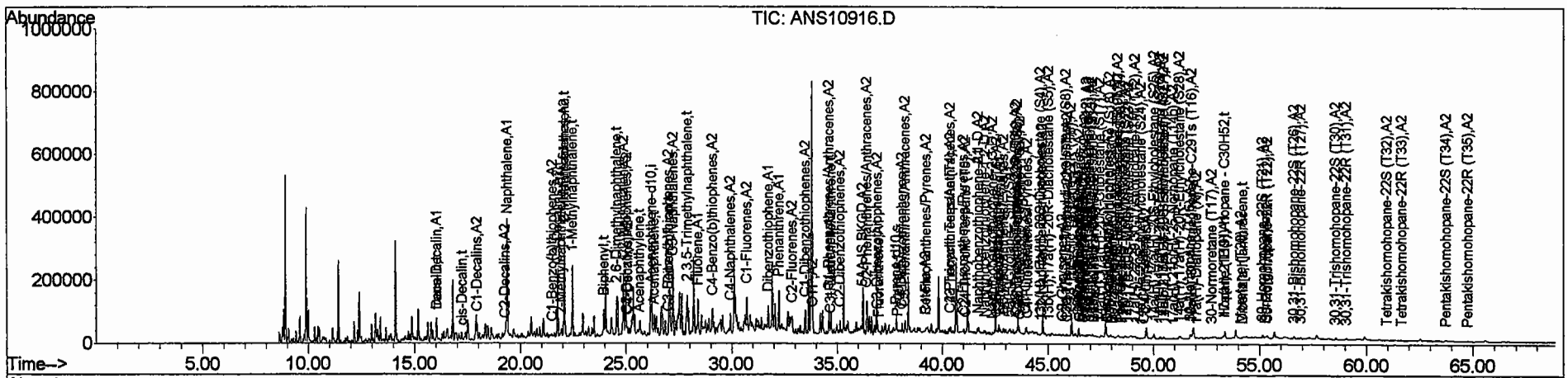
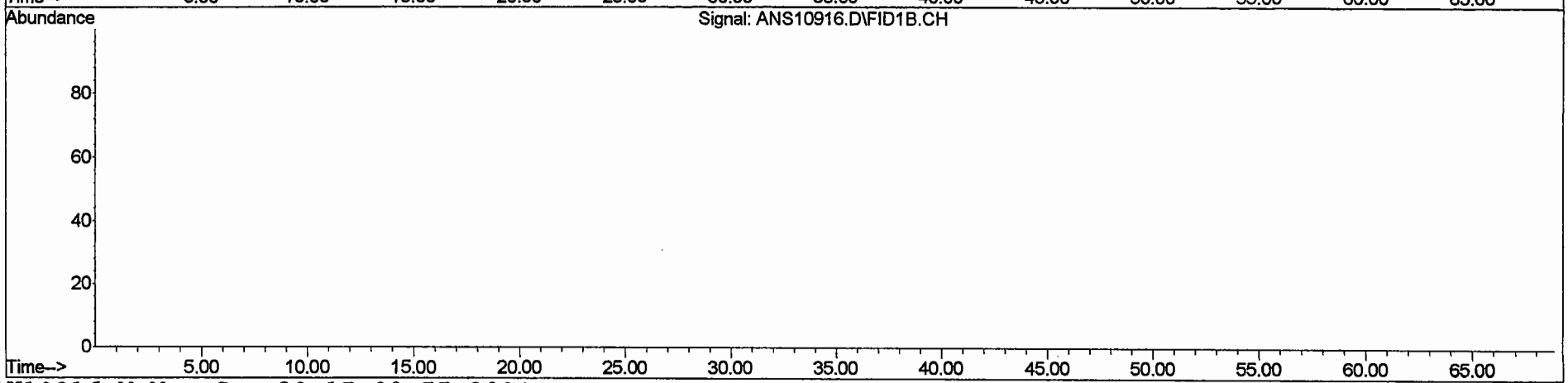
Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : ANS10916.D
Acq On : 17 Sep 2004 9:04 pm
Operator : BL
Sample : ANS10916
Misc : SW090104A 5.14 ug/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 15:09:03 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration





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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS100104AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Naphthalene	714.43	470	66	65-135
C1-Naphthalenes	1534.53	970	63[a]	65-135
C2-Naphthalenes	1897.27	1200	62[a]	65-135
C3-Naphthalenes	1436.53	860	60[a]	65-135
C4-Naphthalenes	773.42	490	63[a]	65-135
Biphenyl	216.49	140	65	65-135
Acenaphthene	15.55	15	96	65-135
Fluorene	87.56	76	87	65-135
C1-Fluorenes	219.89	180	82	65-135
C2-Fluorenes	341.2	290	85	65-135
C3-Fluorenes	299.61	280	93	65-135
Phenanthrene	272.58	270	100	65-135
C1-Phenanthrenes/Anthracenes	564.81	560	99	65-135
C2-Phenanthrenes/Anthracenes	660.43	630	95	65-135
C3-Phenanthrenes/Anthracenes	448.76	450	101	65-135
C4-Phenanthrenes/Anthracenes	175.88	180	101	65-135
Dibenzothiophene	218.8	200	89	65-135
C1-Dibenzothiophenes	434.54	320	73	65-135
C2-Dibenzothiophenes	551.44	540	98	65-135
C3-Dibenzothiophenes	460.96	490	107	65-135
C4-Dibenzothiophenes	236.77	230	98	65-135
Fluoranthene	4.26	5.0	116	65-135
Pyrene	15.56	15	96	65-135
C1-Fluoranthenes/Pyrenes	78.43	100	128	65-135
C2-Fluoranthenes/Pyrenes	132.93	140	107	65-135
C3-Fluoranthenes/Pyrenes	111.33	160	148[a]	65-135
Chrysene/Triphenylene	50.99	46	89	65-135
C1-Chrysenes	81.69	80	98	65-135
C2-Chrysenes	95.93	95	99	65-135
C3-Chrysenes	89.87	93	104	65-135
C4-Chrysenes	51.86	48	92	65-135
Benzo[b]fluoranthene	6.54	6.6	101	65-135
Benzo[e]pyrene	12.88	11	83	65-135

10/13/04 15:45

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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS100104AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Dibenz[a,h]anthracene	1.02	1.2	113	65-135
Benzo[g,h,i]perylene	3.35	3.5	106	65-135
Hopane (T19)	118.8	120	104	65-135

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/13/04 15:45

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Form I
Alaska North Slope Crude
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS100104AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/25/04	100	0.05	10	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	72	30,31-Bishomohopane-22R (T27)	30
C24 Tricyclic Terpane (T5)	40	30,31-Trishomohopane-22S (T30)	35
C25 Tricyclic Terpane (T6)	36	30,31-Trishomohopane-22R (T31)	24
C24 Tetracyclic Terpane (T6a)	14	Tetrakishomohopane-22S (T32)	26
C26 Tricyclic Terpane-22S (T6b)	15	Tetrakishomohopane-22R (T33)	18
C26 Tricyclic Terpane-22R (T6c)	19	Pentakishomohopane-22S (T34)	29
C28 Tricyclic Terpane-22S (T7)	13	Pentakishomohopane-22R (T35)	22
C28 Tricyclic Terpane-22R (T8)	12	13b(H),17a(H)-20S-Diacholestane (S4)	56
C29 Tricyclic Terpane-22S (T9)	18	13b(H),17a(H)-20R-Diacholestane (S5)	40
C29 Tricyclic Terpane-22R (T10)	17	13b,17a-20S-Methyldiacholestane (S8)	29
18a-22,29,30-Trisnorneohopane-TS (T11)	21	14a(H),17a(H)-20S-Cholestane (S12)	38
17a(H)-22,29,30-Trisnorhopane-TM (T12)	32	14a(H),17a(H)-20R-Cholestane (S17)	85
17a/b,21b/a 28,30-Bisnorhopane (T14a)	8.6	13b,17a-20R-Ethyldiacholestane (S18)	37
17a(H),21b(H)-25-Norhopane (T14b)	22	13a,17b-20S-Ethyldiacholestane (S19)	23
30-Norhopane (T15)	91	14a,17a-20S-Methylcholestane (S20)	39
18a(H)-30-Norneohopane-C29Ts (T16)	19	14a,17a-20R-Methylcholestane (S24)	37
17a(H)-Diahopane (X)	7.3	14a(H),17a(H)-20S-Ethylcholestane (S25)	55
30-Normoretane (T17)	7.6	14a(H),17a(H)-20R-Ethylcholestane (S28)	59
18a(H)&18b(H)-Oleananes (T18)	0.55 U	14b(H),17b(H)-20R-Cholestane (S14)	69
Hopane (T19)	120	14b(H),17b(H)-20S-Cholestane (S15)	50
Moretane (T20)	17	14b,17b-20R-Methylcholestane (S22)	54
30-Homohopane-22S (T21)	59	14b,17b-20S-Methylcholestane (S23)	45
30-Homohopane-22R (T22)	51	14b(H),17b(H)-20R-Ethylcholestane (S26)	81
30,31-Bishomohopane-22S (T26)	42	14b(H),17b(H)-20S-Ethylcholestane (S27)	61

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:25

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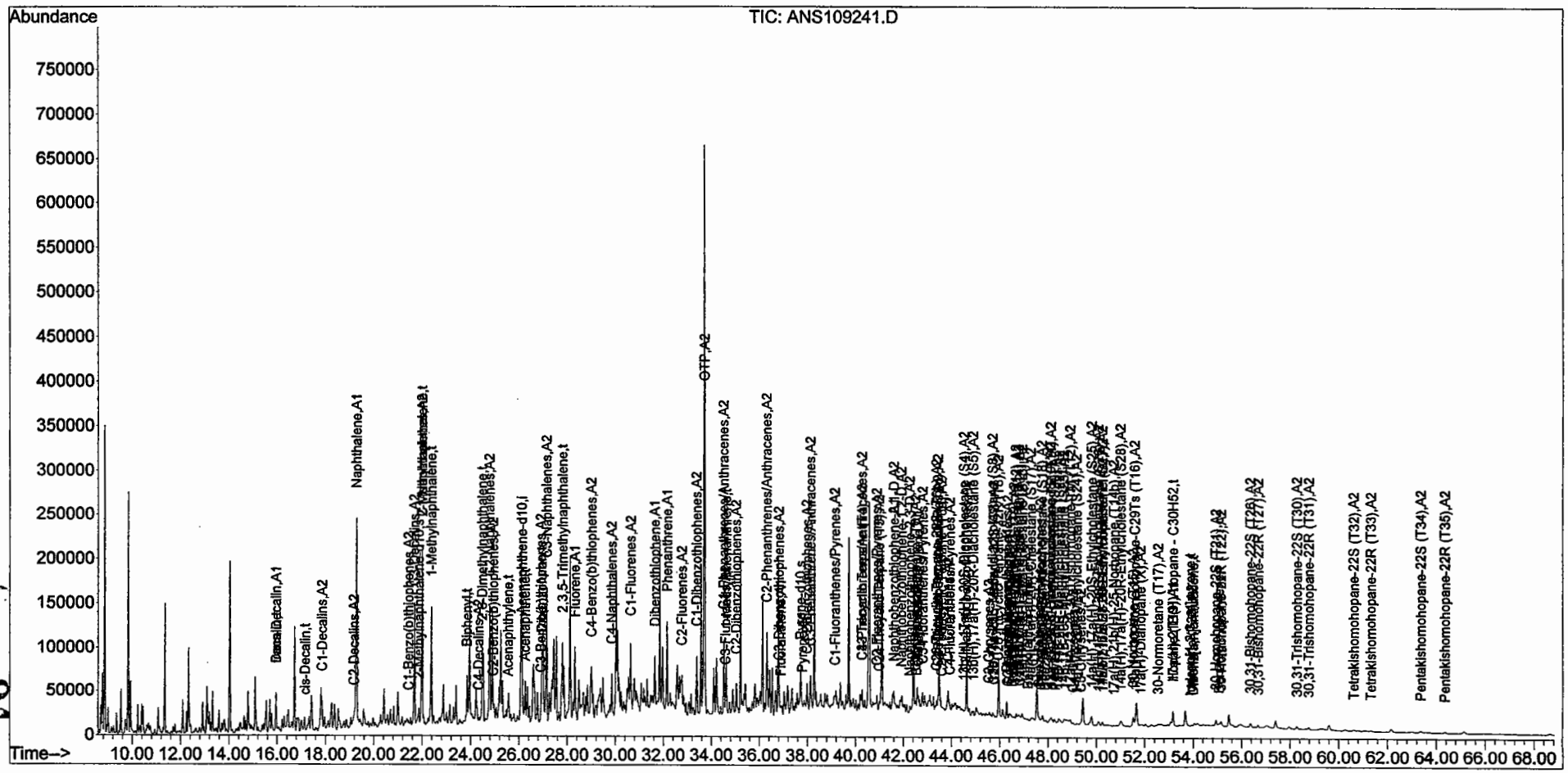
Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\SEPT24\
Data File : ANS109241.D
Acq On : 25 Sep 2004 4:23 am
Operator : BL
Sample : ANS109241
Misc : SW090104A 5.14 mg/mL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 27 07:06:29 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 06:37:35 2004
Response via : Initial Calibration



Supporting Quality Control Results

Form IV
Method Blank Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02**
Date Analyzed: **09/20/04 19:48**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS090704BS02	09/20/04 21:06
LCSD	SS090704BSD02	09/20/04 22:25
DSY-SD-101-0006	0408123-01	09/20/04 23:44
DSY-SD-101-0612	0408123-02	09/21/04 01:03
DSY-SD-103-0006	0408123-03	09/21/04 02:21
DSY-SD-103-0612	0408123-04	09/21/04 03:40
DSY-SD-104-0006	0408123-05	09/21/04 04:59
DSY-SD-104-0612	0408123-06	09/21/04 06:18
DSY-SD-02-082504	0408123-07	09/21/04 07:37
DSY-SD-DUP01-082504	0408123-08	09/21/04 10:14
DSY-SD-28-082504	0408123-09	09/21/04 11:33
DSY-SD-06-082504	0408123-10	09/21/04 14:11
DSY-SD-09-082604	0408123-11	09/21/04 15:30
DSY-SD-09-082604	0408123-11 D	09/21/04 16:49
DSY-SD-09-082604	0408123-11 M	09/21/04 18:07
DSY-SD-03-082604	0408123-12	09/21/04 19:26
DSY-SD-29-082604	0408123-13	09/21/04 20:45
DSY-SD-05-082604	0408123-14	09/22/04 08:28
DSY-SD-DUP02-082604	0408123-15	09/22/04 09:47

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form IV
Method Blank Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02F1**
Date Analyzed: **09/22/04 12:25**

Client ID	Lab ID	Date/Time Analyzed
DSY-SD-101-0006	0408123-01F1	09/22/04 16:23
DSY-SD-101-0612	0408123-02F1	09/22/04 17:43
DSY-SD-103-0006	0408123-03F1	09/22/04 19:02
DSY-SD-103-0612	0408123-04F1	09/22/04 20:21
DSY-SD-104-0006	0408123-05F1	09/22/04 21:40
DSY-SD-104-0612	0408123-06F1	09/22/04 22:59
DSY-SD-02-082504	0408123-07F1	09/23/04 00:18
DSY-SD-DUP01-082504	0408123-08F1	09/25/04 10:57
DSY-SD-28-082504	0408123-09F1	09/25/04 12:16
DSY-SD-06-082504	0408123-10F1	09/25/04 13:35
DSY-SD-09-082604	0408123-11F1	09/25/04 14:54
DSY-SD-09-082604	0408123-11F1 D	09/25/04 16:13
DSY-SD-03-082604	0408123-12F1	09/25/04 18:52
DSY-SD-29-082604	0408123-13F1	09/25/04 20:11
DSY-SD-05-082604	0408123-14F1	09/25/04 21:30
DSY-SD-DUP02-082604	0408123-15F1	09/25/04 22:49

N/A - Not Applicable

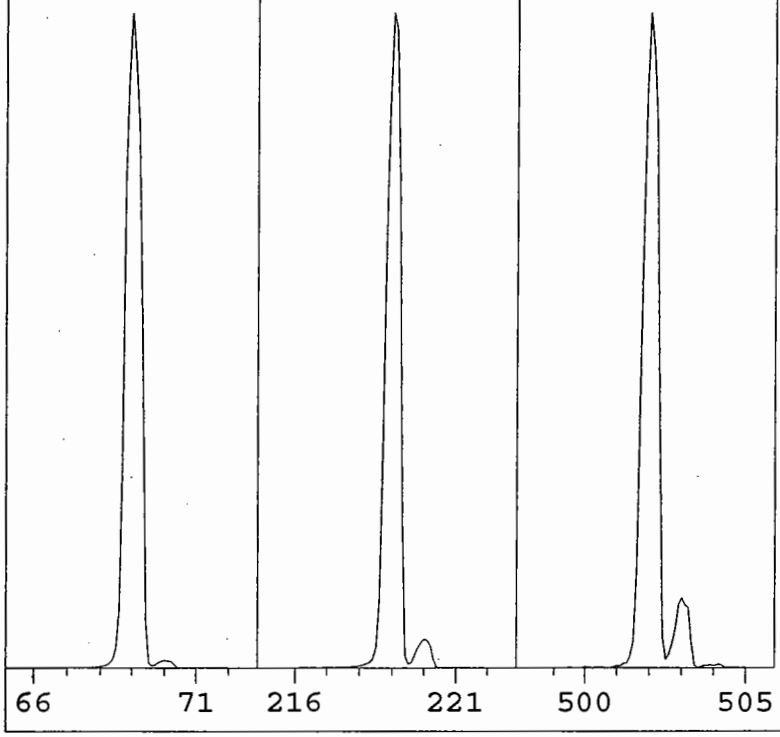
375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

5973 QuickTune

Fri Sep 17 09:54:53 2004 Instrument: PAHINST1

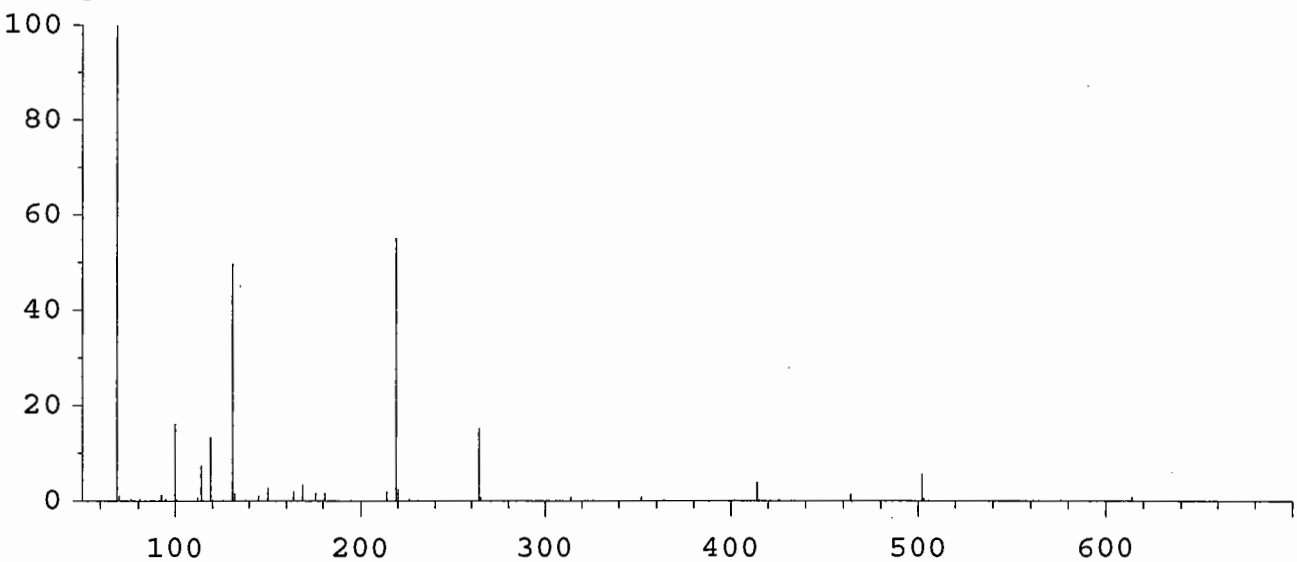
C:\MSDCHEM\1\5973N\PFTBA.U BL

Mass	69.00	Mass	219.00	Mass	502.00
Ab	337654	Ab	193051	Ab	19357
Pw50	0.55	Pw50	0.50	Pw50	0.55



Ion Pol	POS	MassGain	-337
		MassOffs	-9
Emission	34.6	AmuGain	2037
ElEnrgy	69.9	AmuOffs	136
Filament	1	Wid219	-0.043
		DC Pol	NEG
Repeller	26.44		
IonFcus	90.2	HEDEnab	ON
EntLens	0.0	EMVolts	1141
EntOffs	VAR		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 50.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
109 peaks Base: 69.00 Abundance: 301120



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	301120	100.00	70.00	3282	1.09
219.00	166208	55.20	220.00	7442	4.48
502.00	17232	5.72	503.00	1666	9.67

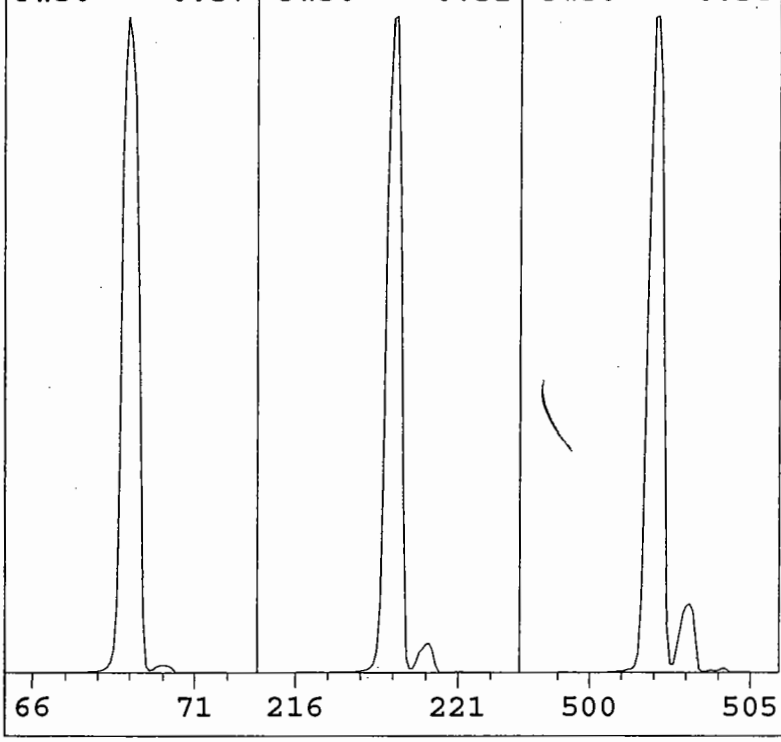
TARGET MASS:	50	69	131	219	414	502
DYNAMIC ENT OFFSET:	17.8	15.3	14.3	14.8	13.1	17.3
TARGET ABUND(%):	1.0	100.0	45.0	55.0	3.5	5.5
ACTUAL TUNE ABUND(%):	1.1	100.0	49.9	55.2	3.9	5.7

5973 Tune

Fri Sep 24 09:31:19 2004 Instrument: PAHINST1

C:\MSDCHEM\1\5973N\PBTBA.U

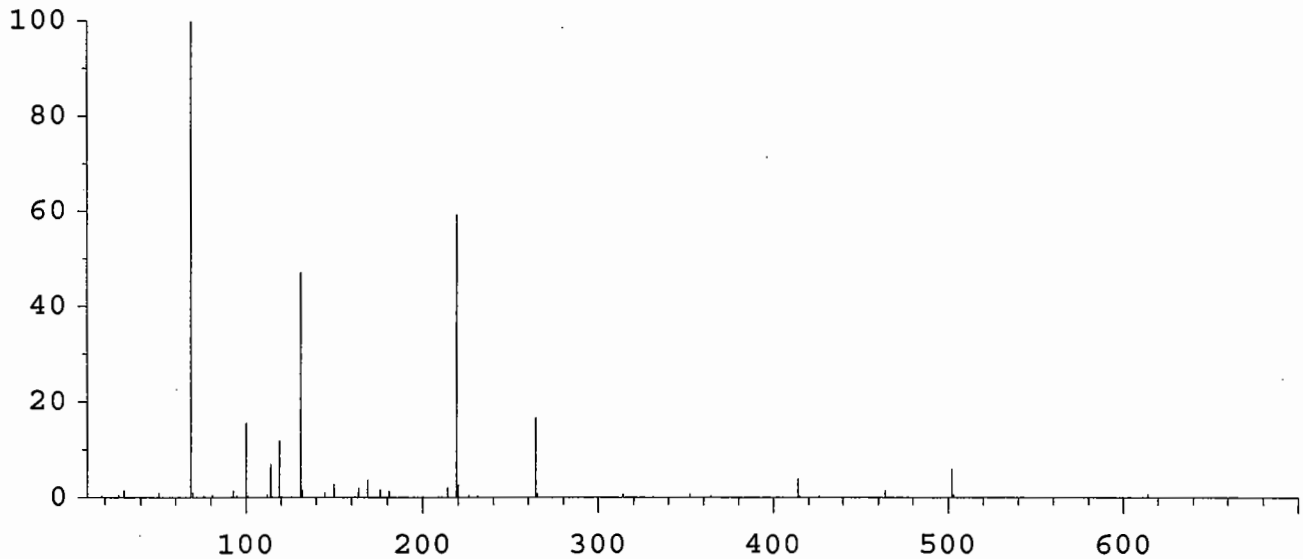
Mass	69.00	Mass	219.10	Mass	502.10
Ab	332270	Ab	201067	Ab	20622
Pw50	0.57	Pw50	0.51	Pw50	0.54



Ion Pol	POS	MassGain	-334
		MassOffs	-9
Emission	34.6	AmuGain	2045
ElEnrgy	69.9	AmuOffs	135
Filament	1	Wid219	-0.043
		DC Pol	NEG
Repeller	27.11		
IonFcus	90.2	HEDEnab	ON
EntLens	0.0	EMVolts	1094
EntOffs	VAR		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	TurboSpd	100
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

101 peaks Base: 69.00 Abundance: 305984



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	305984	100.00	70.00	3235	1.06
219.00	181504	59.32	220.00	8155	4.49
502.00	18496	6.04	503.10	1940	10.49

TARGET MASS:	50	69	131	219	414	502
DYNAMIC ENT OFFSET:	16.8	15.3	14.3	15.8	14.1	18.6
TARGET ABUND(%):	1.0	100.0	45.0	55.0	3.5	5.5
ACTUAL TUNE ABUND(%):	1.0	100.0	47.2	59.3	4.0	6.0

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

V.W.J 9/22/04

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D 10000 = I 109167
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
1)	i	Acenaphthene-d10	----------ISTD----------							
2)	t	Decalin	0.261	0.261	0.238	0.254	0.263	0.259	0.259	4.40
3)	A1	trans-Decalin	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
4)	t	cis-Decalin	0.421	0.384	0.351	0.399	0.406	0.398	0.398	6.35
5)	A2	C1-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
6)	A2	C2-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
7)	A2	C3-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
8)	A2	C4-Decalins	0.591	0.522	0.478	0.510	0.527	0.519	0.528	6.71
9)	A1	Naphthalene	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
10)	A2	C1-Naphthalenes	3.263	2.709	2.551	2.758	2.829	2.737	2.820	7.89
11)	A2	C2-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
12)	A2	C3-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
13)	A2	C4-Naphthalenes	3.254	2.709	2.551	2.758	2.829	2.737	2.819	7.78
14)	s	2-Methylnaphthale	1.006	1.137	1.124	1.240	1.296	1.272	1.206	10.19
15)	t	2-Methylnaphthale	1.689	1.647	1.565	1.725	1.780	1.714	1.704	4.84
16)	t	1-Methylnaphthale	1.604	1.494	1.414	1.546	1.608	1.559	1.553	5.03
17)	A1	Benzothiophene	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
18)	A2	C1-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
19)	A2	C2-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
20)	A2	C3-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
21)	A2	C4-Benzo(b)thioph	2.308	2.246	2.216	2.441	2.484	2.395	2.375	5.15
22)	t	Biphenyl	1.836	1.824	1.767	2.006	1.993	2.044	1.948	7.36
23)	t	2,6-Dimethylnapht	1.274	1.189	1.191	1.311	1.375	1.367	1.308	7.49
24)	t	Dibenzofuran	2.167	2.006	1.948	2.179	2.260	2.223	2.158	6.26
25)	t	Acenaphthylene	2.170	2.124	1.997	2.315	2.455	2.539	2.333	11.06
26)	t	Acenaphthene	1.454	1.386	1.335	1.467	1.533	1.504	1.467	5.88
27)	t	2,3,5-Trimethylna	1.150	0.985	0.955	1.058	1.122	1.140	1.089	8.61
28)	A1	Fluorene	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
29)	A2	C1-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
30)	A2	C2-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
31)	A2	C3-Fluorenes	1.803	1.477	1.405	1.495	1.593	1.611	1.583	8.69
32)	A1	Dibenzothiophene	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
33)	A2	OTP	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
34)	A2	C1-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
35)	A2	C2-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
36)	A2	C3-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
37)	A2	C4-Dibenzothiophe	2.007	1.936	1.962	2.149	2.302	2.369	2.178	10.34
38)	A1	Phenanthrene	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
39)	A2	C1-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
40)	A2	C2-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
41)	A2	5AA IS BKGD	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
42)	A2	C3-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
43)	A2	C4-Phenanthrenes/	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
44)	A2	Retene	1.752	1.933	1.919	2.004	2.126	2.173	2.024	8.64
45)	t	Anthracene	2.687	1.579	1.629	1.834	2.025	2.126	2.027	19.35

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
46)	t	Carbazole							0.000#	-1.00
47)	t	1-Methylphenanthr	1.077	1.123	1.120	1.207	1.312	1.371	1.239	11.75
48)	A1	Fluoranthene	3.007	1.710	1.671	1.745	1.941	2.040	2.045	22.79
49)	A2	Benzo(b)fluorene	3.007	1.710	1.671	1.745	1.941	2.040	2.045	22.79
50)	s	Pyrene-d10	0.964	1.053	1.068	1.142	1.252	1.323	1.178	14.29
51)	A1	Pyrene		2.275	1.864	1.804	1.967	1.974	2.002	8.68
52)	A2	C1-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
53)	A2	C2-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
54)	A2	C3-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
55)	A2	C4-Fluoranthenes/		2.275	1.864	1.804	1.967	1.974	2.002	8.68
56)	A1	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
57)	A2	Naphthobenzothiop	1.783	1.611	1.651	1.667	1.825	1.847	1.775	8.42
58)	A2	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
59)	A2	Naphthobenzothiop	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
60)	A2	C1-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
61)	A2	C2-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
62)	A2	C3-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
63)	A2	C4-Naphthobenzoth	1.791	1.611	1.651	1.667	1.825	1.847	1.776	8.42
64)	i	Chrysene-d12	----------ISTD----------							
65)	t	Benz[a]anthracene	1.763	1.503	1.389	1.460	1.528	1.553	1.558	8.56
66)	t	Chrysene	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
67)	A1	Chrysene/Tripheny	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
68)	A2	C1-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
69)	A2	C2-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
70)	A2	BBF-d12 Surr BKGD	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
71)	A2	C3-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
72)	A2	C4-Chrysenes	1.567	1.376	1.370	1.509	1.543	1.516	1.495	5.84
73)	s	Benzo[b]fluoranth	0.975	1.085	0.975	1.105	1.146	1.184	1.111	10.62
74)	t	Benzo[b]fluoranth	1.815	1.692	1.496	1.744	1.828	1.805	1.764	8.29
75)	A1	Benzo[k]fluoranth	1.796	1.668	1.505	1.742	1.803	1.788	1.750	7.84
76)	A2	Benzo[a]fluoranth	1.796	1.668	1.505	1.742	1.803	1.788	1.750	7.84
77)	t	Benzo[e]pyrene	1.789	1.652	1.447	1.651	1.710	1.708	1.688	7.69
78)	t	Benzo[a]pyrene	1.787	1.677	1.424	1.652	1.710	1.774	1.709	9.16
79)	t	Perylene	1.755	1.622	1.387	1.624	1.688	1.727	1.668	9.08
80)	t	Indeno[1,2,3-cd]p	1.885	1.722	1.448	1.773	1.797	1.914	1.790	9.83
81)	t	Dibenz[a,h]anthra	1.630	1.611	1.388	1.703	1.743	1.797	1.677	9.26
82)	t	Benzo[g,h,i]peryl	1.848	1.831	1.591	1.942	1.970	2.002	1.885	7.84
83)	t	17a(H),21B(H)-hop	0.821	0.779	0.659	0.713	0.702	0.603	0.703	10.89
84)	A1	Hopane (T19)	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
85)	A2	C23 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
86)	A2	C24 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
87)	A2	C25 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
88)	A2	C24 Tetracyclic T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
89)	A2	C26 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
90)	A2	C26 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10916.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 20 10:36:48 2004
Response Via : Initial Calibration

Calibration Files
10 =I109161.D 25 =I109162.D 100 =I109163.D
500 =I109164.D 1250=I109165.D 5000=I109166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
91)	A2	C28 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
92)	A2	C28 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
93)	A2	C29 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
94)	A2	C29 Tricyclic Ter	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
95)	A2	18a-22,29,30-Tris	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
96)	A2	17a(H)-22,29,30-T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
97)	A2	17a/b,21b/a 28,30	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
98)	A2	17a(H),21b(H)-25-	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
99)	A2	30-Norhopane (T15	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
100)	A2	18a(H)-30-Norneoh	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
101)	A2	17a(H)-Diahopane	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
102)	A2	30-Normoretane (T	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
103)	A2	18a(H)&18b(H)-Ole	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
104)	A2	Moretane (T20)	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
105)	A2	30-Homohopane-22S	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
106)	A2	30-Homohopane-22R	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
107)	A2	30,31-Bishomohopa	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
108)	A2	30,31-Bishomohopa	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
109)	A2	30,31-Trishomohop	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
110)	A2	30,31-Trishomohop	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
111)	A2	Tetrakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
112)	A2	Tetrakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
113)	A2	Pentakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
114)	A2	Pentakishomohopan	0.876	0.779	0.659	0.713	0.702	0.603	0.711	12.92
115)	SA1	5B(H)Cholane - Su	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
116)	A2	13b(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
117)	A2	13b(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
118)	A2	13b,17a-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
119)	A2	14a(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
120)	A2	14a(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
121)	A2	13b,17a-20R-Ethyl	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
122)	A2	13a,17b-20S-Ethyl	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
123)	A2	14a,17a-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
124)	A2	14a,17a-20R-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
125)	A2	14a(H),17a(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
126)	A2	14a(H),17a(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
127)	A2	14b(H),17b(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
128)	A2	14b(H),17b(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
129)	A2	14b,17b-20R-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
130)	A2	14b,17b-20S-Methy	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
131)	A2	14b(H),17b(H)-20R	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41
132)	A2	14b(H),17b(H)-20S	0.250	0.201	0.186	0.198	0.199	0.209	0.210	10.41

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	109	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.000#	100.0#	0#	-16.01#
4	t	cis-Decalin	0.398	0.000#	100.0#	0#	-17.23#
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.501	11.3	99	0.00
10	A2	C1-Naphthalenes	2.820	2.949	-4.6	116	0.01
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.244	-3.2	109	0.00
15	t	2-Methylnaphthalene	1.704	1.500	12.0	95	0.01
16	t	1-Methylnaphthalene	1.553	1.447	6.8	102	0.00
17	A1	Benzothiophene	2.375	0.000#	100.0#	0#	-19.55#
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.807	7.2	98	0.00
23	t	2,6-Dimethylnaphthalene	1.308	1.198	8.4	99	0.00
24	t	Dibenzofuran	2.158	1.922	10.9	96	0.00
25	t	Acenaphthylene	2.333	1.960	16.0	92	0.00
26	t	Acenaphthene	1.467	1.338	8.8	99	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	0.995	8.6	102	0.00
28	A1	Fluorene	1.583	1.364	13.8	99	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	0.013#	99.4#	1#	0.01
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.852	8.5	100	0.00

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.696	16.3	101	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#
47	t	1-Methylphenanthrene	1.239	1.152	7.0	104	0.00
48	A1	Fluoranthene	2.045	1.671	18.3	104	0.00
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.218	-3.4	116	0.00
51	A1	Pyrene	2.002	1.746	12.8	105	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	0.000#	100.0#	0#	-41.72#
57	A2	Naphthobenzothiophene-2,1-D	1.775	0.000#	100.0#	0#	-41.72#
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	107	0.00
65	t	Benz[a]anthracene	1.558	1.477	5.2	108	-0.01
66	t	Chrysene	1.495	1.398	6.5	99	0.00
67	A1	Chrysene/Triphenylene	1.495	1.398	6.5	99	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.137	-2.3	110	-0.01
74	t	Benzo[b]fluoranthene	1.764	1.608	8.8	99	-0.01
75	A1	Benzo[k]fluoranthene	1.750	1.618	7.5	99	-0.01

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.586	6.0	103	-0.01
78	t	Benzo[a]pyrene	1.709	1.593	6.8	103	-0.02
79	t	Perylene	1.668	1.626	2.5	107	-0.02
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.654	7.6	100	-0.04
81	t	Dibenz[a,h]anthracene	1.677	1.550	7.6	97	-0.04
82	t	Benzo[g,h,i]perylene	1.885	1.747	7.3	96	-0.02
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.000#	100.0#	0#	-53.35#
84	A1	Hopane (T19)	0.711	0.000#	100.0#	0#	-53.35#
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT17\
Data File : Q10916.D
Acq On : 17 Sep 2004 10:23 pm
Operator : BL
Sample : Q10916
Misc : SW083104A 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 10:52:33 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 10:36:48 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.214	-1.9	116	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10924.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 27 07:40:38 2004
Response Via : Initial Calibration

Calibration Files
10 =I1092401.D 25 =I1092402.D 100 =I1092403.D
500 =I1092404.D 1250=I1092405.D 5000=I1092406.D

DVS 9-27-04

		Compound	10	25	100	500	1250	5000	Avg	%RSD
1)	i	Acenaphthene-d10	----------ISTD----------							
2)	t	Decalin	0.623	0.475	0.403	0.417	0.418	0.424	0.455	17.05
3)	A1	trans-Decalin	0.475	0.465	0.428	0.455	0.468	0.478	0.468	4.98
4)	t	cis-Decalin	0.365	0.378	0.327	0.354	0.366	0.367	0.364	5.35
5)	A2	C1-Decalins	0.475	0.465	0.428	0.455	0.468	0.478	0.468	4.98
6)	A2	C2-Decalins	0.475	0.465	0.428	0.455	0.468	0.478	0.468	4.98
7)	A2	C3-Decalins	0.475	0.465	0.428	0.455	0.468	0.478	0.468	4.98
8)	A2	C4-Decalins	0.475	0.465	0.428	0.455	0.468	0.478	0.468	4.98
9)	A1	Naphthalene	2.722	2.427	2.342	2.491	2.530	2.503	2.521	4.98
10)	A2	C1-Naphthalenes	2.722	2.427	2.342	2.491	2.530	2.503	2.521	4.98
11)	A2	C2-Naphthalenes	2.722	2.427	2.342	2.491	2.530	2.503	2.521	4.98
12)	A2	C3-Naphthalenes	2.722	2.427	2.342	2.491	2.530	2.503	2.521	4.98
13)	A2	C4-Naphthalenes	2.722	2.427	2.342	2.491	2.530	2.503	2.521	4.98
14)	s	2-Methylnaphthale	0.947	1.031	1.038	1.150	1.194	1.202	1.119	10.37
15)	t	2-Methylnaphthale	1.831	1.512	1.468	1.578	1.626	1.597	1.612	7.34
16)	t	1-Methylnaphthale	1.920	1.574	1.338	1.418	1.465	1.443	1.525	12.44
17)	A1	Benzothiophene	1.926	1.977	2.008	2.170	2.235	2.200	2.119	6.98
18)	A2	C1-Benzo(b)thioph	1.926	1.977	2.008	2.170	2.235	2.200	2.119	6.98
19)	A2	C2-Benzo(b)thioph	1.926	1.977	2.008	2.170	2.235	2.200	2.119	6.98
20)	A2	C3-Benzo(b)thioph	1.926	1.977	2.008	2.170	2.235	2.200	2.119	6.98
21)	A2	C4-Benzo(b)thioph	1.926	1.977	2.008	2.170	2.235	2.200	2.119	6.98
22)	t	Biphenyl	1.759	1.646	1.745	1.876	1.934	1.929	1.843	7.07
23)	t	2,6-Dimethylnapht	1.202	1.099	1.124	1.242	1.307	1.313	1.238	8.37
24)	t	Dibenzofuran	1.888	1.911	1.849	2.083	2.186	2.174	2.052	8.23
25)	t	Acenaphthylene	2.085	2.004	1.932	2.138	2.276	2.412	2.203	10.41
26)	t	Acenaphthene	1.345	1.303	1.305	1.417	1.469	1.466	1.405	6.34
27)	t	2,3,5-Trimethylna	1.054	1.010	0.982	1.087	1.142	1.154	1.092	7.66
28)	A1	Fluorene	1.431	1.412	1.383	1.529	1.612	1.639	1.533	8.47
29)	A2	C1-Fluorenes	1.431	1.412	1.383	1.529	1.612	1.639	1.533	8.47
30)	A2	C2-Fluorenes	1.431	1.412	1.383	1.529	1.612	1.639	1.533	8.47
31)	A2	C3-Fluorenes	1.431	1.412	1.383	1.529	1.612	1.639	1.533	8.47
32)	A1	Dibenzothiophene	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
33)	A2	OTP	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
34)	A2	C1-Dibenzothiophe	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
35)	A2	C2-Dibenzothiophe	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
36)	A2	C3-Dibenzothiophe	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
37)	A2	C4-Dibenzothiophe	2.195	2.090	2.129	2.402	2.524	2.579	2.379	10.41
38)	A1	Phenanthrene	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
39)	A2	C1-Phenanthrenes/	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
40)	A2	C2-Phenanthrenes/	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
41)	A2	5AA IS BKGD	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
42)	A2	C3-Phenanthrenes/	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
43)	A2	C4-Phenanthrenes/	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
44)	A2	Retene	2.297	2.113	1.999	2.281	2.377	2.449	2.297	8.41
45)	t	Anthracene	1.946	1.833	1.808	2.112	2.259	2.414	2.133	13.63

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10924.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 27 07:40:38 2004
Response Via : Initial Calibration

Calibration Files
10 =I1092401.D 25 =I1092402.D 100 =I1092403.D
500 =I1092404.D 1250=I1092405.D 5000=I1092406.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
46)	t	Carbazole	0.016		0.005	0.005	0.004	0.005	0.007#	66.17
47)	t	1-Methylphenanthr	1.527	1.341	1.331	1.483	1.583	1.689	1.536	11.19
48)	A1	Fluoranthene	2.407	2.181	2.079	2.347	2.527	2.699	2.444	11.37
49)	A2	Benzo(b)fluorene	2.407	2.181	2.079	2.347	2.527	2.699	2.444	11.37
50)	s	Pyrene-d10	1.345	1.432	1.391	1.579	1.701	1.791	1.598	14.08
51)	A1	Pyrene		2.435	2.168	2.453	2.579	2.647	2.513	8.57
52)	A2	C1-Fluoranthenes/		2.435	2.168	2.453	2.579	2.647	2.513	8.57
53)	A2	C2-Fluoranthenes/		2.435	2.168	2.453	2.579	2.647	2.513	8.57
54)	A2	C3-Fluoranthenes/		2.435	2.168	2.453	2.579	2.647	2.513	8.57
55)	A2	C4-Fluoranthenes/		2.435	2.168	2.453	2.579	2.647	2.513	8.57
56)	A1	Naphthobenzothiop	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
57)	A2	Naphthobenzothiop	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
58)	A2	Naphthobenzothiop	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
59)	A2	Naphthobenzothiop	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
60)	A2	C1-Naphthobenzoth	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
61)	A2	C2-Naphthobenzoth	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
62)	A2	C3-Naphthobenzoth	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
63)	A2	C4-Naphthobenzoth	2.296	2.016	1.999	2.247	2.434	2.618	2.342	12.52
64)	i	Chrysene-d12	----------ISTD----------							
65)	t	Benz[a]anthracene	1.818	1.499	1.320	1.402	1.480	1.597	1.545	11.16
66)	t	Chrysene	1.486	1.384	1.336	1.467	1.527	1.508	1.466	5.38
67)	A1	Chrysene/Tripheny	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
68)	A2	C1-Chrysenes	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
69)	A2	C2-Chrysenes	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
70)	A2	BBF-d12 Surr BKGD	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
71)	A2	C3-Chrysenes	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
72)	A2	C4-Chrysenes	1.478	1.384	1.336	1.467	1.527	1.509	1.465	5.38
73)	s	Benzo[b]fluoranth	0.868	0.883	0.812	0.895	0.950	1.017	0.932	10.43
74)	t	Benzo[b]fluoranth	1.439	1.353	1.248	1.405	1.478	1.529	1.439	8.36
75)	A1	Benzo[k]fluoranth	1.448	1.335	1.222	1.370	1.457	1.505	1.418	8.45
76)	A2	Benzo[a]fluoranth	1.448	1.335	1.222	1.370	1.457	1.505	1.418	8.45
77)	t	Benzo[e]pyrene	1.322	1.259	1.150	1.251	1.329	1.365	1.305	7.55
78)	t	Benzo[a]pyrene	1.341	1.221	1.103	1.185	1.284	1.362	1.280	9.44
79)	t	Perylene	1.341	1.182	1.048	1.162	1.251	1.344	1.249	10.20
80)	t	Indeno[1,2,3-cd]p	1.260	1.107	0.999	1.095	1.186	1.253	1.174	9.63
81)	t	Dibenz[a,h]anthra	1.167	1.013	1.018	1.090	1.169	1.196	1.130	8.18
82)	t	Benzo[g,h,i]peryl	1.301	1.235	1.118	1.237	1.306	1.315	1.267	6.20
83)	t	17a(H),21B(H)-hop	0.722	0.637	0.510	0.523	0.524	0.467	0.553	16.66
84)	A1	Hopane (T19)	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
85)	A2	C23 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
86)	A2	C24 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
87)	A2	C25 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
88)	A2	C24 Tetracyclic T	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
89)	A2	C26 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
90)	A2	C26 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24

Response Factor Report PAHINST1

Method Path : C:\MSDCHEM\1\METHODS\
Method File : PAH10924.M
Title : Decalins & Alkylated PAH's
Last Update : Mon Sep 27 07:40:38 2004
Response Via : Initial Calibration

Calibration Files
10 =I1092401.D 25 =I1092402.D 100 =I1092403.D
500 =I1092404.D 1250=I1092405.D 5000=I1092406.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
91)	A2	C28 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
92)	A2	C28 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
93)	A2	C29 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
94)	A2	C29 Tricyclic Ter	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
95)	A2	18a-22,29,30-Tris	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
96)	A2	17a(H)-22,29,30-T	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
97)	A2	17a/b,21b/a 28,30	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
98)	A2	17a(H),21b(H)-25-	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
99)	A2	30-Norhopane (T15	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
100)	A2	18a(H)-30-Norneoh	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
101)	A2	17a(H)-Diahopane	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
102)	A2	30-Normoretane (T	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
103)	A2	18a(H)&18b(H)-Ole	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
104)	A2	Moretane (T20)	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
105)	A2	30-Homohopane-22S	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
106)	A2	30-Homohopane-22R	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
107)	A2	30,31-Bishomohopa	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
108)	A2	30,31-Bishomohopa	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
109)	A2	30,31-Trishomohop	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
110)	A2	30,31-Trishomohop	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
111)	A2	Tetrakishomohopan	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
112)	A2	Tetrakishomohopan	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
113)	A2	Pentakishomohopan	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
114)	A2	Pentakishomohopan	0.722	0.619	0.512	0.523	0.524	0.467	0.551	16.24
115)	SA1	5B(H)Cholane - Su	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
116)	A2	13b(H),17a(H)-20S	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
117)	A2	13b(H),17a(H)-20R	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
118)	A2	13b,17a-20S-Methy	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
119)	A2	14a(H),17a(H)-20S	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
120)	A2	14a(H),17a(H)-20R	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
121)	A2	13b,17a-20R-Ethyl	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
122)	A2	13a,17b-20S-Ethyl	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
123)	A2	14a,17a-20S-Methy	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
124)	A2	14a,17a-20R-Methy	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
125)	A2	14a(H),17a(H)-20S	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
126)	A2	14a(H),17a(H)-20R	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
127)	A2	14b(H),17b(H)-20R	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
128)	A2	14b(H),17b(H)-20S	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
129)	A2	14b,17b-20R-Methy	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
130)	A2	14b,17b-20S-Methy	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
131)	A2	14b(H),17b(H)-20R	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59
132)	A2	14b(H),17b(H)-20S	0.248	0.231	0.187	0.207	0.210	0.221	0.221	9.59

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : Q1092402.D
Acq On : 25 Sep 2004 5:42 am
Operator : BL
Sample : Q1092402
Misc : SW083104A 500 ng/mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 27 07:57:29 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

MB 9-27-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	111	0.00
2	t	Decalin	0.455	0.000#	100.0#	0#	-15.95#
3	A1	trans-Decalin	0.468	0.000#	100.0#	0#	-15.95#
4	t	cis-Decalin	0.364	0.000#	100.0#	0#	-17.16#
5	A2	C1-Decalins	0.468	0.000#	100.0#	0#	-17.86#
6	A2	C2-Decalins	0.468	0.000#	100.0#	0#	-19.17#
7	A2	C3-Decalins	0.468	0.000#	100.0#	0#	-21.68#
8	A2	C4-Decalins	0.468	0.000#	100.0#	0#	-24.33#
9	A1	Naphthalene	2.521	2.266	10.1	101	0.00
10	A2	C1-Naphthalenes	2.521	2.739	-8.6	122	0.38
11	A2	C2-Naphthalenes	2.521	0.000#	100.0#	0#	-24.78#
12	A2	C3-Naphthalenes	2.521	0.000#	100.0#	0#	-27.15#
13	A2	C4-Naphthalenes	2.521	0.000#	100.0#	0#	-29.85#
14	s	2-Methylnaphthalene-d10	1.119	1.164	-4.0	113	0.00
15	t	2-Methylnaphthalene	1.612	1.390	13.8	98	0.00
16	t	1-Methylnaphthalene	1.525	1.350	11.5	106	0.00
17	A1	Benzothiophene	2.119	0.000#	100.0#	0#	-19.48#
18	A2	C1-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-21.44#
19	A2	C2-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-24.93#
20	A2	C3-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-26.91#
21	A2	C4-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-29.01#
22	t	Biphenyl	1.843	1.695	8.0	101	0.00
23	t	2,6-Dimethylnaphthalene	1.238	1.166	5.8	105	0.00
24	t	Dibenzofuran	2.052	1.880	8.4	100	0.00
25	t	Acenaphthylene	2.203	1.867	15.3	97	0.00
26	t	Acenaphthene	1.405	1.317	6.3	103	-0.01
27	t	2,3,5-Trimethylnaphthalene	1.092	1.026	6.0	105	-0.01
28	A1	Fluorene	1.533	1.412	7.9	103	0.00
29	A2	C1-Fluorenes	1.533	0.000#	100.0#	0#	-30.64#
30	A2	C2-Fluorenes	1.533	0.000#	100.0#	0#	-32.77#
31	A2	C3-Fluorenes	1.533	0.000#	100.0#	0#	-34.59#
32	A1	Dibenzothiophene	2.379	0.017#	99.3#	1#	0.00
33	A2	OTP	2.379	0.000#	100.0#	0#	-33.73#
34	A2	C1-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-33.39#
35	A2	C2-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-35.04#
36	A2	C3-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.58#
37	A2	C4-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.99#
38	A1	Phenanthrene	2.297	2.127	7.4	104	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : Q1092402.D
Acq On : 25 Sep 2004 5:42 am
Operator : BL
Sample : Q1092402
Misc : SW083104A 500 ng/mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 27 07:57:29 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-34.52#
40	A2	C2-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-36.31#
41	A2	5AA IS BKGD	2.297	0.000#	100.0#	0#	-36.04#
42	A2	C3-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-38.13#
43	A2	C4-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-40.12#
44	A2	Retene	2.297	0.000#	100.0#	0#	-39.13#
45	t	Anthracene	2.133	1.960	8.1	103	0.00
46	t	Carbazole	0.007	0.003#	57.1#	62	0.00
47	t	1-Methylphenanthrene	1.536	1.445	5.9	108	0.00
48	A1	Fluoranthene	2.444	2.198	10.1	104	0.00
49	A2	Benzo(b)fluorene	2.444	0.000#	100.0#	0#	-39.42#
50	s	Pyrene-d10	1.598	1.675	-4.8	118	0.00
51	A1	Pyrene	2.513	2.335	7.1	106	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-39.15#
53	A2	C2-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-41.12#
54	A2	C3-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-42.80#
55	A2	C4-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-43.93#
56	A1	Naphthobenzothiophene	2.342	0.000#	100.0#	0#	-41.59#
57	A2	Naphthobenzothiophene-2,1-D	2.342	0.000#	100.0#	0#	-41.59#
58	A2	Naphthobenzothiophene-1,2-D	2.342	0.000#	100.0#	0#	-41.92#
59	A2	Naphthobenzothiophene-2,3-D	2.342	0.000#	100.0#	0#	-42.27#
60	A2	C1-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-43.45#
61	A2	C2-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-44.60#
62	A2	C3-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-46.33#
63	A2	C4-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-47.70#
64	i	Chrysene-d12	1.000	1.000	0.0	106	0.00
65	t	Benz[a]anthracene	1.545	1.493	3.4	113	0.00
66	t	Chrysene	1.466	1.392	5.0	100	0.00
67	A1	Chrysene/Triphenylene	1.465	1.392	5.0	100	0.00
68	A2	C1-Chrysenes	1.465	0.000#	100.0#	0#	-43.86#
69	A2	C2-Chrysenes	1.465	0.000#	100.0#	0#	-45.85#
70	A2	BBF-d12 Surr BKGD	1.465	0.037#	97.5#	3#	-0.01
71	A2	C3-Chrysenes	1.465	0.000#	100.0#	0#	-49.00#
72	A2	C4-Chrysenes	1.465	0.000#	100.0#	0#	-49.05#
73	s	Benzo[b]fluoranthene-d12	0.932	0.955	-2.5	113	-0.02
74	t	Benzo[b]fluoranthene	1.439	1.311	8.9	99	-0.01
75	A1	Benzo[k]fluoranthene	1.418	1.331	6.1	103	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : Q1092402.D
Acq On : 25 Sep 2004 5:42 am
Operator : BL
Sample : Q1092402
Misc : SW083104A 500 ng/mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 27 07:57:29 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.418	0.000#	100.0#	0#	-46.99#
77	t	Benzo[e]pyrene	1.305	1.240	5.0	105	-0.01
78	t	Benzo[a]pyrene	1.280	1.210	5.5	108	-0.02
79	t	Perylene	1.249	1.242	0.6	113	-0.02
80	t	Indeno[1,2,3-cd]pyrene	1.174	1.082	7.8	104	-0.04
81	t	Dibenz[a,h]anthracene	1.130	1.073	5.0	104	-0.02
82	t	Benzo[g,h,i]perylene	1.267	1.161	8.4	99	-0.04
83	t	17a(H),21B(H)-hopane - C30H	0.553	0.000#	100.0#	0#	-53.15#
84	A1	Hopane (T19)	0.551	0.000#	100.0#	0#	-53.15#
85	A2	C23 Tricyclic Terpane (T4)	0.551	0.000#	100.0#	0#	-40.28#
86	A2	C24 Tricyclic Terpane (T5)	0.551	0.000#	100.0#	0#	-41.00#
87	A2	C25 Tricyclic Terpane (T6)	0.551	0.000#	100.0#	0#	-42.51#
88	A2	C24 Tetracyclic Terpane (T6	0.551	0.000#	100.0#	0#	-43.60#
89	A2	C26 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-43.39#
90	A2	C26 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-43.45#
91	A2	C28 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-45.76#
92	A2	C28 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-45.94#
93	A2	C29 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-46.61#
94	A2	C29 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-46.84#
95	A2	18a-22,29,30-Trisnorneohopa	0.551	0.000#	100.0#	0#	-48.13#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.551	0.000#	100.0#	0#	-48.92#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.551	0.000#	100.0#	0#	-50.26#
98	A2	17a(H),21b(H)-25-Norhopane	0.551	0.000#	100.0#	0#	-50.68#
99	A2	30-Norhopane (T15)	0.551	0.000#	100.0#	0#	-51.53#
100	A2	18a(H)-30-Norneohopane-C29T	0.551	0.000#	100.0#	0#	-51.53#
101	A2	17a(H)-Diahopane (X)	0.551	0.000#	100.0#	0#	-51.82#
102	A2	30-Normoretane (T17)	0.551	0.000#	100.0#	0#	-52.55#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.551	0.000#	100.0#	0#	-53.16#
104	A2	Moretane (T20)	0.551	0.000#	100.0#	0#	-53.93#
105	A2	30-Homohopane-22S (T21)	0.551	0.000#	100.0#	0#	-54.93#
106	A2	30-Homohopane-22R (T22)	0.551	0.000#	100.0#	0#	-55.14#
107	A2	30,31-Bishomohopane-22S (T2	0.551	0.000#	100.0#	0#	-56.36#
108	A2	30,31-Bishomohopane-22R (T2	0.551	0.000#	100.0#	0#	-56.68#
109	A2	30,31-Trishomohopane-22S (T	0.551	0.000#	100.0#	0#	-58.28#
110	A2	30,31-Trishomohopane-22R (T	0.551	0.000#	100.0#	0#	-58.77#
111	A2	Tetrakishomohopane-22S (T32	0.551	0.000#	100.0#	0#	-60.62#
112	A2	Tetrakishomohopane-22R (T33	0.551	0.000#	100.0#	0#	-61.33#
113	A2	Pentakishomohopane-22S (T34	0.551	0.000#	100.0#	0#	-63.37#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : Q1092402.D
Acq On : 25 Sep 2004 5:42 am
Operator : BL
Sample : Q1092402
Misc : SW083104A 500 ng/mL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 27 07:57:29 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.551	0.000#	100.0#	0#	-64.35#
115	SA1	5B(H)Cholane - Surr	0.221	0.226	-2.3	115	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.221	0.000#	100.0#	0#	-44.53#
117	A2	13b(H),17a(H)-20R-Diacholes	0.221	0.000#	100.0#	0#	-44.91#
118	A2	13b,17a-20S-Methyldiacholes	0.221	0.000#	100.0#	0#	-45.72#
119	A2	14a(H),17a(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.68#
120	A2	14a(H),17a(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-47.30#
121	A2	13b,17a-20R-Ethyldiacholest	0.221	0.000#	100.0#	0#	-47.75#
122	A2	13a,17b-20S-Ethyldiacholest	0.221	0.000#	100.0#	0#	-48.11#
123	A2	14a,17a-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.27#
124	A2	14a,17a-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-49.18#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-49.82#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-51.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-46.79#
128	A2	14b(H),17b(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.94#
129	A2	14b,17b-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-48.49#
130	A2	14b,17b-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.66#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-50.09#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-50.25#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	80	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.522	1.1	82	0.00
4	t	cis-Decalin	0.398	0.403	-1.3	81	-0.01
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.810	0.3	82	0.00
10	A2	C1-Naphthalenes	2.820	0.000#	100.0#	0#	-22.06#
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.241	-2.9	80	0.00
15	t	2-Methylnaphthalene	1.704	1.738	-2.0	81	0.00
16	t	1-Methylnaphthalene	1.553	1.569	-1.0	81	0.00
17	A1	Benzothiophene	2.375	2.467	-3.9	81	-0.01
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.910	2.0	76	-0.01
23	t	2,6-Dimethylnaphthalene	1.308	1.308	0.0	80	-0.01
24	t	Dibenzofuran	2.158	2.152	0.3	79	0.00
25	t	Acenaphthylene	2.333	1.965	15.8	68	0.00
26	t	Acenaphthene	1.467	1.442	1.7	79	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.021	6.2	78	-0.01
28	A1	Fluorene	1.583	1.444	8.8	78	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	2.045	6.1	76	0.00
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.847	8.7	74	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.542	23.9	68	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#
47	t	1-Methylphenanthrene	1.239	0.000#	100.0#	0#	-34.71#
48	A1	Fluoranthene	2.045	1.549	24.3	71	-0.01
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.034	12.2	73	-0.01
51	A1	Pyrene	2.002	1.701	15.0	76	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	1.585	10.8	76	0.00
57	A2	Naphthobenzothiophene-2,1-D	1.775	1.580	11.0	76	0.00
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	85	0.00
65	t	Benz[a]anthracene	1.558	1.224	21.4	72	0.00
66	t	Chrysene	1.495	1.533	-2.5	87	0.00
67	A1	Chrysene/Triphenylene	1.495	1.533	-2.5	87	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.019	8.3	79	-0.03
74	t	Benzo[b]fluoranthene	1.764	1.692	4.1	83	-0.02
75	A1	Benzo[k]fluoranthene	1.750	1.677	4.2	82	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.568	7.1	81	-0.03
78	t	Benzo[a]pyrene	1.709	1.310	23.3	68	-0.04
79	t	Perylene	1.668	1.353	18.9	71	-0.03
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.349	24.6	65	-0.05
81	t	Dibenz[a,h]anthracene	1.677	1.434	14.5	72	-0.05
82	t	Benzo[g,h,i]perylene	1.885	1.633	13.4	72	-0.05
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.579	17.6	69	-0.05
84	A1	Hopane (T19)	0.711	0.579	18.6	69	-0.05
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092002.D
Acq On : 20 Sep 2004 6:30 pm
Operator : BL
Sample : C1092002
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 21 09:08:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.162	22.9	70	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	94	0.00
2	t	Decalin	0.259	0.000#	100.0#	0#	-16.01#
3	A1	trans-Decalin	0.528	0.483	8.5	89	0.00
4	t	cis-Decalin	0.398	0.377	5.3	89	-0.01
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.625	6.9	90	-0.01
10	A2	C1-Naphthalenes	2.820	0.000#	100.0#	0#	-22.06#
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.223	-1.4	93	0.00
15	t	2-Methylnaphthalene	1.704	1.644	3.5	90	0.00
16	t	1-Methylnaphthalene	1.553	1.484	4.4	91	0.00
17	A1	Benzothiophene	2.375	2.316	2.5	90	-0.01
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.920	1.4	90	-0.01
23	t	2,6-Dimethylnaphthalene	1.308	1.284	1.8	92	-0.01

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Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
24	t	Dibenzofuran	2.158	2.029	6.0	88	0.00
25	t	Acenaphthylene	2.333	2.279	2.3	93	0.00
26	t	Acenaphthene	1.467	1.406	4.2	90	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.054	3.2	94	-0.01
28	A1	Fluorene	1.583	1.453	8.2	92	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	0.000#	100.0#	0#	-31.72#
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.888	6.7	89	0.00
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.798	11.3	93	0.00
46	t	Carbazole	0.000	0.000#	0.0	0#	-33.14#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	t	1-Methylphenanthrene	1.239	0.000#	100.0#	0#	-34.71#
48	A1	Fluoranthene	2.045	1.755	14.2	95	-0.01
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.186	-0.7	98	-0.01
51	A1	Pyrene	2.002	1.773	11.4	93	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	1.758	1.0	99	0.00
57	A2	Naphthobenzothiophene-2,1-D	1.775	1.755	1.1	99	0.00
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	97	0.00
65	t	Benz[a]anthracene	1.558	1.538	1.3	102	-0.02
66	t	Chrysene	1.495	1.498	-0.2	96	0.00
67	A1	Chrysene/Triphenylene	1.495	1.498	-0.2	96	0.00
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.175	-5.8	103	-0.02
74	t	Benzo[b]fluoranthene	1.764	1.816	-2.9	101	0.00
75	A1	Benzo[k]fluoranthene	1.750	1.802	-3.0	100	-0.02
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.712	-1.4	100	-0.02
78	t	Benzo[a]pyrene	1.709	1.785	-4.4	104	-0.03
79	t	Perylene	1.668	1.740	-4.3	104	-0.02
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.745	2.5	95	-0.02
81	t	Dibenz[a,h]anthracene	1.677	1.644	2.0	93	-0.03
82	t	Benzo[g,h,i]perylene	1.885	1.797	4.7	89	0.00
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.685	2.6	93	-0.02
84	A1	Hopane (T19)	0.711	0.685	3.7	93	-0.02
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
92 A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93 A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94 A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95 A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96 A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97 A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98 A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99 A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
.00 A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
.01 A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
.02 A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
.03 A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
.04 A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
.05 A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
.06 A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
.07 A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
.08 A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
.09 A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
10 A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
11 A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
12 A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
13 A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#
14 A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#

121

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C1092003.D
Acq On : 21 Sep 2004 8:56 am
Operator : BL
Sample : C1092003
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 10:27:19 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
115	SA1	5B(H)Cholane - Surr	0.210	0.205	2.4	100	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

12

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20A\
Data File : C1092004.D
Acq On : 22 Sep 2004 11:06 am
Operator : BL
Sample : C1092004
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 22 12:23:10 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

BL 9-22-04

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	89	0.00
2	t	Decalin	0.259	0.439	-69.5#	153	0.00
3	A1	trans-Decalin	0.528	0.492	6.8	85	0.00
4	t	cis-Decalin	0.398	0.381	4.3	85	0.00
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.633	6.6	85	0.00
10	A2	C1-Naphthalenes	2.820	3.166	-12.3	102	0.00
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.220	-1.2	87	0.00
15	t	2-Methylnaphthalene	1.704	1.652	3.1	85	0.00
16	t	1-Methylnaphthalene	1.553	1.503	3.2	86	0.00
17	A1	Benzothiophene	2.375	2.339	1.5	85	0.00
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.960	-0.6	87	0.00
23	t	2,6-Dimethylnaphthalene	1.308	1.300	0.6	88	0.00
24	t	Dibenzofuran	2.158	2.050	5.0	84	0.00
25	t	Acenaphthylene	2.333	2.322	0.5	89	0.00
26	t	Acenaphthene	1.467	1.419	3.3	86	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.069	1.8	90	0.00
28	A1	Fluorene	1.583	1.490	5.9	88	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	2.158	0.9	89	0.00
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	2.003	1.0	89	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20A\
Data File : C1092004.D
Acq On : 22 Sep 2004 11:06 am
Operator : BL
Sample : C1092004
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 22 12:23:10 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.933	4.6	94	0.00
46	t	Carbazole	0.000	0.006#	0.0	0#	-0.02
47	t	1-Methylphenanthrene	1.239	1.320	-6.5	97	0.00
48	A1	Fluoranthene	2.045	2.121	-3.7	108	-0.02
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.450	-23.1	113	0.00
51	A1	Pyrene	2.002	2.151	-7.4	106	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	2.245	-26.4	120	-0.01
57	A2	Naphthobenzothiophene-2,1-D	1.775	2.243	-26.4	119	-0.01
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	115	0.00
65	t	Benz[a]anthracene	1.558	1.578	-1.3	125	-0.01
66	t	Chrysene	1.495	1.474	1.4	113	-0.01
67	A1	Chrysene/Triphenylene	1.495	1.474	1.4	113	-0.01
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.061	4.5	111	-0.04
74	t	Benzo[b]fluoranthene	1.764	1.608	8.8	106	-0.02
75	A1	Benzo[k]fluoranthene	1.750	1.598	8.7	106	-0.02

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20A\
Data File : C1092004.D
Acq On : 22 Sep 2004 11:06 am
Operator : BL
Sample : C1092004
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 22 12:23:10 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.477	12.5	103	-0.03
78	t	Benzo[a]pyrene	1.709	1.515	11.4	106	-0.03
79	t	Perylene	1.668	1.463	12.3	104	-0.03
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.390	22.3	90	-0.05
81	t	Dibenz[a,h]anthracene	1.677	1.349	19.6	91	-0.05
82	t	Benzo[g,h,i]perylene	1.885	1.414	25.0	84	-0.04
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.616	12.4	100	-0.06
84	A1	Hopane (T19)	0.711	0.616	13.4	100	-0.06
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20A\
Data File : C1092004.D
Acq On : 22 Sep 2004 11:06 am
Operator : BL
Sample : C1092004
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 22 12:23:10 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.205	2.4	120	-0.01
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT20A\
Data File : C1092005.D
Acq On : 23 Sep 2004 1:37 am
Operator : BL
Sample : C1092005
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 23 08:49:12 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-34.61#
40	A2	C2-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-36.42#
41	A2	5AA IS BKGD	2.024	0.000#	100.0#	0#	-37.02#
42	A2	C3-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-38.24#
43	A2	C4-Phenanthrenes/Anthracene	2.024	0.000#	100.0#	0#	-40.39#
44	A2	Retene	2.024	0.000#	100.0#	0#	-39.23#
45	t	Anthracene	2.027	1.739	14.2	78	0.00
46	t	Carbazole	0.000	0.004#	0.0	0#	0.00
47	t	1-Methylphenanthrene	1.239	1.212	2.2	83	0.00
48	A1	Fluoranthene	2.045	1.894	7.4	90	-0.02
49	A2	Benzo(b)fluorene	2.045	0.000#	100.0#	0#	-39.51#
50	s	Pyrene-d10	1.178	1.299	-10.3	94	-0.02
51	A1	Pyrene	2.002	1.967	1.7	90	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-39.25#
53	A2	C2-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-41.01#
54	A2	C3-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-42.90#
55	A2	C4-Fluoranthenes/Pyrenes	2.002	0.000#	100.0#	0#	-44.04#
56	A1	Naphthobenzothiophene	1.776	2.047	-15.3	101	-0.01
57	A2	Naphthobenzothiophene-2,1-D	1.775	2.044	-15.2	101	-0.01
58	A2	Naphthobenzothiophene-1,2-D	1.776	0.000#	100.0#	0#	-42.05#
59	A2	Naphthobenzothiophene-2,3-D	1.776	0.000#	100.0#	0#	-42.40#
60	A2	C1-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-43.55#
61	A2	C2-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-44.72#
62	A2	C3-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-46.48#
63	A2	C4-Naphthobenzothiophenes	1.776	0.000#	100.0#	0#	-47.87#
64	i	Chrysene-d12	1.000	1.000	0.0	105	0.00
65	t	Benz[a]anthracene	1.558	1.478	5.1	106	-0.01
66	t	Chrysene	1.495	1.466	1.9	102	-0.01
67	A1	Chrysene/Triphenylene	1.495	1.466	1.9	102	-0.01
68	A2	C1-Chrysenes	1.495	0.000#	100.0#	0#	-43.97#
69	A2	C2-Chrysenes	1.495	0.000#	100.0#	0#	-45.69#
70	A2	BBF-d12 Surr BKGD	1.495	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.495	0.000#	100.0#	0#	-49.55#
72	A2	C4-Chrysenes	1.495	0.000#	100.0#	0#	-49.65#
73	s	Benzo[b]fluoranthene-d12	1.111	1.078	3.0	103	-0.02
74	t	Benzo[b]fluoranthene	1.764	1.645	6.7	99	-0.01
75	A1	Benzo[k]fluoranthene	1.750	1.648	5.8	100	-0.01

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT20A\
Data File : C1092005.D
Acq On : 23 Sep 2004 1:37 am
Operator : BL
Sample : C1092005
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 23 08:49:12 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

BL 9-23-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	82	0.00
2	t	Decalin	0.259	0.450	-73.7#	146	0.00
3	A1	trans-Decalin	0.528	0.506	4.2	82	0.00
4	t	cis-Decalin	0.398	0.387	2.8	80	0.00
5	A2	C1-Decalins	0.528	0.000#	100.0#	0#	-17.93#
6	A2	C2-Decalins	0.528	0.000#	100.0#	0#	-19.24#
7	A2	C3-Decalins	0.528	0.000#	100.0#	0#	-21.75#
8	A2	C4-Decalins	0.528	0.000#	100.0#	0#	-24.40#
9	A1	Naphthalene	2.819	2.679	5.0	80	0.00
10	A2	C1-Naphthalenes	2.820	3.203	-13.6	96	0.00
11	A2	C2-Naphthalenes	2.819	0.000#	100.0#	0#	-24.87#
12	A2	C3-Naphthalenes	2.819	0.000#	100.0#	0#	-27.23#
13	A2	C4-Naphthalenes	2.819	0.000#	100.0#	0#	-29.94#
14	s	2-Methylnaphthalene-d10	1.206	1.239	-2.7	82	0.00
15	t	2-Methylnaphthalene	1.704	1.664	2.3	80	0.00
16	t	1-Methylnaphthalene	1.553	1.516	2.4	81	0.00
17	A1	Benzothiophene	2.375	2.358	0.7	80	0.00
18	A2	C1-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-21.51#
19	A2	C2-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-25.01#
20	A2	C3-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-27.00#
21	A2	C4-Benzo(b)thiophenes	2.375	0.000#	100.0#	0#	-29.09#
22	t	Biphenyl	1.948	1.965	-0.9	81	0.00
23	t	2,6-Dimethylnaphthalene	1.308	1.280	2.1	81	0.00
24	t	Dibenzofuran	2.158	2.047	5.1	78	0.00
25	t	Acenaphthylene	2.333	2.149	7.9	77	0.00
26	t	Acenaphthene	1.467	1.406	4.2	79	0.00
27	t	2,3,5-Trimethylnaphthalene	1.089	1.054	3.2	82	0.00
28	A1	Fluorene	1.583	1.436	9.3	79	0.00
29	A2	C1-Fluorenes	1.583	0.000#	100.0#	0#	-30.72#
30	A2	C2-Fluorenes	1.583	0.000#	100.0#	0#	-32.86#
31	A2	C3-Fluorenes	1.583	0.000#	100.0#	0#	-34.68#
32	A1	Dibenzothiophene	2.178	2.060	5.4	79	0.00
33	A2	OTP	2.178	0.000#	100.0#	0#	-34.57#
34	A2	C1-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-33.49#
35	A2	C2-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-35.14#
36	A2	C3-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-36.91#
37	A2	C4-Dibenzothiophenes	2.178	0.000#	100.0#	0#	-38.09#
38	A1	Phenanthrene	2.024	1.915	5.4	79	0.00

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT20A\
Data File : C1092005.D
Acq On : 23 Sep 2004 1:37 am
Operator : BL
Sample : C1092005
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 23 08:49:12 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

① not target analytes.
BL 9-23-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.750	0.000#	100.0#	0#	-47.18#
77	t	Benzo[e]pyrene	1.688	1.524	9.7	97	-0.01
78	t	Benzo[a]pyrene	1.709	1.506	11.9	96	-0.02
79	t	Perylene	1.668	1.455	12.8	94	-0.02
80	t	Indeno[1,2,3-cd]pyrene	1.790	1.335	25.4 ①	79	-0.02
81	t	Dibenz[a,h]anthracene	1.677	1.307	22.1	81	-0.03
82	t	Benzo[g,h,i]perylene	1.885	1.384	26.6 ①	75	-0.02
83	t	17a(H),21B(H)-hopane - C30H	0.703	0.643	8.5	95	-0.03
84	A1	Hopane (T19)	0.711	0.643	9.6	95	-0.03
85	A2	C23 Tricyclic Terpane (T4)	0.711	0.000#	100.0#	0#	-40.39#
86	A2	C24 Tricyclic Terpane (T5)	0.711	0.000#	100.0#	0#	-41.11#
87	A2	C25 Tricyclic Terpane (T6)	0.711	0.000#	100.0#	0#	-42.59#
88	A2	C24 Tetracyclic Terpane (T6	0.711	0.000#	100.0#	0#	-43.70#
89	A2	C26 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-43.49#
90	A2	C26 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-43.56#
91	A2	C28 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-45.91#
92	A2	C28 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-46.09#
93	A2	C29 Tricyclic Terpane-22S (	0.711	0.000#	100.0#	0#	-46.77#
94	A2	C29 Tricyclic Terpane-22R (	0.711	0.000#	100.0#	0#	-47.01#
95	A2	18a-22,29,30-Trisnorneohopa	0.711	0.000#	100.0#	0#	-48.31#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.711	0.000#	100.0#	0#	-49.13#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.711	0.000#	100.0#	0#	-50.48#
98	A2	17a(H),21b(H)-25-Norhopane	0.711	0.000#	100.0#	0#	-50.93#
99	A2	30-Norhopane (T15)	0.711	0.000#	100.0#	0#	-51.73#
100	A2	18a(H)-30-Norneohopane-C29T	0.711	0.000#	100.0#	0#	-51.78#
101	A2	17a(H)-Diahopane (X)	0.711	0.000#	100.0#	0#	-52.04#
102	A2	30-Normoretane (T17)	0.711	0.000#	100.0#	0#	-52.76#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.711	0.000#	100.0#	0#	-53.32#
104	A2	Moretane (T20)	0.711	0.000#	100.0#	0#	-54.13#
105	A2	30-Homohopane-22S (T21)	0.711	0.000#	100.0#	0#	-55.14#
106	A2	30-Homohopane-22R (T22)	0.711	0.000#	100.0#	0#	-55.35#
107	A2	30,31-Bishomohopane-22S (T2	0.711	0.000#	100.0#	0#	-56.60#
108	A2	30,31-Bishomohopane-22R (T2	0.711	0.000#	100.0#	0#	-56.92#
109	A2	30,31-Trishomohopane-22S (T	0.711	0.000#	100.0#	0#	-58.57#
110	A2	30,31-Trishomohopane-22R (T	0.711	0.000#	100.0#	0#	-59.06#
111	A2	Tetrakishomohopane-22S (T32	0.711	0.000#	100.0#	0#	-60.94#
112	A2	Tetrakishomohopane-22R (T33	0.711	0.000#	100.0#	0#	-61.66#
113	A2	Pentakishomohopane-22S (T34	0.711	0.000#	100.0#	0#	-63.73#

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH1\SEPT20A\
Data File : C1092005.D
Acq On : 23 Sep 2004 1:37 am
Operator : BL
Sample : C1092005
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 23 08:49:12 2004
Quant Method : O:\ORGANICS\METHODS\PAH1\PAH10916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 20 13:01:46 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.711	0.000#	100.0#	0#	-64.74#
115	SA1	5B(H)Cholane - Surr	0.210	0.188	10.5	100	-0.01
116	A2	13b(H),17a(H)-20S-Diacholes	0.210	0.000#	100.0#	0#	-44.65#
117	A2	13b(H),17a(H)-20R-Diacholes	0.210	0.000#	100.0#	0#	-45.05#
118	A2	13b,17a-20S-Methyldiacholes	0.210	0.000#	100.0#	0#	-45.86#
119	A2	14a(H),17a(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-46.84#
120	A2	14a(H),17a(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-47.47#
121	A2	13b,17a-20R-Ethyldiacholest	0.210	0.000#	100.0#	0#	-47.93#
122	A2	13a,17b-20S-Ethyldiacholest	0.210	0.000#	100.0#	0#	-48.30#
123	A2	14a,17a-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.46#
124	A2	14a,17a-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-49.40#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.02#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-51.22#
127	A2	14b(H),17b(H)-20R-Cholestan	0.210	0.000#	100.0#	0#	-46.95#
128	A2	14b(H),17b(H)-20S-Cholestan	0.210	0.000#	100.0#	0#	-47.10#
129	A2	14b,17b-20R-Methylcholestan	0.210	0.000#	100.0#	0#	-48.69#
130	A2	14b,17b-20S-Methylcholestan	0.210	0.000#	100.0#	0#	-48.85#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.210	0.000#	100.0#	0#	-50.32#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.210	0.000#	100.0#	0#	-50.48#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092401.D
Acq On : 25 Sep 2004 9:38 am
Operator : BL
Sample : C1092401
Misc : SW083004E 500 ng/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 27 08:00:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

MS 9/27/04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	114	0.00
2	t	Decalin	0.455	0.393	13.6	108	0.00
3	A1	trans-Decalin	0.468	0.437	6.6	110	0.00
4	t	cis-Decalin	0.364	0.345	5.2	111	0.00
5	A2	C1-Decalins	0.468	0.000#	100.0#	0#	-17.86#
6	A2	C2-Decalins	0.468	0.000#	100.0#	0#	-19.17#
7	A2	C3-Decalins	0.468	0.000#	100.0#	0#	-21.68#
8	A2	C4-Decalins	0.468	0.000#	100.0#	0#	-24.33#
9	A1	Naphthalene	2.521	2.423	3.9	111	0.00
10	A2	C1-Naphthalenes	2.521	2.937	-16.5	135	0.00
11	A2	C2-Naphthalenes	2.521	0.000#	100.0#	0#	-24.78#
12	A2	C3-Naphthalenes	2.521	0.000#	100.0#	0#	-27.15#
13	A2	C4-Naphthalenes	2.521	0.000#	100.0#	0#	-29.85#
14	s	2-Methylnaphthalene-d10	1.119	1.147	-2.5	114	0.00
15	t	2-Methylnaphthalene	1.612	1.547	4.0	112	0.00
16	t	1-Methylnaphthalene	1.525	1.400	8.2	113	0.00
17	A1	Benzothiophene	2.119	2.120	-0.0	112	0.00
18	A2	C1-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-21.44#
19	A2	C2-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-24.93#
20	A2	C3-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-26.91#
21	A2	C4-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-29.01#
22	t	Biphenyl	1.843	1.819	1.3	111	0.00
23	t	2,6-Dimethylnaphthalene	1.238	1.245	-0.6	114	0.00
24	t	Dibenzofuran	2.052	2.043	0.4	112	0.00
25	t	Acenaphthylene	2.203	2.225	-1.0	119	0.00
26	t	Acenaphthene	1.405	1.406	-0.1	113	-0.01
27	t	2,3,5-Trimethylnaphthalene	1.092	1.097	-0.5	115	-0.01
28	A1	Fluorene	1.533	1.544	-0.7	115	0.00
29	A2	C1-Fluorenes	1.533	0.000#	100.0#	0#	-30.64#
30	A2	C2-Fluorenes	1.533	0.000#	100.0#	0#	-32.77#
31	A2	C3-Fluorenes	1.533	0.000#	100.0#	0#	-34.59#
32	A1	Dibenzothiophene	2.379	2.372	0.3	113	-0.01
33	A2	OTP	2.379	0.000#	100.0#	0#	-33.73#
34	A2	C1-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-33.39#
35	A2	C2-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-35.04#
36	A2	C3-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.58#
37	A2	C4-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.99#
38	A1	Phenanthrene	2.297	2.254	1.9	113	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092401.D
Acq On : 25 Sep 2004 9:38 am
Operator : BL
Sample : C1092401
Misc : SW083004E 500 ng/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 27 08:00:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-34.52#
40	A2	C2-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-36.31#
41	A2	5AA IS BKGD	2.297	0.000#	100.0#	0#	-36.04#
42	A2	C3-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-38.13#
43	A2	C4-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-40.12#
44	A2	Retene	2.297	0.000#	100.0#	0#	-39.13#
45	t	Anthracene	2.133	2.188	-2.6	118	0.00
46	t	Carbazole	0.007	0.006#	14.3	116	0.00
47	t	1-Methylphenanthrene	1.536	1.523	0.8	117	-0.01
48	A1	Fluoranthene	2.444	2.415	1.2	117	-0.01
49	A2	Benzo(b)fluorene	2.444	0.000#	100.0#	0#	-39.42#
50	s	Pyrene-d10	1.598	1.628	-1.9	118	-0.01
51	A1	Pyrene	2.513	2.402	4.4	112	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-39.15#
53	A2	C2-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-41.12#
54	A2	C3-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-42.80#
55	A2	C4-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-43.93#
56	A1	Naphthobenzothiophene	2.342	2.263	3.4	115	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.342	2.259	3.5	115	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.342	0.000#	100.0#	0#	-41.92#
59	A2	Naphthobenzothiophene-2,3-D	2.342	0.000#	100.0#	0#	-42.27#
60	A2	C1-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-43.45#
61	A2	C2-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-44.60#
62	A2	C3-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-46.33#
63	A2	C4-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-47.70#
64	i	Chrysene-d12	1.000	1.000	0.0	104	0.00
65	t	Benz[a]anthracene	1.545	1.632	-5.6	121	0.00
66	t	Chrysene	1.466	1.480	-1.0	105	0.00
67	A1	Chrysene/Triphenylene	1.465	1.481	-1.1	105	0.00
68	A2	C1-Chrysenes	1.465	0.000#	100.0#	0#	-43.86#
69	A2	C2-Chrysenes	1.465	0.000#	100.0#	0#	-45.85#
70	A2	BBF-d12 Surr BKGD	1.465	0.036#	97.5#	3#	0.02
71	A2	C3-Chrysenes	1.465	0.000#	100.0#	0#	-49.00#
72	A2	C4-Chrysenes	1.465	0.000#	100.0#	0#	-49.05#
73	s	Benzo[b]fluoranthene-d12	0.932	0.965	-3.5	112	0.01
74	t	Benzo[b]fluoranthene	1.439	1.461	-1.5	108	0.01
75	A1	Benzo[k]fluoranthene	1.418	1.457	-2.8	111	0.01

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092401.D
Acq On : 25 Sep 2004 9:38 am
Operator : BL
Sample : C1092401
Misc : SW083004E 500 ng/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 27 08:00:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.418	0.000#	100.0#	0#	-46.99#
77	t	Benzo[e]pyrene	1.305	1.332	-2.1	111	0.02
78	t	Benzo[a]pyrene	1.280	1.398	-9.2	123	0.02
79	t	Perylene	1.249	1.325	-6.1	119	0.01
80	t	Indeno[1,2,3-cd]pyrene	1.174	1.240	-5.6	118	0.02
81	t	Dibenz[a,h]anthracene	1.130	1.169	-3.5	112	0.02
82	t	Benzo[g,h,i]perylene	1.267	1.264	0.2	106	0.02
83	t	17a(H),21B(H)-hopane - C30H	0.553	0.542	2.0	108	0.02
84	A1	Hopane (T19)	0.551	0.542	1.6	108	0.02
85	A2	C23 Tricyclic Terpane (T4)	0.551	0.000#	100.0#	0#	-40.28#
86	A2	C24 Tricyclic Terpane (T5)	0.551	0.000#	100.0#	0#	-41.00#
87	A2	C25 Tricyclic Terpane (T6)	0.551	0.000#	100.0#	0#	-42.51#
88	A2	C24 Tetracyclic Terpane (T6	0.551	0.000#	100.0#	0#	-43.60#
89	A2	C26 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-43.39#
90	A2	C26 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-43.45#
91	A2	C28 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-45.76#
92	A2	C28 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-45.94#
93	A2	C29 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-46.61#
94	A2	C29 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-46.84#
95	A2	18a-22,29,30-Trisnorneohopa	0.551	0.000#	100.0#	0#	-48.13#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.551	0.000#	100.0#	0#	-48.92#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.551	0.000#	100.0#	0#	-50.26#
98	A2	17a(H),21b(H)-25-Norhopane	0.551	0.000#	100.0#	0#	-50.68#
99	A2	30-Norhopane (T15)	0.551	0.000#	100.0#	0#	-51.53#
100	A2	18a(H)-30-Norneohopane-C29T	0.551	0.000#	100.0#	0#	-51.53#
101	A2	17a(H)-Diahopane (X)	0.551	0.000#	100.0#	0#	-51.82#
102	A2	30-Normoretane (T17)	0.551	0.000#	100.0#	0#	-52.55#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.551	0.000#	100.0#	0#	-53.16#
104	A2	Moretane (T20)	0.551	0.000#	100.0#	0#	-53.93#
105	A2	30-Homohopane-22S (T21)	0.551	0.000#	100.0#	0#	-54.93#
106	A2	30-Homohopane-22R (T22)	0.551	0.000#	100.0#	0#	-55.14#
107	A2	30,31-Bishomohopane-22S (T2	0.551	0.000#	100.0#	0#	-56.36#
108	A2	30,31-Bishomohopane-22R (T2	0.551	0.000#	100.0#	0#	-56.68#
109	A2	30,31-Trishomohopane-22S (T	0.551	0.000#	100.0#	0#	-58.28#
110	A2	30,31-Trishomohopane-22R (T	0.551	0.000#	100.0#	0#	-58.77#
111	A2	Tetrakishomohopane-22S (T32	0.551	0.000#	100.0#	0#	-60.62#
112	A2	Tetrakishomohopane-22R (T33	0.551	0.000#	100.0#	0#	-61.33#
113	A2	Pentakishomohopane-22S (T34	0.551	0.000#	100.0#	0#	-63.37#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092401.D
Acq On : 25 Sep 2004 9:38 am
Operator : BL
Sample : C1092401
Misc : SW083004E 500 ng/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 27 08:00:24 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.551	0.000#	100.0#	0#	-64.35#
115	SA1	5B(H)Cholane - Surr	0.221	0.228	-3.2	114	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.221	0.000#	100.0#	0#	-44.53#
117	A2	13b(H),17a(H)-20R-Diacholes	0.221	0.000#	100.0#	0#	-44.91#
118	A2	13b,17a-20S-Methyldiacholes	0.221	0.000#	100.0#	0#	-45.72#
119	A2	14a(H),17a(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.68#
120	A2	14a(H),17a(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-47.30#
121	A2	13b,17a-20R-Ethyldiacholest	0.221	0.000#	100.0#	0#	-47.75#
122	A2	13a,17b-20S-Ethyldiacholest	0.221	0.000#	100.0#	0#	-48.11#
123	A2	14a,17a-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.27#
124	A2	14a,17a-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-49.18#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-49.82#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-51.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-46.79#
128	A2	14b(H),17b(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.94#
129	A2	14b,17b-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-48.49#
130	A2	14b,17b-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.66#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-50.09#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-50.25#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092402.D
Acq On : 26 Sep 2004 12:08 am
Operator : BL
Sample : C1092402
Misc : SW083004E 500 ng/mL
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Sep 27 08:03:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

CMS 9-27-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	105	0.00
2	t	Decalin	0.455	0.407	10.5	103	0.00
3	A1	trans-Decalin	0.468	0.452	3.4	105	0.00
4	t	cis-Decalin	0.364	0.345	5.2	103	0.00
5	A2	C1-Decalins	0.468	0.000#	100.0#	0#	-17.86#
6	A2	C2-Decalins	0.468	0.000#	100.0#	0#	-19.17#
7	A2	C3-Decalins	0.468	0.000#	100.0#	0#	-21.68#
8	A2	C4-Decalins	0.468	0.000#	100.0#	0#	-24.33#
9	A1	Naphthalene	2.521	2.431	3.6	103	0.00
10	A2	C1-Naphthalenes	2.521	2.988	-18.5	126	0.00
11	A2	C2-Naphthalenes	2.521	0.000#	100.0#	0#	-24.78#
12	A2	C3-Naphthalenes	2.521	0.000#	100.0#	0#	-27.15#
13	A2	C4-Naphthalenes	2.521	0.000#	100.0#	0#	-29.85#
14	s	2-Methylnaphthalene-d10	1.119	1.147	-2.5	105	0.00
15	t	2-Methylnaphthalene	1.612	1.565	2.9	105	0.00
16	t	1-Methylnaphthalene	1.525	1.414	7.3	105	0.00
17	A1	Benzothiophene	2.119	2.137	-0.8	104	0.00
18	A2	C1-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-21.44#
19	A2	C2-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-24.93#
20	A2	C3-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-26.91#
21	A2	C4-Benzo(b)thiophenes	2.119	0.000#	100.0#	0#	-29.01#
22	t	Biphenyl	1.843	1.846	-0.2	104	0.00
23	t	2,6-Dimethylnaphthalene	1.238	1.236	0.2	105	0.00
24	t	Dibenzofuran	2.052	2.062	-0.5	104	0.00
25	t	Acenaphthylene	2.203	2.113	4.1	104	0.00
26	t	Acenaphthene	1.405	1.410	-0.4	105	-0.01
27	t	2,3,5-Trimethylnaphthalene	1.092	1.075	1.6	104	-0.01
28	A1	Fluorene	1.533	1.518	1.0	105	0.00
29	A2	C1-Fluorenes	1.533	0.000#	100.0#	0#	-30.64#
30	A2	C2-Fluorenes	1.533	0.000#	100.0#	0#	-32.77#
31	A2	C3-Fluorenes	1.533	0.000#	100.0#	0#	-34.59#
32	A1	Dibenzothiophene	2.379	2.352	1.1	103	-0.01
33	A2	OTP	2.379	0.000#	100.0#	0#	-33.73#
34	A2	C1-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-33.39#
35	A2	C2-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-35.04#
36	A2	C3-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.58#
37	A2	C4-Dibenzothiophenes	2.379	0.000#	100.0#	0#	-37.99#
38	A1	Phenanthrene	2.297	2.228	3.0	103	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092402.D
Acq On : 26 Sep 2004 12:08 am
Operator : BL
Sample : C1092402
Misc : SW083004E 500 ng/mL
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Sep 27 08:03:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-34.52#
40	A2	C2-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-36.31#
41	A2	5AA IS BKGD	2.297	0.000#	100.0#	0#	-36.04#
42	A2	C3-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-38.13#
43	A2	C4-Phenanthrenes/Anthracene	2.297	0.000#	100.0#	0#	-40.12#
44	A2	Retene	2.297	0.000#	100.0#	0#	-39.13#
45	t	Anthracene	2.133	2.052	3.8	102	0.00
46	t	Carbazole	0.007	0.005#	28.6	103	0.01
47	t	1-Methylphenanthrene	1.536	1.474	4.0	105	-0.01
48	A1	Fluoranthene	2.444	2.338	4.3	105	-0.01
49	A2	Benzo(b)fluorene	2.444	0.000#	100.0#	0#	-39.42#
50	s	Pyrene-d10	1.598	1.598	0.0	107	-0.01
51	A1	Pyrene	2.513	2.385	5.1	103	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-39.15#
53	A2	C2-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-41.12#
54	A2	C3-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-42.80#
55	A2	C4-Fluoranthenes/Pyrenes	2.513	0.000#	100.0#	0#	-43.93#
56	A1	Naphthobenzothiophene	2.342	2.235	4.6	105	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.342	2.227	4.9	105	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.342	0.000#	100.0#	0#	-41.92#
59	A2	Naphthobenzothiophene-2,3-D	2.342	0.000#	100.0#	0#	-42.27#
60	A2	C1-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-43.45#
61	A2	C2-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-44.60#
62	A2	C3-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-46.33#
63	A2	C4-Naphthobenzothiophenes	2.342	0.000#	100.0#	0#	-47.70#
64	i	Chrysene-d12	1.000	1.000	0.0	103	0.00
65	t	Benz[a]anthracene	1.545	1.483	4.0	109	0.00
66	t	Chrysene	1.466	1.468	-0.1	103	0.00
67	A1	Chrysene/Triphenylene	1.465	1.468	-0.2	103	0.00
68	A2	C1-Chrysenes	1.465	0.000#	100.0#	0#	-43.86#
69	A2	C2-Chrysenes	1.465	0.000#	100.0#	0#	-45.85#
70	A2	BBF-d12 Surr BKGD	1.465	0.034#	97.7#	2#	0.02
71	A2	C3-Chrysenes	1.465	0.000#	100.0#	0#	-49.00#
72	A2	C4-Chrysenes	1.465	0.000#	100.0#	0#	-49.05#
73	s	Benzo[b]fluoranthene-d12	0.932	0.937	-0.5	108	0.01
74	t	Benzo[b]fluoranthene	1.439	1.425	1.0	104	0.01
75	A1	Benzo[k]fluoranthene	1.418	1.409	0.6	106	0.01

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092402.D
Acq On : 26 Sep 2004 12:08 am
Operator : BL
Sample : C1092402
Misc : SW083004E 500 ng/mL
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Sep 27 08:03:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.418	0.000#	100.0#	0#	-46.99#
77	t	Benzo[e]pyrene	1.305	1.303	0.2	107	0.02
78	t	Benzo[a]pyrene	1.280	1.243	2.9	108	0.02
79	t	Perylene	1.249	1.233	1.3	109	0.01
80	t	Indeno[1,2,3-cd]pyrene	1.174	1.138	3.1	107	0.02
81	t	Dibenz[a,h]anthracene	1.130	1.107	2.0	104	0.02
82	t	Benzo[g,h,i]perylene	1.267	1.234	2.6	103	0.02
83	t	17a(H),21B(H)-hopane - C30H	0.553	0.548	0.9	108	0.02
84	A1	Hopane (T19)	0.551	0.548	0.5	108	0.02
85	A2	C23 Tricyclic Terpane (T4)	0.551	0.000#	100.0#	0#	-40.28#
86	A2	C24 Tricyclic Terpane (T5)	0.551	0.000#	100.0#	0#	-41.00#
87	A2	C25 Tricyclic Terpane (T6)	0.551	0.000#	100.0#	0#	-42.51#
88	A2	C24 Tetracyclic Terpane (T6	0.551	0.000#	100.0#	0#	-43.60#
89	A2	C26 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-43.39#
90	A2	C26 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-43.45#
91	A2	C28 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-45.76#
92	A2	C28 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-45.94#
93	A2	C29 Tricyclic Terpane-22S (	0.551	0.000#	100.0#	0#	-46.61#
94	A2	C29 Tricyclic Terpane-22R (	0.551	0.000#	100.0#	0#	-46.84#
95	A2	18a-22,29,30-Trisnorneohopa	0.551	0.000#	100.0#	0#	-48.13#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.551	0.000#	100.0#	0#	-48.92#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.551	0.000#	100.0#	0#	-50.26#
98	A2	17a(H),21b(H)-25-Norhopane	0.551	0.000#	100.0#	0#	-50.68#
99	A2	30-Norhopane (T15)	0.551	0.000#	100.0#	0#	-51.53#
100	A2	18a(H)-30-Norneohopane-C29T	0.551	0.000#	100.0#	0#	-51.53#
101	A2	17a(H)-Diahopane (X)	0.551	0.000#	100.0#	0#	-51.82#
102	A2	30-Normoretane (T17)	0.551	0.000#	100.0#	0#	-52.55#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.551	0.000#	100.0#	0#	-53.16#
104	A2	Moretane (T20)	0.551	0.000#	100.0#	0#	-53.93#
105	A2	30-Homohopane-22S (T21)	0.551	0.000#	100.0#	0#	-54.93#
106	A2	30-Homohopane-22R (T22)	0.551	0.000#	100.0#	0#	-55.14#
107	A2	30,31-Bishomohopane-22S (T2	0.551	0.000#	100.0#	0#	-56.36#
108	A2	30,31-Bishomohopane-22R (T2	0.551	0.000#	100.0#	0#	-56.68#
109	A2	30,31-Trishomohopane-22S (T	0.551	0.000#	100.0#	0#	-58.28#
110	A2	30,31-Trishomohopane-22R (T	0.551	0.000#	100.0#	0#	-58.77#
111	A2	Tetrakishomohopane-22S (T32	0.551	0.000#	100.0#	0#	-60.62#
112	A2	Tetrakishomohopane-22R (T33	0.551	0.000#	100.0#	0#	-61.33#
113	A2	Pentakishomohopane-22S (T34	0.551	0.000#	100.0#	0#	-63.37#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT24\
Data File : C1092402.D
Acq On : 26 Sep 2004 12:08 am
Operator : BL
Sample : C1092402
Misc : SW083004E 500 ng/mL
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Sep 27 08:03:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH10924.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Mon Sep 27 07:54:12 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.551	0.000#	100.0#	0#	-64.35#
115	SA1	5B(H)Cholane - Surr	0.221	0.220	0.5	109	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.221	0.000#	100.0#	0#	-44.53#
117	A2	13b(H),17a(H)-20R-Diacholes	0.221	0.000#	100.0#	0#	-44.91#
118	A2	13b,17a-20S-Methyldiacholes	0.221	0.000#	100.0#	0#	-45.72#
119	A2	14a(H),17a(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.68#
120	A2	14a(H),17a(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-47.30#
121	A2	13b,17a-20R-Ethyldiacholest	0.221	0.000#	100.0#	0#	-47.75#
122	A2	13a,17b-20S-Ethyldiacholest	0.221	0.000#	100.0#	0#	-48.11#
123	A2	14a,17a-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.27#
124	A2	14a,17a-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-49.18#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-49.82#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-51.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.221	0.000#	100.0#	0#	-46.79#
128	A2	14b(H),17b(H)-20S-Cholestan	0.221	0.000#	100.0#	0#	-46.94#
129	A2	14b,17b-20R-Methylcholestan	0.221	0.000#	100.0#	0#	-48.49#
130	A2	14b,17b-20S-Methylcholestan	0.221	0.000#	100.0#	0#	-48.66#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.221	0.000#	100.0#	0#	-50.09#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.221	0.000#	100.0#	0#	-50.25#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**
Lab ID: **C1092002**

Case: N/A SDG: N/A

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		31548	26.19	34299	42.66
Upper Limit:		63096	26.69	68598	43.16
Lower Limit:		15774	25.69	17150	42.16
Client ID	**Lab ID**				
Blank	SS090704B02	30375	26.19	31819	42.66
LCS	SS090704BS02	29810	26.19	33143	42.66
LCSD	SS090704BSD02	33915	26.19	35265	42.66
DSY-SD-101-0006	0408123-01	34394	26.19	35862	42.66
DSY-SD-101-0612	0408123-02	35020	26.19	34136	42.66
DSY-SD-103-0006	0408123-03	35349	26.19	34449	42.66
DSY-SD-103-0612	0408123-04	34030	26.19	36155	42.67
DSY-SD-104-0006	0408123-05	37181	26.19	33824	42.66
DSY-SD-104-0612	0408123-06	35939	26.19	35261	42.66
DSY-SD-02-082504	0408123-07	36319	26.19	33658	42.66
CCV	C1092003	37073	26.19	38785	42.66

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**
Lab ID: **C1092003**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		37073	26.19	38785	42.66
Upper Limit:		74146	26.69	77570	43.16
Lower Limit:		18536	25.69	19392	42.16
Client ID	**Lab ID**				
DSY-SD-DUP01-082504	0408123-08	36236	26.19	35432	42.66
DSY-SD-28-082504	0408123-09	35539	26.19	34411	42.66
DSY-SD-06-082504	0408123-10	33504	26.19	35564	42.66
DSY-SD-09-082604	0408123-11	36929	26.19	36026	42.66
DSY-SD-09-082604	0408123-11 D	35619	26.19	36485	42.66
DSY-SD-09-082604	0408123-11 M	35272	26.19	39723	42.66
DSY-SD-03-082604	0408123-12	35671	26.19	38404	42.66
DSY-SD-29-082604	0408123-13	35162	26.19	37741	42.67
DSY-SD-05-082604	0408123-14	33365	26.18	37379	42.67
DSY-SD-DUP02-082604	0408123-15	34408	26.18	38588	42.67
CCV	C1092004	34882	26.18	46286	42.67

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

10/07/04 11:15

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Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**
Lab ID: **C1092004**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		34882	26.18	46286	42.67
Upper Limit:		69764	26.68	92572	43.17
Lower Limit:		17441	25.68	23143	42.17
Client ID	**Lab ID**				
Blank	SS090704B02F1	36560	26.18	43357	42.67
DSY-SD-101-0006	0408123-01F1	34490	26.18	43596	42.67
DSY-SD-101-0612	0408123-02F1	34741	26.18	42107	42.67
DSY-SD-103-0006	0408123-03F1	36647	26.18	43416	42.67
DSY-SD-103-0612	0408123-04F1	33500	26.18	43600	42.67
DSY-SD-104-0006	0408123-05F1	37671	26.18	44403	42.67
DSY-SD-104-0612	0408123-06F1	58606	26.18	73467	42.67
DSY-SD-02-082504	0408123-07F1	31656	26.18	38439	42.67
CCV	C1092005	32414	26.18	42232	42.67

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**
Lab ID: **C1092401**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		34374	26.11	44060	42.57
Upper Limit:		68748	26.61	88120	43.07
Lower Limit:		17187	25.61	22030	42.07
Client ID	**Lab ID**				
DSY-SD-DUP01-082504	0408123-08F1	35717	26.11	41872	42.57
DSY-SD-28-082504	0408123-09F1	34542	26.11	41141	42.57
DSY-SD-06-082504	0408123-10F1	33954	26.11	41487	42.57
DSY-SD-09-082604	0408123-11F1	37628	26.11	42800	42.57
DSY-SD-09-082604	0408123-11F1 D	36479	26.11	42682	42.57
DSY-SD-03-082604	0408123-12F1	33715	26.11	39887	42.57
DSY-SD-29-082604	0408123-13F1	35967	26.11	42273	42.57
DSY-SD-05-082604	0408123-14F1	34739	26.11	41105	42.57
DSY-SD-DUP02-082604	0408123-15F1	36259	26.11	43820	42.57
CCV	C1092402	31755	26.11	43550	42.57

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

10/07/04 12:11

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Woods Hole Group Environmental Laboratories
Batch Weight Report
09/07/2004

Lab ID	QC Type	0408123SST - Sample
0408123-01	SAM	30.29
0408123-02	SAM	30.6
0408123-03	SAM	30.39
0408123-04	SAM	30.29
0408123-05	SAM	30.41
0408123-06	SAM	30.29
0408123-07	SAM	30.28
0408123-08	SAM	30.96
0408123-09	SAM	30.96
0408123-10	SAM	30.2
0408123-11	D	30.31
0408123-11	SAM	30.75
0408123-11M	OP NEWFIE	30.28
0408123-11M	OP SHC	30.28
0408123-12	SAM	30.44
0408123-13	SAM	30.45
0408123-I4	SAM	30.58
0408123-15	SAM	30.54
SS090704B02	B	30
SS090704BS02BS	OP NEWFIE	30
SS090704BS02BS	OP SHC	30
SS090704BSD02BSD	OP NEWFIE	30
SS090704BSD02BSD	OP SHC	30

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46
COPPER: A14601 SULFURIC ACID: 3102030
GLASS WOOL: 4303309989 SODIUM SULFATE: E13478
DIATEMACEOUS EARTH: 00504

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408123SST - OP NEWFIE

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408123-01	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-02	SAM	Shaker	JFR	9/7/04	9/14/04		30.6	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-03	SAM	Shaker	JFR	9/7/04	9/14/04		30.39	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-04	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	20	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-05	SAM	Shaker	JFR	9/7/04	9/14/04		30.41	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-06	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-07	SAM	Shaker	JFR	9/7/04	9/14/04		30.28	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-08	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-09	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-10	SAM	Shaker	JFR	9/7/04	9/14/04		30.2	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	D	Shaker	JFR	9/7/04	9/14/04		30.31	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	M	Shaker	JFR	9/7/04	9/14/04		30.28	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	SAM	Shaker	JFR	9/7/04	9/14/04		30.75	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-12	SAM	Shaker	JFR	9/7/04	9/14/04		30.44	10	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-13	SAM	Shaker	JFR	9/7/04	9/14/04		30.45	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-14	SAM	Shaker	JFR	9/7/04	9/14/04		30.58	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-15	SAM	Shaker	JFR	9/7/04	9/14/04		30.54	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704B02	B	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704BS02	BS	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704BSD02	BSD	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408123SST - OP NEWFIE

Lab ID	Notes
0408123-01	1st Prep: Copper Cleaned
0408123-02	1st Prep: Copper Cleaned
0408123-03	1st Prep: Copper Cleaned
0408123-04	1st Prep: Copper Cleaned
0408123-05	1st Prep: Copper Cleaned
0408123-06	1st Prep: Copper Cleaned
0408123-07	1st Prep: Copper Cleaned
0408123-08	1st Prep: Copper Cleaned
0408123-09	1st Prep: Copper Cleaned
0408123-10	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-12	1st Prep: Copper Cleaned
0408123-13	1st Prep: Copper Cleaned
0408123-14	1st Prep: Copper Cleaned
0408123-15	1st Prep: Copper Cleaned
SS090704B02	1st Prep: Copper Cleaned
SS090704BS02	1st Prep: Copper Cleaned
SS090704BSD02	1st Prep: Copper Cleaned

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/07/2004 0408123SST - OP NEWFIE Analyst: JFR Witness: MP

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408123-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-05	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-06	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-07	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-08	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-09	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-10	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-11	D	SSW083104B	100	µl				SSW090104E	100	µl
0408123-11	M	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
0408123-11	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-12	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-13	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-14	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-15	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SS090704B02	B	SSW083104B	100	µl				SSW090104E	100	µl
SS090704BS02	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SS090704BSD02	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: NEWFIE

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW090104E

Conc. 10 ug/ml

Test: NEWFIE

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW083104B

Conc. 10 ug/ml-PAH 500 ug/mL-SHC

Test: NEWFIE

Standard Type: *Surrogate* *LCS* *MS-MSD*

LFB / *Other* _____

ID# SLW090104G

Conc. 10 ug/ml-PAH 500 ug/mL-SHC

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Woods Hole Group Environmental Laboratories
Batch Clean Up Report
09/07/2004 0408123SST - OP NEWFIE

Lab ID	QC Type	Clean Up Method	Analyst	Clean Up Date	Flow Rate	Coll. Start	Coll. End	Concentration Analyst	Conc. Date	Solvent Ex.	Prefraction Volume	Fractionation Amount	Fractionation Factor	Transfer Volume
0408123-01	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.4		1
0408123-02	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.25		1
0408123-03	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.25		1
0408123-04	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.1		1
0408123-05	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.4		1
0408123-06	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.4		1
0408123-07	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.5		1
0408123-08	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.8		1
0408123-09	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.5		1
0408123-10	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.25		1
0408123-11	D	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.8		1
0408123-11	M	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.8		1
0408123-11	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.5		1
0408123-12	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.2		1
0408123-13	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.4		1
0408123-14	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.5		1
0408123-15	SAM	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	0.8		1
SS090704B02	B	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	1		1
SS090704BS02	BS	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	1		1
SS090704BSD02	BSD	3630	RPR	9/13/04		18	25	MAL	9/14/04	False	2	1		1

Woods Hole Group Environmental Laboratories
Batch Clean Up Report
09/07/2004 0408123SST - OP NEWFIE

Lab ID	Notes
0408123-01	Fraction 1 transferred for analysis
0408123-02	Fraction 1 transferred for analysis
0408123-03	Fraction 1 transferred for analysis
0408123-04	Fraction 1 transferred for analysis
0408123-05	Fraction 1 transferred for analysis
0408123-06	Fraction 1 transferred for analysis
0408123-07	Fraction 1 transferred for analysis
0408123-08	Fraction 1 transferred for analysis
0408123-09	Fraction 1 transferred for analysis
0408123-10	Fraction 1 transferred for analysis
0408123-11	Fraction 1 transferred for analysis
0408123-11	Fraction 1 transferred for analysis
0408123-11	Fraction 1 transferred for analysis
0408123-12	Fraction 1 transferred for analysis
0408123-13	Fraction 1 transferred for analysis
0408123-14	Fraction 1 transferred for analysis
0408123-15	Fraction 1 transferred for analysis
SS090704B02	Fraction 1 transferred for analysis
SS090704BS02	Fraction 1 transferred for analysis
SS090704BSD02	Fraction 1 transferred for analysis

Gravimetric Determination For Column

Analyst: MAL
Date: 9/10/04

BATCH: 0408123

Entered by: MAL
Verified by:

ETR #	Sample #	QC (MB, LCS, D)	Final Volume of Extract (ul)	Aliquot Removed #1 (ul)	Aliquot Removed #2 (ul)	Aliquot Weight #1 (mg)	Aliquot Weight #2 (mg)	Total Extract Oil Weight (mg)	Volume Removed For Column (ul)	Oil to Column (mg)	Dilution Factor	QC (%R, RPD)
0408123	LCS		NA	50	NA	0.214	NA	NA	NA	NA	NA	86%
0408123	1		2000	50	NA	0.704	NA	28.16	400	5.63	5.00	
0408123	2		2000	50	NA	0.848	NA	33.92	250	4.24	8.00	
0408123	3		2000	50	NA	1.165	NA	46.60	250	5.83	8.00	
0408123	4		2000	50	NA	2.903	NA	116.12	100	5.81	20.00	
0408123	5		2000	50	NA	0.743	NA	29.72	400	5.94	5.00	
0408123	6		2000	50	NA	0.751	NA	30.04	400	6.01	5.00	
0408123	7		2000	50	NA	0.502	NA	20.08	500	5.02	4.00	
0408123	8		2000	50	NA	0.384	NA	15.36	800	6.14	2.50	
0408123	9		2000	50	NA	0.571	NA	22.84	500	5.71	4.00	
0408123	10		2000	50	NA	1.165	NA	46.60	250	5.83	8.00	
0408123	11		2000	50	NA	0.399	NA	15.96	500	3.99	4.00	
0408123	11	D	2000	50	NA	0.349	NA	13.96	800	5.58	2.50	13%
0408123	11	MS	2000	50	NA	0.370	NA	14.80	800	5.92	2.50	
0408123	12		2000	50	NA	1.554	NA	62.16	200	6.22	10.00	
0408123	13		2000	50	NA	0.756	NA	30.24	400	6.05	5.00	
0408123	14		2000	50	NA	0.535	NA	21.40	500	5.35	4.00	
0408123	15		2000	50	NA	0.360	NA	14.40	800	5.76	2.50	

Total Extract Oil Weight (mg) = (Final Volume of Extract / Aliquot Removed) * Aliquot Weight
Sample Weight (mg/mL) = 20 * Aliquot Weight (mg)
LCS TV = 5 mg/mL

Oil to Column = Total Extract Oil Weight (mg) / Dilution Factor
Dilution Factor = Final Volumne of Extract (ul) / Volume Removed For Column (ul)

TEMPLATE: GravimetricT.XLT
Duplicates should agree within +/- 10%.

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Gravimetric Determination For Column

Analyst: MAL
Date: 9/10/04

BATCH: 0408123

Entered by: MAL
Verified by:

ETR #	Sample #	QC (MB, LCS, D)	Final Volume of Extract (ul)	Aliquot Removed #1 (ul)	Aliquot Removed #2 (ul)	Aliquot Weight #1 (mg)	Aliquot Weight #2 (mg)	Total Extract Oil Weight (mg)	Volume Removed For Column (ul)	Oil to Column (mg)	Dilution Factor	QC (%R, RPD)
0408123	LCS		NA	50	NA	0.214	NA	NA	NA	NA	NA	0%
0408123	1		2000	50	NA	0.704	NA					
0408123	2		2000	50	NA	0.848	NA					
0408123	3		2000	50	NA	1.165	NA					
0408123	4		2000	50	NA	2.903	NA					
0408123	5		2000	50	NA	0.743	NA					
0408123	6		2000	50	NA	0.751	NA					
0408123	7		2000	50	NA	0.502	NA					
0408123	8		2000	50	NA	0.384	NA					
0408123	9		2000	50	NA	0.571	NA					
0408123	10		2000	50	NA	1.165	NA					
0408123	11		2000	50	NA	0.399	NA					
0408123	11	D	2000	50	NA	0.349	NA					#VALUE!
0408123	11	MS	2000	50	NA	0.370	NA					
0408123	12		2000	50	NA	1.554	NA					
0408123	13		2000	50	NA	0.756	NA					
0408123	14		2000	50	NA	0.535	NA					
0408123	15		2000	50	NA	0.380	NA					

Total Extract Oil Weight (mg) = (Final Volume of Extract / Aliquot Removed) * Aliquot Weight
Sample Weight (mg/mL) = 20 * Aliquot Weight (mg)
LCS TV = 5 mg/mL

Oil to Column = Total Extract Oil Weight (mg) / Dilution Factor
Dilution Factor = Final Volumne of Extract (ul) / Volume Removed For Column (ul)

TEMPLATE: GravimetricT.XLT
Duplicates should agree within +/- 10%.

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408123ST

Lab ID	Extract Vol (uL)	Standard ID and Vial #	Vol IS Added (uL)	Pre Injection Vol (uL)[1]	Final Volume Equivalent	Spiked By	Witnessed By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408123-01	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-02	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-03	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-04	900	SSW083104D 1OF3	100	1000	20	RPR	RPR	500	500	9/11/04
0408123-05	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-06	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-07	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-08	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-09	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-10	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-11	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-11D	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-11MS	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-12	900	SSW083104D 1OF3	100	1000	10	RPR	RPR	500	500	9/11/04
0408123-13	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-14	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-15	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
SS090704B02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04
SS090704BS02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04
SS090704BSD02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04

[1] Includes Internal Std

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408123ST

Lab ID	Extract Vol (uL)	Standard ID and Vial	Vol Added (uL)	Pre-Injection Vol (uL)[1]	Final Volume Equivalent	Spiked By	Witnd By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408123-01-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-02-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-03-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-04-F1	900	SSW083104D 1OF3	100	1000	20	MAL	RPR	1000	NA	9/14/04
0408123-05-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-06-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-07-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-08-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-09-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-10-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-11-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-11D-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-11MS-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-12-F1	900	SSW083104D 1OF3	100	1000	10	MAL	RPR	1000	NA	9/14/04
0408123-13-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-14-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-15-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
SS090704B02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BS02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BSD02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04

[1] Includes Internal Std

```
   Sequence Name: C:\MSDChem\1\sequence\S1091701.S
         Comment: Dural column collection
        Operator: BL
       Data Path: C:\MSDCHEM\1\DATA\SEPT17\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ---------------------------------------------------------------------------
   Line                      Sample Name/Misc Info
 1) RearSamp        3
     Datafile           i FID 1 ug/mL
     Method             PAH10916
 2)  Sample         4   I109161  PAH10916 I109161
 3) RearSamp        5
     Datafile           i FID 10 ug/mL
     Method             PAH10916
 4)  Sample         6   I109162  PAH10916 I109162
 5)  Sample         8   I109163  PAH10916 I109163
 6)  Sample        10   I109164  PAH10916 I109164
 7)  Sample        12   I109165  PAH10916 I109165
 8)  Sample        14   I109166  PAH10916 I109166
 9)  Sample        16   I109167  PAH10916 I109167
10)  Sample        17   ANS10916 PAH10916 ANS10916  SS092304AWS01
11)  Sample        18   Q10916   PAH10916 Q10916
12)  Sample        19   SA10916  PAH10916 SA10916   SS092304SA01
13)  Sample        20   SSF10916 PAH10916 SSF10916  SS092304SSF01
14)  Sample        21   C109161  PAH10916 C109161
15)  Sample        22   B10916   PAH10916 B10916
16) Sample         23
     Datafile           TS090704B05
     Method             PAH10916
17) Sample         24
     Datafile           TS090704B06 ✓
     Method             PAH10916
18) Sample         25
     Datafile           TS090704BS05 ✓
     Method             PAH10916
19) Sample         26
     Datafile           TS090704BSD05 ✓
     Method             PAH10916
20) Sample         27
     Datafile           0409019-01 ✓
     Method             PAH10916
21) Sample         28
     Datafile           0409019-01D ✓
     Method             PAH10916
22)  Sample        29   C109162  PAH10916 C109162
23) Sample         30
     Datafile           TS083004B06
     Method             PAH10916
24) Sample         31
```

	Datafile		TS083004BS03
	Method		PAH10916
25)	Sample	32	
	Datafile		TS083004BSD03
	Method		PAH10916
26)	Sample	33	
	Datafile		0408098-01
	Method		PAH10916
27)	Sample	~~33~~	
	Datafile	34	0408098-01D
	Method		PAH10916
28)	Sample	29	C109163 PAH10916 C109163

Sequence Name: C:\MSDChem\1\sequence\S1092001.S
Comment: Derecktor
Operator: BL
Data Path: C:\MSDCHEM\1\DATA\SEPT20A\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Reprinted CM 9/23/04

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line		Sample Name/Misc Info
1) Sample	1	C1092001 PAH10916 C1092001
2) Sample	2	
Datafile		SW090104B11
Method		PAH10916
3) Sample	3	
Datafile		SW090104BS07
Method		PAH10916
4) Sample	4	
Datafile		SW090104BSD07
Method		PAH10916
5) Sample	5	
Datafile		0408~~119-04~~ 122-04 MS
Method		PAH10916
6) Sample	6	C1092002 PAH10916 C1092002
7) Sample	7	
Datafile		SS090704B02
Method		PAH10916
8) Sample	8	
Datafile		SS090704BS02
Method		PAH10916
9) Sample	9	
Datafile		SS090704BSD02
Method		PAH10916
10) Sample	10	
Datafile		0408123-01
Method		PAH10916
11) Sample	11	
Datafile		0408123-02
Method		PAH10916
12) Sample	12	
Datafile		0408123-03
Method		PAH10916
13) Sample	13	
Datafile		0408123-04
Method		PAH10916
14) Sample	14	
Datafile		0408123-05
Method		PAH10916
15) Sample	15	
Datafile		0408123-06
Method		PAH10916
16) Sample	16	

```
     Datafile          0408123-07
     Method            PAH10916
17)  Sample       17   C1092003 PAH10916 C1092003
18) Sample        18
     Datafile          0408123-08
     Method            PAH10916
19) Sample        19
     Datafile          0408123-09
     Method            PAH10916
20) Sample       100
     Datafile          0408048-06E2
     Method            PAH10916
21) Sample        20
     Datafile          0408123-10
     Method            PAH10916
22) Sample        21
     Datafile          0408123-11
     Method            PAH10916
23) Sample        22
     Datafile          0408123-11D
     Method            PAH10916
24) Sample        23
     Datafile          0408123-11M
     Method            PAH10916
25) Sample        24
     Datafile          0408123-12
     Method            PAH10916
26) Sample        25
     Datafile          0408123-13
     Method            PAH10916
27) Sample        26
     Datafile          0408123-14
     Method            PAH10916
28) Sample        27
     Datafile          0408123-15
     Method            PAH10916
29)  Sample       28   C1092004 PAH10916 C1092004
30) Sample        29
     Datafile          SS090704B02-F1
     Method            PAH10916
31) Sample        30
     Datafile          SS090704BS02-F1
     Method            PAH10916
32) Sample        31
     Datafile          SS090704BSD02-F1
     Method            PAH10916
33) Sample        32
     Datafile          0408123-01-F1
     Method            PAH10916
34) Sample        33
     Datafile          0408123-02-F1
     Method            PAH10916
35) Sample        34
     Datafile          0408123-03-F1
     Method            PAH10916
36) Sample        35
     Datafile          0408123-04-F1
     Method            PAH10916
37) Sample        36
     Datafile          0408123-05-F1
```

```
     Method              PAH10916
38)  Sample         37
     Datafile            0408123-06-F1
     Method              PAH10916
39)  Sample         38
     Datafile            0408123-07-F1
     Method              PAH10916
40)   Sample        39  C1092005 PAH10916 C1092005
41)  Sample         40
     Datafile            0408123-08-F1
     Method              PAH10916
42)  Sample         41
     Datafile            0408123-09-F1
     Method              PAH10916
43)  Sample         42
     Datafile            0408123-10-F1
     Method              PAH10916
```

See 9/24

Sequence Name: C:\MSDChem\1\sequence\S1092001.S

Line Type	Vial	DataFile	Method	Sample Name
44) Sample	43			
Datafile		0408123-11-F1		see 9/24
Method		PAH10916		
45) Sample	44			
Datafile		0408123-11D-F1		
Method		PAH10916		
46) Sample	45			
Datafile		0408123-11MS-F1		
Method		PAH10916		
47) Sample	46			
Datafile		0408123-12-F1		
Method		PAH10916		
48) Sample	46	DCM	PAH10916	DCM
49) Sample	46	BLANK2	PAH10916	BLANK2
50) Sample	47			
Datafile		0408123-13-F1		see 9/24
Method		PAH10916		
51) Sample	48			
Datafile		0408123-14-F1		
Method		PAH10916		
52) Sample	49			
Datafile		0408123-15-F1		
Method		PAH10916		
53) Sample	50	C1092006	PAH10916	C1092006

error data collection
ran BlK2 +
Restarted
CT
9/23/04

```
   Sequence Name: C:\MSDChem\1\sequence\S1092401.S
         Comment: Derecktor
        Operator: BL
       Data Path: C:\MSDCHEM\1\DATA\SEPT24\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

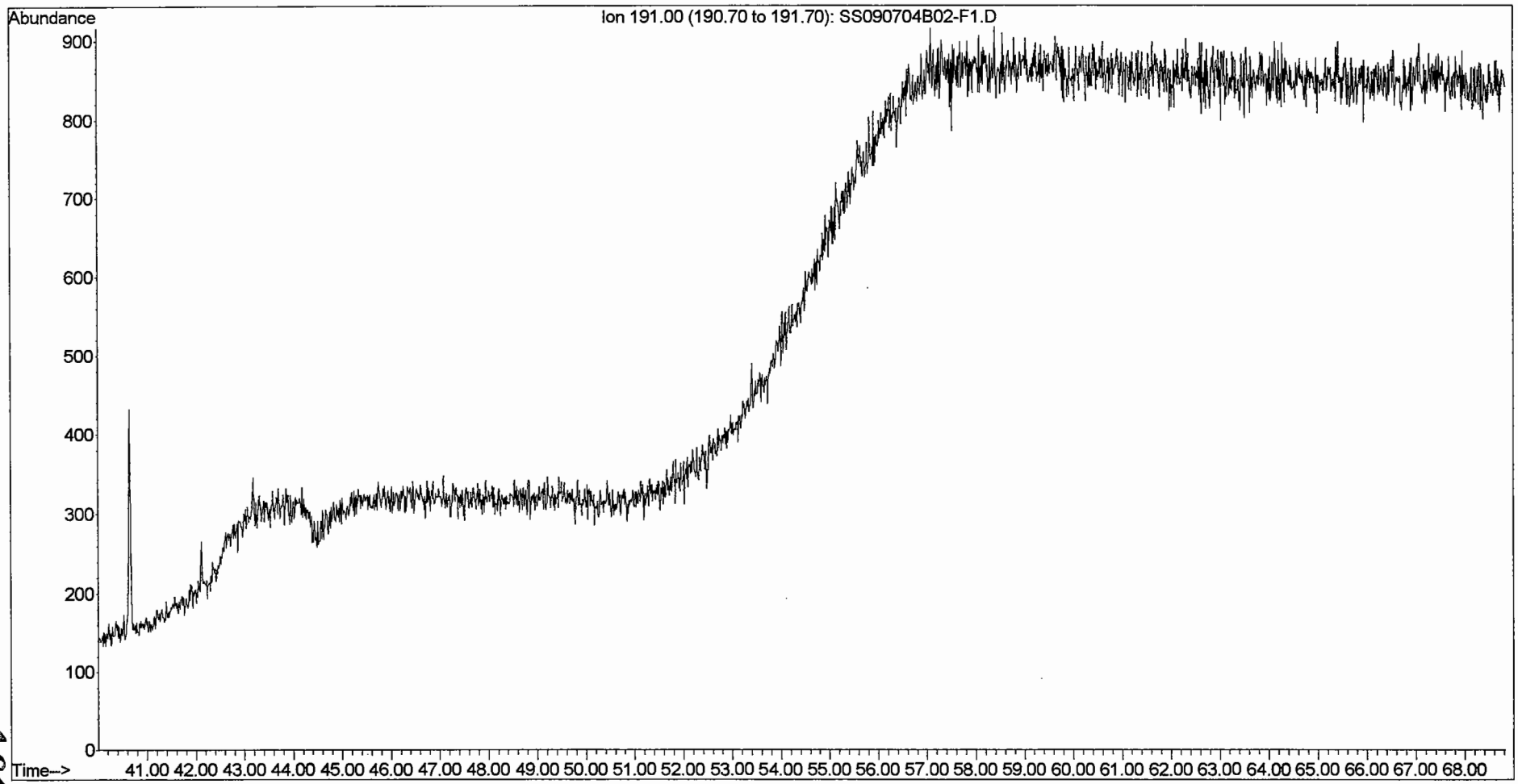
   Method Sections To Run     On A Barcode Mismatch
    (X) Full Method             (X) Inject Anyway
    ( ) Reprocessing Only       ( ) Don't Inject

   ----------------------------------------------------------------------
   Line                     Sample Name/Misc Info
 1)  Sample        50  C1092007 PAH10916 C1092007
 2)  Sample        50  C1092008 PAH10916 C1092008
 3) Sample          1
     Datafile          ANS primer1
     Method            PAH10924
 4)  Sample         2  C109241A PAH10916 C109241A
 5) Sample          1
     Datafile          ANS primer2
     Method            PAH10924
 6) Sample          1
     Datafile          ANS primer3
     Method            PAH10924
 7)  Sample         2  DCM1     PAH10924 DCM1
 8)  Sample         3  I1092401 PAH10924 I1092401
 9)  Sample         4  I1092402 PAH10924 I1092402
10)  Sample         5  I1092403 PAH10924 I1092403
11)  Sample         6  I1092404 PAH10924 I1092404
12)  Sample         7  I1092405 PAH10924 I1092405
13)  Sample         8  I1092406 PAH10924 I1092406
14)  Sample         9  I1092407 PAH10924 I1092407
15)  Sample        10  Q1092401 PAH10924 Q1092401
16) Sample         11
     Datafile          ANS109241
     Method            PAH10924
17)  Sample        10  Q1092402 PAH10924 Q1092402
18)  Sample        12  SA109241 PAH10924 SA109241
19) Sample         13
     Datafile          SSF109241
     Method            PAH10924
20)  Sample        14  C1092401 PAH10924 C1092401
21) Sample         40
     Datafile          0408123-08-F1
     Method            PAH10924
22) Sample         41
     Datafile          0408123-09-F1
     Method            PAH10924
23) Sample         42
     Datafile          0408123-10-F1
     Method            PAH10924
24) Sample         43
     Datafile          0408123-11-F1
     Method            PAH10924
```

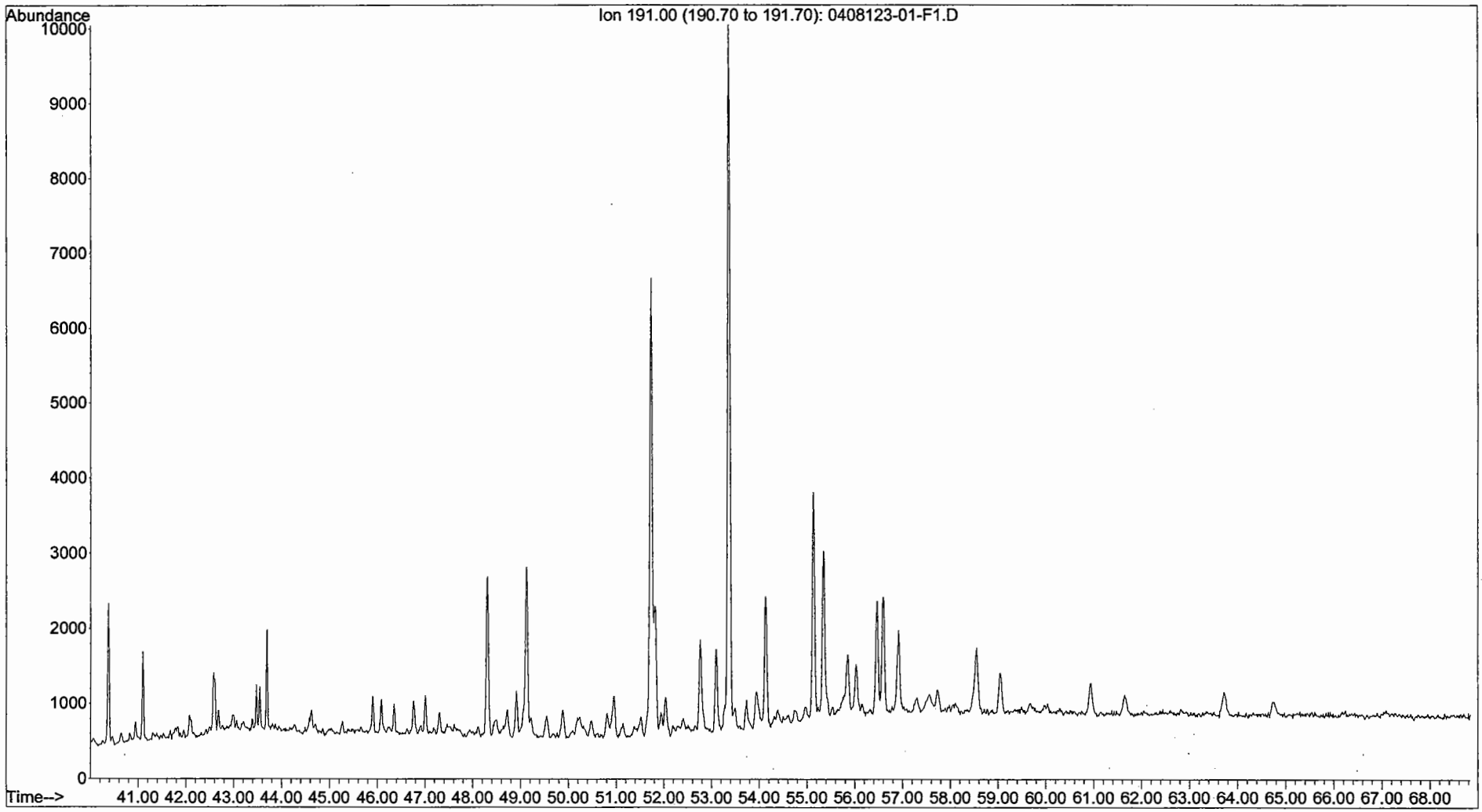
```
25) Sample        44
     Datafile          0408123-11D-F1
     Method            PAH10924
26) Sample        45
     Datafile          0408123-11MS-F1
     Method            PAH10924
27) Sample        46
     Datafile          0408123-12-F1
     Method            PAH10924
28) Sample        47
     Datafile          0408123-13-F1
     Method            PAH10924
29) Sample        48
     Datafile          0408123-14-F1
     Method            PAH10924
30) Sample        49
     Datafile          0408123-15-F1
     Method            PAH10924
31)  Sample       50  C1092402 PAH10924 C1092402
```

Ion Plots
&
Histograms

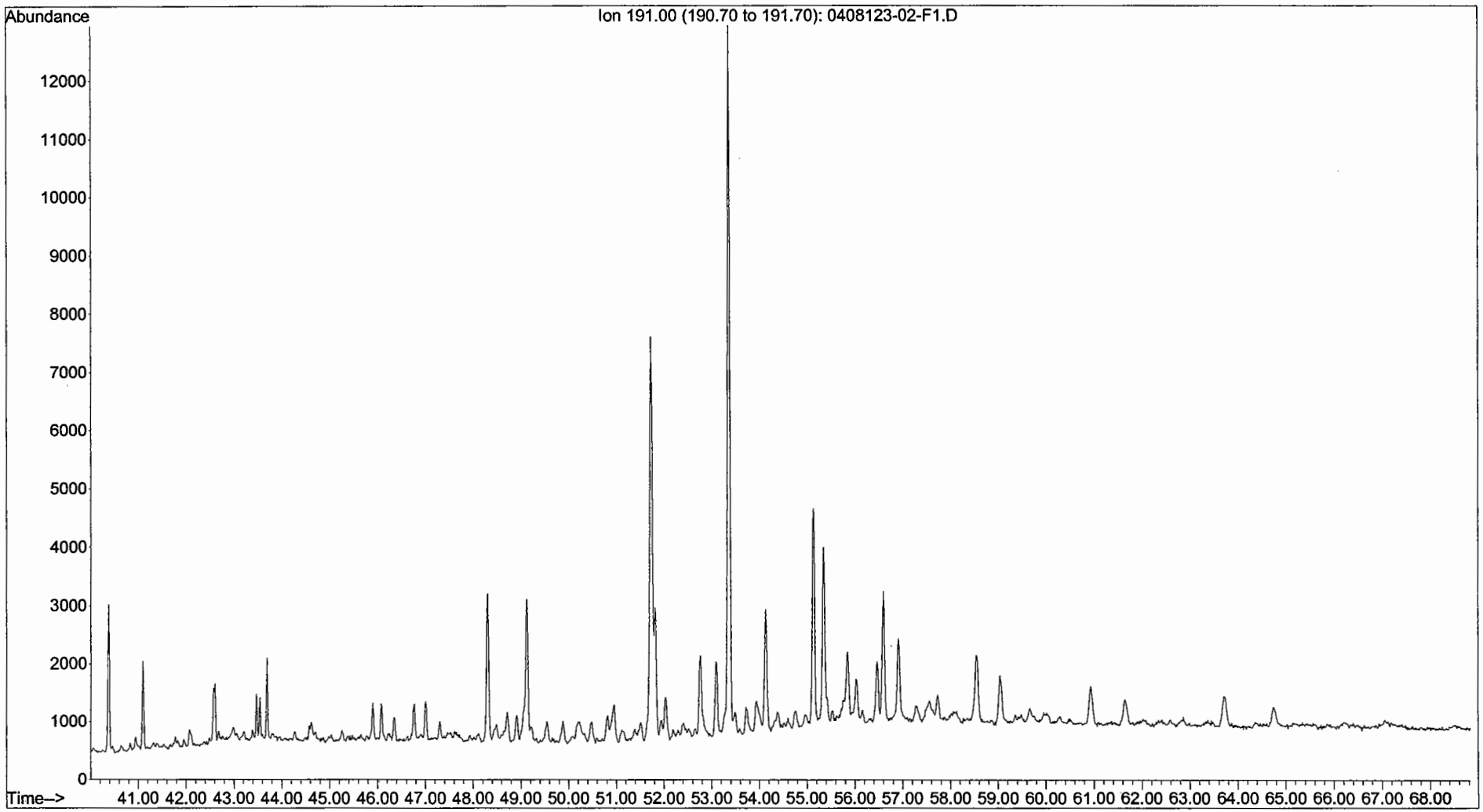
File :O:\Organics\DATA\PAH1\SEPT20A\SS090704B02-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: SS090704B02-F1
Misc Info : 1X
Vial Number: 29



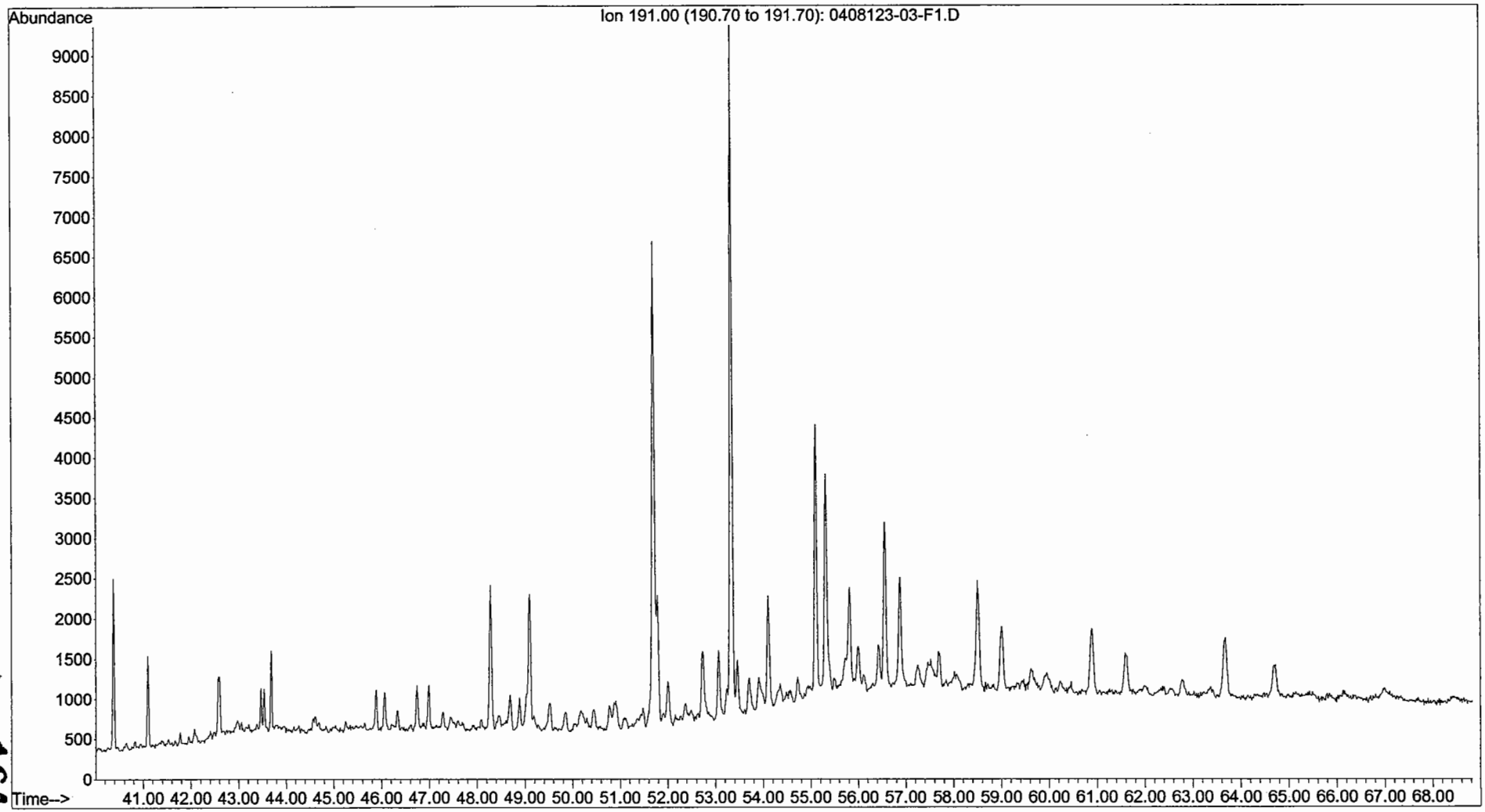
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-01-F1
Misc Info : 1X
Vial Number: 32



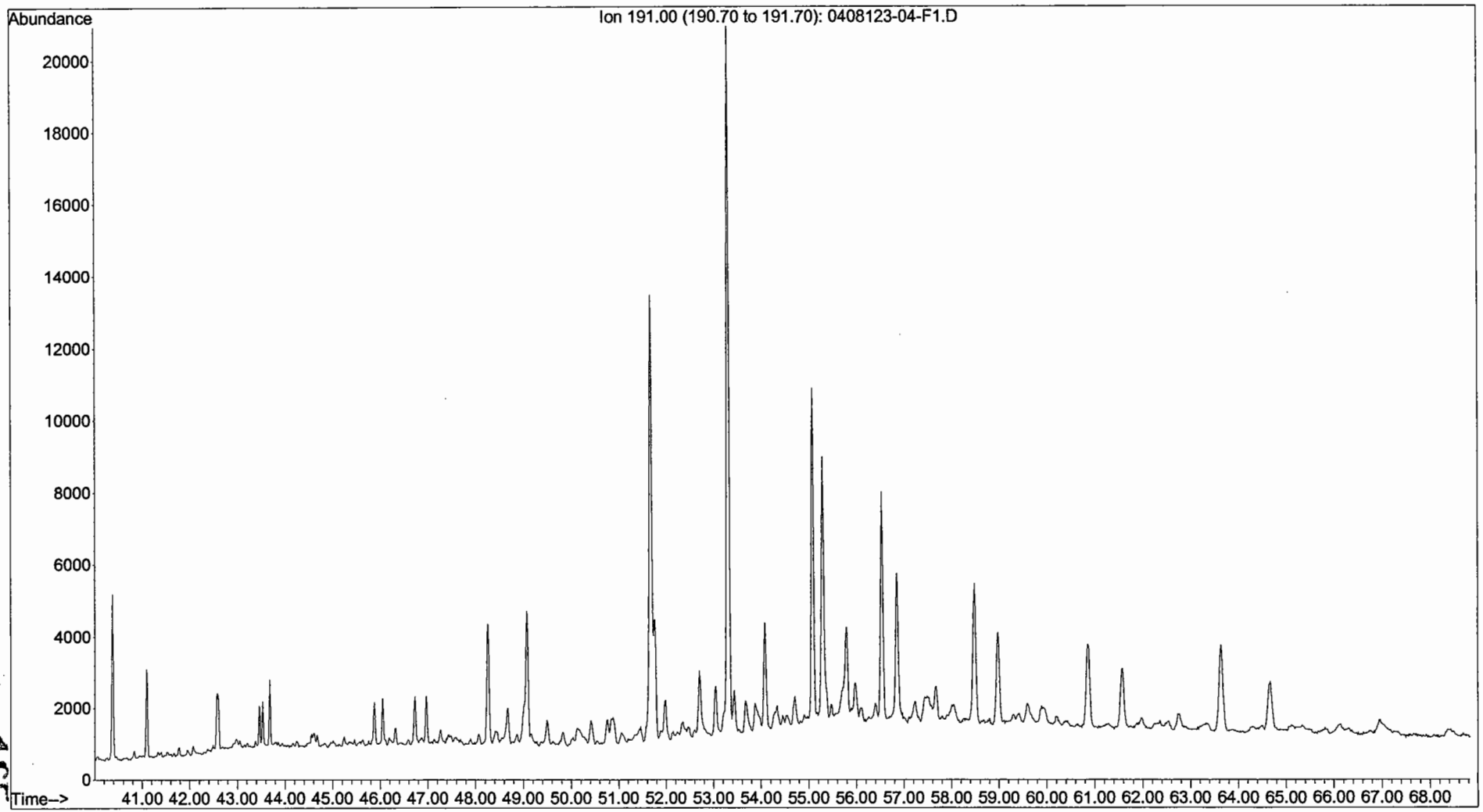
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-02-F1
Misc Info : 1X
Vial Number: 33



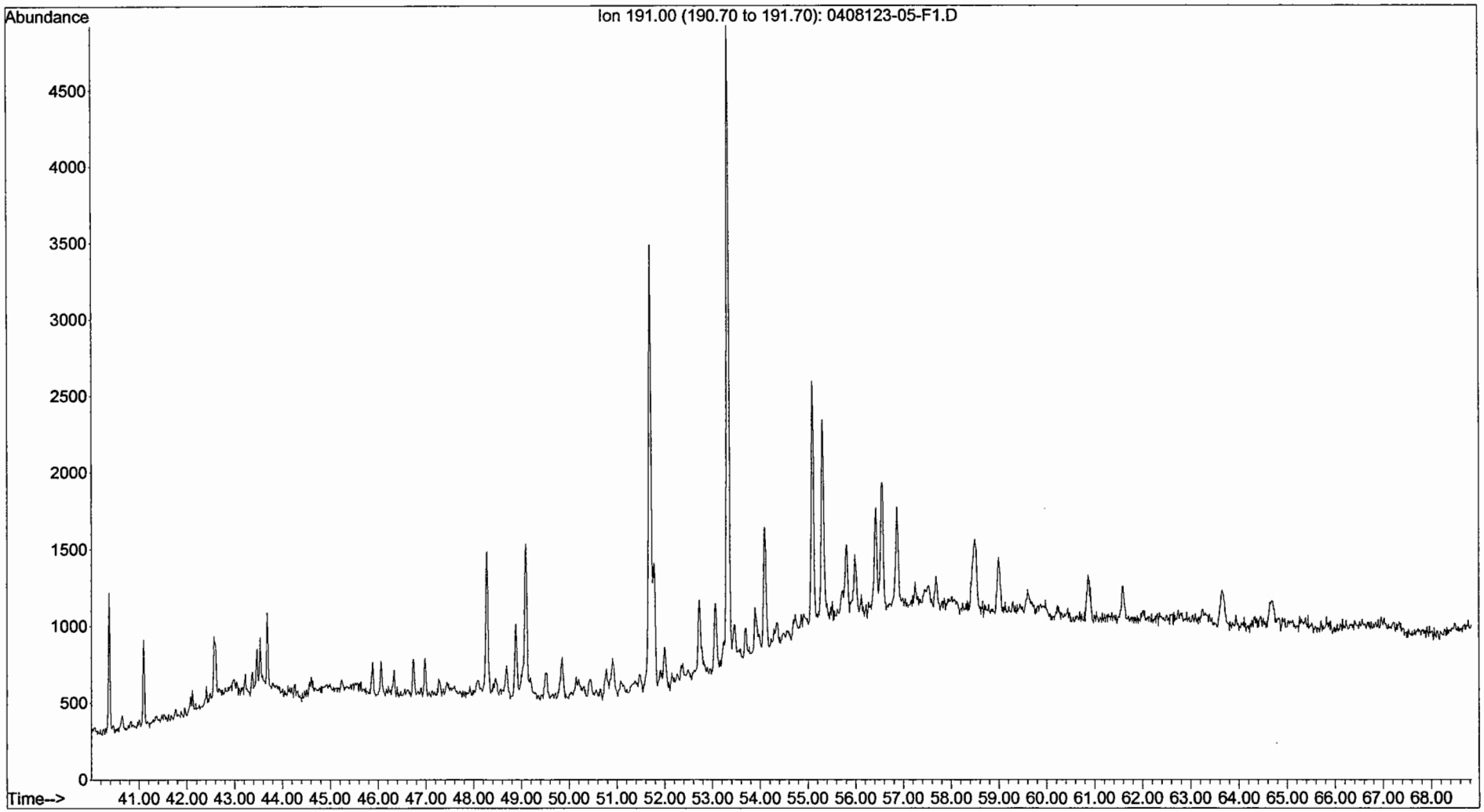
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-03-F1
Misc Info : 1X
Vial Number: 34



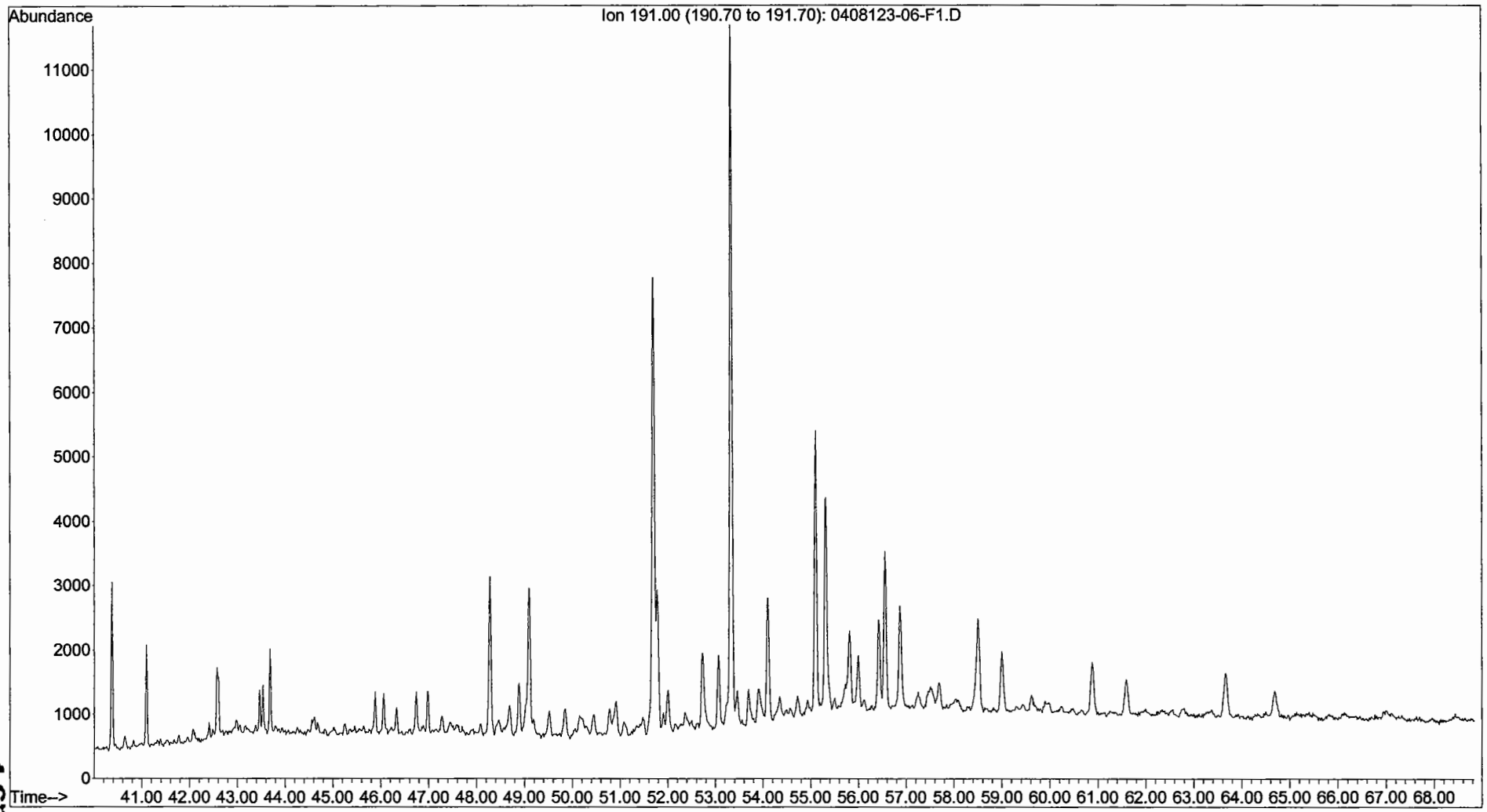
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-04-F1
Misc Info : 1X
Vial Number: 35



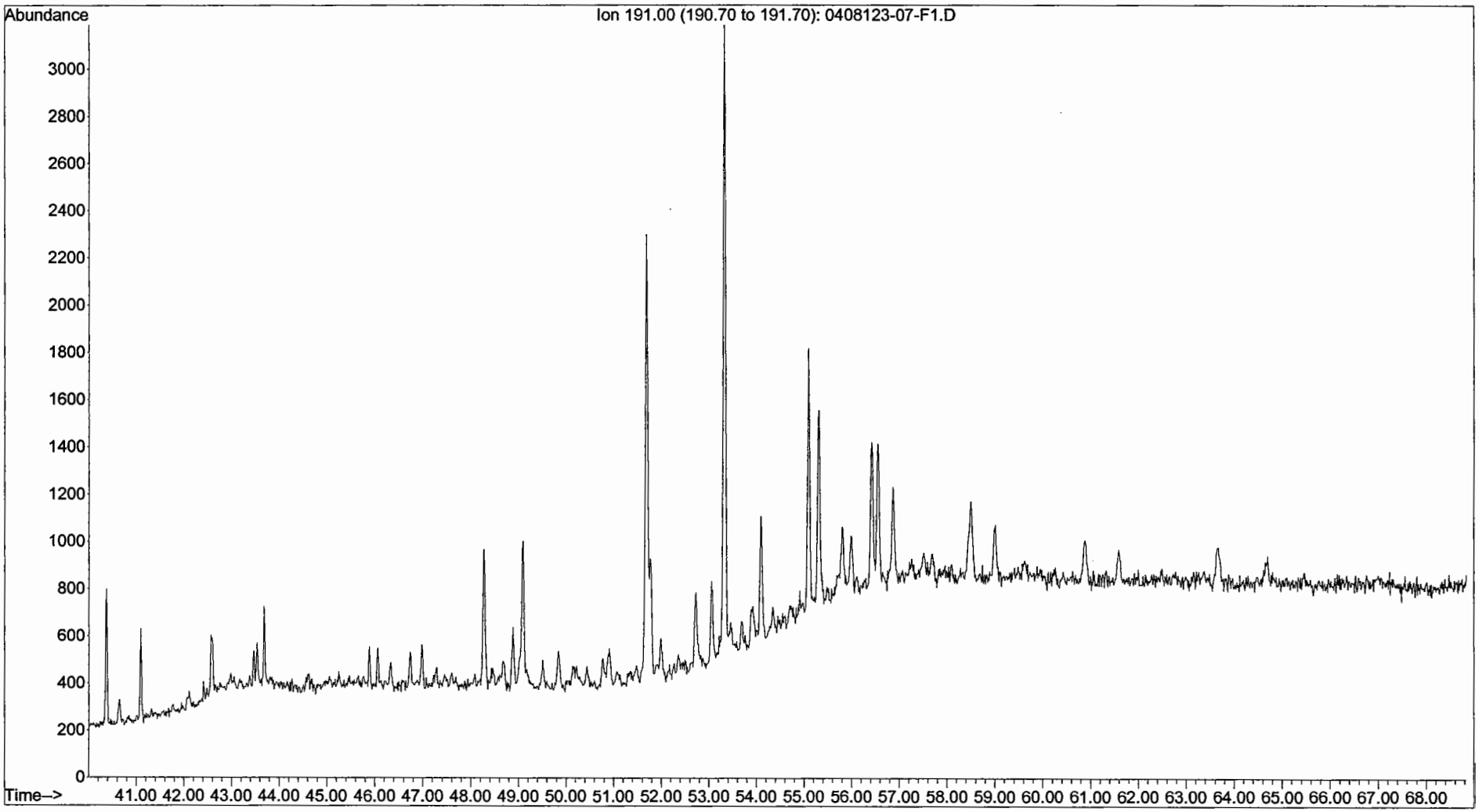
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-05-F1
Misc Info : 1X
Vial Number: 36



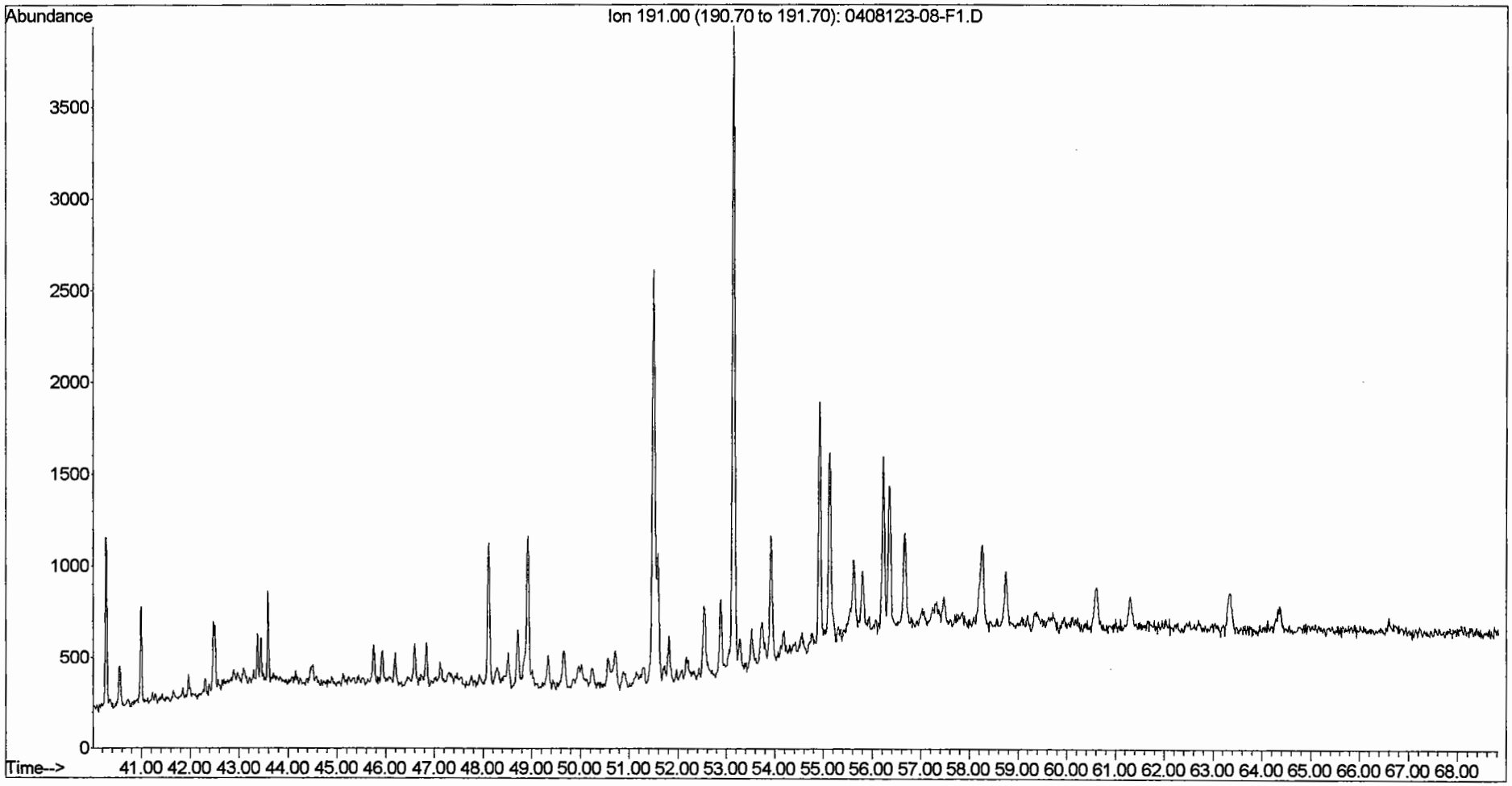
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-06-F1
Misc Info : 1X
Vial Number: 37



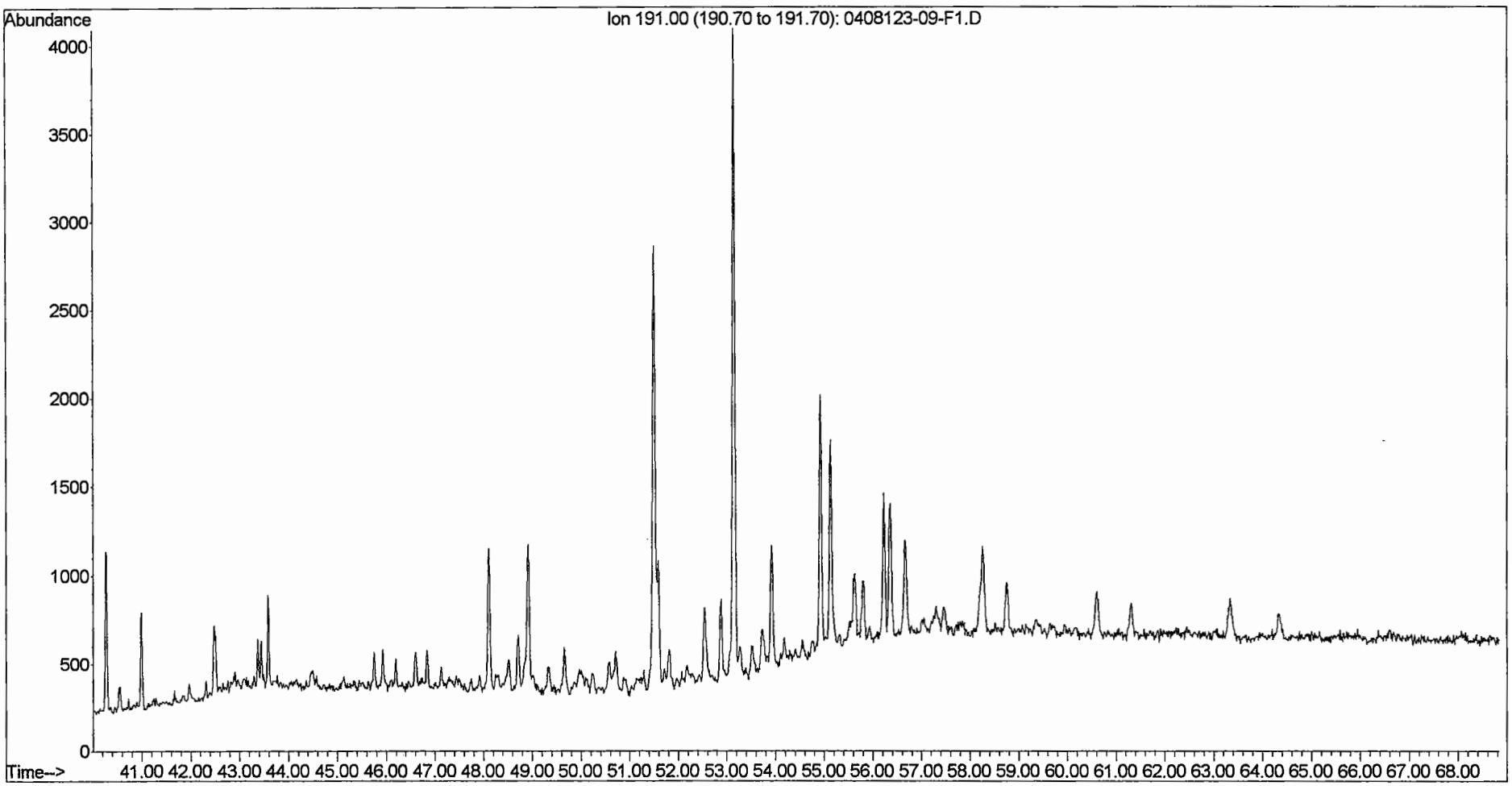
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-07-F1.D
Operator : BL
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-07-F1
Misc Info : 1X
Vial Number: 38



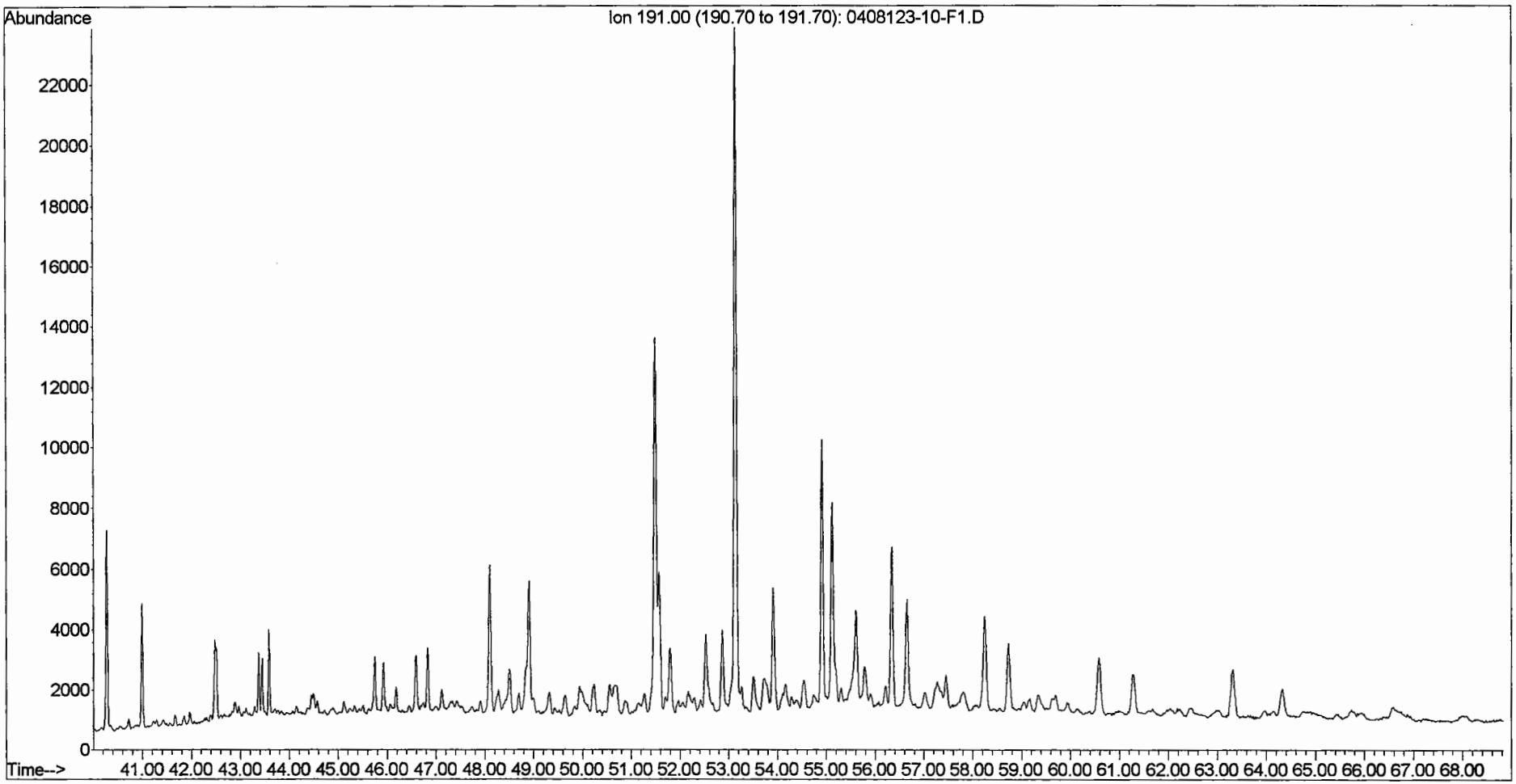
File :O:\Organics\DATA\PAH1\SEPT24\0408123-08-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-08-F1
Misc Info : 1X
Vial Number: 40



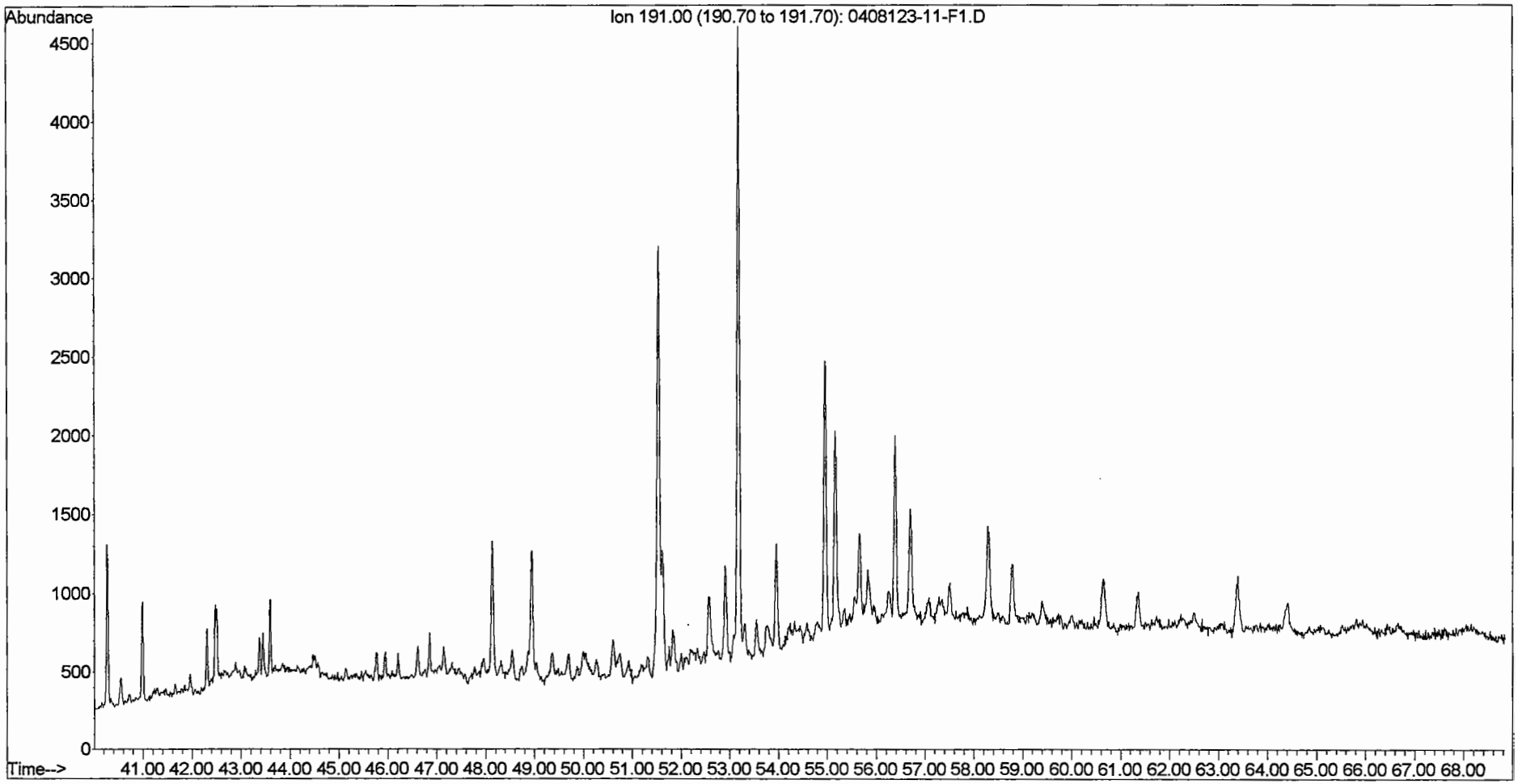
File :O:\Organics\DATA\PAH1\SEPT24\0408123-09-F1.D
Operator : BL
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-09-F1
Misc Info : 1X
Vial Number: 41



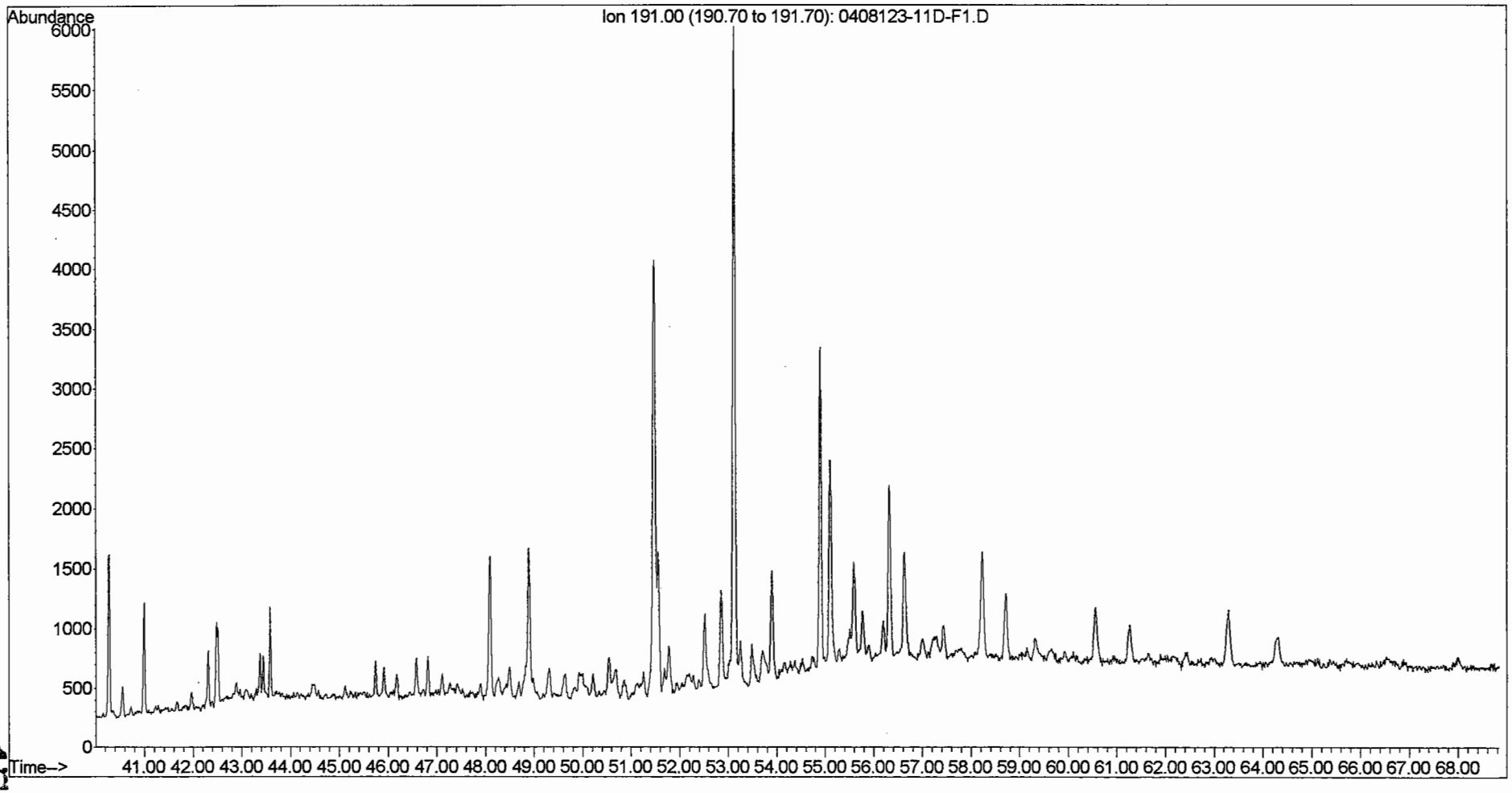
File :O:\Organics\DATA\PAH1\SEPT24\0408123-10-F1.D
Operator : BL
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-10-F1
Misc Info : 1X
Vial Number: 42



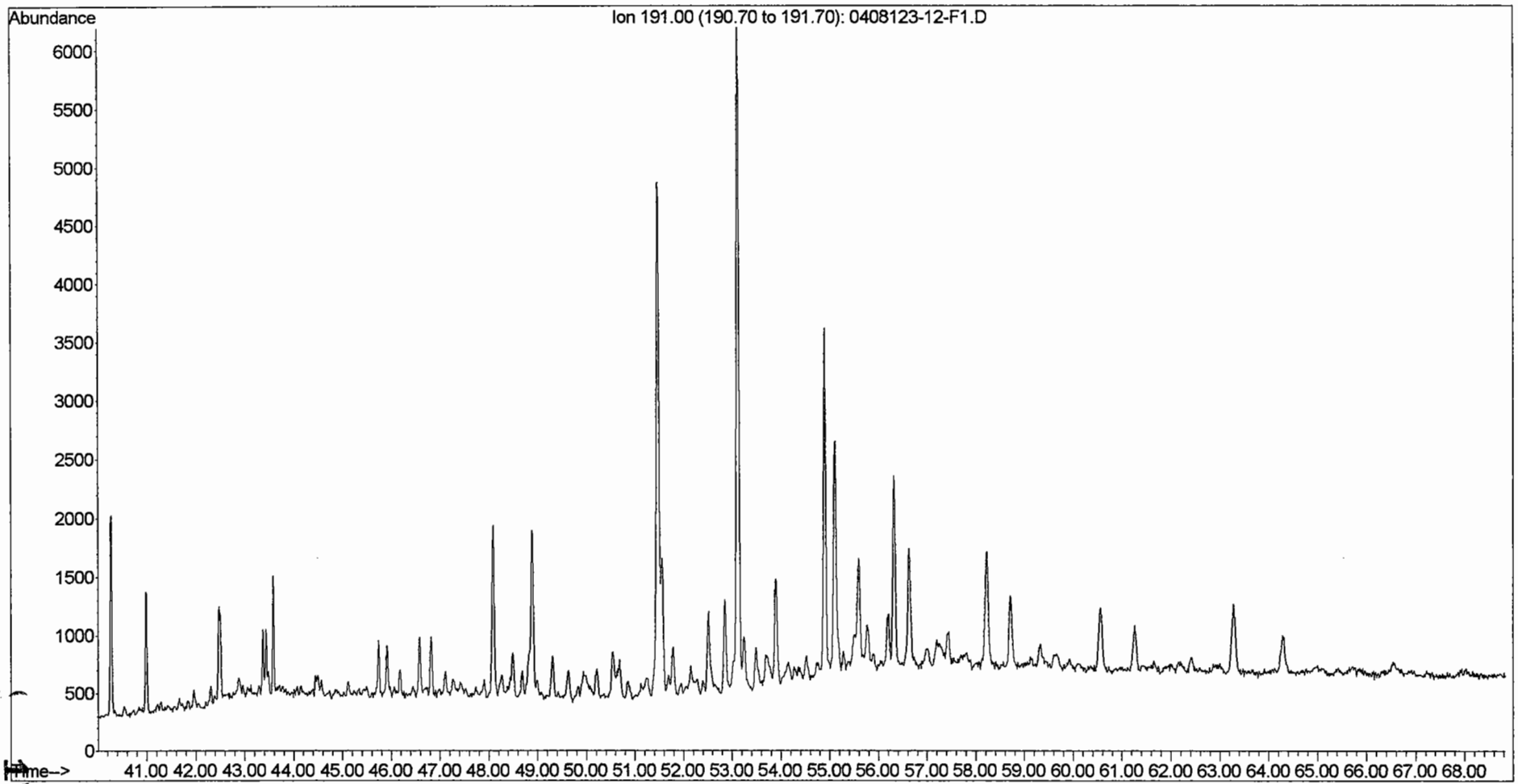
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11-F1.D
Operator : BL
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11-F1
Misc Info : 1X
Vial Number: 43



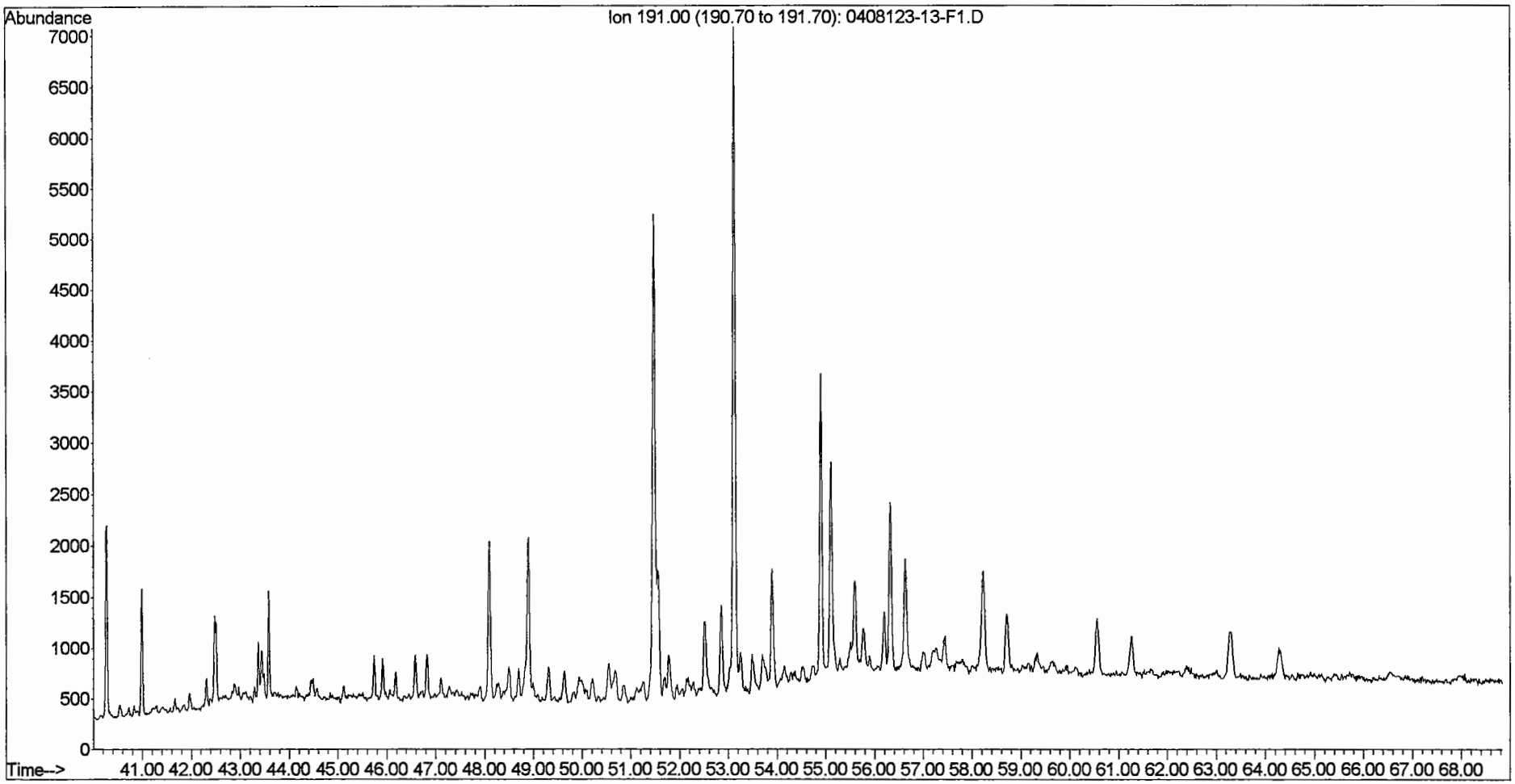
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11D-F1.D
Operator : BL
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11D-F1
Misc Info : 1X
Vial Number: 44



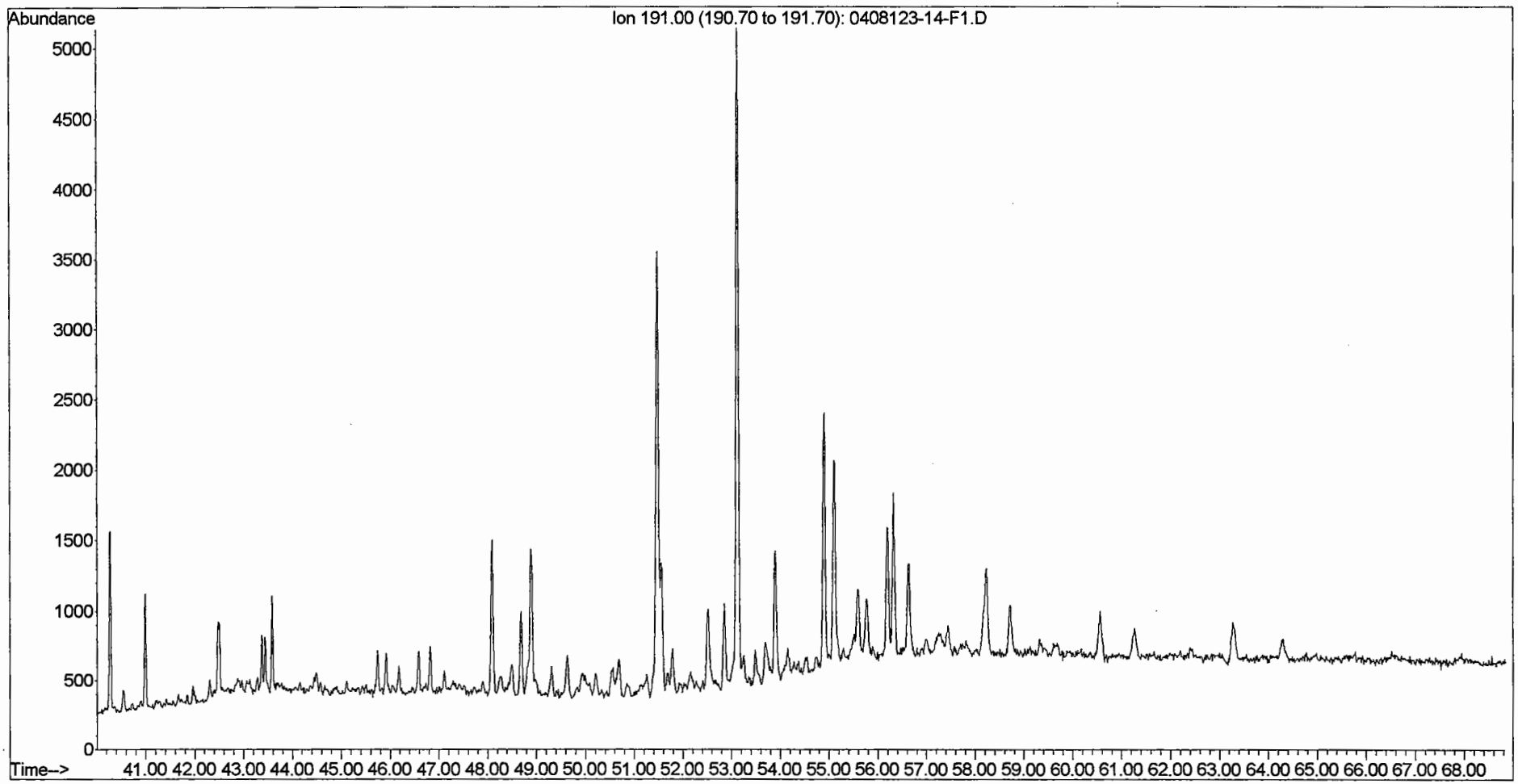
File :O:\Organics\DATA\PAH1\SEPT24\0408123-12-F1.D
Operator : BL
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-12-F1
Misc Info : 1X
Vial Number: 46



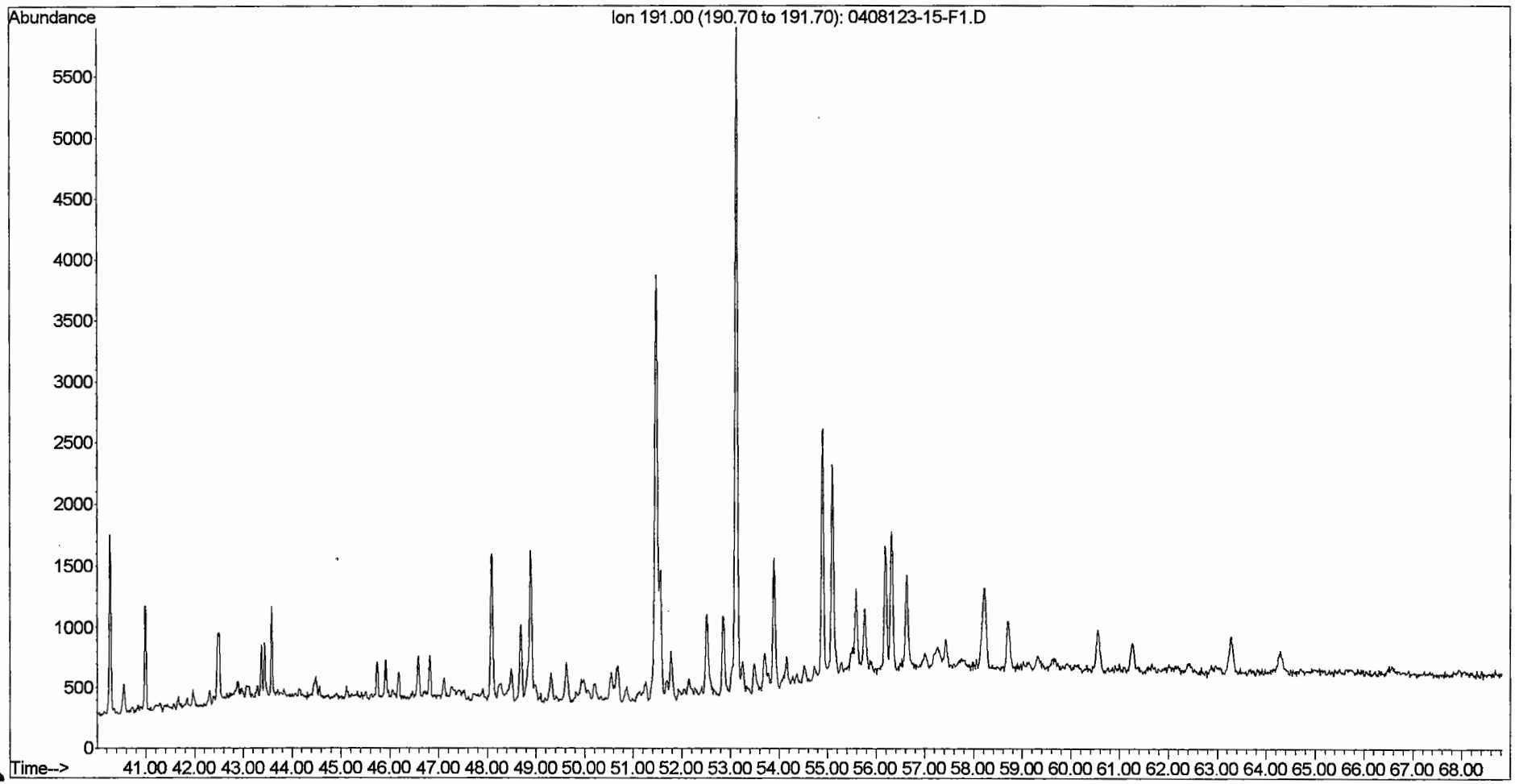
File :O:\Organics\DATA\PAH1\SEPT24\0408123-13-F1.D
Operator : BL
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-13-F1
Misc Info : 1X
Vial Number: 47



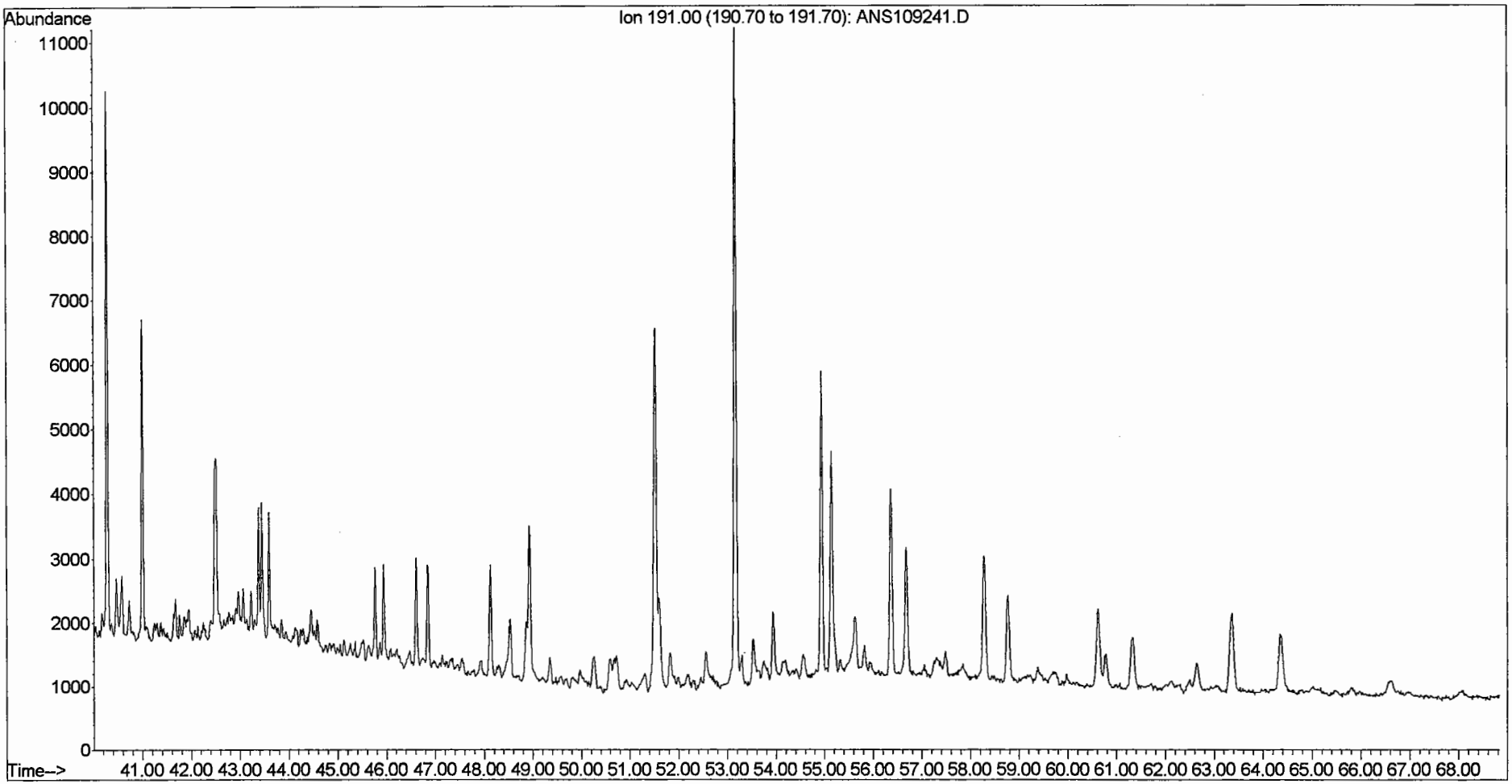
File :O:\Organics\DATA\PAH1\SEPT24\0408123-14-F1.D
Operator : BL
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-14-F1
Misc Info : 1X
Vial Number: 48



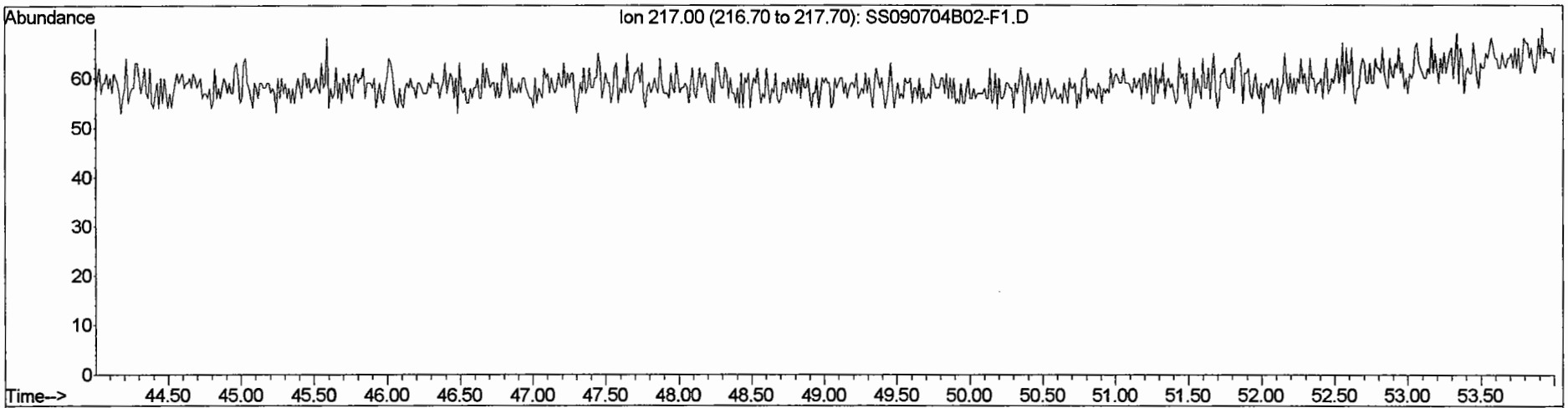
File :O:\Organics\DATA\PAH1\SEPT24\0408123-15-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-15-F1
Misc Info : 1X
Vial Number: 49

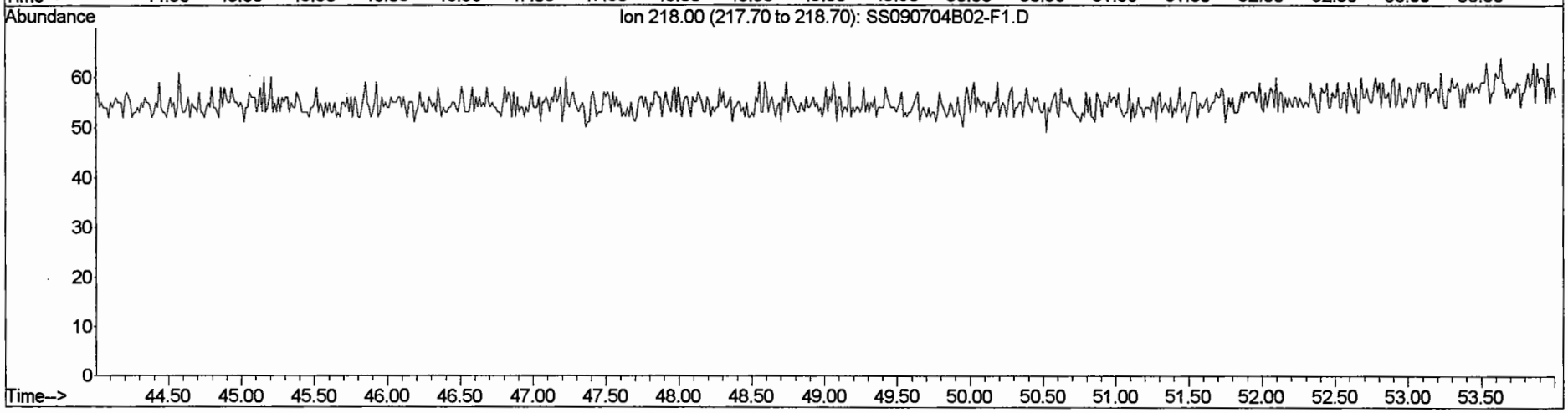


File :O:\Organics\DATA\PAH1\SEPT24\ANS109241.D
Operator : BL
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: ANS109241
Misc Info : SW090104A 5.14 mg/mL
Vial Number: 11

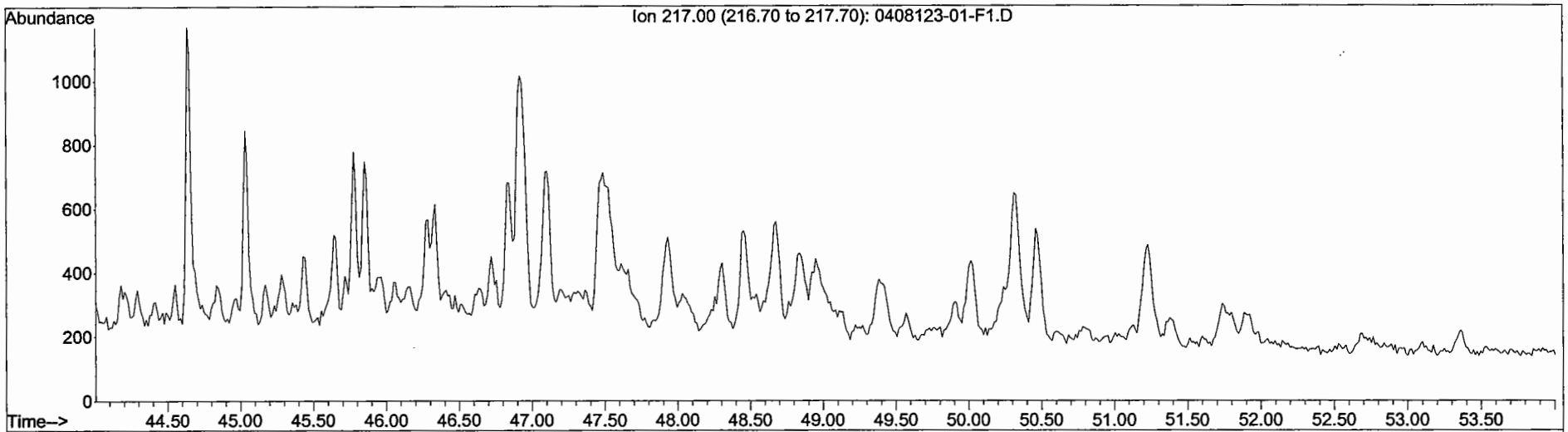


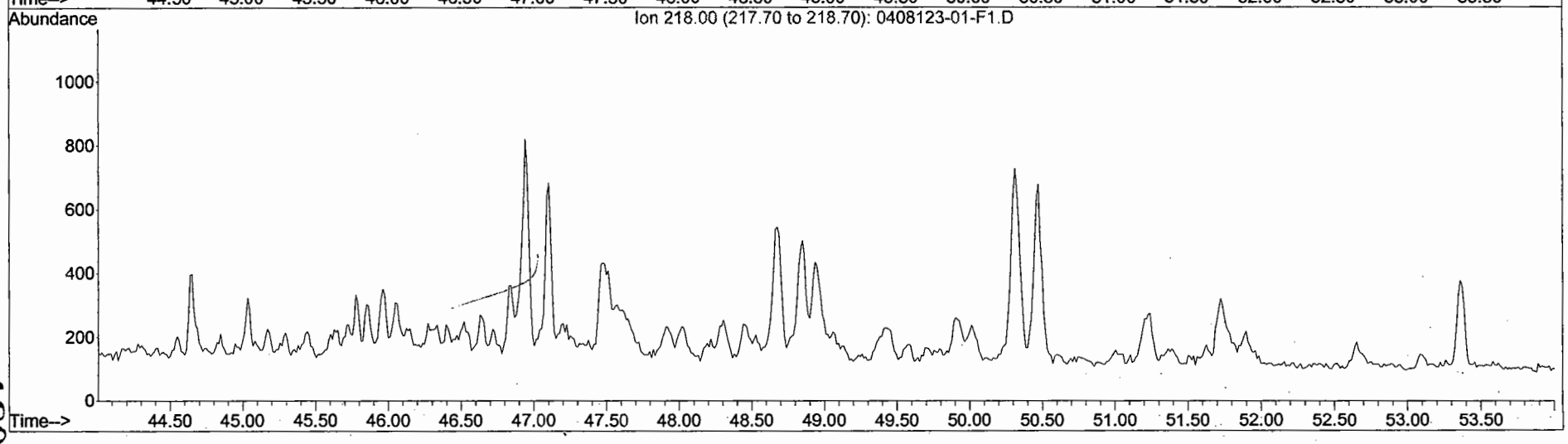
File :O:\Organics\DATA\PAH1\SEPT20A\SS090704B02-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: SS090704B02-F1
Misc Info : 1X
Vial Number: 29



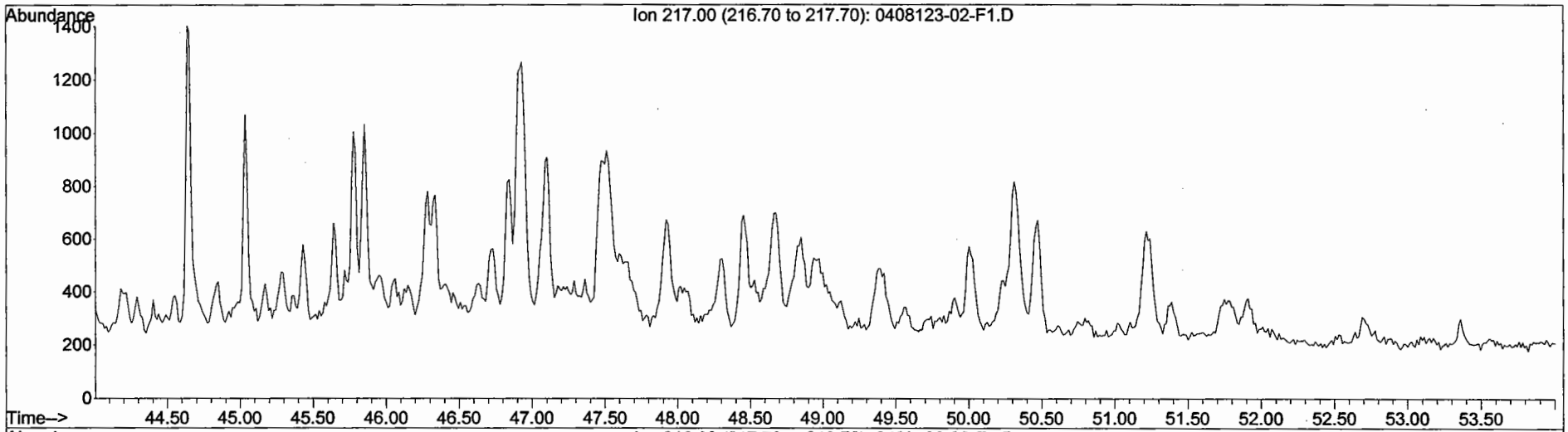


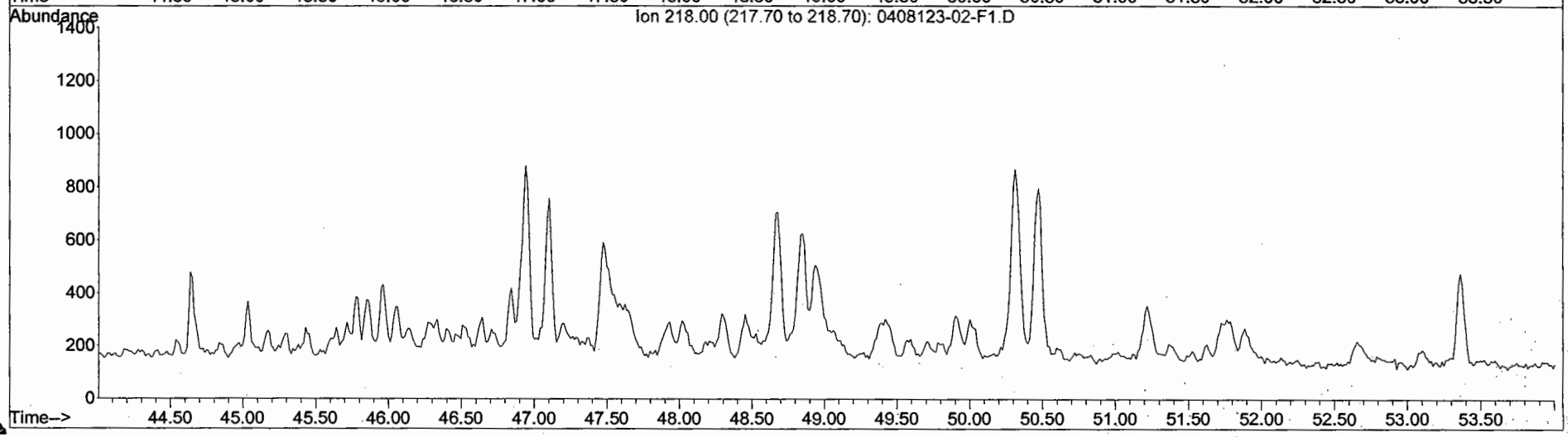
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-01-F1
Misc Info : 1X
Vial Number: 32



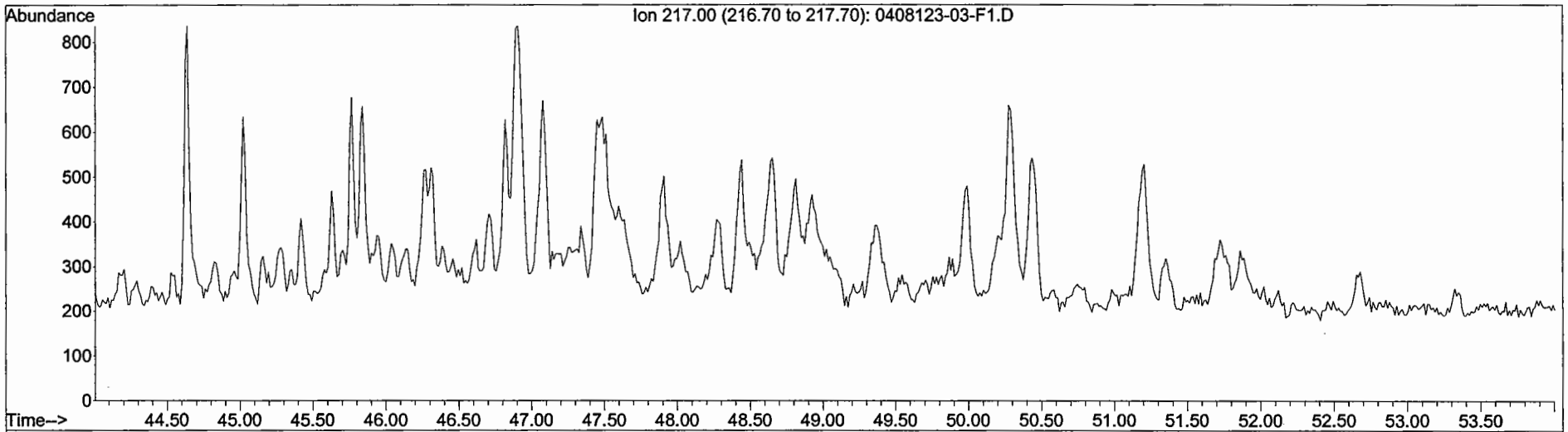


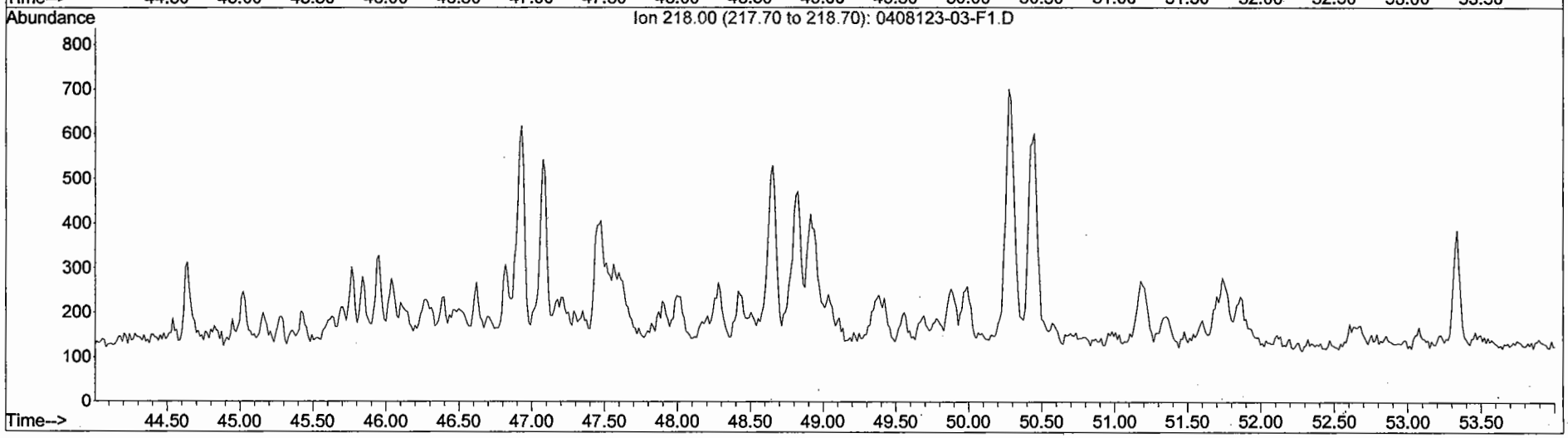
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-02-F1
Misc Info : 1X
Vial Number: 33



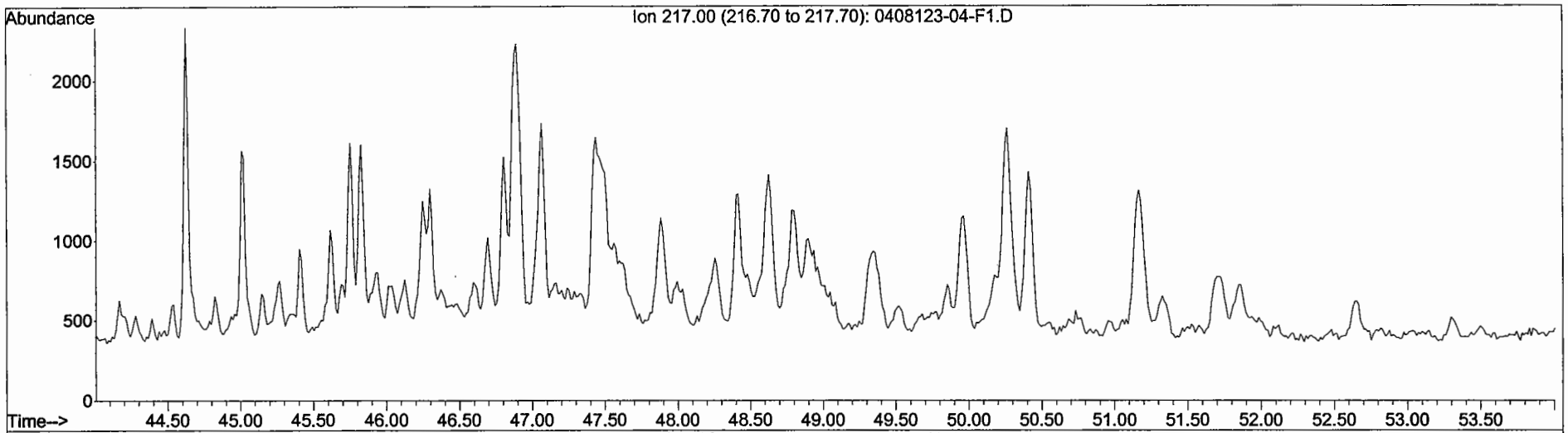


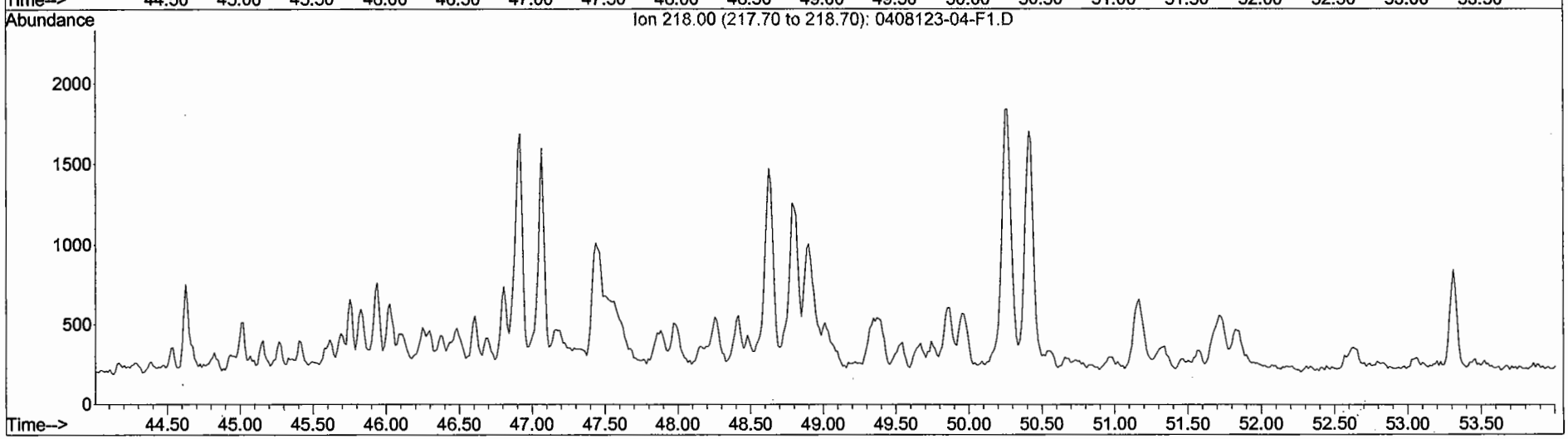
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-03-F1
Misc Info : 1X
Vial Number: 34



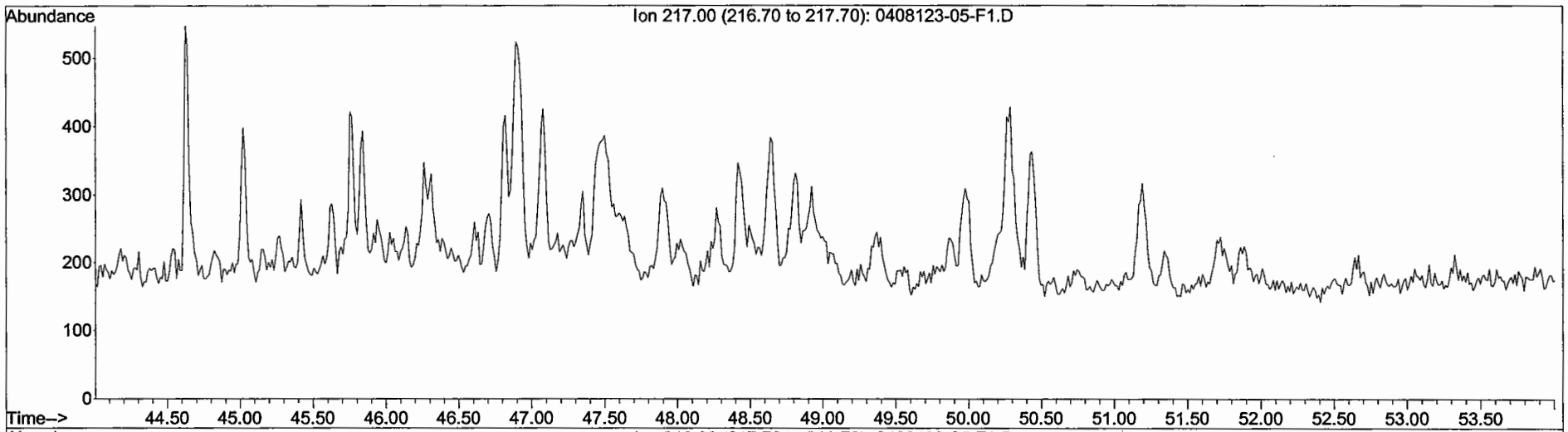


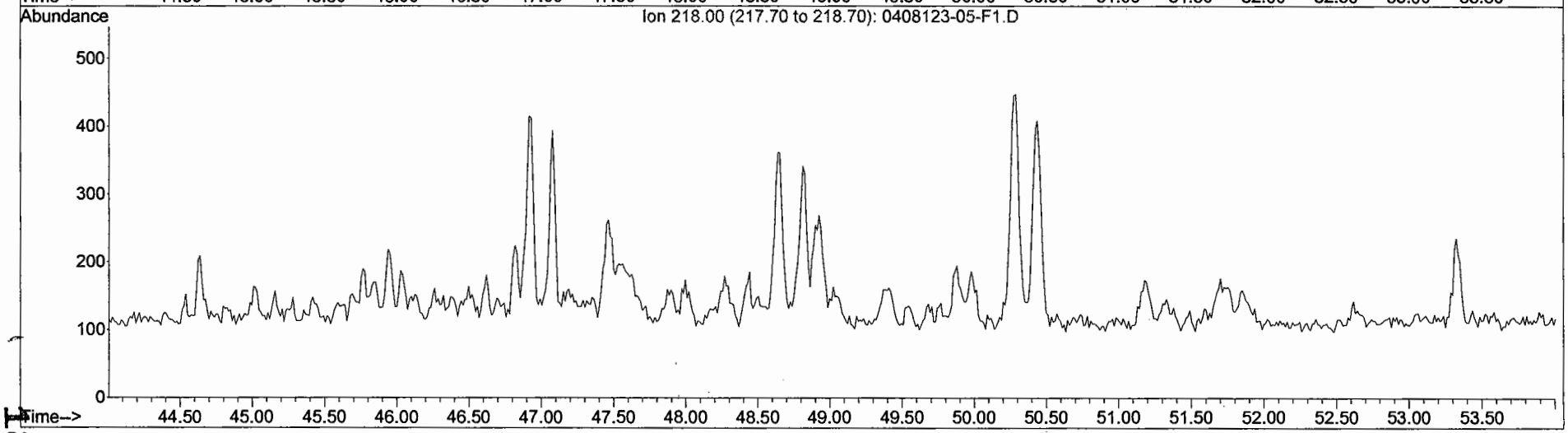
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-04-F1
Misc Info : 1X
Vial Number: 35



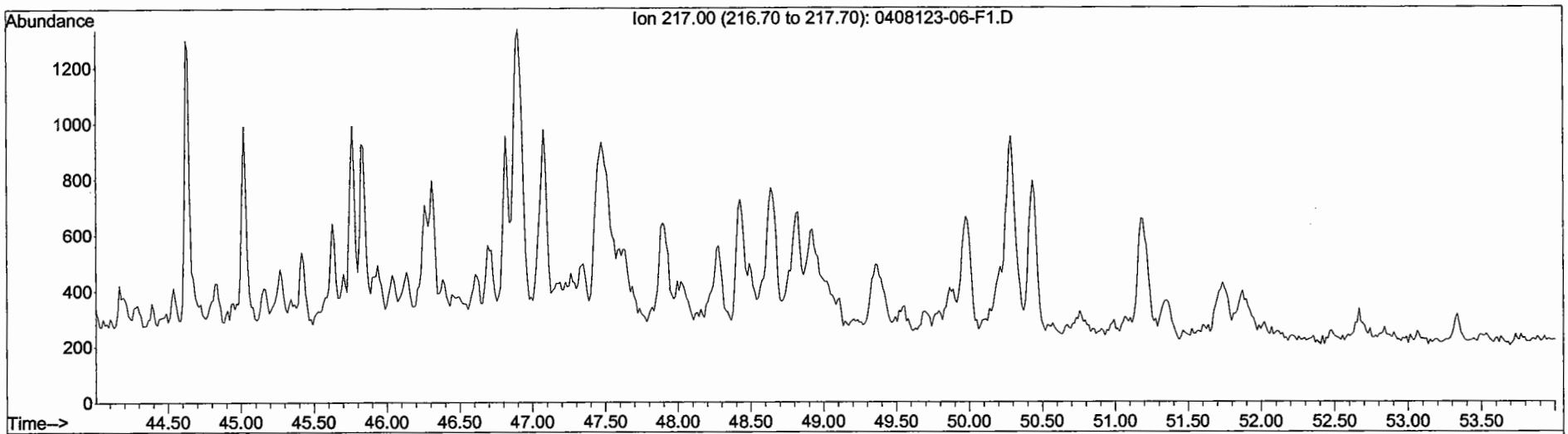


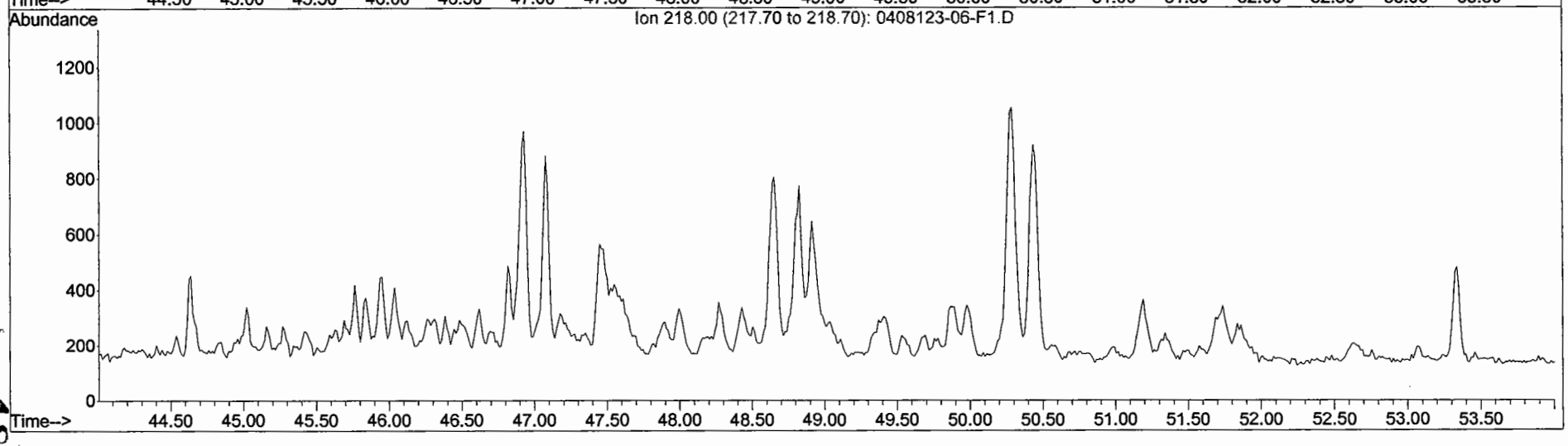
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-05-F1
Misc Info : 1X
Vial Number: 36



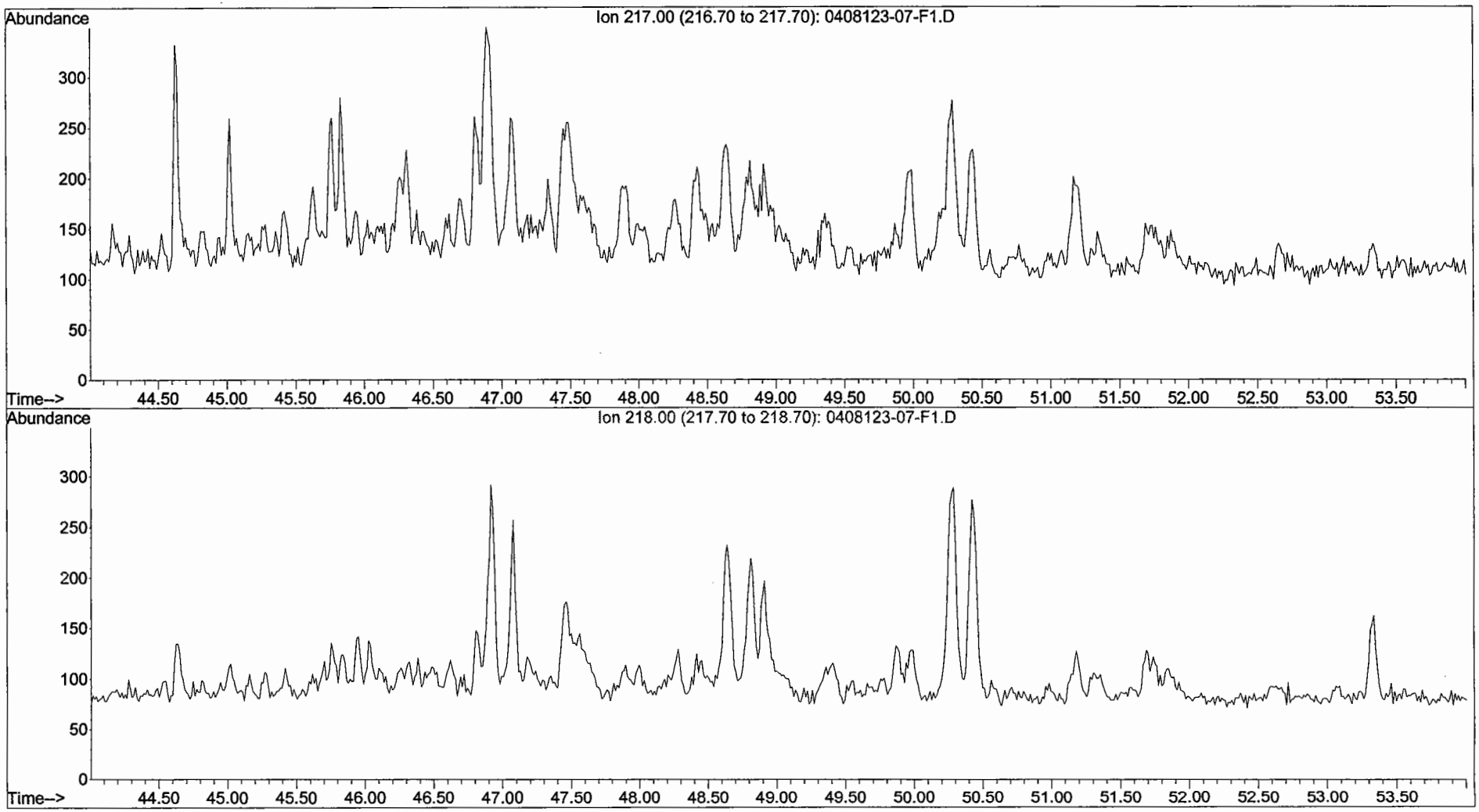


File :O:\Organics\DATA\PAH1\SEPT20A\0408123-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-06-F1
Misc Info : 1X
Vial Number: 37

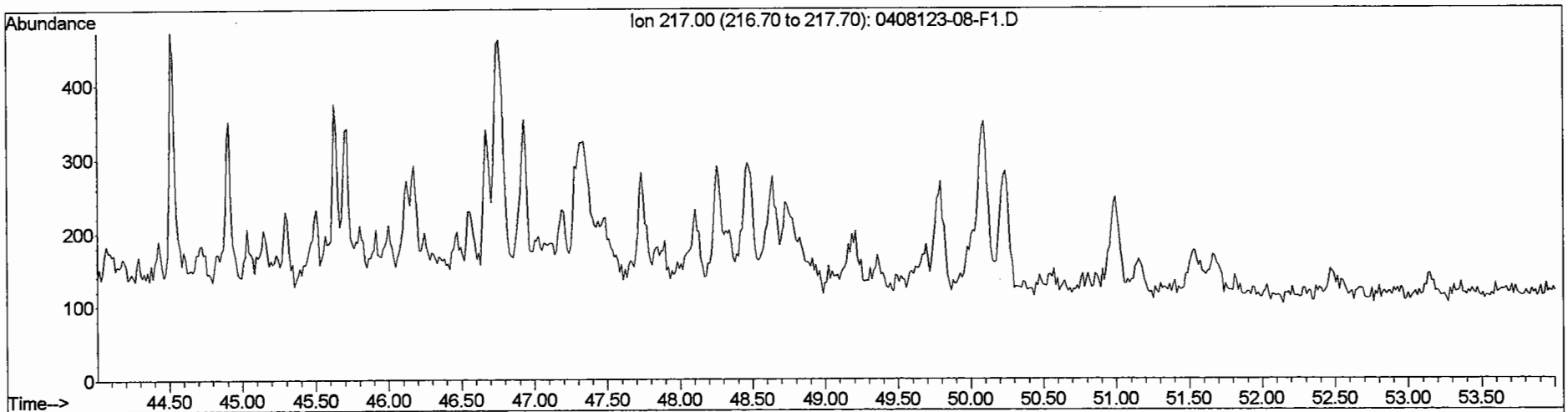


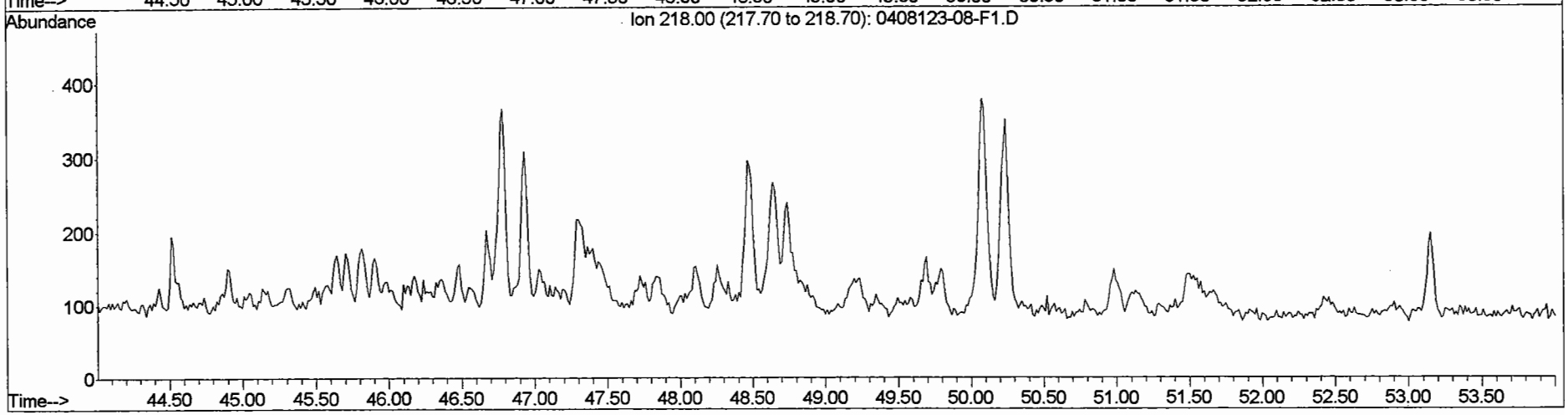


File :O:\Organics\DATA\PAH1\SEPT20A\0408123-07-F1.D
Operator : BL
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-07-F1
Misc Info : 1X
Vial Number: 38

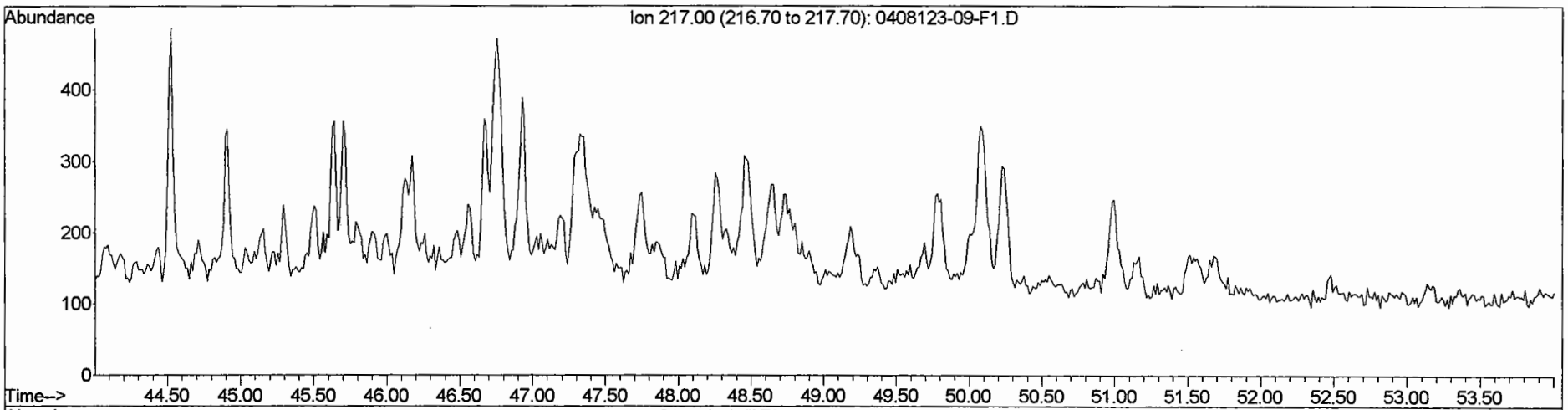


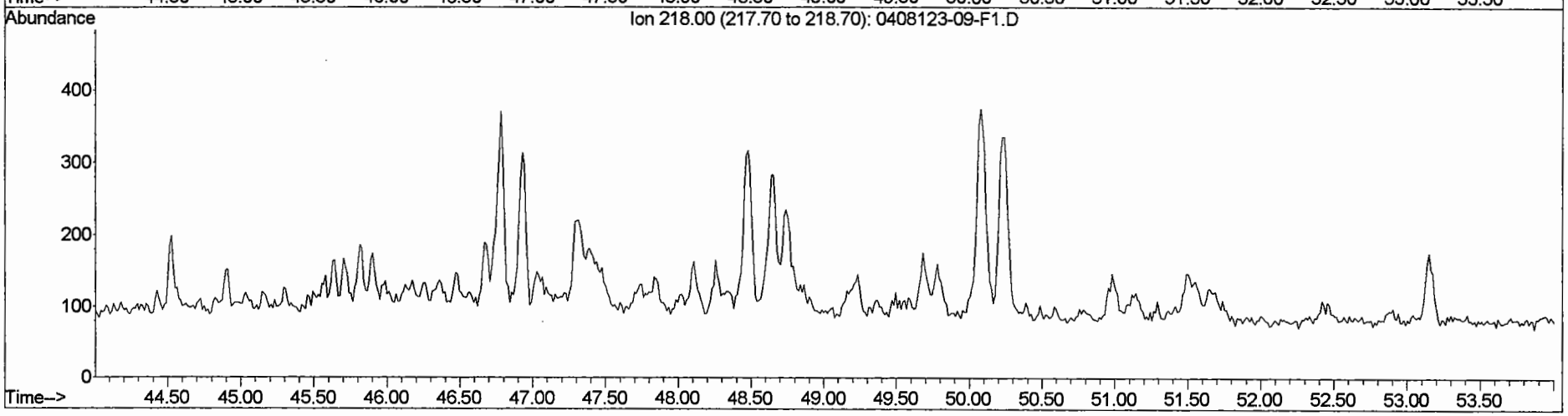
File :O:\Organics\DATA\PAH1\SEPT24\0408123-08-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-08-F1
Misc Info : 1X
Vial Number: 40



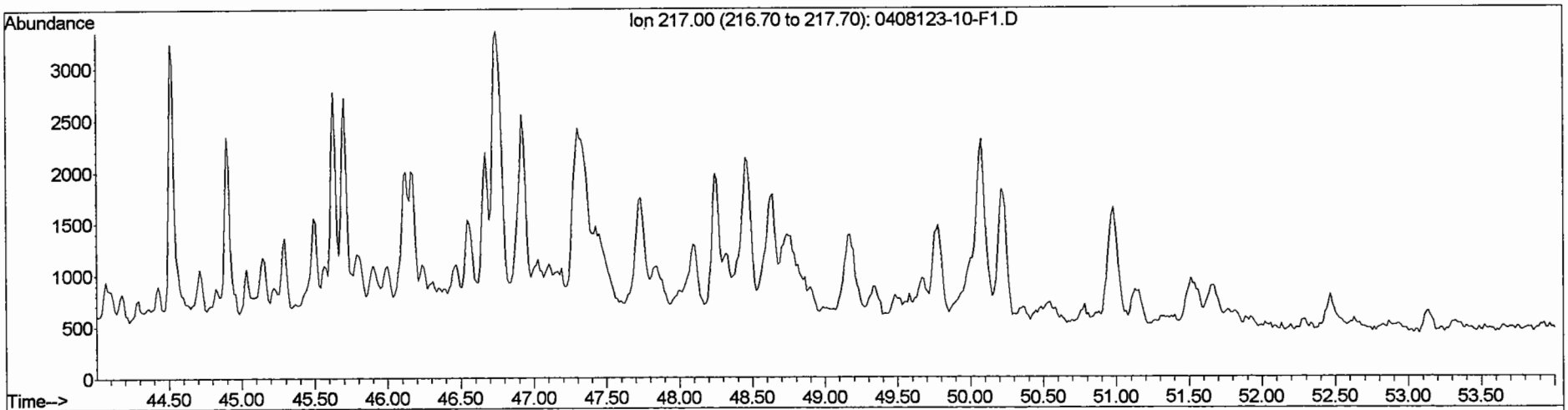


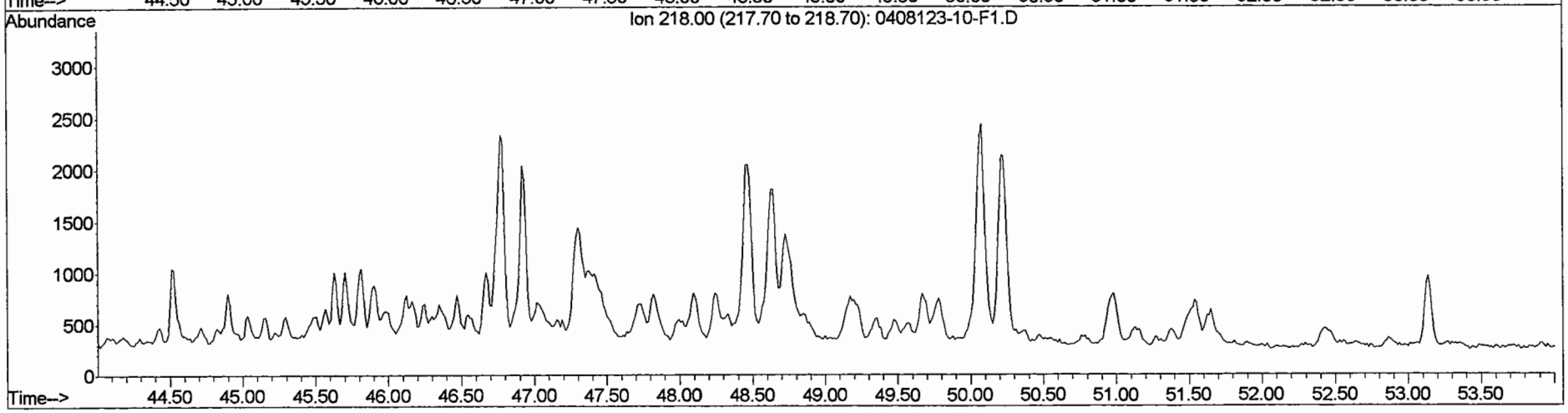
File :O:\Organics\DATA\PAH1\SEPT24\0408123-09-F1.D
Operator : BL
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-09-F1
Misc Info : 1X
Vial Number: 41



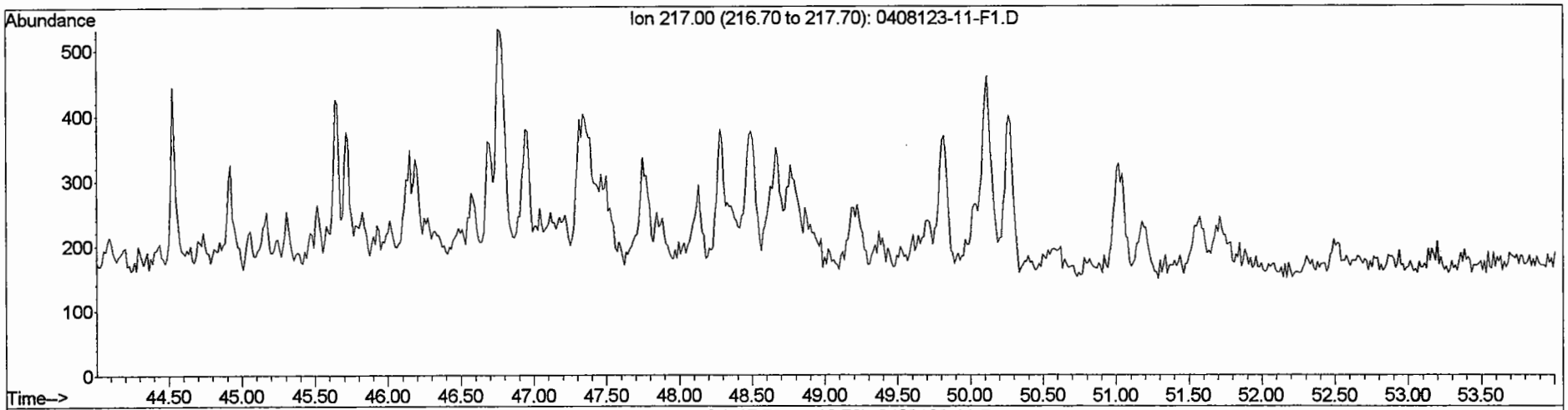


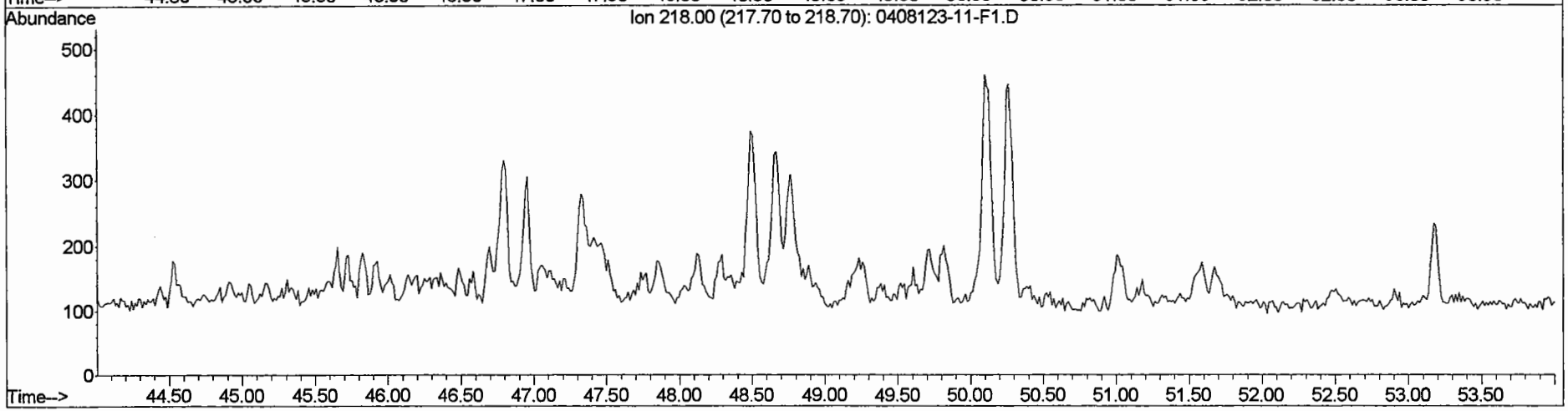
File :O:\Organics\DATA\PAH1\SEPT24\0408123-10-F1.D
Operator : BL
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-10-F1
Misc Info : 1X
Vial Number: 42



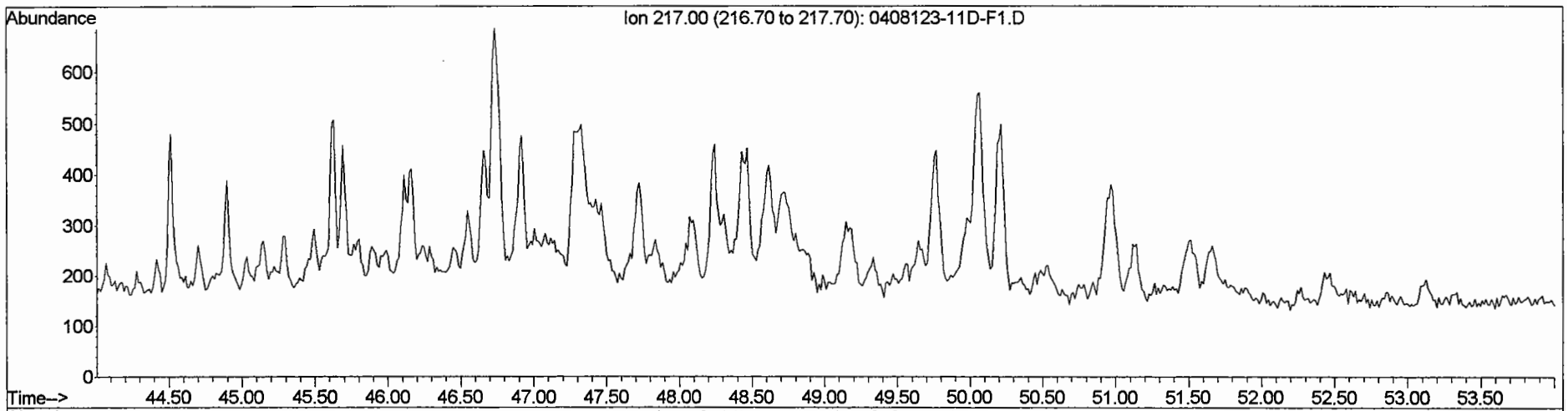


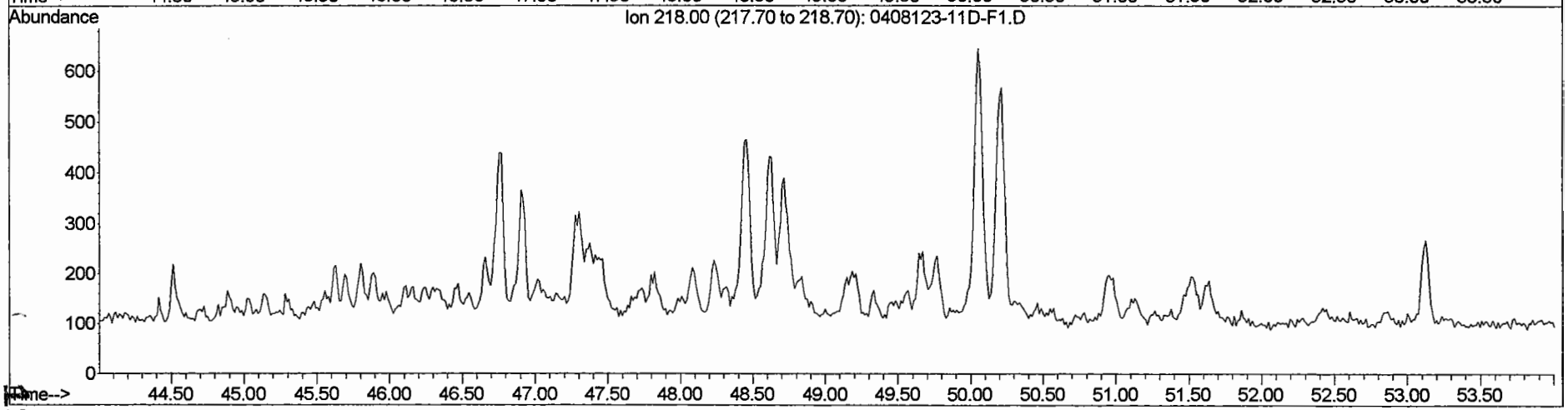
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11-F1.D
Operator : BL
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11-F1
Misc Info : 1X
Vial Number: 43



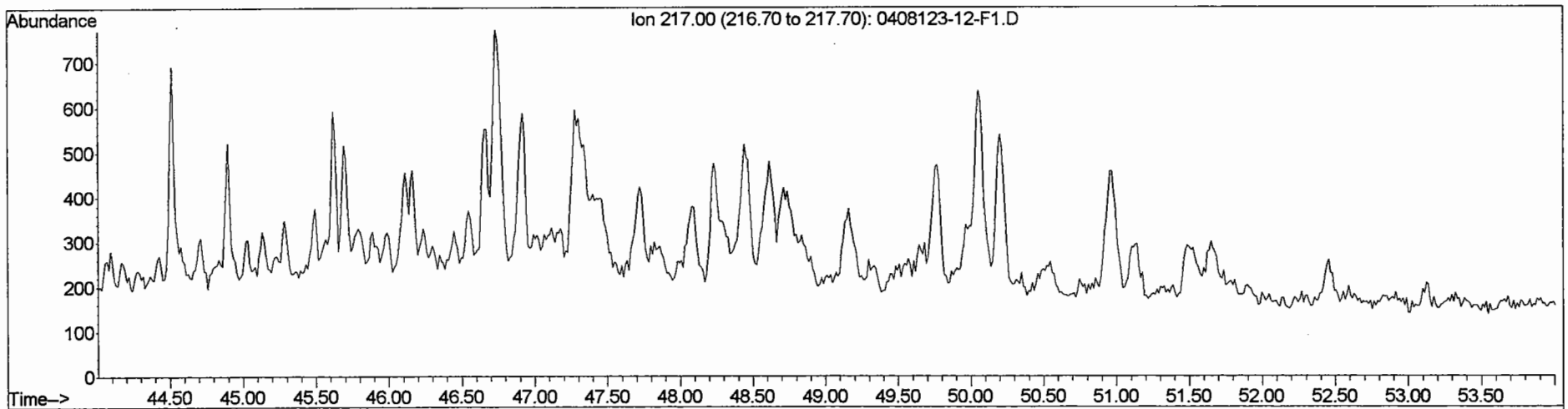


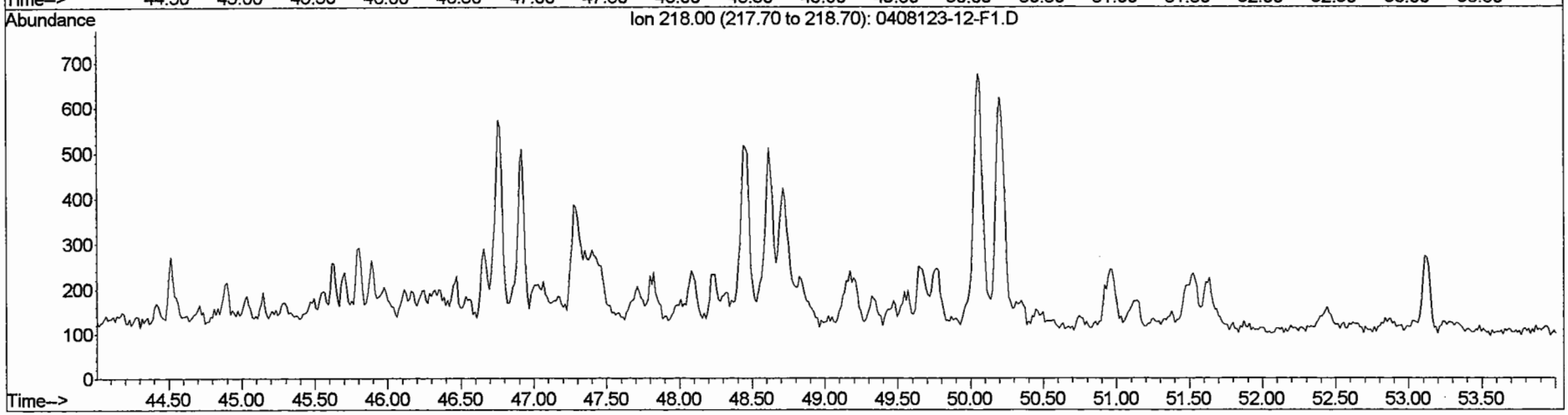
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11D-F1.D
Operator : BL
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11D-F1
Misc Info : 1X
Vial Number: 44



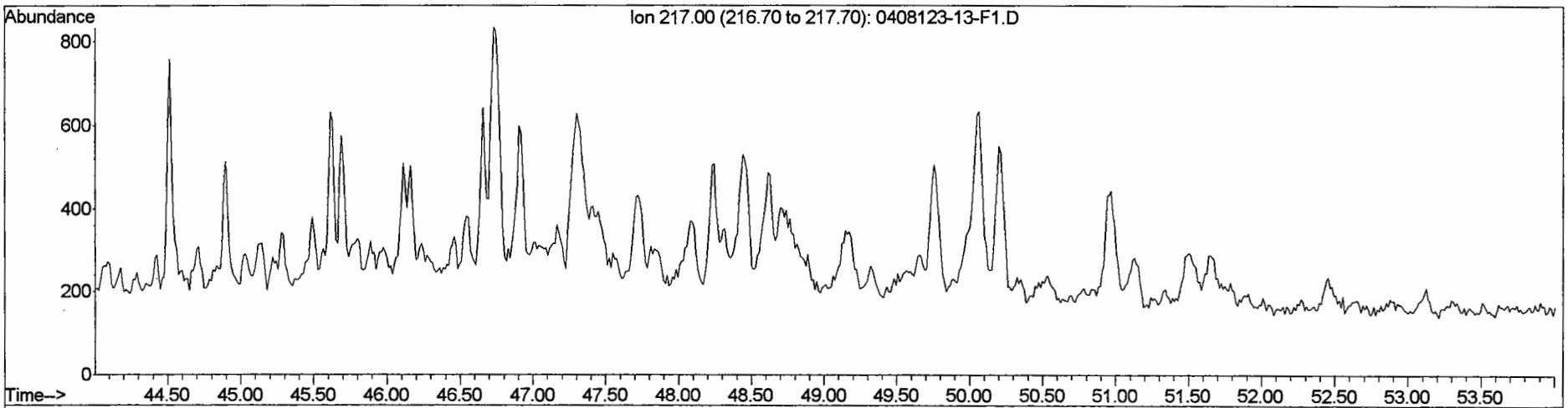


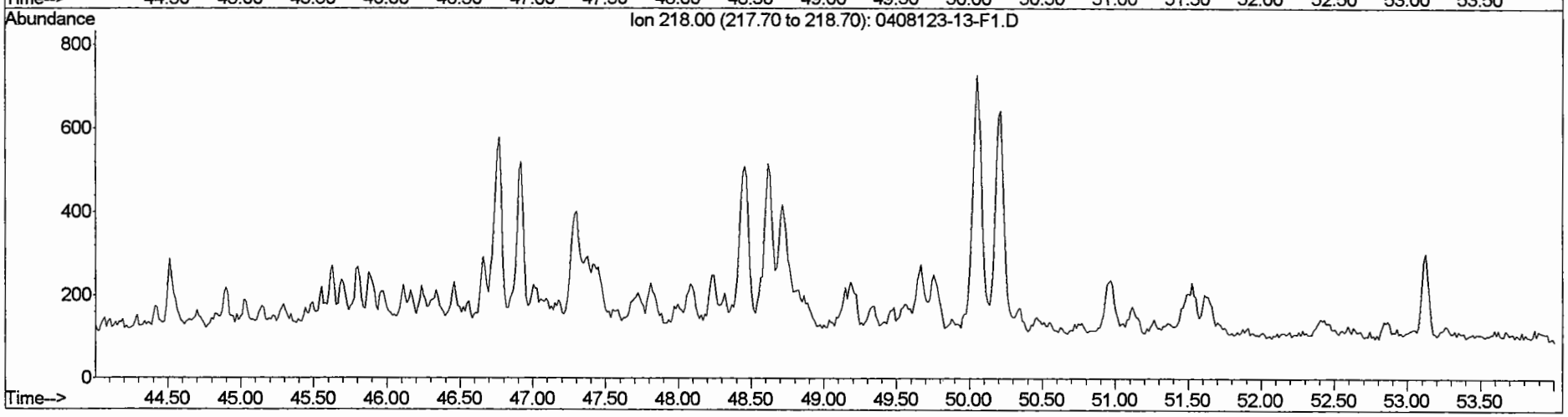
File :O:\Organics\DATA\PAH1\SEPT24\0408123-12-F1.D
Operator : BL
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-12-F1
Misc Info : 1X
Vial Number: 46



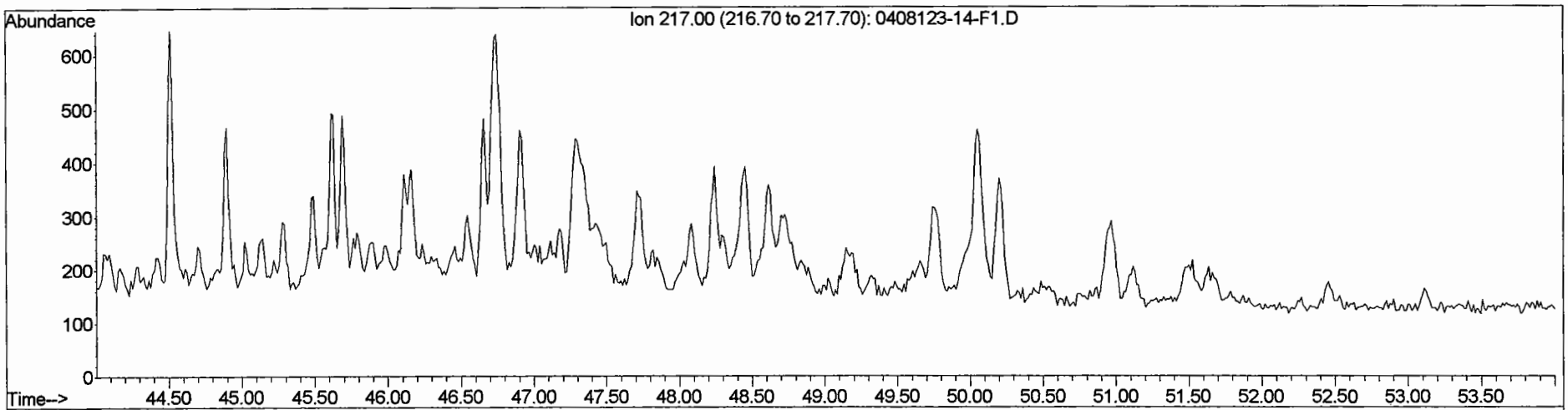


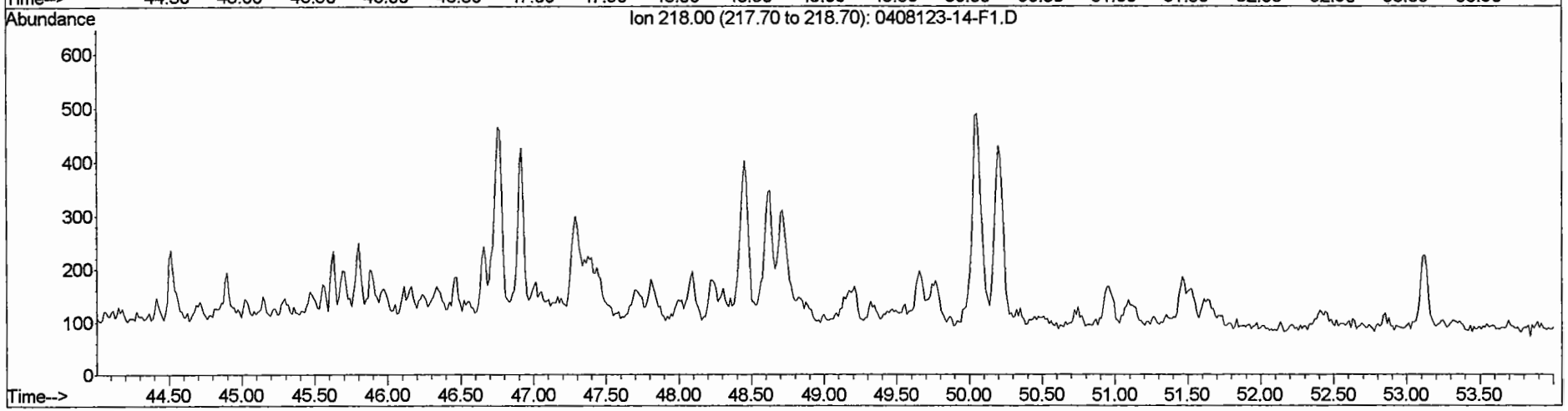
File :O:\Organics\DATA\PAH1\SEPT24\0408123-13-F1.D
Operator : BL
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-13-F1
Misc Info : 1X
Vial Number: 47



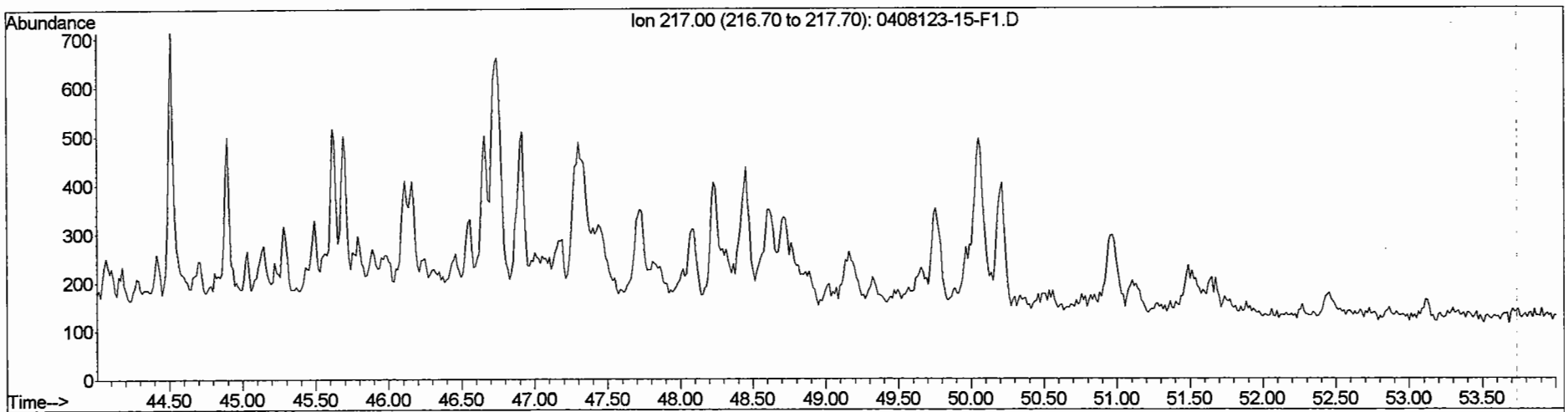


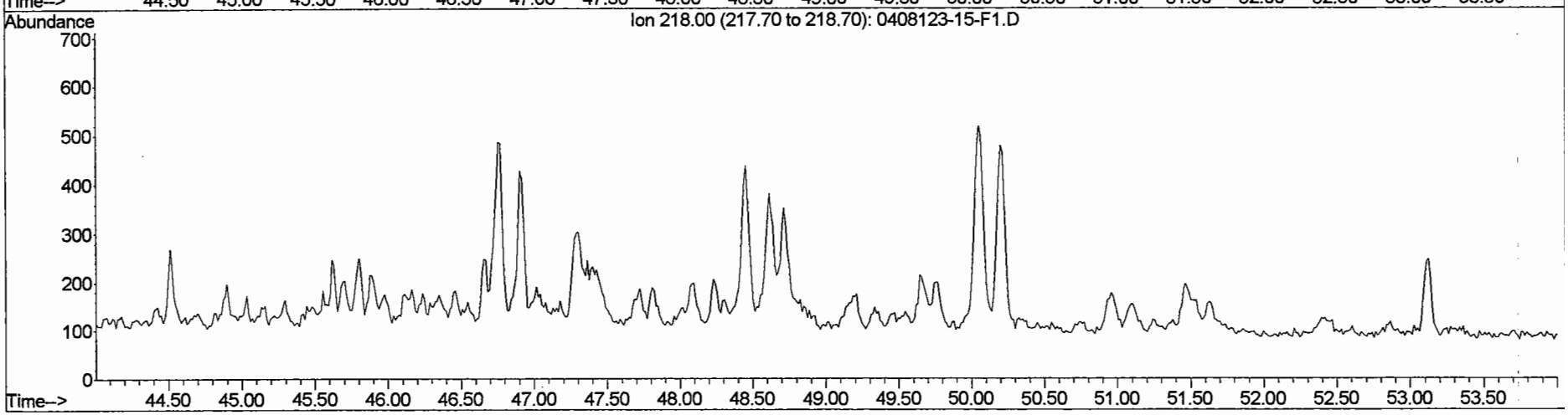
File :O:\Organics\DATA\PAH1\SEPT24\0408123-14-F1.D
Operator : BL
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-14-F1
Misc Info : 1X
Vial Number: 48



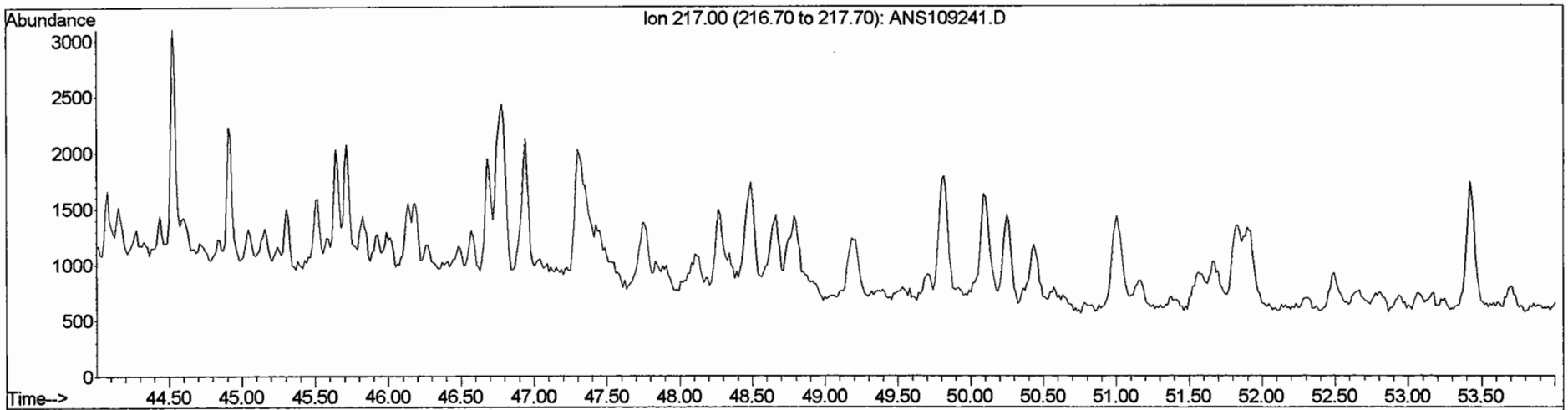


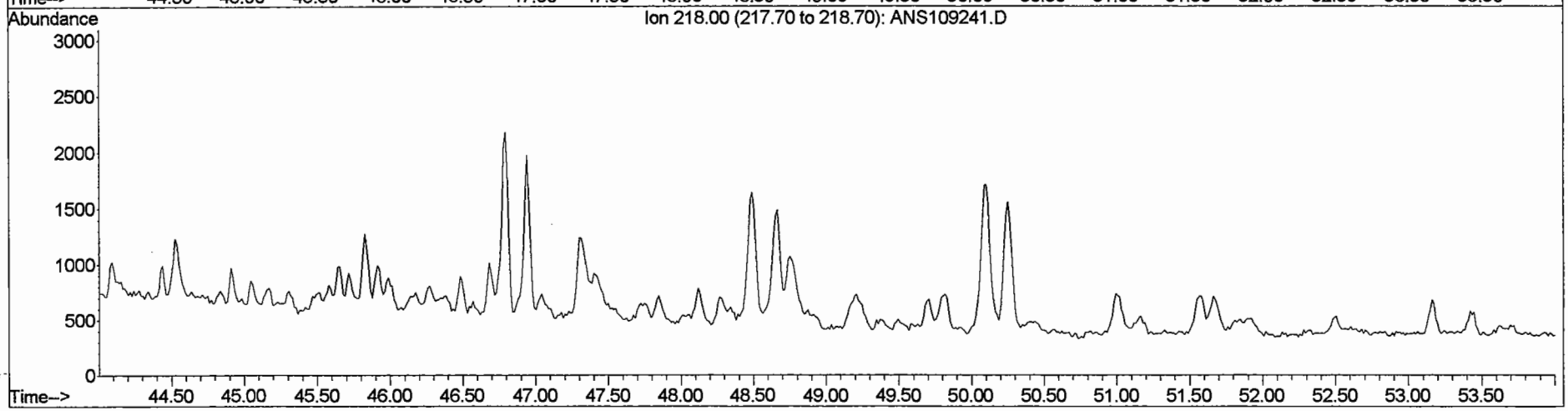
File :O:\Organics\DATA\PAH1\SEPT24\0408123-15-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-15-F1
Misc Info : 1X
Vial Number: 49



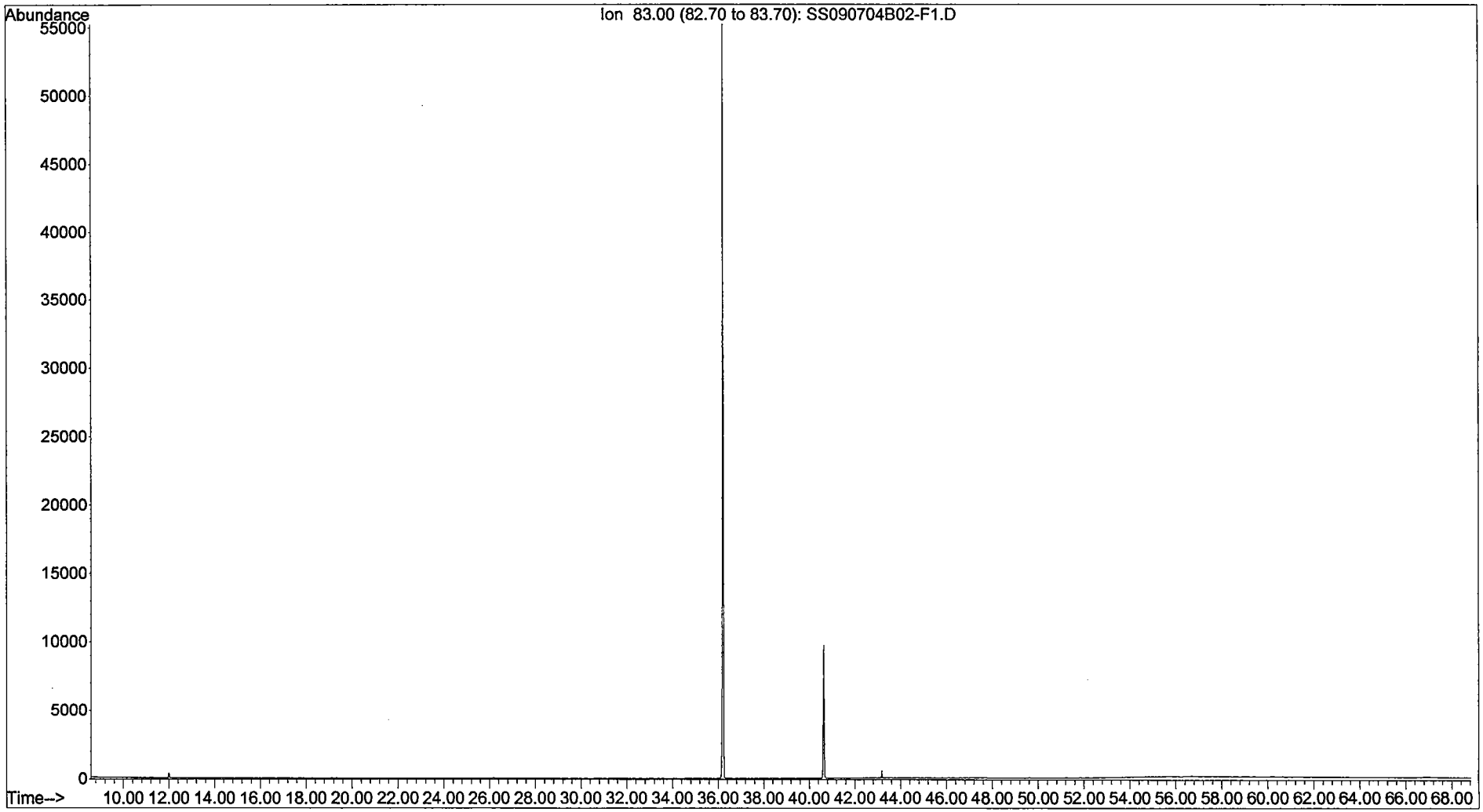


File :O:\Organics\DATA\PAH1\SEPT24\ANS109241.D
Operator : BL
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: ANS109241
Misc Info : SW090104A 5.14 mg/mL
Vial Number: 11

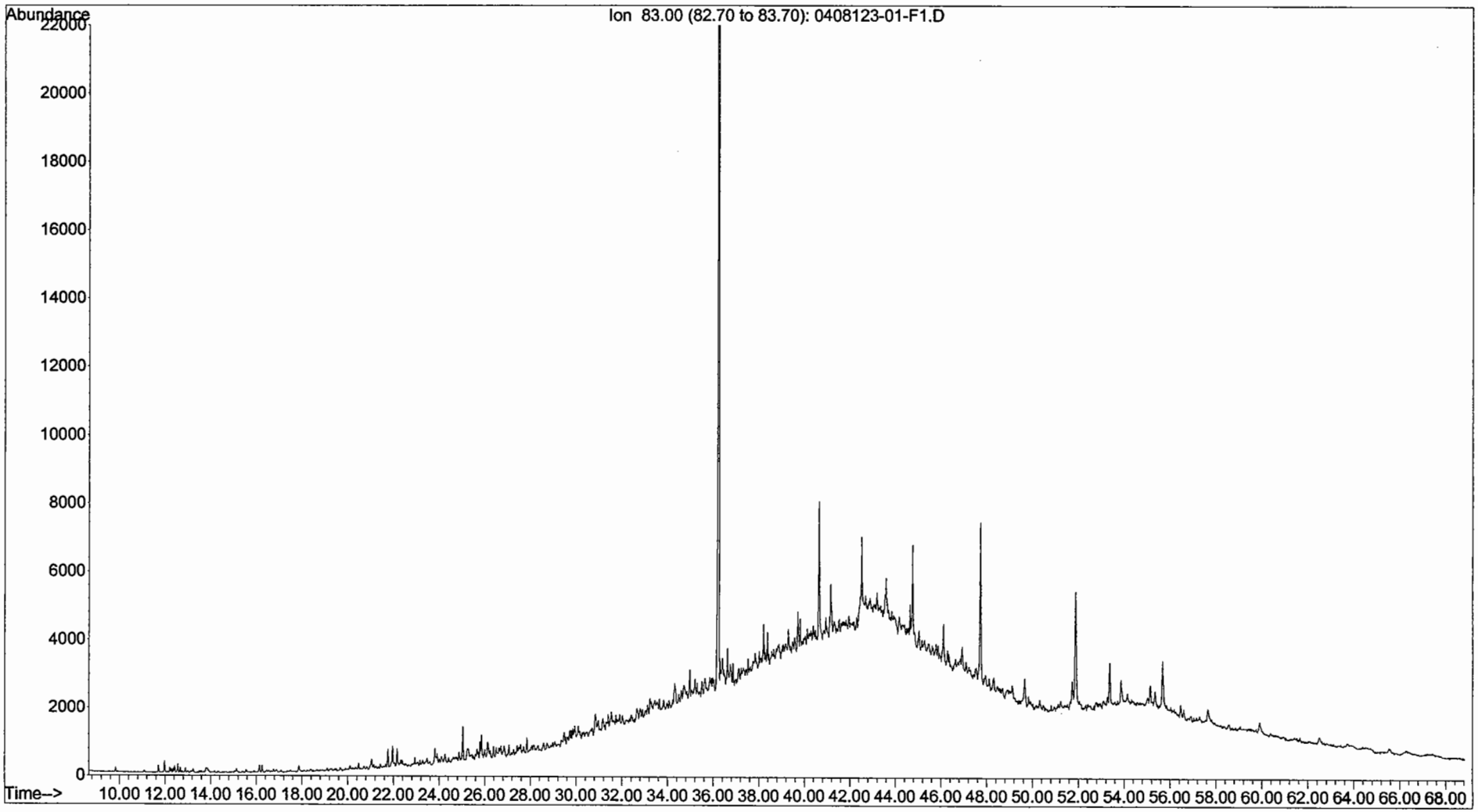




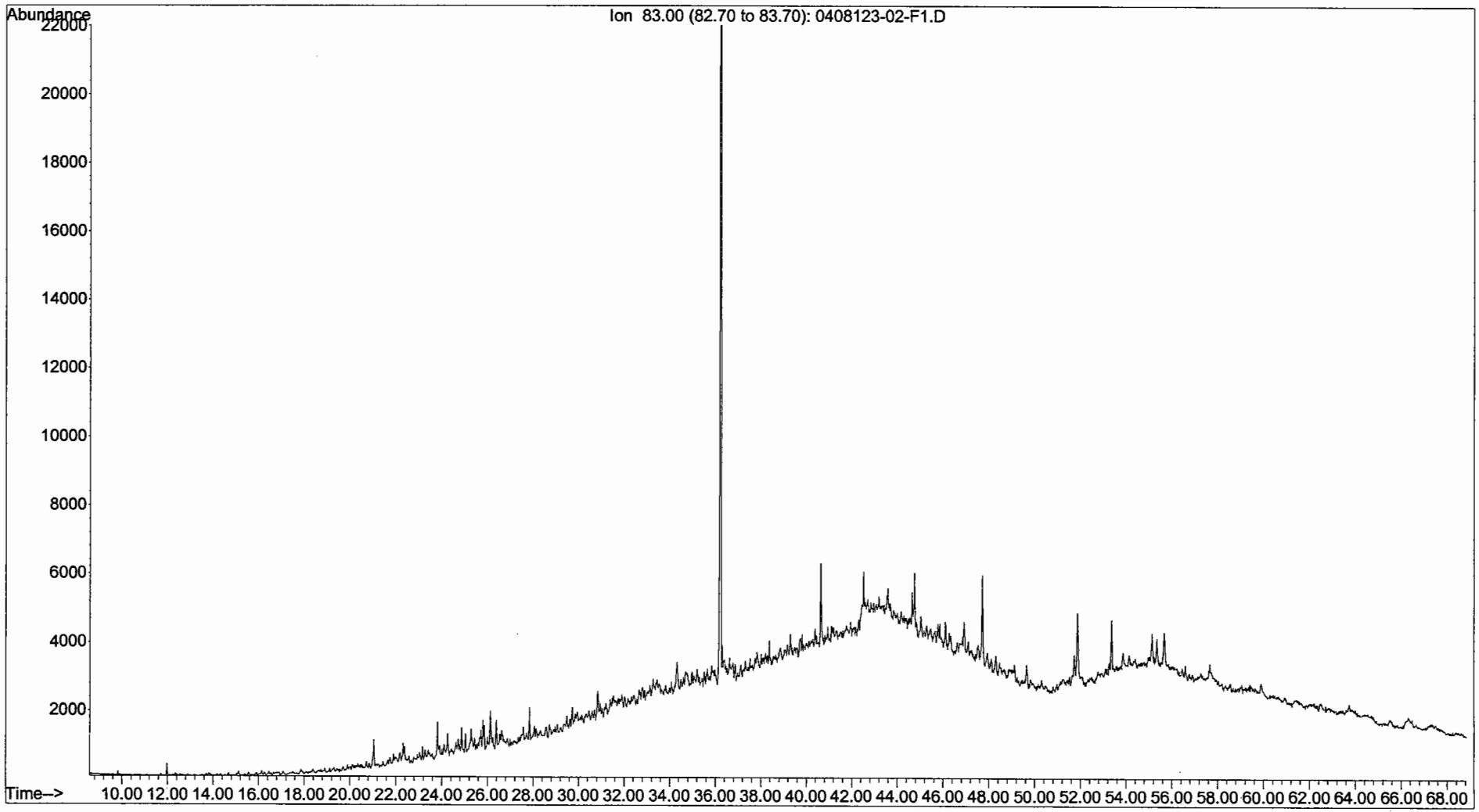
File :O:\Organics\DATA\PAH1\SEPT20A\SS090704B02-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: SS090704B02-F1
Misc Info : 1X
Vial Number: 29



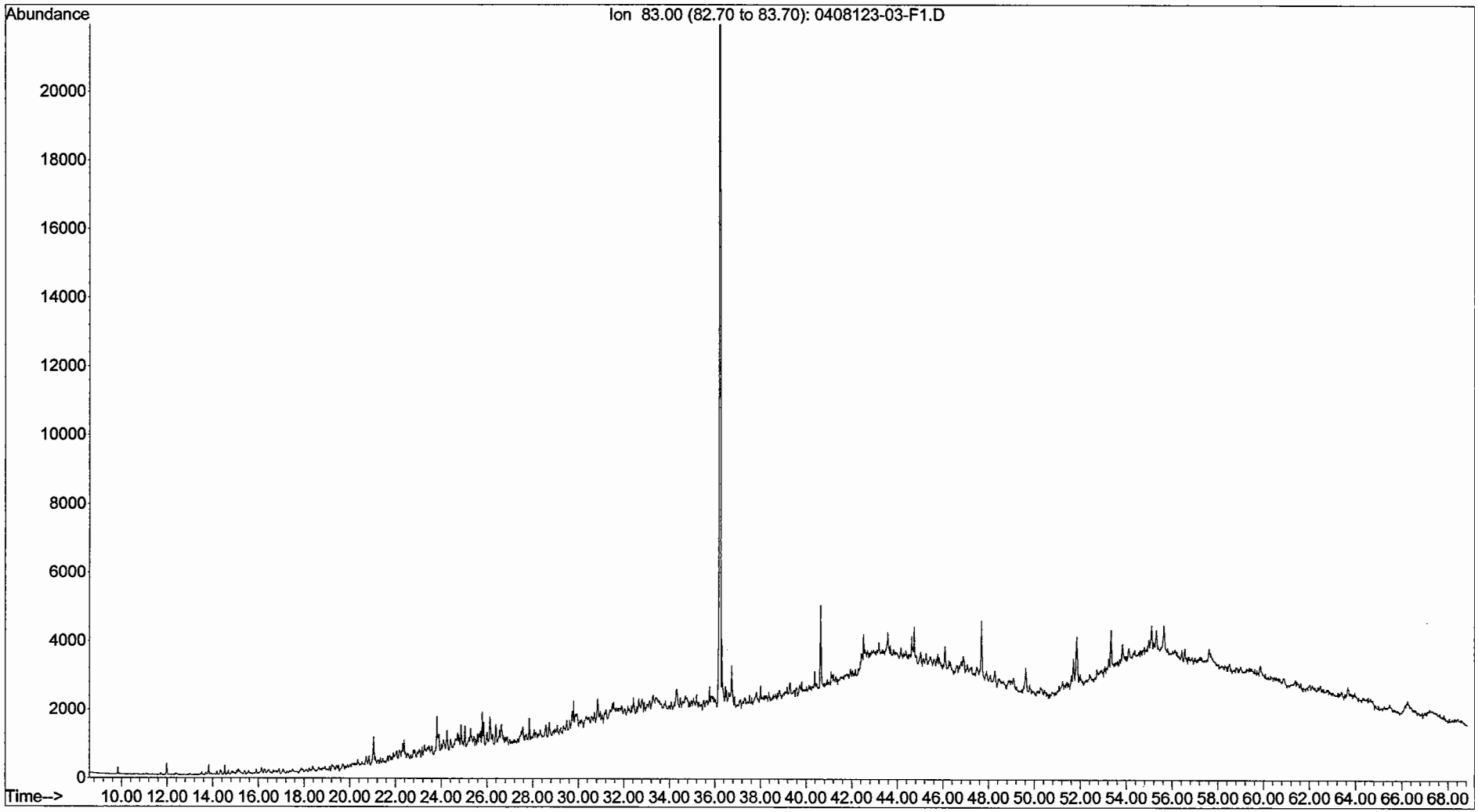
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-01-F1
Misc Info : 1X
Vial Number: 32



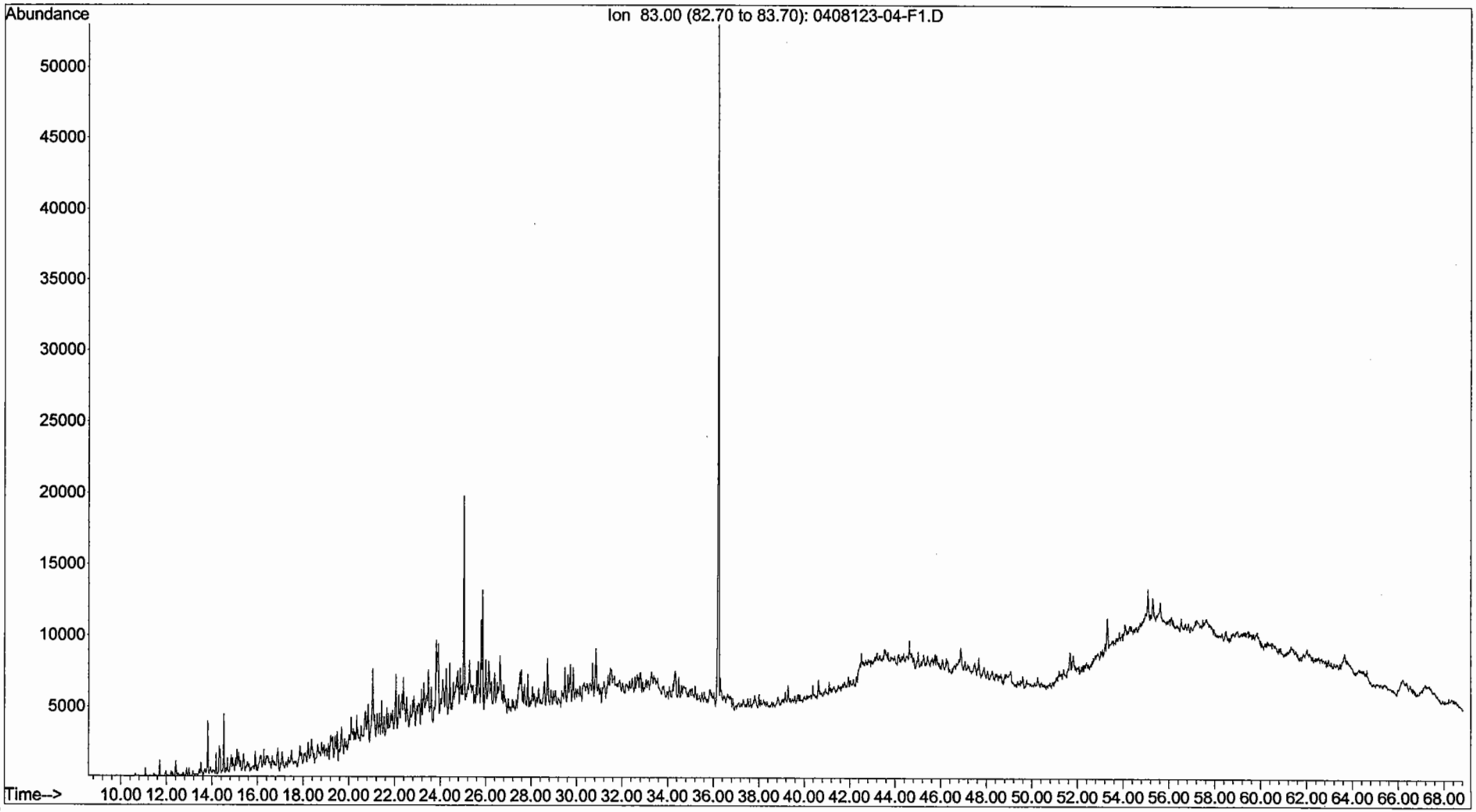
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-02-F1
Misc Info : 1X
Vial Number: 33



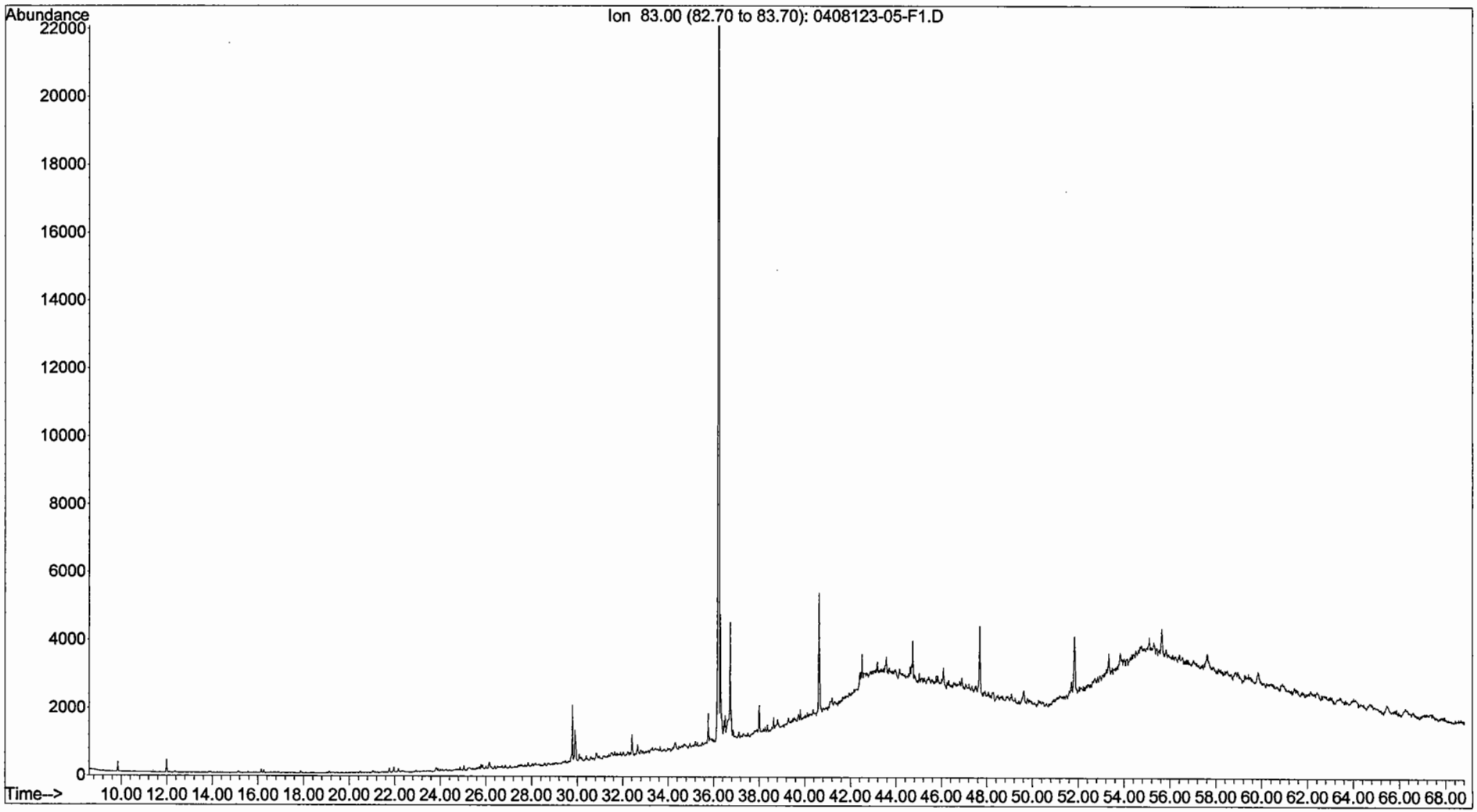
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-03-F1
Misc Info : 1X
Vial Number: 34



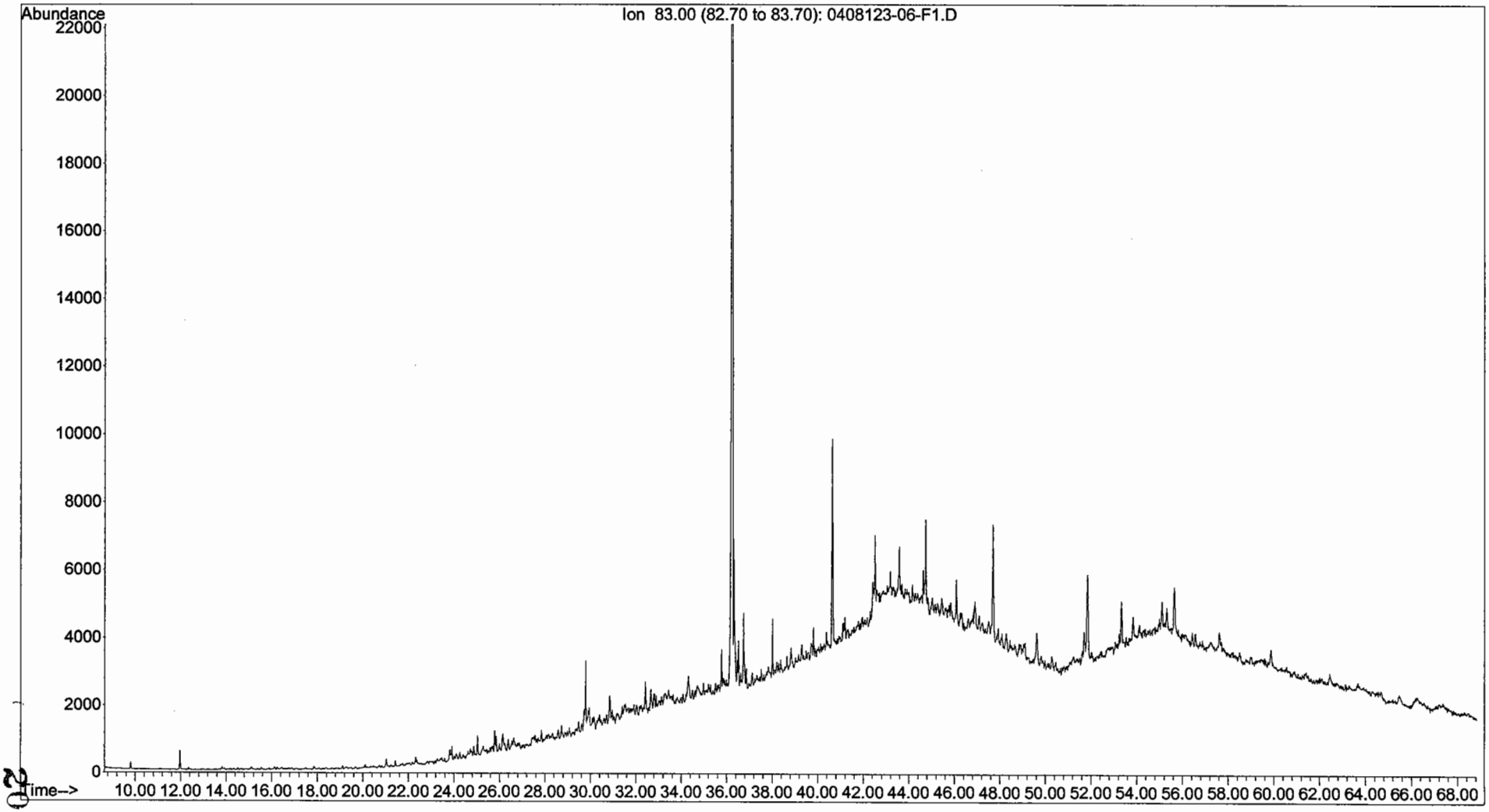
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-04-F1
Misc Info : 1X
Vial Number: 35



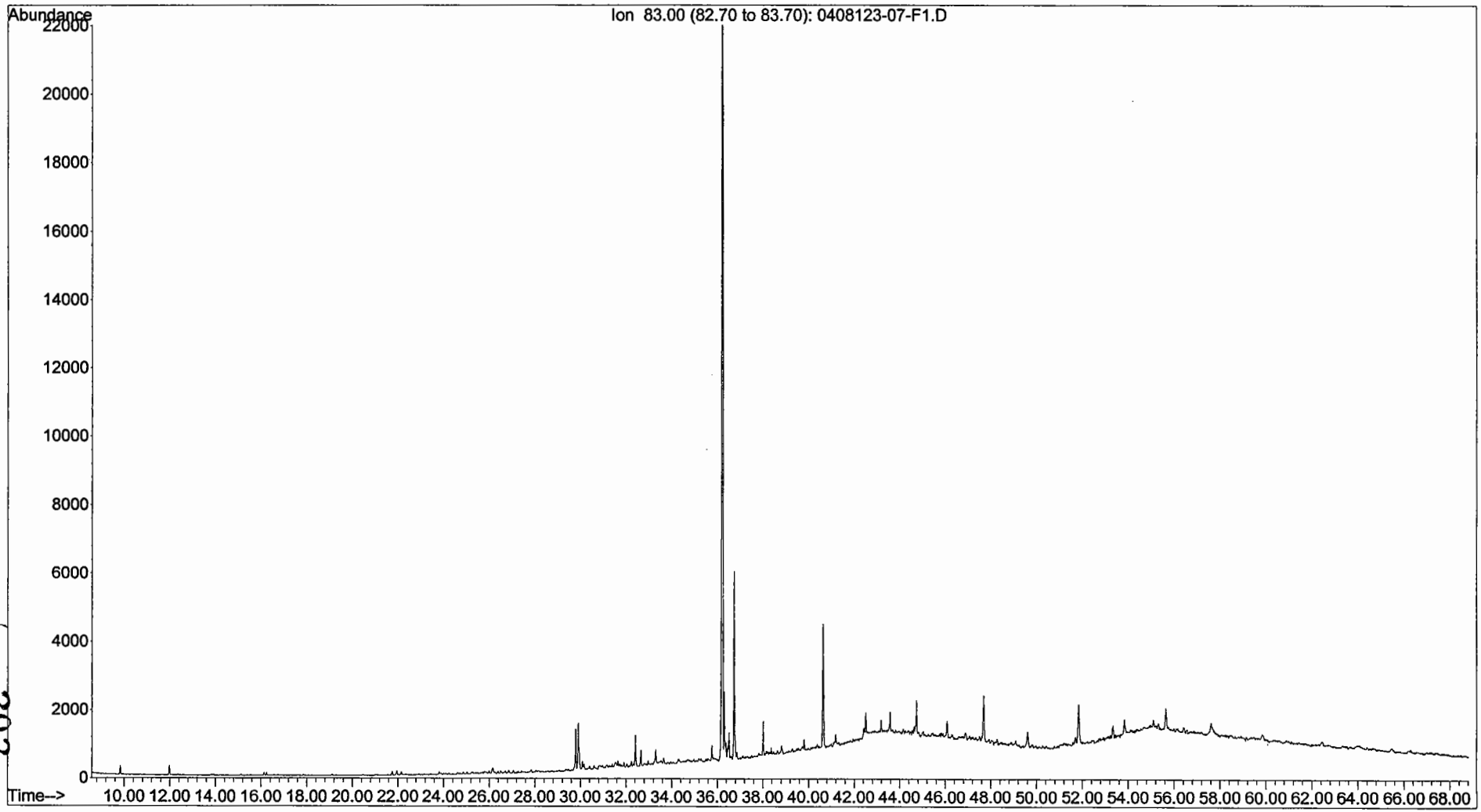
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-05-F1
Misc Info : 1X
Vial Number: 36



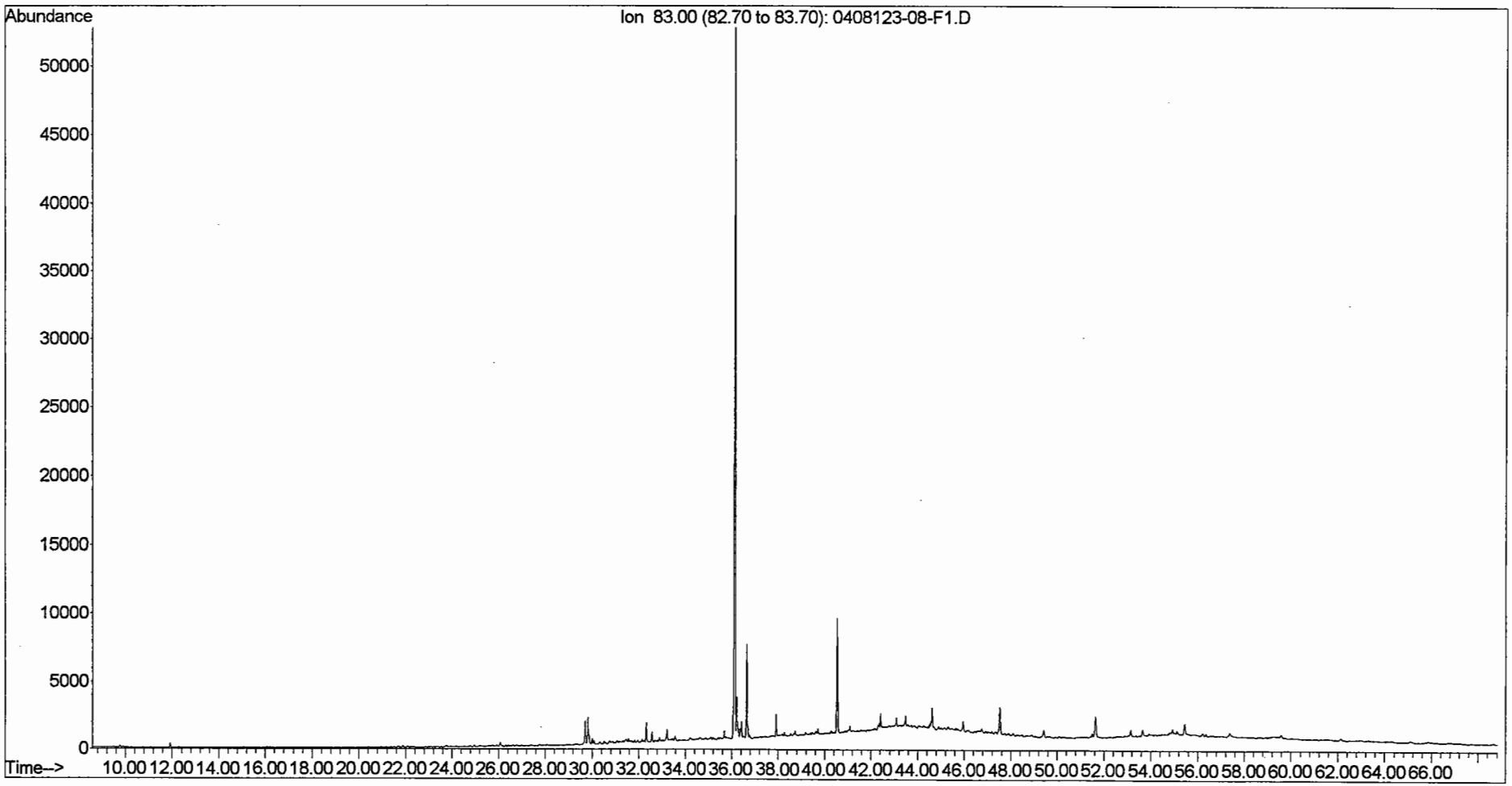
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-06-F1
Misc Info : 1X
Vial Number: 37



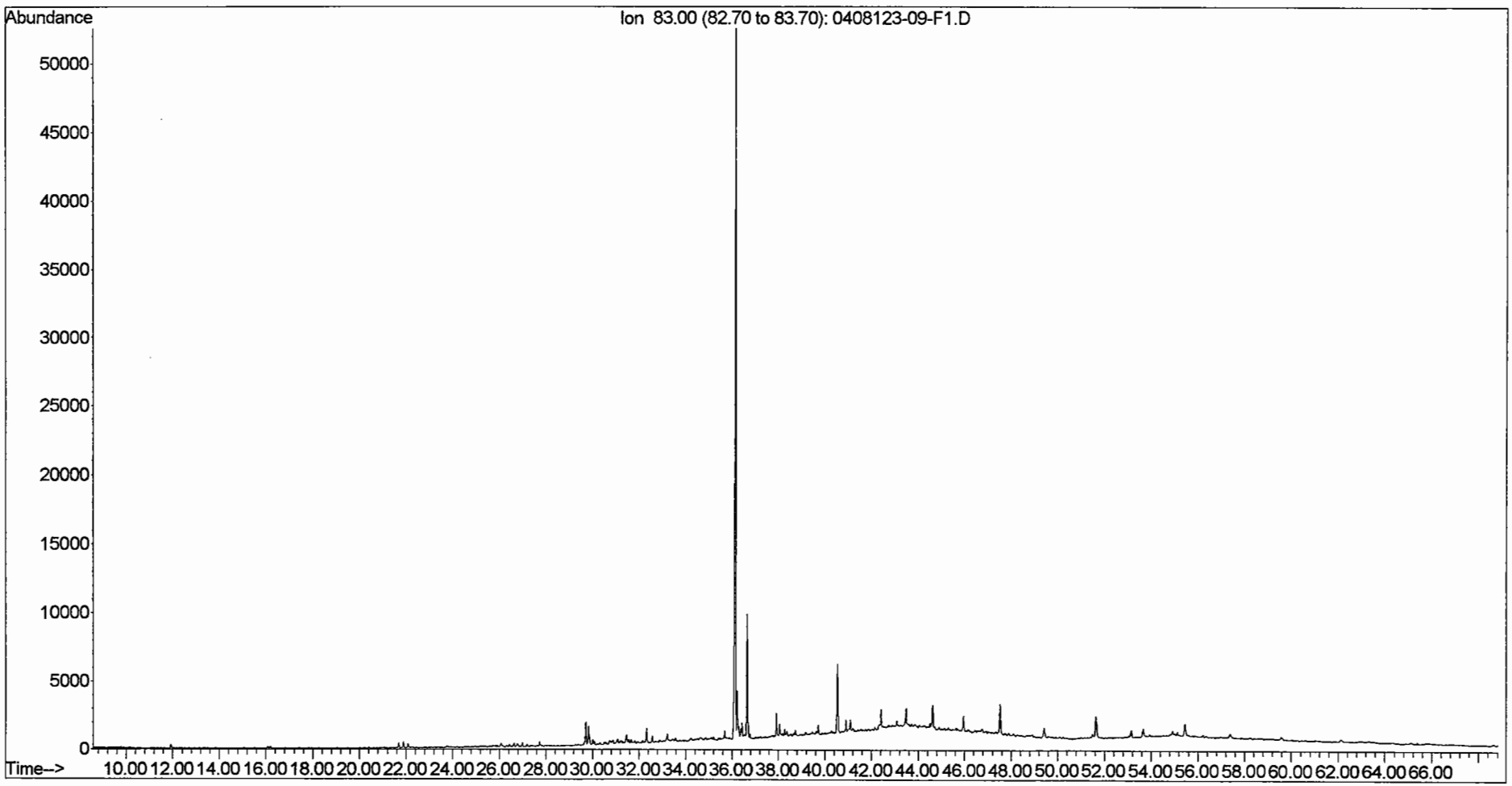
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-07-F1.D
Operator : BL
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-07-F1
Misc Info : 1X
Vial Number: 38



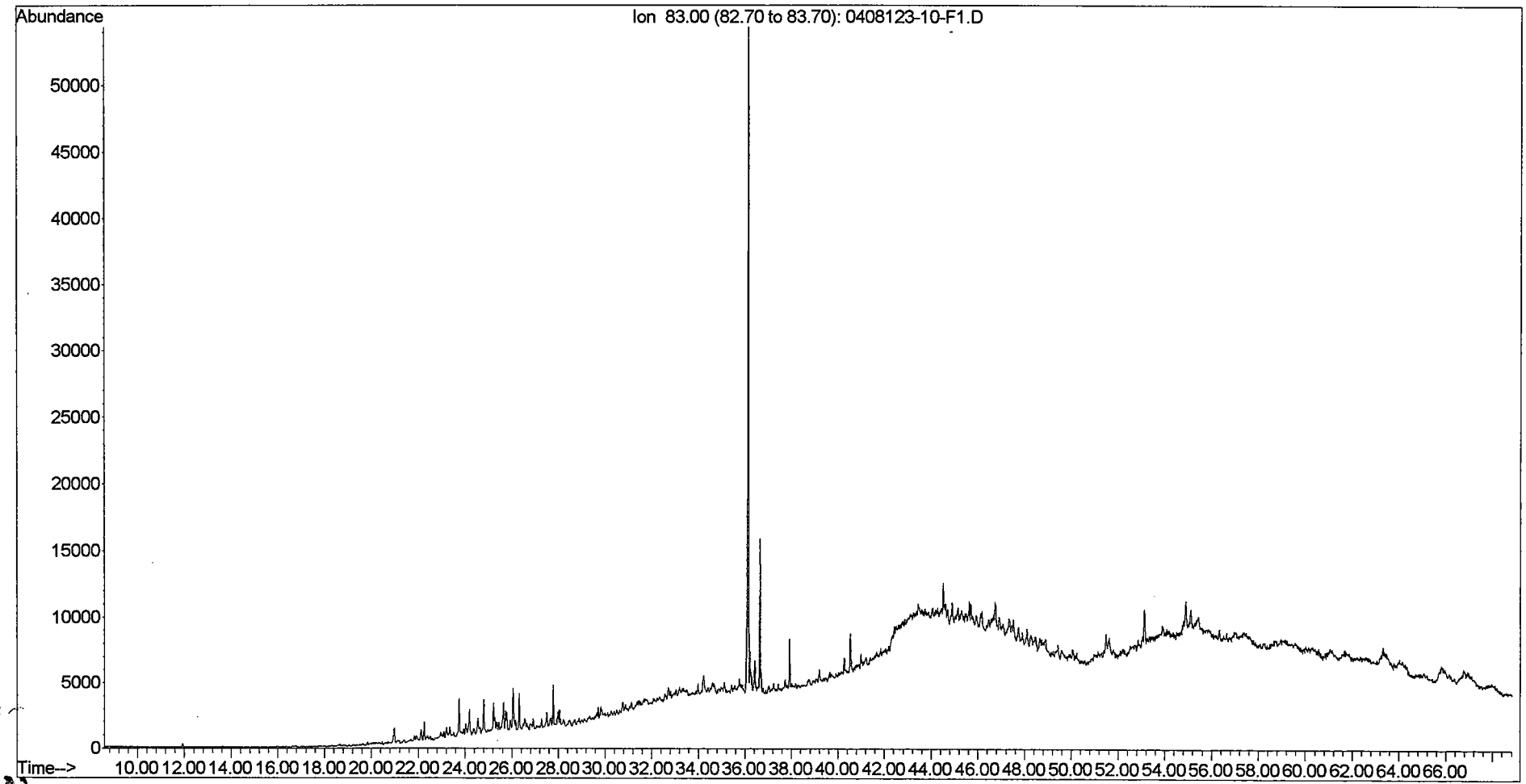
File :O:\Organics\DATA\PAH1\SEPT24\0408123-08-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-08-F1
Misc Info : 1X
Vial Number: 40



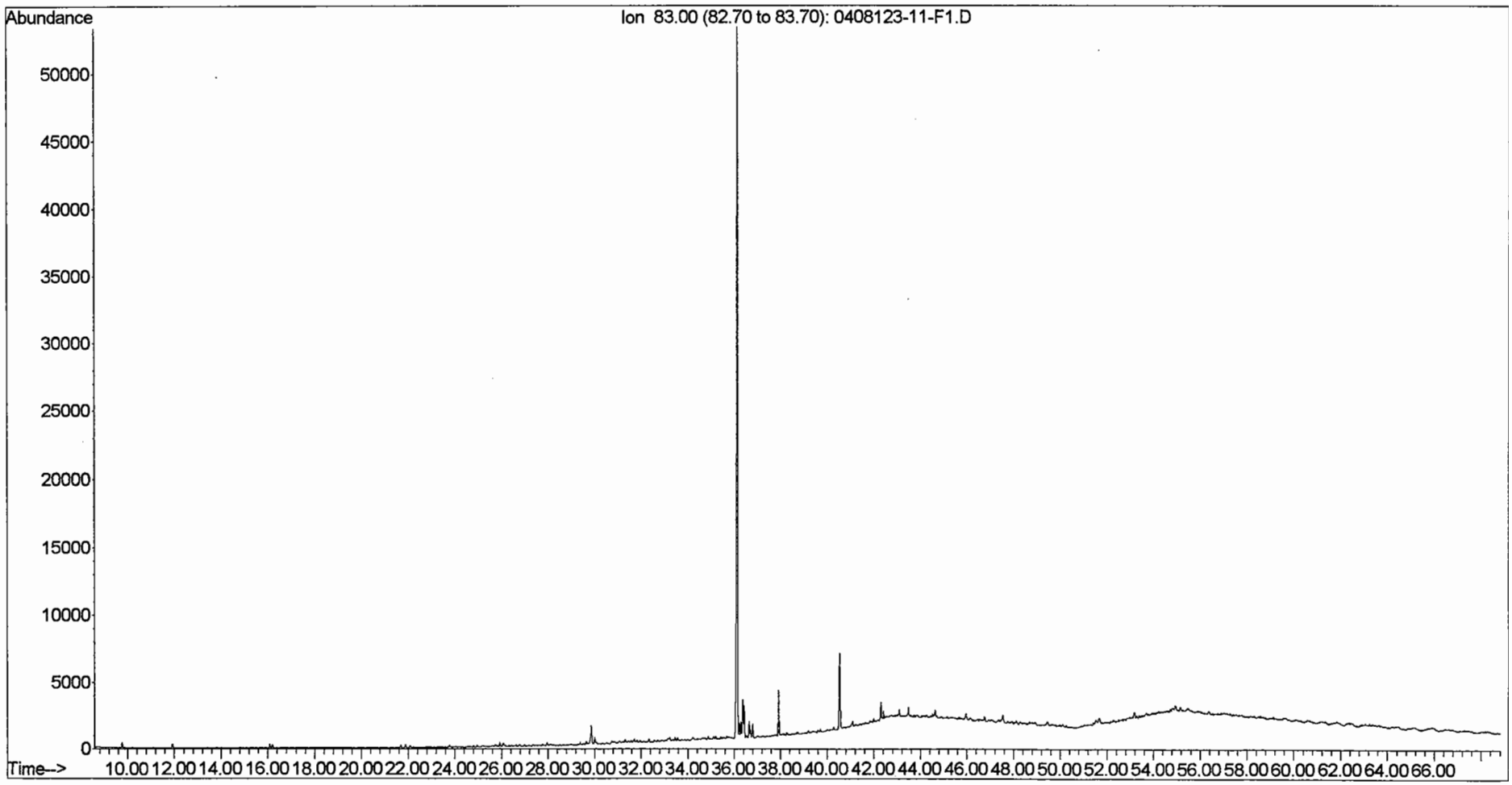
File :O:\Organics\DATA\PAH1\SEPT24\0408123-09-F1.D
Operator : BL
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-09-F1
Misc Info : 1X
Vial Number: 41



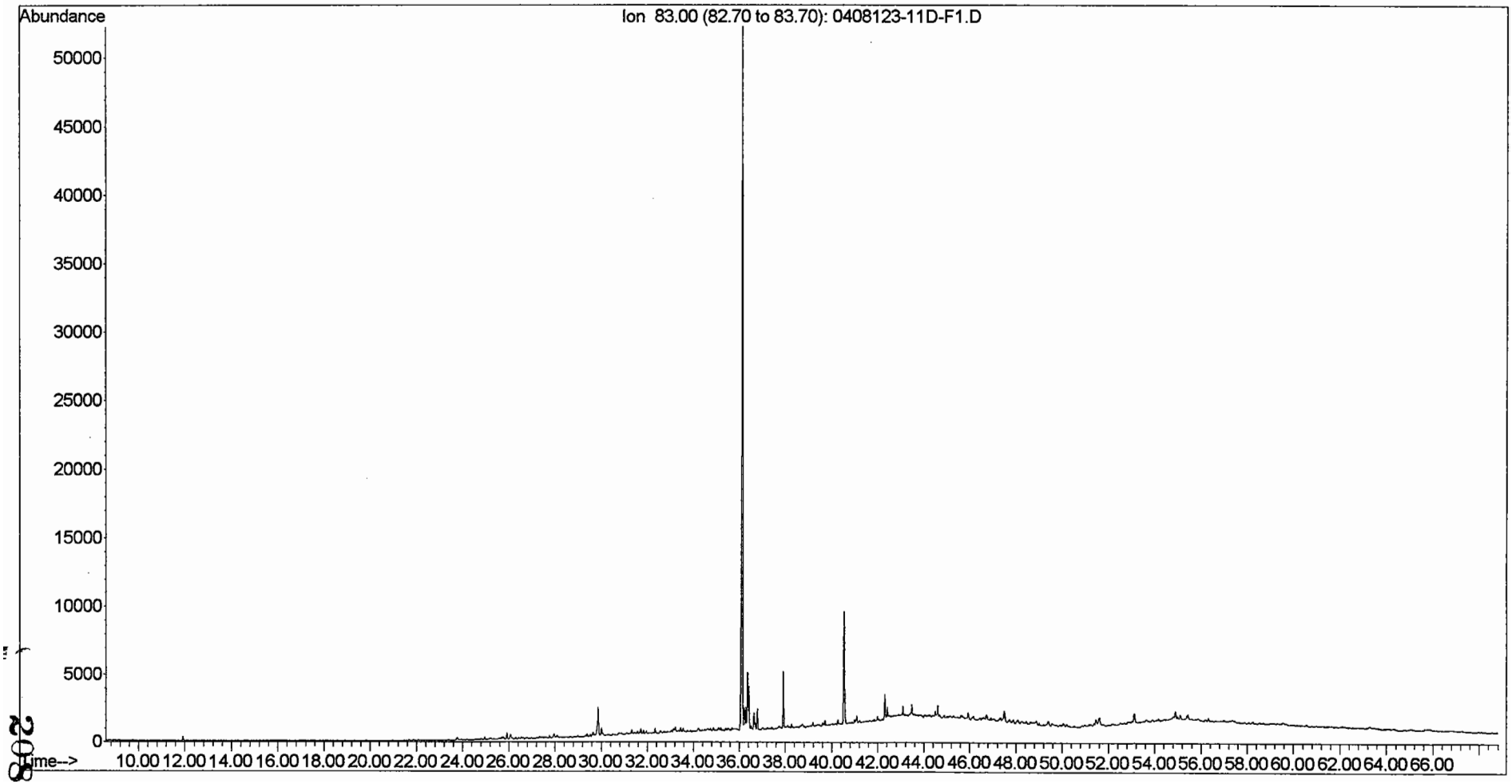
File :O:\Organics\DATA\PAH1\SEPT24\0408123-10-F1.D
Operator : BL
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-10-F1
Misc Info : 1X
Vial Number: 42



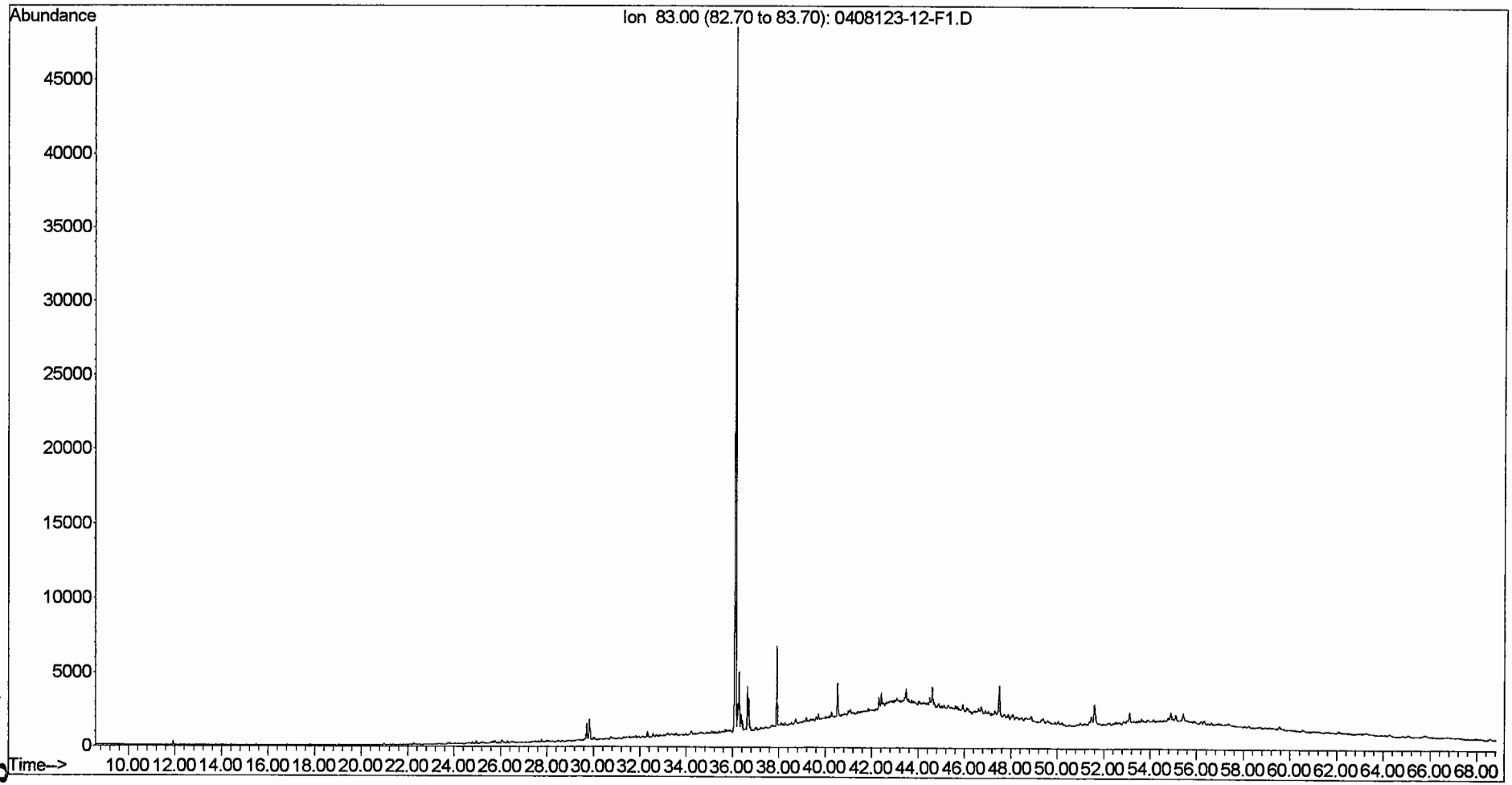
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11-F1.D
Operator : BL
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11-F1
Misc Info : 1X
Vial Number: 43



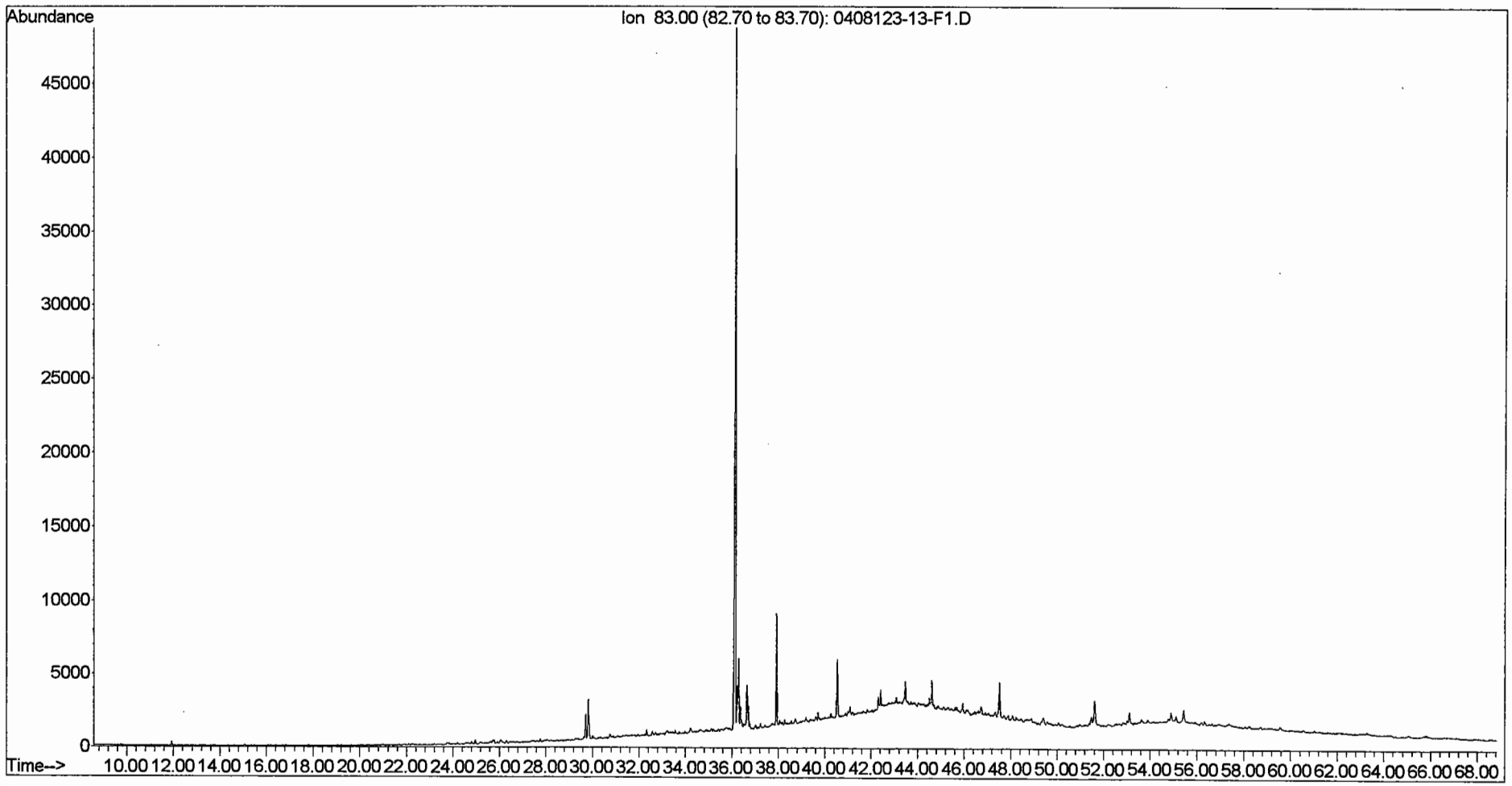
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11D-F1.D
Operator : BL
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11D-F1
Misc Info : 1X
Vial Number: 44



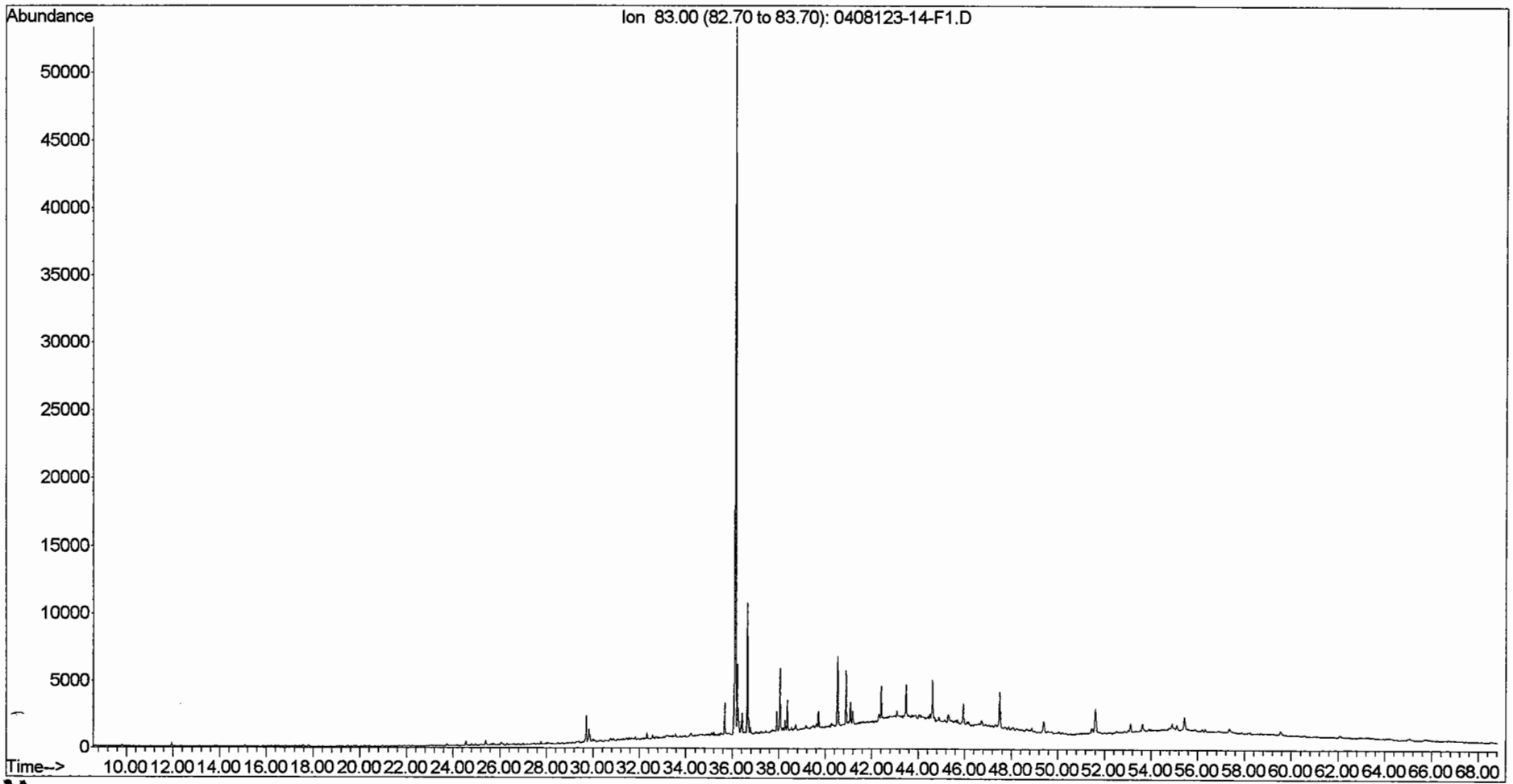
File :O:\Organics\DATA\PAH1\SEPT24\0408123-12-F1.D
Operator : BL
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-12-F1
Misc Info : 1X
Vial Number: 46



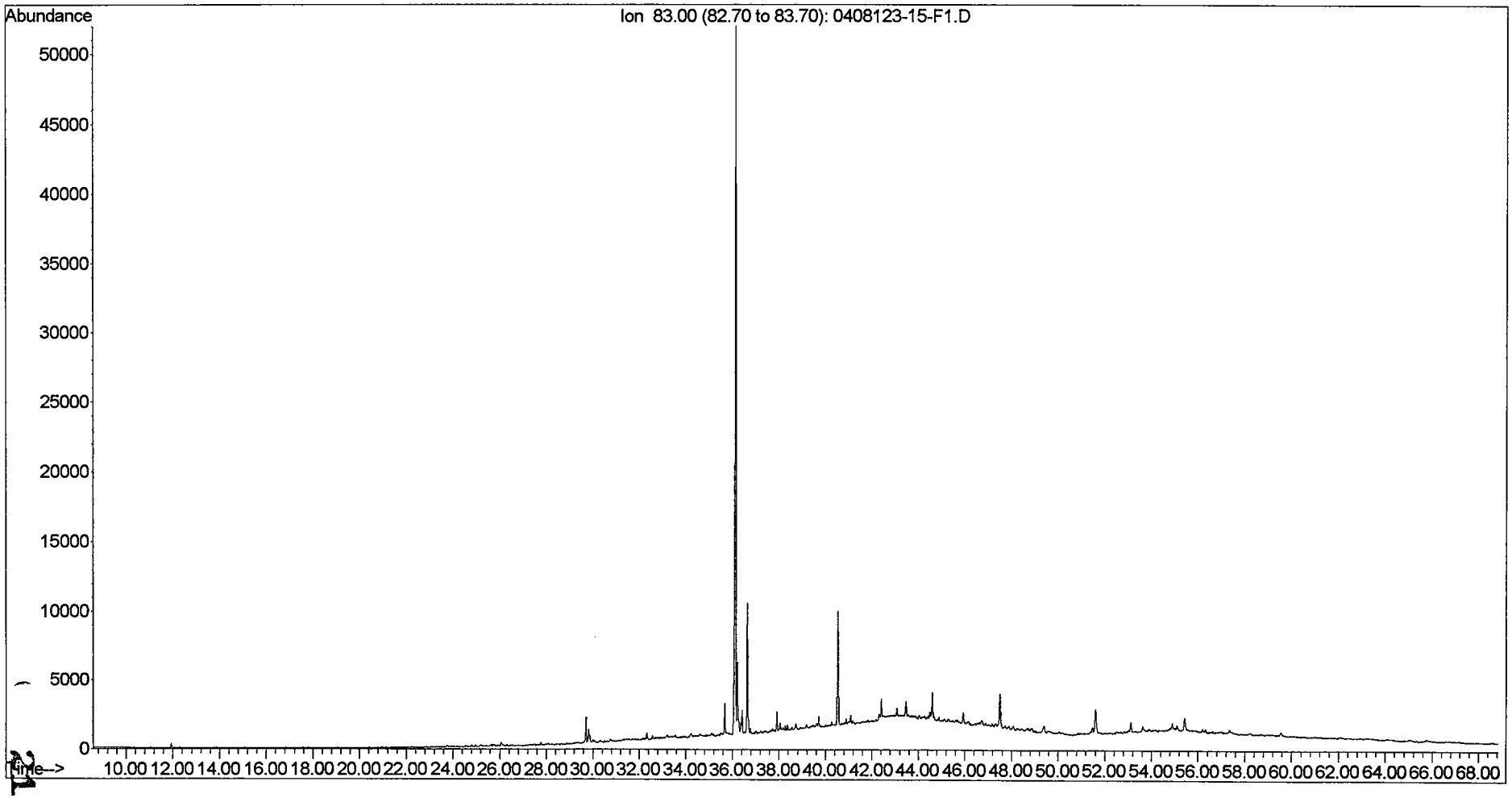
File :O:\Organics\DATA\PAH1\SEPT24\0408123-13-F1.D
Operator : BL
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-13-F1
Misc Info : 1X
Vial Number: 47



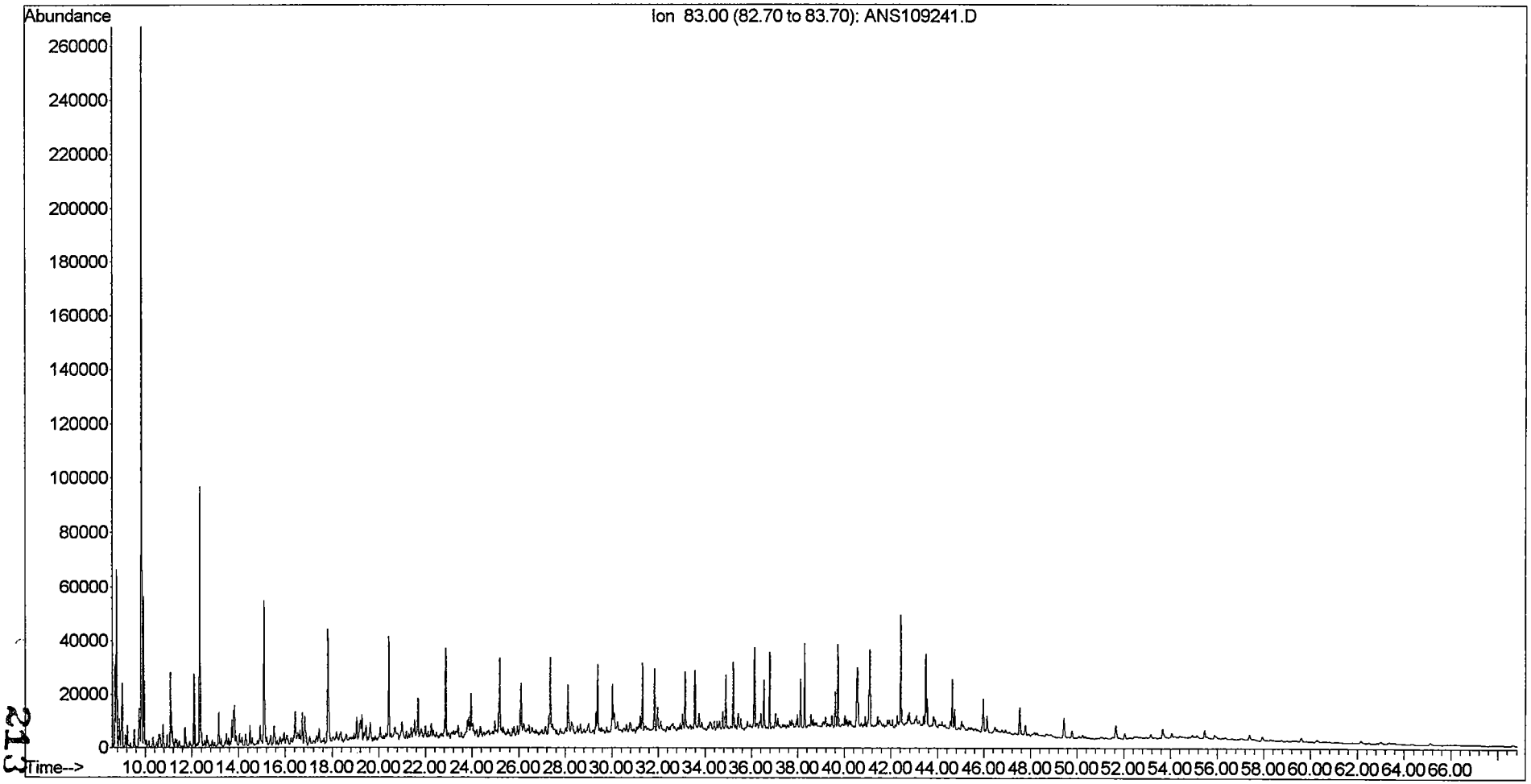
File :O:\Organics\DATA\PAH1\SEPT24\0408123-14-F1.D
Operator : BL
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-14-F1
Misc Info : 1X
Vial Number: 48



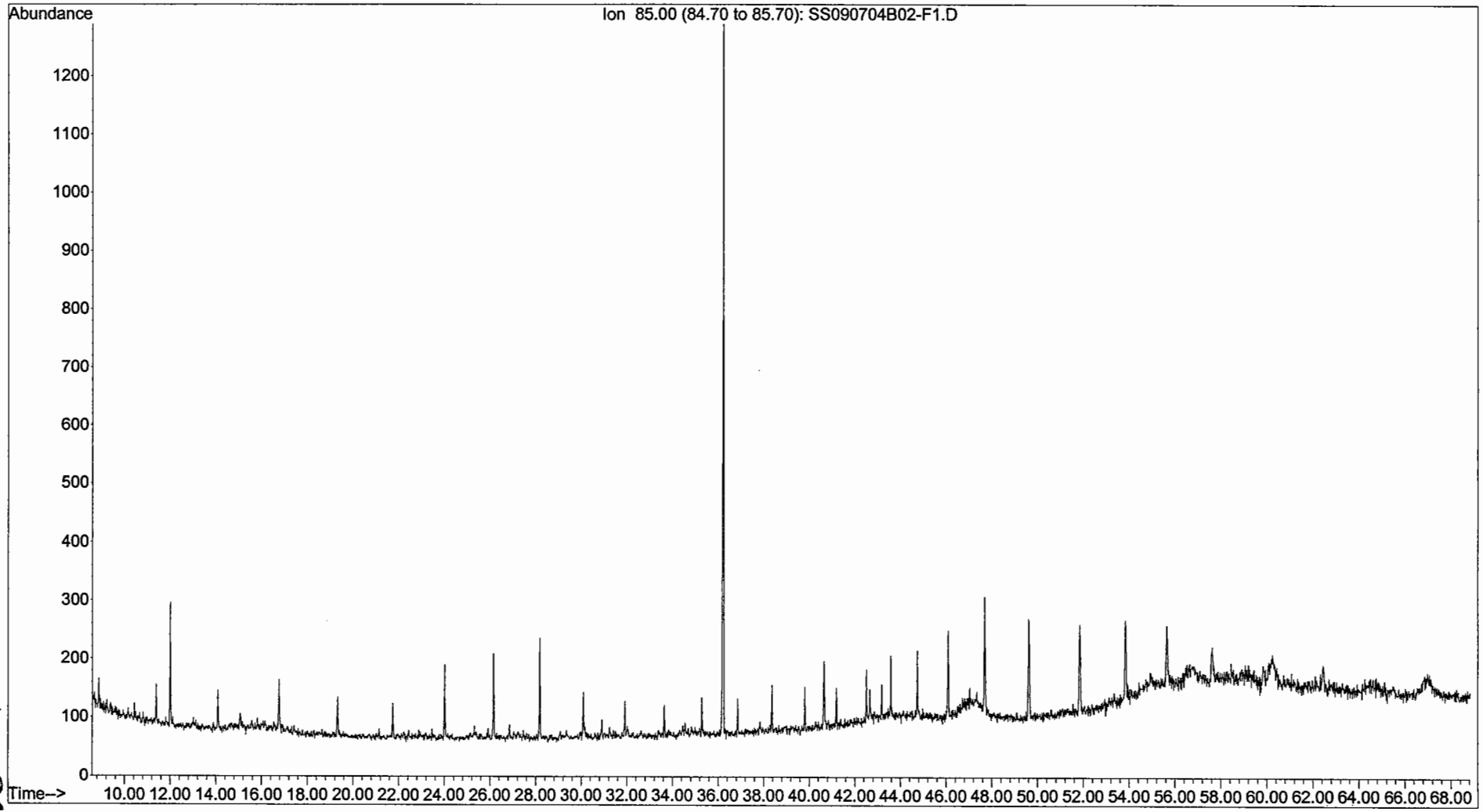
File :O:\Organics\DATA\PAH1\SEPT24\0408123-15-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-15-F1
Misc Info : 1X
Vial Number: 49



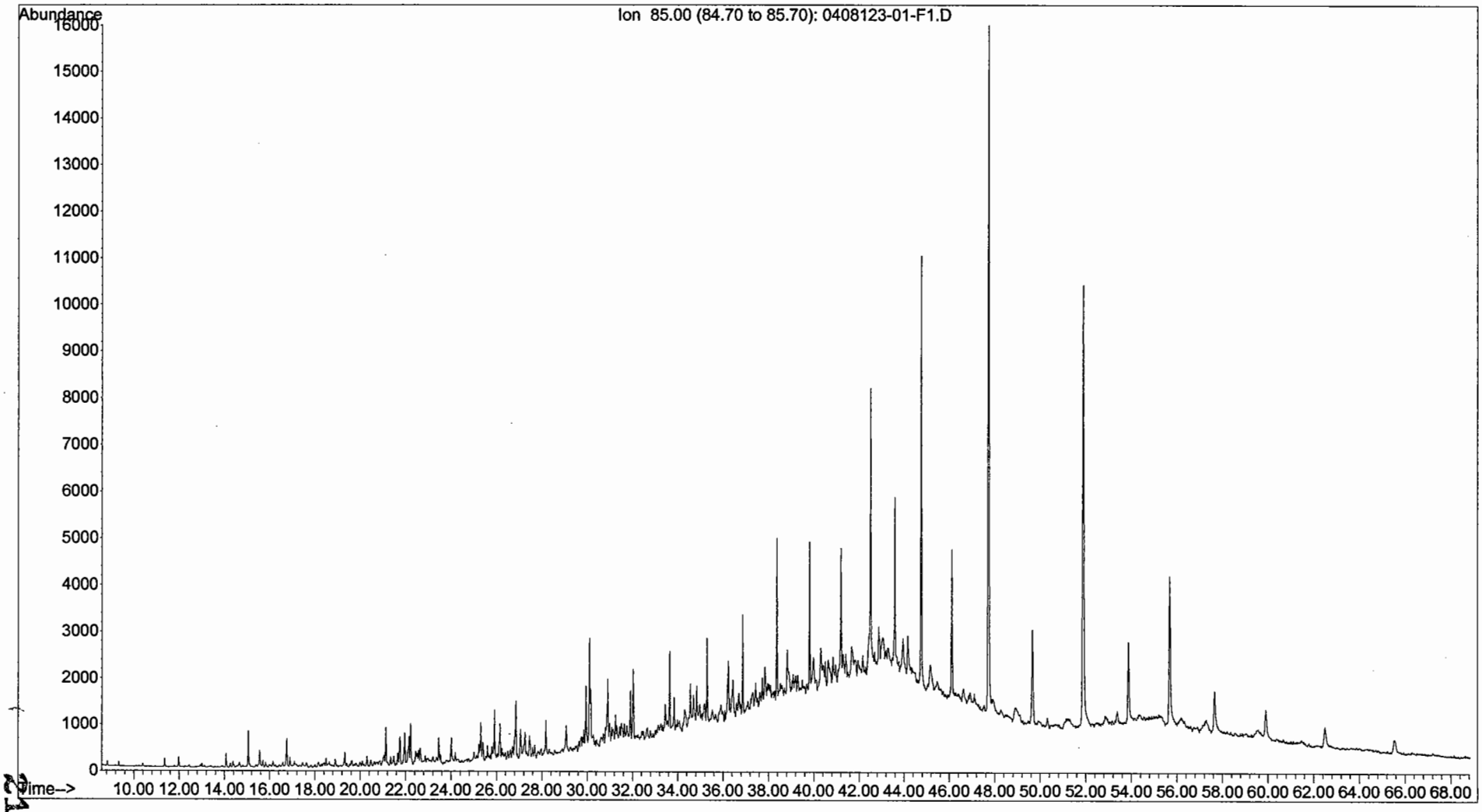
File :O:\Organics\DATA\PAH1\SEPT24\ANS109241.D
Operator : BL
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: ANS109241
Misc Info : SW090104A 5.14 mg/mL
Vial Number: 11



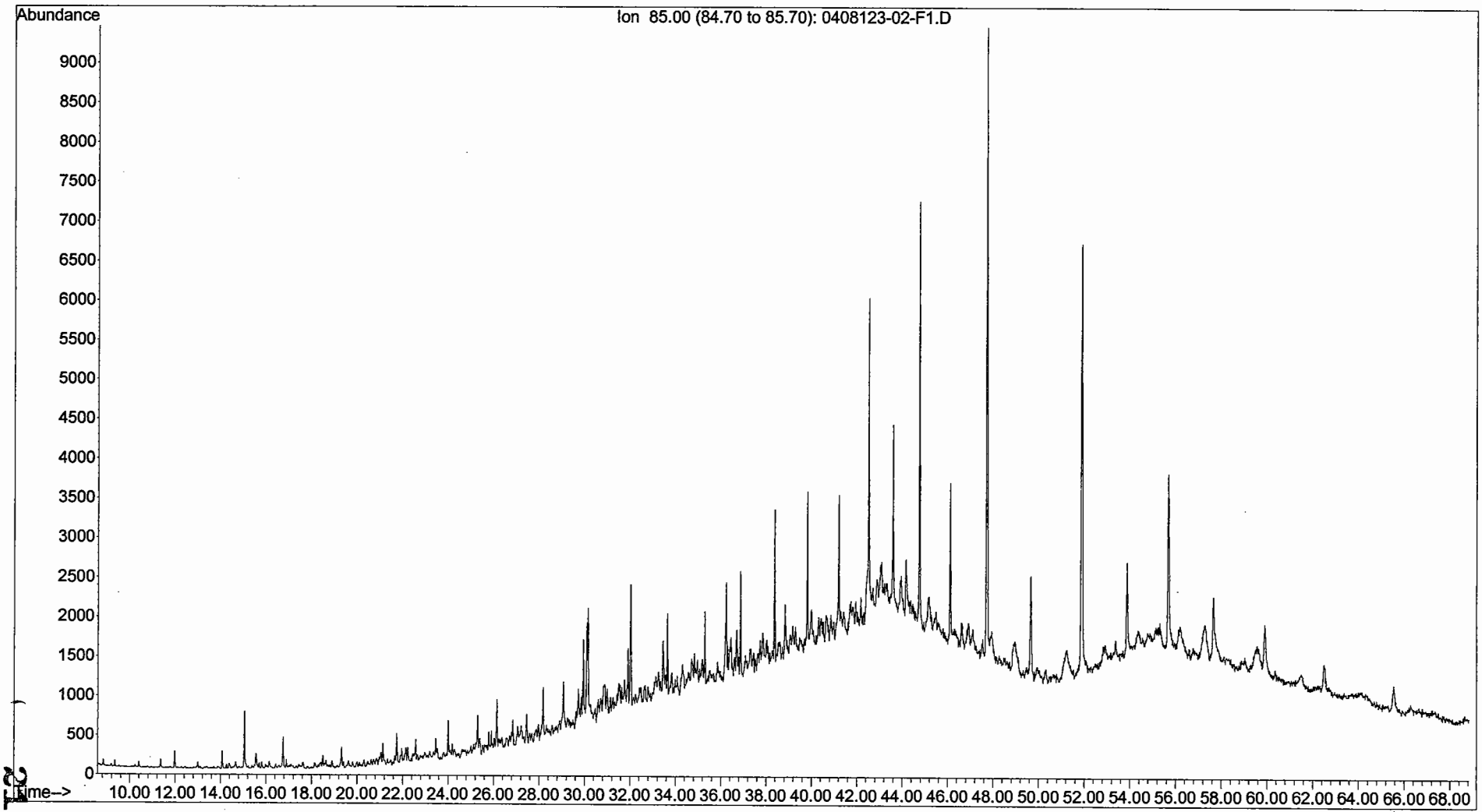
File :O:\Organics\DATA\PAH1\SEPT20A\SS090704B02-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: SS090704B02-F1
Misc Info : 1X
Vial Number: 29



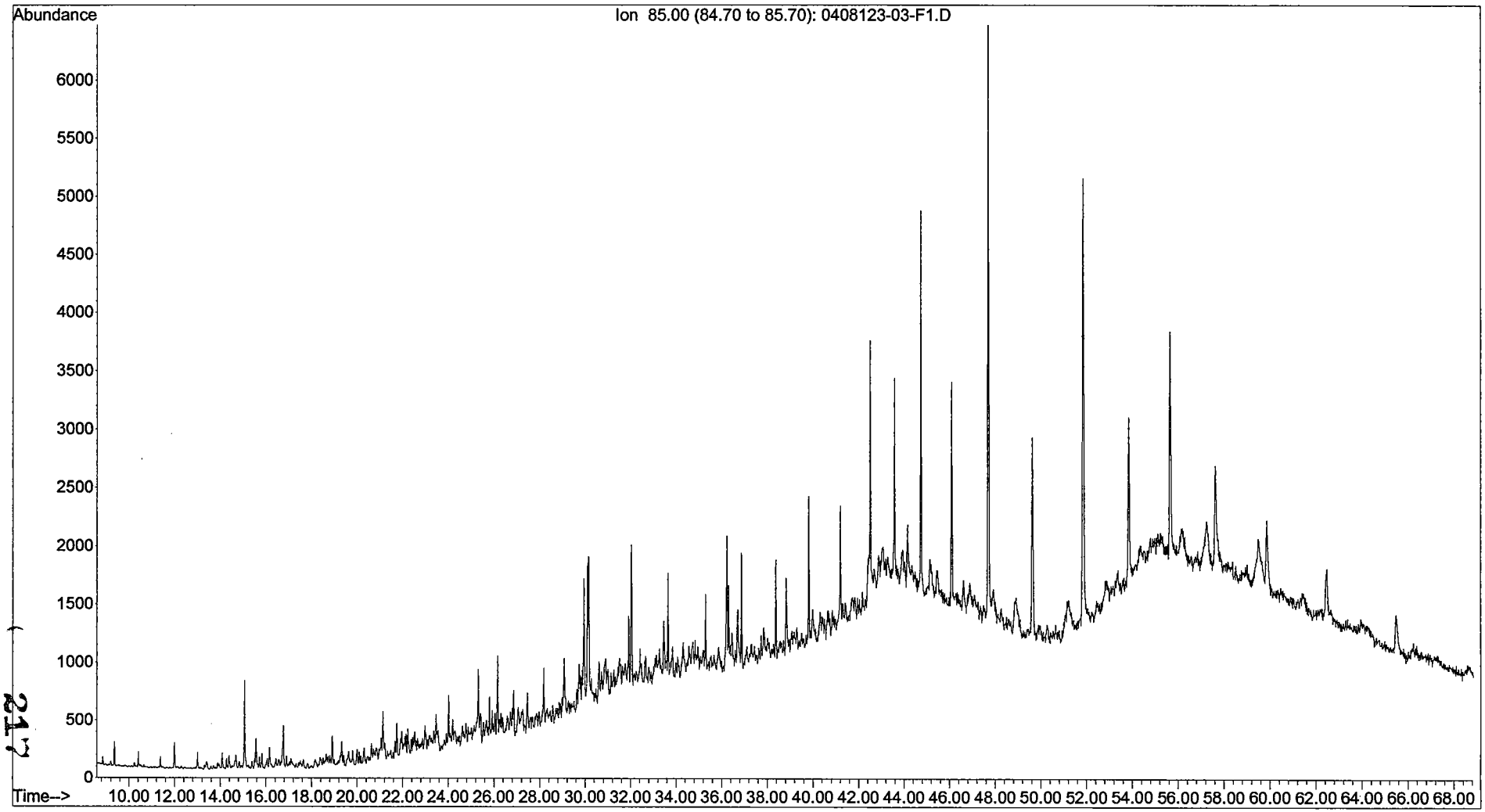
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-01-F1
Misc Info : 1X
Vial Number: 32



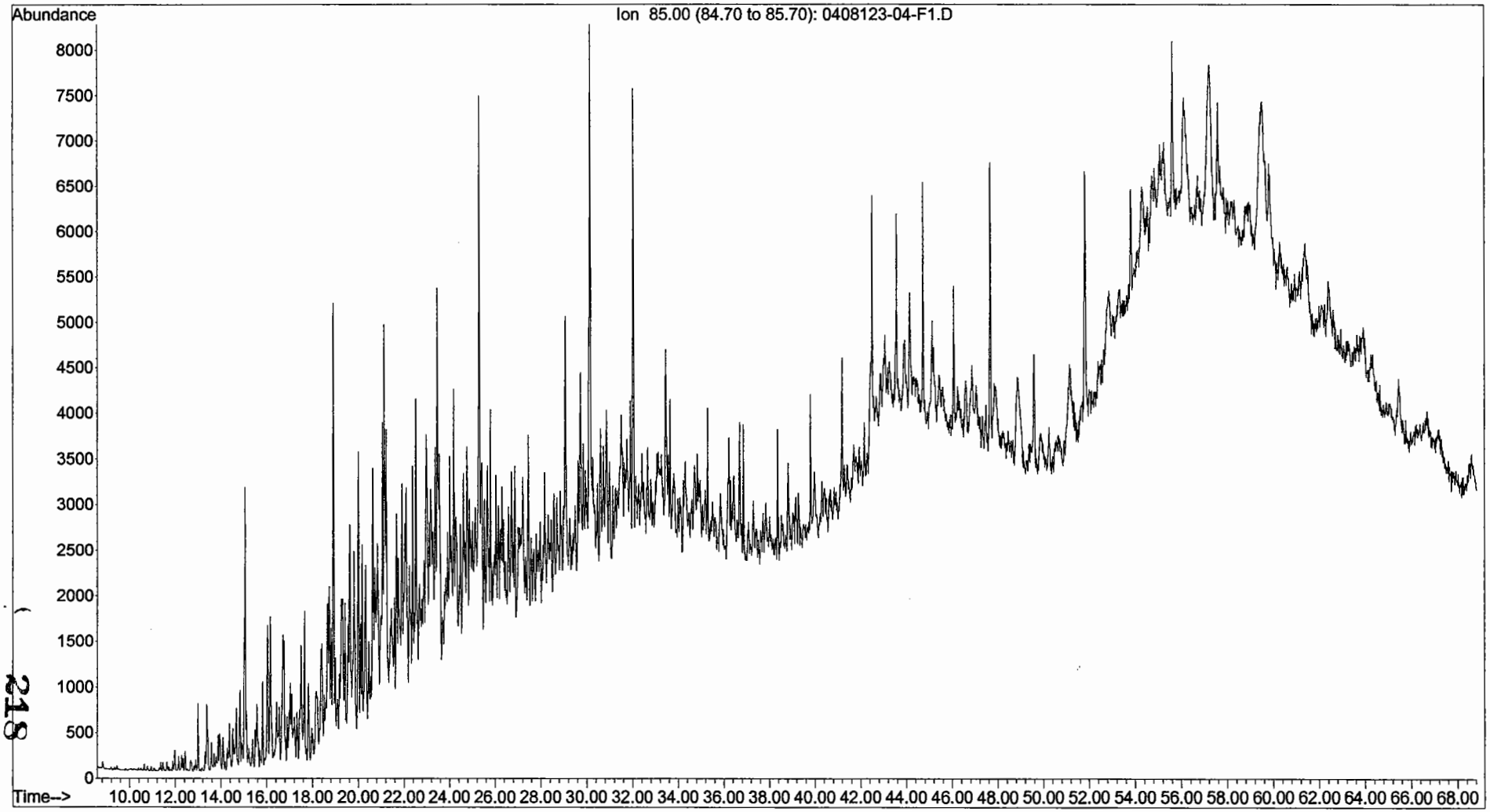
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-02-F1
Misc Info : 1X
Vial Number: 33



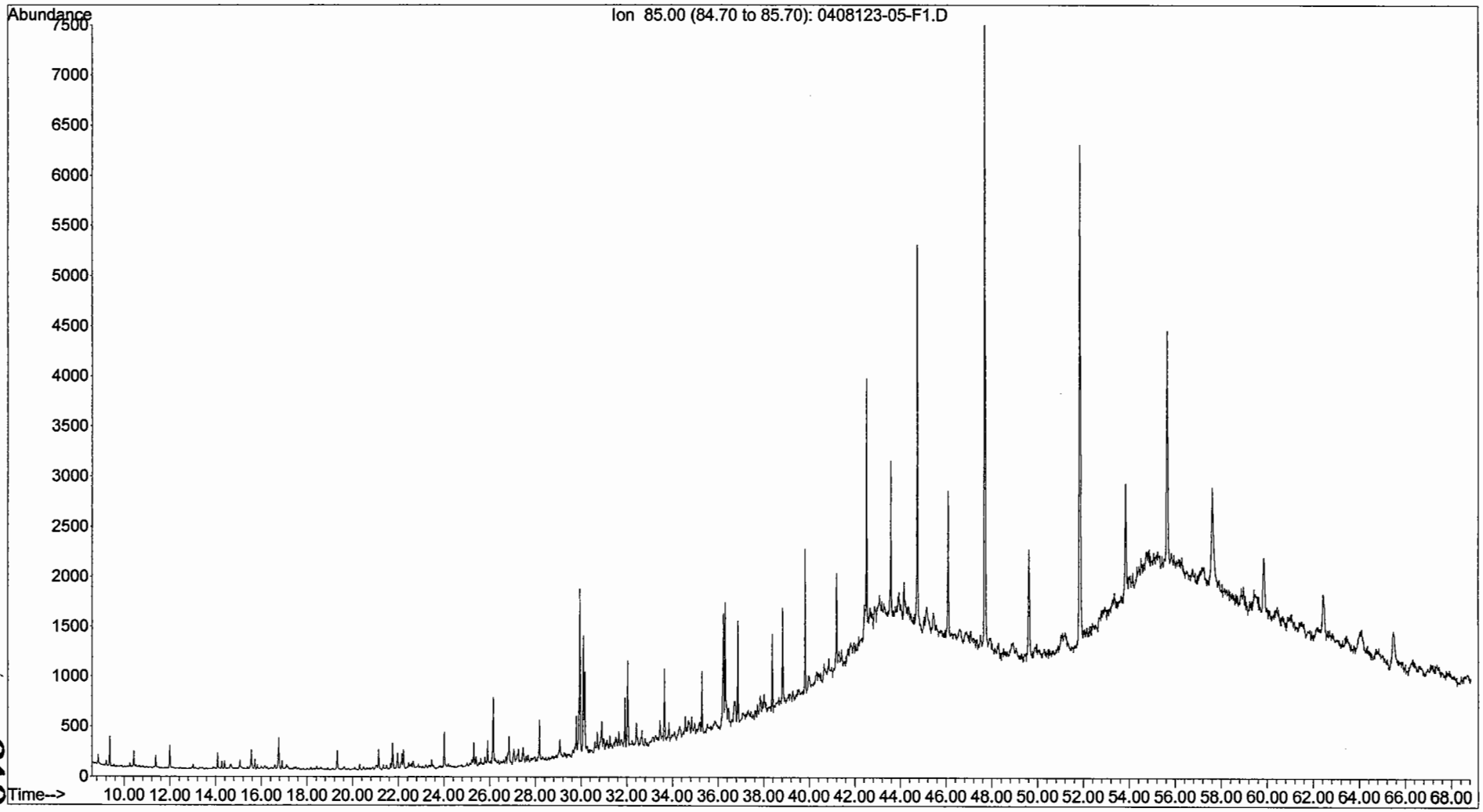
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-03-F1
Misc Info : 1X
Vial Number: 34



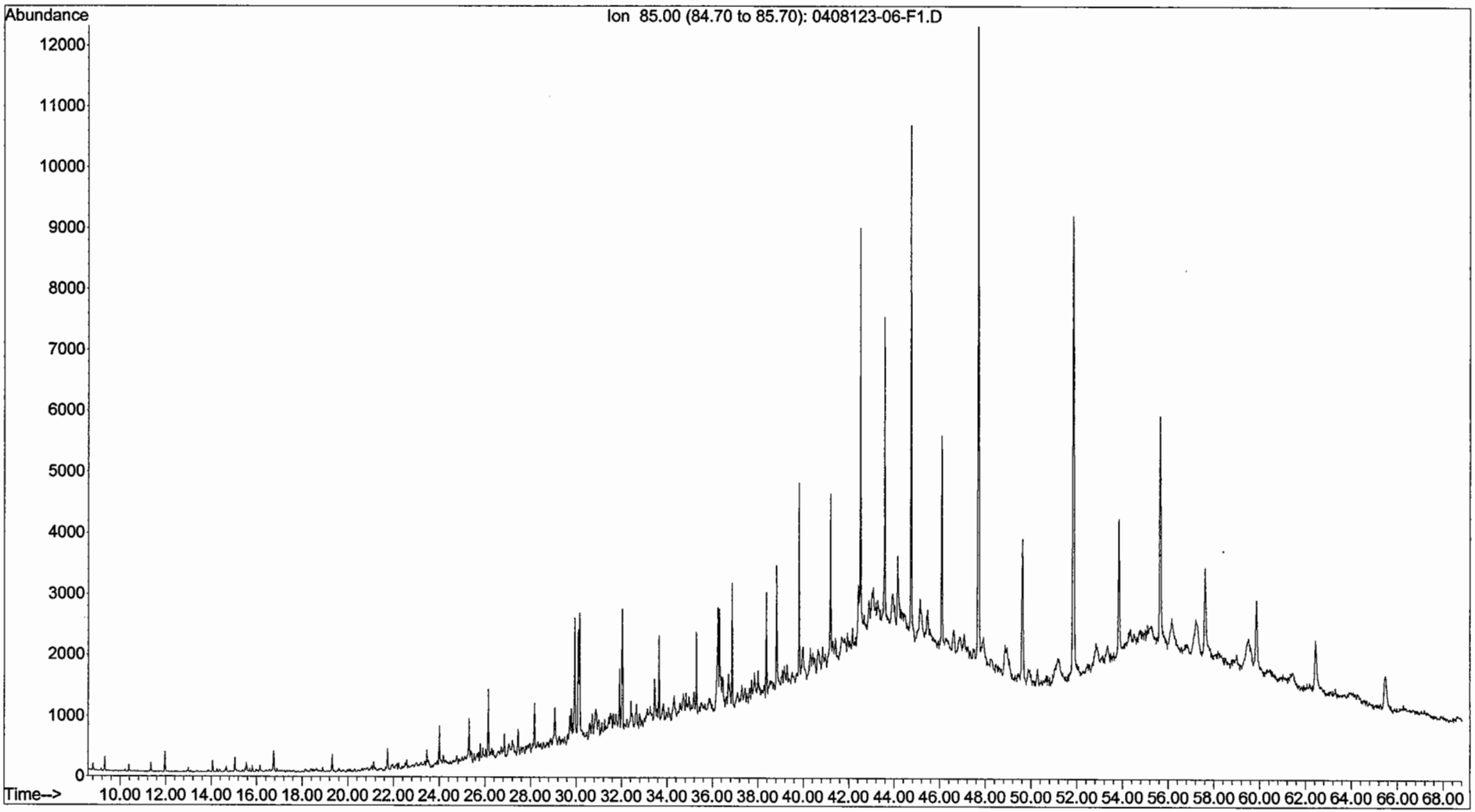
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-04-F1
Misc Info : 1X
Vial Number: 35



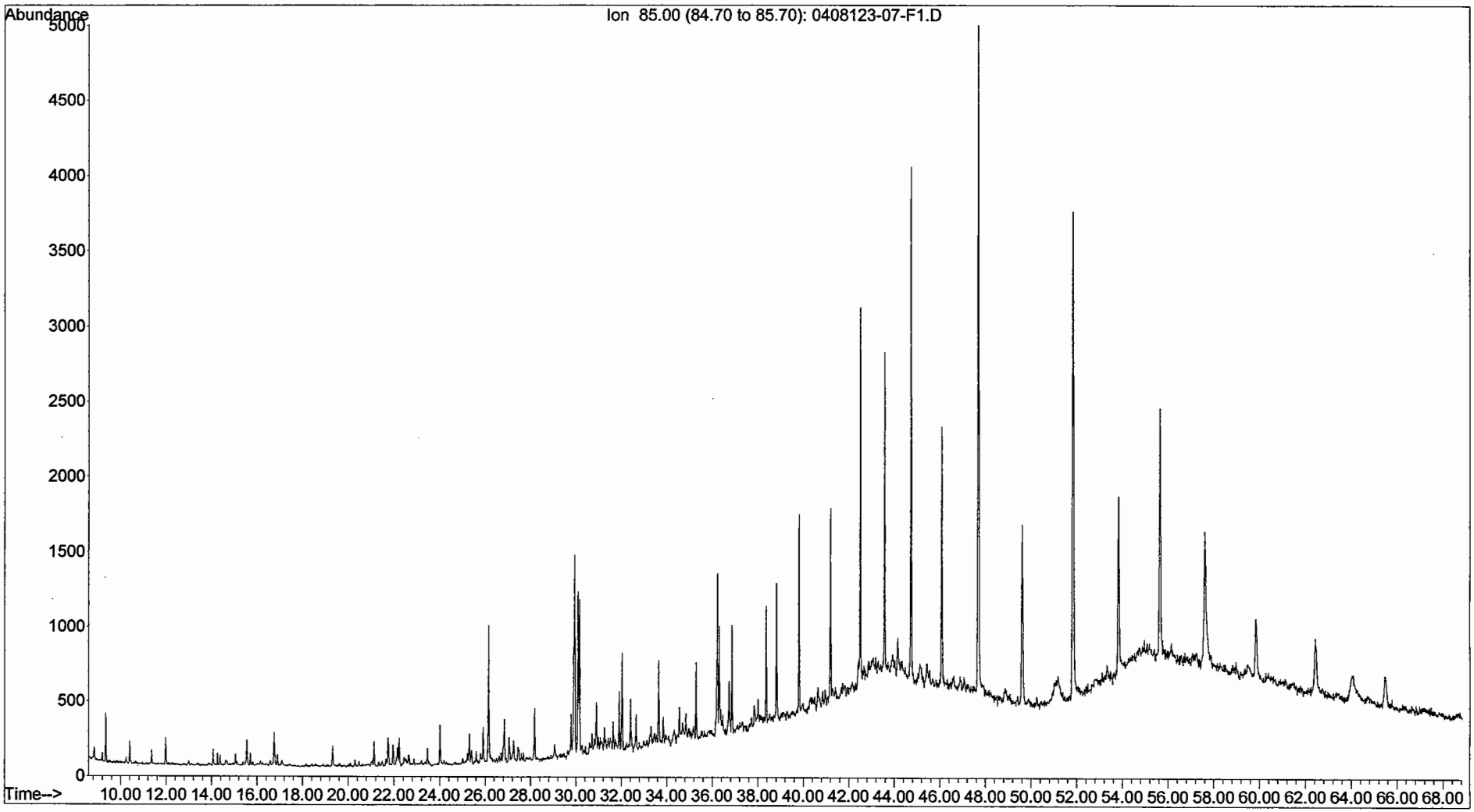
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-05-F1
Misc Info : 1X
Vial Number: 36



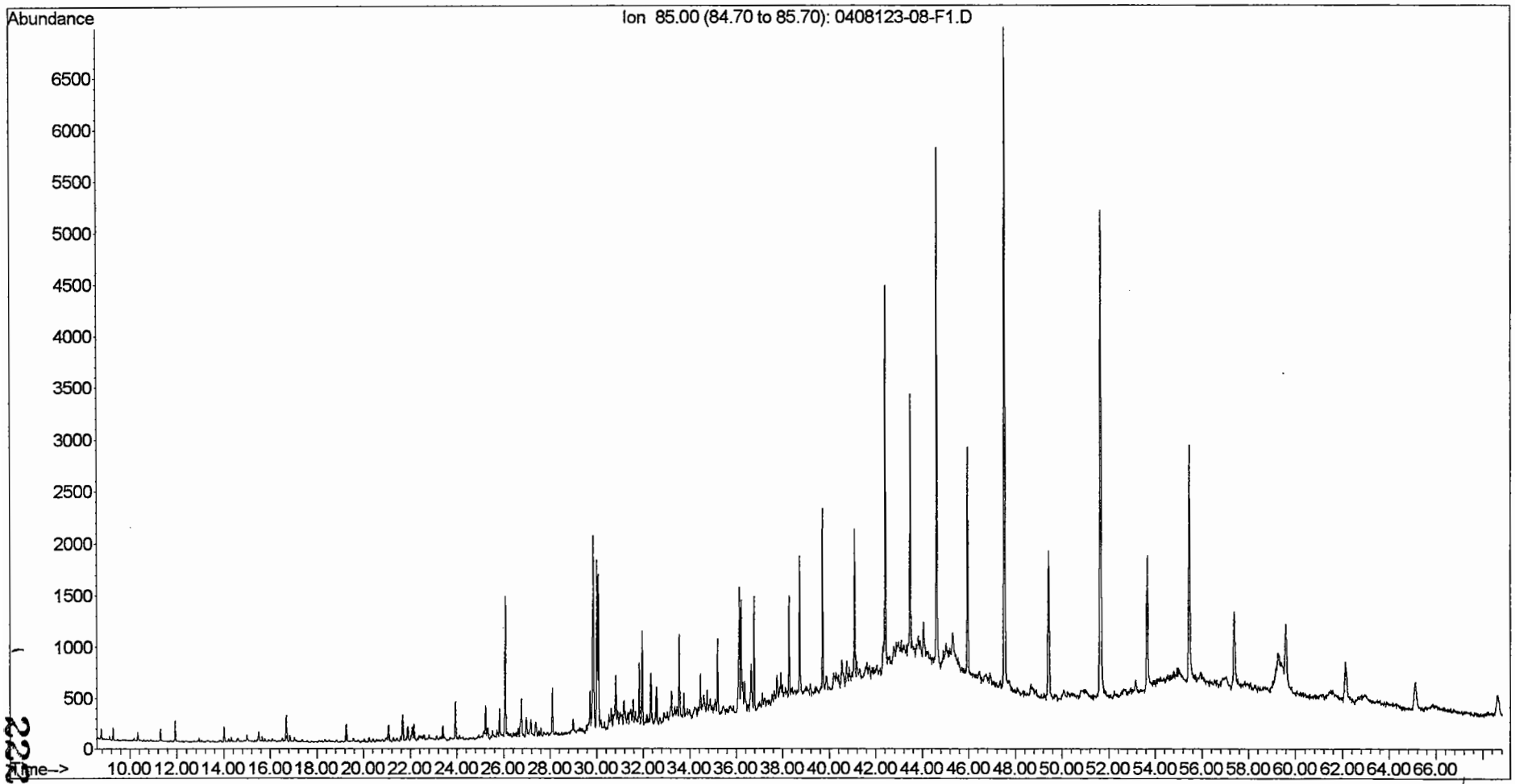
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-06-F1
Misc Info : 1X
Vial Number: 37



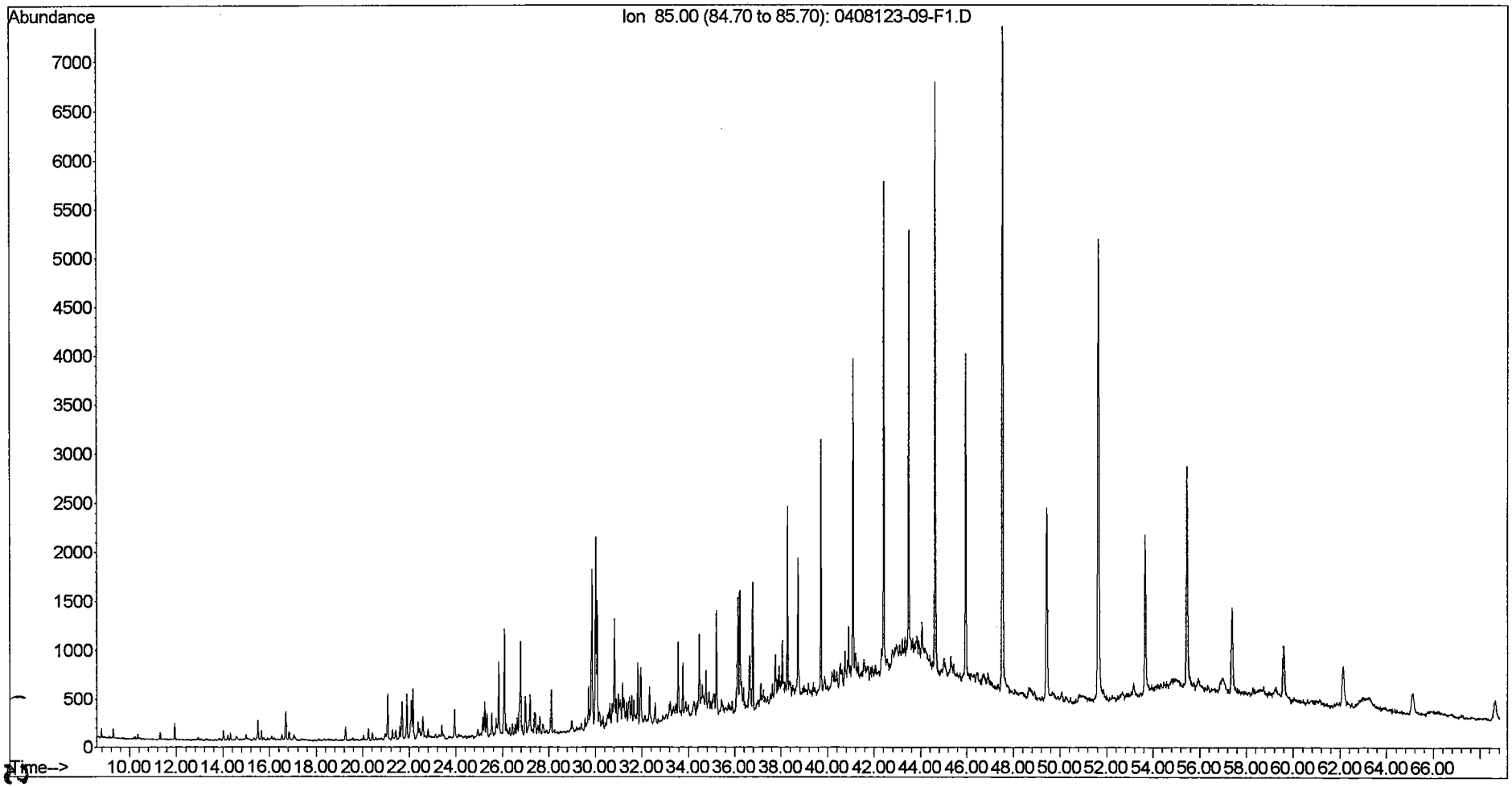
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-07-F1.D
Operator : BL
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-07-F1
Misc Info : 1X
Vial Number: 38



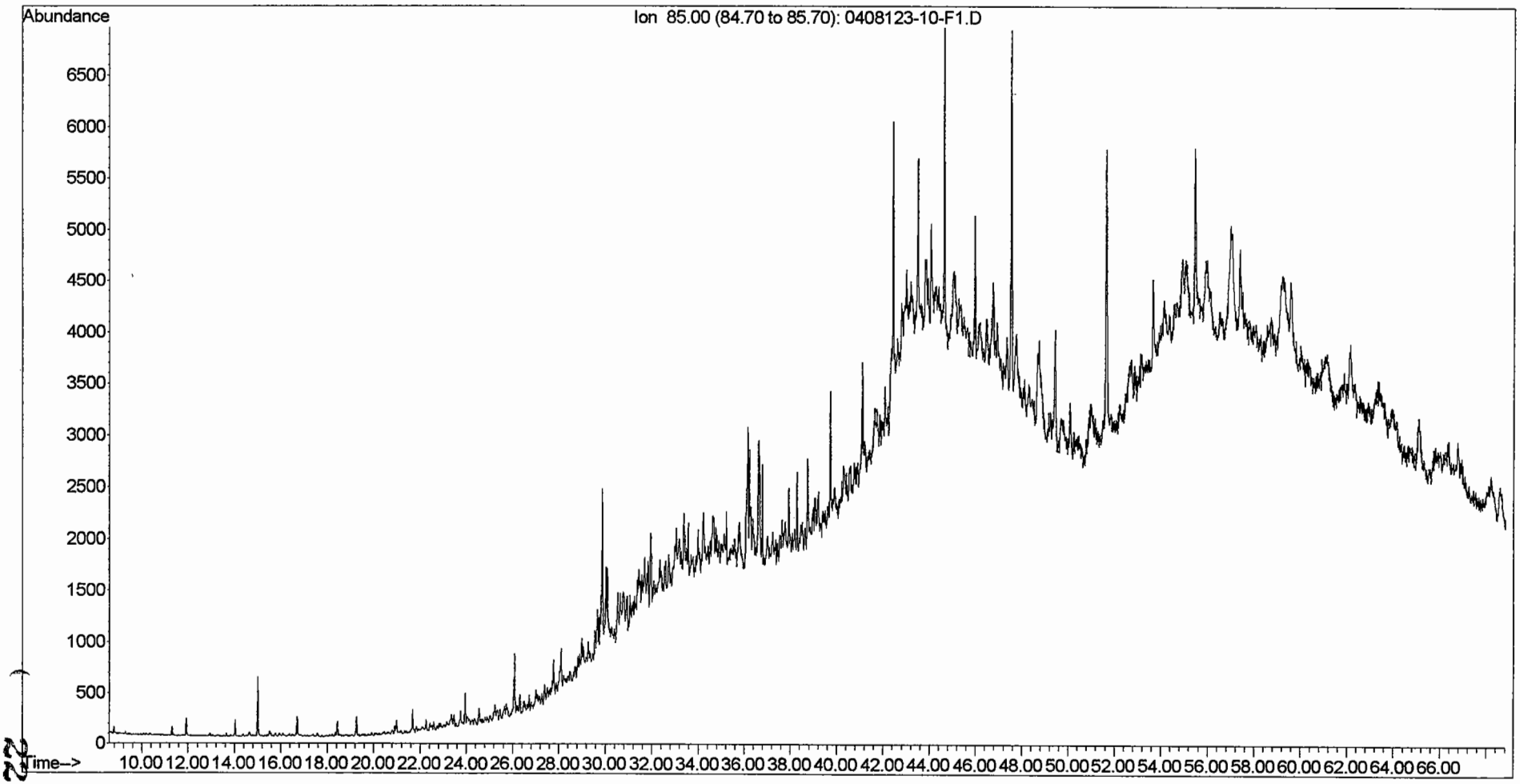
File :O:\Organics\DATA\PAH1\SEPT24\0408123-08-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-08-F1
Misc Info : 1X
Vial Number: 40



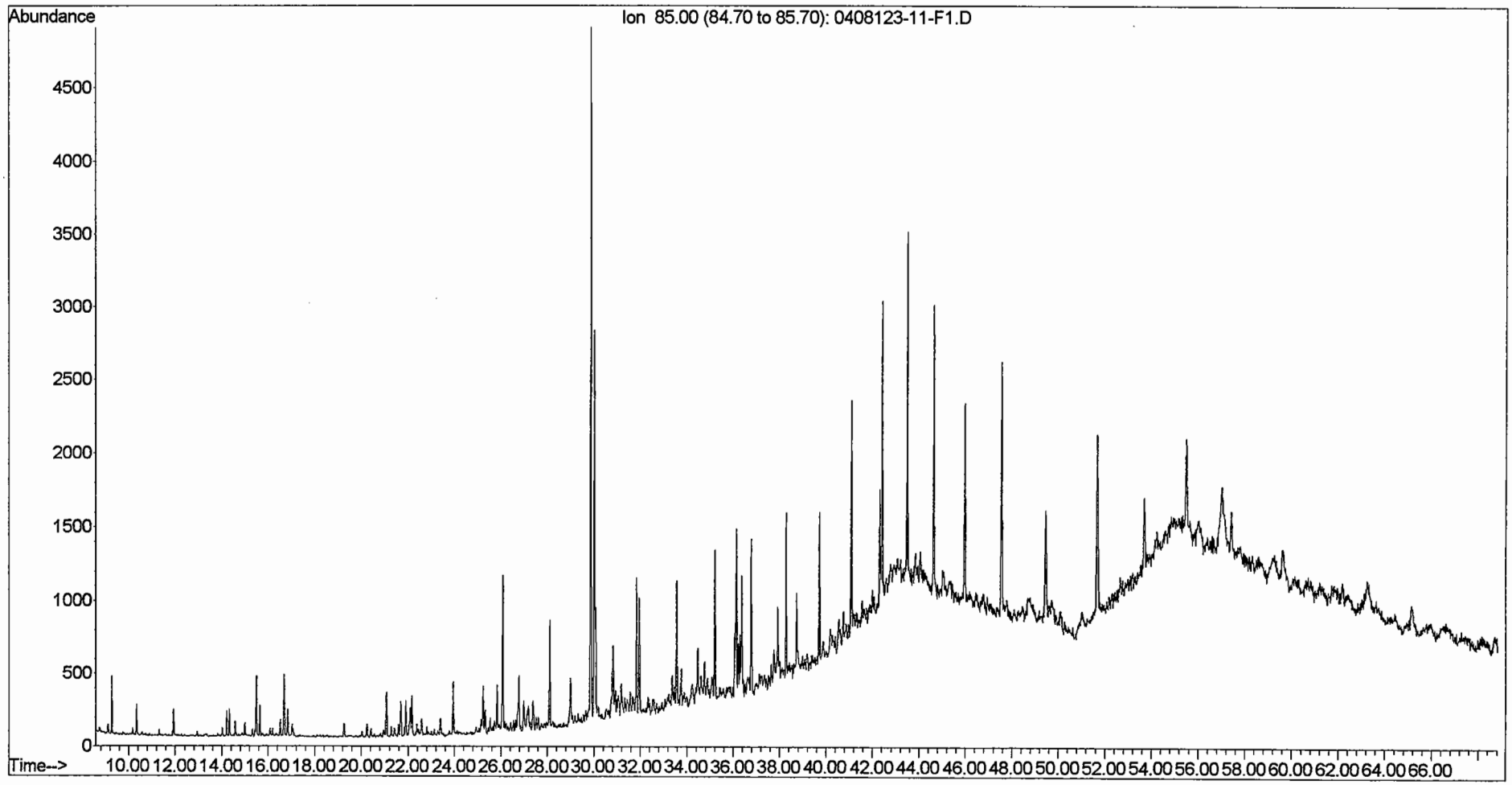
File :O:\Organics\DATA\PAH1\SEPT24\0408123-09-F1.D
Operator : BL
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-09-F1
Misc Info : 1X
Vial Number: 41



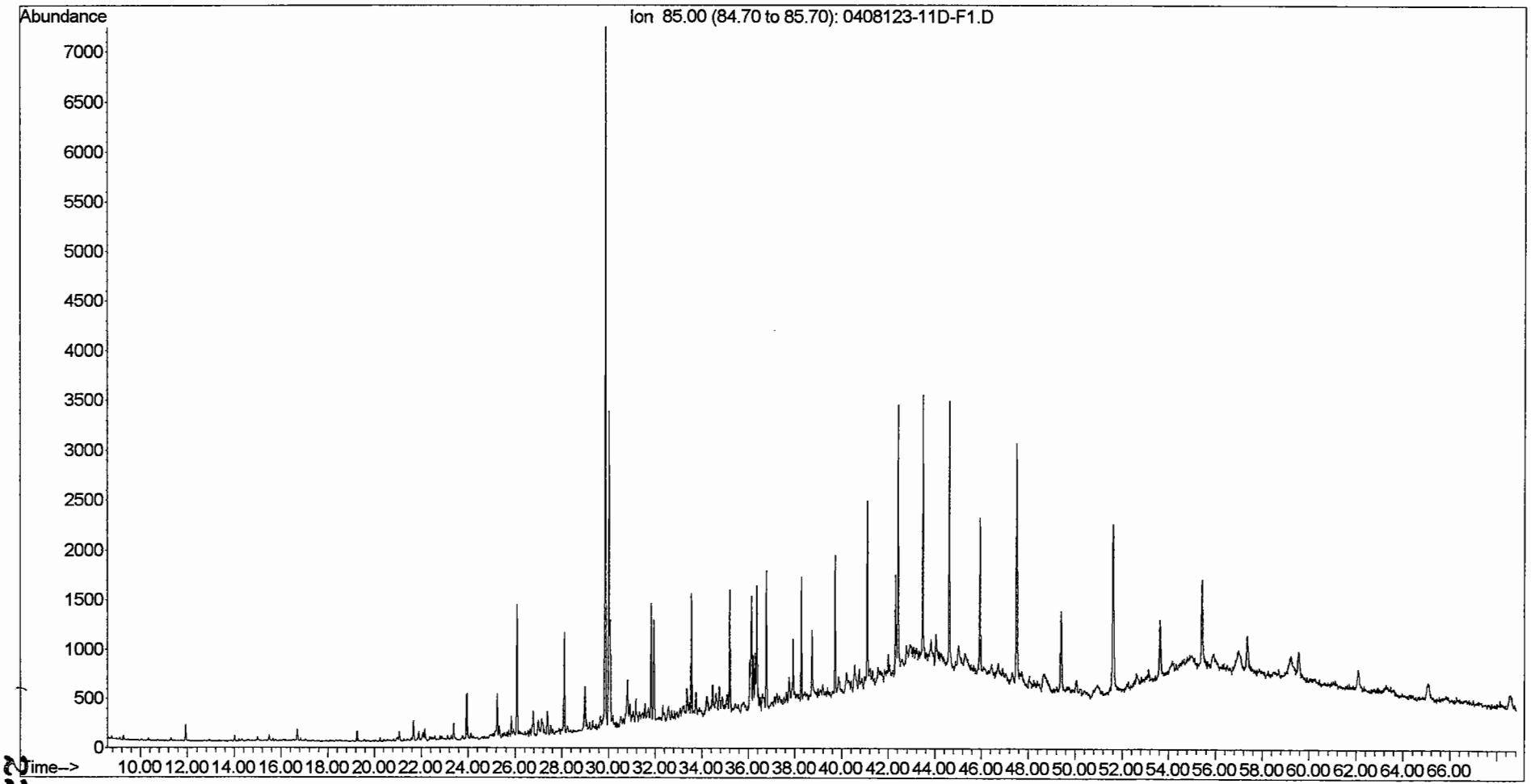
File :O:\Organics\DATA\PAH1\SEPT24\0408123-10-F1.D
Operator : BL
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-10-F1
Misc Info : 1X
Vial Number: 42



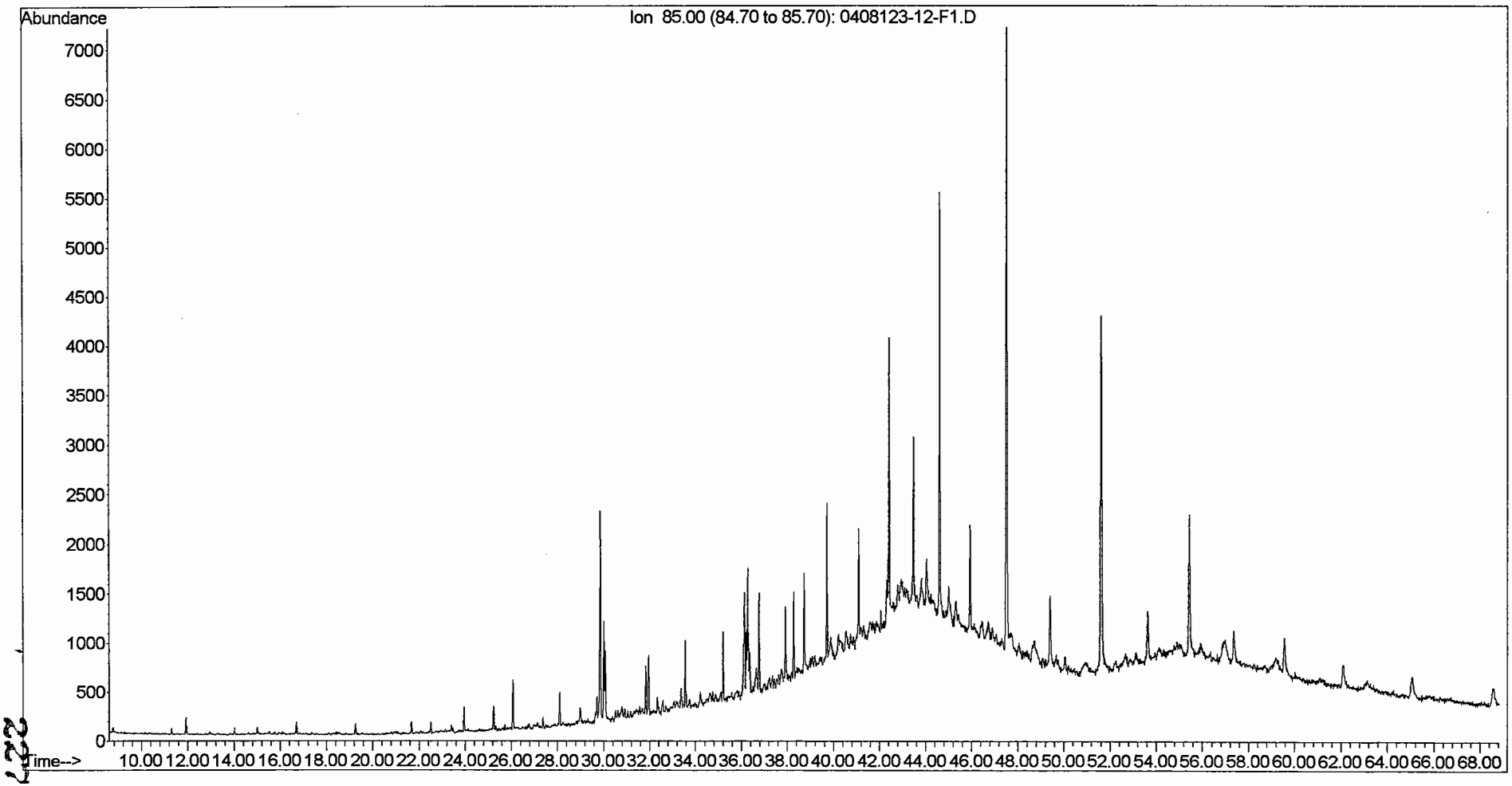
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11-F1.D
Operator : BL
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11-F1
Misc Info : 1X
Vial Number: 43



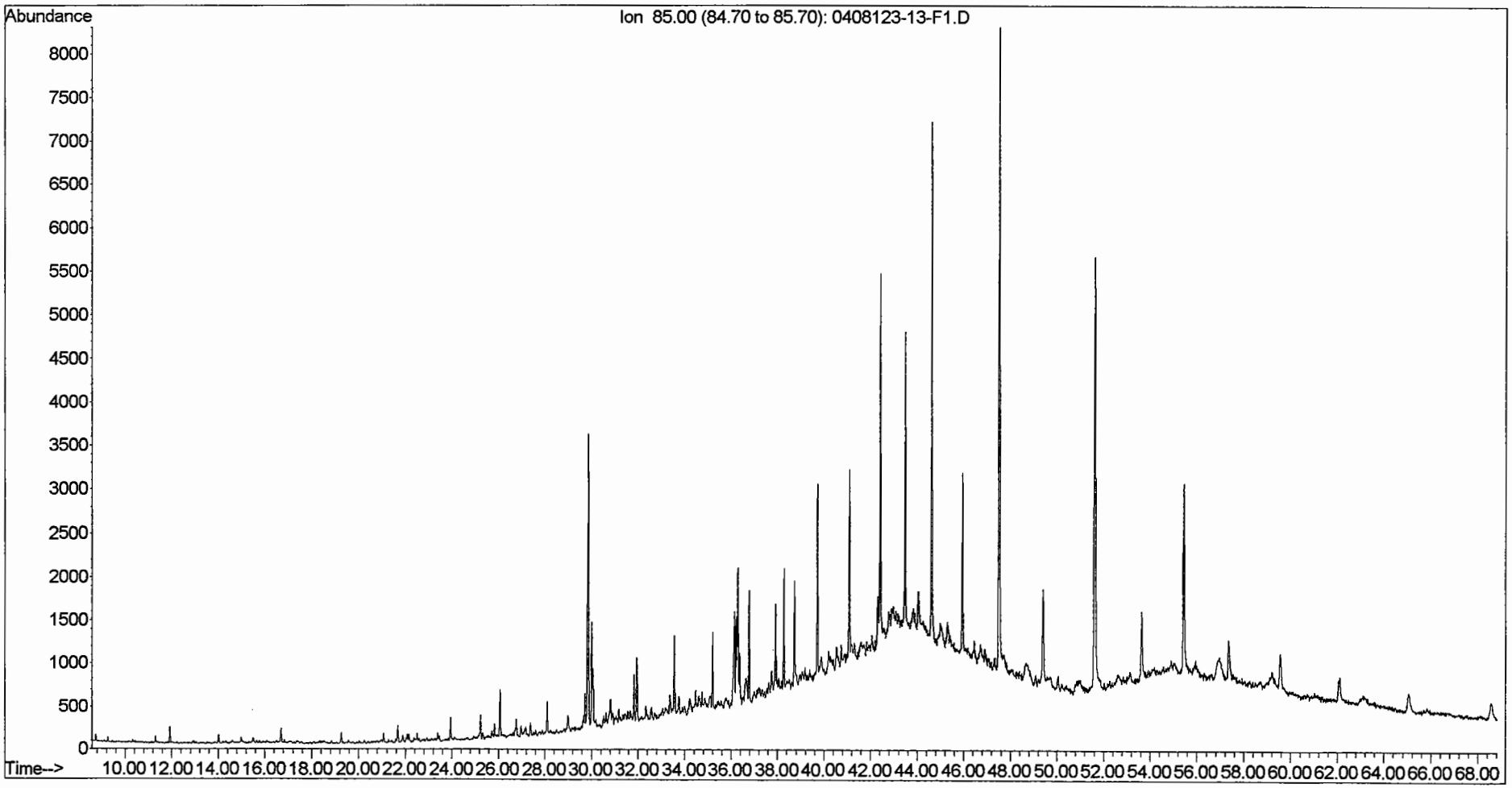
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11D-F1.D
Operator : BL
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11D-F1
Misc Info : 1X
Vial Number: 44



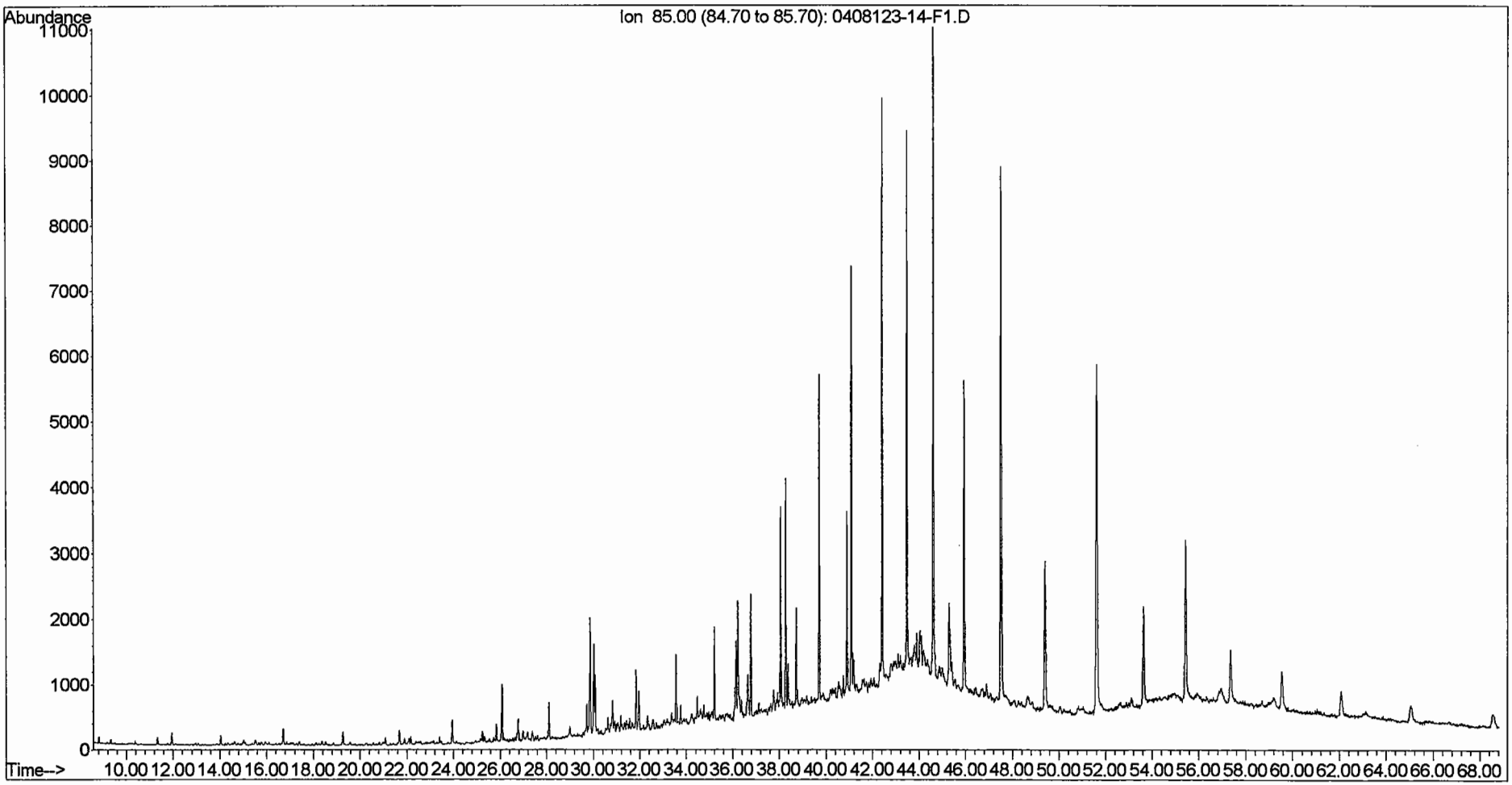
File :O:\Organics\DATA\PAH1\SEPT24\0408123-12-F1.D
Operator : BL
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-12-F1
Misc Info : 1X
Vial Number: 46



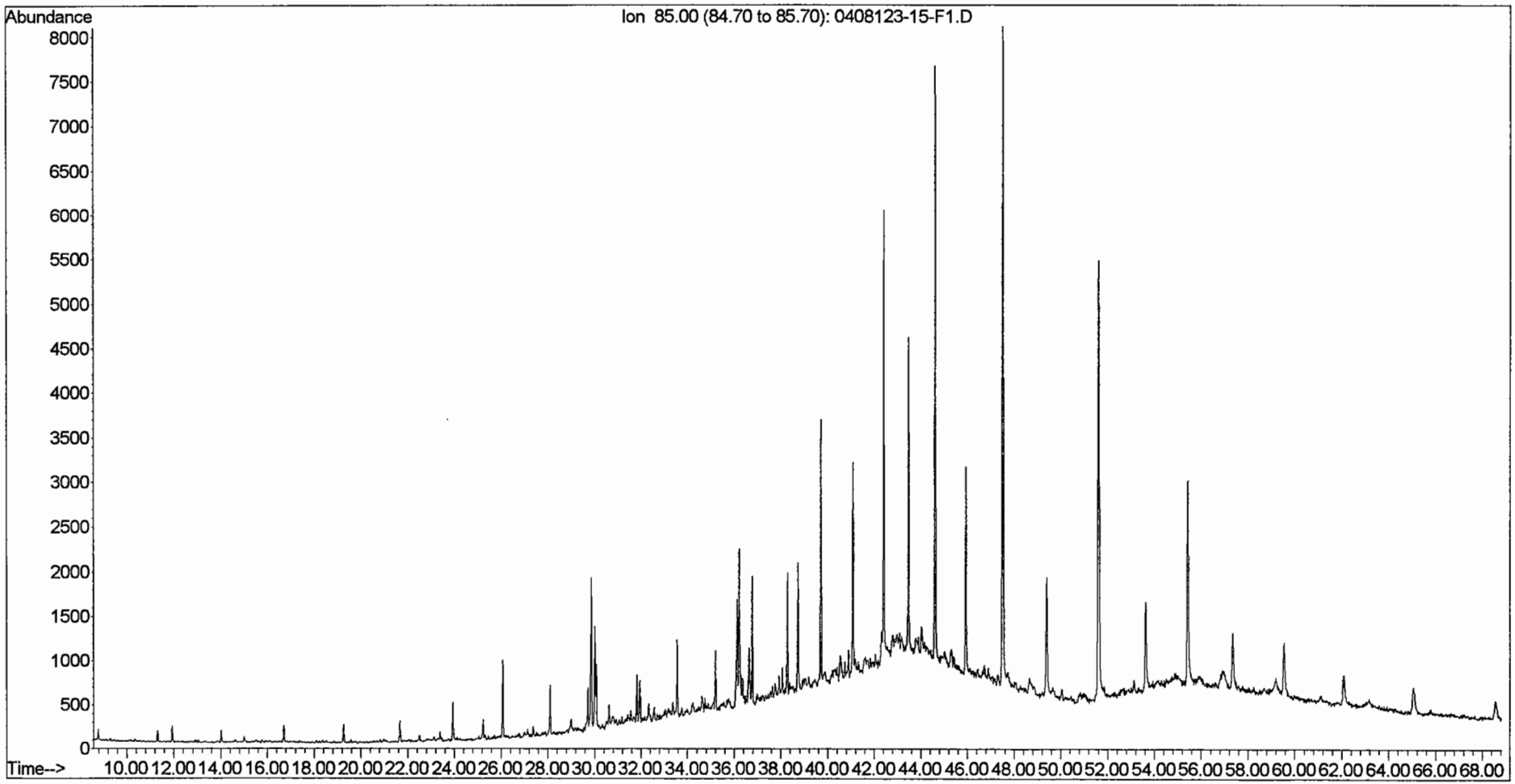
File :O:\Organics\DATA\PAH1\SEPT24\0408123-13-F1.D
Operator : BL
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-13-F1
Misc Info : 1X
Vial Number: 47



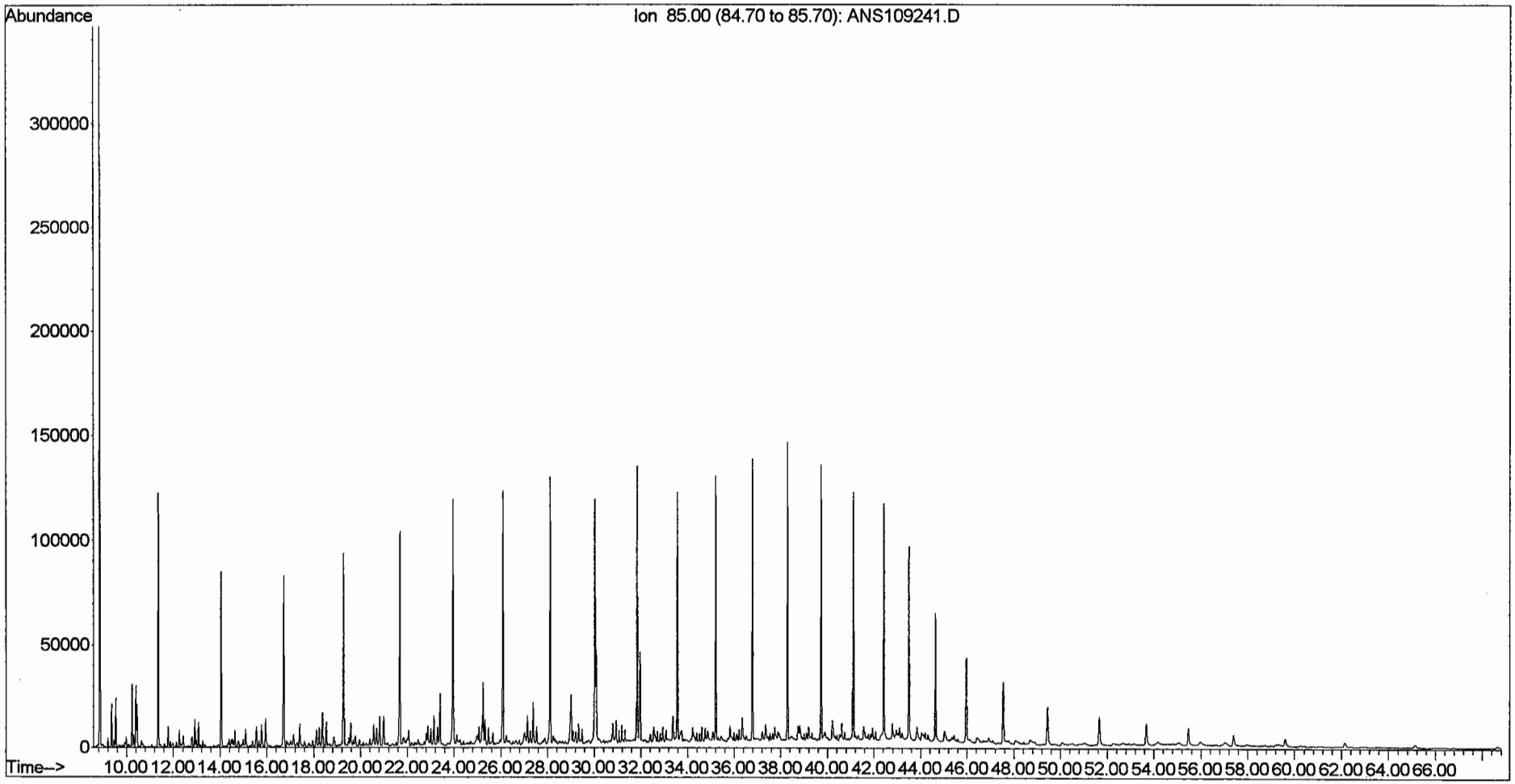
File :O:\Organics\DATA\PAH1\SEPT24\0408123-14-F1.D
Operator : BL
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-14-F1
Misc Info : 1X
Vial Number: 48



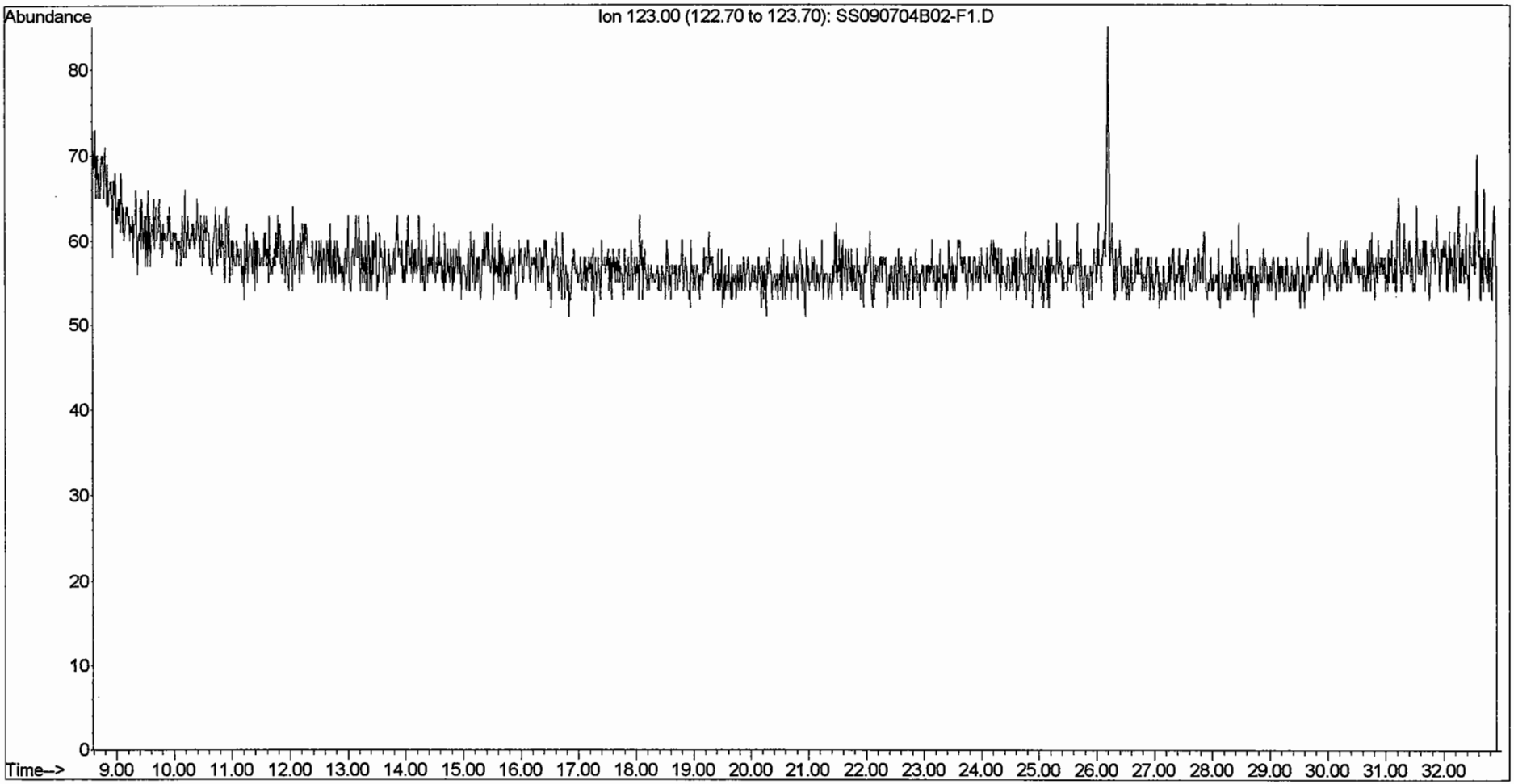
File :O:\Organics\DATA\PAH1\SEPT24\0408123-15-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-15-F1
Misc Info : 1X
Vial Number: 49



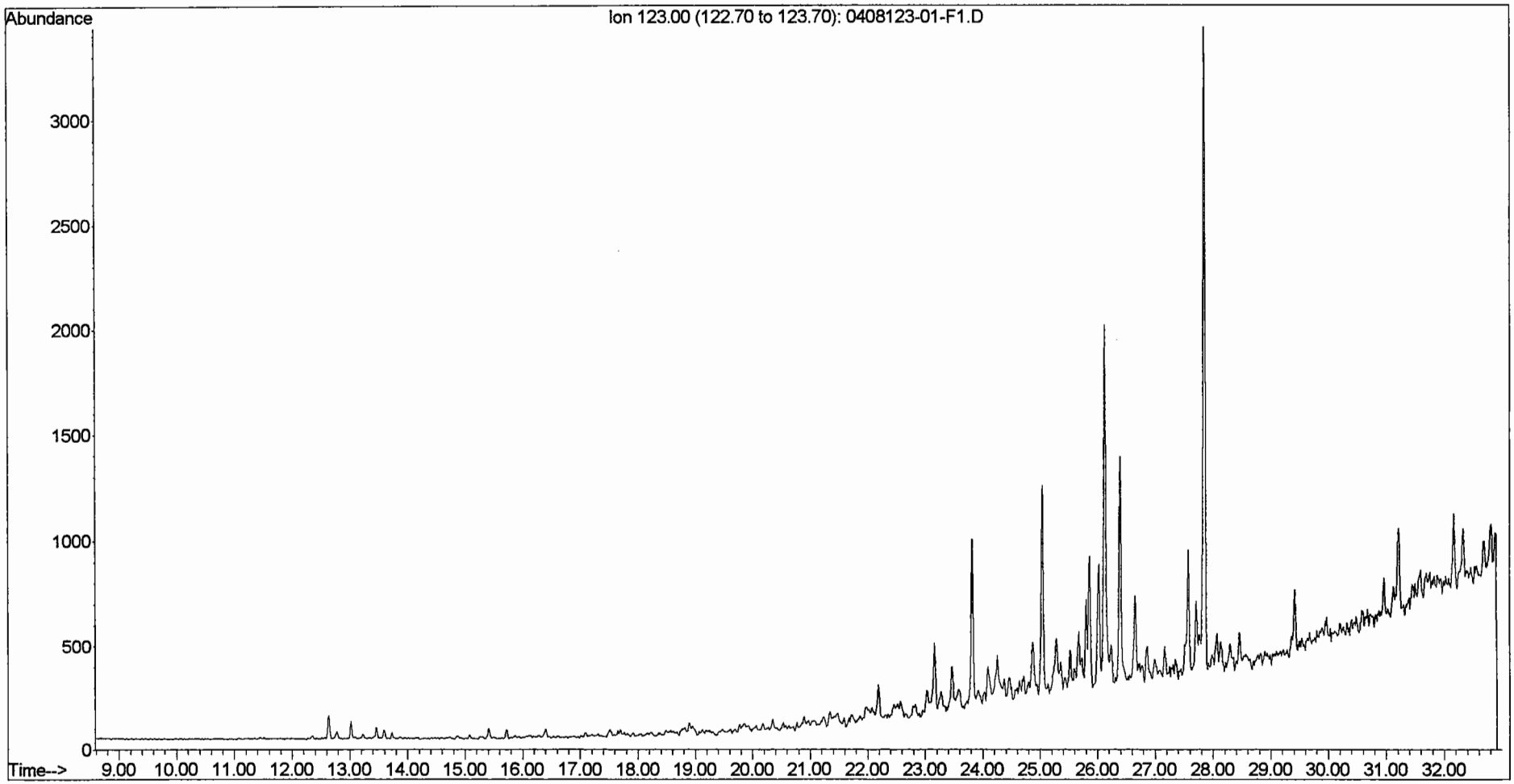
File :O:\Organics\DATA\PAH1\SEPT24\ANS109241.D
Operator : BL
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: ANS109241
Misc Info : SW090104A 5.14 mg/mL
Vial Number: 11



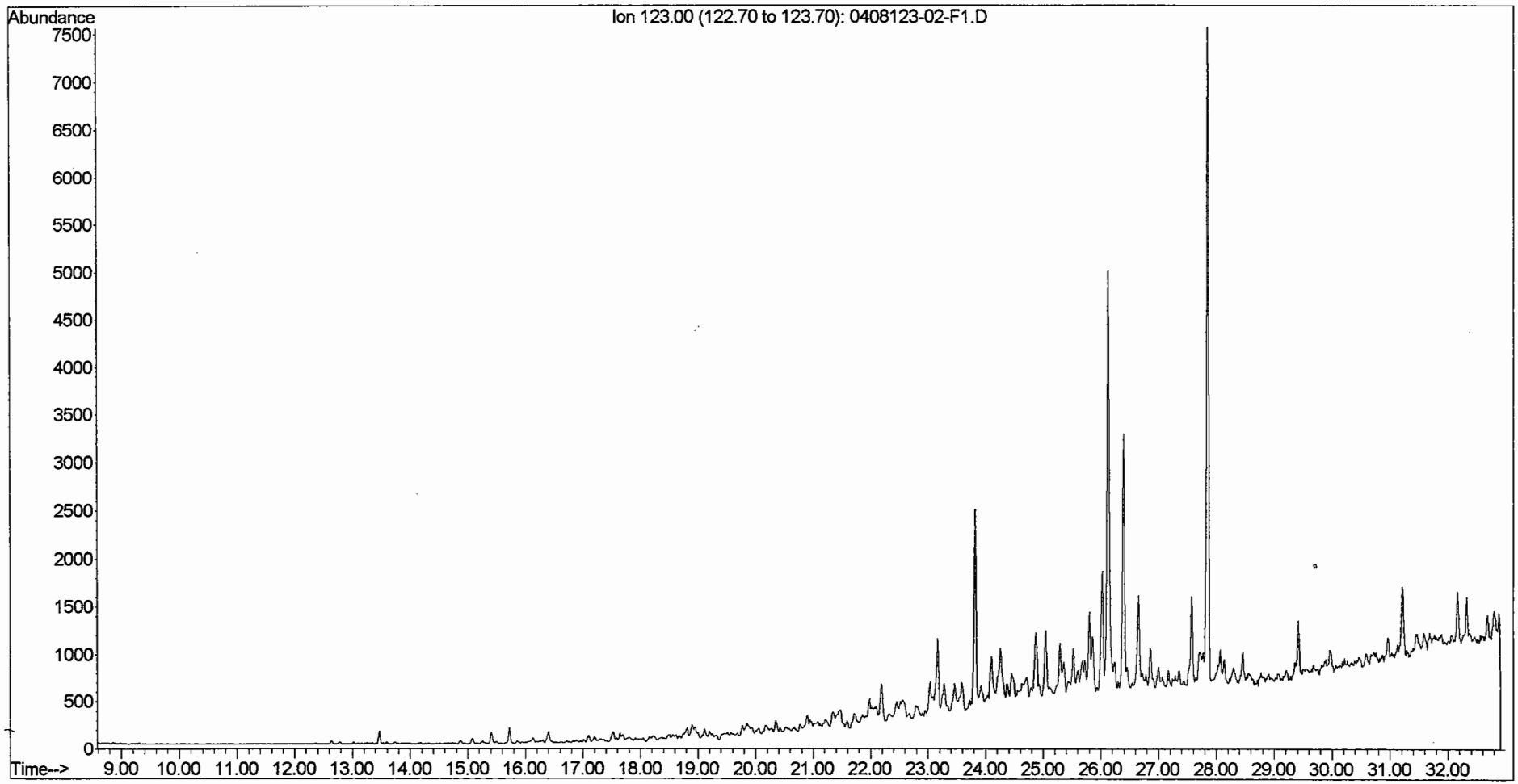
File :O:\Organics\DATA\PAH1\SEPT20A\SS090704B02-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:25 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: SS090704B02-F1
Misc Info : 1X
Vial Number: 29



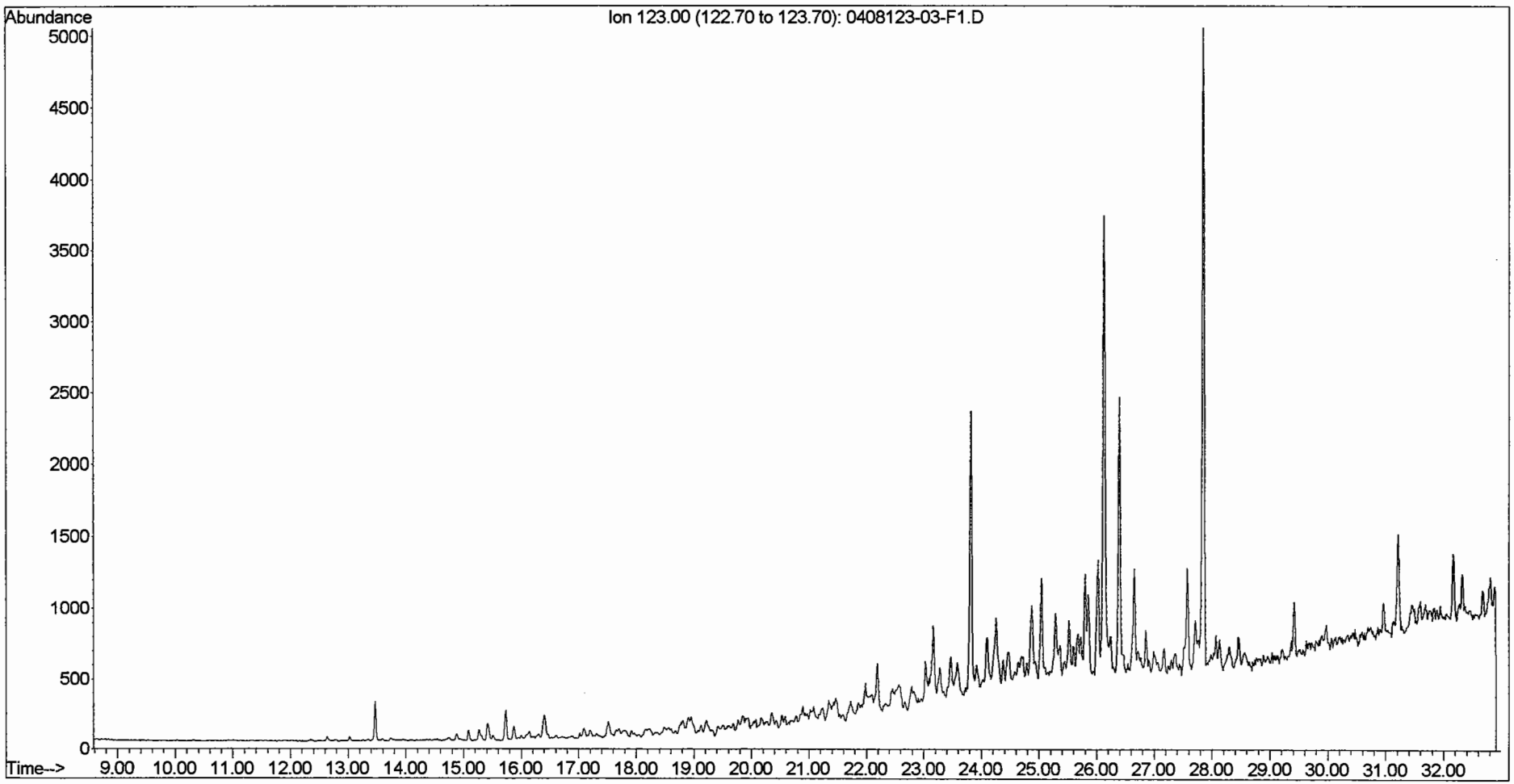
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:23 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-01-F1
Misc Info : 1X
Vial Number: 32



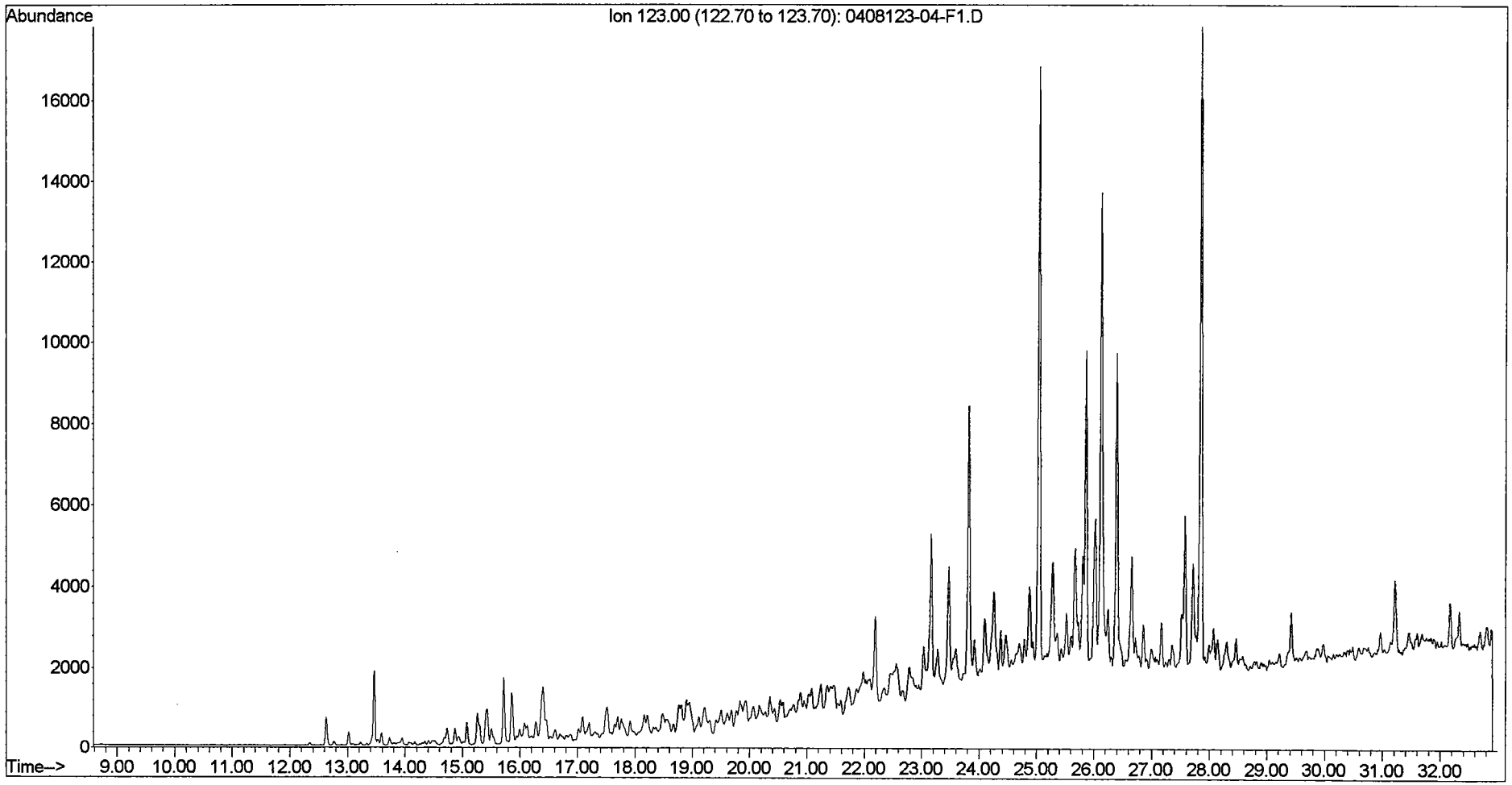
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:43 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-02-F1
Misc Info : 1X
Vial Number: 33



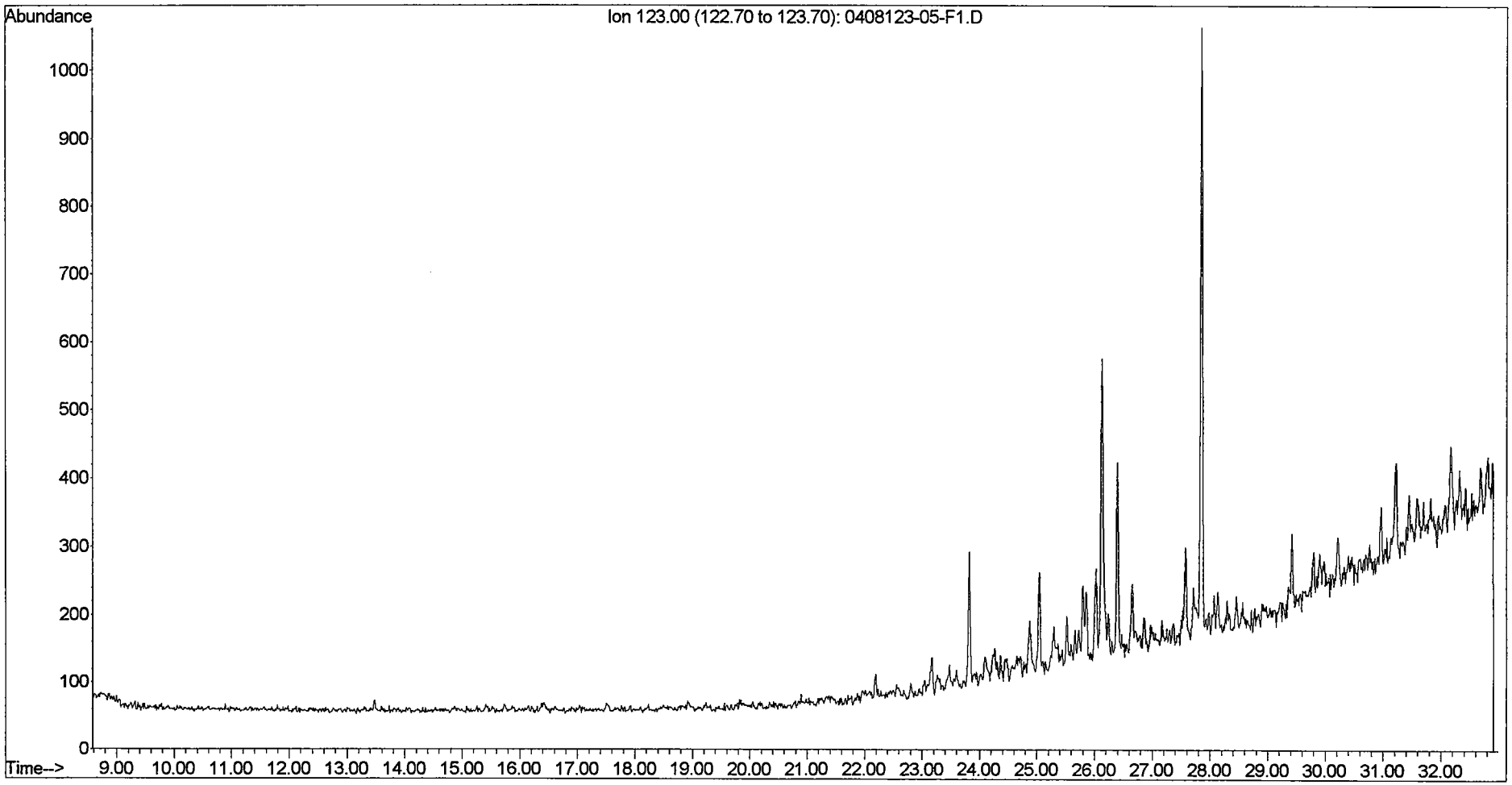
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:02 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-03-F1
Misc Info : 1X
Vial Number: 34



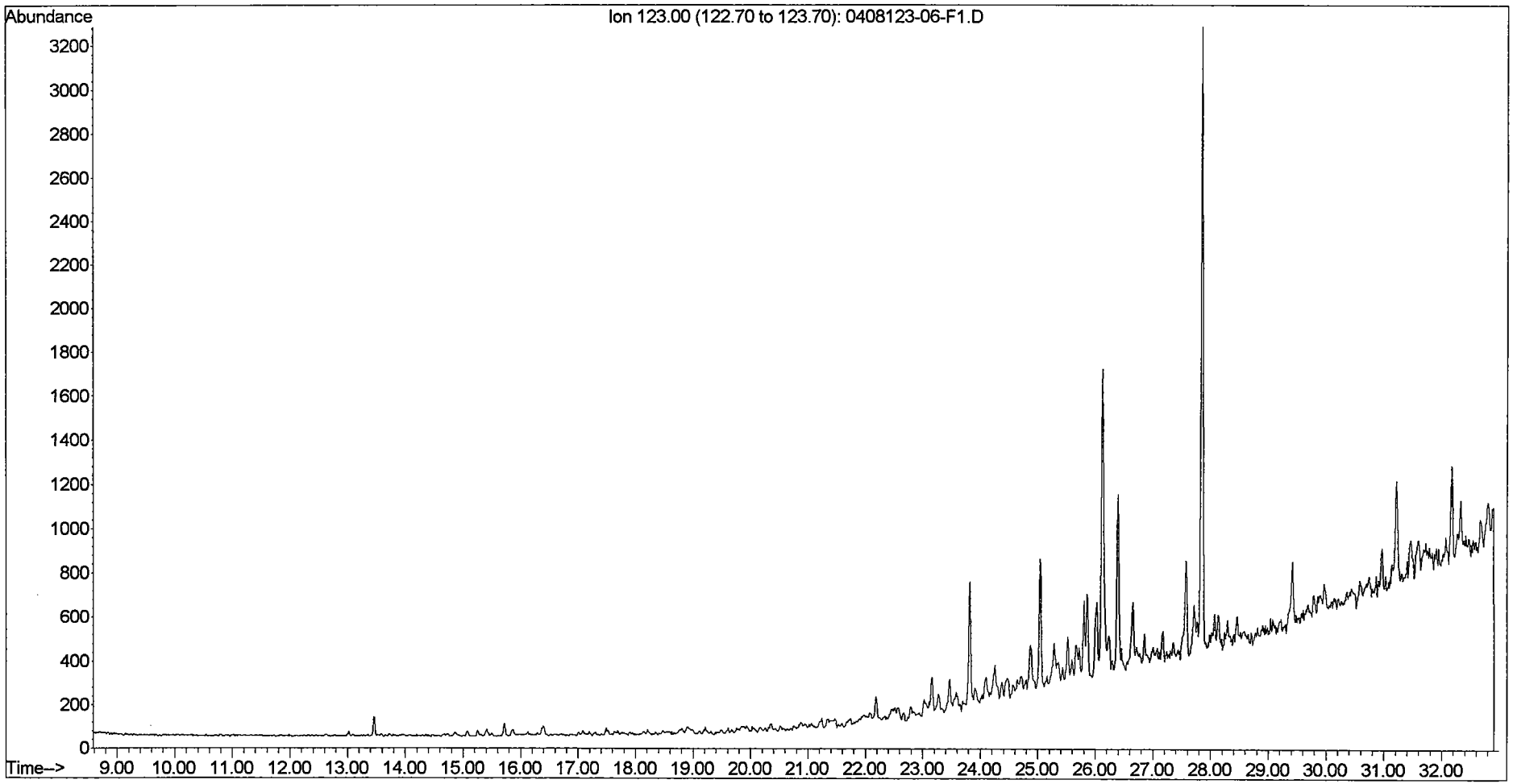
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:21 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-04-F1
Misc Info : 1X
Vial Number: 35



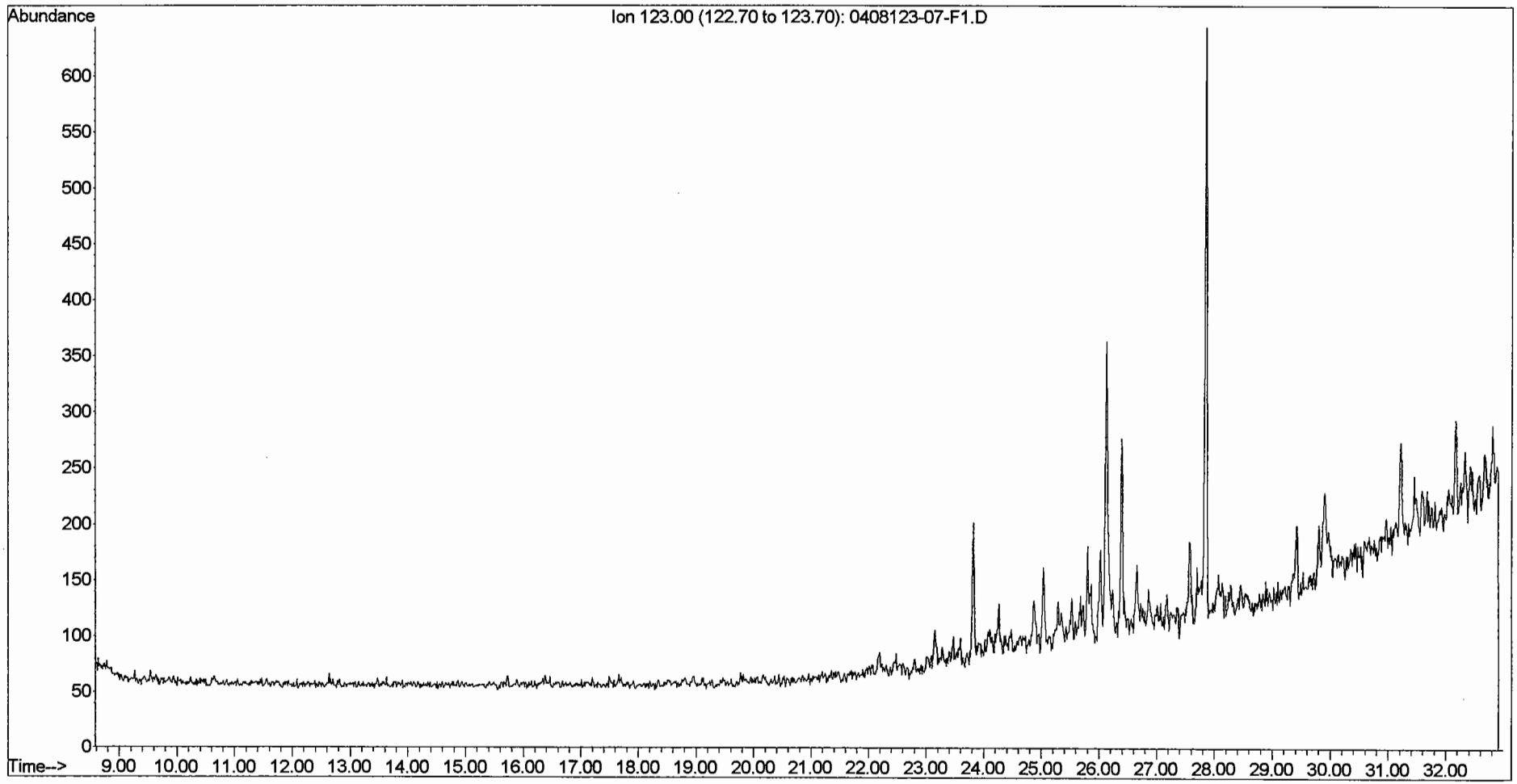
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:40 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-05-F1
Misc Info : 1X
Vial Number: 36



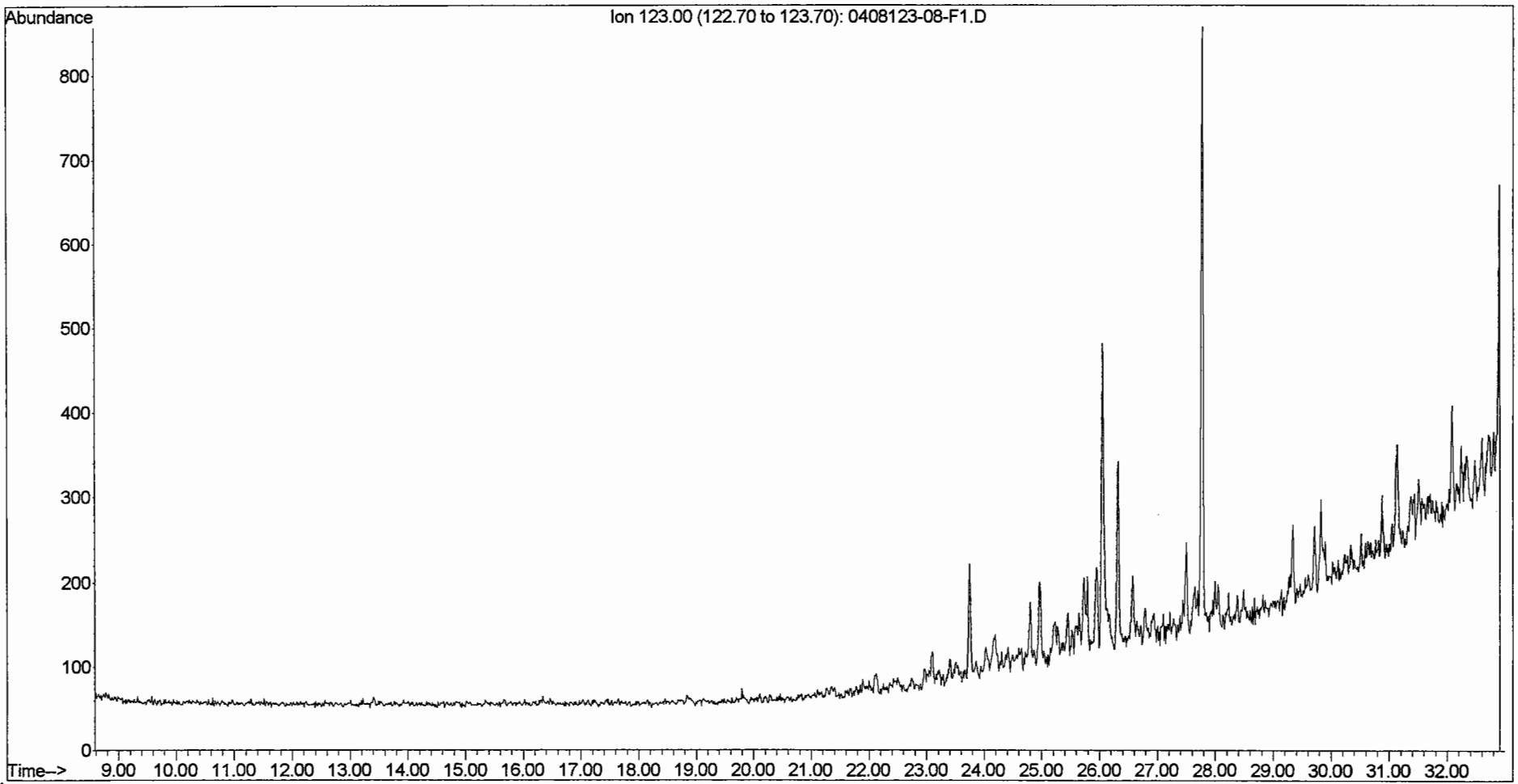
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 10:59 pm using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-06-F1
Misc Info : 1X
Vial Number: 37



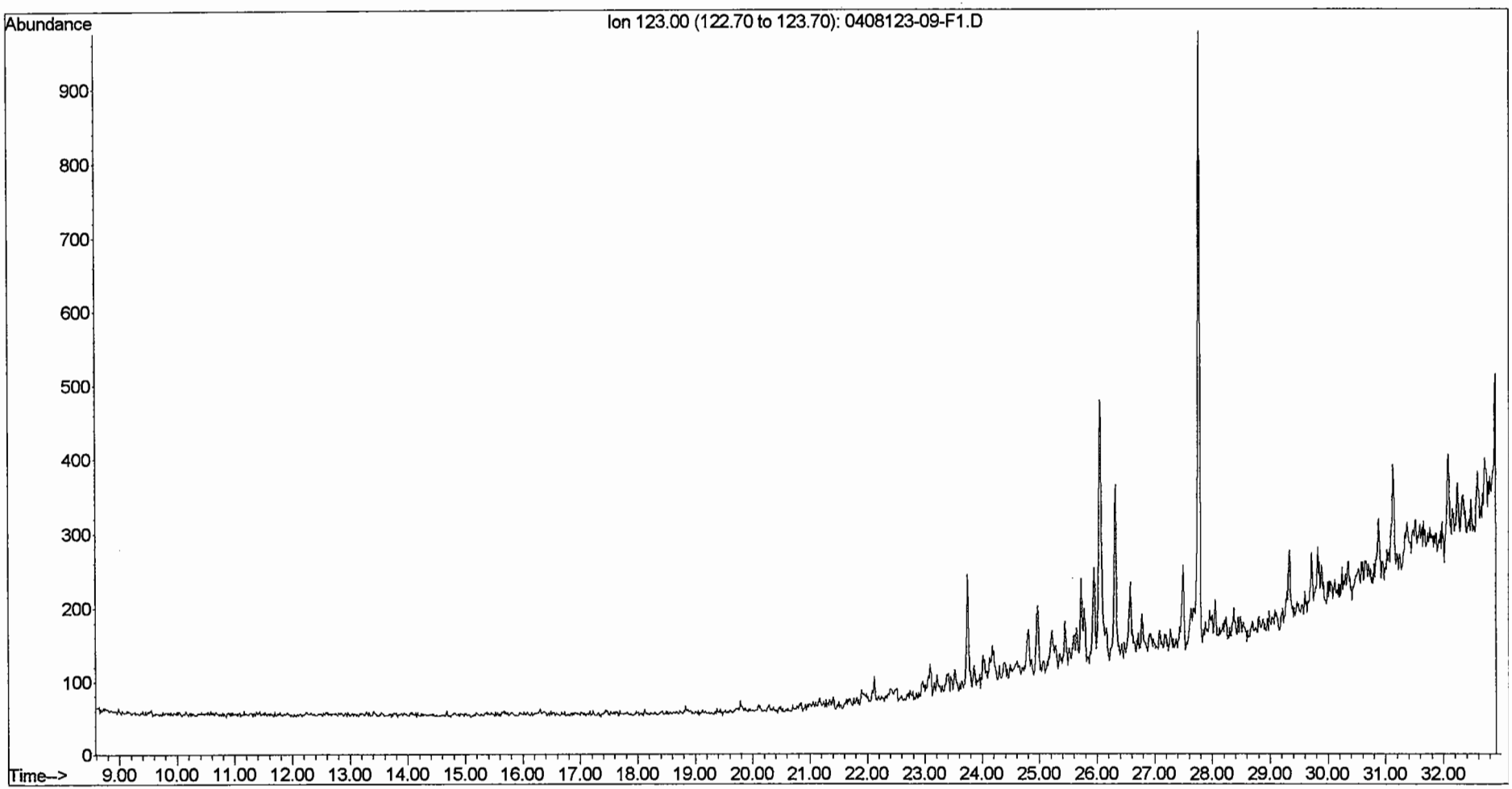
File :O:\Organics\DATA\PAH1\SEPT20A\0408123-07-F1.D
Operator : BL
Acquired : 23 Sep 2004 12:18 am using AcqMethod PAH10916.M
Instrument : PAHINST1
Sample Name: 0408123-07-F1
Misc Info : 1X
Vial Number: 38



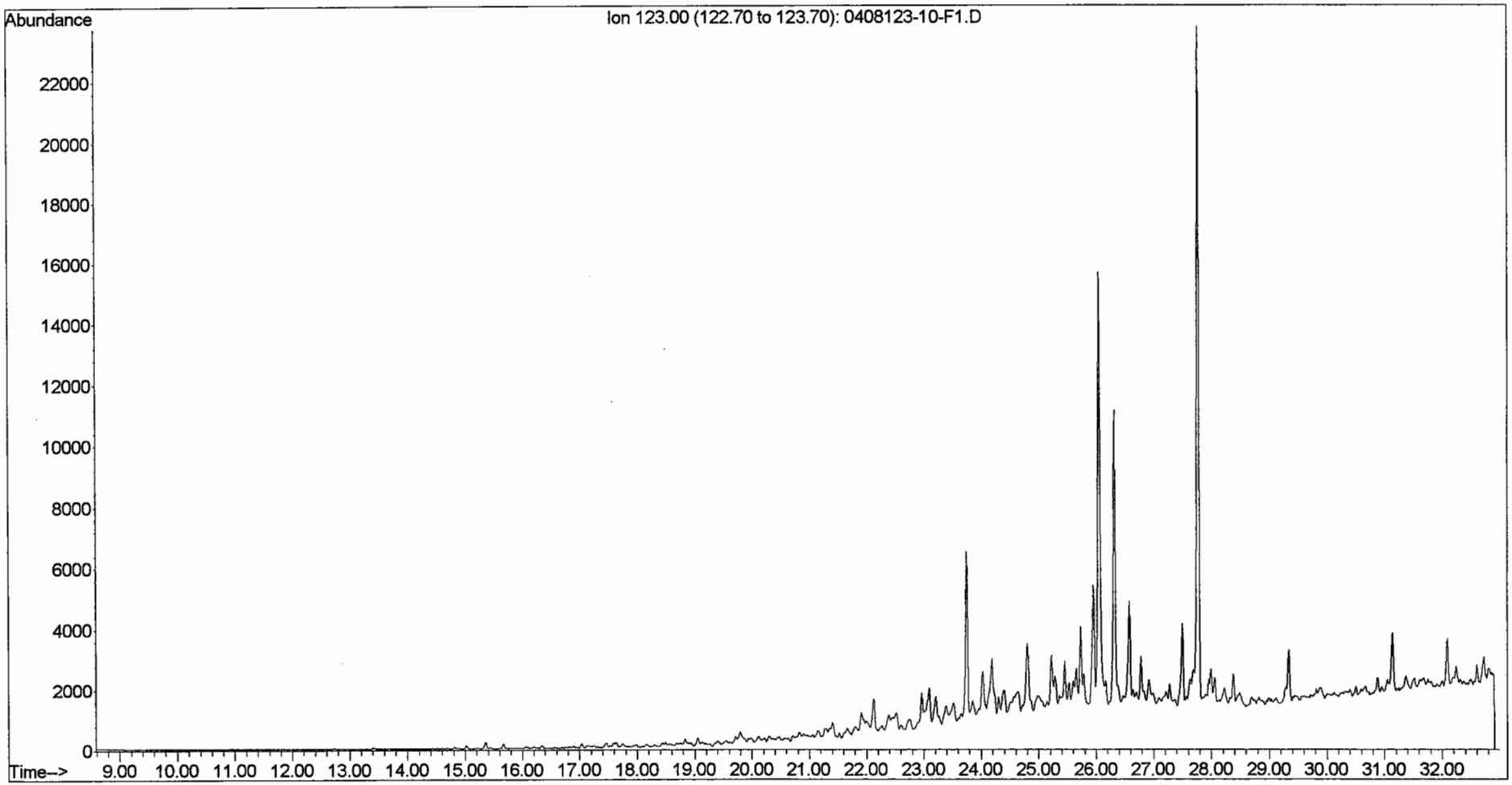
File :O:\Organics\DATA\PAH1\SEPT24\0408123-08-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:57 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-08-F1
Misc Info : 1X
Vial Number: 40



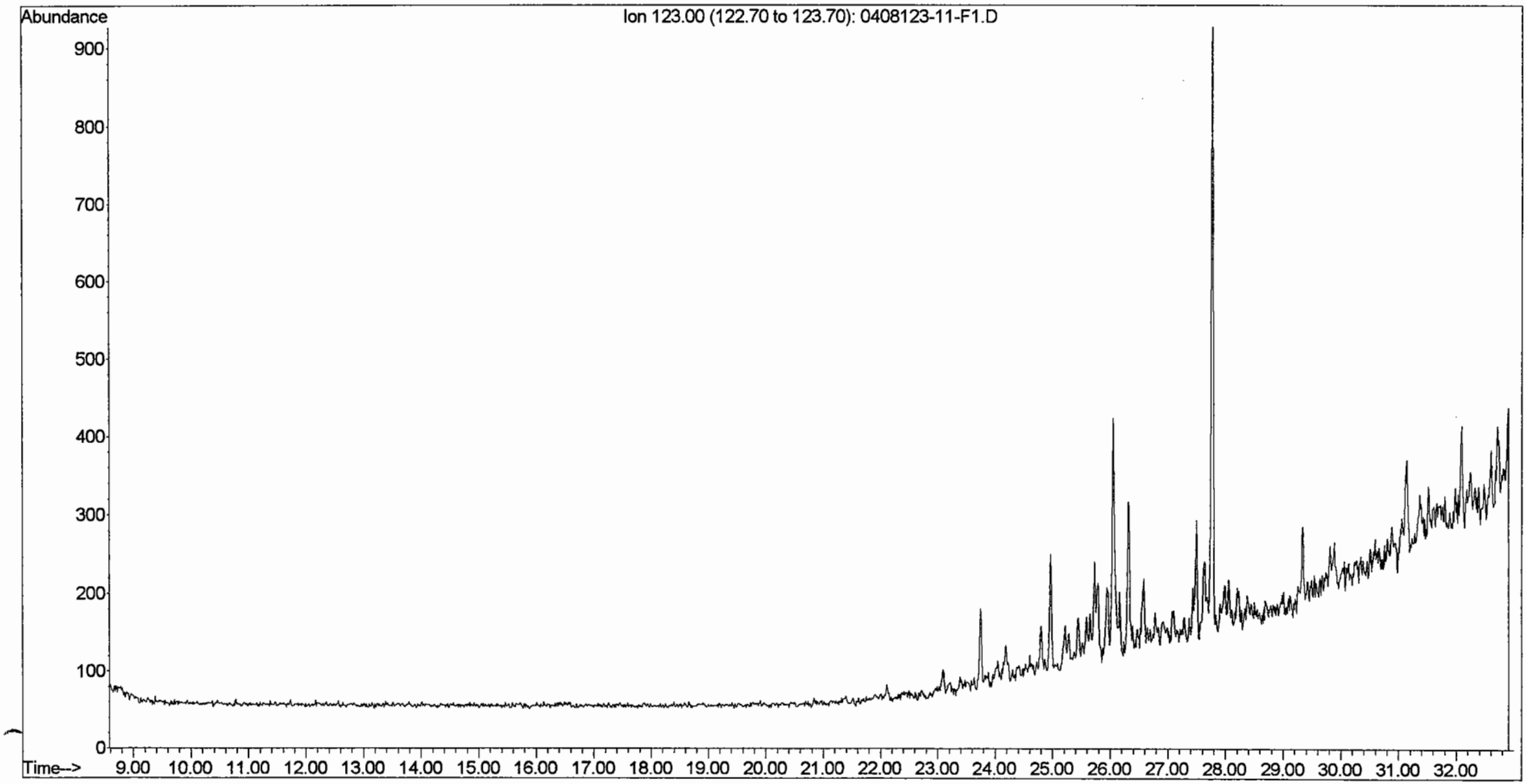
File :O:\Organics\DATA\PAH1\SEPT24\0408123-09-F1.D
Operator : BL
Acquired : 25 Sep 2004 12:16 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-09-F1
Misc Info : 1X
Vial Number: 41



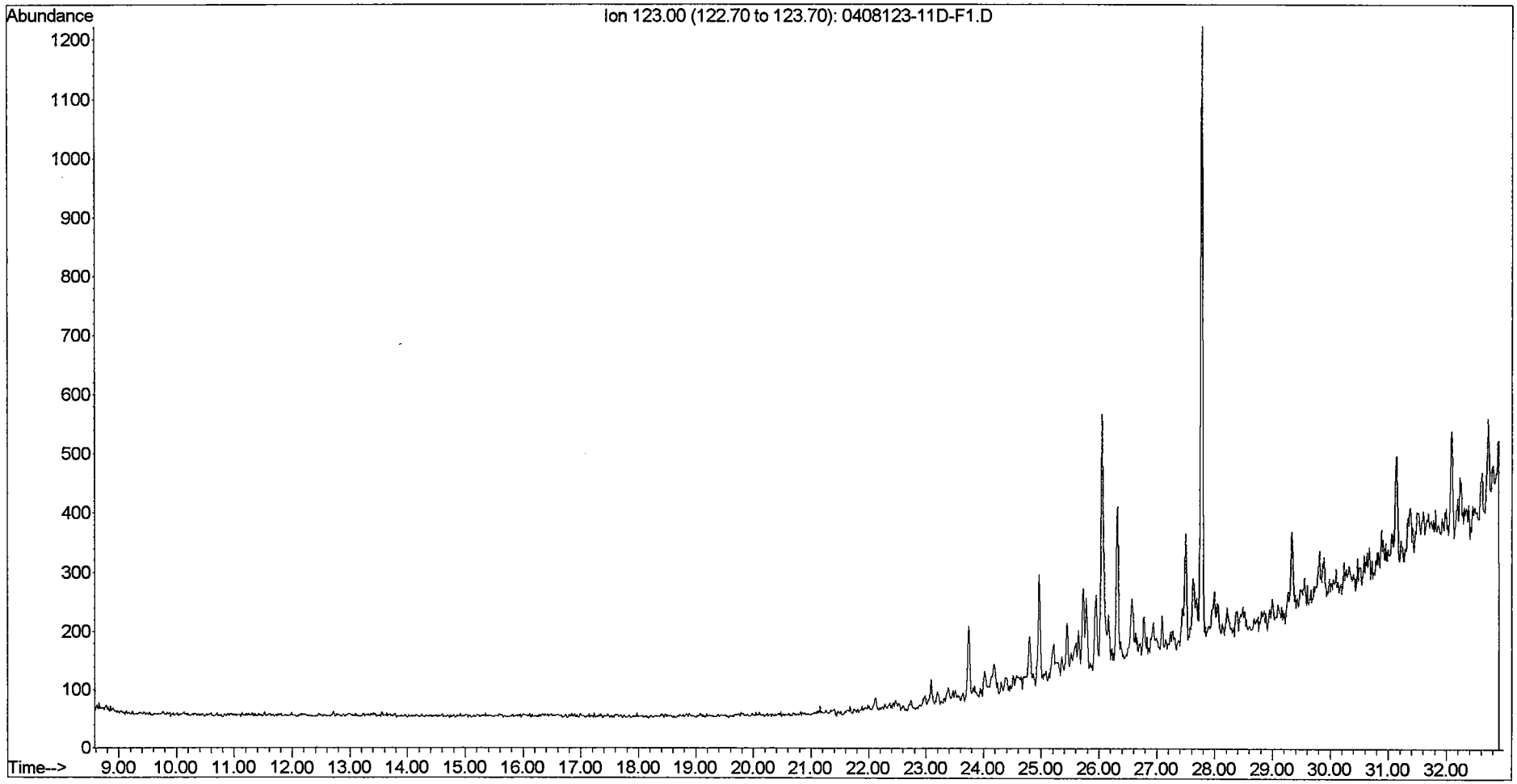
File :O:\Organics\DATA\PAH1\SEPT24\0408123-10-F1.D
Operator : BL
Acquired : 25 Sep 2004 1:35 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-10-F1
Misc Info : 1X
Vial Number: 42



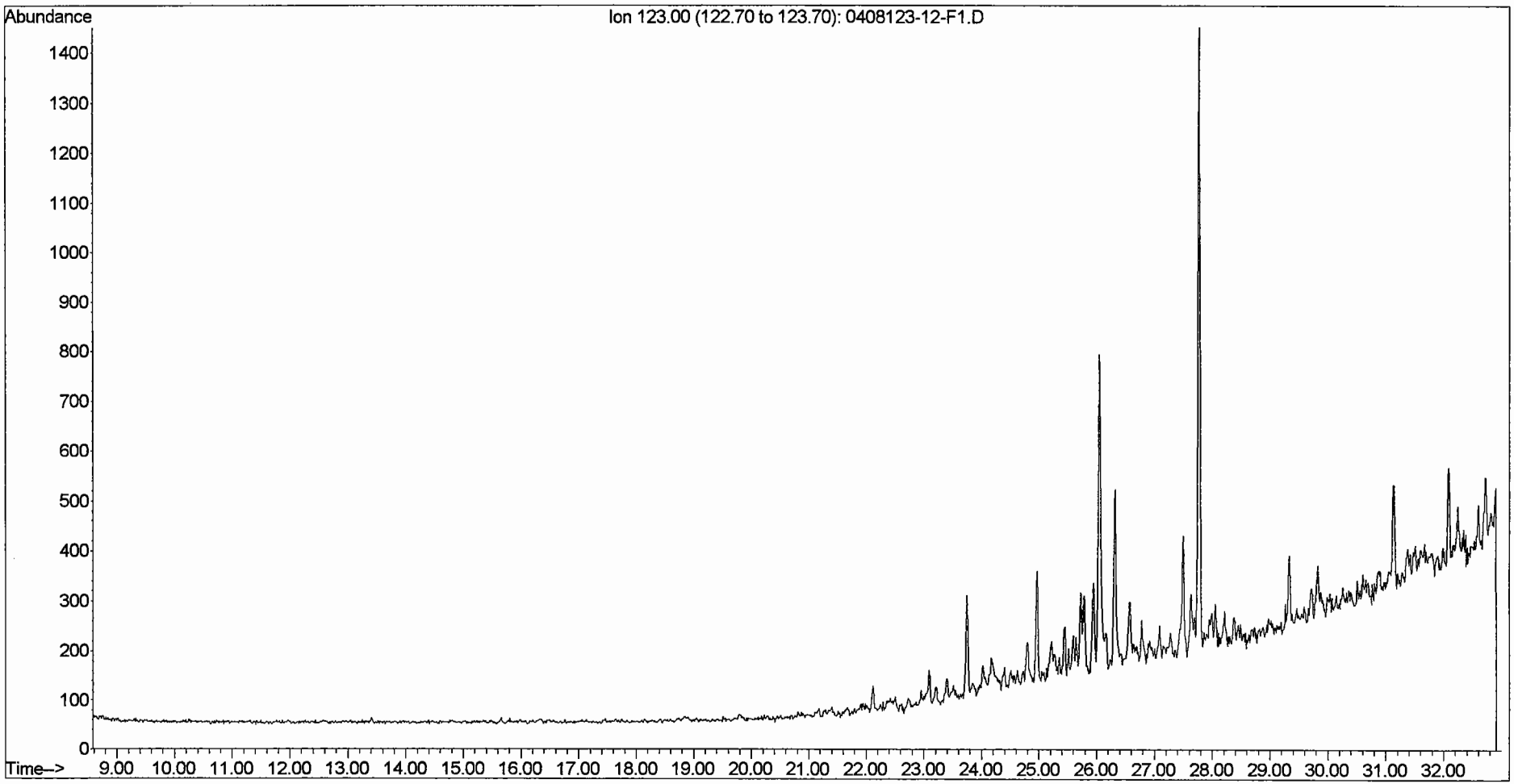
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11-F1.D
Operator : BL
Acquired : 25 Sep 2004 2:54 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11-F1
Misc Info : 1X
Vial Number: 43



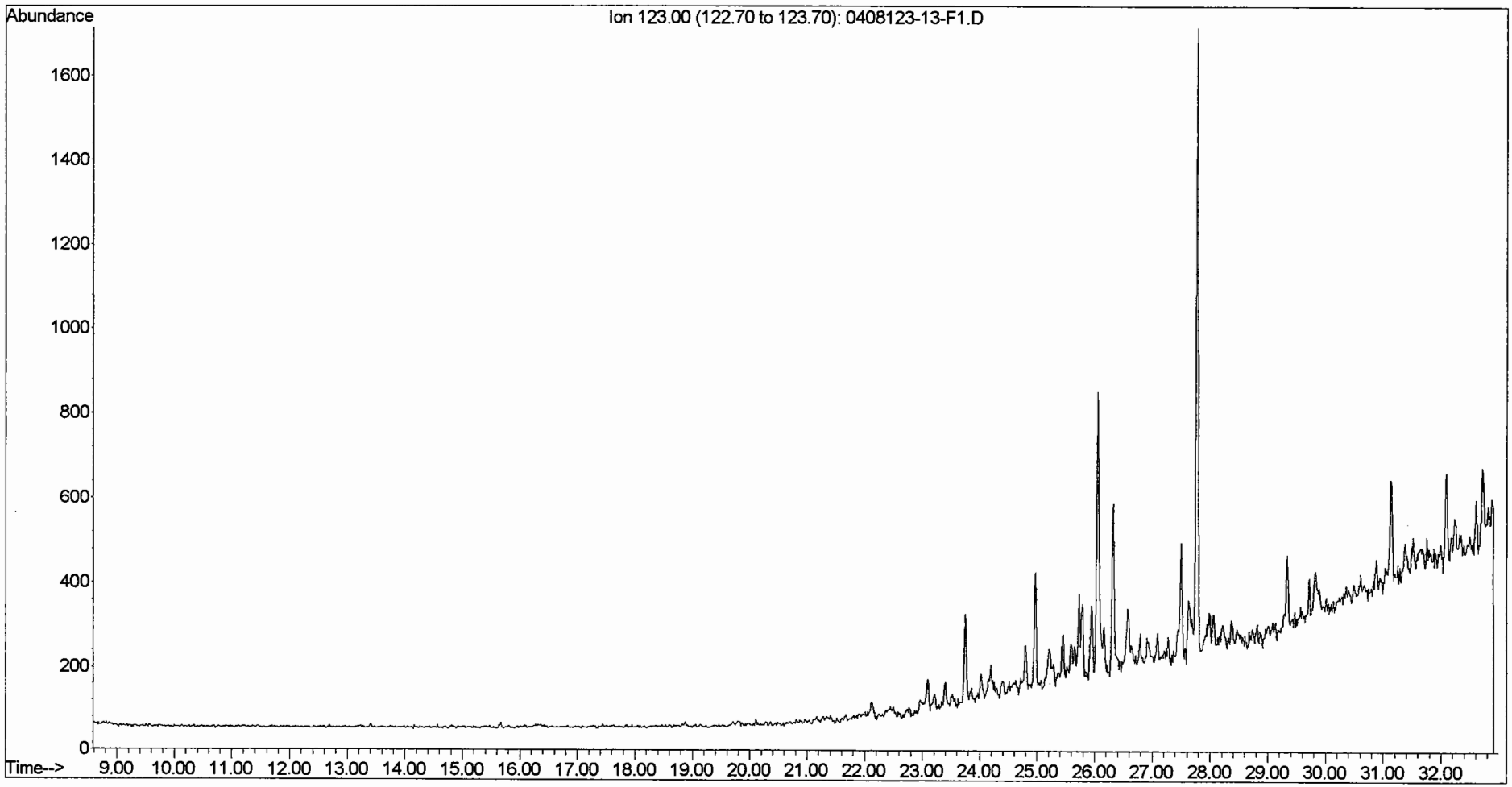
File :O:\Organics\DATA\PAH1\SEPT24\0408123-11D-F1.D
Operator : BL
Acquired : 25 Sep 2004 4:13 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-11D-F1
Misc Info : 1X
Vial Number: 44



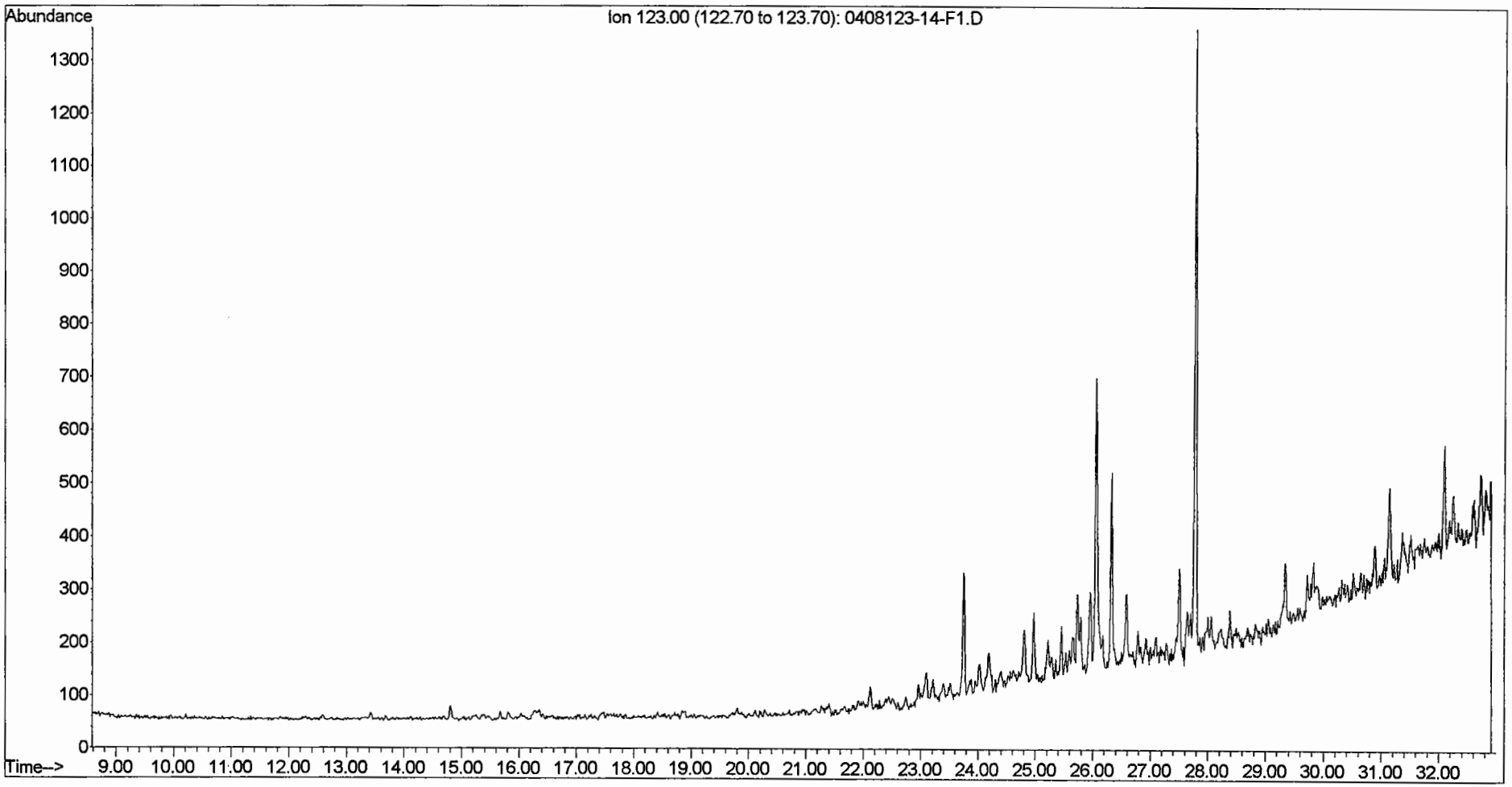
File :O:\Organics\DATA\PAH1\SEPT24\0408123-12-F1.D
Operator : BL
Acquired : 25 Sep 2004 6:52 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-12-F1
Misc Info : 1X
Vial Number: 46



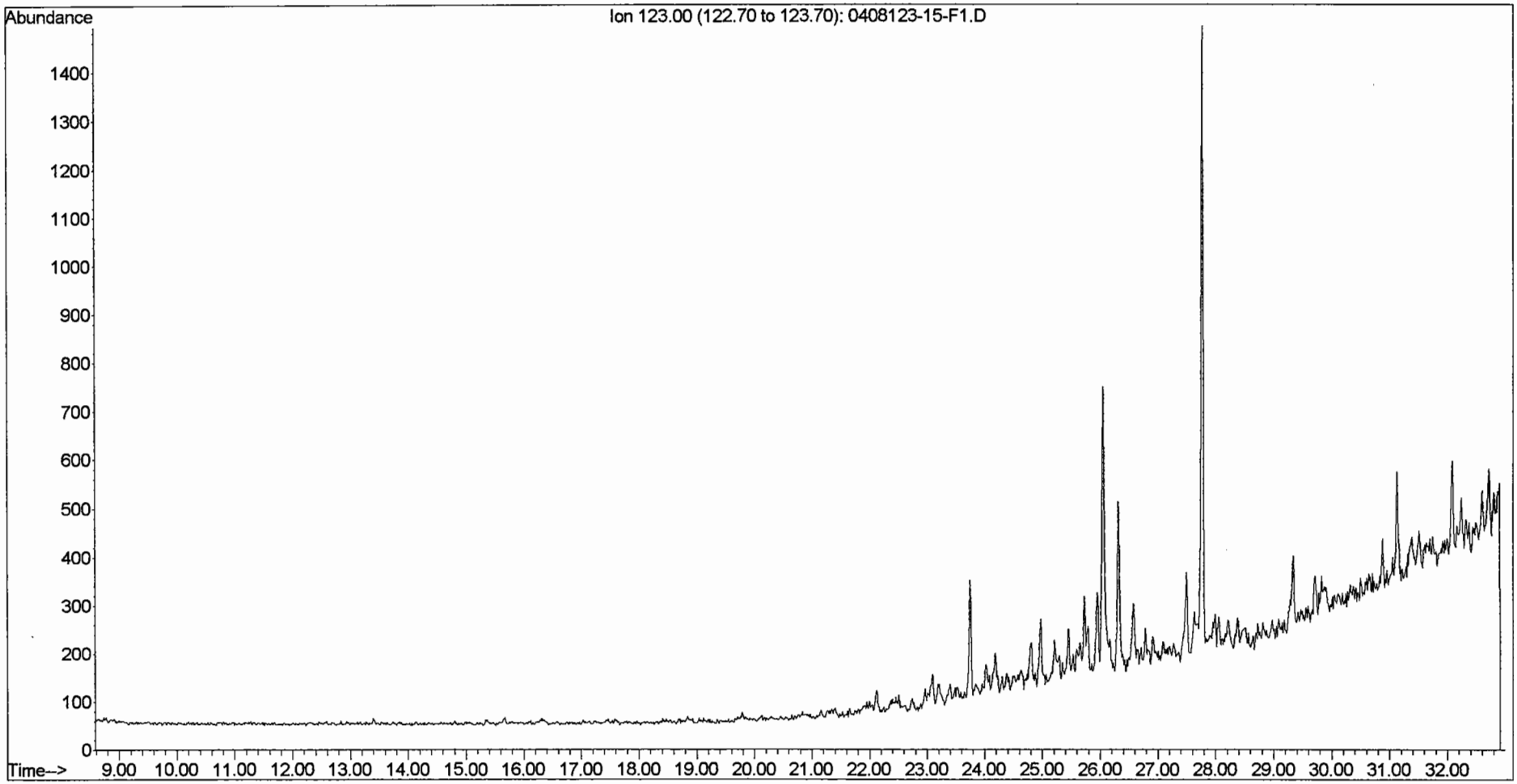
File :O:\Organics\DATA\PAH1\SEPT24\0408123-13-F1.D
Operator : BL
Acquired : 25 Sep 2004 8:11 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-13-F1
Misc Info : 1X
Vial Number: 47



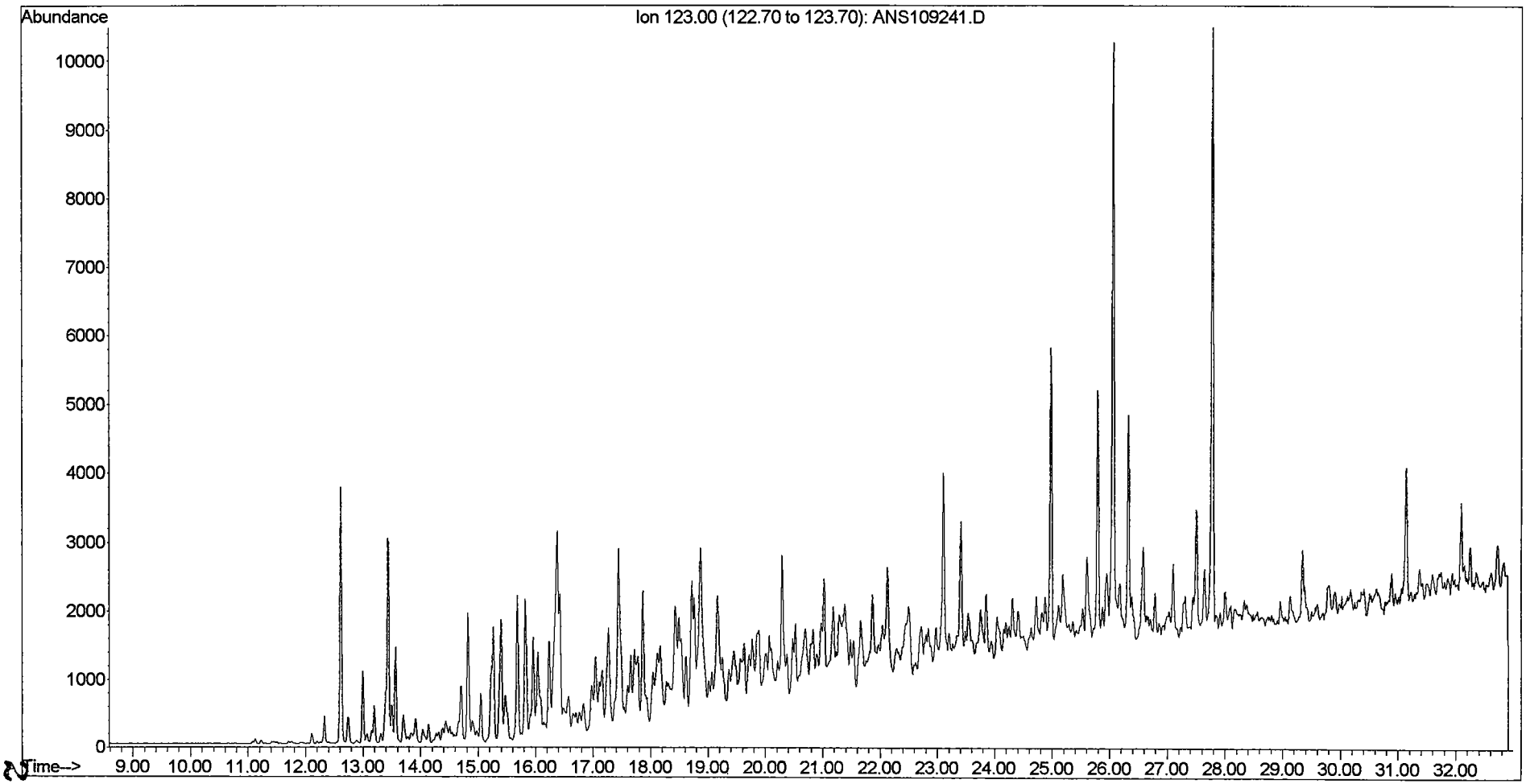
File :O:\Organics\DATA\PAH1\SEPT24\0408123-14-F1.D
Operator : BL
Acquired : 25 Sep 2004 9:30 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-14-F1
Misc Info : 1X
Vial Number: 48



File :O:\Organics\DATA\PAH1\SEPT24\0408123-15-F1.D
Operator : BL
Acquired : 25 Sep 2004 10:49 pm using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: 0408123-15-F1
Misc Info : 1X
Vial Number: 49



File :O:\Organics\DATA\PAH1\SEPT24\ANS109241.D
Operator : BL
Acquired : 25 Sep 2004 4:23 am using AcqMethod PAH10924.M
Instrument : PAHINST1
Sample Name: ANS109241
Misc Info : SW090104A 5.14 mg/mL
Vial Number: 11

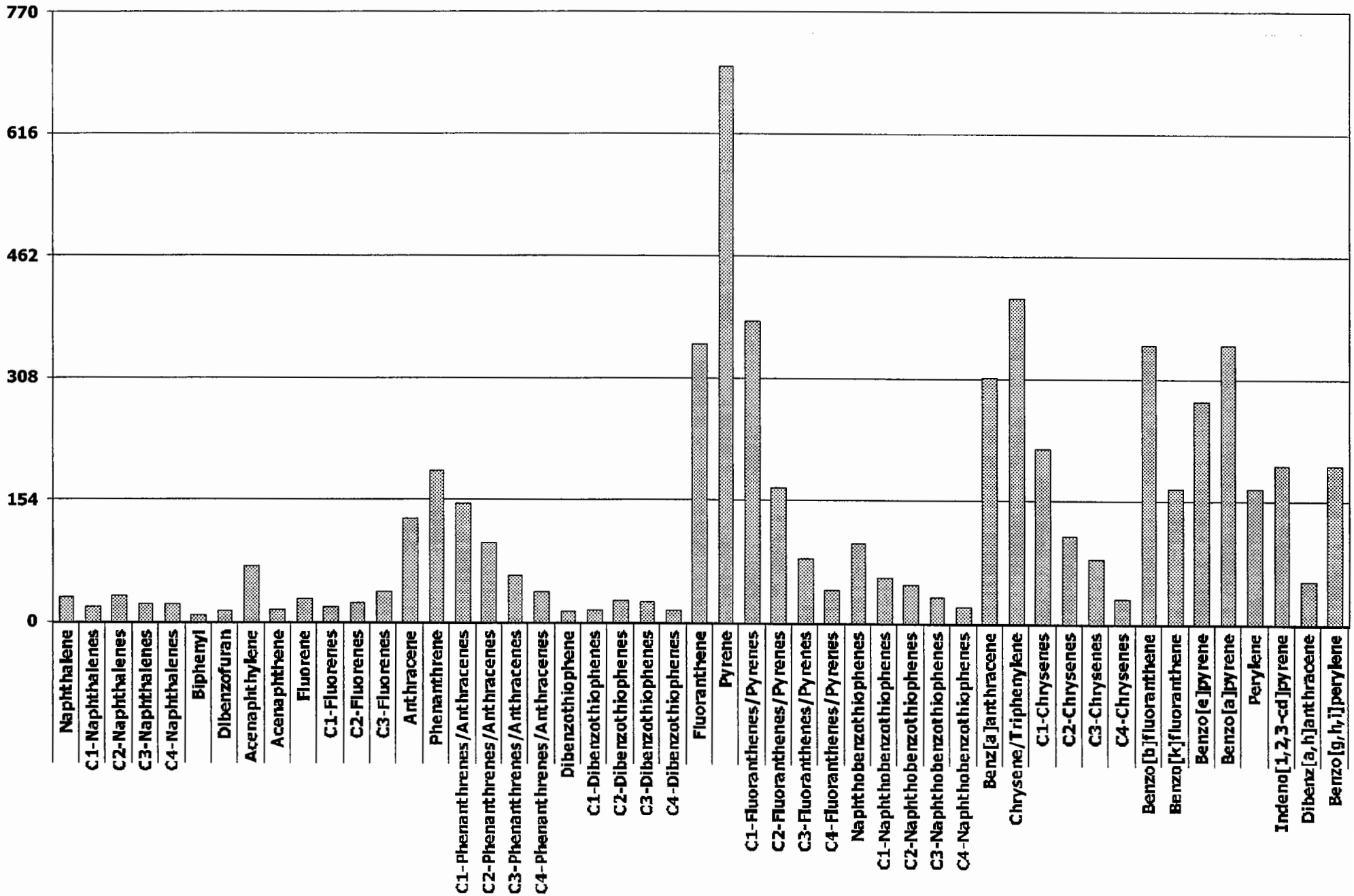


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-101-0006**

Lab ID: **0408123-01**

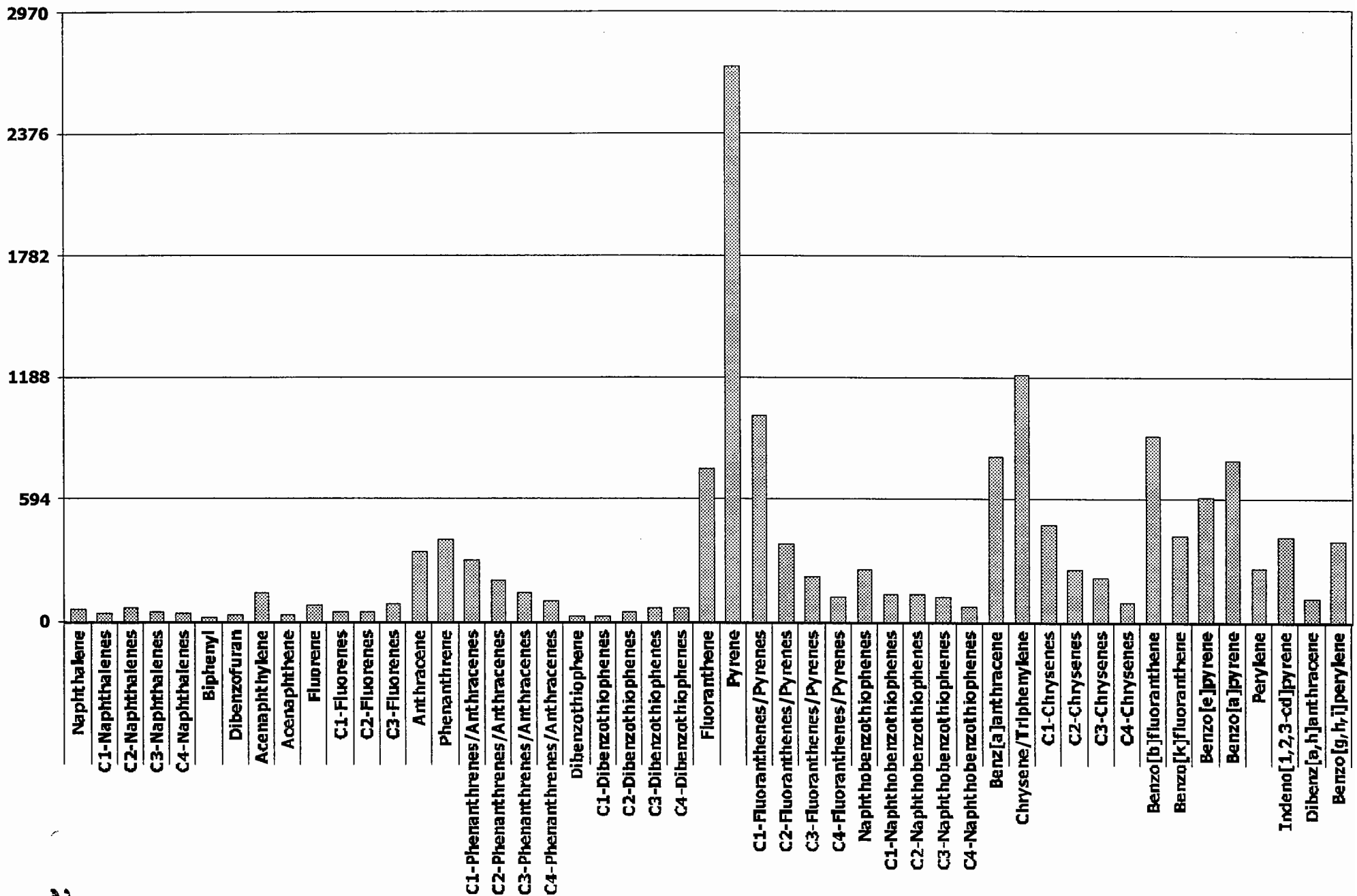
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-101-0612** Lab ID: **0408123-02**

Concentration: µg/Kg

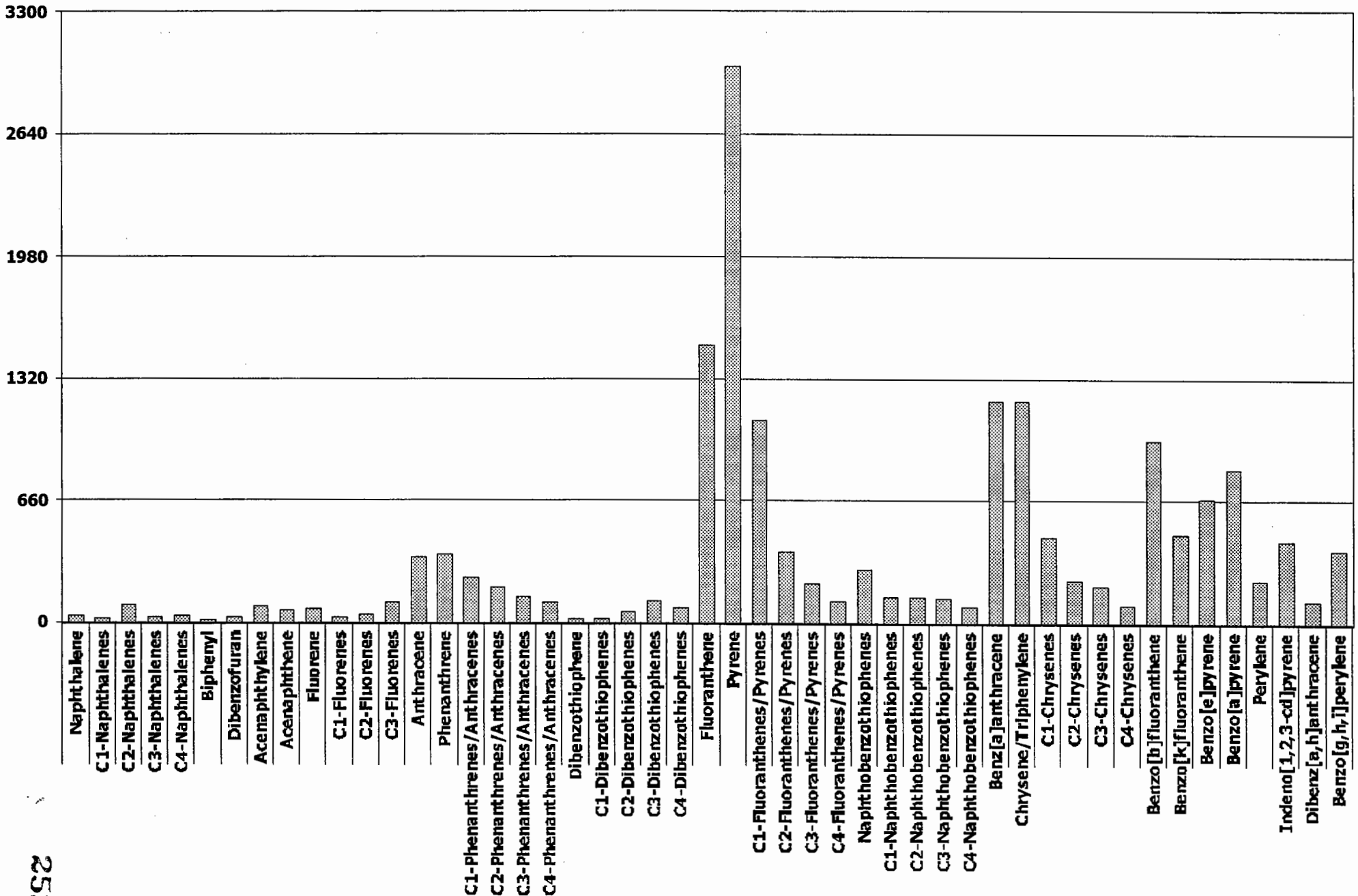


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-103-0006**

Lab ID: **0408123-03**

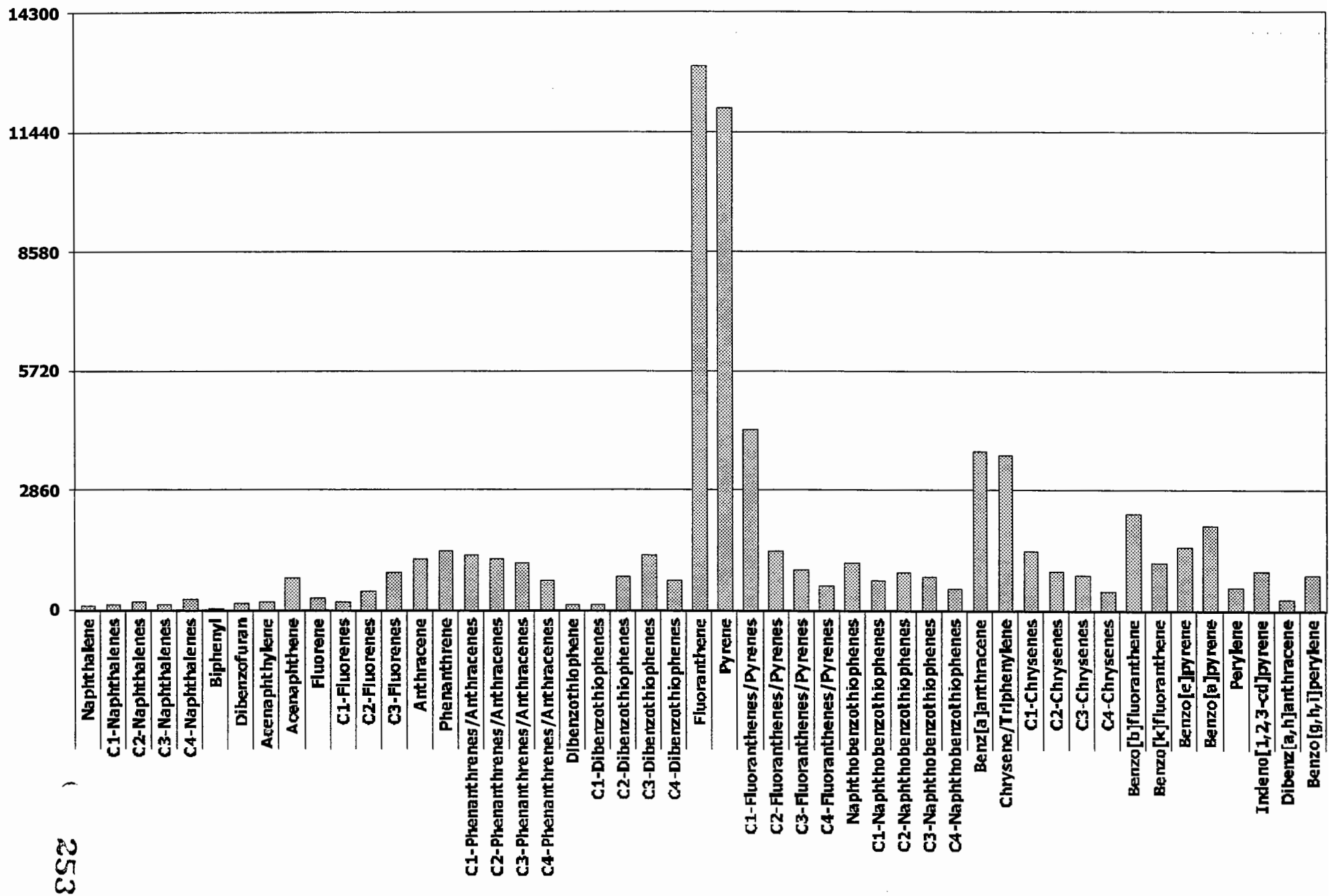
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-103-0612** Lab ID: **0408123-04**

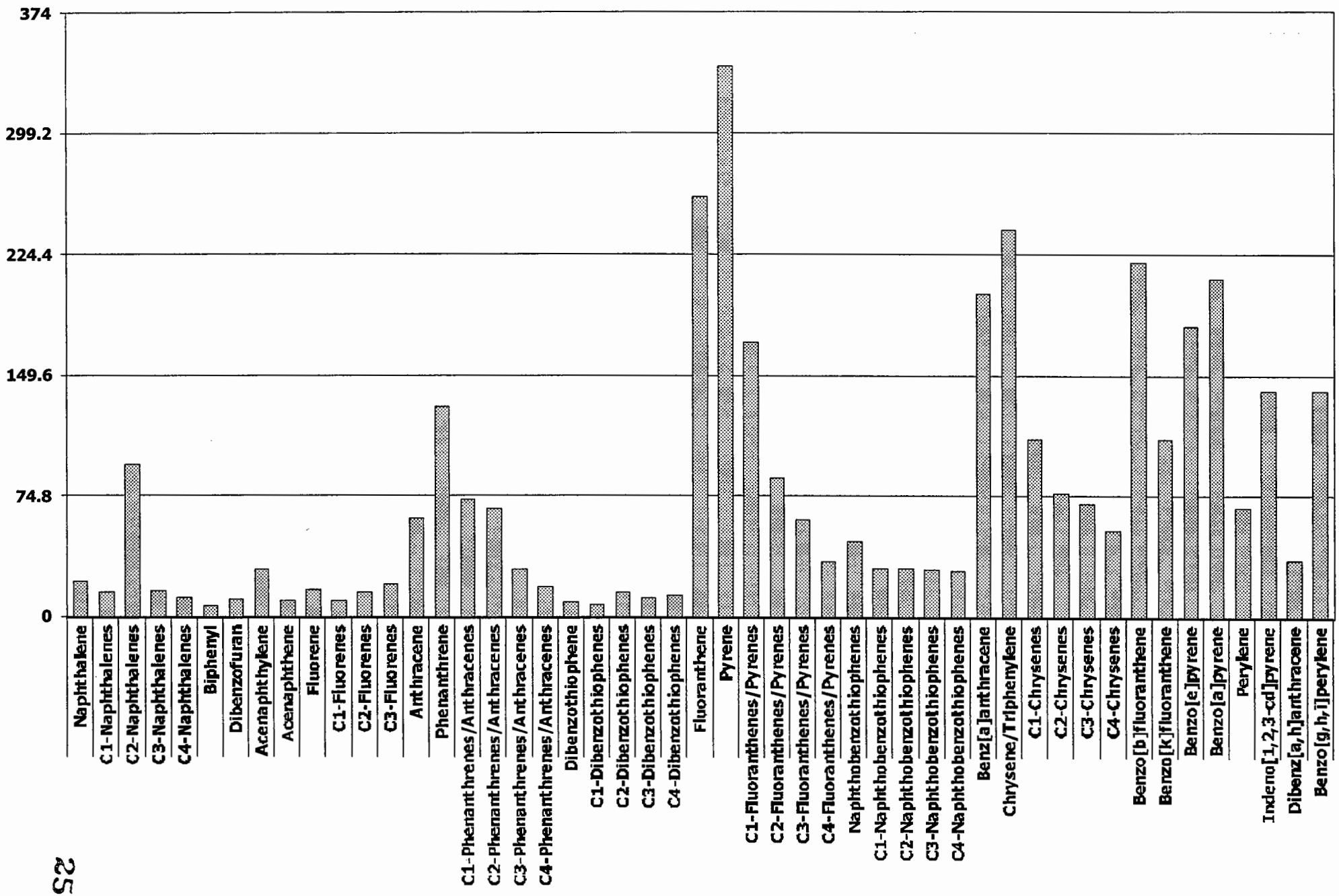
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-104-0006** Lab ID: **0408123-05**

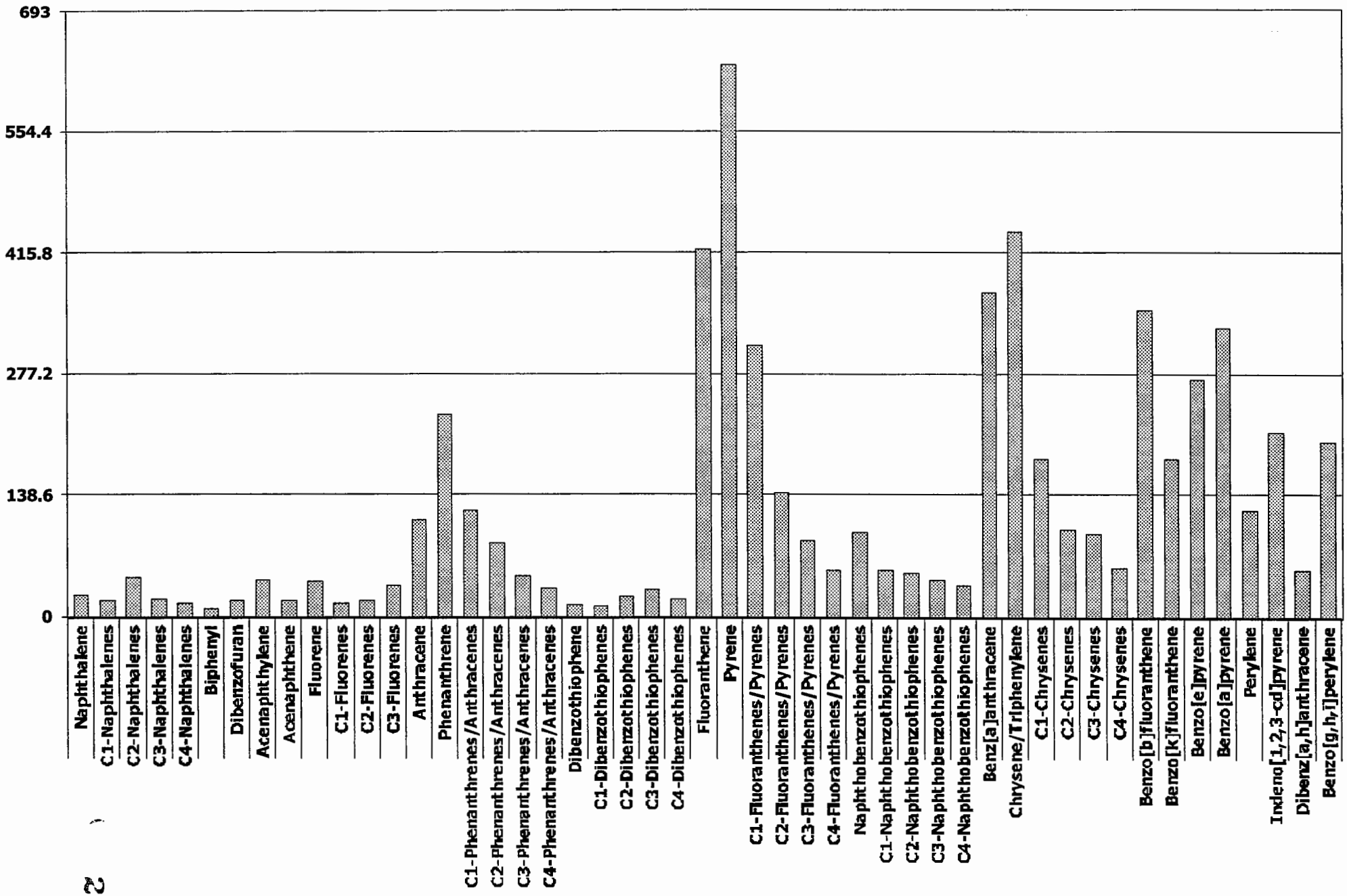
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-104-0612** Lab ID: **0408123-06**

Concentration: µg/Kg

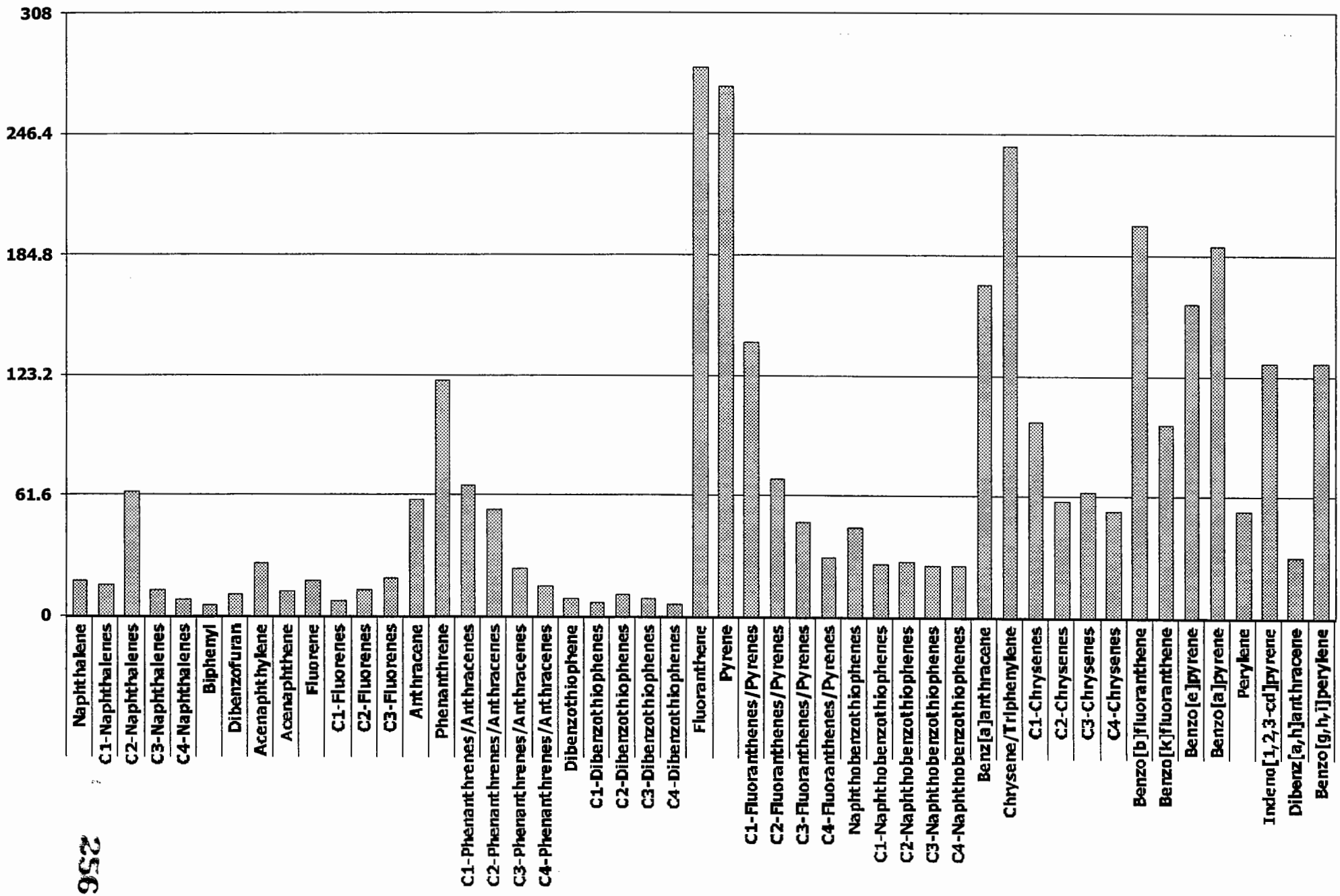


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-02-082504**

Lab ID: **0408123-07**

Concentration: µg/Kg

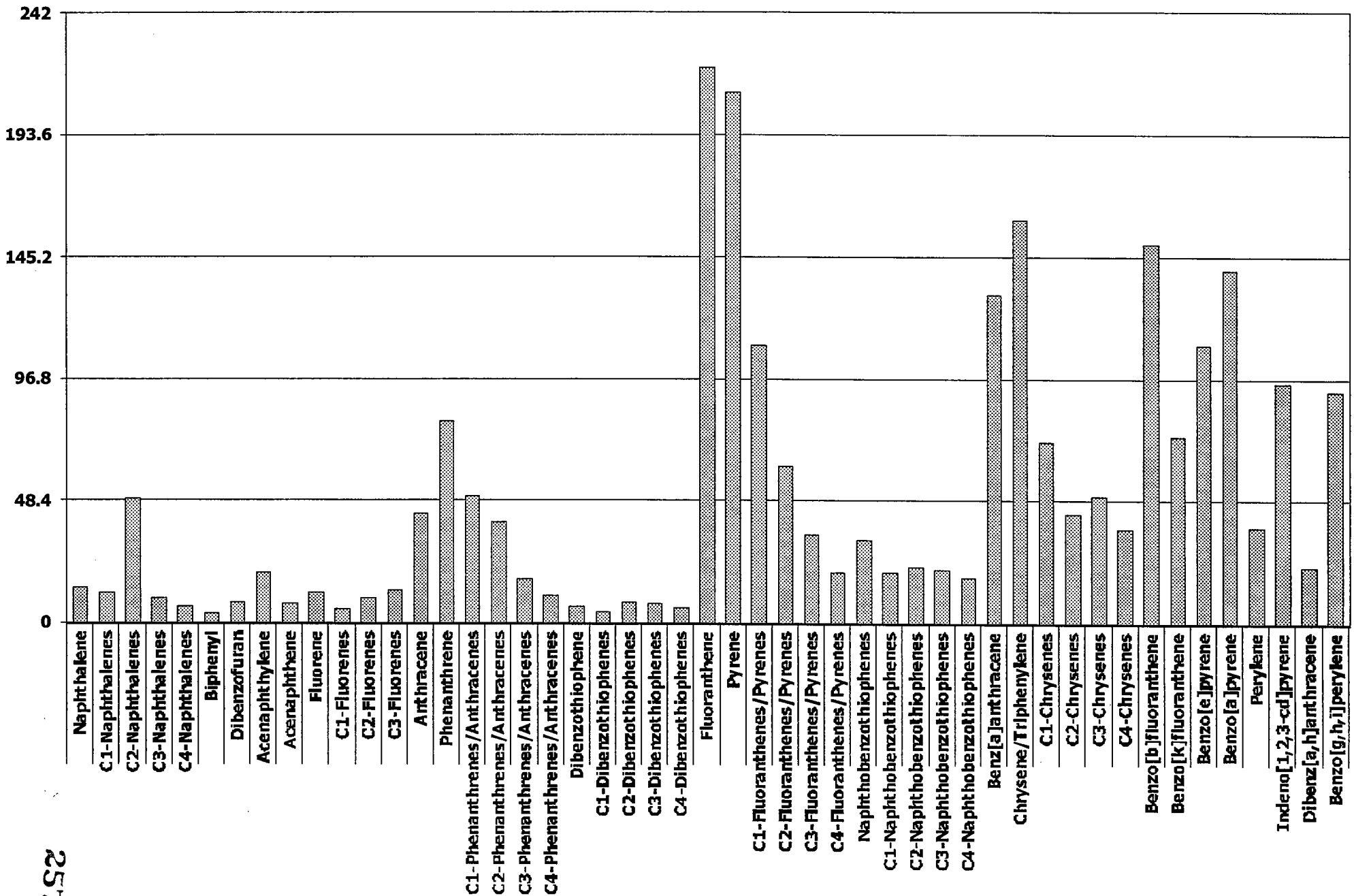


256

Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-DUP01-082504** Lab ID: **0408123-08**

Concentration: µg/Kg

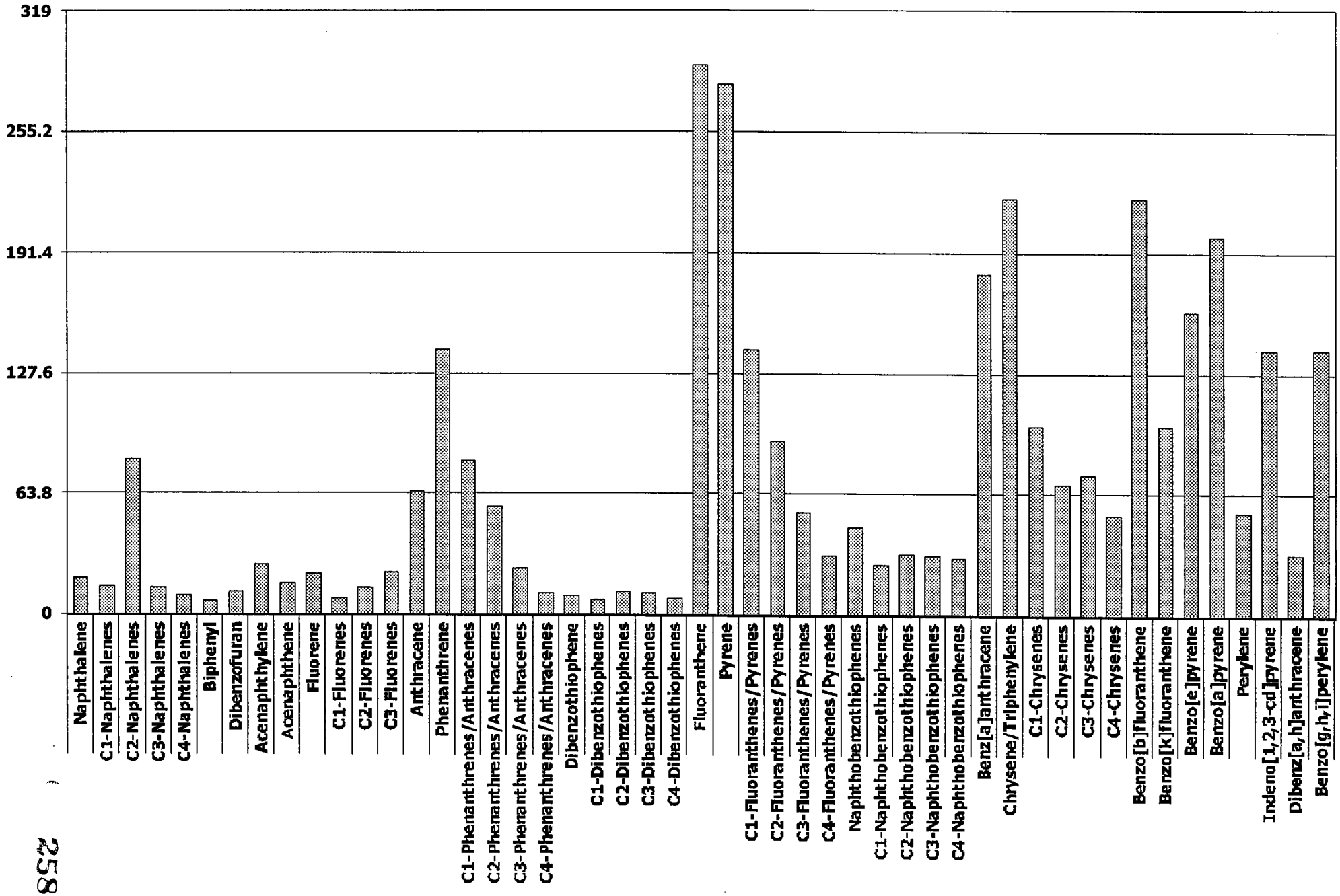


257

Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-28-082504** Lab ID: **0408123-09**

Concentration: µg/Kg

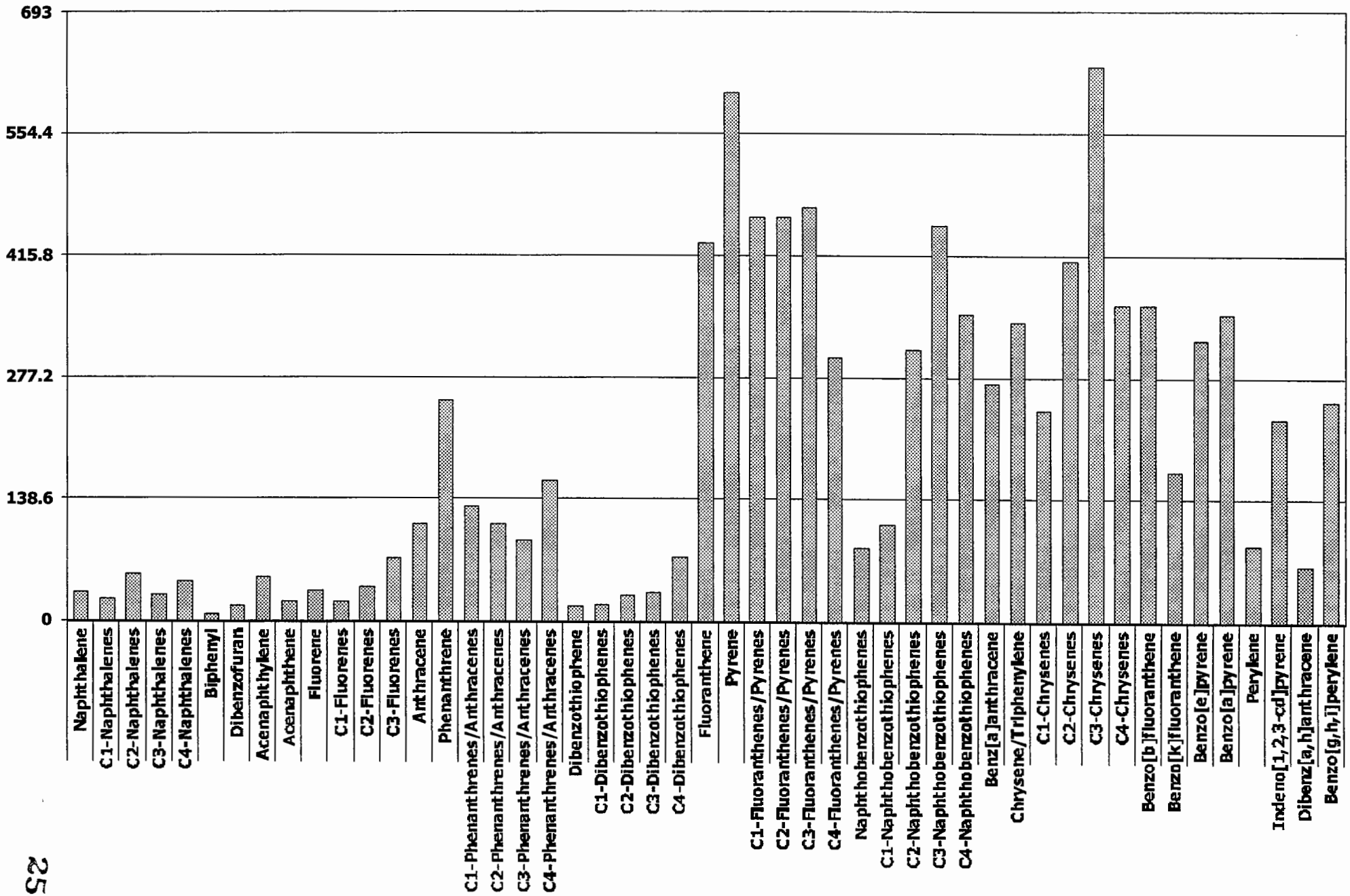


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-06-082504**

Lab ID: **0408123-10**

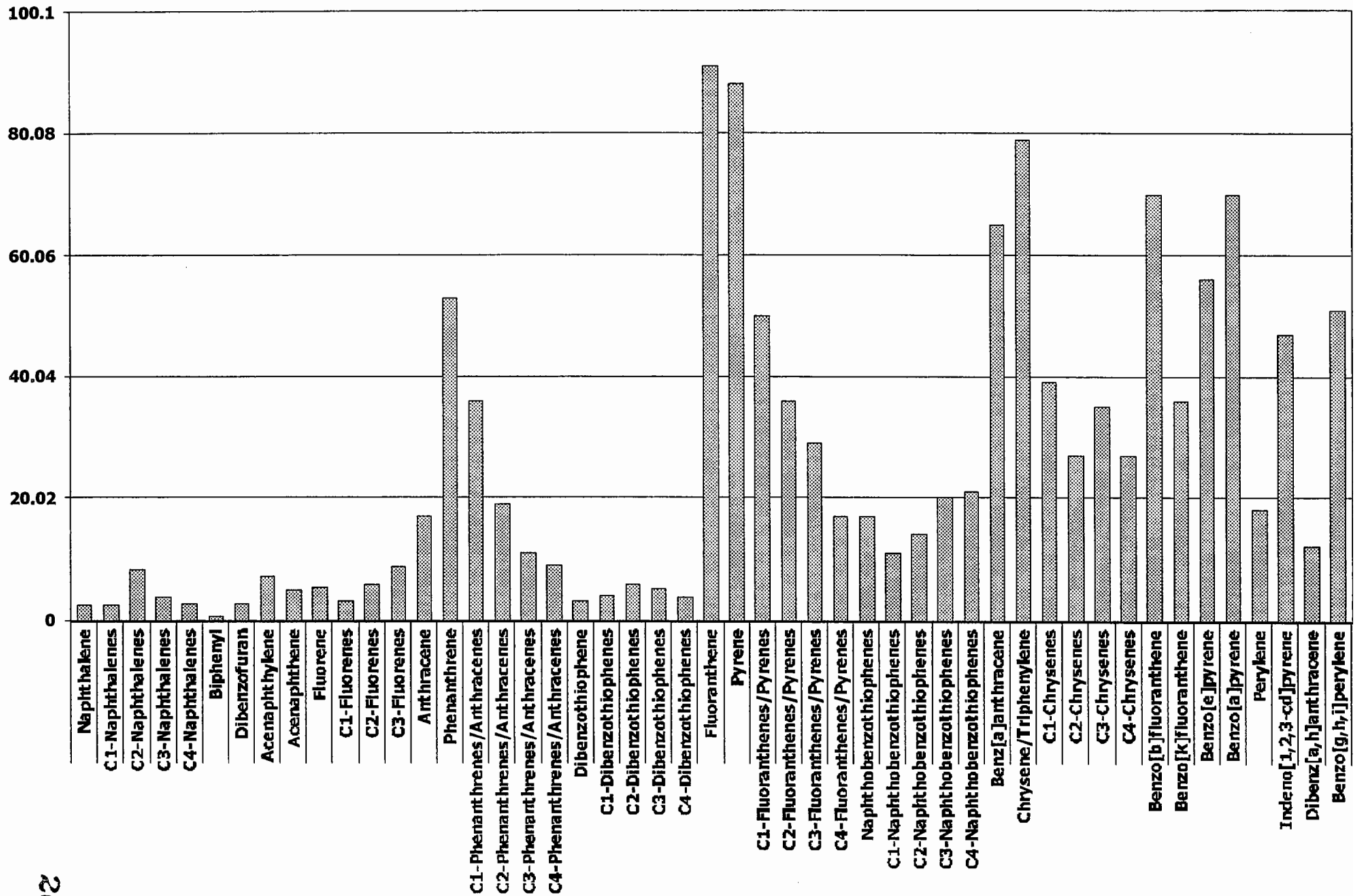
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons]

Client ID: **DSY-SD-09-082604** Lab ID: **0408123-11**

Concentration: µg/Kg

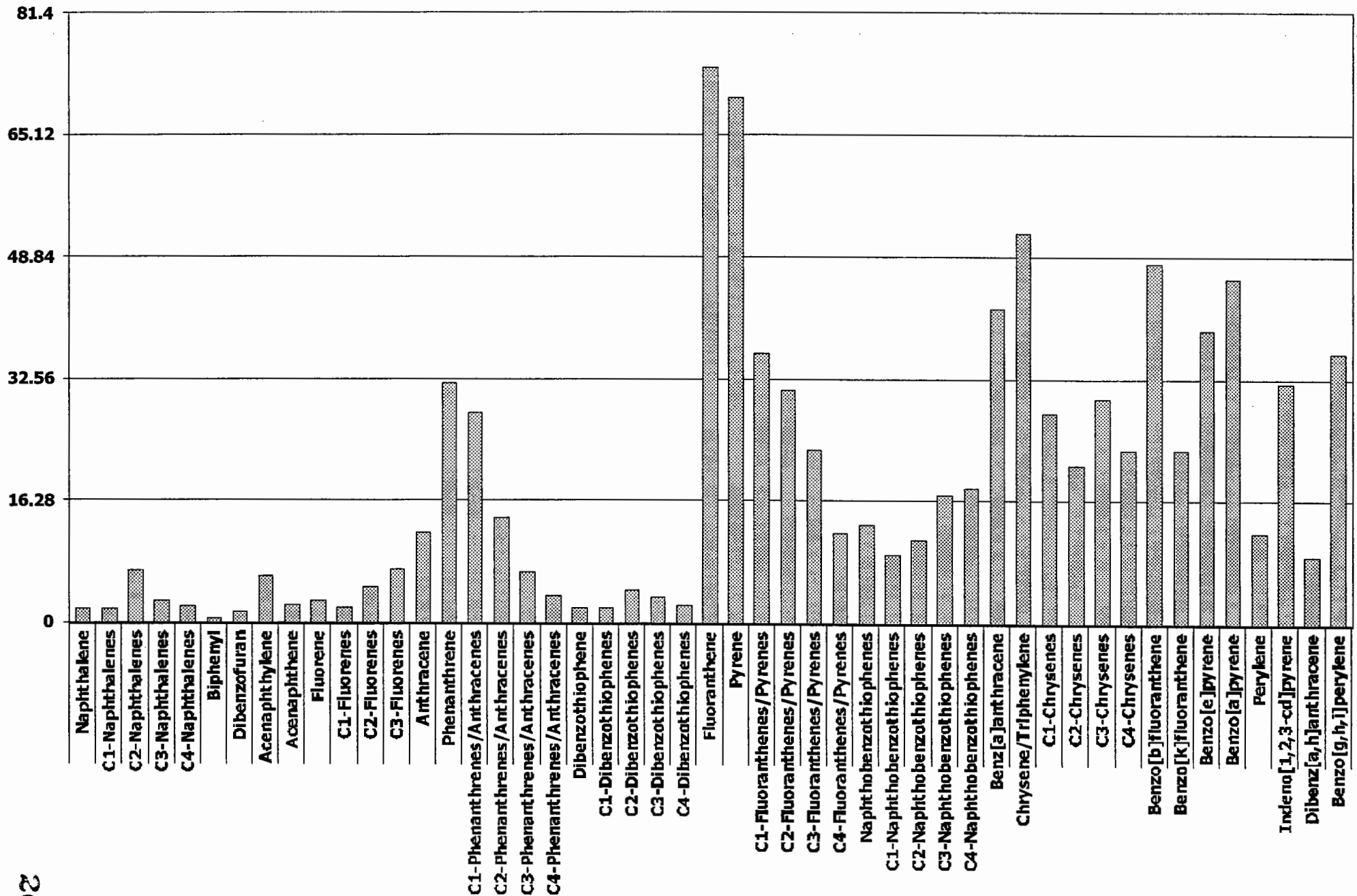


Alkylated Polynuclear Aromatic Hydrocarbons]

Client ID: **DSY-SD-09-082604**

Lab ID: **0408123-11 D**

Concentration: µg/Kg

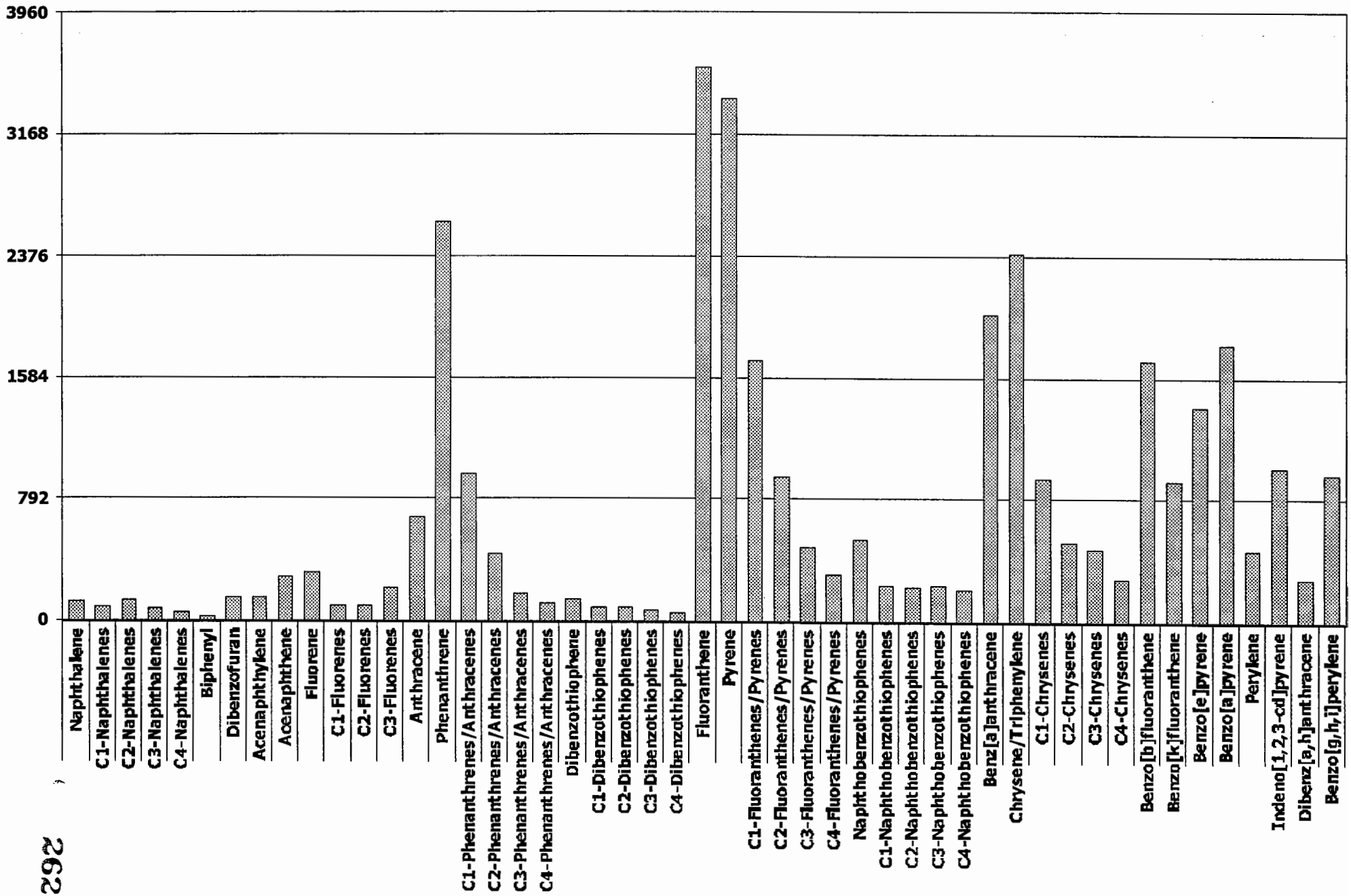


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-03-082604**

Lab ID: **0408123-12**

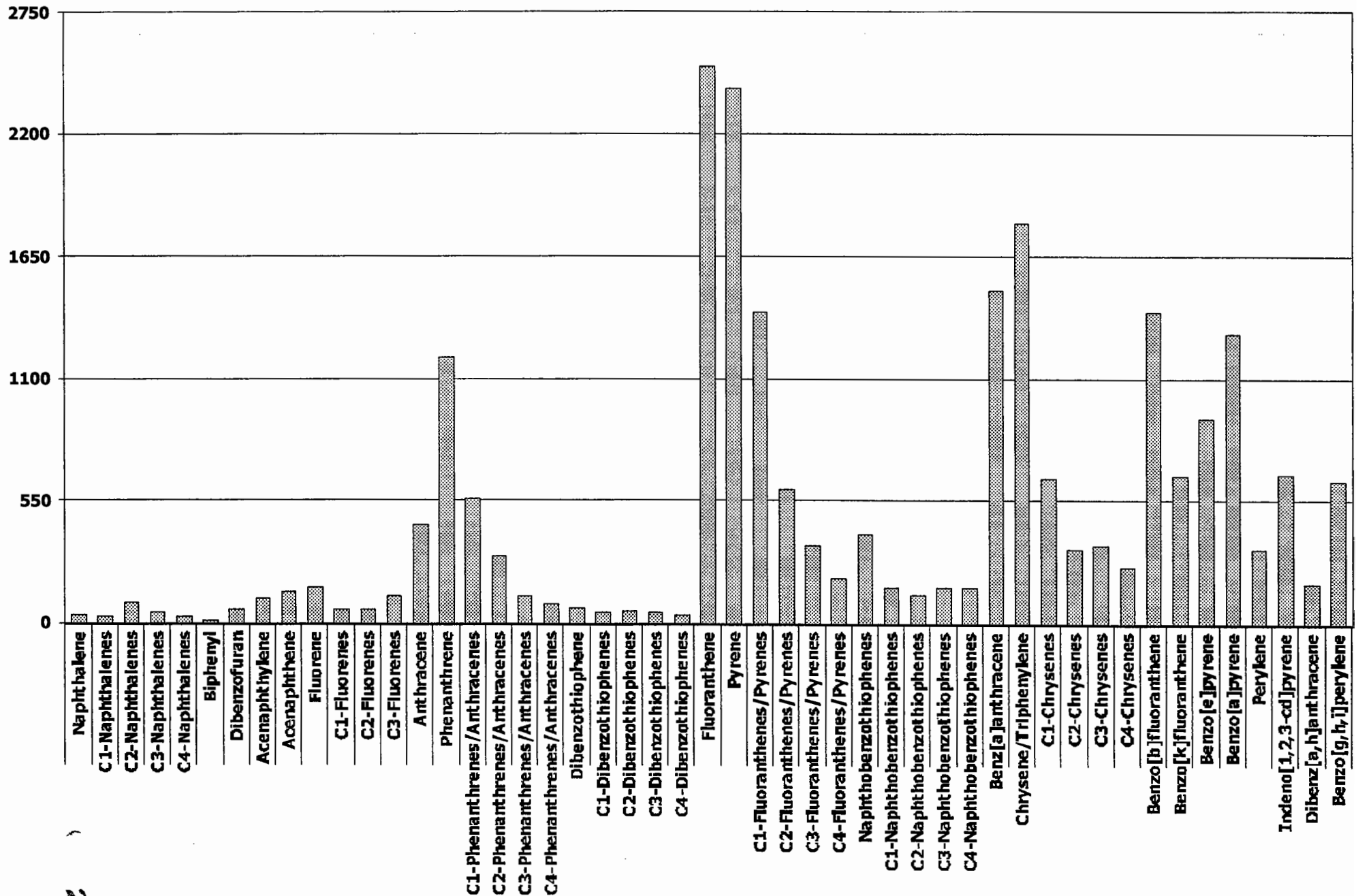
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-29-082604** Lab ID: **0408123-13**

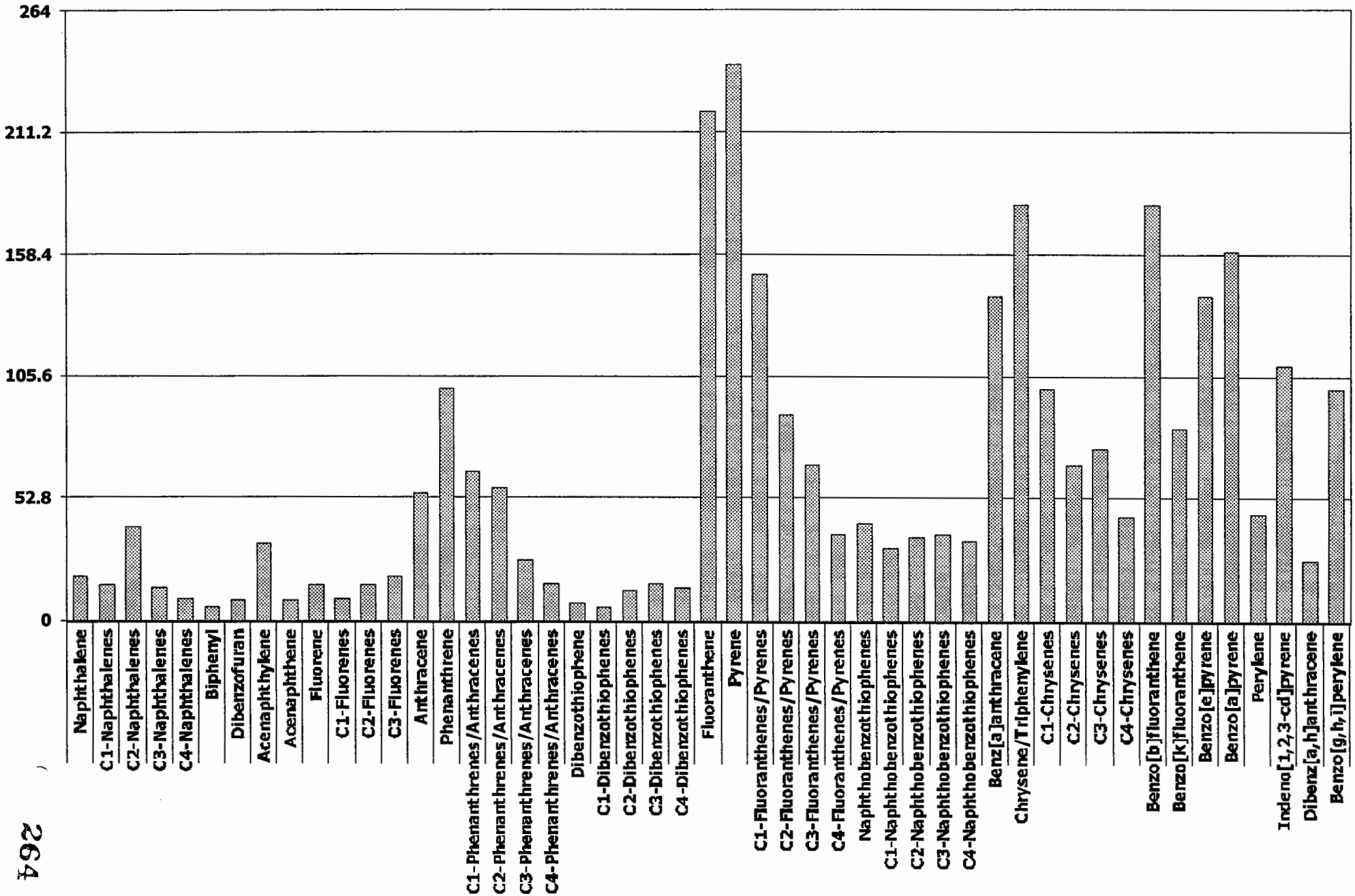
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-05-082604** Lab ID: **0408123-14**

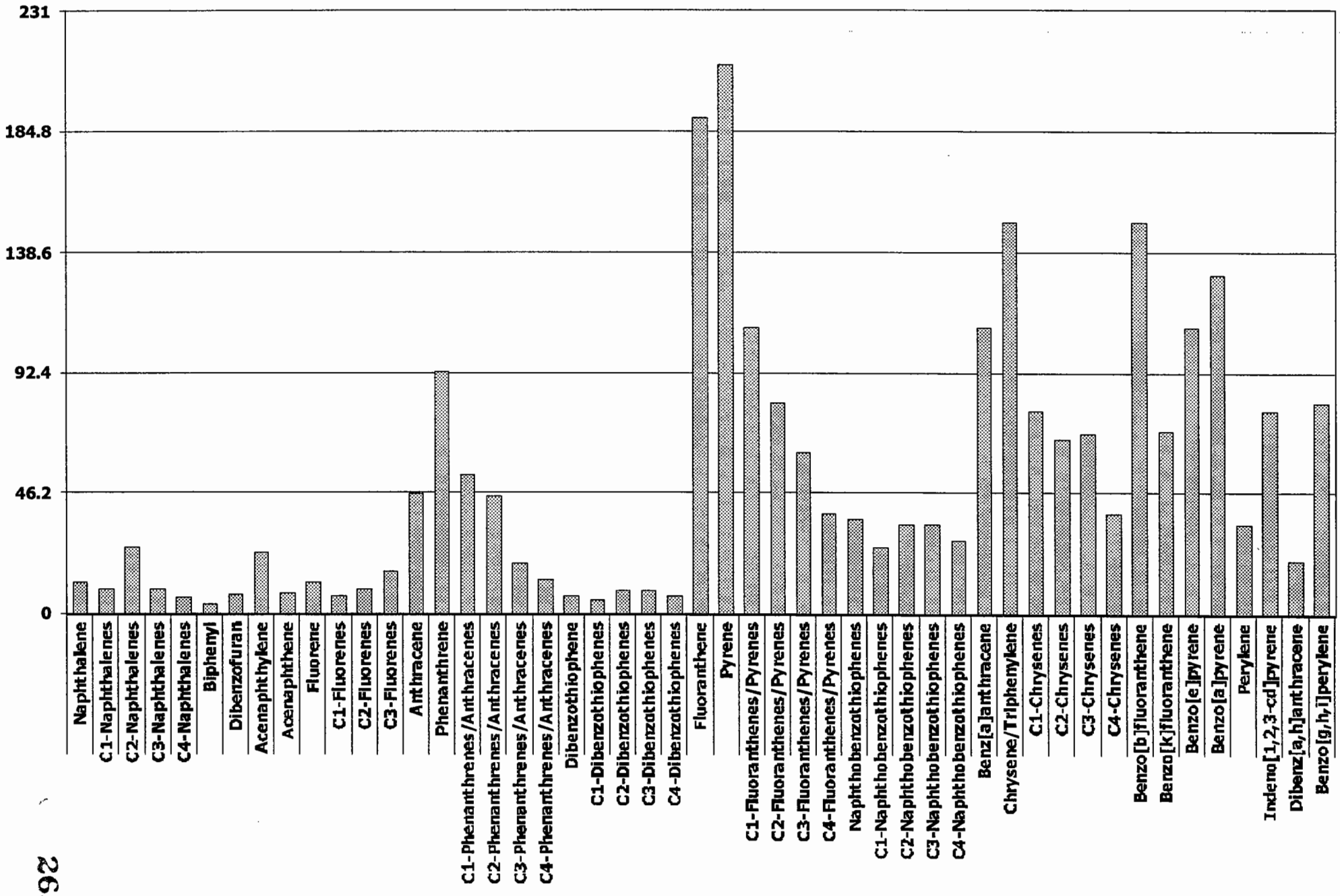
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-DUP02-082604** Lab ID: **0408123-15**

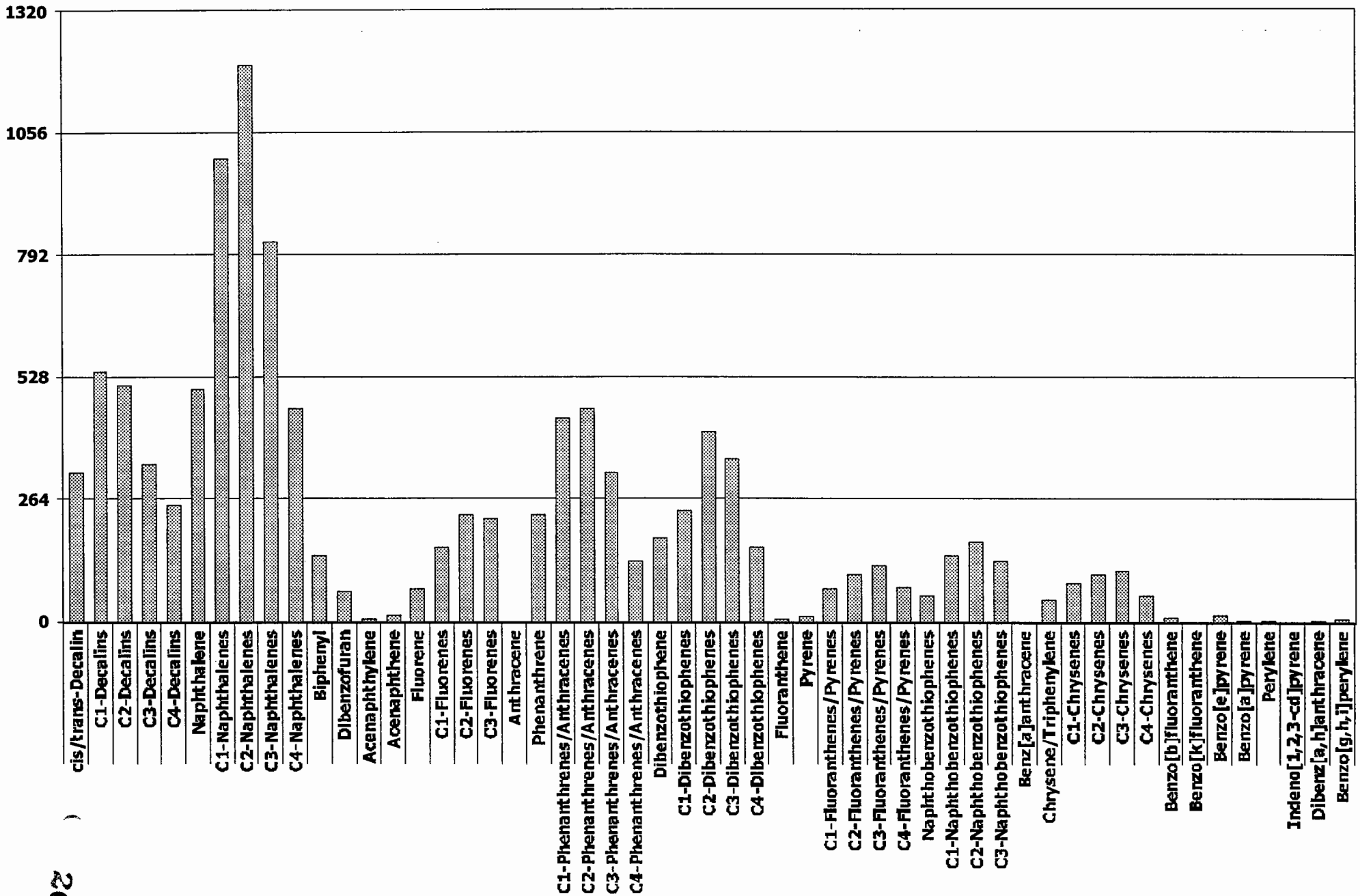
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **Alaska North Slope Crude** Lab ID: **SS092304AWS01**

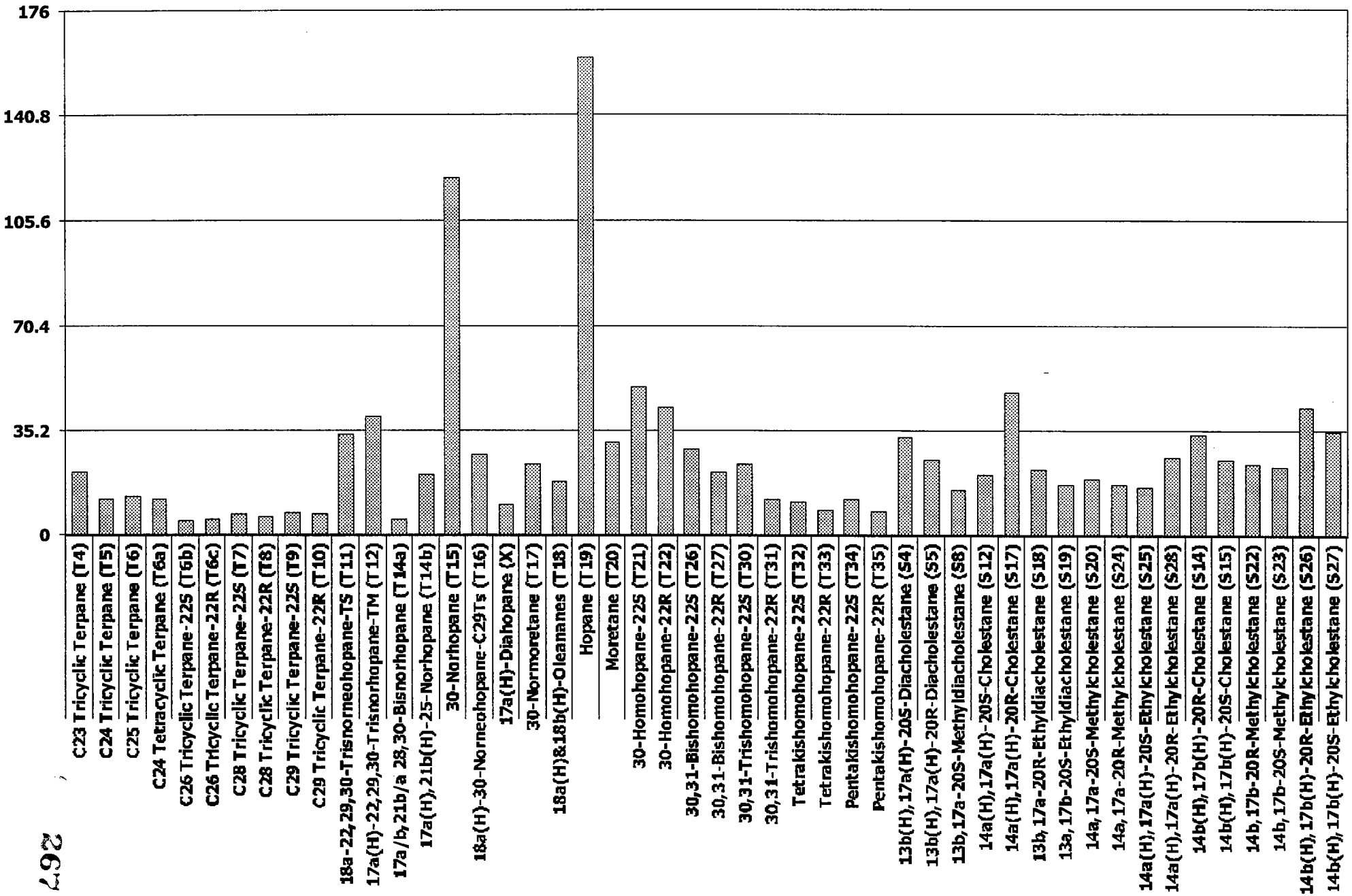
Concentration: mg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-101-0006** Lab ID: **0408123-01**

Concentration: µg/Kg

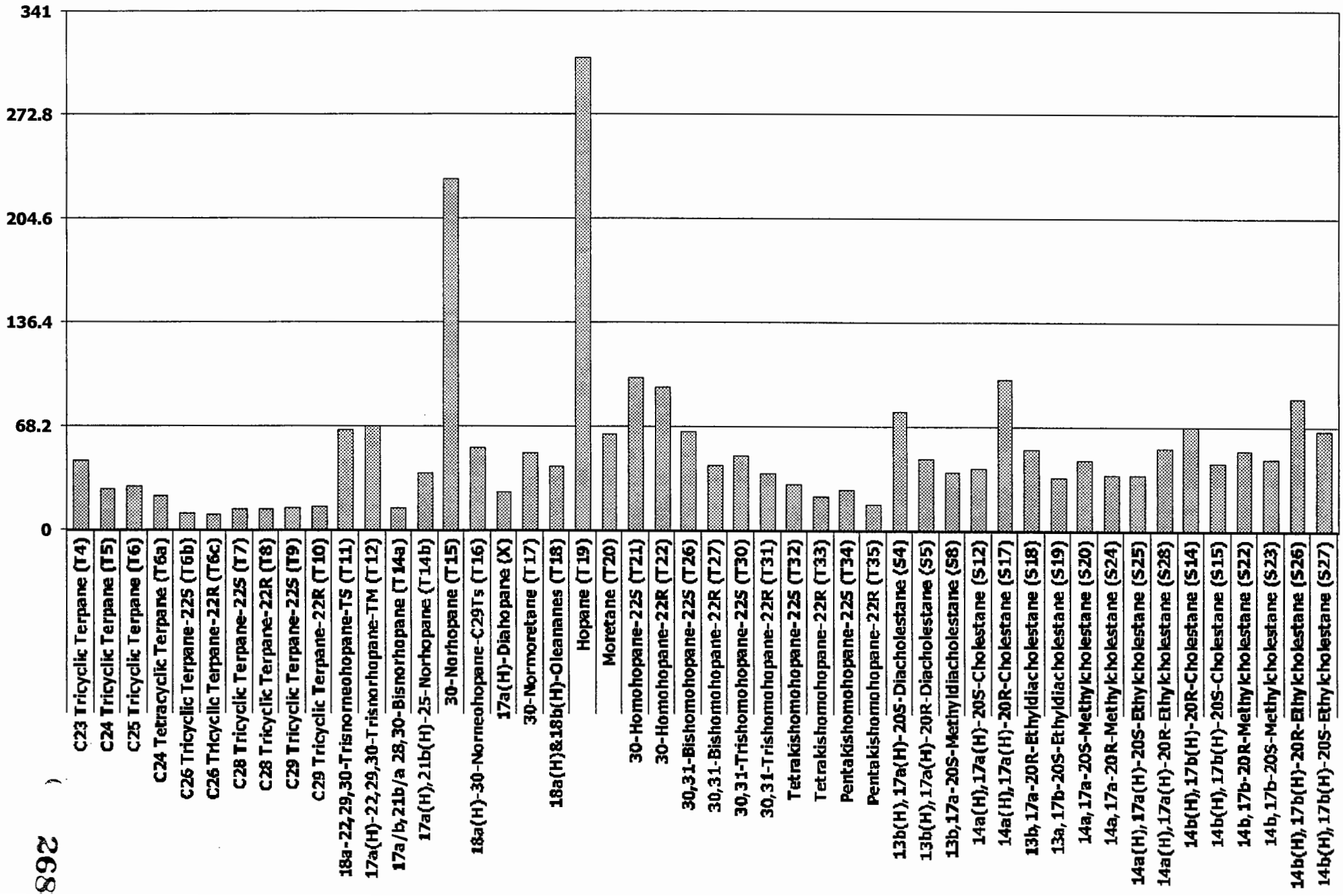


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-101-0612**

Lab ID: **0408123-02**

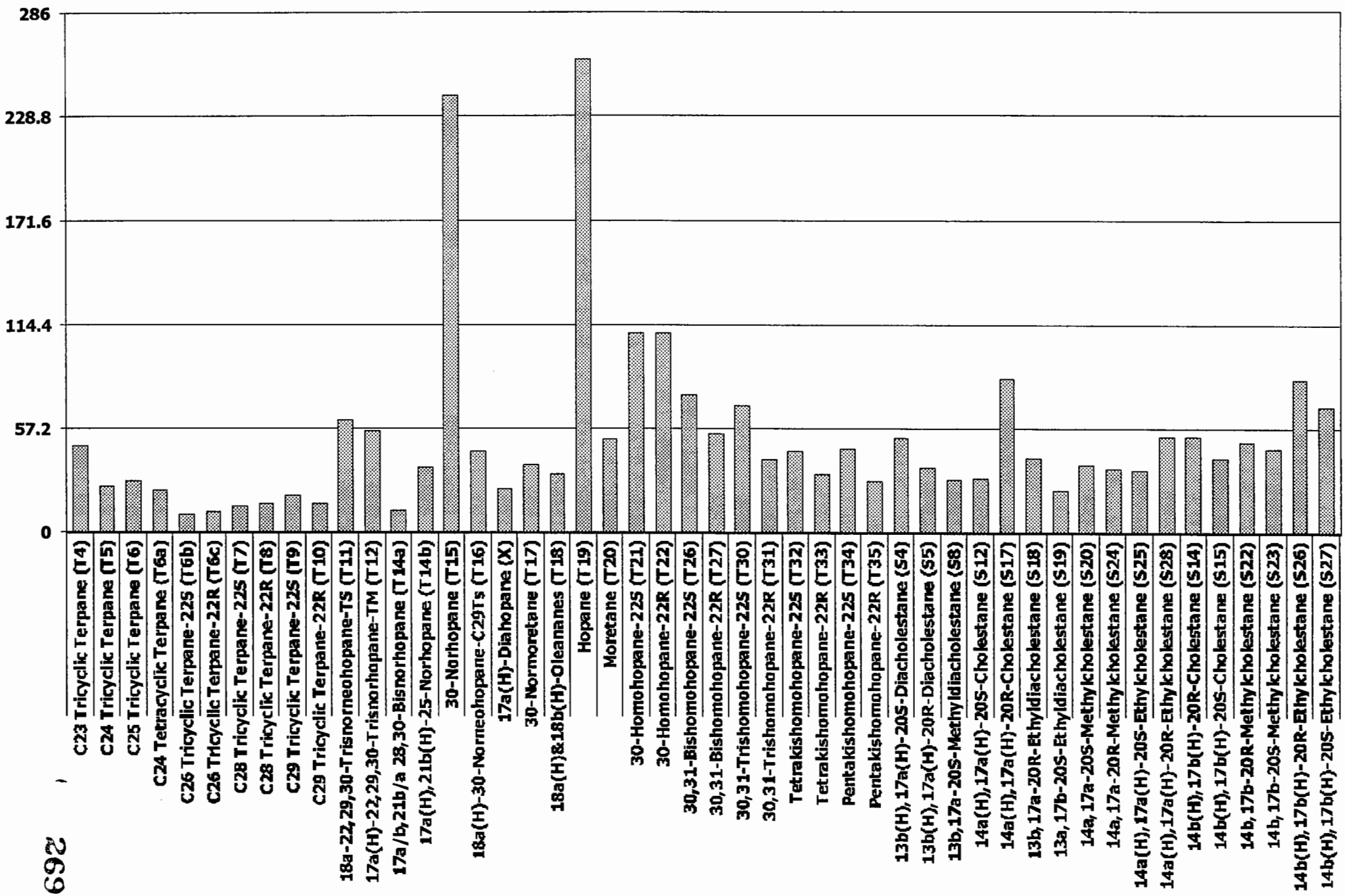
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-103-0006** Lab ID: **0408123-03**

Concentration: µg/Kg

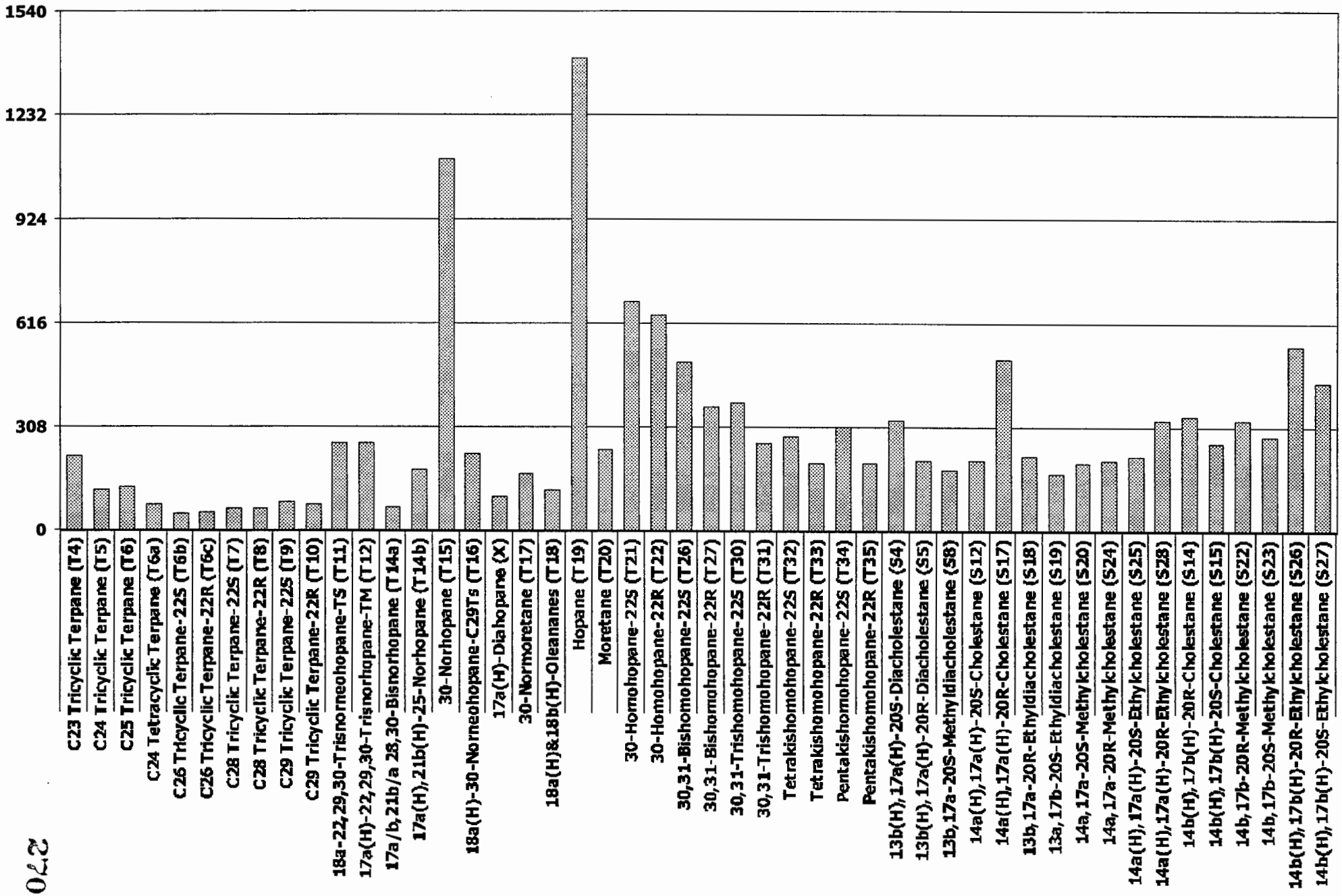


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-103-0612**

Lab ID: **0408123-04**

Concentration: µg/Kg

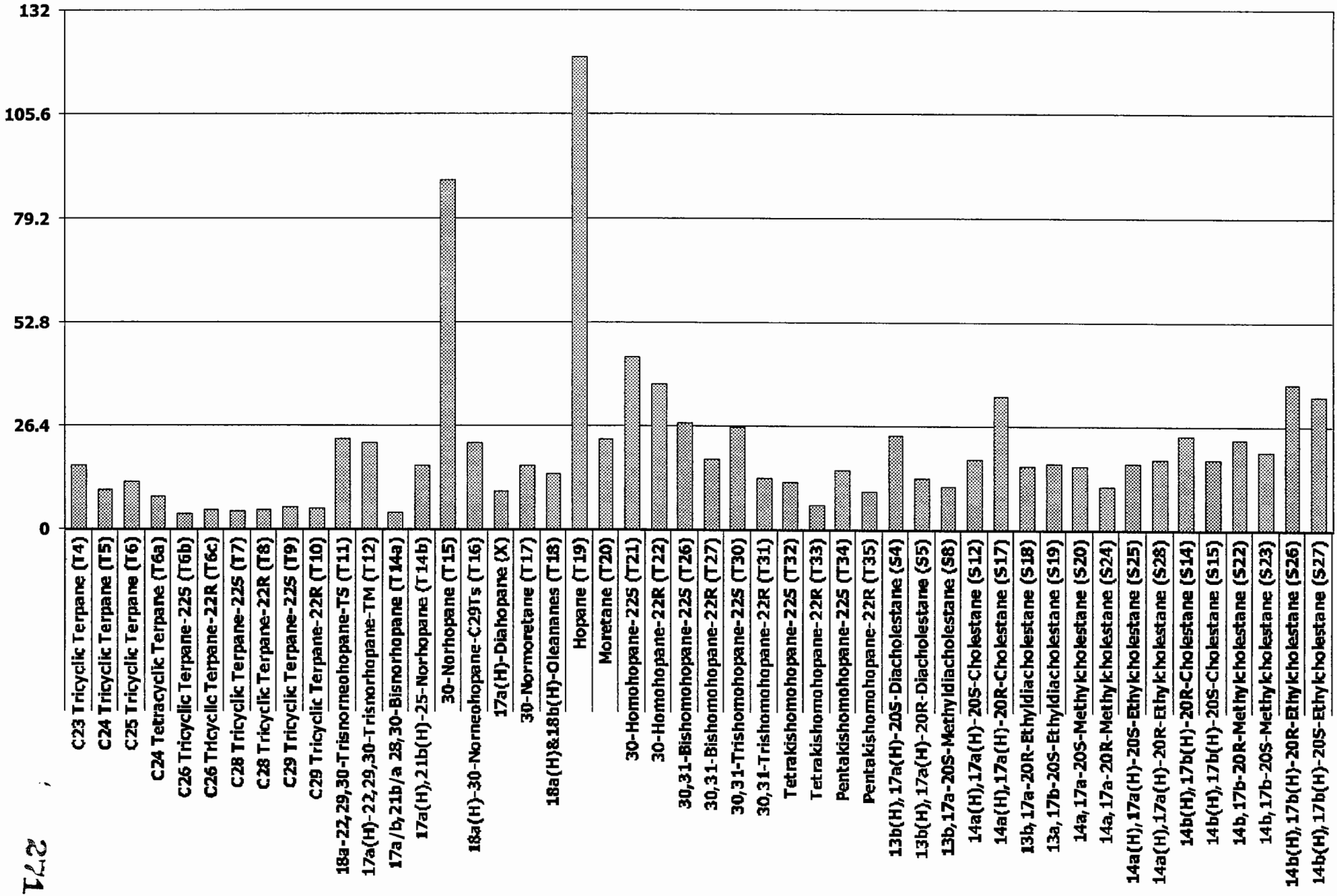


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-104-0006**

Lab ID: **0408123-05**

Concentration: µg/Kg

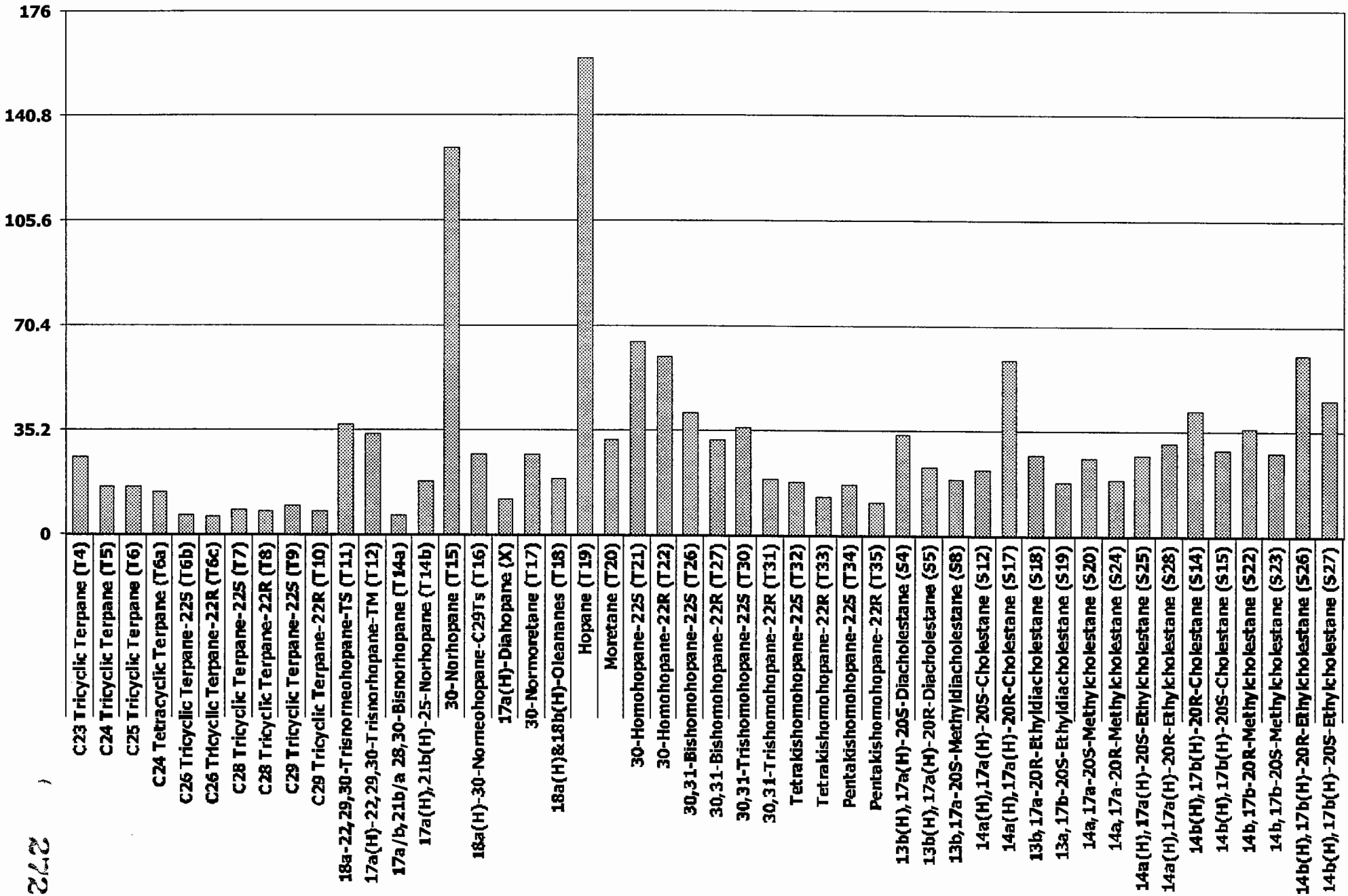


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-104-0612**

Lab ID: **0408123-06**

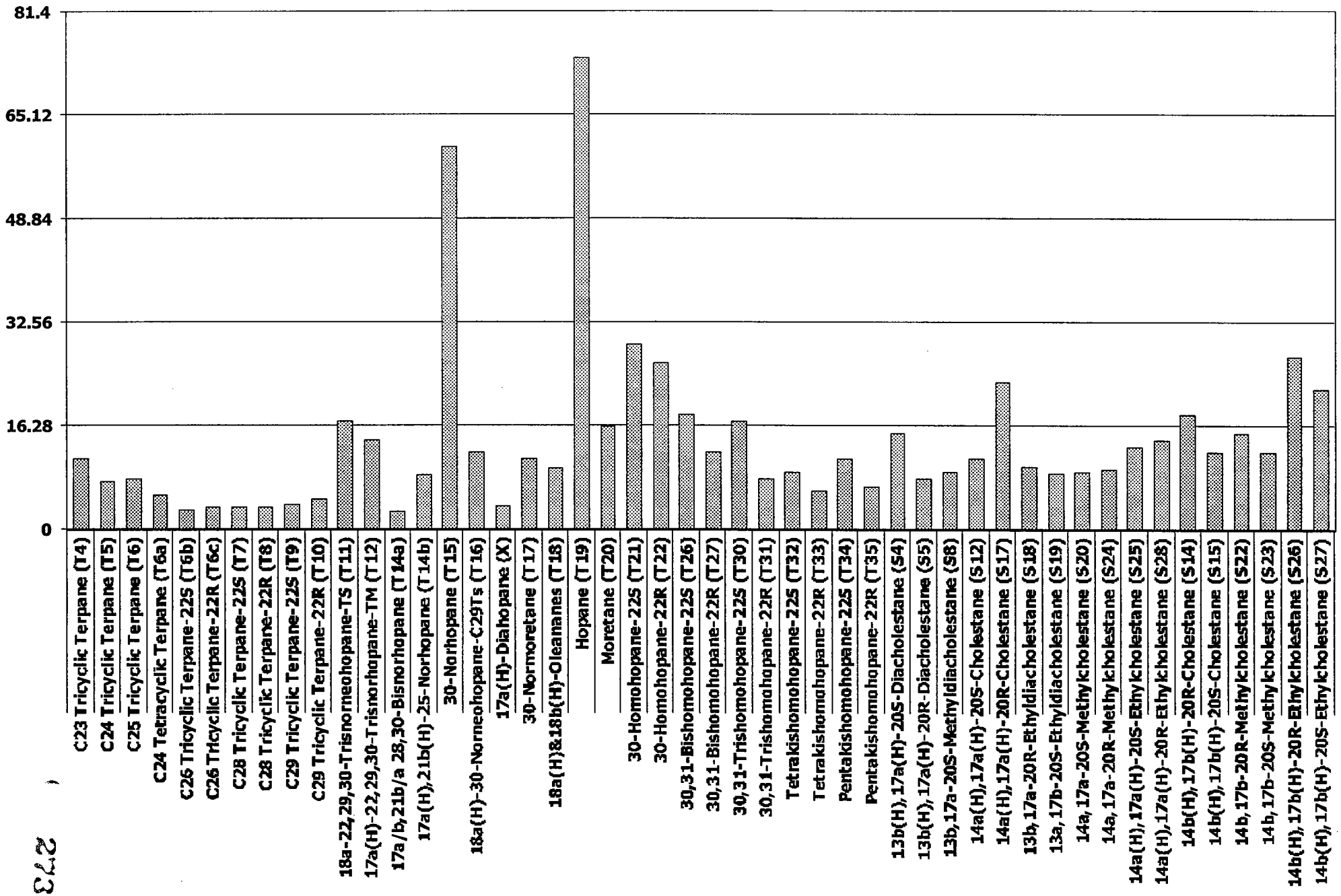
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-02-082504** Lab ID: **0408123-07**

Concentration: µg/Kg

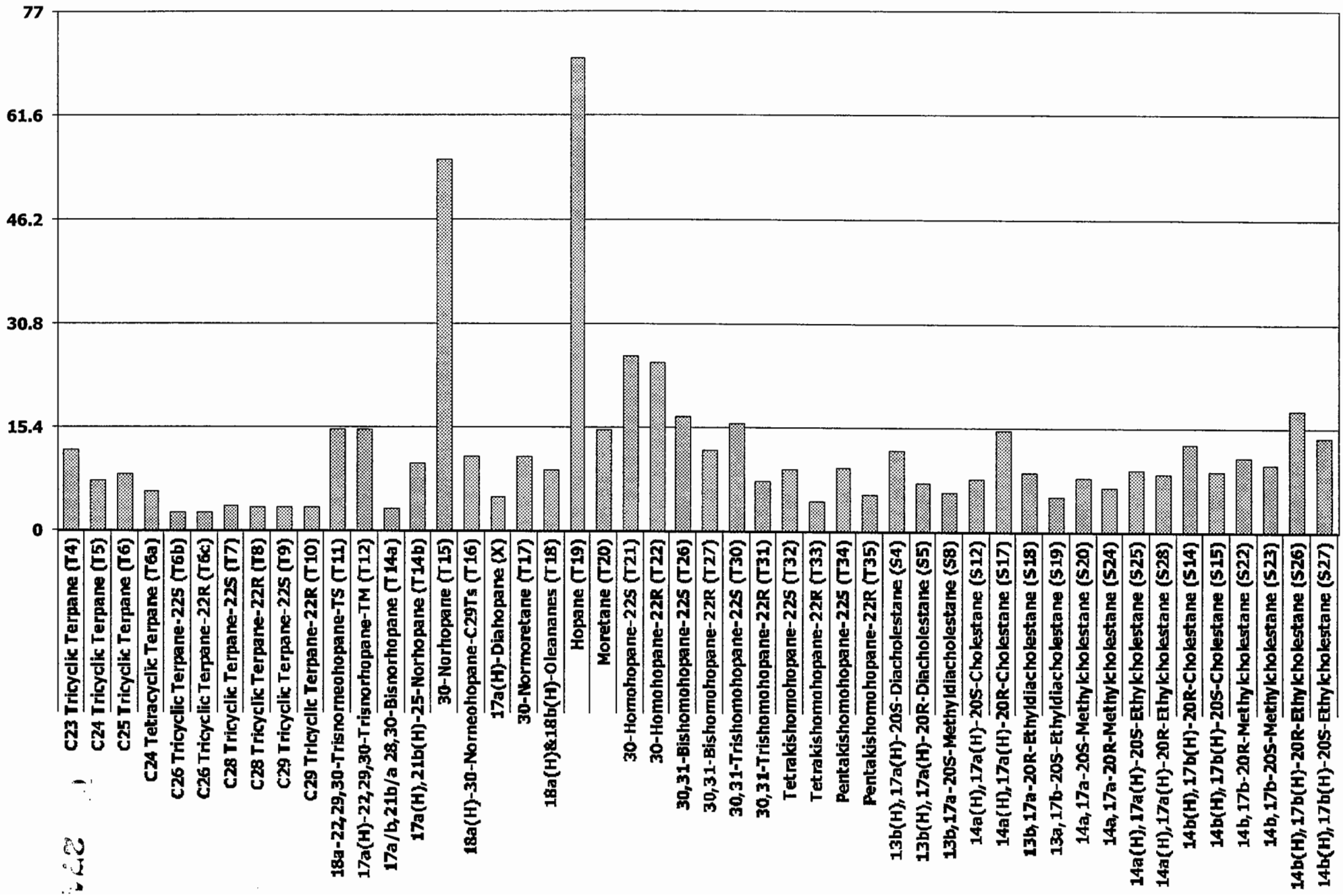


Steranes and Triterpanes Distributio

Client ID: **DSY-SD-DUP01-082504**

Lab ID: **0408123-08**

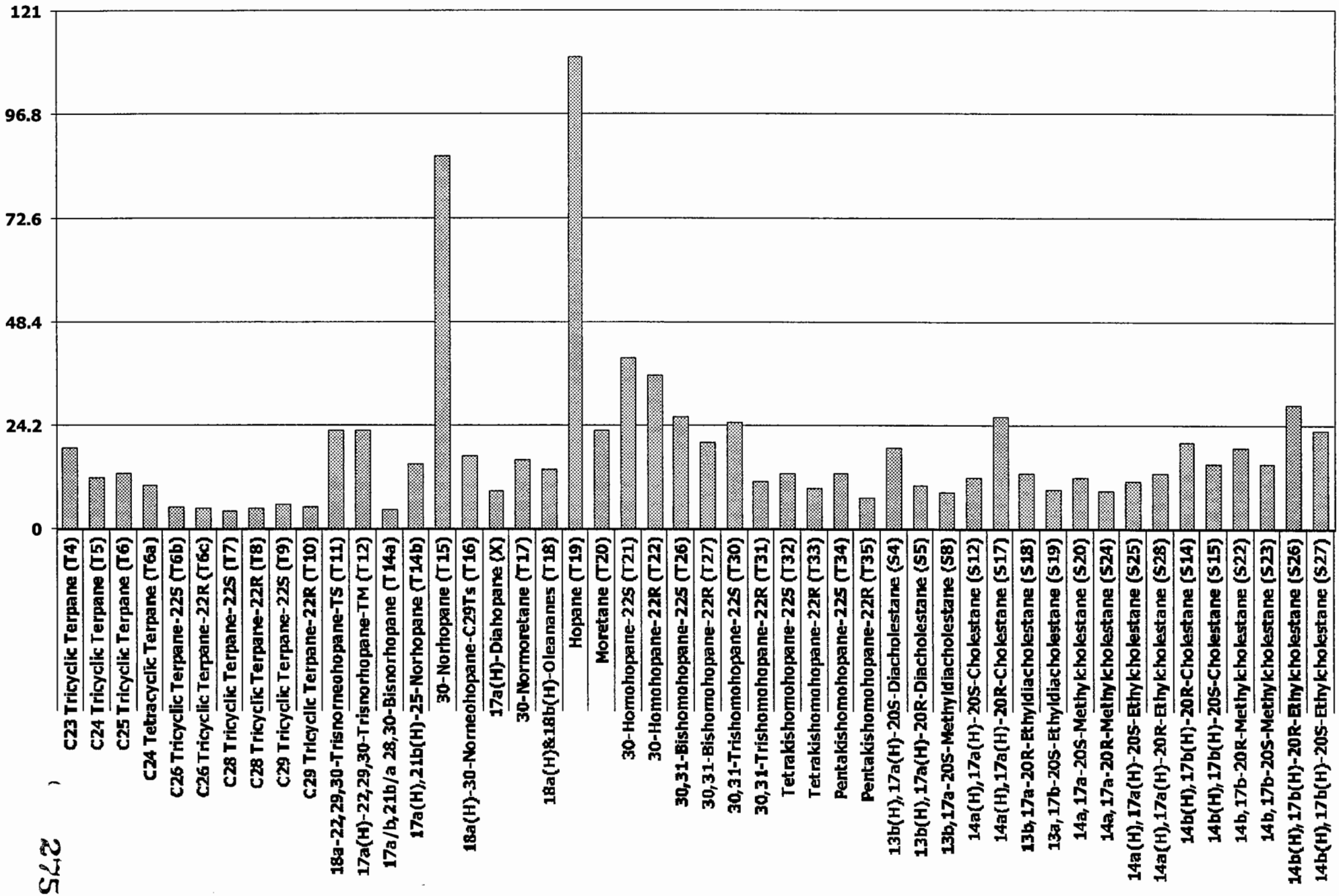
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-28-082504** Lab ID: **0408123-09**

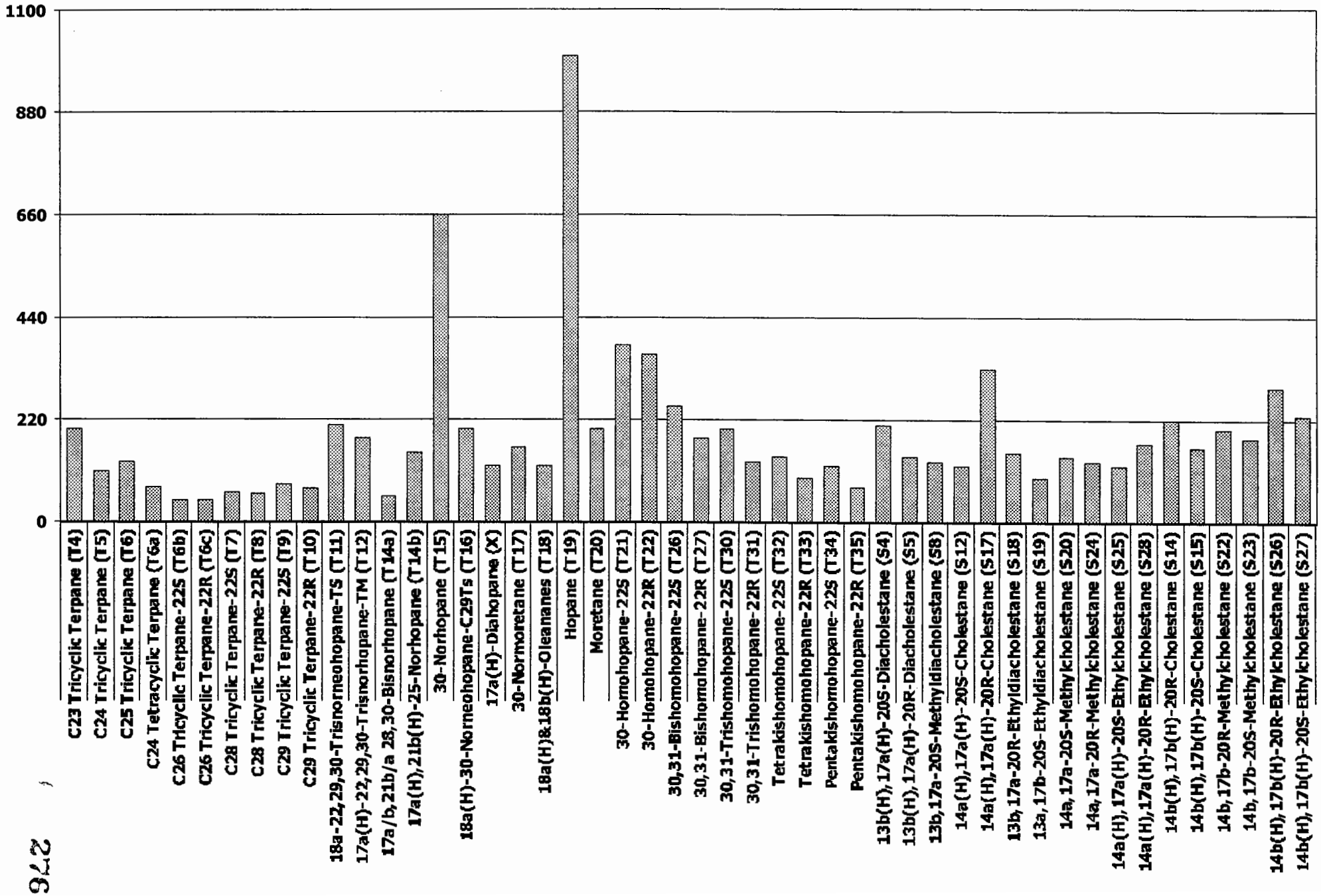
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-06-082504** Lab ID: **0408123-10**

Concentration: µg/Kg

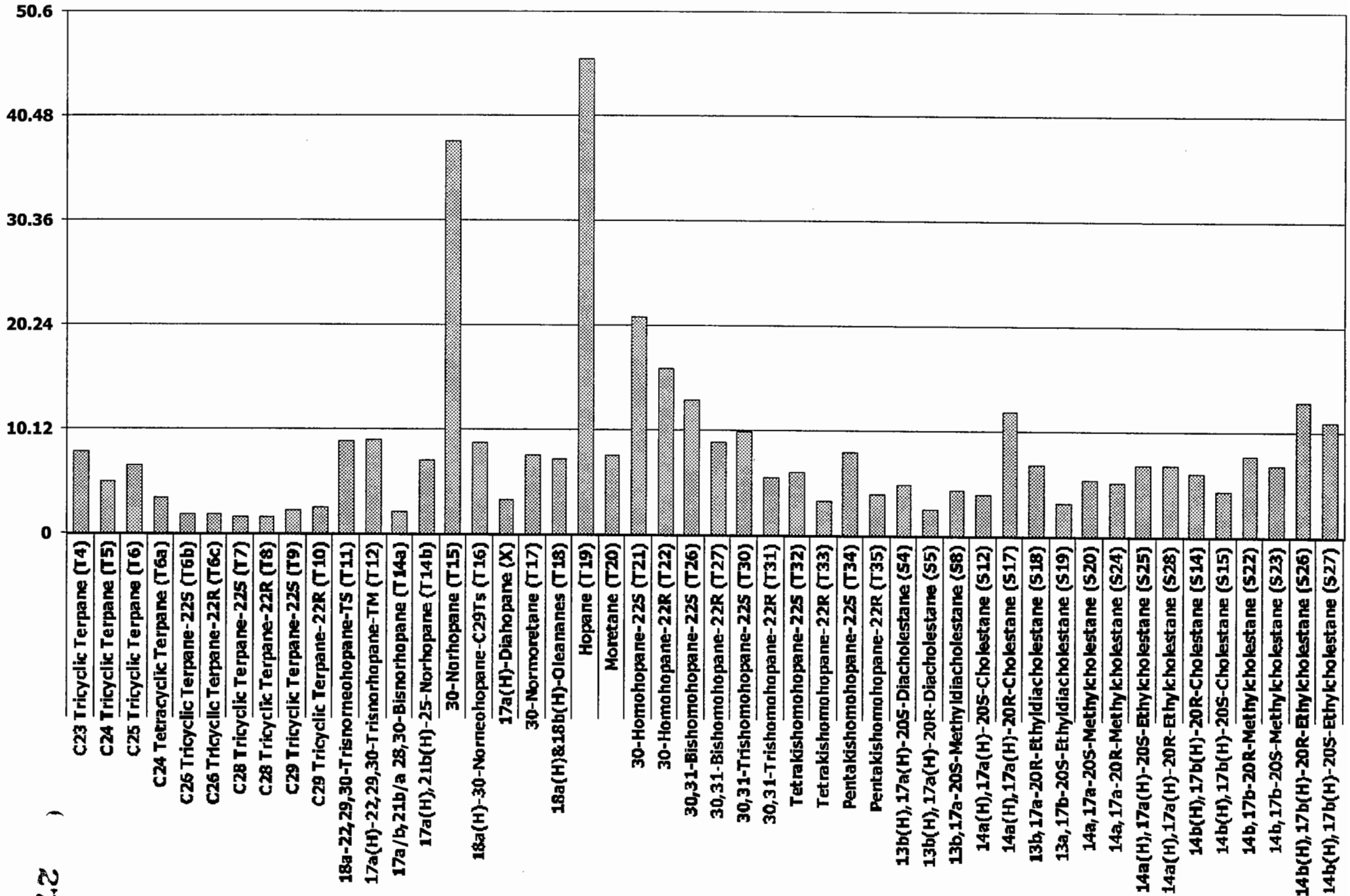


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-09-082604**

Lab ID: **0408123-11**

Concentration: µg/Kg



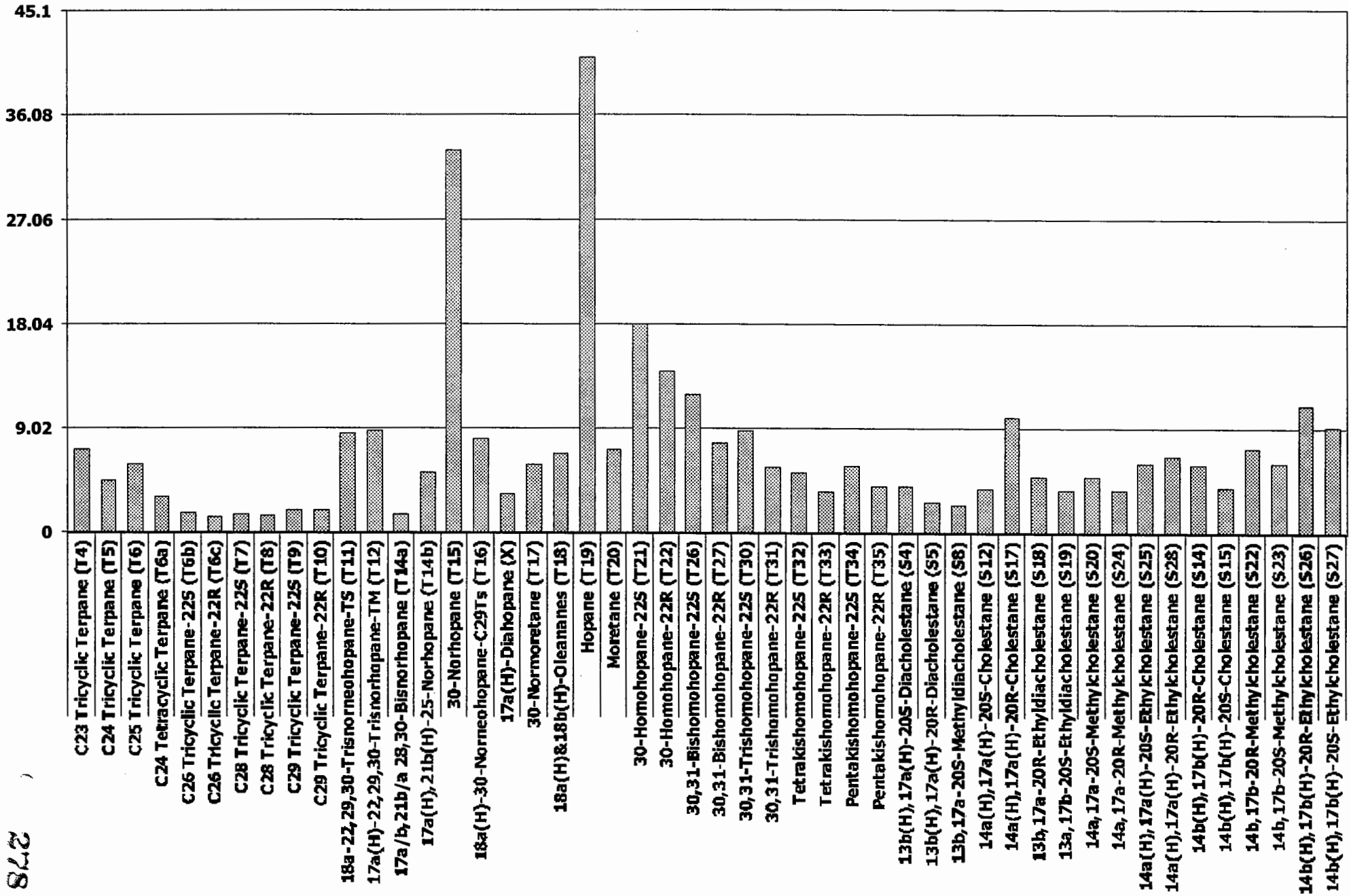
277

Steranes and Triterpanes Distributions

Client ID: **DSY-SD-09-082604**

Lab ID: **0408123-11 D**

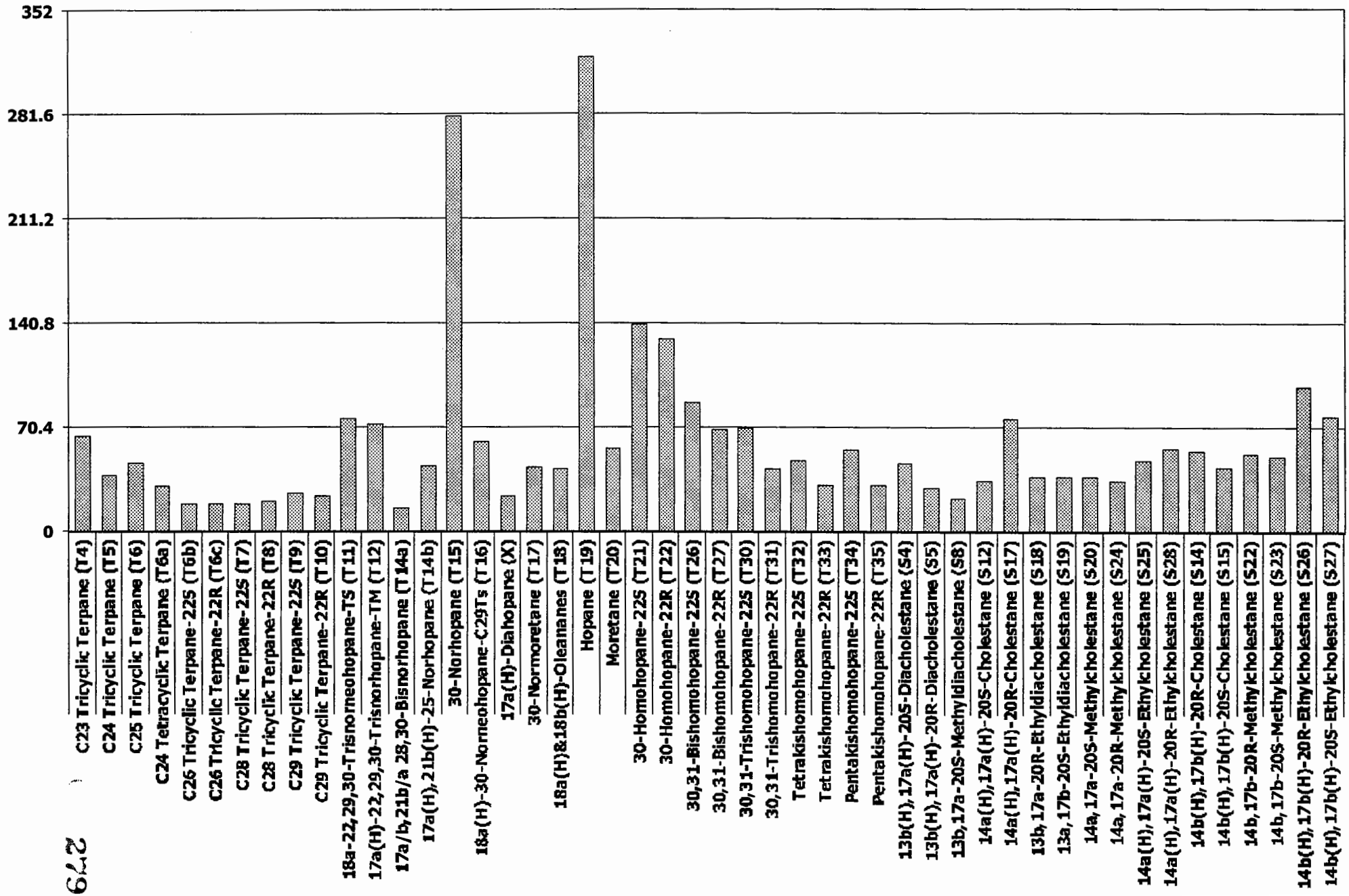
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-03-082604** Lab ID: **0408123-12**

Concentration: µg/Kg

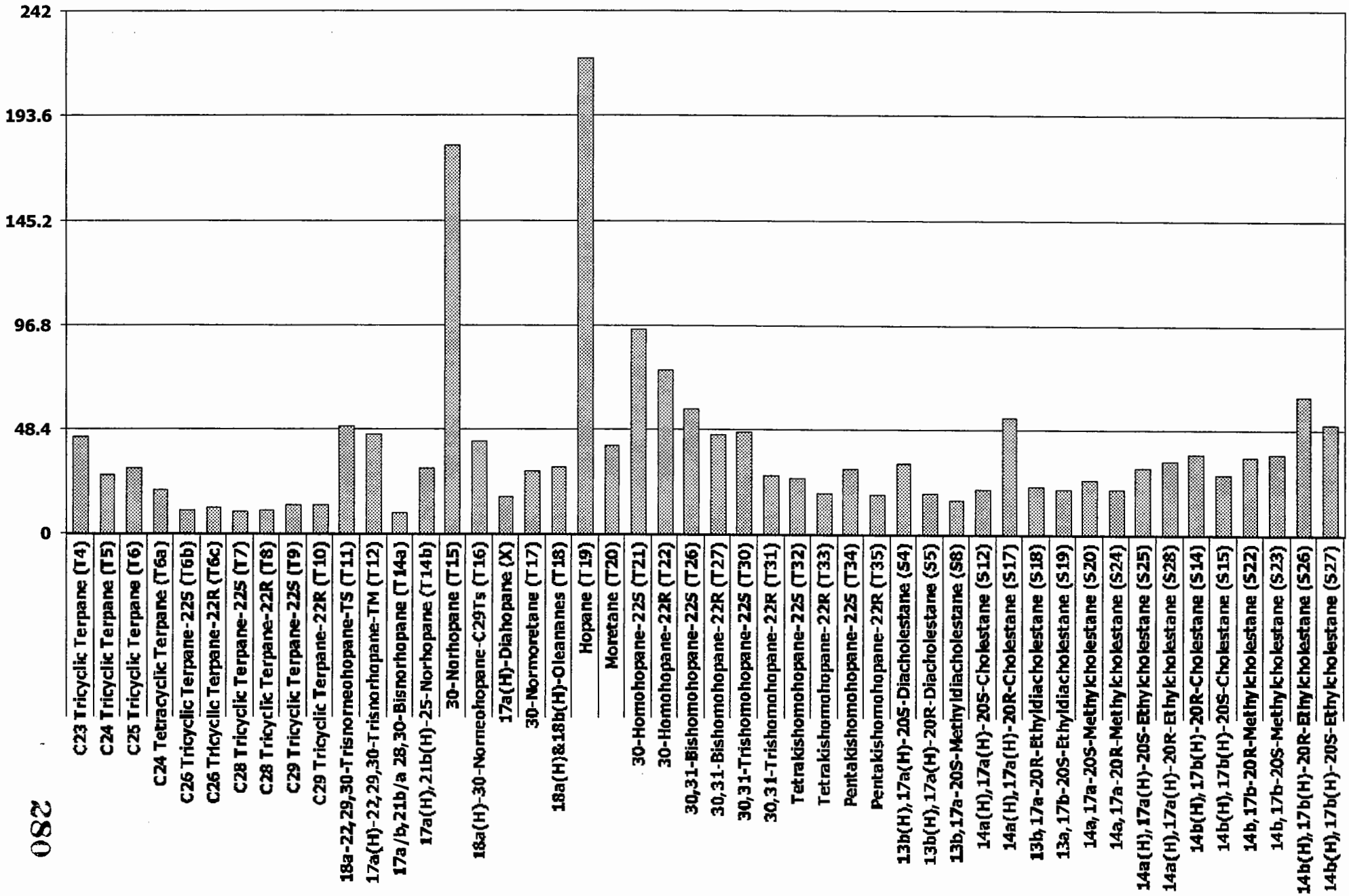


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-29-082604**

Lab ID: **0408123-13**

Concentration: µg/Kg

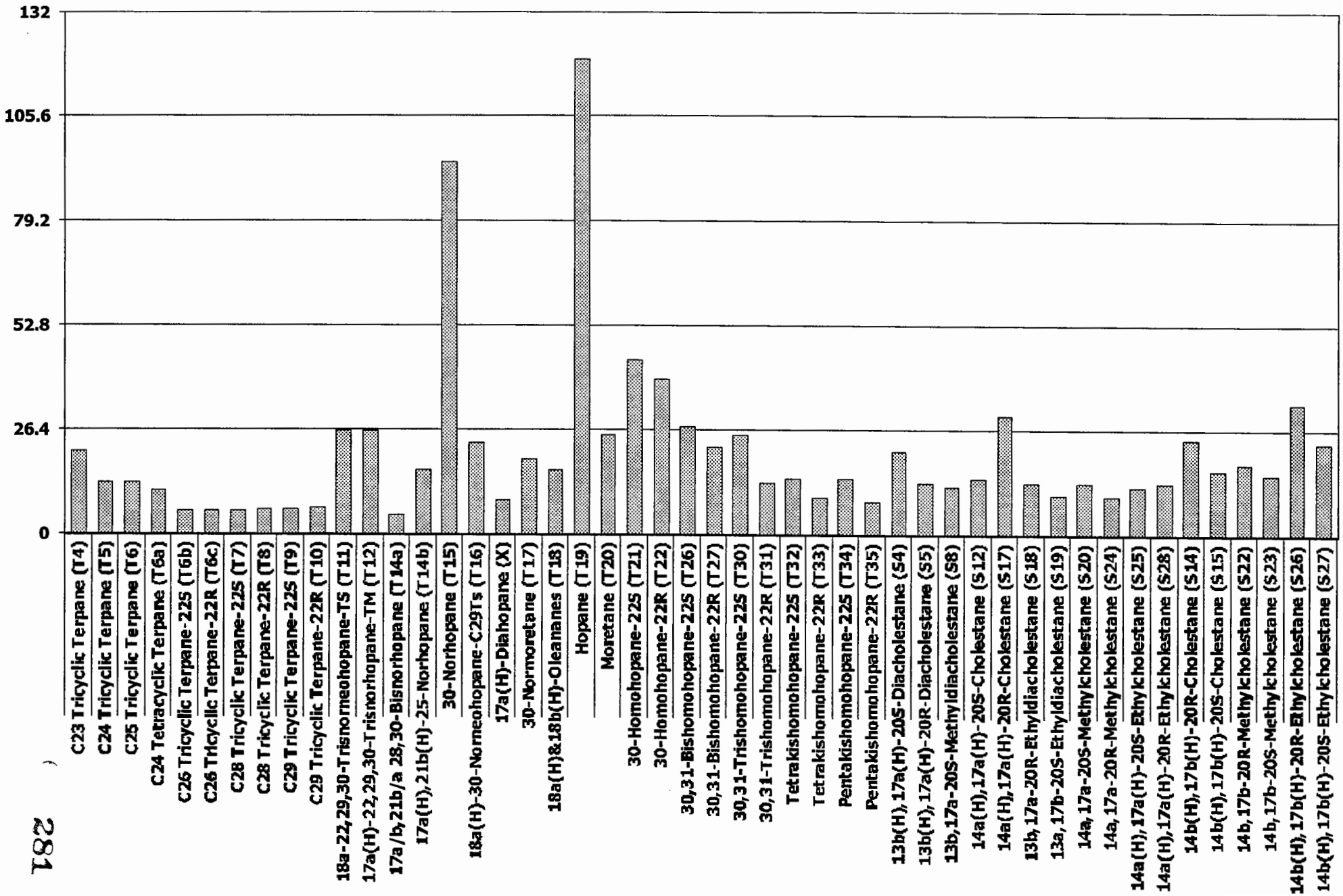


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-05-082604**

Lab ID: **0408123-14**

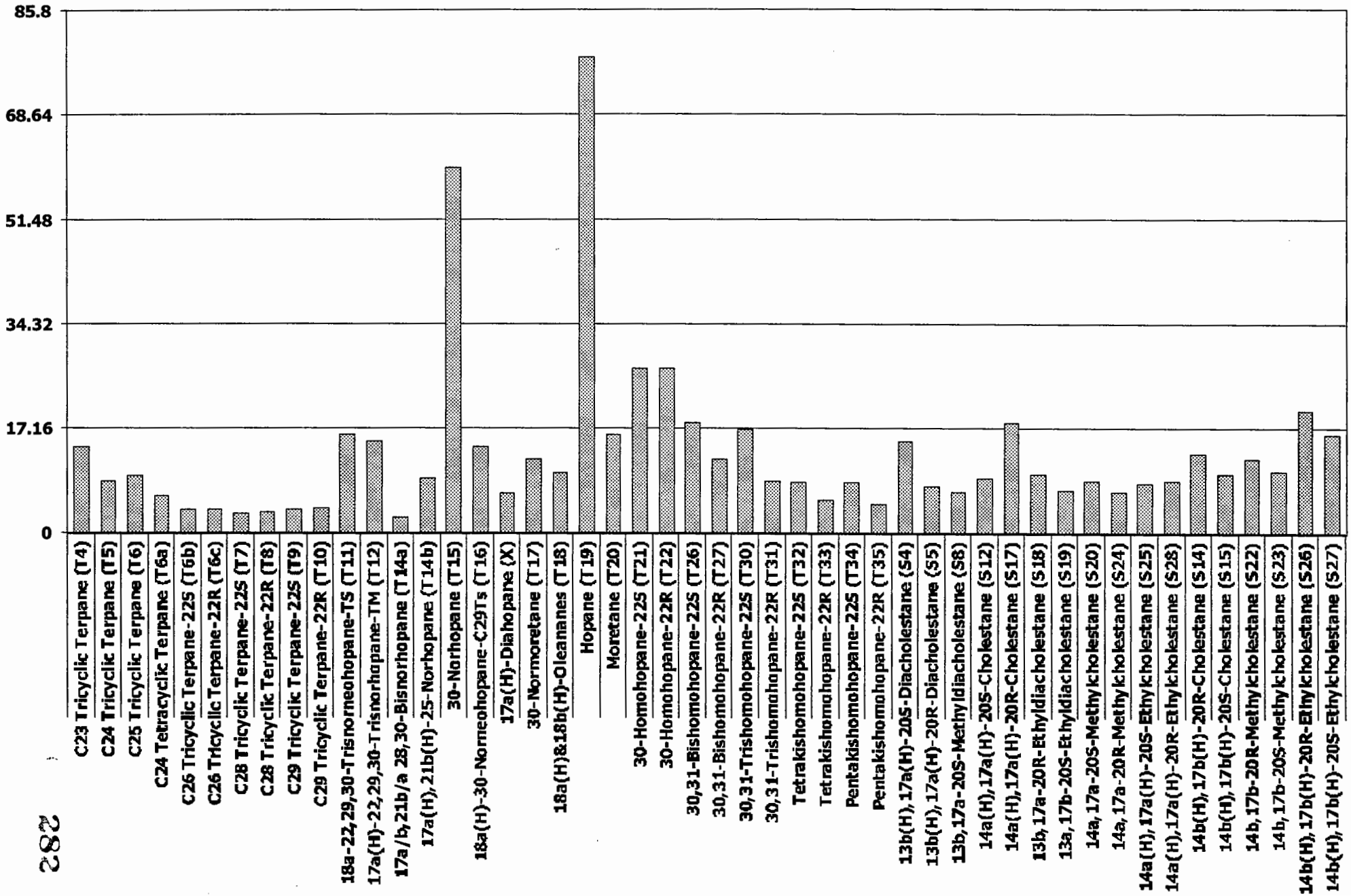
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-DUP02-082604** Lab ID: **0408123-15**

Concentration: µg/Kg

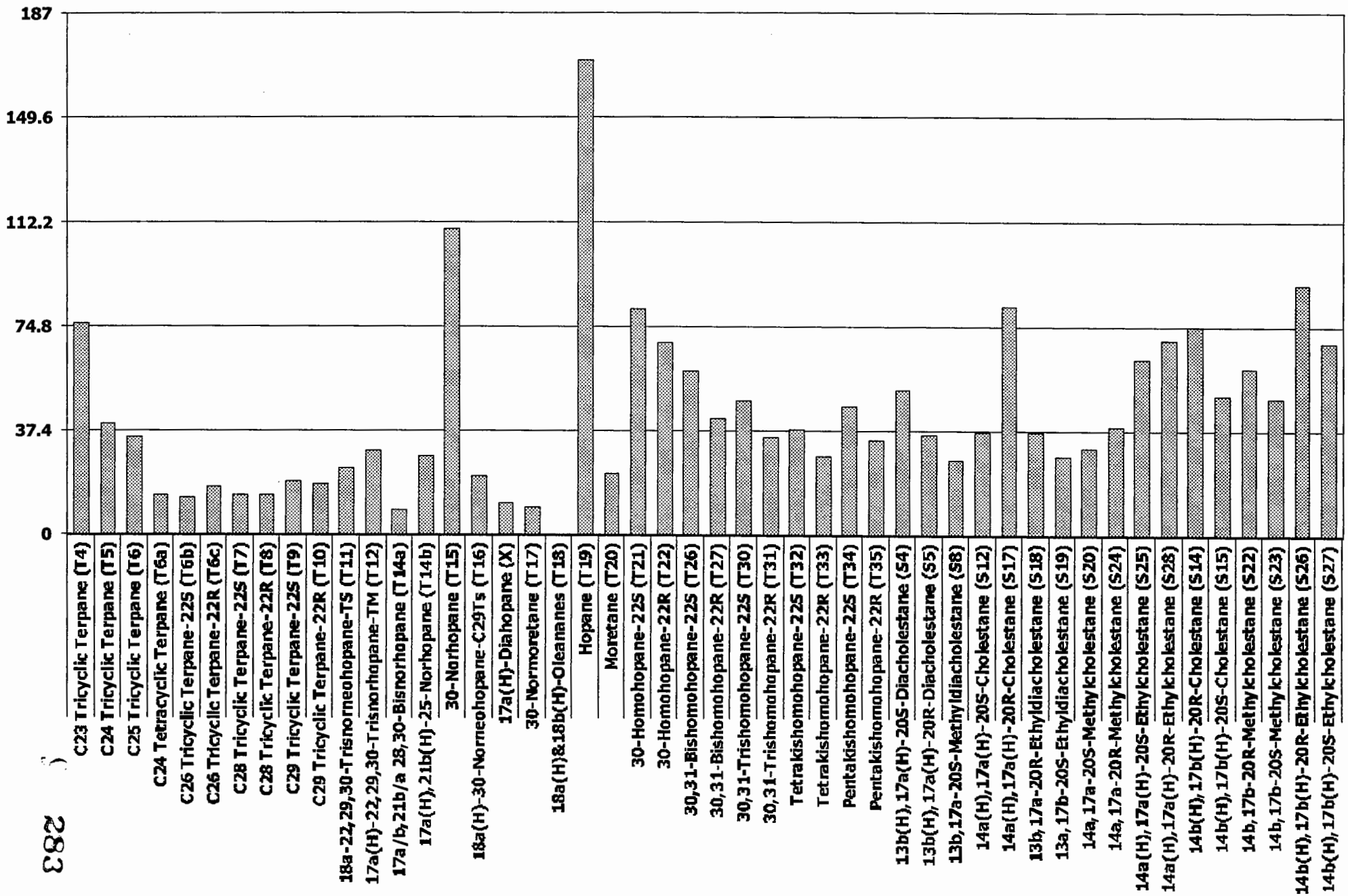


Steranes and Triterpanes Distributions

Client ID: **Alaska North Slope Crude**

Lab ID: **SS092304AWS01**

Concentration: mg/Kg

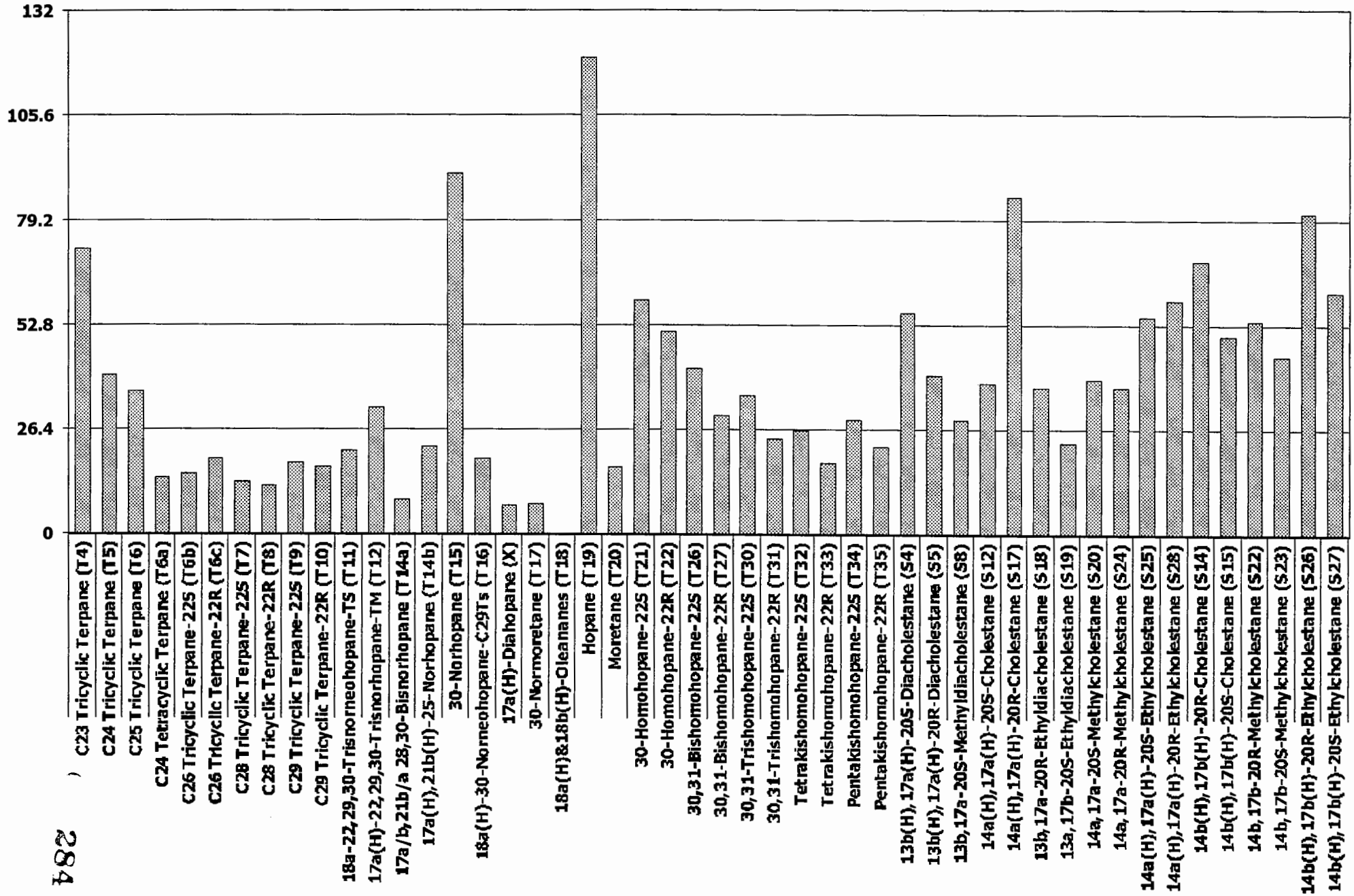


Steranes and Triterpanes Distributions

Client ID: **Alaska North Slope Crude**

Lab ID: **SS100104AWS01**

Concentration: mg/Kg



SATURATED AND TOTAL PETROLEUM HYDROCARBONS

284-A

Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-01**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	56.5	30.29	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**1.0**		n-Docosane (C22)	**0.091**	J
n-Decane (C10)	**0.0058**	J	n-Tricosane (C23)	**0.073**	J
n-Undecane (C11)	**0.012**	J	n-Tetracosane (C24)	**0.15**	J
n-Dodecane (C12)	**0.0058**	J	n-Pentacosane (C25)	**0.29**	J
n-Tridecane (C13)	**0.0029**	J	n-Hexacosane (C26)	**0.16**	J
2,6,10 Trimethyldodecane (1380)	**0.038**	J	n-Heptacosane (C27)	**0.29**	J
n-Tetradecane (C14)	**0.023**	J	n-Octacosane (C28)	**0.22**	J
2,6,10 Trimethyltridecane (1470)	**0.0088**	J	n-Nonacosane (C29)	**0.71**	
n-Pentadecane (C15)	**0.099**	J	n-Triacontane (C30)	**0.33**	
n-Hexadecane (C16)	**0.0088**	J	n-Hentriacontane (C31)	**0.61**	
Norpristane (1650)	**0.015**	J	n-Dotriacontane (C32)	0.29	U
n-Heptadecane (C17)	**0.094**	J	n-Tritriacontane (C33)	0.29	U
Pristane	**0.10**	J	n-Tetratriacontane (C34)	0.29	U
n-Octadecane (C18)	**0.038**	J	n-Pentatriacontane (C35)	0.29	U
Phytane	**0.15**	J	n-Hexatriacontane (C36)	0.29	U
n-Nonadecane (C19)	**0.10**	J	n-Heptatriacontane (C37)	0.29	U
n-Eicosane (C20)	**0.047**	J	n-Octatriacontane (C38)	0.29	U
n-Heneicosane (C21)	**0.064**	J	n-Tetracontane (C40)	0.29	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.7**
Total Extractable Material[2]	**170**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

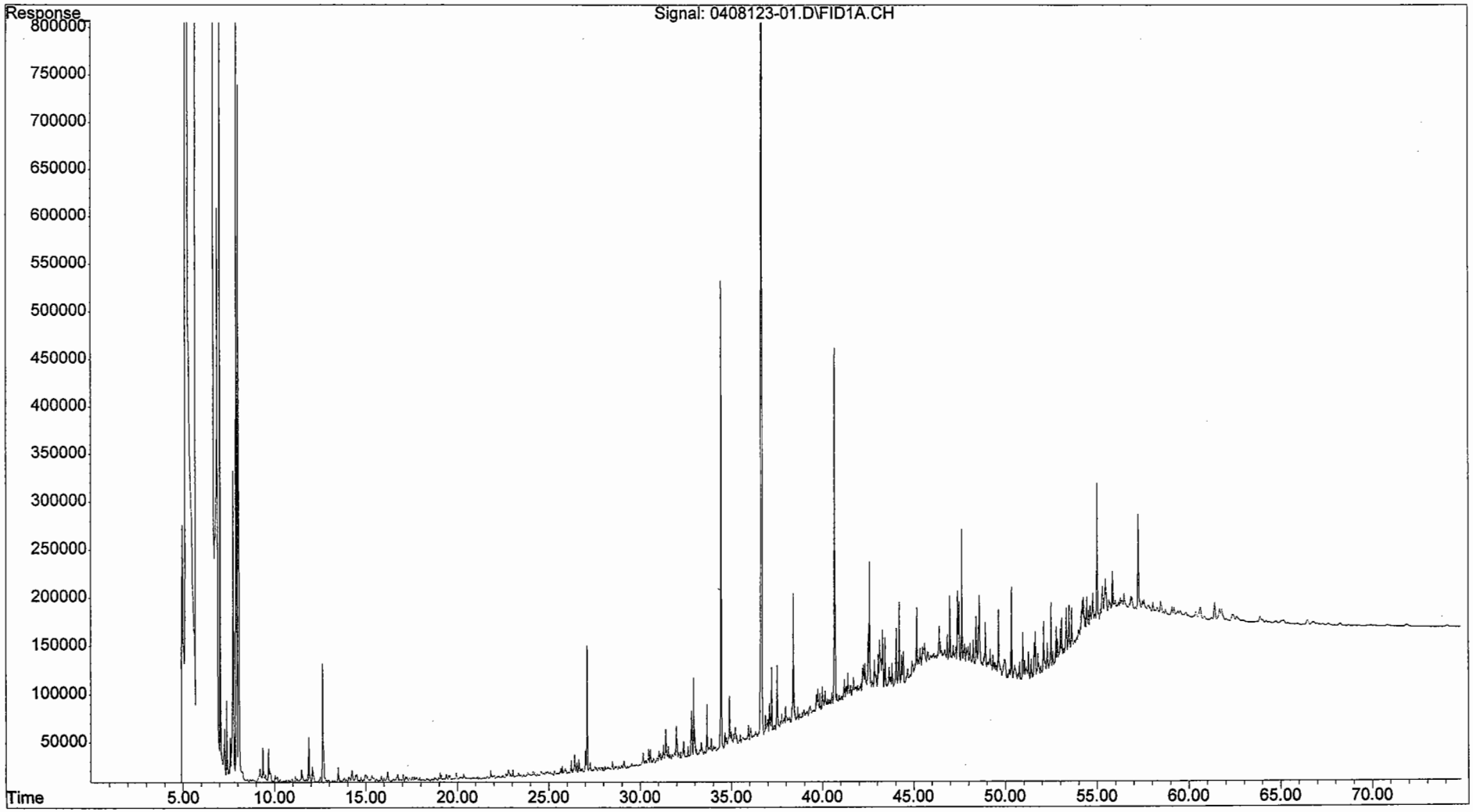
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	91	50-130
d50-Tetracosane	93	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-01.D
Operator : NLJr
Acquired : 26 Sep 2004 4:05 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-01
Misc Info : 1X
Vial Number: 23



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-101-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-02**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	55.6	30.60	8	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.63**		n-Docosane (C22)	**0.085**	J
n-Decane (C10)	**0.0094**	J	n-Tricosane (C23)	**0.070**	J
n-Undecane (C11)	**0.014**	J	n-Tetracosane (C24)	**0.075**	J
n-Dodecane (C12)	**0.019**	J	n-Pentacosane (C25)	**0.27**	J
n-Tridecane (C13)	**0.023**	J	n-Hexacosane (C26)	**0.18**	J
2,6,10 Trimethyldodecane (1380)	**0.042**	J	n-Heptacosane (C27)	**0.28**	J
n-Tetradecane (C14)	**0.0047**	J	n-Octacosane (C28)	**0.21**	J
2,6,10 Trimethyltridecane (1470)	**0.0094**	J	n-Nonacosane (C29)	**0.70**	
n-Pentadecane (C15)	**0.056**	J	n-Triacontane (C30)	**0.41**	J
n-Hexadecane (C16)	**0.0094**	J	n-Hentriacontane (C31)	**0.55**	
Norpristane (1650)	**0.047**	J	n-Dotriacontane (C32)	**0.16**	J
n-Heptadecane (C17)	**0.11**	J	n-Tritriacontane (C33)	**0.27**	J
Pristane	**0.099**	J	n-Tetratriacontane (C34)	0.47	U
n-Octadecane (C18)	**0.042**	J	n-Pentatriacontane (C35)	0.47	U
Phytane	**0.26**	J	n-Hexatriacontane (C36)	0.47	U
n-Nonadecane (C19)	**0.15**	J	n-Heptatriacontane (C37)	0.47	U
n-Eicosane (C20)	**0.047**	J	n-Octatriacontane (C38)	0.47	U
n-Heneicosane (C21)	**0.10**	J	n-Tetracontane (C40)	0.47	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.8**
Total Extractable Material[2]	**420**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

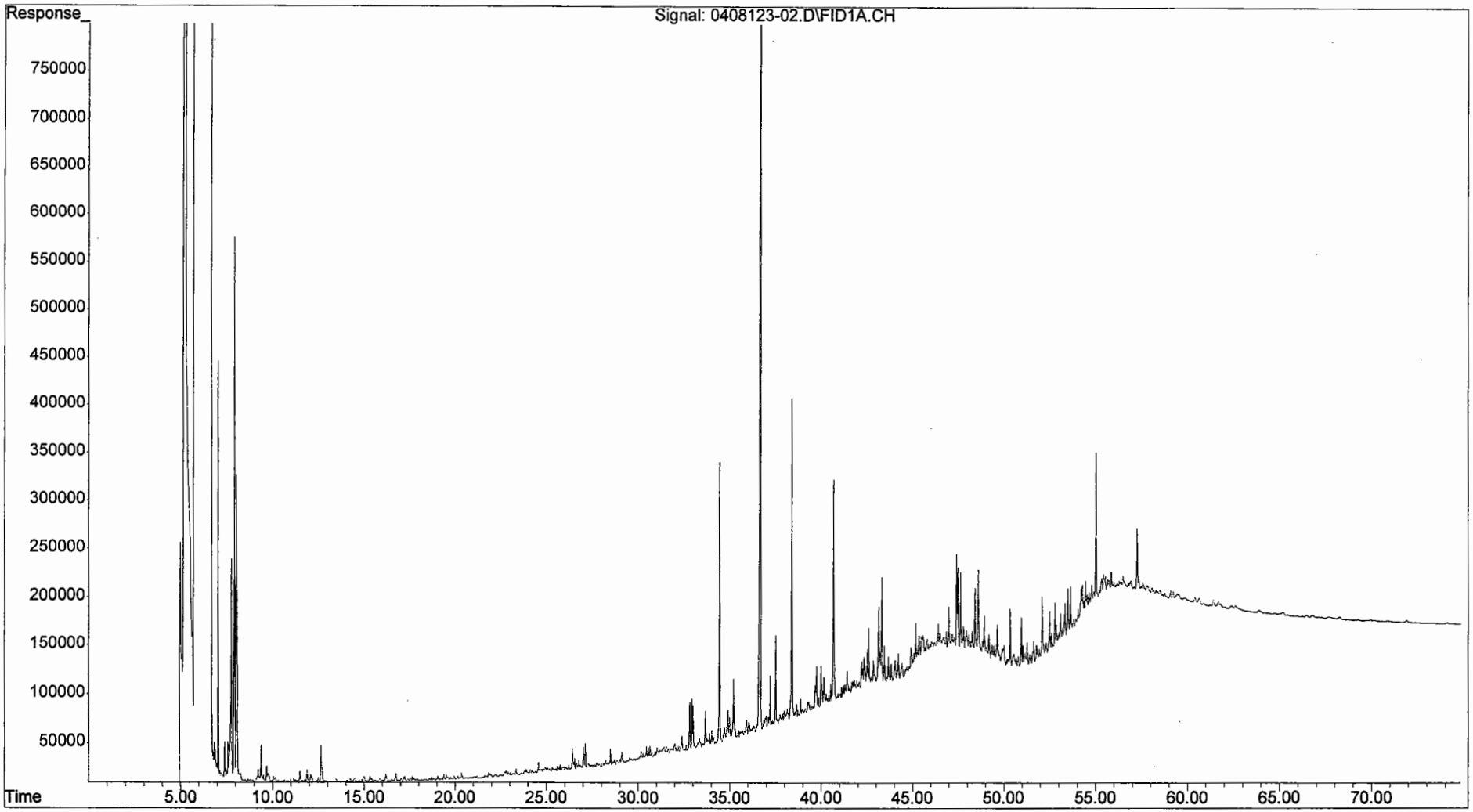
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	91	50-130
d50-Tetracosane	103	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-02.D
Operator : NLJr
Acquired : 26 Sep 2004 5:36 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-02
Misc Info : 1X
Vial Number: 24



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-03**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	42.8	30.39	8	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.33**	J	n-Docosane (C22)	0.62	U
n-Decane (C10)	0.62	U	n-Tricosane (C23)	**0.062**	J
n-Undecane (C11)	**0.018**	J	n-Tetracosane (C24)	**0.062**	J
n-Dodecane (C12)	0.62	U	n-Pentacosane (C25)	**0.18**	J
n-Tridecane (C13)	0.62	U	n-Hexacosane (C26)	**0.15**	J
2,6,10 Trimethyldodecane (1380)	**0.10**	J	n-Heptacosane (C27)	**0.20**	J
n-Tetradecane (C14)	0.62	U	n-Octacosane (C28)	**0.24**	J
2,6,10 Trimethyltridecane (1470)	**0.031**	J	n-Nonacosane (C29)	**0.55**	J
n-Pentadecane (C15)	**0.062**	J	n-Triacontane (C30)	**0.36**	J
n-Hexadecane (C16)	0.62	U	n-Hentriacontane (C31)	**0.58**	J
Norpristane (1650)	0.62	U	n-Dotriacontane (C32)	**0.14**	J
n-Heptadecane (C17)	**0.14**	J	n-Tritriacontane (C33)	**0.23**	J
Pristane	**0.11**	J	n-Tetratriacontane (C34)	0.62	U
n-Octadecane (C18)	**0.049**	J	n-Pentatriacontane (C35)	0.62	U
Phytane	**0.42**	J	n-Hexatriacontane (C36)	0.62	U
n-Nonadecane (C19)	**0.14**	J	n-Heptatriacontane (C37)	0.62	U
n-Eicosane (C20)	0.62	U	n-Octatriacontane (C38)	0.62	U
n-Heneicosane (C21)	0.62	U	n-Tetracontane (C40)	0.62	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.0**
Total Extractable Material[2]	**420**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

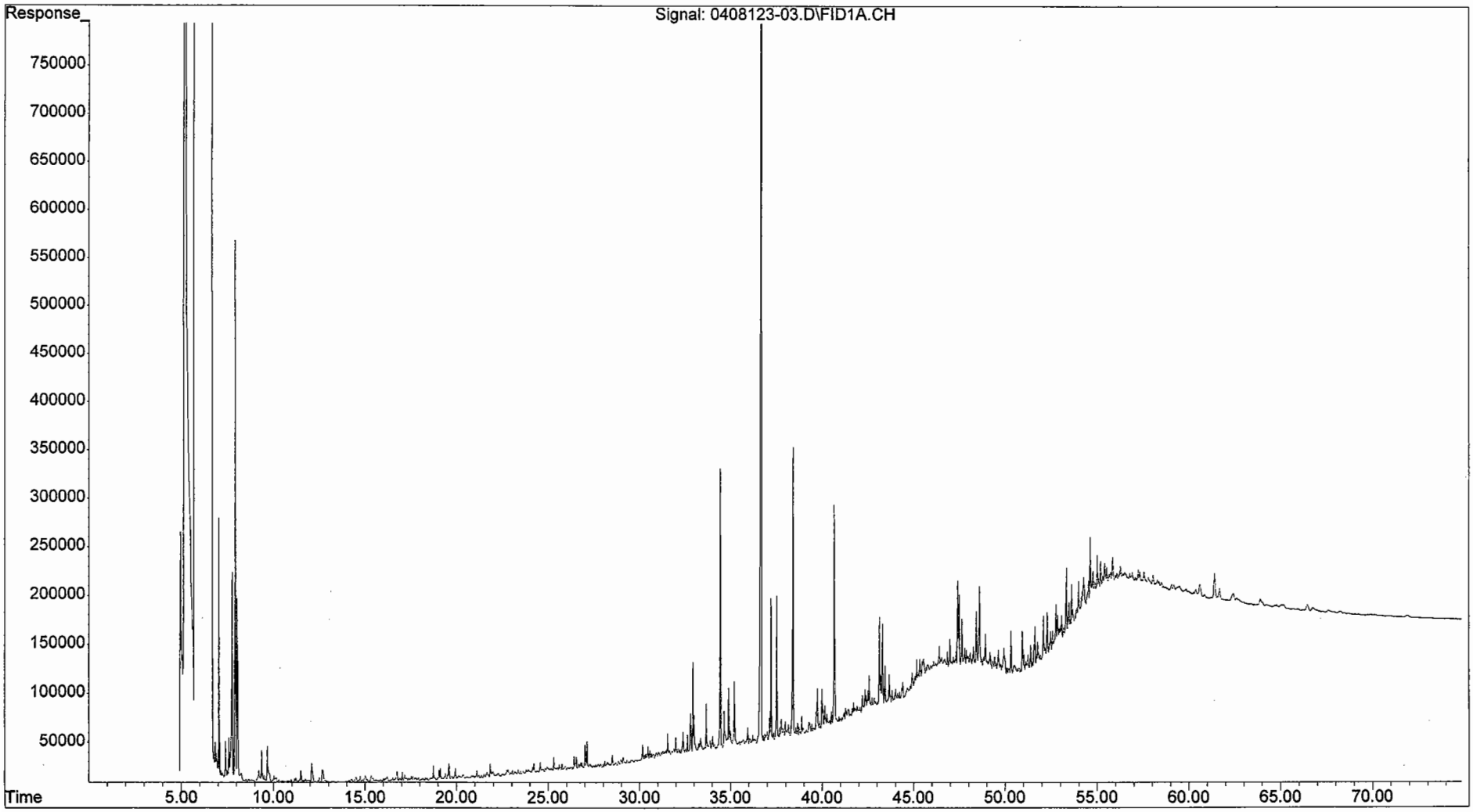
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	96	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-03.D
Operator : NLJr
Acquired : 26 Sep 2004 7:08 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-03
Misc Info : 1X
Vial Number: 25



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-103-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-04**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	48.3	30.29	20	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.72**	J	n-Docosane (C22)	**0.30**	J
n-Decane (C10)	1.4	U	n-Tricosane (C23)	**0.027**	J
n-Undecane (C11)	1.4	U	n-Tetracosane (C24)	**0.42**	J
n-Dodecane (C12)	**0.45**	J	n-Pentacosane (C25)	**1.7**	
n-Tridecane (C13)	**0.56**	J	n-Hexacosane (C26)	**0.96**	J
2,6,10 Trimethyldodecane (1380)	**0.87**	J	n-Heptacosane (C27)	**1.8**	
n-Tetradecane (C14)	**1.7**		n-Octacosane (C28)	**2.3**	
2,6,10 Trimethyltridecane (1470)	**0.70**	J	n-Nonacosane (C29)	**1.9**	
n-Pentadecane (C15)	**0.46**	J	n-Triacontane (C30)	**1.9**	
n-Hexadecane (C16)	1.4	U	n-Hentriacontane (C31)	**2.7**	
Norpristane (1650)	**0.53**	J	n-Dotriacontane (C32)	**1.4**	
n-Heptadecane (C17)	**1.5**		n-Tritriacontane (C33)	**0.71**	J
Pristane	**0.93**	J	n-Tetratriacontane (C34)	1.4	U
n-Octadecane (C18)	**1.0**	J	n-Pentatriacontane (C35)	1.4	U
Phytane	**4.7**		n-Hexatriacontane (C36)	1.4	U
n-Nonadecane (C19)	**2.9**		n-Heptatriacontane (C37)	1.4	U
n-Eicosane (C20)	**0.57**	J	n-Octatriacontane (C38)	1.4	U
n-Heneicosane (C21)	**0.97**	J	n-Tetracontane (C40)	1.4	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**33**
Total Extractable Material[2]	**3100**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

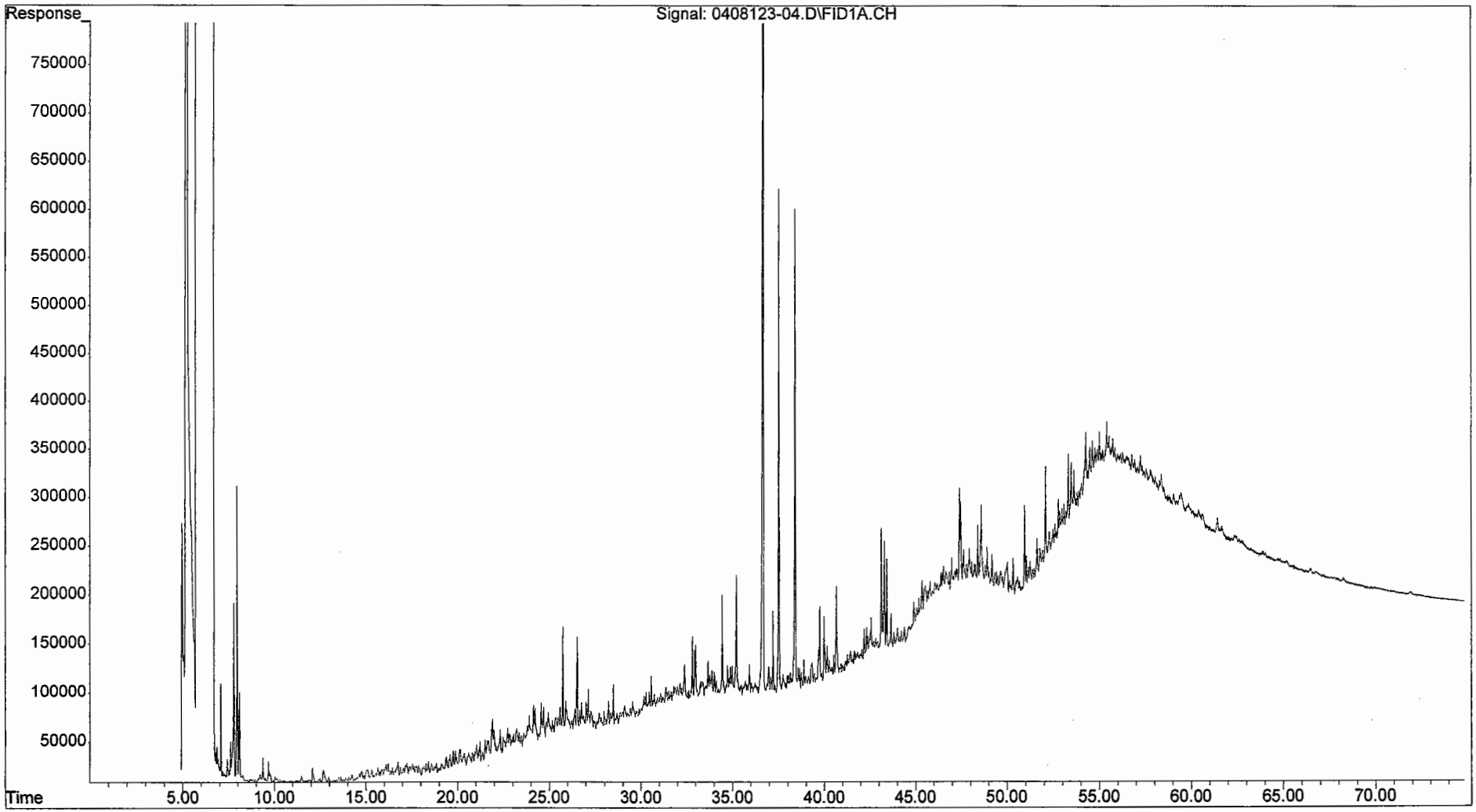
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	86	50-130
d50-Tetracosane	118	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-04.D
Operator : NLJr
Acquired : 26 Sep 2004 8:39 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-04
Misc Info : 1X
Vial Number: 26



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0006**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-05**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	33.8	30.41	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.36**	J	n-Docosane (C22)	**0.0097**	J
n-Decane (C10)	**0.0049**	J	n-Tricosane (C23)	**0.083**	J
n-Undecane (C11)	**0.0097**	J	n-Tetracosane (C24)	**0.058**	J
n-Dodecane (C12)	**0.019**	J	n-Pentacosane (C25)	**0.18**	J
n-Tridecane (C13)	**0.0049**	J	n-Hexacosane (C26)	**0.073**	J
2,6,10 Trimethyldodecane (1380)	**0.063**	J	n-Heptacosane (C27)	**0.18**	J
n-Tetradecane (C14)	**0.024**	J	n-Octacosane (C28)	0.49	U
2,6,10 Trimethyltridecane (1470)	0.49	U	n-Nonacosane (C29)	**0.40**	J
n-Pentadecane (C15)	**0.044**	J	n-Triacontane (C30)	**0.16**	J
n-Hexadecane (C16)	0.49	U	n-Hentriacontane (C31)	**0.46**	J
Norpristane (1650)	**0.019**	J	n-Dotriacontane (C32)	**0.14**	J
n-Heptadecane (C17)	**0.19**	J	n-Tritriacontane (C33)	**0.17**	J
Pristane	**0.068**	J	n-Tetratriacontane (C34)	0.49	U
n-Octadecane (C18)	**0.024**	J	n-Pentatriacontane (C35)	0.49	U
Phytane	**0.37**	J	n-Hexatriacontane (C36)	0.49	U
n-Nonadecane (C19)	**0.053**	J	n-Heptatriacontane (C37)	0.49	U
n-Eicosane (C20)	**0.019**	J	n-Octatriacontane (C38)	0.49	U
n-Heneicosane (C21)	**0.063**	J	n-Tetracontane (C40)	0.49	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**3.2**
Total Extractable Material[2]	**110**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

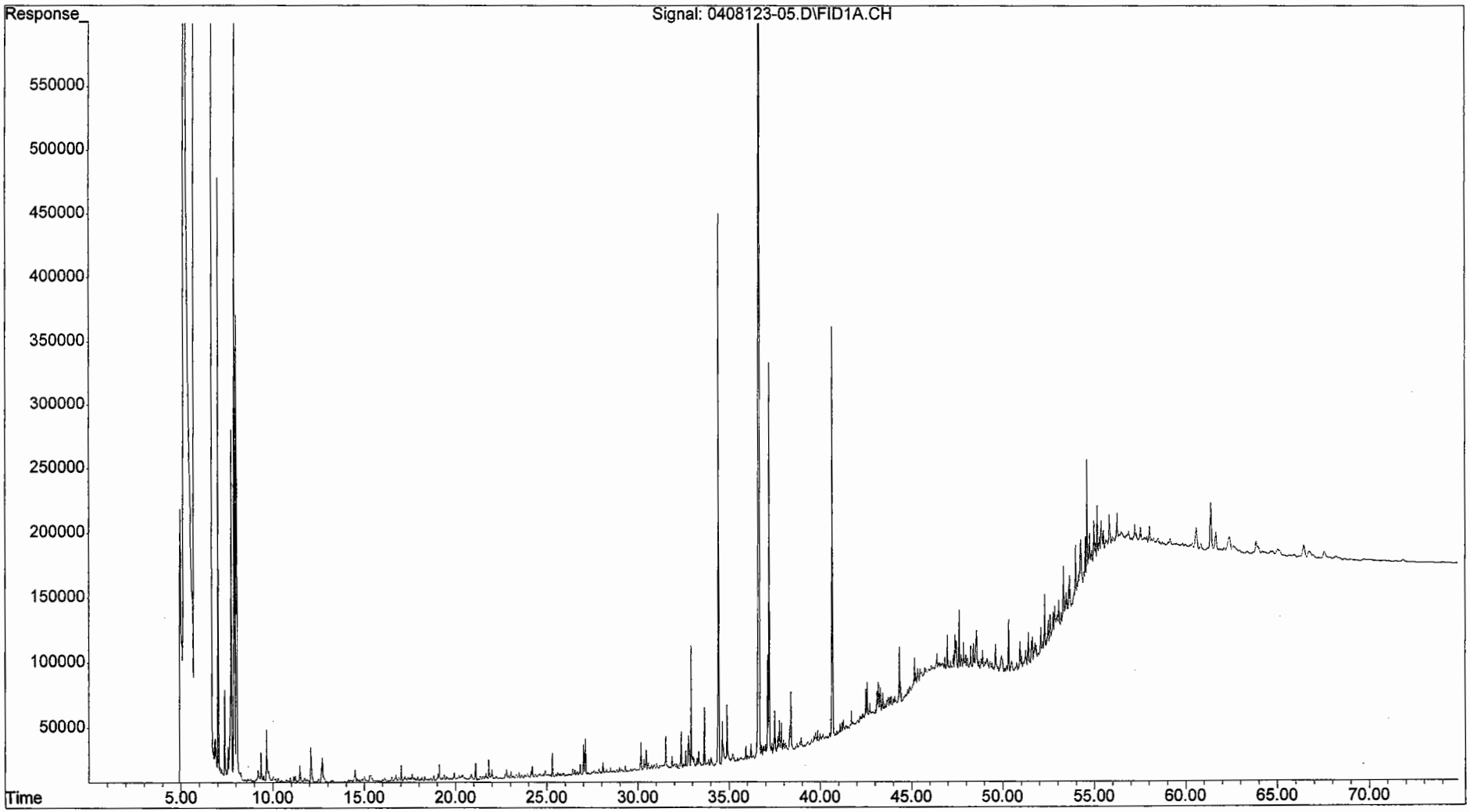
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	83	50-130
d50-Tetracosane	83	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-05.D
Operator : NLJr
Acquired : 26 Sep 2004 10:12 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-05
Misc Info : 1X
Vial Number: 27



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-104-0612**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-06**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	35.7	30.29	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.27**	J	n-Docosane (C22)	**0.014**	J
n-Decane (C10)	**0.0046**	J	n-Tricosane (C23)	**0.083**	J
n-Undecane (C11)	**0.0092**	J	n-Tetracosane (C24)	**0.079**	J
n-Dodecane (C12)	**0.0046**	J	n-Pentacosane (C25)	**0.23**	J
n-Tridecane (C13)	**0.0046**	J	n-Hexacosane (C26)	**0.14**	J
2,6,10 Trimethyldodecane (1380)	**0.046**	J	n-Heptacosane (C27)	**0.023**	J
n-Tetradecane (C14)	**0.0092**	J	n-Octacosane (C28)	**0.16**	J
2,6,10 Trimethyltridecane (1470)	**0.055**	J	n-Nonacosane (C29)	**0.44**	J
n-Pentadecane (C15)	**0.042**	J	n-Triacontane (C30)	0.46	U
n-Hexadecane (C16)	**0.0046**	J	n-Hentriacontane (C31)	0.46	U
Norpristane (1650)	0.46	U	n-Dotriacontane (C32)	0.46	U
n-Heptadecane (C17)	**0.11**	J	n-Tritriacontane (C33)	0.46	U
Pristane	**0.088**	J	n-Tetratriacontane (C34)	0.46	U
n-Octadecane (C18)	**0.037**	J	n-Pentatriacontane (C35)	0.46	U
Phytane	**0.41**	J	n-Hexatriacontane (C36)	0.46	U
n-Nonadecane (C19)	**0.074**	J	n-Heptatriacontane (C37)	0.46	U
n-Eicosane (C20)	0.46	U	n-Octatriacontane (C38)	0.46	U
n-Heneicosane (C21)	0.46	U	n-Tetracontane (C40)	0.46	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.2**
Total Extractable Material[2]	**190**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

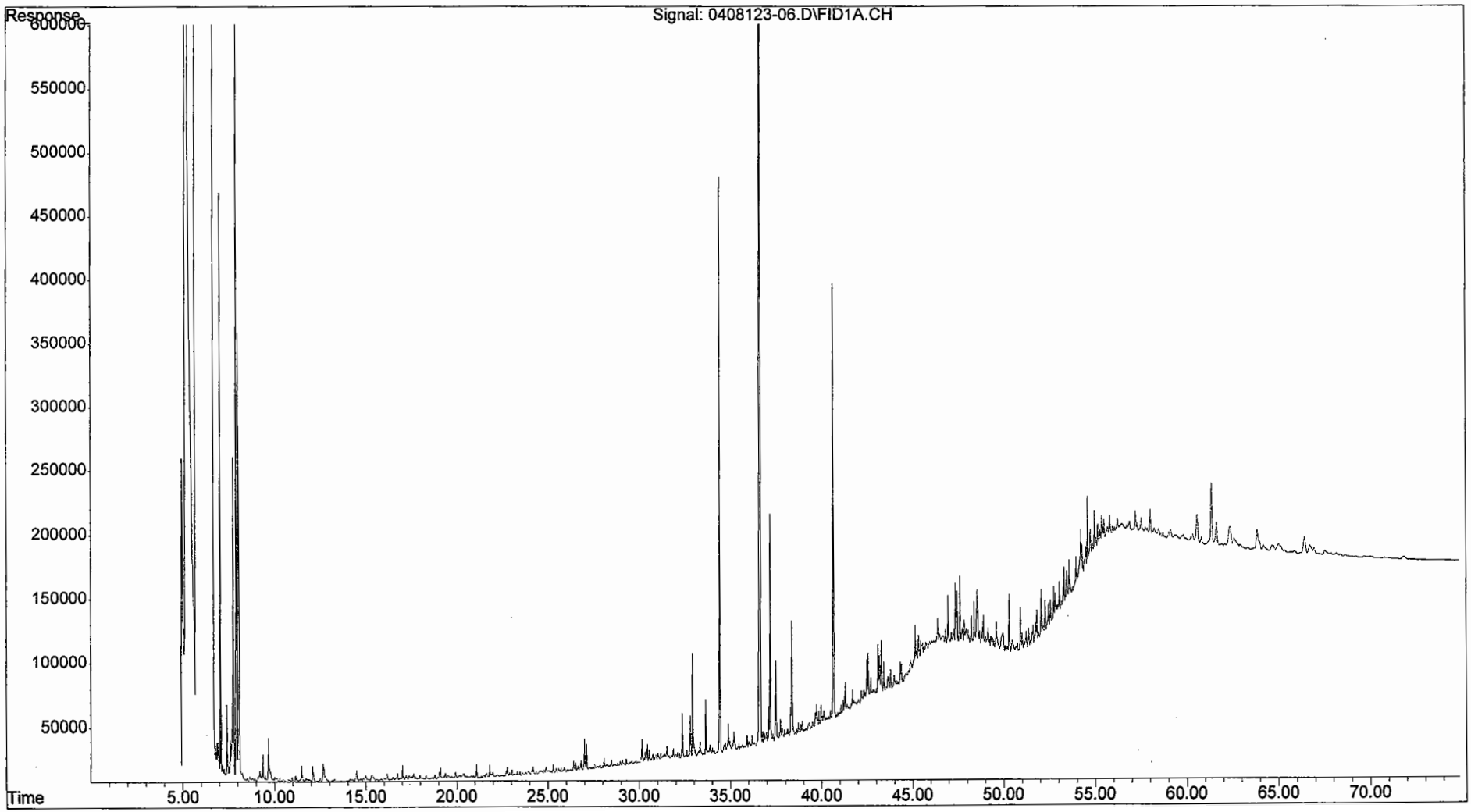
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	83	50-130
d50-Tetracosane	84	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-06.D
Operator : NLJr
Acquired : 26 Sep 2004 11:43 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-06
Misc Info : 1X
Vial Number: 28



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-02-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-07**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	30.3	30.28	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.23**	J	n-Docosane (C22)	**0.013**	J
n-Decane (C10)	**0.0044**	J	n-Tricosane (C23)	**0.048**	J
n-Undecane (C11)	**0.0087**	J	n-Tetracosane (C24)	**0.065**	J
n-Dodecane (C12)	**0.017**	J	n-Pentacosane (C25)	**0.18**	J
n-Tridecane (C13)	**0.0087**	J	n-Hexacosane (C26)	**0.087**	J
2,6,10 Trimethyldodecane (1380)	0.44	U	n-Heptacosane (C27)	**0.087**	J
n-Tetradecane (C14)	**0.031**	J	n-Octacosane (C28)	**0.11**	J
2,6,10 Trimethyltridecane (1470)	0.44	U	n-Nonacosane (C29)	**0.35**	J
n-Pentadecane (C15)	**0.061**	J	n-Triacontane (C30)	0.44	U
n-Hexadecane (C16)	**0.031**	J	n-Hentriacontane (C31)	0.44	U
Norpristane (1650)	0.44	U	n-Dotriacontane (C32)	0.44	U
n-Heptadecane (C17)	**0.20**	J	n-Tritriacontane (C33)	0.44	U
Pristane	**0.092**	J	n-Tetratriacontane (C34)	0.44	U
n-Octadecane (C18)	**0.031**	J	n-Pentatriacontane (C35)	0.44	U
Phytane	**0.41**	J	n-Hexatriacontane (C36)	0.44	U
n-Nonadecane (C19)	**0.031**	J	n-Heptatriacontane (C37)	0.44	U
n-Eicosane (C20)	**0.013**	J	n-Octatriacontane (C38)	0.44	U
n-Heneicosane (C21)	**0.031**	J	n-Tetracontane (C40)	0.44	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.1**
Total Extractable Material[2]	**84**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

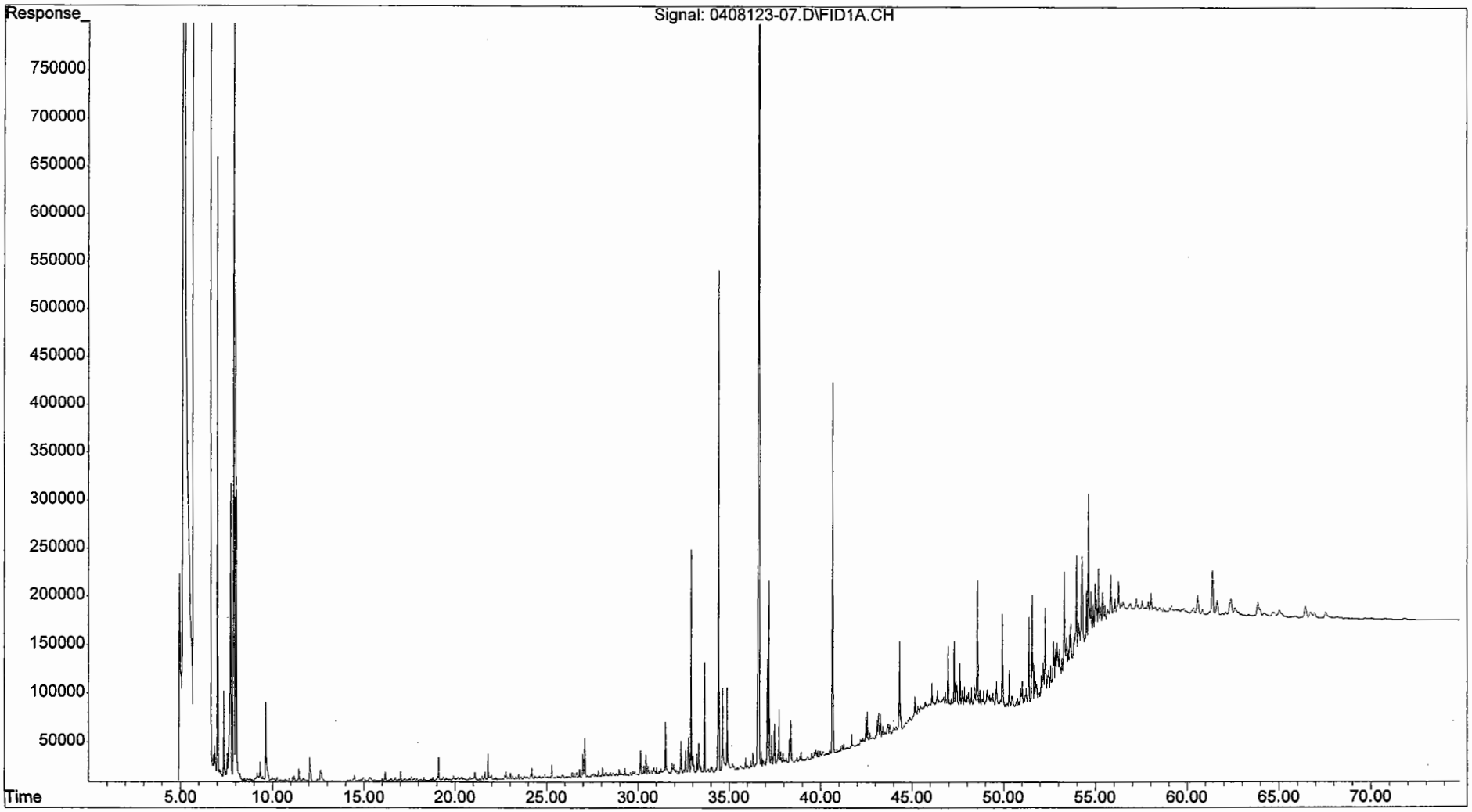
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	80	50-130
d50-Tetracosane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-07.D
Operator : NLJr
Acquired : 26 Sep 2004 1:07 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-07
Misc Info : 1X
Vial Number: 29



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP01-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-08**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	30.5	30.96	2.5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.16**	J	n-Docosane (C22)	**0.013**	J
n-Decane (C10)	**0.0053**	J	n-Tricosane (C23)	**0.040**	J
n-Undecane (C11)	**0.0079**	J	n-Tetracosane (C24)	**0.040**	J
n-Dodecane (C12)	**0.024**	J	n-Pentacosane (C25)	**0.16**	J
n-Tridecane (C13)	**0.0053**	J	n-Hexacosane (C26)	**0.077**	J
2,6,10 Trimethyldodecane (1380)	**0.045**	J	n-Heptacosane (C27)	**0.12**	J
n-Tetradecane (C14)	**0.024**	J	n-Octacosane (C28)	**0.079**	J
2,6,10 Trimethyltridecane (1470)	**0.024**	J	n-Nonacosane (C29)	**0.26**	J
n-Pentadecane (C15)	**0.048**	J	n-Triacontane (C30)	**0.11**	J
n-Hexadecane (C16)	**0.034**	J	n-Hentriacontane (C31)	**0.32**	
Norpristane (1650)	**0.021**	J	n-Dotriacontane (C32)	**0.095**	J
n-Heptadecane (C17)	**0.15**	J	n-Tritriacontane (C33)	**0.12**	J
Pristane	**0.079**	J	n-Tetratriacontane (C34)	0.26	U
n-Octadecane (C18)	**0.024**	J	n-Pentatriacontane (C35)	**0.10**	J
Phytane	**0.34**		n-Hexatriacontane (C36)	0.26	U
n-Nonadecane (C19)	**0.021**	J	n-Heptatriacontane (C37)	0.26	U
n-Eicosane (C20)	**0.011**	J	n-Octatriacontane (C38)	0.26	U
n-Heneicosane (C21)	**0.024**	J	n-Tetracontane (C40)	0.26	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.5**
Total Extractable Material[2]	**76**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

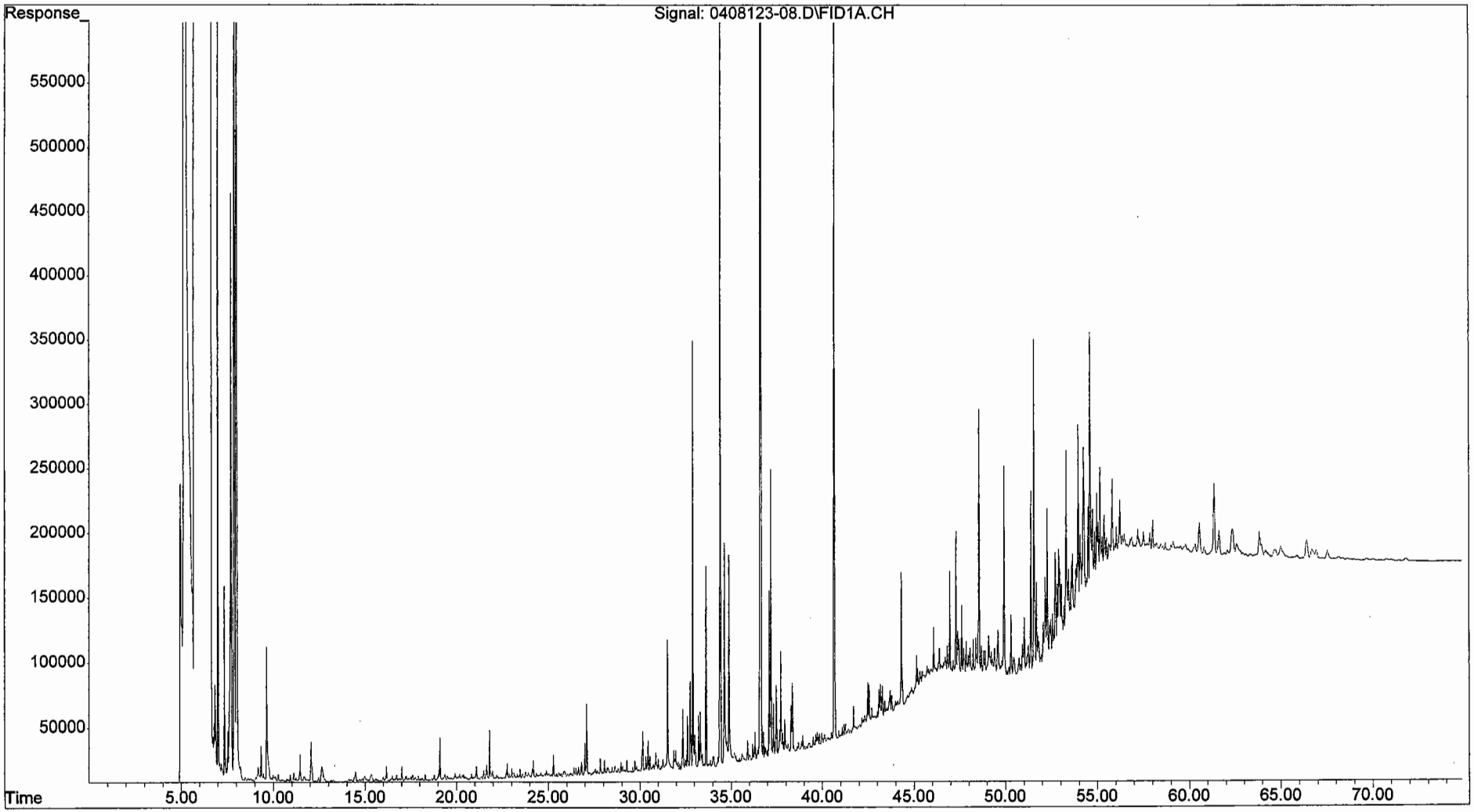
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	82	50-130
d50-Tetracosane	81	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-08.D
Operator : NLJr
Acquired : 26 Sep 2004 6:44 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-08
Misc Info : 1X
Vial Number: 33



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-28-082504**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-09**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	33.9	30.96	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.26**	J	n-Docosane (C22)	**0.027**	J
n-Decane (C10)	**0.0038**	J	n-Tricosane (C23)	**0.069**	J
n-Undecane (C11)	**0.0076**	J	n-Tetracosane (C24)	**0.092**	J
n-Dodecane (C12)	**0.034**	J	n-Pentacosane (C25)	**0.18**	J
n-Tridecane (C13)	**0.0076**	J	n-Hexacosane (C26)	**0.10**	J
2,6,10 Trimethyldodecane (1380)	**0.061**	J	n-Heptacosane (C27)	**0.18**	J
n-Tetradecane (C14)	**0.027**	J	n-Octacosane (C28)	**0.12**	J
2,6,10 Trimethyltridecane (1470)	**0.034**	J	n-Nonacosane (C29)	**0.39**	
n-Pentadecane (C15)	**0.050**	J	n-Triacontane (C30)	**0.18**	J
n-Hexadecane (C16)	**0.027**	J	n-Hentriacontane (C31)	**0.43**	
Norpristane (1650)	**0.015**	J	n-Dotriacontane (C32)	**0.080**	J
n-Heptadecane (C17)	**0.18**	J	n-Tritriacontane (C33)	0.38	U
Pristane	**0.088**	J	n-Tetratriacontane (C34)	0.38	U
n-Octadecane (C18)	**0.027**	J	n-Pentatriacontane (C35)	0.38	U
Phytane	**0.41**		n-Hexatriacontane (C36)	0.38	U
n-Nonadecane (C19)	**0.038**	J	n-Heptatriacontane (C37)	0.38	U
n-Eicosane (C20)	**0.019**	J	n-Octatriacontane (C38)	0.38	U
n-Heneicosane (C21)	**0.038**	J	n-Tetracontane (C40)	0.38	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**3.1**
Total Extractable Material[2]	**110**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	80	50-130
d50-Tetracosane	81	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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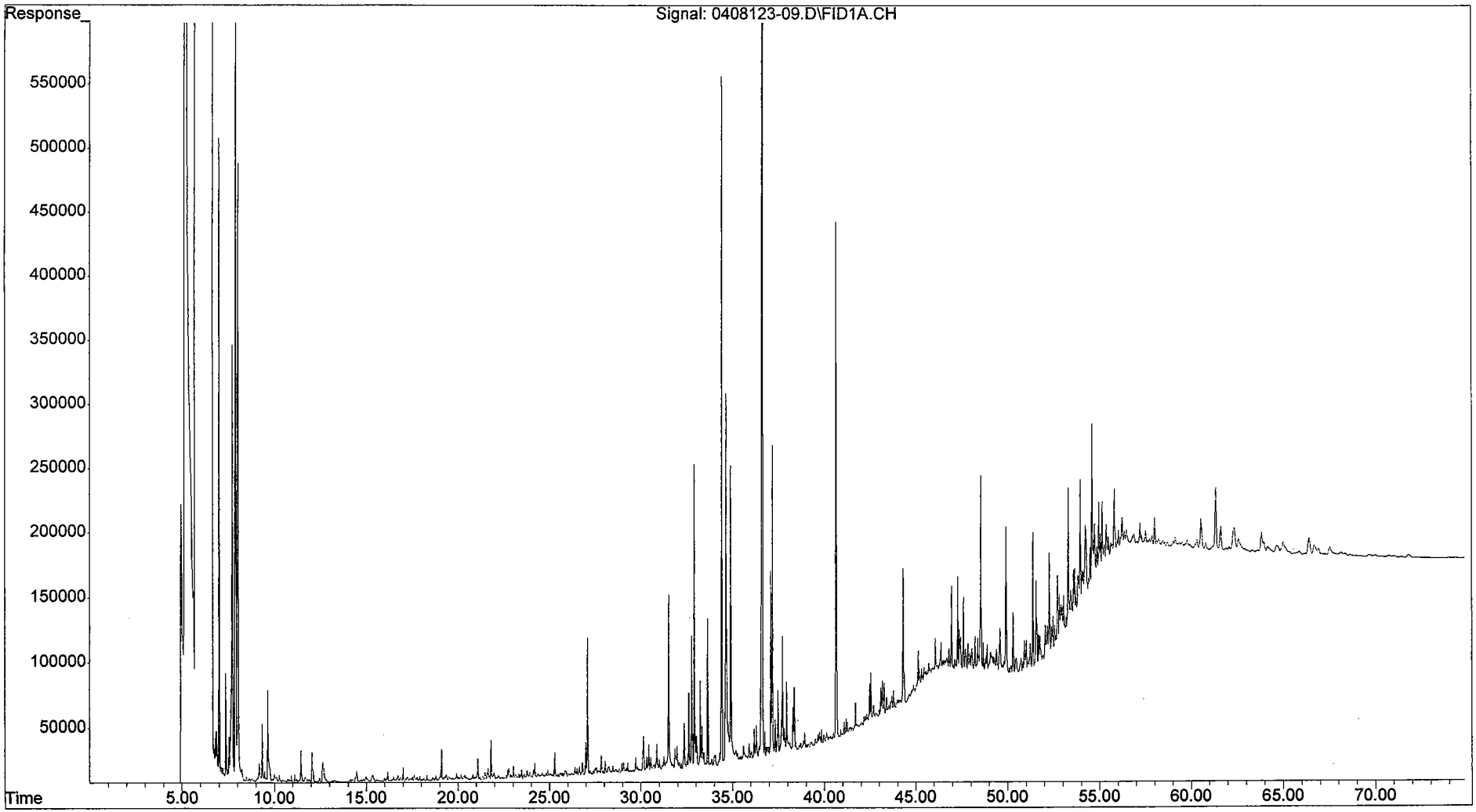
File :O:\Organics\DATA\PAH2\SEPT24\0408123-09.D
Operator : NLJr
Acquired : 26 Sep 2004 8:07 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-09
Misc Info : 1X
Vial Number: 34



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-06-082504**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-10**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/25/04	08/31/04	09/07/04	09/26/04	44.7	30.20	8	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.30**	J	n-Docosane (C22)	**0.74**	
n-Decane (C10)	**0.012**	J	n-Tricosane (C23)	0.59	U
n-Undecane (C11)	**0.024**	J	n-Tetracosane (C24)	0.59	U
n-Dodecane (C12)	**0.041**	J	n-Pentacosane (C25)	0.59	U
n-Tridecane (C13)	**0.0059**	J	n-Hexacosane (C26)	0.59	U
2,6,10 Trimethyldodecane (1380)	**0.14**	J	n-Heptacosane (C27)	0.59	U
n-Tetradecane (C14)	**0.43**	J	n-Octacosane (C28)	0.59	U
2,6,10 Trimethyltridecane (1470)	**0.053**	J	n-Nonacosane (C29)	0.59	U
n-Pentadecane (C15)	**0.23**	J	n-Triacontane (C30)	0.59	U
n-Hexadecane (C16)	**0.11**	J	n-Hentriacontane (C31)	0.59	U
Norpristane (1650)	0.59	U	n-Dotriacontane (C32)	0.59	U
n-Heptadecane (C17)	**0.21**	J	n-Tritriacontane (C33)	0.59	U
Pristane	**0.077**	J	n-Tetratriacontane (C34)	0.59	U
n-Octadecane (C18)	**0.053**	J	n-Pentatriacontane (C35)	0.59	U
Phytane	**0.43**	J	n-Hexatriacontane (C36)	0.59	U
n-Nonadecane (C19)	**0.13**	J	n-Heptatriacontane (C37)	0.59	U
n-Eicosane (C20)	0.59	U	n-Octatriacontane (C38)	0.59	U
n-Heneicosane (C21)	**0.071**	J	n-Tetracontane (C40)	0.59	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.9**
Total Extractable Material[2]	**1300**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

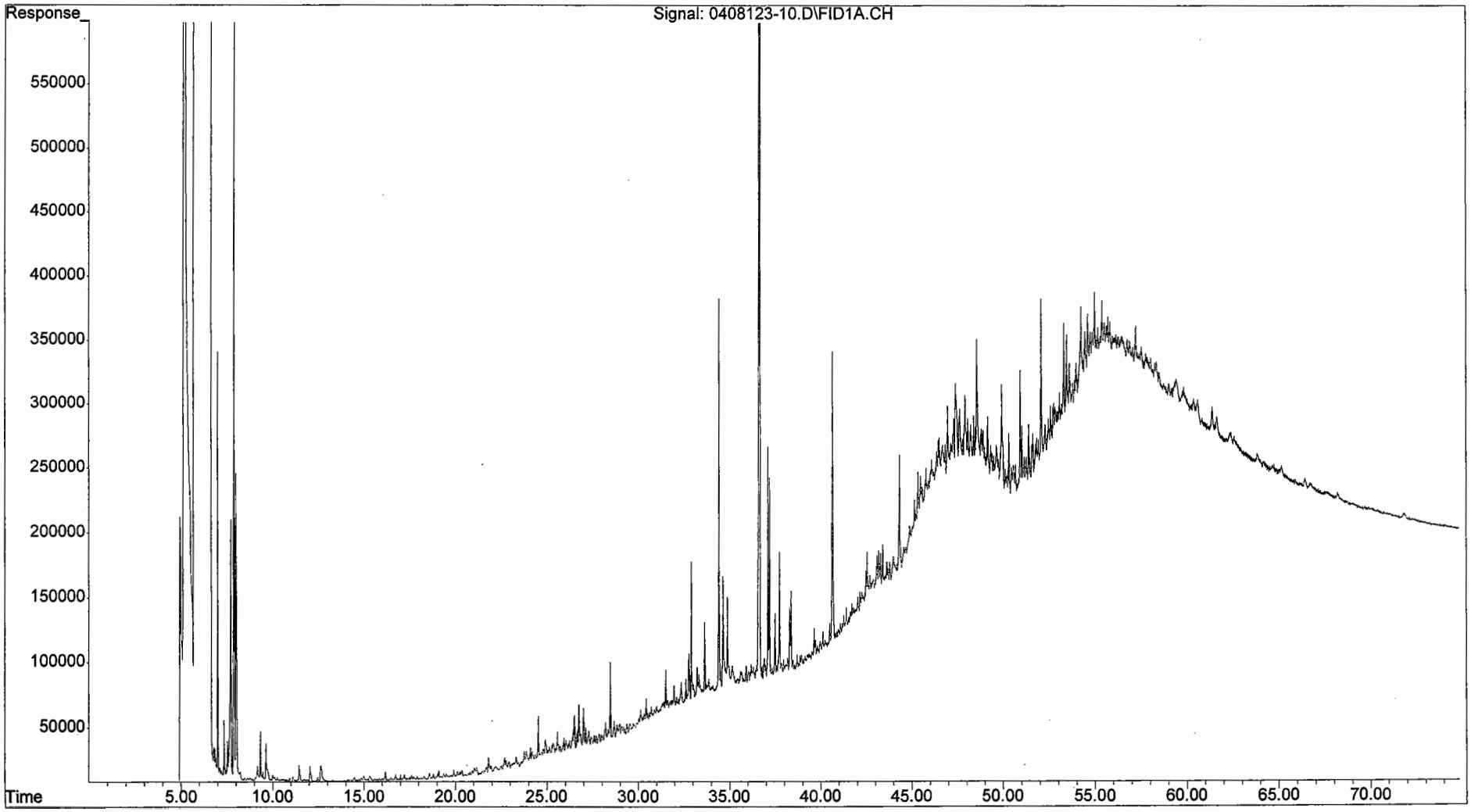
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	91	50-130
d50-Tetracosane	96	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-10.D
Operator : NLJr
Acquired : 26 Sep 2004 9:32 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-10
Misc Info : 1X
Vial Number: 35



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/26/04	83.6	30.75	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.073**	J	n-Docosane (C22)	**0.011**	J
n-Decane (C10)	**0.011**	J	n-Tricosane (C23)	**0.014**	J
n-Undecane (C11)	**0.0016**	J	n-Tetracosane (C24)	**0.020**	J
n-Dodecane (C12)	0.16	U	n-Pentacosane (C25)	**0.019**	J
n-Tridecane (C13)	**0.0031**	J	n-Hexacosane (C26)	**0.031**	J
2,6,10 Trimethyldodecane (1380)	**0.012**	J	n-Heptacosane (C27)	**0.025**	J
n-Tetradecane (C14)	**0.011**	J	n-Octacosane (C28)	**0.025**	J
2,6,10 Trimethyltridecane (1470)	**0.047**	J	n-Nonacosane (C29)	**0.044**	J
n-Pentadecane (C15)	**0.022**	J	n-Triacontane (C30)	**0.040**	J
n-Hexadecane (C16)	**0.0062**	J	n-Hentriacontane (C31)	**0.070**	J
Norpristane (1650)	**0.011**	J	n-Dotriacontane (C32)	0.16	U
n-Heptadecane (C17)	**0.092**	J	n-Tritriacontane (C33)	**0.031**	J
Pristane	**0.034**	J	n-Tetratriacontane (C34)	0.16	U
n-Octadecane (C18)	**0.014**	J	n-Pentatriacontane (C35)	0.16	U
Phytane	**0.073**	J	n-Hexatriacontane (C36)	0.16	U
n-Nonadecane (C19)	**0.016**	J	n-Heptatriacontane (C37)	0.16	U
n-Eicosane (C20)	**0.011**	J	n-Octatriacontane (C38)	0.16	U
n-Heneicosane (C21)	**0.0093**	J	n-Tetracontane (C40)	0.16	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.71**
Total Extractable Material[2]	**52**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

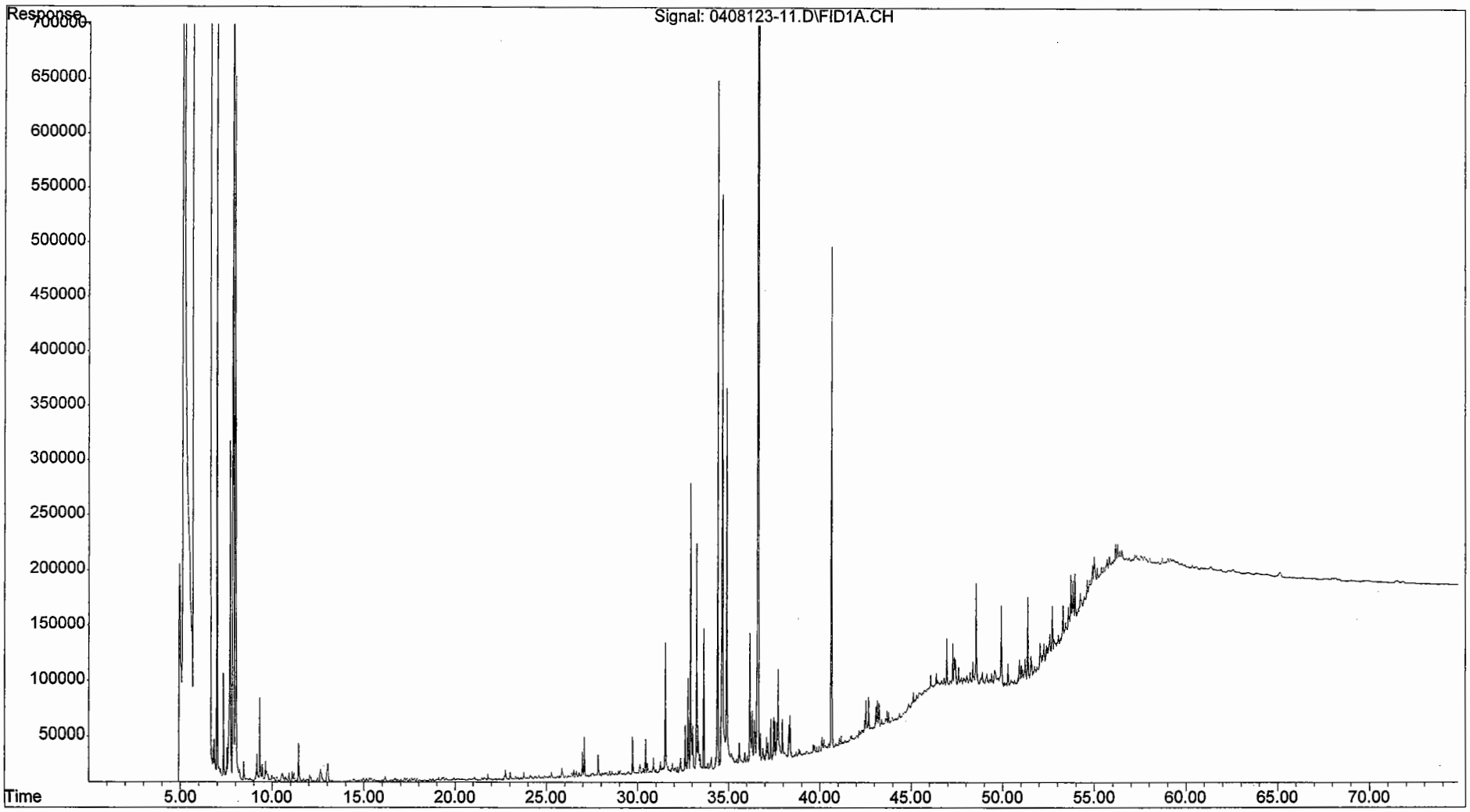
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	90	50-130
d50-Tetracosane	88	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-11.D
Operator : NLJr
Acquired : 26 Sep 2004 10:56 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-11
Misc Info : 1X
Vial Number: 36



Form I
Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 D**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	83.6	30.31	2.5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.044**	J	n-Docosane (C22)	**0.0069**	J
n-Decane (C10)	**0.0089**	J	n-Tricosane (C23)	**0.012**	J
n-Undecane (C11)	**0.0020**	J	n-Tetracosane (C24)	**0.015**	J
n-Dodecane (C12)	0.099	U	n-Pentacosane (C25)	**0.018**	J
n-Tridecane (C13)	**0.0020**	J	n-Hexacosane (C26)	**0.024**	J
2,6,10 Trimethyldodecane (1380)	**0.0099**	J	n-Heptacosane (C27)	**0.025**	J
n-Tetradecane (C14)	**0.0069**	J	n-Octacosane (C28)	**0.021**	J
2,6,10 Trimethyltridecane (1470)	**0.041**	J	n-Nonacosane (C29)	**0.043**	J
n-Pentadecane (C15)	**0.015**	J	n-Triacontane (C30)	**0.023**	J
n-Hexadecane (C16)	**0.011**	J	n-Hentriacontane (C31)	**0.068**	J
Norpristane (1650)	**0.0069**	J	n-Dotriacontane (C32)	0.099	U
n-Heptadecane (C17)	**0.084**	J	n-Tritriacontane (C33)	**0.033**	J
Pristane	**0.026**	J	n-Tetratriacontane (C34)	0.099	U
n-Octadecane (C18)	**0.011**	J	n-Pentatriacontane (C35)	0.099	U
Phytane	**0.070**	J	n-Hexatriacontane (C36)	0.099	U
n-Nonadecane (C19)	**0.013**	J	n-Heptatriacontane (C37)	0.099	U
n-Eicosane (C20)	**0.0079**	J	n-Octatriacontane (C38)	0.099	U
n-Heneicosane (C21)	**0.0069**	J	n-Tetracontane (C40)	0.099	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.59**
Total Extractable Material[2]	**47**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

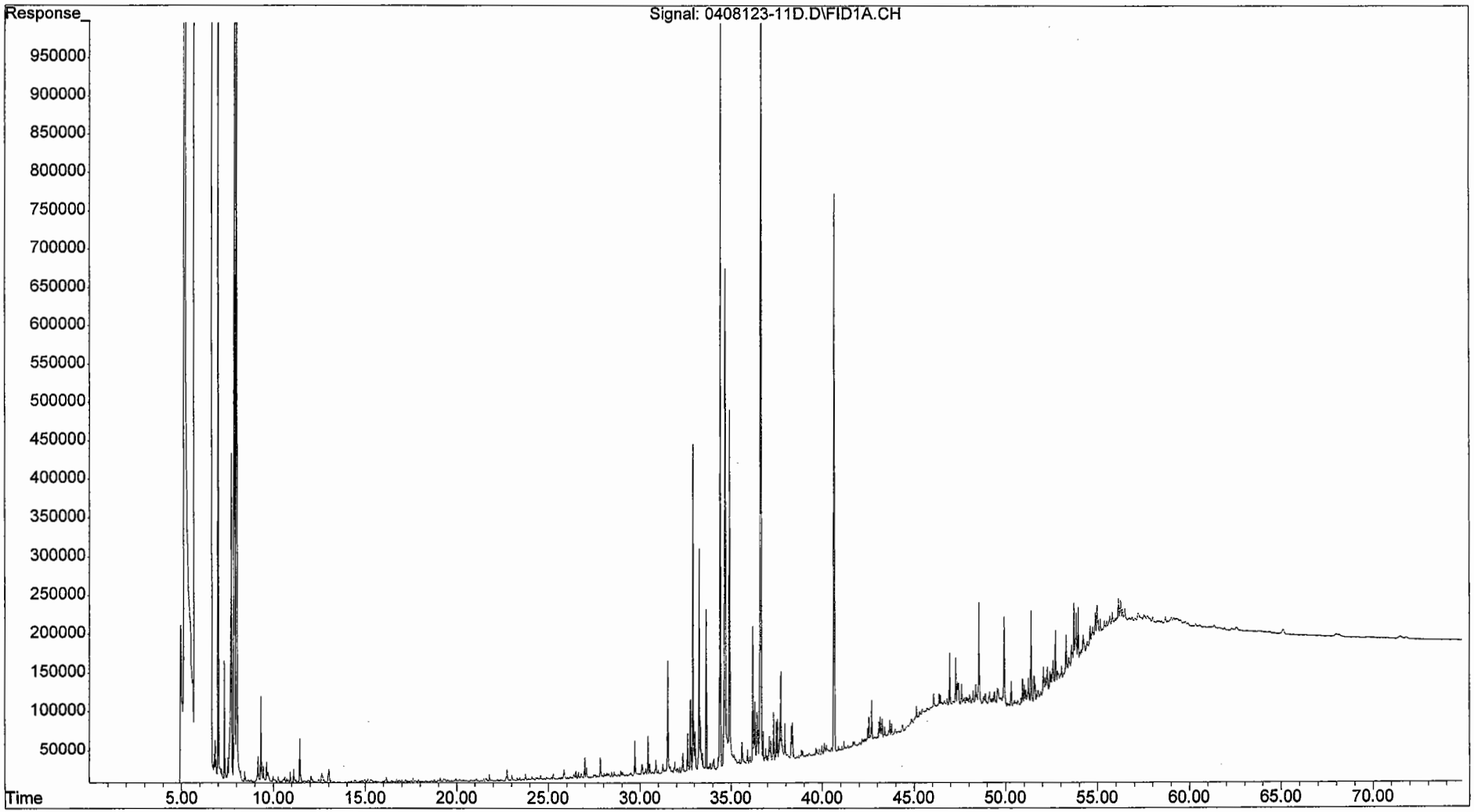
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	86	50-130
d50-Tetracosane	84	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-11D.D
Operator : NLJr
Acquired : 27 Sep 2004 12:20 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-11D
Misc Info : 1X
Vial Number: 37



Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	NLJr

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
n-Nonane (C9)	**0.073** J	**0.044** J	49[a]	30
n-Decane (C10)	**0.011** J	**0.0089** J	20	30
n-Undecane (C11)	**0.0016** J	**0.0020** J	24	30
n-Dodecane (C12)	0.16 U	0.099 U	N/A	30
n-Tridecane (C13)	**0.0031** J	**0.0020** J	45[a]	30
2,6,10 Trimethyldodecane (1380)	**0.012** J	**0.0099** J	23	30
n-Tetradecane (C14)	**0.011** J	**0.0069** J	45[a]	30
2,6,10 Trimethyltridecane (1470)	**0.047** J	**0.041** J	12	30
n-Pentadecane (C15)	**0.022** J	**0.015** J	38[a]	30
n-Hexadecane (C16)	**0.0062** J	**0.011** J	54[a]	30
Norpristane (1650)	**0.011** J	**0.0069** J	45[a]	30
n-Heptadecane (C17)	**0.092** J	**0.084** J	9	30
Pristane	**0.034** J	**0.026** J	29	30
n-Octadecane (C18)	**0.014** J	**0.011** J	25	30
Phytane	**0.073** J	**0.070** J	4	30
n-Nonadecane (C19)	**0.016** J	**0.013** J	19	30
n-Eicosane (C20)	**0.011** J	**0.0079** J	32[a]	30
n-Heneicosane (C21)	**0.0093** J	0.0069 J	30	30
n-Docosane (C22)	**0.011** J	0.0069 J	45[a]	30
n-Tricosane (C23)	**0.014** J	**0.012** J	17	30
n-Tetracosane (C24)	**0.020** J	**0.015** J	31[a]	30
n-Pentacosane (C25)	**0.019** J	**0.018** J	5	30
n-Hexacosane (C26)	**0.031** J	**0.024** J	27	30
n-Heptacosane (C27)	**0.025** J	**0.025** J	1	30
n-Octacosane (C28)	**0.025** J	**0.021** J	18	30
n-Nonacosane (C29)	**0.044** J	**0.043** J	0	30
n-Triacontane (C30)	**0.040** J	**0.023** J	56[a]	30
n-Hentriacontane (C31)	**0.070** J	**0.068** J	3	30
n-Dotriacontane (C32)	0.16 U	0.099 U	N/A	30
n-Tritriacontane (C33)	**0.031** J	**0.033** J	5	30
n-Tetratriacontane (C34)	0.16 U	0.099 U	N/A	30
n-Pentatriacontane (C35)	0.16 U	0.099 U	N/A	30
n-Hexatriacontane (C36)	0.16 U	0.099 U	N/A	30
n-Heptatriacontane (C37)	0.16 U	0.099 U	N/A	30
n-Octatriacontane (C38)	0.16 U	0.099 U	N/A	30

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.
N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:52

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	NLJr

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
n-Tetracontane (C40)	0.16 U	0.099 U	N/A	30
Total Saturated Hydrocarbons [1]	**0.71**	**0.59**	17	30
Total Extractable Material[2]	**52**	**47**	10	30

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery		Acceptance Range (%)
ortho-Terphenyl	90	86	50-130
d50-Tetracosane	88	84	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

310

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/07/04 11:52

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Matrix Spike
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 M**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	83.6	30.28	2.5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**1.3**	S	n-Docosane (C22)	**1.8**	S
n-Decane (C10)	**1.4**	S	n-Tricosane (C23)	0.099	U
n-Undecane (C11)	0.099	U	n-Tetracosane (C24)	**2.0**	S
n-Dodecane (C12)	**1.6**	S	n-Pentacosane (C25)	0.099	U
n-Tridecane (C13)	0.099	U	n-Hexacosane (C26)	**1.8**	S
2,6,10 Trimethyldodecane (1380)	0.099	U	n-Heptacosane (C27)	0.099	U
n-Tetradecane (C14)	**1.6**	S	n-Octacosane (C28)	**1.9**	S
2,6,10 Trimethyltridecane (1470)	0.099	U	n-Nonacosane (C29)	0.099	U
n-Pentadecane (C15)	0.099	U	n-Triacontane (C30)	**1.9**	S
n-Hexadecane (C16)	**1.7**	S	n-Hentriacontane (C31)	0.099	U
Norpristane (1650)	0.099	U	n-Dotriacontane (C32)	0.099	U
n-Heptadecane (C17)	0.099	U	n-Tritriacontane (C33)	**0.11**	
Pristane	0.099	U	n-Tetratriacontane (C34)	0.099	U
n-Octadecane (C18)	**1.8**	S	n-Pentatriacontane (C35)	0.099	U
Phytane	0.099	U	n-Hexatriacontane (C36)	**1.8**	S
n-Nonadecane (C19)	**1.8**	S	n-Heptatriacontane (C37)	0.099	U
n-Eicosane (C20)	**1.8**	S	n-Octatriacontane (C38)	0.099	U
n-Heneicosane (C21)	0.099	U	n-Tetracontane (C40)	0.099	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**25**
Total Extractable Material[2]	**72**

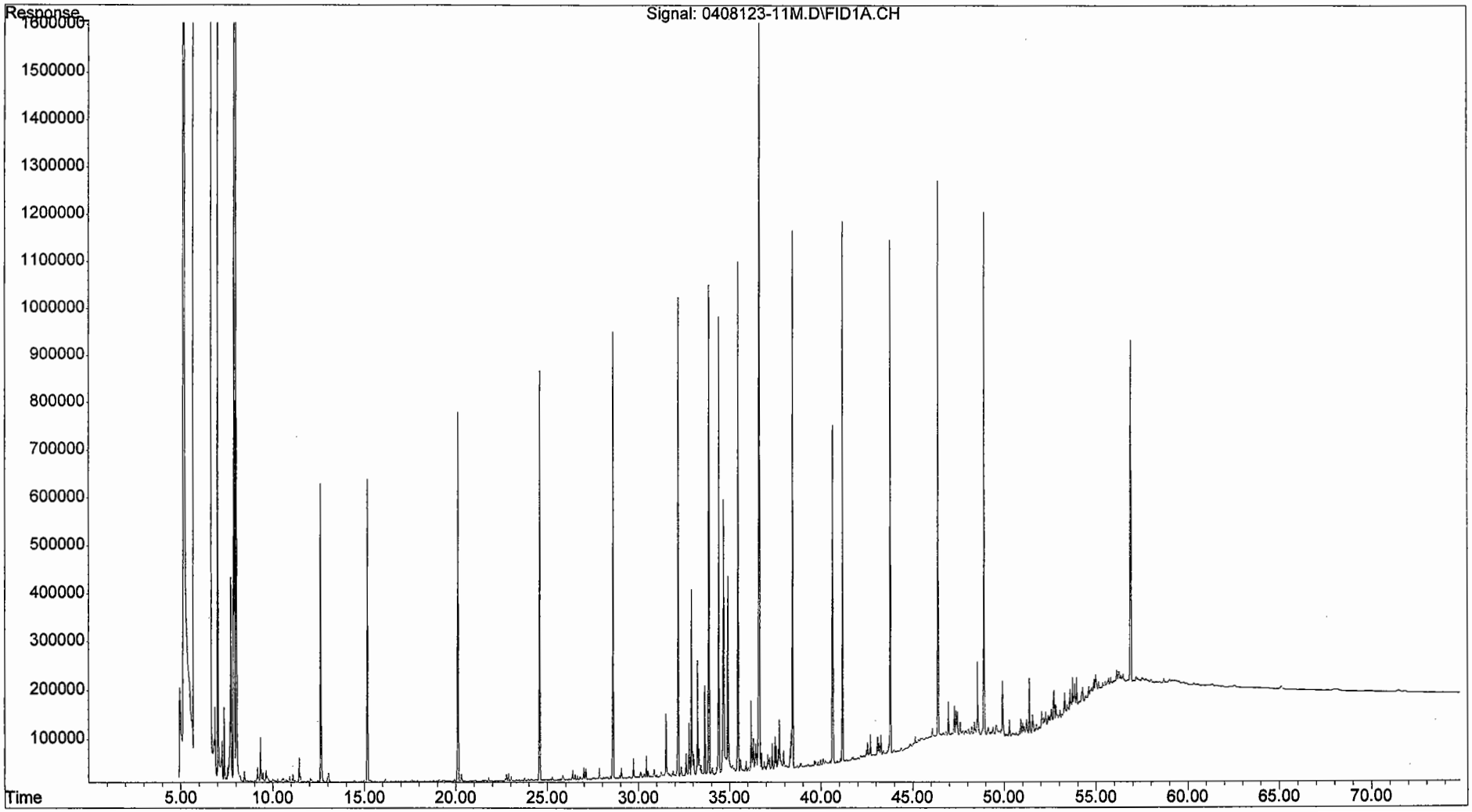
[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408123-11M.D
Operator : NLJr
Acquired : 27 Sep 2004 1:43 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-11M
Misc Info : 1X
Vial Number: 38



Form III
Spike Recovery Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-09-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **See Below**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	83.6	NLJr

Parameter	Sample Conc. (0408123-11)	Matrix Spike Conc. (0408123-11)	Matrix Spike % Recovery	% Recovery Limits
n-Nonane (C9)	0.073	1.3	62	50-130
n-Decane (C10)	0.011	1.4	70	50-130
n-Dodecane (C12)	0.16 U	1.6	78	50-130
n-Tetradecane (C14)	0.011	1.6	83	50-130
n-Hexadecane (C16)	0.0062	1.7	88	50-130
n-Octadecane (C18)	0.014	1.8	88	50-130
n-Nonadecane (C19)	0.016	1.8	90	50-130
n-Eicosane (C20)	0.011	1.8	92	50-130
n-Docosane (C22)	0.011	1.8	91	50-130
n-Tetracosane (C24)	0.020	2.0	98	50-130
n-Hexacosane (C26)	0.031	1.8	91	50-130
n-Octacosane (C28)	0.025	1.9	95	50-130
n-Triacontane (C30)	0.040	1.9	95	50-130
n-Hexatriacontane (C36)	0.16 U	1.8	90	50-130

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 16:34

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Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-12**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	48.5	30.44	10	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.39**	J	n-Docosane (C22)	0.68	U
n-Decane (C10)	**0.0068**	J	n-Tricosane (C23)	**0.088**	J
n-Undecane (C11)	**0.014**	J	n-Tetracosane (C24)	**0.061**	J
n-Dodecane (C12)	**0.027**	J	n-Pentacosane (C25)	**0.10**	J
n-Tridecane (C13)	**0.014**	J	n-Hexacosane (C26)	**0.22**	J
2,6,10 Trimethyldodecane (1380)	**0.075**	J	n-Heptacosane (C27)	**0.23**	J
n-Tetradecane (C14)	**0.014**	J	n-Octacosane (C28)	0.68	U
2,6,10 Trimethyltridecane (1470)	**0.075**	J	n-Nonacosane (C29)	**0.68**	
n-Pentadecane (C15)	**0.047**	J	n-Triacontane (C30)	**0.47**	J
n-Hexadecane (C16)	0.68	U	n-Hentriacontane (C31)	**0.69**	
Norpristane (1650)	**0.041**	J	n-Dotriacontane (C32)	**0.075**	J
n-Heptadecane (C17)	**0.31**	J	n-Tritriacontane (C33)	**0.28**	J
Pristane	**0.12**	J	n-Tetratriacontane (C34)	0.68	U
n-Octadecane (C18)	**0.081**	J	n-Pentatriacontane (C35)	0.68	U
Phytane	**0.24**	J	n-Hexatriacontane (C36)	0.68	U
n-Nonadecane (C19)	**0.068**	J	n-Heptatriacontane (C37)	0.68	U
n-Eicosane (C20)	**0.034**	J	n-Octatriacontane (C38)	0.68	U
n-Heneicosane (C21)	**0.041**	J	n-Tetracontane (C40)	0.68	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.3**
Total Extractable Material[2]	**480**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	84	50-130
d50-Tetracosane	96	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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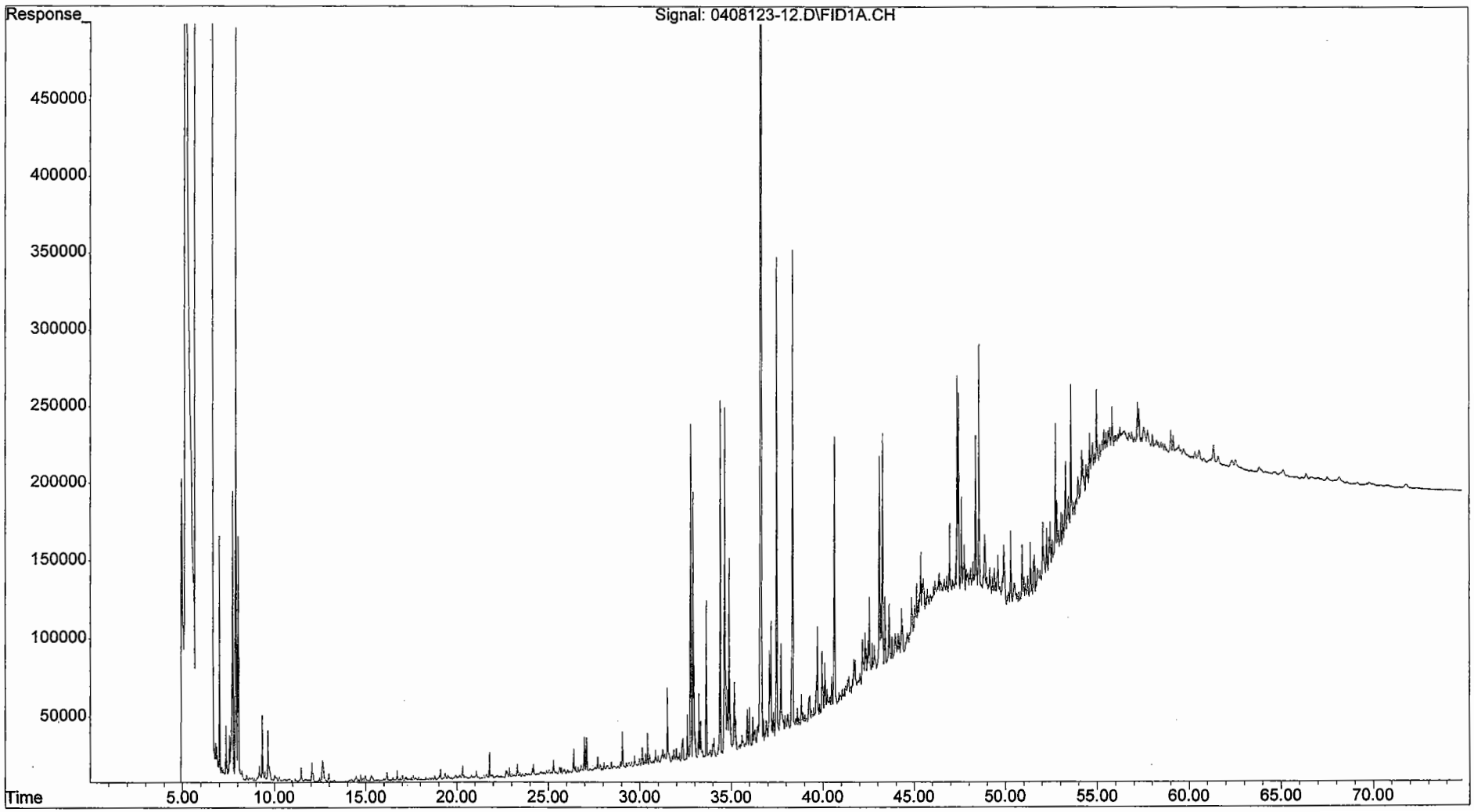
File :O:\Organics\DATA\PAH2\SEPT24\0408123-12.D
Operator : NLJr
Acquired : 27 Sep 2004 3:07 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-12
Misc Info : 1X
Vial Number: 39



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-29-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-13**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	37.0	30.45	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.24**	J	n-Docosane (C22)	0.44	U
n-Decane (C10)	**0.0044**	J	n-Tricosane (C23)	**0.062**	J
n-Undecane (C11)	**0.0089**	J	n-Tetracosane (C24)	**0.062**	J
n-Dodecane (C12)	**0.027**	J	n-Pentacosane (C25)	**0.20**	J
n-Tridecane (C13)	**0.0089**	J	n-Hexacosane (C26)	**0.16**	J
2,6,10 Trimethyldodecane (1380)	**0.062**	J	n-Heptacosane (C27)	0.44	U
n-Tetradecane (C14)	**0.0089**	J	n-Octacosane (C28)	0.44	U
2,6,10 Trimethyltridecane (1470)	**0.053**	J	n-Nonacosane (C29)	**0.52**	
n-Pentadecane (C15)	**0.044**	J	n-Triacontane (C30)	**0.30**	J
n-Hexadecane (C16)	**0.027**	J	n-Hentriacontane (C31)	**0.51**	
Norpristane (1650)	**0.035**	J	n-Dotriacontane (C32)	**0.071**	J
n-Heptadecane (C17)	**0.34**	J	n-Tritriacontane (C33)	0.44	U
Pristane	**0.075**	J	n-Tetratriacontane (C34)	0.44	U
n-Octadecane (C18)	**0.049**	J	n-Pentatriacontane (C35)	0.44	U
Phytane	**0.22**	J	n-Hexatriacontane (C36)	0.44	U
n-Nonadecane (C19)	**0.058**	J	n-Heptatriacontane (C37)	0.44	U
n-Eicosane (C20)	**0.027**	J	n-Octatriacontane (C38)	0.44	U
n-Heneicosane (C21)	**0.053**	J	n-Tetracontane (C40)	0.44	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**3.1**
Total Extractable Material[2]	**320**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	79	50-130
d50-Tetracosane	82	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

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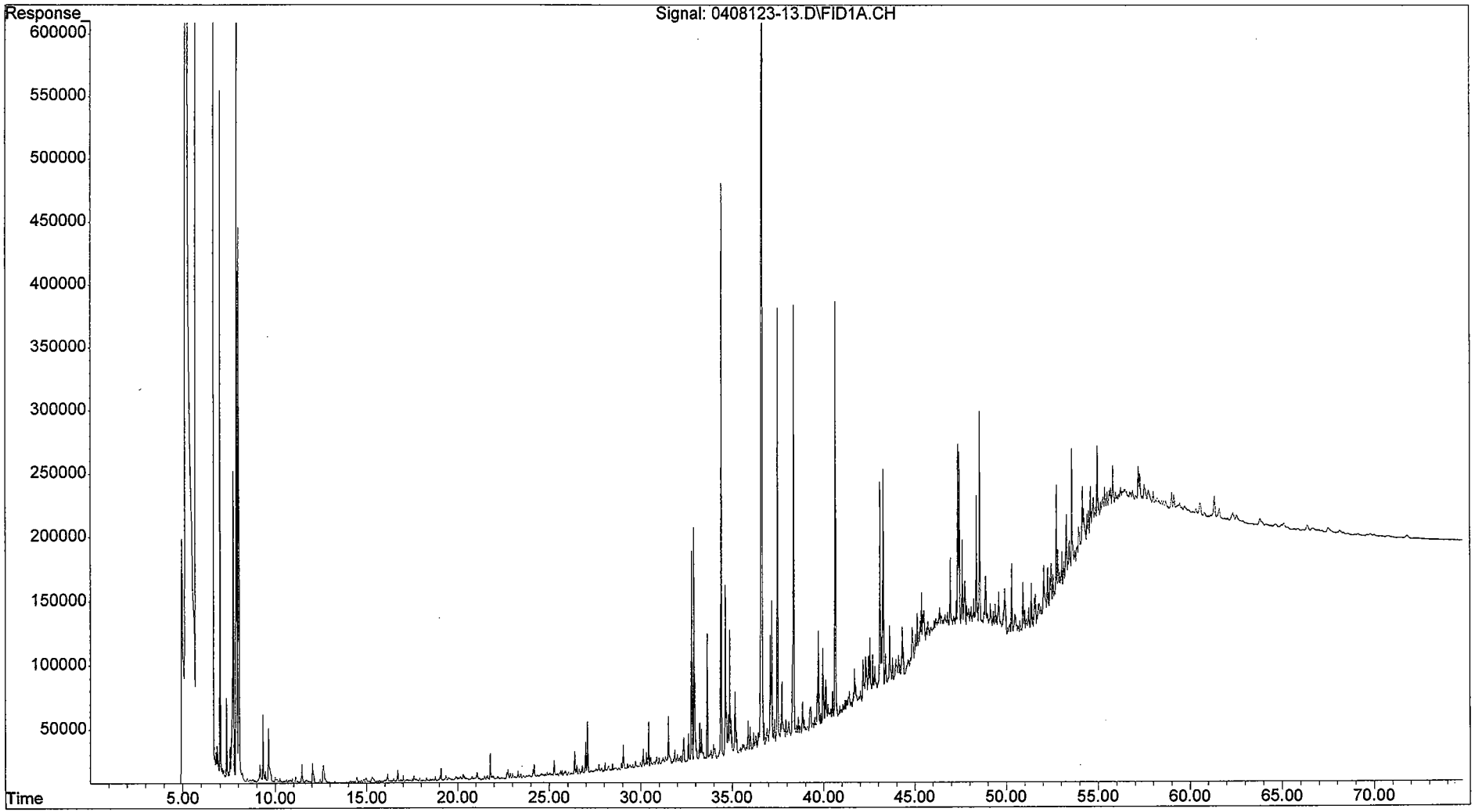
File :O:\Organics\DATA\PAH2\SEPT24\0408123-13.D
Operator : NLJr
Acquired : 27 Sep 2004 4:31 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-13
Misc Info : 1X
Vial Number: 40



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-05-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-14**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	41.2	30.58	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.20**	J	n-Docosane (C22)	**0.032**	J
n-Decane (C10)	**0.0063**	J	n-Tricosane (C23)	**0.057**	J
n-Undecane (C11)	**0.0095**	J	n-Tetracosane (C24)	**0.060**	J
n-Dodecane (C12)	**0.013**	J	n-Pentacosane (C25)	**0.18**	J
n-Tridecane (C13)	**0.0095**	J	n-Hexacosane (C26)	**0.11**	J
2,6,10 Trimethyldodecane (1380)	**0.044**	J	n-Heptacosane (C27)	**0.14**	J
n-Tetradecane (C14)	**0.022**	J	n-Octacosane (C28)	**0.083**	J
2,6,10 Trimethyltridecane (1470)	**0.048**	J	n-Nonacosane (C29)	**0.34**	
n-Pentadecane (C15)	**0.044**	J	n-Triacontane (C30)	**0.13**	J
n-Hexadecane (C16)	**0.0032**	J	n-Hentriacontane (C31)	**0.36**	
Norpristane (1650)	0.32	U	n-Dotriacontane (C32)	**0.12**	J
n-Heptadecane (C17)	**0.12**	J	n-Tritriacontane (C33)	0.32	U
Pristane	**0.051**	J	n-Tetratriacontane (C34)	0.32	U
n-Octadecane (C18)	**0.044**	J	n-Pentatriacontane (C35)	0.32	U
Phytane	**0.25**	J	n-Hexatriacontane (C36)	0.32	U
n-Nonadecane (C19)	**0.041**	J	n-Heptatriacontane (C37)	0.32	U
n-Eicosane (C20)	**0.019**	J	n-Octatriacontane (C38)	0.32	U
n-Heneicosane (C21)	**0.048**	J	n-Tetracontane (C40)	0.32	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.5**
Total Extractable Material[2]	**170**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	84	50-130
d50-Tetracosane	80	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 11:16

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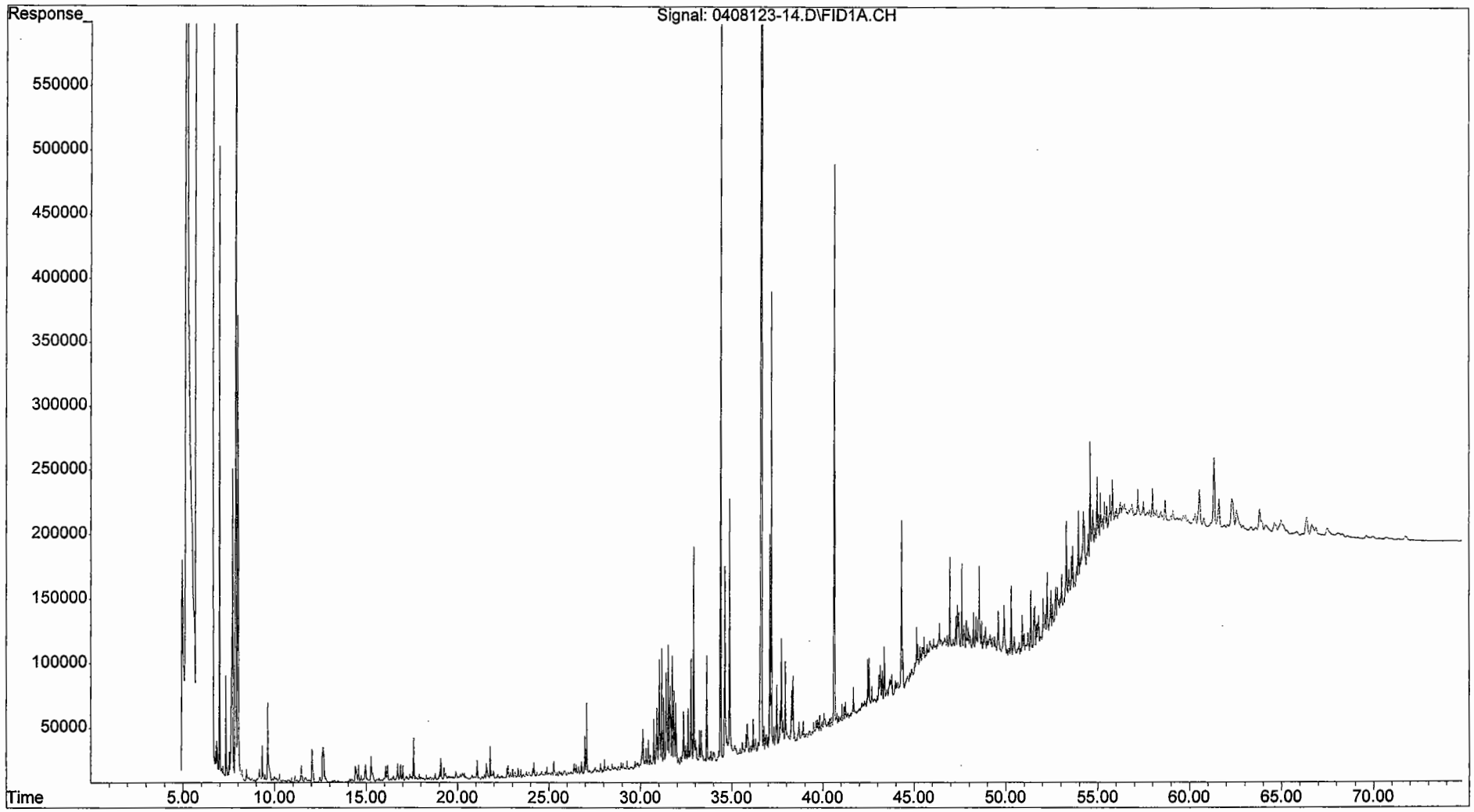
File :O:\Organics\DATA\PAH2\SEPT24\0408123-14.D
Operator : NLJr
Acquired : 27 Sep 2004 5:55 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-14
Misc Info : 1X
Vial Number: 41



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-15**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	41.4	30.54	2.5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.15**	J	n-Docosane (C22)	**0.012**	J
n-Decane (C10)	**0.0040**	J	n-Tricosane (C23)	**0.040**	J
n-Undecane (C11)	**0.0059**	J	n-Tetracosane (C24)	**0.020**	J
n-Dodecane (C12)	**0.0099**	J	n-Pentacosane (C25)	**0.12**	J
n-Tridecane (C13)	**0.0059**	J	n-Hexacosane (C26)	**0.053**	J
2,6,10 Trimethyldodecane (1380)	**0.026**	J	n-Heptacosane (C27)	**0.11**	J
n-Tetradecane (C14)	**0.0079**	J	n-Octacosane (C28)	**0.053**	J
2,6,10 Trimethyltridecane (1470)	**0.026**	J	n-Nonacosane (C29)	**0.23**	
n-Pentadecane (C15)	**0.028**	J	n-Triacontane (C30)	**0.079**	J
n-Hexadecane (C16)	**0.0040**	J	n-Hentriacontane (C31)	**0.24**	
Norpristane (1650)	0.20	U	n-Dotriacontane (C32)	**0.075**	J
n-Heptadecane (C17)	**0.085**	J	n-Tritriacontane (C33)	0.20	U
Pristane	**0.034**	J	n-Tetratriacontane (C34)	0.20	U
n-Octadecane (C18)	**0.018**	J	n-Pentatriacontane (C35)	0.20	U
Phytane	**0.16**	J	n-Hexatriacontane (C36)	0.20	U
n-Nonadecane (C19)	**0.026**	J	n-Heptatriacontane (C37)	0.20	U
n-Eicosane (C20)	**0.0099**	J	n-Octatriacontane (C38)	0.20	U
n-Heneicosane (C21)	**0.026**	J	n-Tetracontane (C40)	0.20	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**1.6**
Total Extractable Material[2]	**99**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	80	50-130
d50-Tetracosane	79	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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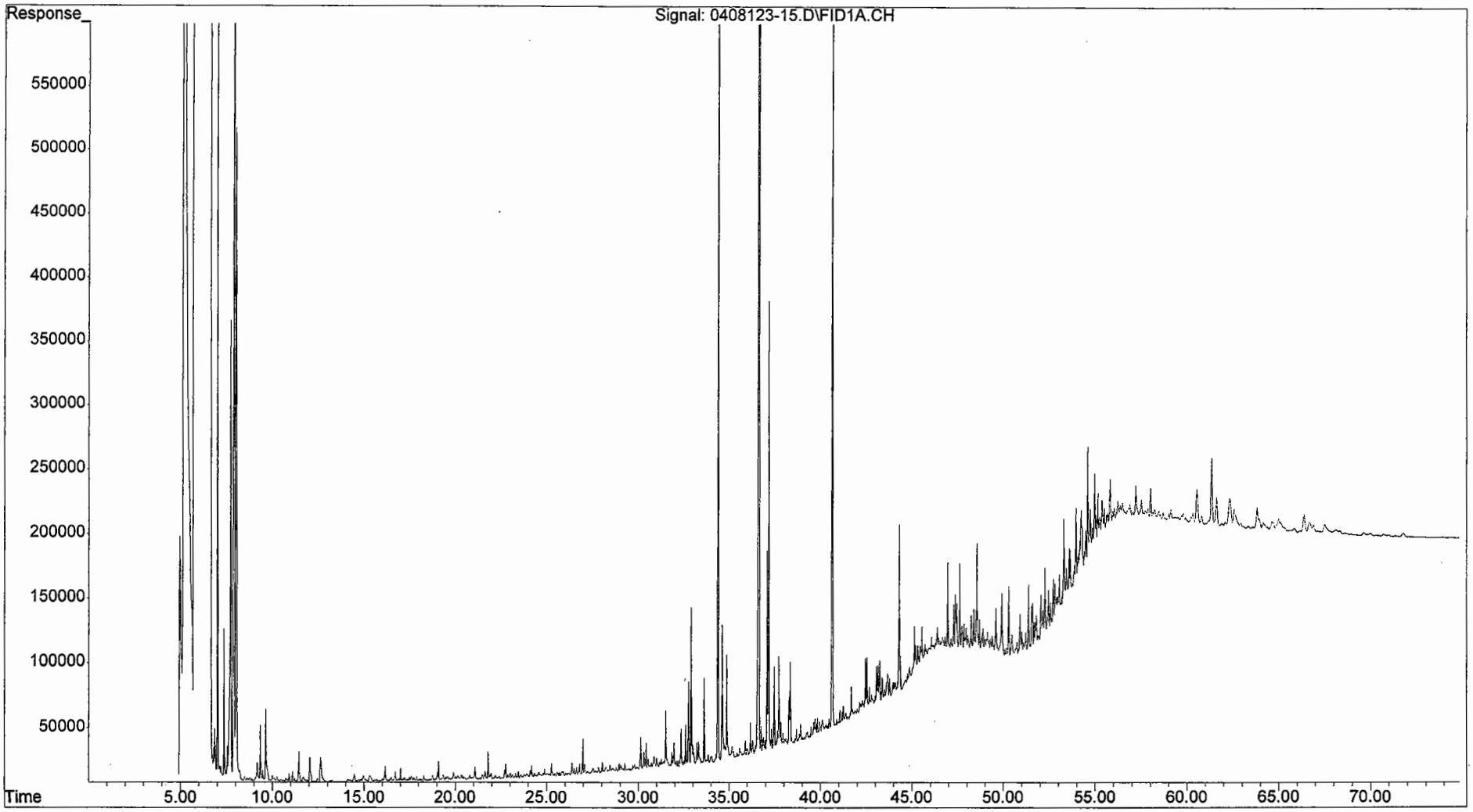
File :O:\Organics\DATA\PAH2\SEPT24\0408123-15.D
Operator : NLJr
Acquired : 27 Sep 2004 7:19 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408123-15
Misc Info : 1X
Vial Number: 42



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/25/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	0.067	U	n-Docosane (C22)	0.067	U
n-Decane (C10)	0.067	U	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	0.067	U
n-Dodecane (C12)	0.067	U	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	0.067	U
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	0.067	U	n-Octacosane (C28)	0.067	U
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	0.067	U
n-Hexadecane (C16)	0.067	U	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	0.067	U	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	0.067	U
n-Nonadecane (C19)	0.067	U	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	0.067	U	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	0.067	U
Total Extractable Material[2]	2.2	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	89	50-130
d50-Tetracosane	92	50-130

10/07/04 12:14

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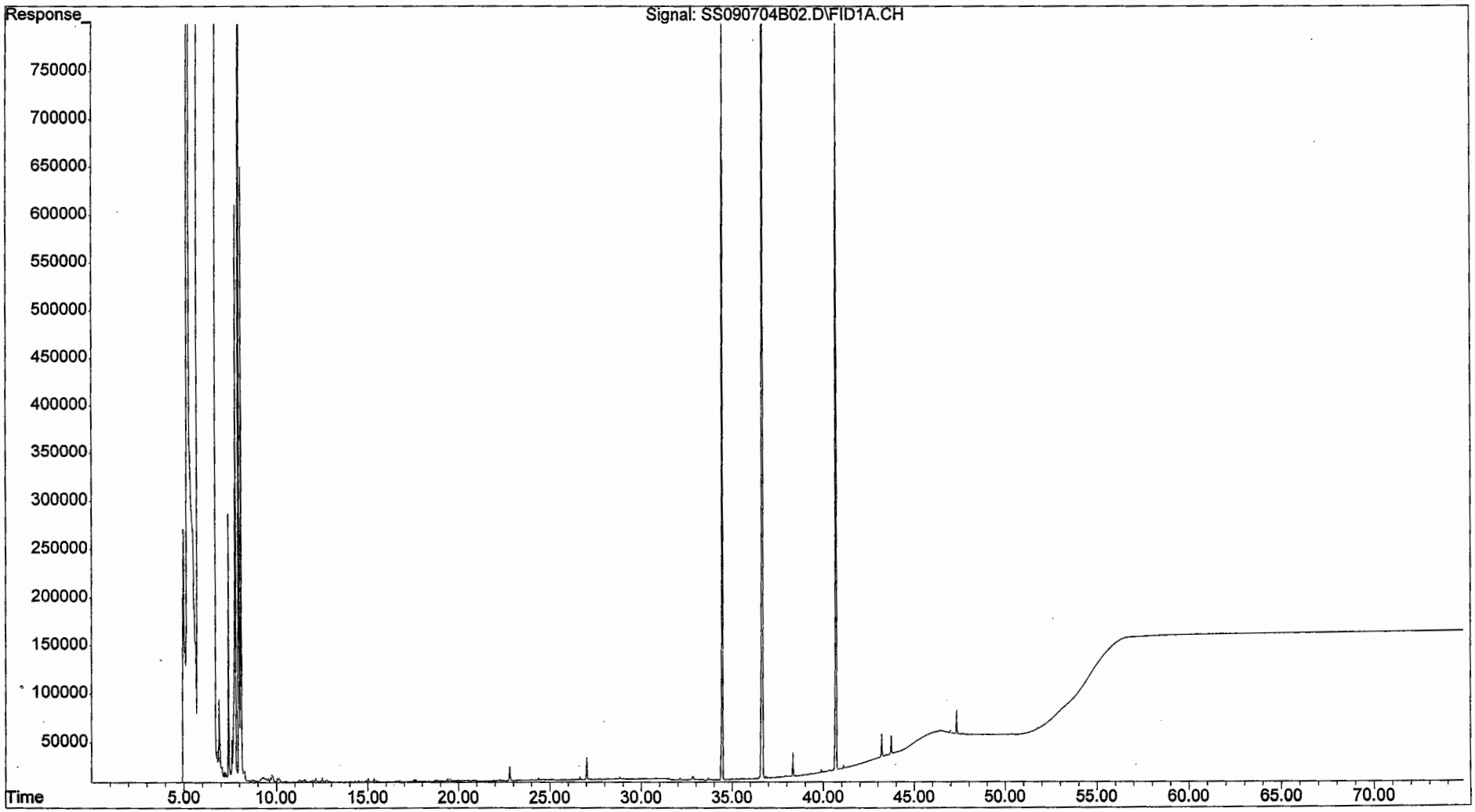
File :O:\Organics\DATA\PAH2\SEPT24\SS090704B02.D
Operator : NLJr
Acquired : 25 Sep 2004 11:28 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704B02
Misc Info : 1X
Vial Number: 20



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704BS02**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/26/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**1.3**	S	n-Docosane (C22)	**1.7**	S
n-Decane (C10)	**1.5**	S	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	**1.8**	S
n-Dodecane (C12)	**1.7**	S	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	**1.7**	S
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	**1.6**	S	n-Octacosane (C28)	**1.9**	S
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	**1.8**	S
n-Hexadecane (C16)	**1.6**	S	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	**1.6**	S	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	**1.7**	S
n-Nonadecane (C19)	**1.6**	S	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	**1.7**	S	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**23**	
Total Extractable Material[2]	2.2	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	91	50-130
d50-Tetracosane	98	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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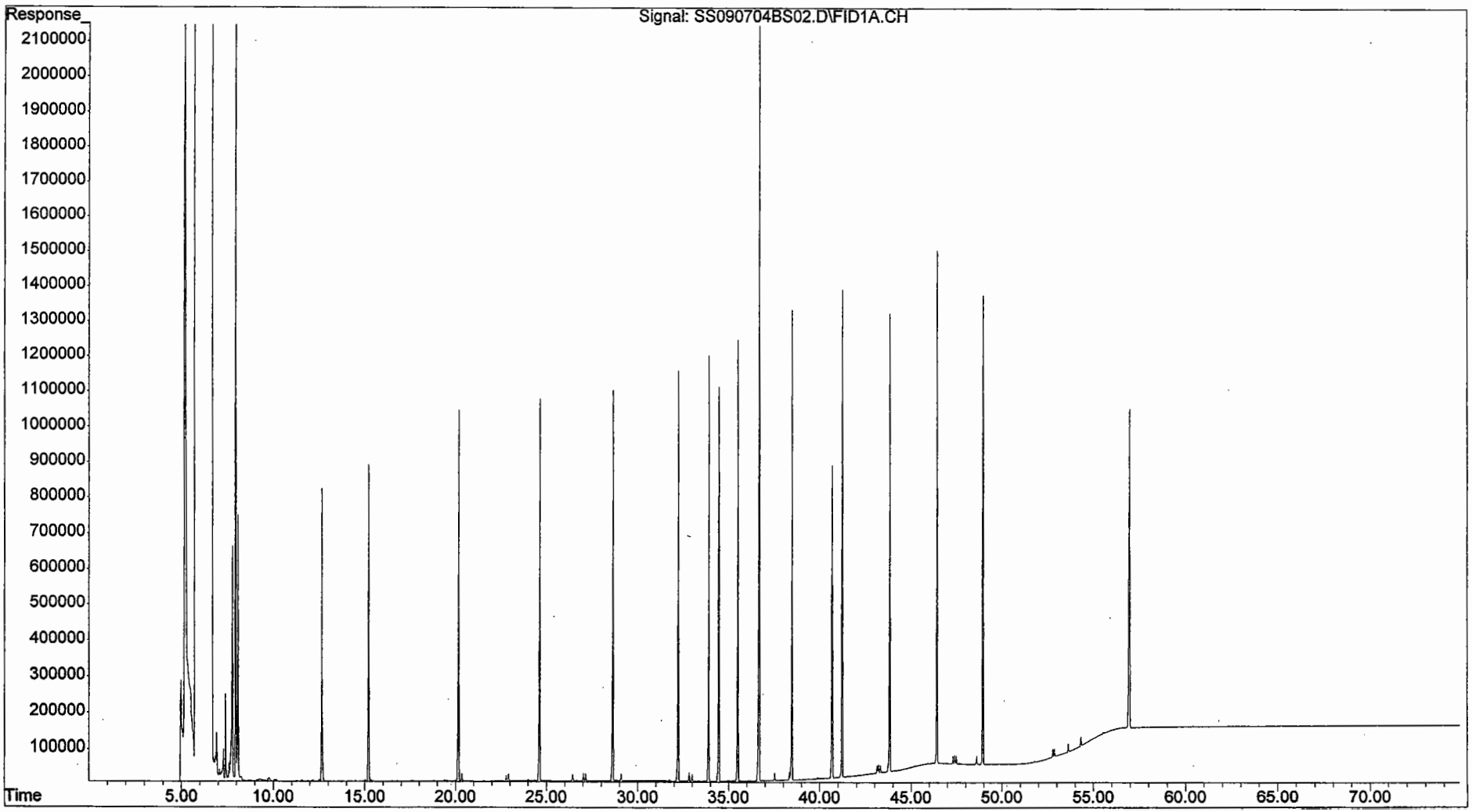
File :O:\Organics\DATA\PAH2\SEPT24\SS090704BS02.D
Operator : NLJr
Acquired : 26 Sep 2004 1:01 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704BS02
Misc Info : 1X
Vial Number: 21



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704BSD02**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/26/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**1.3**	S	n-Docosane (C22)	**1.6**	S
n-Decane (C10)	**1.5**	S	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	**1.8**	S
n-Dodecane (C12)	**1.6**	S	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	**1.7**	S
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	**1.6**	S	n-Octacosane (C28)	**1.8**	S
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	**1.8**	S
n-Hexadecane (C16)	**1.6**	S	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	**1.6**	S	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	**1.6**	S
n-Nonadecane (C19)	**1.6**	S	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	**1.6**	S	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**23**	
Total Extractable Material[2]	2.2	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	90	50-130
d50-Tetracosane	94	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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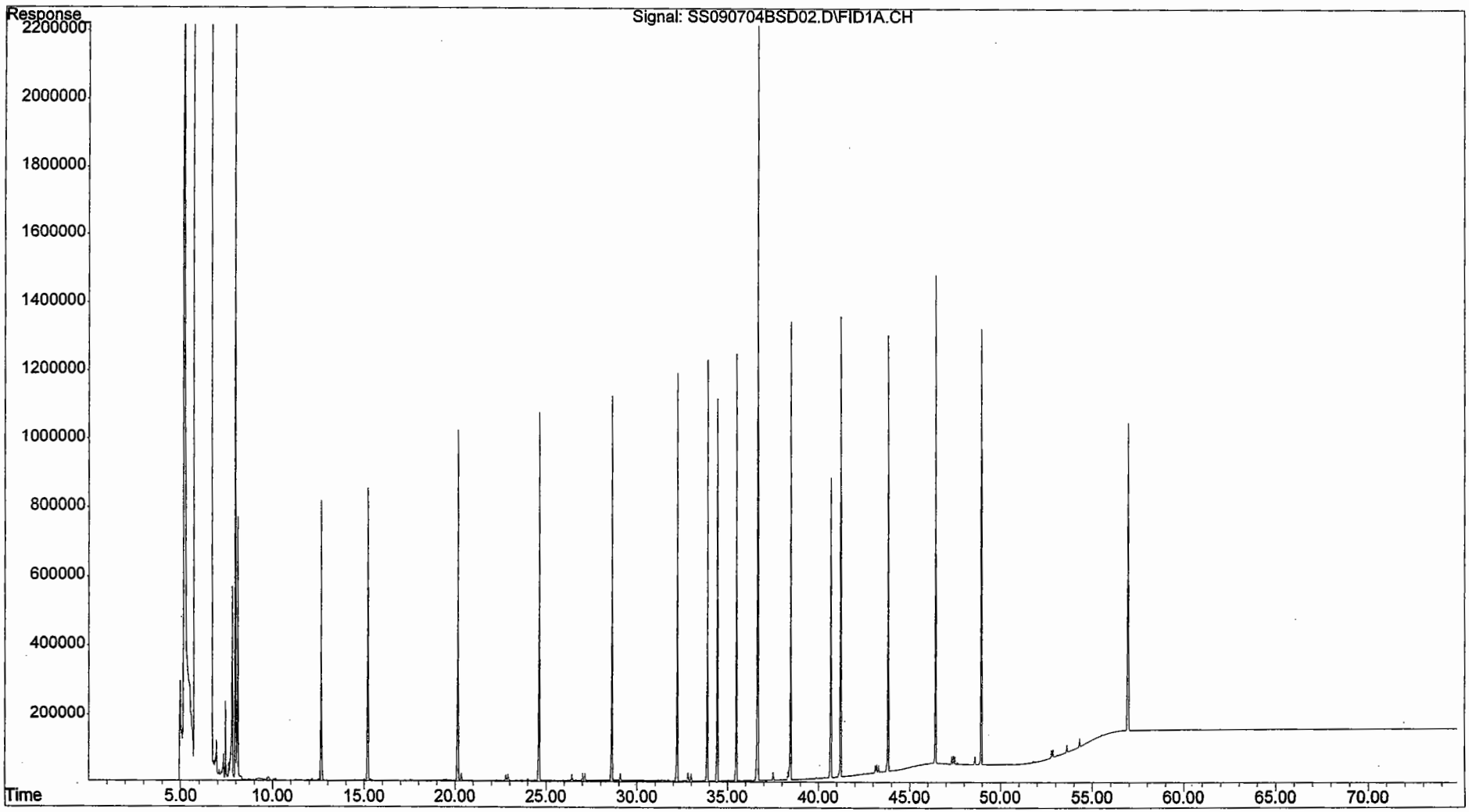
File :O:\Organics\DATA\PAH2\SEPT24\SS090704BSD02.D
Operator : NLJr
Acquired : 26 Sep 2004 2:33 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704BSD02
Misc Info : 1X
Vial Number: 22



Form III
Spike Recovery Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **See Below**
Associated Blank: **SS090704B02**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	09/07/04	100	NLJr

Lab ID: SS090704B02 SS090704BS02 SS090704BSD02

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
n-Nonane (C9)	0.067	U	1.3	77	1.3	76	2	30	50-130
n-Decane (C10)	0.067	U	1.5	91	1.5	89	3	30	50-130
n-Dodecane (C12)	0.067	U	1.7	100	1.6	97	3	30	50-130
n-Tetradecane (C14)	0.067	U	1.6	97	1.6	95	2	30	50-130
n-Hexadecane (C16)	0.067	U	1.6	95	1.6	94	1	30	50-130
n-Octadecane (C18)	0.067	U	1.6	95	1.6	94	1	30	50-130
n-Nonadecane (C19)	0.067	U	1.6	97	1.6	97	1	30	50-130
n-Eicosane (C20)	0.067	U	1.7	100	1.6	98	1	30	50-130
n-Docosane (C22)	0.067	U	1.7	104	1.6	99	5	30	50-130
n-Tetracosane (C24)	0.067	U	1.8	110	1.8	106	3	30	50-130
n-Hexacosane (C26)	0.067	U	1.7	104	1.7	100	4	30	50-130
n-Octacosane (C28)	0.067	U	1.9	112	1.8	105	6	30	50-130
n-Triacontane (C30)	0.067	U	1.8	111	1.8	106	5	30	50-130
n-Hexatriacontane (C36)	0.067	U	1.7	104	1.6	99	5	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
ortho-Terphenyl	91	90	50-130
d50-Tetracosane	98	94	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 11:41

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Supporting Quality Control Results

Form II
Surrogate Recovery
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**
Matrix: **Sediment**

Case: **N/A** SDG: **N/A**

Client ID	Lab ID	ortho-Terphenyl	d50-Tetracosane
Blank	SS090704B02	89	92
LCS	SS090704BS02	91	98
LCSD	SS090704BSD02	90	94
DSY-SD-101-0006	0408123-01	91	93
DSY-SD-101-0612	0408123-02	91	103
DSY-SD-103-0006	0408123-03	87	96
DSY-SD-103-0612	0408123-04	86	118
DSY-SD-104-0006	0408123-05	83	83
DSY-SD-104-0612	0408123-06	83	84
DSY-SD-02-082504	0408123-07	80	78
DSY-SD-DUP01-082504	0408123-08	82	81
DSY-SD-28-082504	0408123-09	80	81
DSY-SD-06-082504	0408123-10	91	96
DSY-SD-09-082604	0408123-11	90	88
DSY-SD-09-082604	0408123-11 D	86	84
DSY-SD-09-082604	0408123-11 M	87	86
DSY-SD-03-082604	0408123-12	84	96
DSY-SD-29-082604	0408123-13	79	82
DSY-SD-05-082604	0408123-14	84	80
DSY-SD-DUP02-082604	0408123-15	80	79

N/A - Not Applicable

Surrogate	QC Limit
ortho-Terphenyl	50-130
d50-Tetracosane	50-130

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Form IV
Method Blank Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **SS090704B02**
Date Analyzed: **09/25/04 23:28**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS090704BS02	09/26/04 01:01
LCSD	SS090704BSD02	09/26/04 02:33
DSY-SD-101-0006	0408123-01	09/26/04 04:05
DSY-SD-101-0612	0408123-02	09/26/04 05:36
DSY-SD-103-0006	0408123-03	09/26/04 07:08
DSY-SD-103-0612	0408123-04	09/26/04 08:39
DSY-SD-104-0006	0408123-05	09/26/04 10:12
DSY-SD-104-0612	0408123-06	09/26/04 11:43
DSY-SD-02-082504	0408123-07	09/26/04 13:07
DSY-SD-DUP01-082504	0408123-08	09/26/04 18:44
DSY-SD-28-082504	0408123-09	09/26/04 20:07
DSY-SD-06-082504	0408123-10	09/26/04 21:32
DSY-SD-09-082604	0408123-11	09/26/04 22:56
DSY-SD-09-082604	0408123-11 D	09/27/04 00:20
DSY-SD-09-082604	0408123-11 M	09/27/04 01:43
DSY-SD-03-082604	0408123-12	09/27/04 03:07
DSY-SD-29-082604	0408123-13	09/27/04 04:31
DSY-SD-05-082604	0408123-14	09/27/04 05:55
DSY-SD-DUP02-082604	0408123-15	09/27/04 07:19

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Nonane (C9)	1.04	0.95	0.94	0.88	0.79	0.92	10.0
n-Decane (C10)	1.00	0.93	0.94	0.88	0.80	0.91	8.3
n-Undecane (C11)	1.02	0.93	0.93	0.87	0.81	0.91	8.5
n-Dodecane (C12)	1.00	0.90	0.93	0.87	0.81	0.90	7.9
n-Tridecane (C13)	1.00	0.90	0.93	0.86	0.82	0.90	7.7
2,6,10 Trimethyldodecane (1380)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
n-Tetradecane (C14)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
2,6,10 Trimethyltridecane (1470)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Pentadecane (C15)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Hexadecane (C16)	1.00	0.87	0.94	0.86	0.85	0.91	7.2
Norpristane (1650)	1.10	0.90	0.99	0.92	0.90	0.96	9.0
n-Heptadecane (C17)	1.01	0.90	0.99	0.92	0.90	0.95	5.7
Pristane	1.06	0.91	0.97	0.88	0.86	0.94	8.5
n-Octadecane (C18)	1.01	0.90	0.98	0.89	0.88	0.93	6.5
Phytane	1.03	0.91	0.99	0.89	0.88	0.94	7.0
n-Nonadecane (C19)	1.04	0.90	0.97	0.87	0.88	0.93	7.8
n-Eicosane (C20)	1.01	0.90	0.98	0.88	0.88	0.93	6.3
n-Heneicosane (C21)	1.04	0.94	1.00	0.93	0.91	0.96	5.9
n-Docosane (C22)	1.05	0.94	1.01	0.93	0.91	0.97	6.0
n-Tricosane (C23)	1.04	0.94	1.01	0.93	0.90	0.96	5.8
n-Tetracosane (C24)	0.98	0.91	0.96	0.89	0.86	0.92	5.6
n-Pentacosane (C25)	1.06	0.96	1.01	0.94	0.90	0.97	6.2
n-Hexacosane (C26)	1.09	0.99	1.04	0.97	0.92	1.00	6.5
n-Heptacosane (C27)	1.04	0.96	1.02	0.94	0.89	0.97	6.4
n-Octacosane (C28)	1.07	0.98	1.03	0.95	0.90	0.99	6.9
n-Nonacosane (C29)	1.08	1.00	1.04	0.96	0.90	0.99	6.9
n-Triacontane (C30)	1.09	1.00	1.04	0.96	0.90	1.00	7.2
n-Hentriacontane (C31)	1.04	0.97	1.00	0.92	0.87	0.96	7.2
n-Dotriacontane (C32)	1.08	1.02	1.04	0.96	0.90	1.00	7.1
n-Tritriacontane (C33)	1.02	0.97	0.98	0.91	0.85	0.95	7.1
n-Tetratriacontane (C34)	1.09	1.03	1.06	0.98	0.91	1.01	6.8
n-Pentatriacontane (C35)	1.06	1.01	1.06	0.95	0.90	1.00	7.2
n-Hexatriacontane (C36)	1.14	1.04	1.07	0.99	0.95	1.04	7.2

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408123**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Heptatriacontane (C37)	1.09	1.01	1.05	0.97	0.94	1.01	6.0
n-Octatriacontane (C38)	1.01	0.97	1.03	0.96	0.93	0.98	4.0
n-Nonatriacontane (C39)	0.079	0.071	0.077	0.072	0.071	0.074	5.0
n-Tetracontane (C40)	0.79	0.88	1.00	0.95	0.94	0.91	9.1
ortho-Terphenyl	1.14	1.04	1.08	0.96	0.96	1.04	7.6
d50-Tetracosane	0.99	0.99	0.98	0.91	0.88	0.95	5.7
Total Extractable Material[2]	1.10	1.01	1.06	0.97	1.10	1.05	5.4
Average RSD							7.0

N/A - Not Applicable

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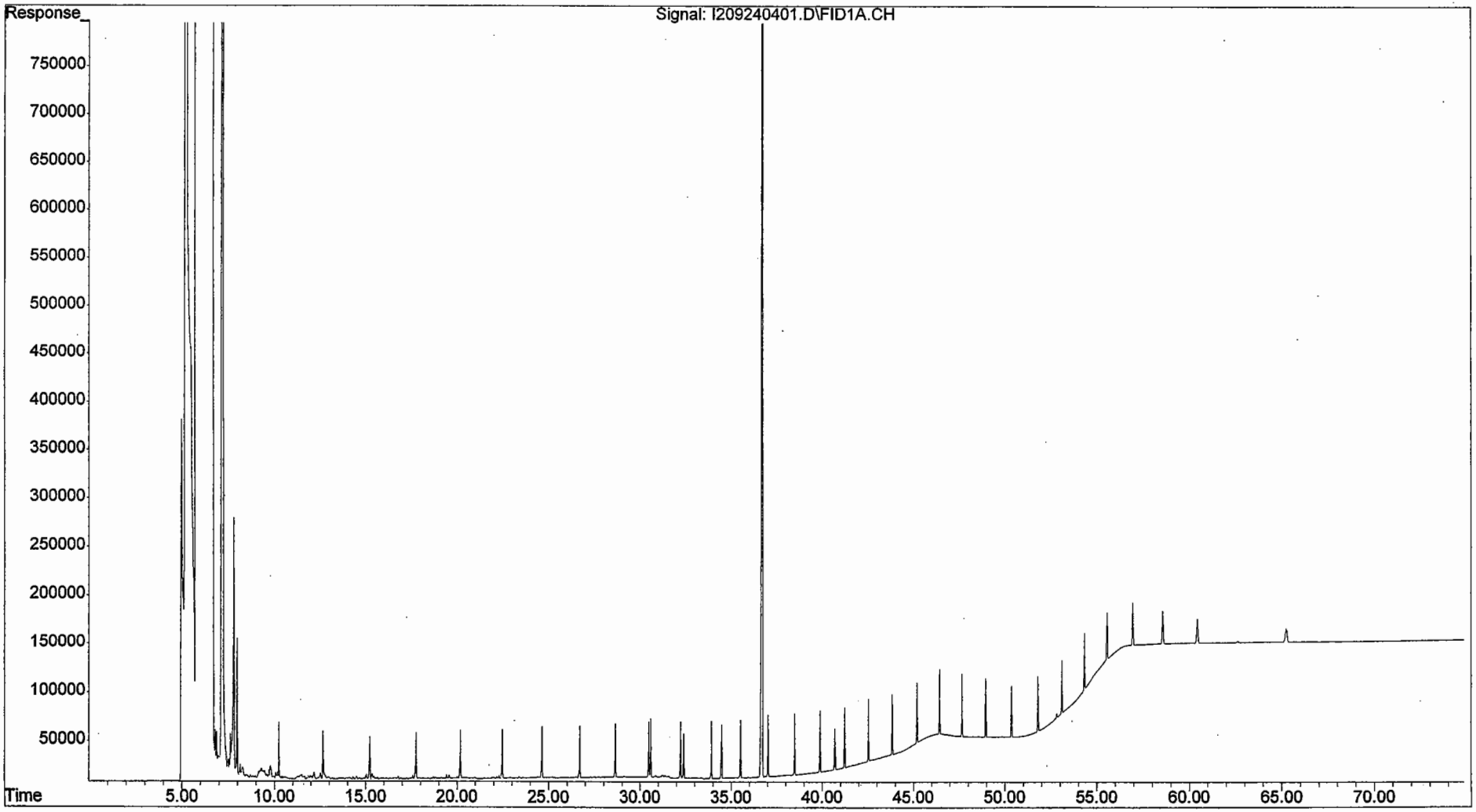
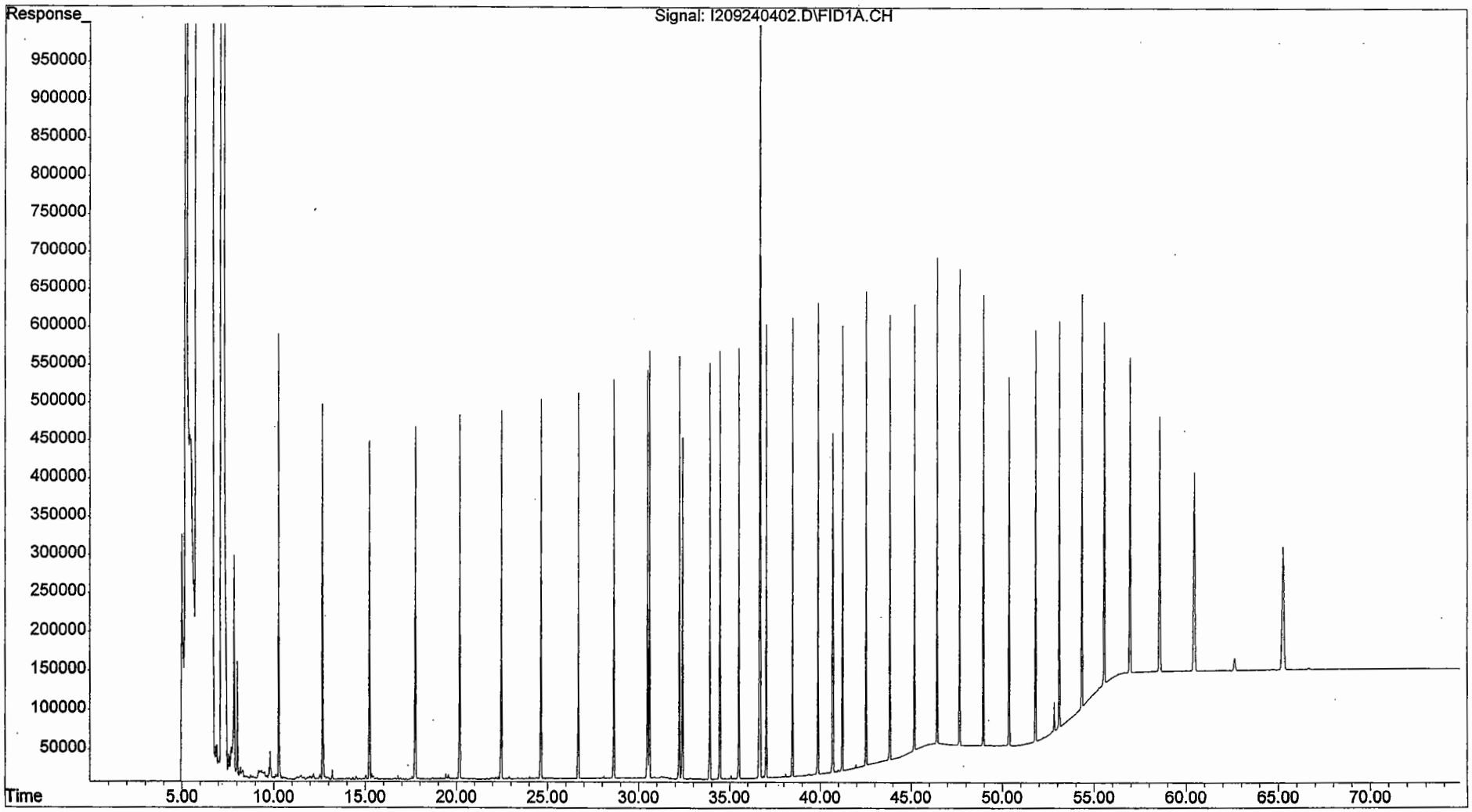
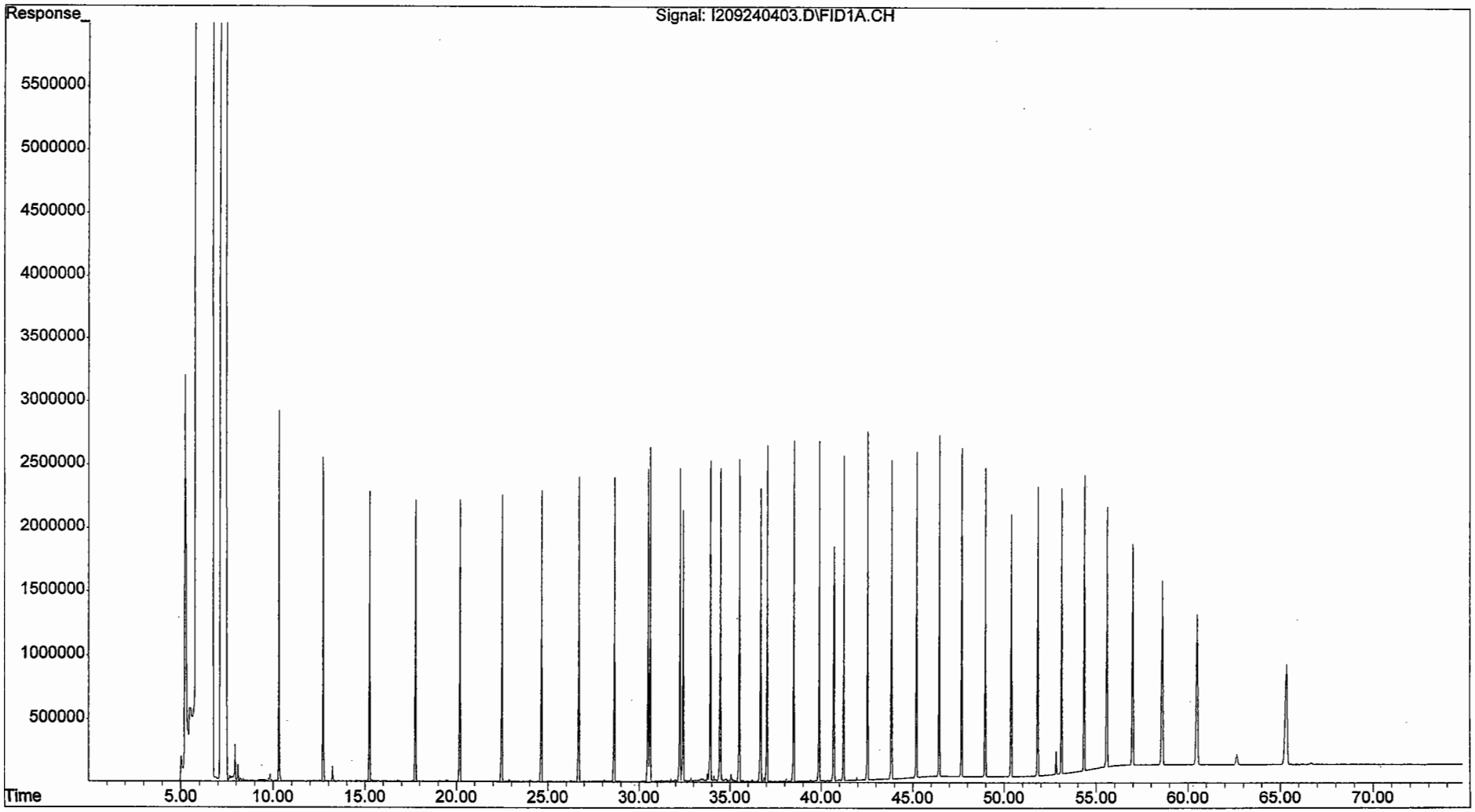
File :O:\Organics\DATA\PAH2\SEPT24\I209240401.D
Operator : NLJr
Acquired : 24 Sep 2004 9:51 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240401
Misc Info : HW081604C 1ug/mL
Vial Number: 3



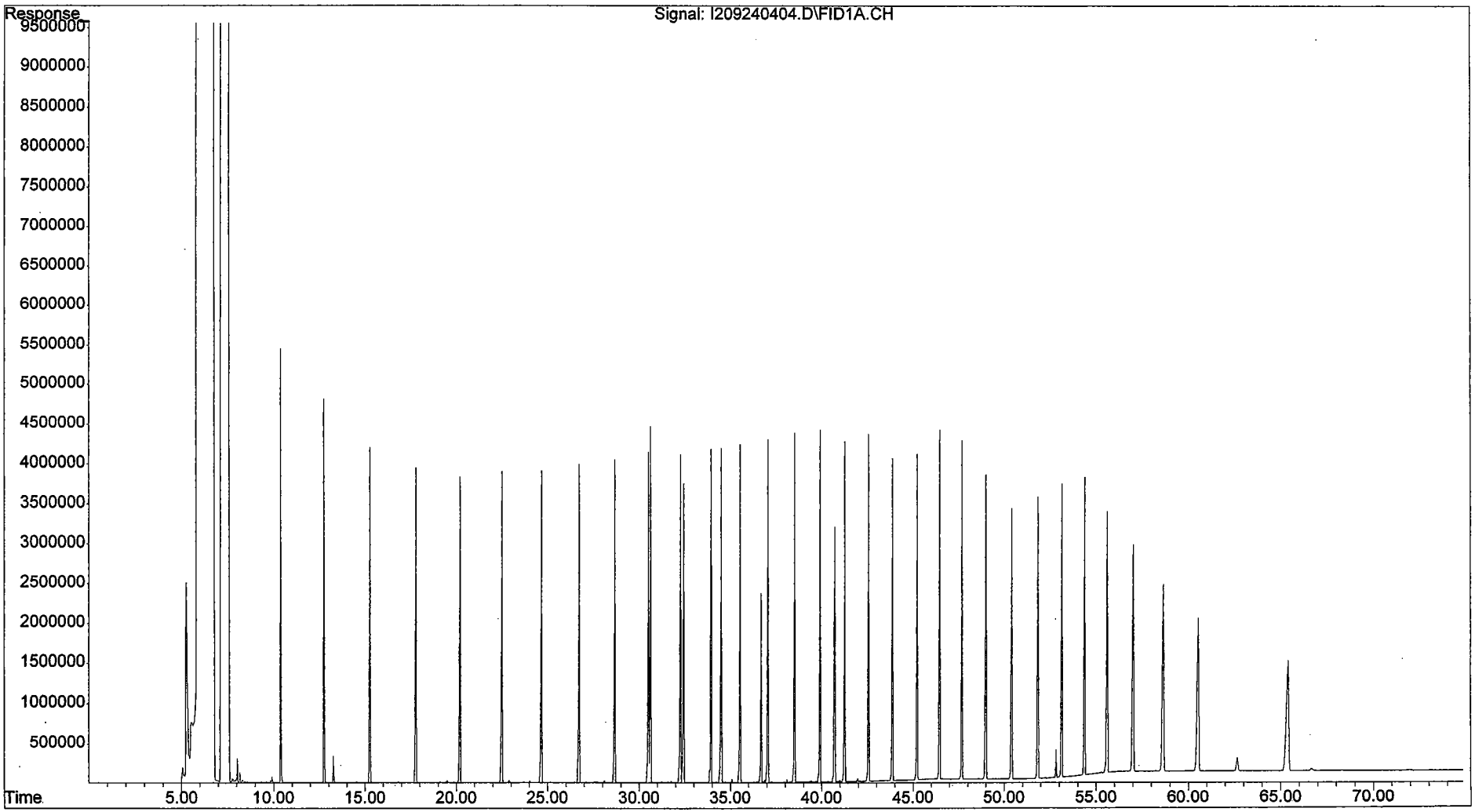
File :O:\Organics\DATA\PAH2\SEPT24\I209240402.D
Operator : NLJr
Acquired : 24 Sep 2004 11:20 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240402
Misc Info : HW081604D 10ug/mL
Vial Number: 4



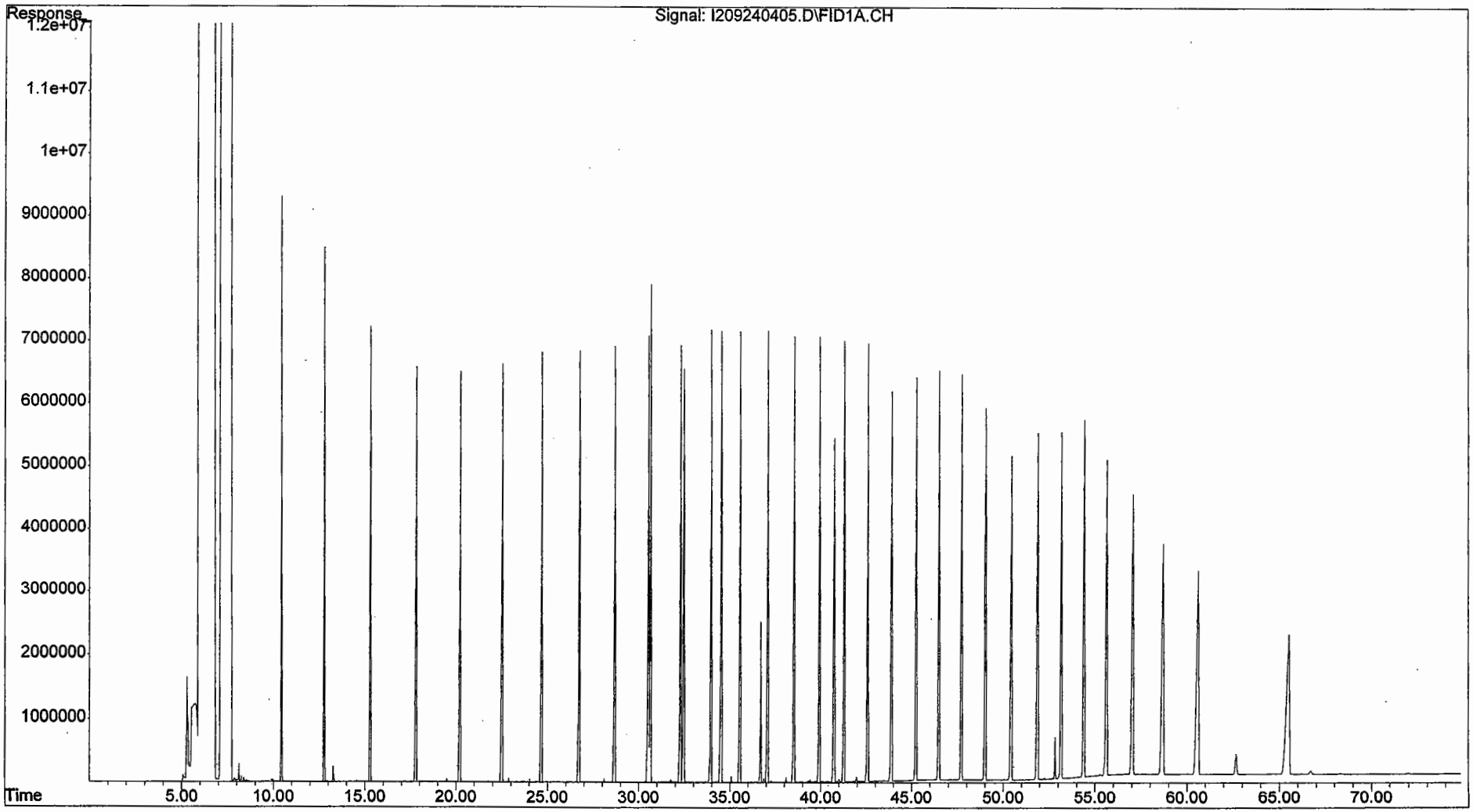
File :O:\Organics\DATA\PAH2\SEPT24\I209240403.D
Operator : NLJr
Acquired : 25 Sep 2004 12:48 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240403
Misc Info : HW081604E 50ug/mL
Vial Number: 5



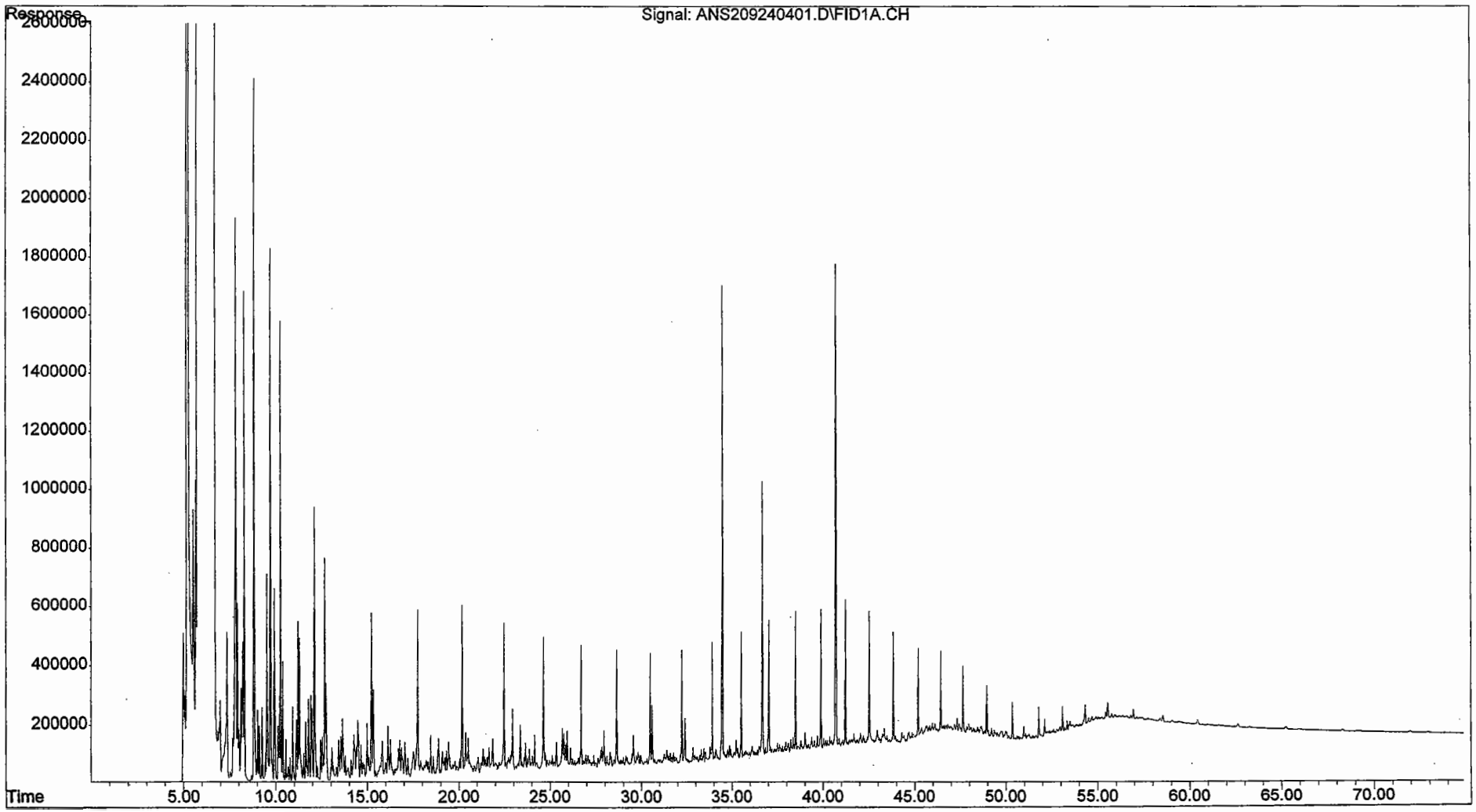
File :O:\Organics\DATA\PAH2\SEPT24\I209240404.D
Operator : NLJr
Acquired : 25 Sep 2004 2:17 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240404
Misc Info : HW081604F 100ug/mL
Vial Number: 6



File :O:\Organics\DATA\PAH2\SEPT24\I209240405.D
Operator : NLJr
Acquired : 25 Sep 2004 3:46 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240405
Misc Info : HW081604G 200ug/mL
Vial Number: 7



File :O:\Organics\DATA\PAH2\SEPT24\ANS209240401.D
Operator : NLJr
Acquired : 25 Sep 2004 6:43 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: ANS209240401
Misc Info : SW090104A 5.14mg/mL
Vial Number: 9



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **C209240402**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	54.17	8.3	25
n-Decane (C10)	50.00	54.35	8.7	25
n-Undecane (C11)	50.00	53.45	6.9	25
n-Dodecane (C12)	50.00	53.03	6.1	25
n-Tridecane (C13)	50.00	52.43	4.9	25
n-Tetradecane (C14)	50.00	52.15	4.3	25
n-Pentadecane (C15)	50.00	51.94	3.9	25
n-Hexadecane (C16)	50.00	51.89	3.8	25
n-Heptadecane (C17)	50.00	52.18	4.4	25
Pristane	50.00	51.66	3.3	25
n-Octadecane (C18)	50.00	52.57	5.1	25
Phytane	50.00	52.71	5.4	25
n-Nonadecane (C19)	50.00	52.89	5.8	25
n-Eicosane (C20)	50.00	52.90	5.8	25
n-Heneicosane (C21)	50.00	52.85	5.7	25
n-Docosane (C22)	50.00	53.13	6.3	25
n-Tricosane (C23)	50.00	53.56	7.1	25
n-Tetracosane (C24)	50.00	53.96	7.9	25
n-Pentacosane (C25)	50.00	54.04	8.1	25
n-Hexacosane (C26)	50.00	54.30	8.6	25
n-Heptacosane (C27)	50.00	54.54	9.1	25
n-Octacosane (C28)	50.00	55.64	11.3	25
n-Nonacosane (C29)	50.00	55.09	10.2	25
n-Triacontane (C30)	50.00	55.09	10.2	25
n-Hentriacontane (C31)	50.00	55.29	10.6	25
n-Dotriacontane (C32)	50.00	55.48	11.0	25
n-Tritriacontane (C33)	50.00	55.72	11.4	25
n-Tetratriacontane (C34)	50.00	55.33	10.7	25
n-Pentatriacontane (C35)	50.00	55.17	10.3	25
n-Hexatriacontane (C36)	50.00	54.97	9.9	25
n-Heptatriacontane (C37)	50.00	55.13	10.3	25
n-Octatriacontane (C38)	50.00	55.78	11.6	25
n-Tetracontane (C40)	50.00	59.42	18.8	25
ortho-Terphenyl	50.00	52.23	4.5	25
d50-Tetracosane	50.00	53.06	6.1	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.12

N/A - Not Applicable

10/07/04 16:24

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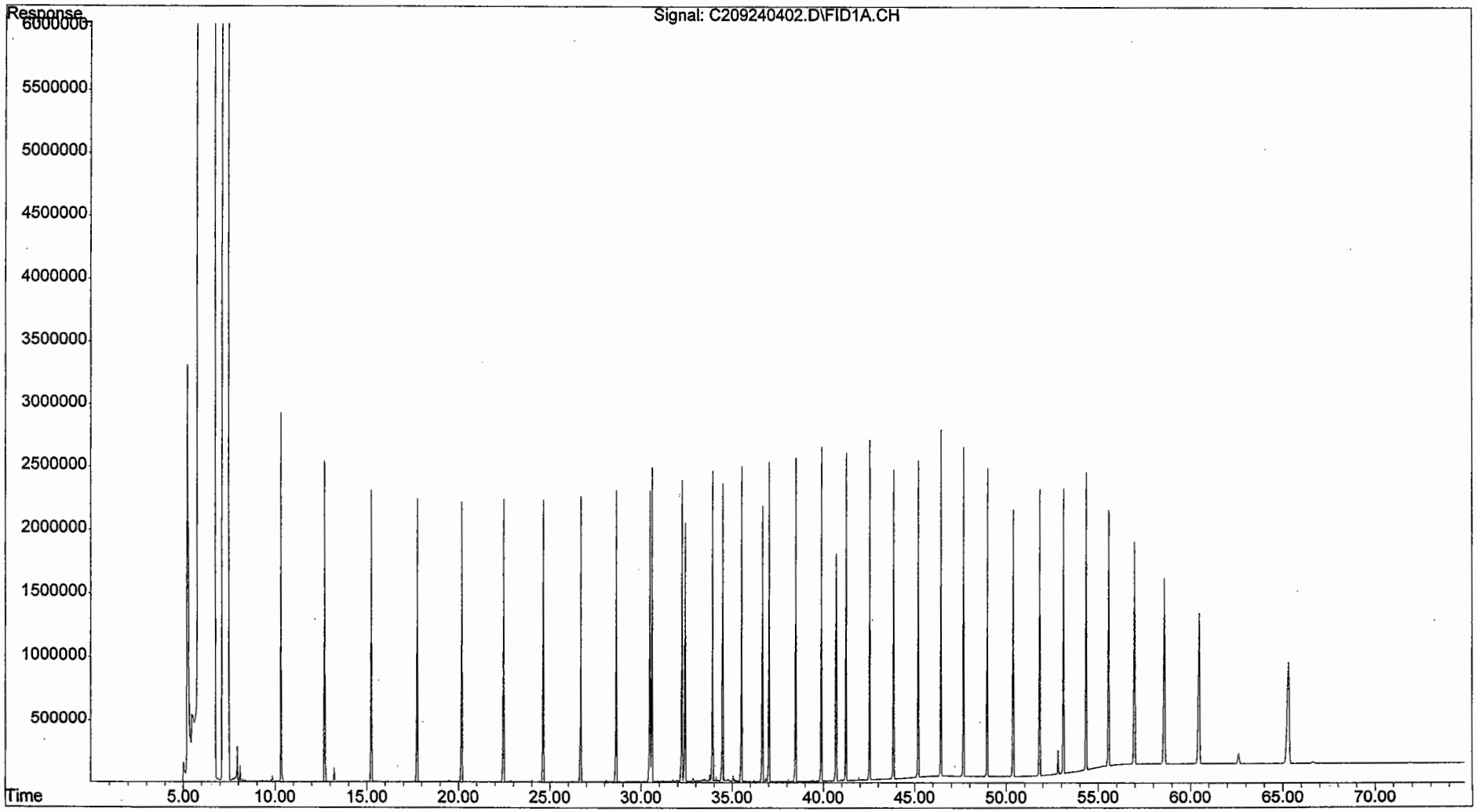
File :O:\Organics\DATA\PAH2\SEPT24\C209240402.D
Operator : NLJr
Acquired : 25 Sep 2004 8:24 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240402
Misc Info : HW081604E 50ug/mL
Vial Number: 18



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **C209240403**

Case: **N/A** SDG: **N/A**

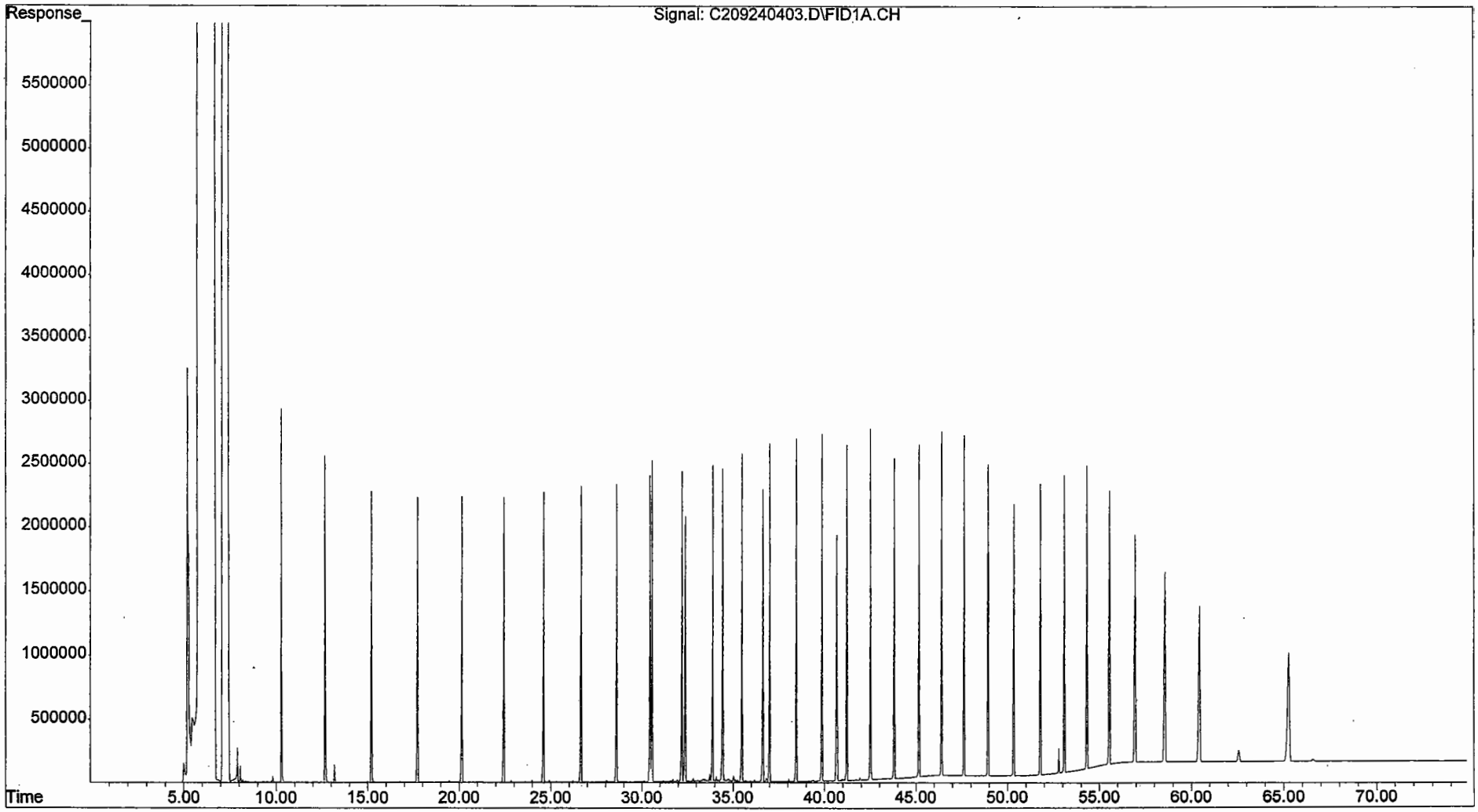
Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	53.59	7.2	25
n-Decane (C10)	50.00	52.39	4.8	25
n-Undecane (C11)	50.00	51.59	3.2	25
n-Dodecane (C12)	50.00	51.17	2.3	25
n-Tridecane (C13)	50.00	50.71	1.4	25
n-Tetradecane (C14)	50.00	50.55	1.1	25
n-Pentadecane (C15)	50.00	50.49	1.0	25
n-Hexadecane (C16)	50.00	50.56	1.1	25
n-Heptadecane (C17)	50.00	50.63	1.3	25
Pristane	50.00	50.81	1.6	25
n-Octadecane (C18)	50.00	51.70	3.4	25
Phytane	50.00	51.63	3.3	25
n-Nonadecane (C19)	50.00	52.28	4.6	25
n-Eicosane (C20)	50.00	52.53	5.1	25
n-Heneicosane (C21)	50.00	52.58	5.2	25
n-Docosane (C22)	50.00	53.04	6.1	25
n-Tricosane (C23)	50.00	53.52	7.0	25
n-Tetracosane (C24)	50.00	53.94	7.9	25
n-Pentacosane (C25)	50.00	55.35	10.7	25
n-Hexacosane (C26)	50.00	54.53	9.1	25
n-Heptacosane (C27)	50.00	54.75	9.5	25
n-Octacosane (C28)	50.00	55.36	10.7	25
n-Nonacosane (C29)	50.00	55.31	10.6	25
n-Triacontane (C30)	50.00	55.31	10.6	25
n-Hentriacontane (C31)	50.00	55.49	11.0	25
n-Dotriacontane (C32)	50.00	55.64	11.3	25
n-Tritriacontane (C33)	50.00	55.60	11.2	25
n-Tetratriacontane (C34)	50.00	55.50	11.0	25
n-Pentatriacontane (C35)	50.00	55.22	10.4	25
n-Hexatriacontane (C36)	50.00	55.12	10.2	25
n-Heptatriacontane (C37)	50.00	55.40	10.8	25
n-Octatriacontane (C38)	50.00	56.31	12.6	25
n-Tetracontane (C40)	50.00	60.23	20.5	25
ortho-Terphenyl	50.00	51.60	3.2	25
d50-Tetracosane	50.00	53.06	6.1	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.13

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\C209240403.D
Operator : NLJr
Acquired : 26 Sep 2004 3:56 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240403
Misc Info : HW081604E 50ug/mL
Vial Number: 31



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **C209240404**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	51.94	3.9	25
n-Decane (C10)	50.00	49.80	0.4	25
n-Undecane (C11)	50.00	49.13	1.7	25
n-Dodecane (C12)	50.00	48.77	2.5	25
n-Tridecane (C13)	50.00	48.46	3.1	25
n-Tetradecane (C14)	50.00	48.54	2.9	25
n-Pentadecane (C15)	50.00	48.61	2.8	25
n-Hexadecane (C16)	50.00	48.89	2.2	25
n-Heptadecane (C17)	50.00	48.39	3.2	25
Pristane	50.00	50.09	0.2	25
n-Octadecane (C18)	50.00	50.62	1.2	25
Phytane	50.00	50.36	0.7	25
n-Nonadecane (C19)	50.00	50.86	1.7	25
n-Eicosane (C20)	50.00	51.86	3.7	25
n-Heneicosane (C21)	50.00	51.82	3.6	25
n-Docosane (C22)	50.00	52.16	4.3	25
n-Tricosane (C23)	50.00	52.59	5.2	25
n-Tetracosane (C24)	50.00	52.97	5.9	25
n-Pentacosane (C25)	50.00	55.23	10.5	25
n-Hexacosane (C26)	50.00	53.56	7.1	25
n-Heptacosane (C27)	50.00	53.75	7.5	25
n-Octacosane (C28)	50.00	54.68	9.4	25
n-Nonacosane (C29)	50.00	54.24	8.5	25
n-Triacontane (C30)	50.00	54.30	8.6	25
n-Hentriacontane (C31)	50.00	54.51	9.0	25
n-Dotriacontane (C32)	50.00	54.66	9.3	25
n-Tritriacontane (C33)	50.00	54.95	9.9	25
n-Tetratriacontane (C34)	50.00	54.75	9.5	25
n-Pentatriacontane (C35)	50.00	54.49	9.0	25
n-Hexatriacontane (C36)	50.00	54.59	9.2	25
n-Heptatriacontane (C37)	50.00	54.97	9.9	25
n-Octatriacontane (C38)	50.00	55.99	12.0	25
n-Tetracontane (C40)	50.00	59.45	18.9	25
ortho-Terphenyl	50.00	51.17	2.3	25
d50-Tetracosane	50.00	52.05	4.1	25

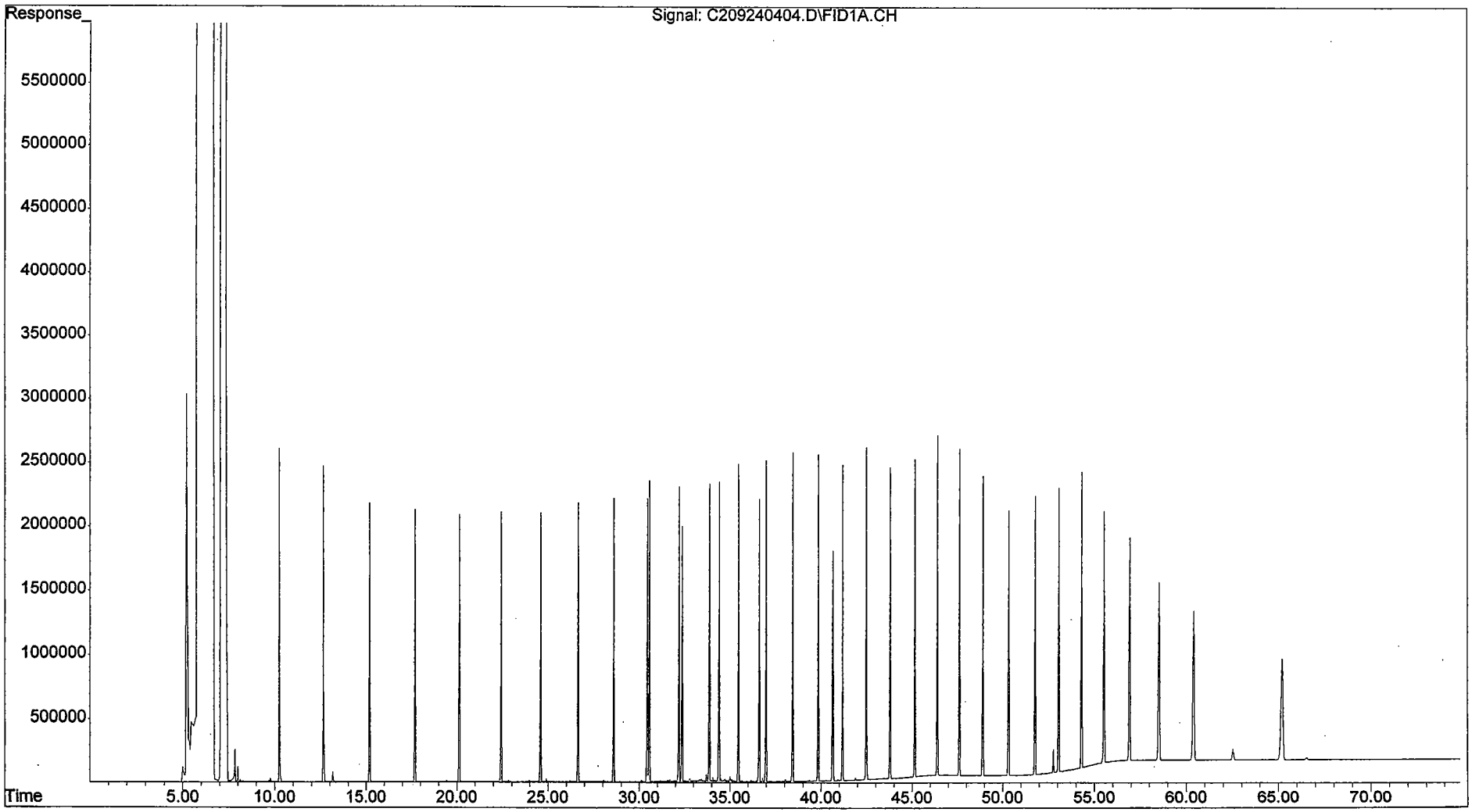
Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.12

N/A - Not Applicable

10/07/04 16:25

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\C209240404.D
Operator : NLJr
Acquired : 27 Sep 2004 10:07 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240404
Misc Info : HW081604E 50ug/mL
Vial Number: 44



Woods Hole Group Environmental Laboratories
Batch Weight Report
09/07/2004

Lab ID	QC Type	0408123SST - Sample
0408123-01	SAM	30.29
0408123-02	SAM	30.6
0408123-03	SAM	30.39
0408123-04	SAM	30.29
0408123-05	SAM	30.41
0408123-06	SAM	30.29
0408123-07	SAM	30.28
0408123-08	SAM	30.96
0408123-09	SAM	30.96
0408123-10	SAM	30.2
0408123-11	D	30.31
0408123-11	SAM	30.75
0408123-11M	OP NEWFIE	30.28
0408123-11M	OP SHC	30.28
0408123-12	SAM	30.44
0408123-13	SAM	30.45
0408123-14	SAM	30.58
0408123-15	SAM	30.54
SS090704B02	B	30
SS090704BS02BS	OP NEWFIE	30
SS090704BS02BS	OP SHC	30
SS090704BSD02BS	DOP NEWFIE	30
SS090704BSD02BS	DOP SHC	30

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46
COPPER: A14601 SULFURIC ACID: 3102030
GLASS WOOL: 4303309989 SODIUM SULFATE: E13478
DIATEMACEOUS EARTH: 00504

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408123SST - OP SHC

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408123-01	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-02	SAM	Shaker	JFR	9/7/04	9/14/04		30.6	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-03	SAM	Shaker	JFR	9/7/04	9/14/04		30.39	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-04	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	20	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-05	SAM	Shaker	JFR	9/7/04	9/14/04		30.41	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-06	SAM	Shaker	JFR	9/7/04	9/14/04		30.29	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-07	SAM	Shaker	JFR	9/7/04	9/14/04		30.28	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-08	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-09	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-10	SAM	Shaker	JFR	9/7/04	9/14/04		30.2	8	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	D	Shaker	JFR	9/7/04	9/14/04		30.31	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	M	Shaker	JFR	9/7/04	9/14/04		30.28	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-11	SAM	Shaker	JFR	9/7/04	9/14/04		30.75	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-12	SAM	Shaker	JFR	9/7/04	9/14/04		30.44	10	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-13	SAM	Shaker	JFR	9/7/04	9/14/04		30.45	5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-14	SAM	Shaker	JFR	9/7/04	9/14/04		30.58	4	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
0408123-15	SAM	Shaker	JFR	9/7/04	9/14/04		30.54	2.5	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704B02	B	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704BS02	BS	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	
SS090704BSD02	BSD	Shaker	JFR	9/7/04	9/14/04		30	2	False	RPR	9/9/04	KD Flask	0.5	RPR	9/11/04	

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408123SST - OP SHC

Lab ID	Notes
0408123-01	1st Prep: Copper Cleaned
0408123-02	1st Prep: Copper Cleaned
0408123-03	1st Prep: Copper Cleaned
0408123-04	1st Prep: Copper Cleaned
0408123-05	1st Prep: Copper Cleaned
0408123-06	1st Prep: Copper Cleaned
0408123-07	1st Prep: Copper Cleaned
0408123-08	1st Prep: Copper Cleaned
0408123-09	1st Prep: Copper Cleaned
0408123-10	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-11	1st Prep: Copper Cleaned
0408123-12	1st Prep: Copper Cleaned
0408123-13	1st Prep: Copper Cleaned
0408123-14	1st Prep: Copper Cleaned
0408123-15	1st Prep: Copper Cleaned
SS090704B02	1st Prep: Copper Cleaned
SS090704BS02	1st Prep: Copper Cleaned
SS090704BSD02	1st Prep: Copper Cleaned

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/07/2004 0408123SST - OP NEWFIE Analyst: JFR Witness: MP

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408123-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-05	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-06	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-07	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-08	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-09	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-10	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-11	D	SSW083104B	100	µl				SSW090104E	100	µl
0408123-11	M	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
0408123-11	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-12	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-13	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-14	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408123-15	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SS090704B02	B	SSW083104B	100	µl				SSW090104E	100	µl
SS090704BS02	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SS090704BSD02	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: _____NEWFIE_____

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID#_____SSW090104E_____
Conc._____10 ug/ml_____

Test: _____NEWFIE_____

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID#_____SSW083104B_____
Conc.__10 ug/ml-PAH__500 ug/mL-SHC____

Test: _____NEWFIE_____

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID#_____SLW090104G_____
Conc.__10 ug/ml-PAH__500 ug/mL-SHC____

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408123ST

Lab ID	Extract Vol (ul)	Standard ID and Vol[1]	Vol Added (ul)	Pre Injection Vol (ul)	Final Volume Equivalent	Spiked By	Wiped By	Aliquot1 Removed (ul)	Aliquot2 Removed (ul)	Date
0408123-01	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-02	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-03	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-04	900	SSW083104D 1OF3	100	1000	20	RPR	RPR	500	500	9/11/04
0408123-05	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-06	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-07	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-08	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-09	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-10	900	SSW083104D 1OF3	100	1000	8	RPR	RPR	500	500	9/11/04
0408123-11	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-11D	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-11MS	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
0408123-12	900	SSW083104D 1OF3	100	1000	10	RPR	RPR	500	500	9/11/04
0408123-13	900	SSW083104D 1OF3	100	1000	5	RPR	RPR	500	500	9/11/04
0408123-14	900	SSW083104D 1OF3	100	1000	4	RPR	RPR	500	500	9/11/04
0408123-15	900	SSW083104D 1OF3	100	1000	2.5	RPR	RPR	500	500	9/11/04
SS090704B02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04
SS090704BS02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04
SS090704BSD02	900	SSW083104D 1OF3	100	1000	2	RPR	RPR	500	500	9/11/04

[1] Includes Internal Std

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408123ST

Lab ID	Extract Vol (uL)	Standard ID and Vial	Vol Is Added (uL)	Pre Injection Vol (uL)[1]	Final Volume Equivalent	Spiked By	Wlm'd By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408123-01-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-02-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-03-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-04-F1	900	SSW083104D 1OF3	100	1000	20	MAL	RPR	1000	NA	9/14/04
0408123-05-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-06-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-07-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-08-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-09-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-10-F1	900	SSW083104D 1OF3	100	1000	8	MAL	RPR	1000	NA	9/14/04
0408123-11-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-11D-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-11MS-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
0408123-12-F1	900	SSW083104D 1OF3	100	1000	10	MAL	RPR	1000	NA	9/14/04
0408123-13-F1	900	SSW083104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408123-14-F1	900	SSW083104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408123-15-F1	900	SSW083104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
SS090704B02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BS02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BSD02-F1	900	SSW083104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04

[1] Includes Internal Std

Gravimetric Determination For Column

Analyst: MAL
Date: 9/10/04

BATCH: 0408123

Entered by: MAL
Verified by:

ETR #	Sample #	QC (MB, LCS, D)	Final Volume of Extract (ul)	Aliquot Removed #1 (ul)	Aliquot Removed #2 (ul)	Aliquot Weight #1 (mg)	Aliquot Weight #2 (mg)	Total Extract Oil Weight (mg)	Volume Removed For Column (ul)	Oil to Column (mg)	Dilution Factor	QC (%R, RPD)
0408123	LCS		NA	50	NA	0.214	NA	NA	NA	NA	NA	86%
0408123	1		2000	50	NA	0.704	NA	28.16	400	5.63	5.00	
0408123	2		2000	50	NA	0.848	NA	33.92	250	4.24	8.00	
0408123	3		2000	50	NA	1.165	NA	46.60	250	5.83	8.00	
0408123	4		2000	50	NA	2.903	NA	116.12	100	5.81	20.00	
0408123	5		2000	50	NA	0.743	NA	29.72	400	5.94	5.00	
0408123	6		2000	50	NA	0.751	NA	30.04	400	6.01	5.00	
0408123	7		2000	50	NA	0.502	NA	20.08	500	5.02	4.00	
0408123	8		2000	50	NA	0.384	NA	15.36	800	6.14	2.50	
0408123	9		2000	50	NA	0.571	NA	22.84	500	5.71	4.00	
0408123	10		2000	50	NA	1.165	NA	46.60	250	5.83	8.00	
0408123	11		2000	50	NA	0.399	NA	15.96	500	3.99	4.00	
0408123	11	D	2000	50	NA	0.349	NA	13.96	800	5.58	2.50	13%
0408123	11	MS	2000	50	NA	0.370	NA	14.80	800	5.92	2.50	
0408123	12		2000	50	NA	1.554	NA	62.16	200	6.22	10.00	
0408123	13		2000	50	NA	0.756	NA	30.24	400	6.05	5.00	
0408123	14		2000	50	NA	0.535	NA	21.40	500	5.35	4.00	
0408123	15		2000	50	NA	0.360	NA	14.40	800	5.76	2.50	

Total Extract Oil Weight (mg) = (Final Volume of Extract / Aliquot Removed) * Aliquot Weight
Sample Weight (mg/mL) = 20 * Aliquot Weight (mg)
LCS TV = 5 mg/mL

Oil to Column = Total Extract Oil Weight (mg) / Dilution Factor
Dilution Factor = Final Volumne of Extract (ul) / Volume Removed For Column (ul)

TEMPLATE: GravimetricT.XLT
Duplicates should agree within +/- 10%.

```
   Sequence Name: C:\MSDChem\3\sequence\S209240401.S
         Comment:
        Operator: NLJr
       Data Path: C:\MSDChem\2\DATA\SEPT24\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ----------------------------------------------------------------------
   Line                     Sample Name/Misc Info
 1) Sample          1
     Datafile           PRIMER01
     Method             MS2SHC092404REV02
 2) Sample          2
     Datafile           IB209240401
     Method             MS2SHC092404REV02
 3) Sample          3
     Datafile           I209240401
     Method             MS2SHC092404REV02
 4) Sample          4
     Datafile           I209240402
     Method             MS2SHC092404REV02
 5) Sample          5
     Datafile           I209240403
     Method             MS2SHC092404REV02
 6) Sample          6
     Datafile           I209240404
     Method             MS2SHC092404REV02
 7) Sample          7
     Datafile           I209240405
     Method             MS2SHC092404REV02
 8) Sample          8
     Datafile           IB209240402
     Method             MS2SHC092404REV02
 9) Sample          9
     Datafile           ANS209240401
     Method             MS2SHC092404REV02
10) Sample         10
     Datafile           Q209240401
     Method             MS2SHC092404REV02
11) Sample         11
     Datafile           C209240401
     Method             MS2SHC092404REV02
12) Sample         12
     Datafile           IB209240403
     Method             MS2SHC092404REV02
13) Sample         13
     Datafile           SW090104B11
     Method             MS2SHC092404REV02
14) Sample         14
     Datafile           SW090104BS07
     Method             MS2SHC092404REV02
```

15) Sample 15
Datafile SW090104BSD07
Method MS2SHC092404REV02
16) Sample 16
Datafile 0408122-04
Method MS2SHC092404REV02
17) Sample 17
Datafile IB209240404
Method MS2SHC092404REV02
18) Sample 18
Datafile C209240402
Method MS2SHC092404REV02
19) Sample 19
Datafile IB209240405
Method MS2SHC092404REV02
20) Sample 20
Datafile SS090704B02
Method MS2SHC092404REV02
21) Sample 21
Datafile SS090704BS02
Method MS2SHC092404REV02
22) Sample 22
Datafile SS090704BSD02
Method MS2SHC092404REV02
23) Sample 23
Datafile 0408123-01
Method MS2SHC092404REV02
24) Sample 24
Datafile 0408123-02
Method MS2SHC092404REV02
25) Sample 25
Datafile 0408123-03
Method MS2SHC092404REV02
26) Sample 26
Datafile 0408123-04
Method MS2SHC092404REV02
27) Sample 27
Datafile 0408123-05
Method MS2SHC092404REV02
28) Sample 28
Datafile 0408123-06
Method MS2SHC092404REV02
29) Sample 29
Datafile 0408123-07
Method MS2SHC092404REV02
30) Sample 30
Datafile IB209240406
Method MS2SHC092404REV02
31) Sample 31
Datafile C209240403
Method MS2SHC092404REV02
32) Sample 32
Datafile IB209240407
Method MS2SHC092404REV02
33) Sample 33
Datafile 0408123-08
Method MS2SHC092404REV02
34) Sample 34
Datafile 0408123-09
Method MS2SHC092404REV02

35) Sample 35
Datafile 0408123-10
Method MS2SHC092404REV02
36) Sample 36
Datafile 0408123-11
Method MS2SHC092404REV02
37) Sample 37
Datafile 0408123-11D
Method MS2SHC092404REV02
38) Sample 38
Datafile 0408123-11M
Method MS2SHC092404REV02
39) Sample 39
Datafile 0408123-12
Method MS2SHC092404REV02
40) Sample 40
Datafile 0408123-13
Method MS2SHC092404REV02
41) Sample 41
Datafile 0408123-14
Method MS2SHC092404REV02
42) Sample 42
Datafile 0408123-15
Method MS2SHC092404REV02
43) Sample 43
Datafile IB209240408
Method MS2SHC092404REV02

Sequence Name: C:\MSDChem\3\sequence\S209240401.S

Line Type	Vial	DataFile	Method	Sample Name
44) Sample	44			
Datafile		C209240404		
Method		MS2SHC092404REV02		
45) Sample	45			
Datafile		IB209240409		
Method		MS2SHC092404REV02		
46) Sample	46			
Datafile		SS090704B03		
Method		MS2SHC092404REV02		
47) Sample	47			
Datafile		SS090704BS03		
Method		MS2SHC092404REV02		
48) Sample	48			
Datafile		SS090704BSD03		
Method		MS2SHC092404REV02		
49) Sample	49			
Datafile		0408124-01		
Method		MS2SHC092404REV02		
50) Sample	50			
Datafile		0408124-02		
Method		MS2SHC092404REV02		
51) Sample	51			
Datafile		0408124-03		
Method		MS2SHC092404REV02		
52) Sample	52			
Datafile		0408124-04		
Method		MS2SHC092404REV02		
53) Sample	53			
Datafile		0408124-05		
Method		MS2SHC092404REV02		
54) Sample	54			
Datafile		0408124-06		
Method		MS2SHC092404REV02		
55) Sample	55			
Datafile		0408124-07		
Method		MS2SHC092404REV02		
56) Sample	56			
Datafile		IB209240410		
Method		MS2SHC092404REV02		
57) Sample	57			
Datafile		C209240405		
Method		MS2SHC092404REV02		
58) Sample	58			
Datafile		IB209240411		
Method		MS2SHC092404REV02		
59) Sample	59			
Datafile		0408124-08		
Method		MS2SHC092404REV02		
60) Sample	60			
Datafile		0408124-09		
Method		MS2SHC092404REV02		
61) Sample	61			
Datafile		0408124-10		
Method		MS2SHC092404REV02		
62) Sample	62			
Datafile		0408124-11		

```
     Method              MS2SHC092404REV02
63)  Sample         63
     Datafile            0408124-12
     Method              MS2SHC092404REV02
64)  Sample         64
     Datafile            0408124-13
     Method              MS2SHC092404REV02
65)  Sample         65
     Datafile            0408124-14
     Method              MS2SHC092404REV02
66)  Sample         66
     Datafile            0408124-14D
     Method              MS2SHC092404REV02
67)  Sample         67
     Datafile            0408124-14M
     Method              MS2SHC092404REV02
68)  Sample         68
     Datafile            0408124-15
     Method              MS2SHC092404REV02
69)  Sample         69
     Datafile            IB209240412
     Method              MS2SHC092404REV02
70)  Sample         70
     Datafile            C209240406
     Method              MS2SHC092404REV02
71)  Sample          1
     Datafile            JEFFTEST01
     Method              MS2SHC092404REV02
72)  Sample          2
     Datafile            JEFFTEST02
     Method              MS2SHC092404REV02
73)  Sample          2
     Datafile            JEFFTEST03
     Method              MS2SHC092404REV02
```

9/24/04

366

TOTAL ORGANIC CARBON

366-A

Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-101-0006**
Matrix: **Sediment**
Percent Solid: **56.5**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-01**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.4**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.5**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-101-0612**
Matrix: **Sediment**
Percent Solid: **55.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-02**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.5**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.4**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-103-0006**
Matrix: **Sediment**
Percent Solid: **42.8**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-03**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.4**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.5**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-103-0612**
Matrix: **Sediment**
Percent Solid: **48.3**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-04**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.4**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-104-0006**
Matrix: **Sediment**
Percent Solid: **33.8**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-05**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.8**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-104-0612**
Matrix: **Sediment**
Percent Solid: **35.7**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-06**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.5**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-02-082504**
Matrix: **Sediment**
Percent Solid: **30.3**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-07**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.7**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-DUP01-082504**
Matrix: **Sediment**
Percent Solid: **30.5**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-08**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.9**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-28-082504**
Matrix: **Sediment**
Percent Solid: **33.9**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-09**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.9**		0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	**2.0**		0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-06-082504**
Matrix: **Sediment**
Percent Solid: **44.7**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-10**
Date Collected: **08/25/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**2.0**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.6**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-09-082604**
Matrix: **Sediment**
Percent Solid: **83.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.40**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.43**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form I
Duplicate
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-09-082604**
Matrix: **Sediment**
Percent Solid: **83.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 D**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.37**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.40**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form VI
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-09-082604**
Matrix: **Sediment**
Percent Solid: **83.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 D**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Sample Result	Duplicate Result	Unit	Percent RPD	RPD Limit
Total Organic Carbon (Run 1)	**0.40**	**0.37**	%	8	25
Total Organic Carbon (Run 2)	**0.43**	**0.40**	%	8	25

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

09/10/04 08:00

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Form I
Matrix Spike
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-09-082604**
Matrix: **Sediment**
Percent Solid: **83.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-11 M**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**3.2**	S	0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**2.3**	S	0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable
S - Spike compound.

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Form VA
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-09-082604**
Matrix: **Sediment**
Percent Solid: **83.6**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **See Below**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Lab ID:	0408123-11		0408123-11		
Parameter	**Sample Conc.**	**Unit**	**Matrix Spike Conc.**	**% Recovery**	**% Recovery Limits**
Total Organic Carbon (Run 1)	0.40	%	3.2	110	75-125
Total Organic Carbon (Run 2)	0.43	%	2.3	107	75-125

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

09/10/04 08:02

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-03-082604**
Matrix: **Sediment**
Percent Solid: **48.5**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-12**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**2.3**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**2.5**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-29-082604**
Matrix: **Sediment**
Percent Solid: **37.0**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-13**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**2.4**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**2.5**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-05-082604**
Matrix: **Sediment**
Percent Solid: **41.2**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-14**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.8**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-DUP02-082604**
Matrix: **Sediment**
Percent Solid: **41.4**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **0408123-15**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.6**		0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable

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Form III
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **WS090804B18**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	0.01	U	0.01	1	09/08/04	%	9060	JAD
Total Organic Carbon (Run 2)	0.01	U	0.01	1	09/08/04	%	9060	JAD

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form III
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **WS090904B14**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	0.01	U	0.01	1	09/09/04	%	9060	JAD
Total Organic Carbon (Run 2)	0.01	U	0.01	1	09/09/04	%	9060	JAD

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form VII
Standard Reference Material 1944
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **SRM 1944**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **WS090804L194401**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Conc.	% Recovery	% Recovery Limits
Total Organic Carbon (Run 1)	4.3	98	75-125
Total Organic Carbon (Run 2)	4.3	98	75-125

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

09/10/04 08:02

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Form VII
Standard Reference Material 1944
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **SRM 1944**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408123**
Lab ID: **WS090904L194401**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Conc.	% Recovery	% Recovery Limits
Total Organic Carbon (Run 1)	5.0	113	75-125
Total Organic Carbon (Run 2)	5.0	113	75-125

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

09/10/04 08:02

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CHAIN OF CUSTODY RECORDS

389-A

0408123

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8-30-04

Carrier: FedEx

Airbill No.: 84550072

No. of Coolers: 7786

Container Type	Container Type	Container Type	Container Type	Container Type
8oz amber				

Analysis	Analysis	Analysis	Analysis	Analysis
Forensic PAH/TPH				

Sample Number	Matrix	2004 Date/Time	Sample Location	Tag Number(s)	QC	Preservative: Ice	Preservative	Preservative	Preservative	Preservative
-1	Sed	8/25 1220	DSY-SD-101-0006			1				
-2		1230	-101-0612			1				
-3		1400	-103-0006			1				
-4		1405	-103-0612			1				
-5		1430	-104-0006			1				
-6		1440	-104-0612			1				
-7		1530	-02-082504			1				
-8		8/25 1540	-DUP01-082504			1				
-9		8/25 1550	-28-082504			2				extra volume
-10		8/25 1615	-06-082504			1				
-11		8/26 0845	-09-082604		QC	2				extra volume
-12	Sed	8/26 0910	DSY-SD-03-082604			1				

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400	Fed Ex	(YES) NO	Use DSY-SD-09-082604 for Lab QC
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	
Fed Ex	8/31/04 9:30	K Bates		

Tt NUS Form 0022

390

№ 03047

0408123

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Page 2 of 3

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/30/04

Carrier: Fed Ex

Airbill No.: 8455007277886

No. of Coolers: 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber				

Analysis	Analysis	Analysis	Analysis	Analysis
Forensic TPH/PAH				

Preservative	Preservative	Preservative	Preservative	Preservative
Ice				

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Container Type
-13	Sed	8/26 0920	DSY-SD-29-082604			1
-14		1000	-05-			1
-15		1005	-DUP02-			1
		1025	-08-			1
		1040	-04-			1
		1110	-20-			1
		1130	-27-			1
		1150	-31-			1
		1210	-11-			1
		1240	-32-			1
		1305	-36-			1
	Sed	8/26 1350	DSY-SD-CC01-082604			1

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400	Fed Ex	YES NO	
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	
Fed Ex	8/31/04 9:30	K Bates		

Tt NUS Form 0022

391

№ 03048

Sample Receipt Checklist

Client: NEWFE		**Receipt Date:** 8/31/04	
Project: DeRecktor Shipyard		**Log-in Date:**	
ETR #: 0408123		**Inspection by:** MG / KJB	**Login by:** MG

ALL SECTIONS BELOW MUST BE COMPLETED

Comments / Notes

Were samples shipped? (Yes, FedEx) / UPS / Other:_____
No, WHG Courier pick-up / Hand delivered

Is bill of lading retained? Yes, Tracking #: Attached
No, Unavailable / NA

Number of coolers received for this project delivery: 1

Indicate cooler temperature upon opening (if multiple coolers, record all temps):

Note: If all coolers are 2-6°C, use one checklist, if NOT, use separate checklists and note all samples received *above* 6°C.

Cooler 1:
Temperature(s) taken from: 6° IR Gun, 6° Temp. Blank, / NA

Were samples received on ice? (Yes) / No

Chain-of-Custody present? (Yes) / No
Complete? (Yes) / No

Custody seals present on Cooler? (Yes) / No
on Bottles? Yes / (No)
Intact? (Yes) / No / NA
Note: Affix custody seals to back of this page.

Were sample containers intact? Yes / (No) If No, list samples: →

Did VOA/VPH waters contain headspace (>5mm)? Yes / No / (NA) If Yes, list samples: →

Were 5035 VOA soils, or VPH soils, *covered* with MeOH? Yes / No / (NA)
If No, list samples: →

Was a sufficient amount of sample received for each test indicated on the COC?
(Yes) / No If No, list samples: →

If chemical preservation is appropriate -
Were samples field preserved? Yes / No / (NA)
☐ C=HCl ☐ M=MeOH ☐ S=H_2SO4
☐ H=NaOH ☐ N=HNO_3 ☐ Other:_____ ☐ U= Unknown

Preservation (pH) verified at lab for *EVERY* bottle? (Not: VOA / VPH / Sulfide)
YES: <2 or >12 (CN) or NO (NA)
If No, why?:

Were samples received within hold time? (Yes) / No If No, list samples: →

Discrepancy between samples rec'd & COC ? Yes / (No) If Yes, list samples: →

Was the Project Manager notified of any other problems? Yes / No / (NA)

Project Manager Acknowledgement: EMP Date: 9/1/04

Sample storage refrigerator #: C3

Sample storage freezer #:_____

Cooler 2:_____ Cooler 3:_____
Cooler 4:_____ Cooler 5:_____
Cooler 6:_____ Cooler 7:_____

More:_____

2 jars had cracked lids (1 ea each)
DSY-SD03-082604
DSY-SD 28-082504
↑ replaced

Chemical preservation OK for ALL samples?
Yes / No / (N/A)

If No, list samples below:

Please use back for any additional notes!

This portion can be removed for recipient's records.

Date 8/30/04 FedEx Tracking Number 8155 [illegible]

Sender's Name K. O'Neill Phone 978 658-7899

Company TETRA TECH NUS INC

Address 55 JONSPIN RD

Dept./Floor/Suite/Room

WILMINGTON State MA ZIP 01887-1020

Your Internal Billing Reference BOS*1611-0522

CUSTODY SEAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Signature

Attachment H
Laboratory Report

Data Delivery Group: ETR0408124

Sediments

PAHs
SHCs
Biomarkers
TOC

ANALYTICAL REPORT

Prepared for:
NewFields Environmental Forensics Practice
100 Ledgewood Place, Suite 302
Rockland, MA 02370

Project: Derecktor Shipyard
ETR: 0408124
Report Date: October 14, 2004

Certifications and Accreditations
Massachusetts MA030
Connecticut PH-0141
New Hampshire 220602
Rhode Island 64
New Jersey MA015
Maine MA030
New York 11627
Louisiana 03090
Army Corps of Engineers
Department of the Navy
Florida E87814

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Sample ID Cross Reference

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**

Lab Sample ID	Client Sample ID
0408124-01	DSY-SD-08-082604
0408124-02	DSY-SD-04-082604
0408124-03	DSY-SD-20-082604
0408124-04	DSY-SD-27-082604
0408124-05	DSY-SD-31-082604
0408124-06	DSY-SD-11-082604
0408124-07	DSY-SD-32-082604
0408124-08	DSY-SD-36-082604
0408124-09	DSY-SD-CC01-082604
0408124-10	DSY-SD-CC02-082604
0408124-11	DSY-SD-JPC01-082604
0408124-12	DSY-SD-JPC03-082604
0408124-13	DSY-SD-DUP03-082604
0408124-14	DSY-SD-CH01-082604
0408124-15	DSY-SD-CH02-082604

C01

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CASE NARRATIVE
Woods Hole Group Environmental Laboratories

ETR: 0408124
Project: Dececktor Shipyard

All analyses were performed according to Woods Hole Group Environmental Laboratories' quality assurance program and documented Standard Operating Procedures (SOPs). The analytical results contained in this report meet all applicable agency and/or NELAC standards, were performed within holding time, and with appropriate quality control measures, except where noted. Blank correction of results is not performed in the laboratory for any parameter. Soil/sediment samples are reported on a dry weight basis unless otherwise noted. Tissue and sediment samples are not certifiable under the NELAC accreditation.

Sample Preparation

1. All samples were centrifuged prior to the determination of the percent solids in order to achieve solids values greater than 50%. In some cases the resulting percent solids were still below 50%.

Alkylated Polynuclear Aromatic Hydrocarbons and Biomarkers

Polynuclear aromatic hydrocarbons were analyzed following Woods Hole Group SOP *Analysis of Parent and Alkylated Polynuclear Aromatic Hydrocarbons and Selected Heterocyclic Compounds by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring (Revision 2.0, 06/28/02).* Soil samples (approximately 30g) are spiked with surrogate compounds and extracted by *Shaker Table Extraction (Revision 0.0, 02/20/02).* Solvent extracts are dried over sodium sulfate and concentrated to an appropriate final volume based on potential hydrocarbon content determined by gravimetric weight. A pre-determined volume of the extract is taken to a final effective volume determined by this gravimetric weight and submitted for polynuclear aromatic hydrocarbons. An additional portion was silica fractionated for Biomarker analysis and again, a volume of the extract was taken to a final effective volume determined by the gravimetric weight. Qualitative identifications are confirmed by analyzing standards under the same conditions used for samples, comparing mass spectra, GC retention times, and patterns generated from reference oils. Quantification is based on response factors derived from a multi-level initial calibration using internal standard techniques. Alkyl homologues are quantified using the response factor of the parent PAH compound. Modifications to any of the noted SOPs, are documented in the *NewFields Derecktor* Project Workplan.

1. The soil method blank SS090704B03 contained low-level polynuclear aromatic hydrocarbon target compounds detected below the reporting limit. Associated field sample results are flagged with "B" qualifiers if the concentration of the analyte in the sample is less than 5X the concentration in the blank. Additionally, the method blank, SS090704B03F1, blank spike, SS090704BS03, and blank spike duplicate, SS090704BSD03, all exhibited low recovery for the biomarker surrogate 5B(H)Cholane. Research into this anomaly indicated only extracts with absence of matrix such as these QC samples exhibited this low recovery. All sample extracts had acceptable recovery for this surrogate. While the cause for these low recoveries is still unknown, the investigation also showed that this problem was isolated to the extraction batches performed on 9/7/04.

2. The North Slope Crude reference oil (ANS30916-SS092404AWS01) analyzed after the initial calibration on 09/16/04 had five analytes outside the 65-135% limits. Please see the enclosed Form III Spike Recovery Summary for details.

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Note that these reference values were generated from a different laboratory. The instrumental calibration check standard was within QC limits.

3. The duplicate analysis of sample DSY-SD-CH01-082604 (0408124-14 and -14D) has the relative percent difference of several analytes above the 30% QC limit for polynuclear aromatic hydrocarbons and biomarkers. All integrations for these analytes in the native sample and the sample duplicate were reviewed and found to be appropriate. Additionally, the matrix spike on this sample (0408124-14M) also exhibited five compounds recover outside the 50%-150% QC limits with three compounds at 0% recovery. Again, all integrations were reviewed and found to be appropriate. It should be noted that the laboratory control spike and laboratory control spike duplicate had all compounds within the recovery and %RPD QC limits.

4. The continuing calibration C309205 exhibited Indeno(1,2,3-cd)pyrene at 53.5%D, Dibenz(a,h)anthracene at 32.9%D and Benzo(g,h,i)perylene at 36.6%D. Since these are PAH compounds that are not evaluated for biomarker analysis, the calibration is accepted. It should be noted that the biomarker analytes, 17a(H),21B(H)-Hopane and 5B(H) Cholane met the calibration criteria.

Saturated and Total Petroleum Hydrocarbons

Samples for Saturated and Total Petroleum Hydrocarbons were analyzed following the procedures in Woods Hole Group SOP *Total Petroleum Hydrocarbons by Gas Chromatography/Flame Ionization Detector (Revision 1.1)* Method 8100/8015mod and SOP *Addendum for Saturated Hydrocarbons, Rev. 1.0, 2004.* Samples were prepared as stated above for the PAH analysis, and according to the *NewFields Derecktor* Workplan. A portion of the final extract was aliquoted for GC/FID analysis. Extracts are analyzed by gas chromatography with flame ionization detection (FID). A multi-level initial calibration over the n-alkane range from C9-C40 was evaluated and quantified using internal standard techniques prior to sample analysis.

1. The duplicate analysis of sample DSY-SD-CH01-082604 (0408124-14 and -14D) has the relative percent difference for two analytes above the 30% QC limit for saturated hydrocarbons. The analytes with high RPD values are those that were detected below the reporting limits. All integrations for these analytes in the native sample and the sample duplicate were reviewed and found to be appropriate.

2. The matrix spike of sample DSY-SD-CH01-082604 (0408124-14M) and the associated LCS/LCSD (SS090704BS03 and SS090704BSD03) have the alkane n-Nonane (C9) recovered below the 50% QC limit.

Total Organic Carbon

Total organic carbon was analyzed following Woods Hole group SOP *Total Organic Carbon in Soil and Sediment (Revision 2.0)* modified from Method 9060. The solid sample (approximately 5mg) was dried, acidified with phosphoric acid, loaded into an aluminum tin, and introduced into a furnace for combustion in a pure oxygen environment. CO_2 was produced in the combustion zone and non-target elements were removed by scrubbing reagents. The resulting CO_2 gas was de-pressurized through a column where it was detected as a function of its thermal conductivity. The amount of CO_2 derived from the sample is directly proportional to the concentration of organic carbonaceous material in the sample.

1. All quality control parameters met the specified criteria.

The enclosed results of analyses are representative of the samples as received by the laboratory. Woods Hole Group Environmental Laboratories makes no representations or certifications as to the method of sample collection, sample identification, or transporting/handling procedures used prior to the receipt of samples by Woods Hole Group Environmental Laboratories. To the best of my knowledge, the information contained in this report is accurate and complete.

Approved by: Elizabeth Porta Title: QA Manager Date: 10/25/04

Elizabeth Porta **Quality Assurance Manager**

Alkylated Polynuclear Aromatic Hydrocarbons By Selective Ion Monitoring

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-08-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-01**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/20/04	40.2	30.96	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	13	Fluoranthene	250
C1-Naphthalenes	9.7	Pyrene	320
C2-Naphthalenes	19	C1-Fluoranthenes/Pyrenes	170
C3-Naphthalenes	9.6	C2-Fluoranthenes/Pyrenes	74
C4-Naphthalenes	9.3	C3-Fluoranthenes/Pyrenes	38
Biphenyl	3.6	C4-Fluoranthenes/Pyrenes	24
Dibenzofuran	7.8	Naphthobenzothiophenes	50
Acenaphthylene	27	C1-Naphthobenzothiophenes	28
Acenaphthene	7.5	C2-Naphthobenzothiophenes	23
Fluorene	14	C3-Naphthobenzothiophenes	20
C1-Fluorenes	7.0	C4-Naphthobenzothiophenes	12
C2-Fluorenes	9.7	Benz[a]anthracene	160
C3-Fluorenes	12	Chrysene/Triphenylene	220
Anthracene	53	C1-Chrysenes	79
Phenanthrene	100	C2-Chrysenes	41
C1-Phenanthrenes/Anthracenes	64	C3-Chrysenes	35
C2-Phenanthrenes/Anthracenes	58	C4-Chrysenes	20
C3-Phenanthrenes/Anthracenes	26	Benzo[b]fluoranthene	180
C4-Phenanthrenes/Anthracenes	10	Benzo[k]fluoranthene	96
Retene	0.47 U	Benzo[a]fluoranthene	35
Dibenzothiophene	7.3	Benzo[e]pyrene	140
C1-Dibenzothiophenes	7.6	Benzo[a]pyrene	170
C2-Dibenzothiophenes	12	Perylene	44
C3-Dibenzothiophenes	11	Indeno[1,2,3-cd]pyrene	120
C4-Dibenzothiophenes	7.1	Dibenz[a,h]anthracene	18
Benzo(b)fluorene	0.32 U	Benzo[g,h,i]perylene	98

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	59	50-130
Pyrene-d10	91	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/13/04 14:06

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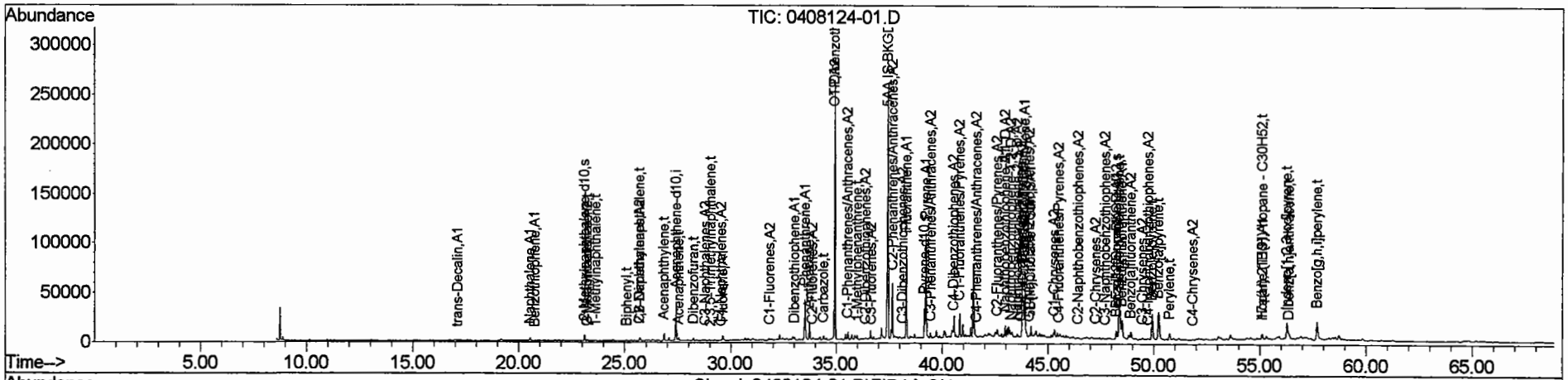
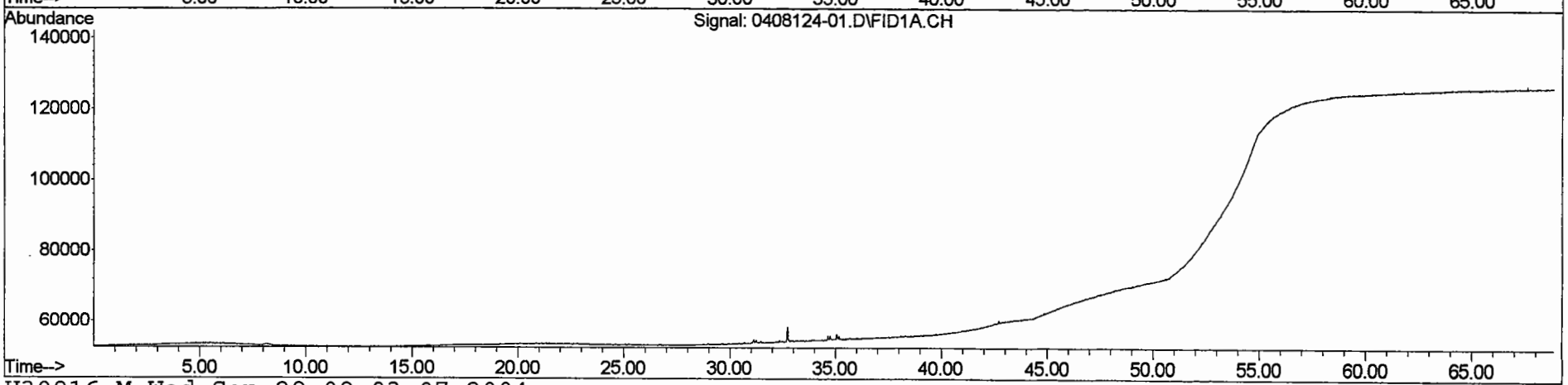
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-01.D
Acq On : 20 Sep 2004 5:50 pm
Operator : BL
Sample : 0408124-01
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 23 13:19:00 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration





007

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-04-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-02**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/20/04	36.8	30.44	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	18	Fluoranthene	500
C1-Naphthalenes	15	Pyrene	540
C2-Naphthalenes	50	C1-Fluoranthenes/Pyrenes	360
C3-Naphthalenes	38	C2-Fluoranthenes/Pyrenes	150
C4-Naphthalenes	14	C3-Fluoranthenes/Pyrenes	79
Biphenyl	6.4	C4-Fluoranthenes/Pyrenes	51
Dibenzofuran	17	Naphthobenzothiophenes	94
Acenaphthylene	47	C1-Naphthobenzothiophenes	56
Acenaphthene	14	C2-Naphthobenzothiophenes	58
Fluorene	40	C3-Naphthobenzothiophenes	53
C1-Fluorenes	12	C4-Naphthobenzothiophenes	31
C2-Fluorenes	17	Benz[a]anthracene	320
C3-Fluorenes	18	Chrysene/Triphenylene	470
Anthracene	130	C1-Chrysenes	140
Phenanthrene	250	C2-Chrysenes	88
C1-Phenanthrenes/Anthracenes	110	C3-Chrysenes	85
C2-Phenanthrenes/Anthracenes	99	C4-Chrysenes	45
C3-Phenanthrenes/Anthracenes	47	Benzo[b]fluoranthene	360
C4-Phenanthrenes/Anthracenes	26	Benzo[k]fluoranthene	170
Retene	0.52 U	Benzo[a]fluoranthene	65
Dibenzothiophene	15	Benzo[e]pyrene	250
C1-Dibenzothiophenes	11	Benzo[a]pyrene	310
C2-Dibenzothiophenes	19	Perylene	88
C3-Dibenzothiophenes	24	Indeno[1,2,3-cd]pyrene	220
C4-Dibenzothiophenes	23	Dibenz[a,h]anthracene	45
Benzo(b)fluorene	0.36 U	Benzo[g,h,i]perylene	180

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	67	50-130
Pyrene-d10	94	50-130
Benzo[b]fluoranthene-d12	99	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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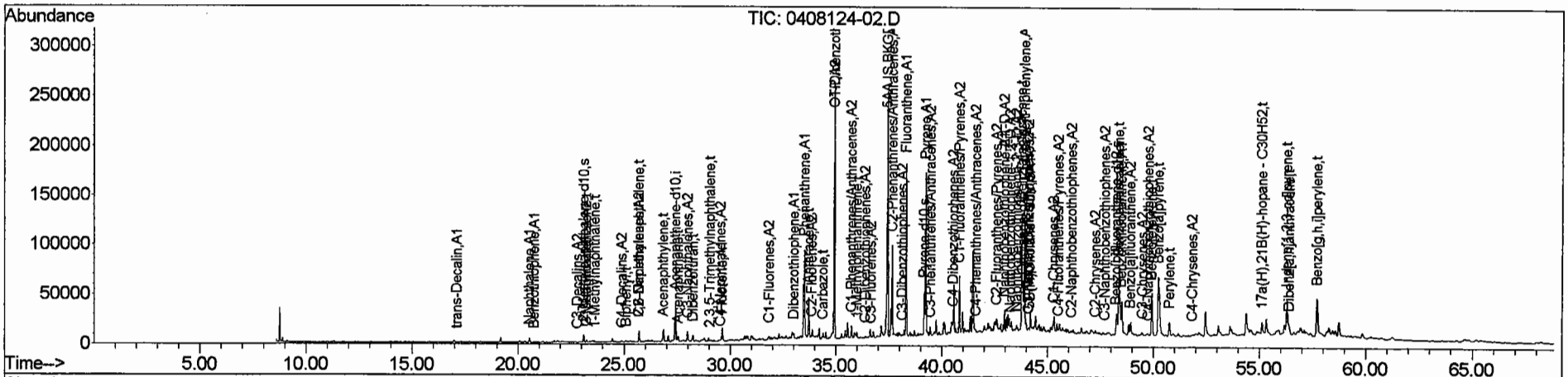
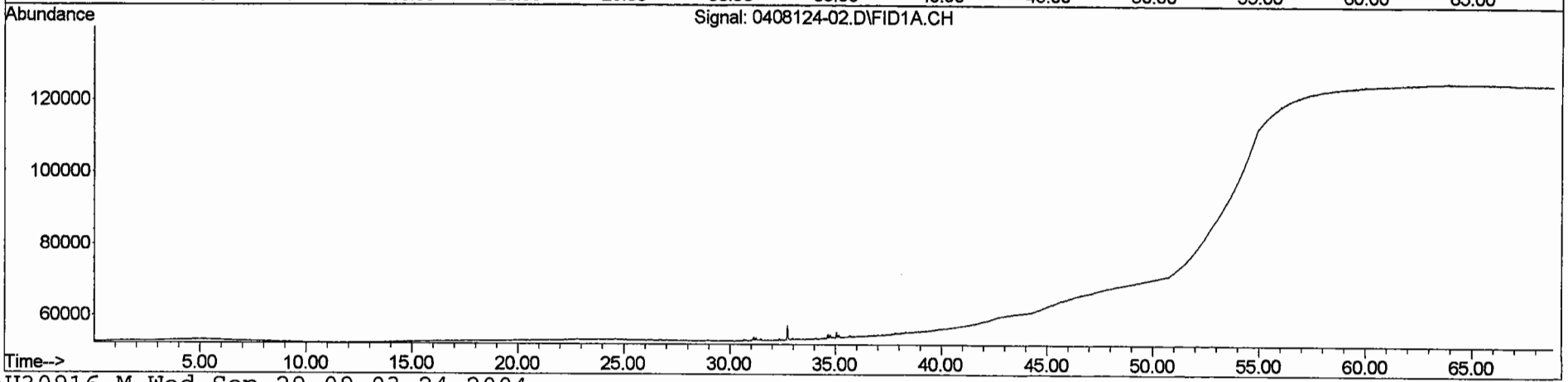
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-02.D
Acq On : 20 Sep 2004 7:13 pm
Operator : BL
Sample : 0408124-02
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 23 13:20:08 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 15:59:43 2004
Response via : Initial Calibration





600

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-20-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-03**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/20/04	37.7	30.27	2	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	10	Fluoranthene	190
C1-Naphthalenes	7.8	Pyrene	230
C2-Naphthalenes	14	C1-Fluoranthenes/Pyrenes	140
C3-Naphthalenes	7.6	C2-Fluoranthenes/Pyrenes	59
C4-Naphthalenes	6.8	C3-Fluoranthenes/Pyrenes	29
Biphenyl	2.6	C4-Fluoranthenes/Pyrenes	16
Dibenzofuran	6.2	Naphthobenzothiophenes	36
Acenaphthylene	19	C1-Naphthobenzothiophenes	19
Acenaphthene	9.2	C2-Naphthobenzothiophenes	16
Fluorene	13	C3-Naphthobenzothiophenes	14
C1-Fluorenes	5.6	C4-Naphthobenzothiophenes	9.7
C2-Fluorenes	5.4	Benz[a]anthracene	130
C3-Fluorenes	8.4	Chrysene/Triphenylene	170
Anthracene	47	C1-Chrysenes	54
Phenanthrene	91	C2-Chrysenes	35
C1-Phenanthrenes/Anthracenes	53	C3-Chrysenes	24
C2-Phenanthrenes/Anthracenes	39	C4-Chrysenes	15
C3-Phenanthrenes/Anthracenes	19	Benzo[b]fluoranthene	140
C4-Phenanthrenes/Anthracenes	9.1	Benzo[k]fluoranthene	71
Retene	0.25 U	Benzo[a]fluoranthene	25
Dibenzothiophene	5.5	Benzo[e]pyrene	100
C1-Dibenzothiophenes	5.7	Benzo[a]pyrene	140
C2-Dibenzothiophenes	7.4	Perylene	36
C3-Dibenzothiophenes	7.8	Indeno[1,2,3-cd]pyrene	100
C4-Dibenzothiophenes	5.2	Dibenz[a,h]anthracene	23
Benzo(b)fluorene	0.18 U	Benzo[g,h,i]perylene	80

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	69	50-130
Pyrene-d10	94	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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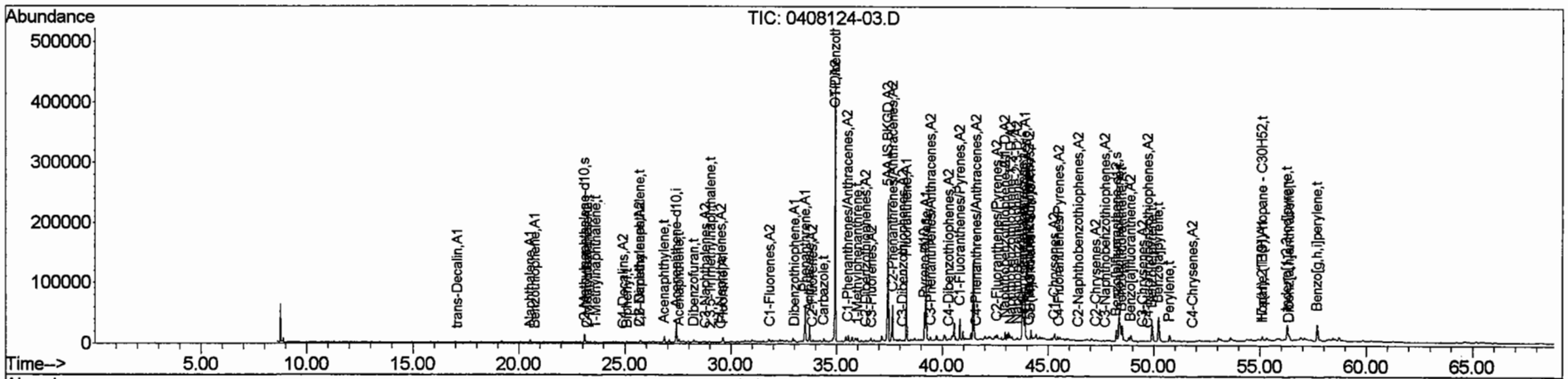
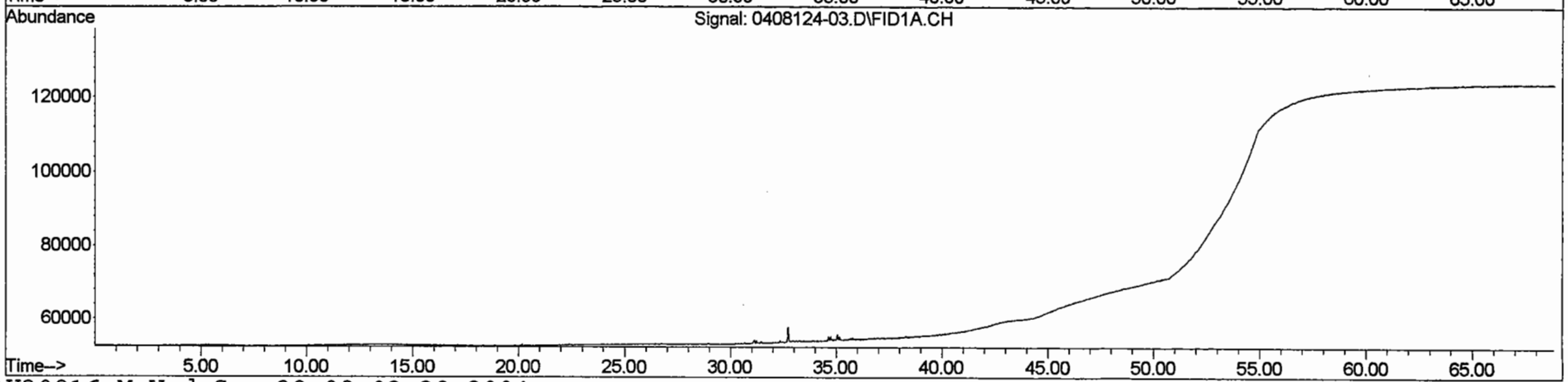
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-03.D
Acq On : 20 Sep 2004 8:36 pm
Operator : BL
Sample : 0408124-03
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 23 13:20:39 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 15:59:43 2004
Response via : Initial Calibration





041

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-27-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-04**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/20/04	50.4	30.92	10	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	21		Fluoranthene	1100
C1-Naphthalenes	16		Pyrene	1500
C2-Naphthalenes	32		C1-Fluoranthenes/Pyrenes	880
C3-Naphthalenes	27		C2-Fluoranthenes/Pyrenes	340
C4-Naphthalenes	51		C3-Fluoranthenes/Pyrenes	190
Biphenyl	6.4	J	C4-Fluoranthenes/Pyrenes	130
Dibenzofuran	13		Naphthobenzothiophenes	240
Acenaphthylene	62		C1-Naphthobenzothiophenes	110
Acenaphthene	17		C2-Naphthobenzothiophenes	130
Fluorene	29		C3-Naphthobenzothiophenes	120
C1-Fluorenes	16		C4-Naphthobenzothiophenes	71
C2-Fluorenes	56		Benz[a]anthracene	760
C3-Fluorenes	69		Chrysene/Triphenylene	1000
Anthracene	200		C1-Chrysenes	340
Phenanthrene	200		C2-Chrysenes	160
C1-Phenanthrenes/Anthracenes	150		C3-Chrysenes	130
C2-Phenanthrenes/Anthracenes	170		C4-Chrysenes	67
C3-Phenanthrenes/Anthracenes	160		Benzo[b]fluoranthene	1200
C4-Phenanthrenes/Anthracenes	120		Benzo[k]fluoranthene	540
Retene	0.93	U	Benzo[a]fluoranthene	120
Dibenzothiophene	16		Benzo[e]pyrene	680
C1-Dibenzothiophenes	24		Benzo[a]pyrene	700
C2-Dibenzothiophenes	89		Perylene	170
C3-Dibenzothiophenes	130		Indeno[1,2,3-cd]pyrene	440
C4-Dibenzothiophenes	97		Dibenz[a,h]anthracene	94
Benzo(b)fluorene	0.65	U	Benzo[g,h,i]perylene	320

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	77	50-130
Pyrene-d10	92	50-130
Benzo[b]fluoranthene-d12	91	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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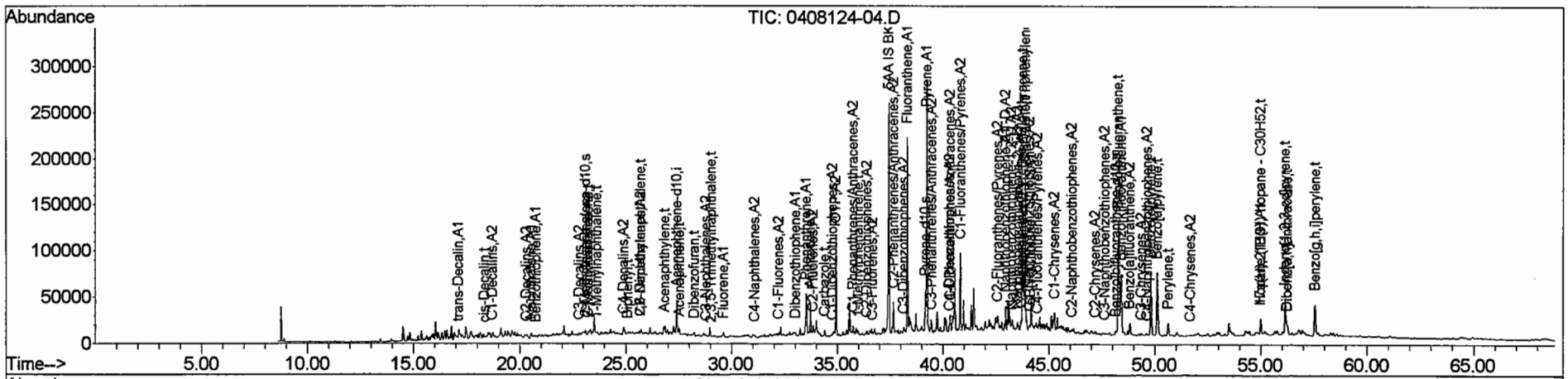
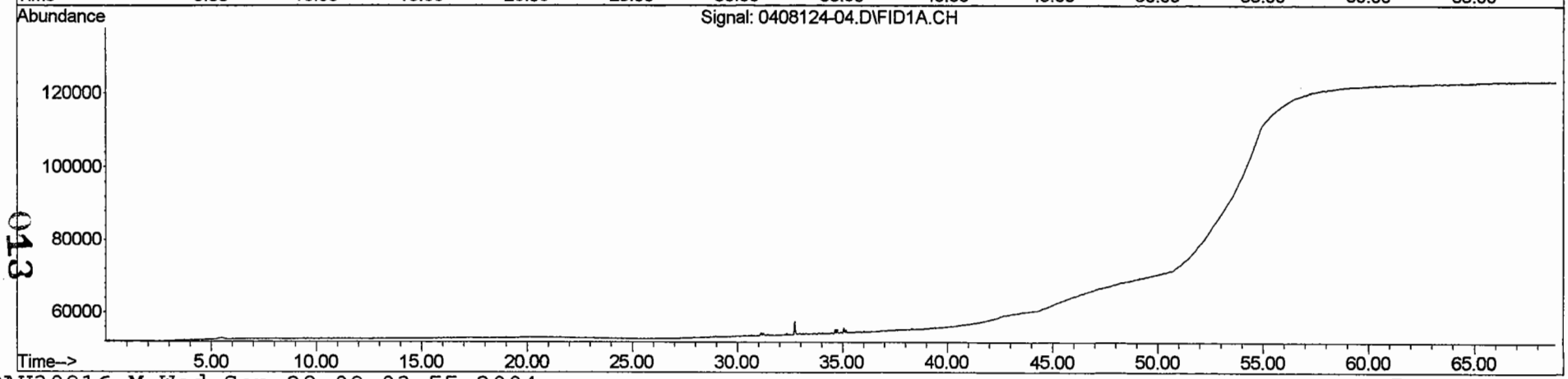
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-04.D
Acq On : 20 Sep 2004 9:59 pm
Operator : BL
Sample : 0408124-04
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 23 13:21:26 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 15:59:43 2004
Response via : Initial Calibration





013

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-31-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-05**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/20/04	37.6	30.82	4	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	17	Fluoranthene	320
C1-Naphthalenes	12	Pyrene	390
C2-Naphthalenes	24	C1-Fluoranthenes/Pyrenes	200
C3-Naphthalenes	12	C2-Fluoranthenes/Pyrenes	99
C4-Naphthalenes	11	C3-Fluoranthenes/Pyrenes	48
Biphenyl	4.8	C4-Fluoranthenes/Pyrenes	32
Dibenzofuran	8.4	Naphthobenzothiophenes	56
Acenaphthylene	33	C1-Naphthobenzothiophenes	33
Acenaphthene	7.4	C2-Naphthobenzothiophenes	32
Fluorene	14	C3-Naphthobenzothiophenes	26
C1-Fluorenes	6.7	C4-Naphthobenzothiophenes	16
C2-Fluorenes	9.8	Benz[a]anthracene	170
C3-Fluorenes	13	Chrysene/Triphenylene	240
Anthracene	59	C1-Chrysenes	87
Phenanthrene	110	C2-Chrysenes	50
C1-Phenanthrenes/Anthracenes	68	C3-Chrysenes	50
C2-Phenanthrenes/Anthracenes	62	C4-Chrysenes	27
C3-Phenanthrenes/Anthracenes	28	Benzo[b]fluoranthene	240
C4-Phenanthrenes/Anthracenes	18	Benzo[k]fluoranthene	110
Retene	0.50 U	Benzo[a]fluoranthene	36
Dibenzothiophene	7.8	Benzo[e]pyrene	170
C1-Dibenzothiophenes	7.8	Benzo[a]pyrene	200
C2-Dibenzothiophenes	13	Perylene	55
C3-Dibenzothiophenes	13	Indeno[1,2,3-cd]pyrene	160
C4-Dibenzothiophenes	7.8	Dibenz[a,h]anthracene	32
Benzo(b)fluorene	0.35 U	Benzo[g,h,i]perylene	130

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	70	50-130
Pyrene-d10	100	50-130
Benzo[b]fluoranthene-d12	101	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

014

10/07/04 14:05

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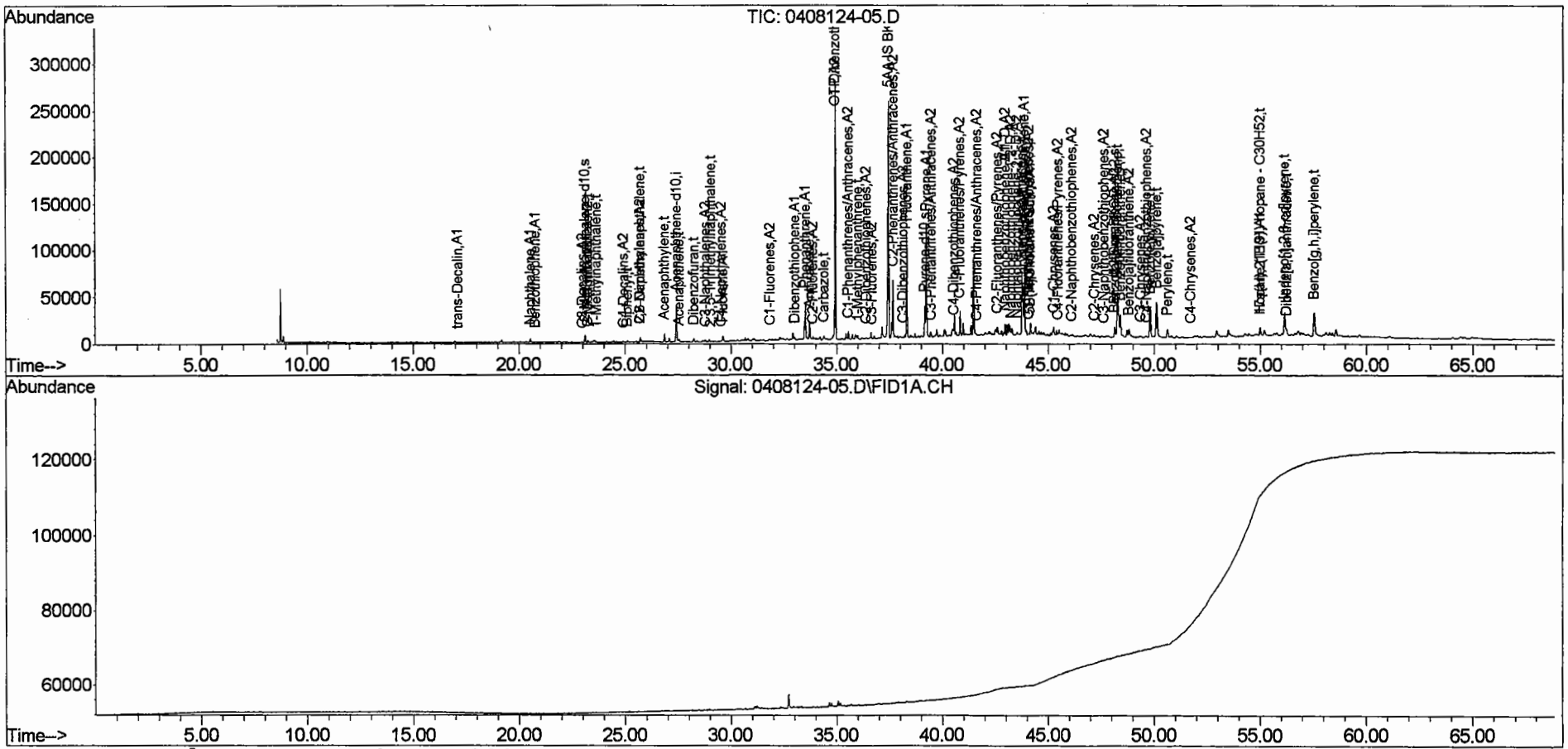
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-05.D
Acq On : 20 Sep 2004 11:21 pm
Operator : BL
Sample : 0408124-05
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 23 13:22:17 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration



015

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-11-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-06**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	48.5	30.54	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	19	Fluoranthene	300
C1-Naphthalenes	14	Pyrene	600
C2-Naphthalenes	32	C1-Fluoranthenes/Pyrenes	340
C3-Naphthalenes	19	C2-Fluoranthenes/Pyrenes	180
C4-Naphthalenes	28	C3-Fluoranthenes/Pyrenes	140
Biphenyl	5.7	C4-Fluoranthenes/Pyrenes	91
Dibenzofuran	11	Naphthobenzothiophenes	75
Acenaphthylene	47	C1-Naphthobenzothiophenes	57
Acenaphthene	11	C2-Naphthobenzothiophenes	100
Fluorene	24	C3-Naphthobenzothiophenes	130
C1-Fluorenes	10	C4-Naphthobenzothiophenes	84
C2-Fluorenes	23	Benz[a]anthracene	240
C3-Fluorenes	44	Chrysene/Triphenylene	310
Anthracene	95	C1-Chrysenes	130
Phenanthrene	150	C2-Chrysenes	120
C1-Phenanthrenes/Anthracenes	96	C3-Chrysenes	140
C2-Phenanthrenes/Anthracenes	82	C4-Chrysenes	80
C3-Phenanthrenes/Anthracenes	60	Benzo[b]fluoranthene	340
C4-Phenanthrenes/Anthracenes	62	Benzo[k]fluoranthene	170
Retene	0.49 U	Benzo[a]fluoranthene	61
Dibenzothiophene	9.9	Benzo[e]pyrene	250
C1-Dibenzothiophenes	10	Benzo[a]pyrene	310
C2-Dibenzothiophenes	20	Perylene	80
C3-Dibenzothiophenes	27	Indeno[1,2,3-cd]pyrene	220
C4-Dibenzothiophenes	37	Dibenz[a,h]anthracene	46
Benzo(b)fluorene	0.34 U	Benzo[g,h,i]perylene	180

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	72	50-130
Pyrene-d10	95	50-130
Benzo[b]fluoranthene-d12	97	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 14:05

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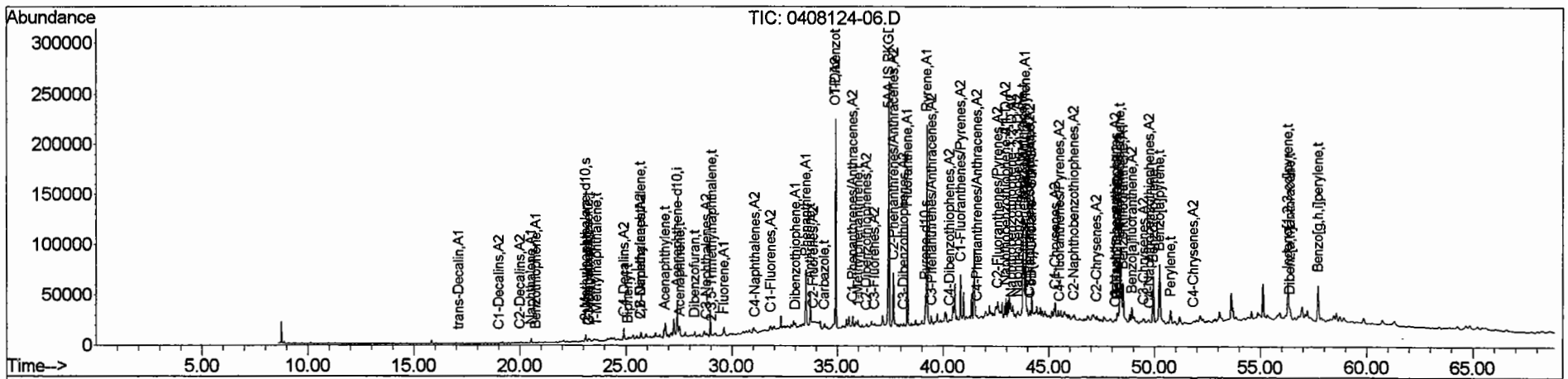
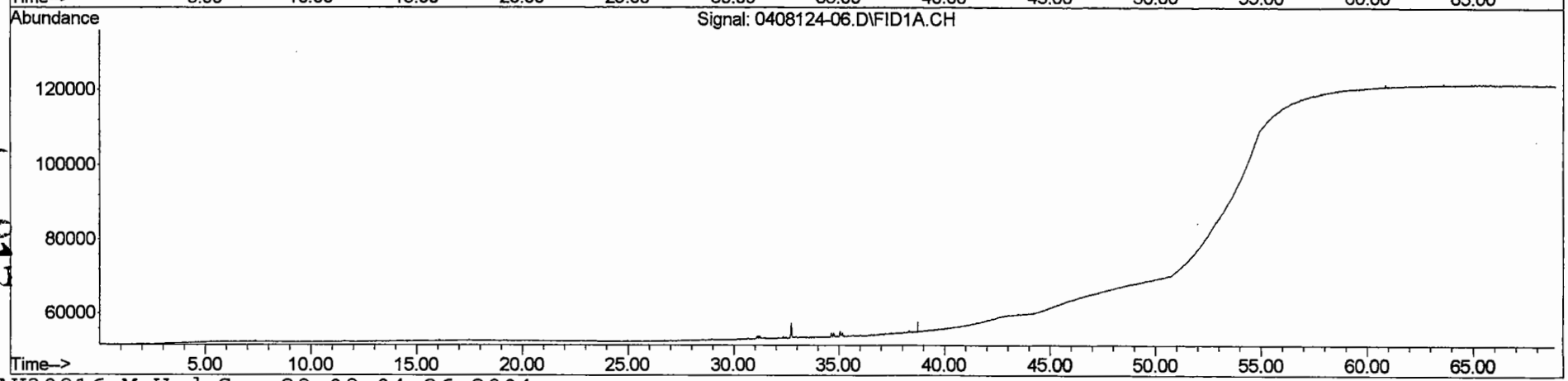
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-06.D
Acq On : 21 Sep 2004 12:44 am
Operator : BL
Sample : 0408124-06
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 23 13:57:56 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-32-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-07**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	38.7	30.74	2	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	9.0	Fluoranthene	110
C1-Naphthalenes	5.9	Pyrene	140
C2-Naphthalenes	11	C1-Fluoranthenes/Pyrenes	93
C3-Naphthalenes	5.6	C2-Fluoranthenes/Pyrenes	43
C4-Naphthalenes	4.9	C3-Fluoranthenes/Pyrenes	19
Biphenyl	2.0	C4-Fluoranthenes/Pyrenes	13
Dibenzofuran	3.9	Naphthobenzothiophenes	25
Acenaphthylene	16	C1-Naphthobenzothiophenes	14
Acenaphthene	3.5	C2-Naphthobenzothiophenes	12
Fluorene	7.0	C3-Naphthobenzothiophenes	10
C1-Fluorenes	3.0	C4-Naphthobenzothiophenes	6.4
C2-Fluorenes	5.0	Benz[a]anthracene	86
C3-Fluorenes	11	Chrysene/Triphenylene	120
Anthracene	31	C1-Chrysenes	43
Phenanthrene	47	C2-Chrysenes	23
C1-Phenanthrenes/Anthracenes	30	C3-Chrysenes	18
C2-Phenanthrenes/Anthracenes	24	C4-Chrysenes	8.7
C3-Phenanthrenes/Anthracenes	12	Benzo[b]fluoranthene	110
C4-Phenanthrenes/Anthracenes	6.9	Benzo[k]fluoranthene	50
Retene	0.24 U	Benzo[a]fluoranthene	19
Dibenzothiophene	3.1	Benzo[e]pyrene	76
C1-Dibenzothiophenes	3.6	Benzo[a]pyrene	98
C2-Dibenzothiophenes	5.3	Perylene	27
C3-Dibenzothiophenes	6.0	Indeno[1,2,3-cd]pyrene	74
C4-Dibenzothiophenes	4.4	Dibenz[a,h]anthracene	15
Benzo(b)fluorene	0.17 U	Benzo[g,h,i]perylene	58

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	70	50-130
Pyrene-d10	92	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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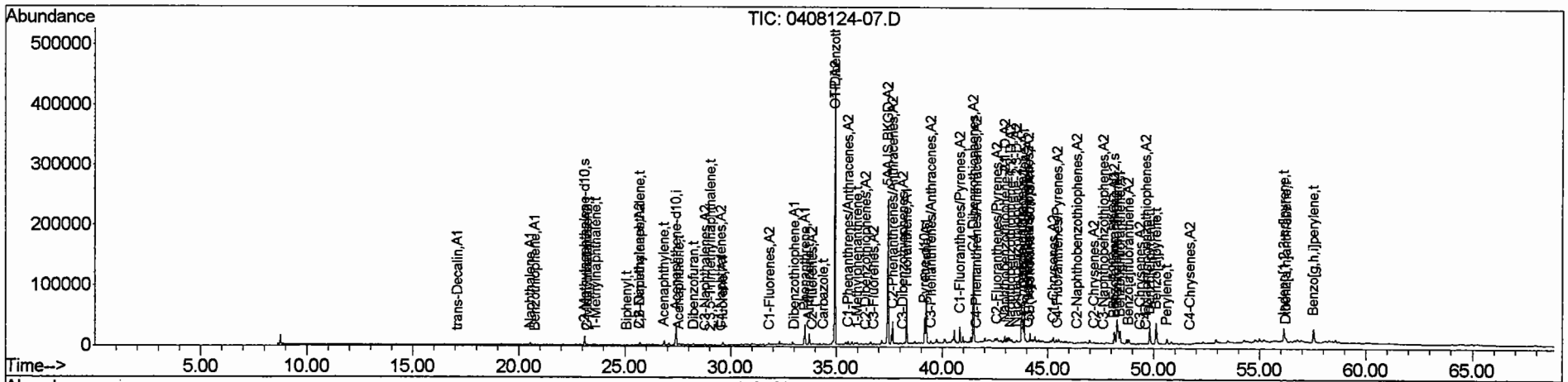
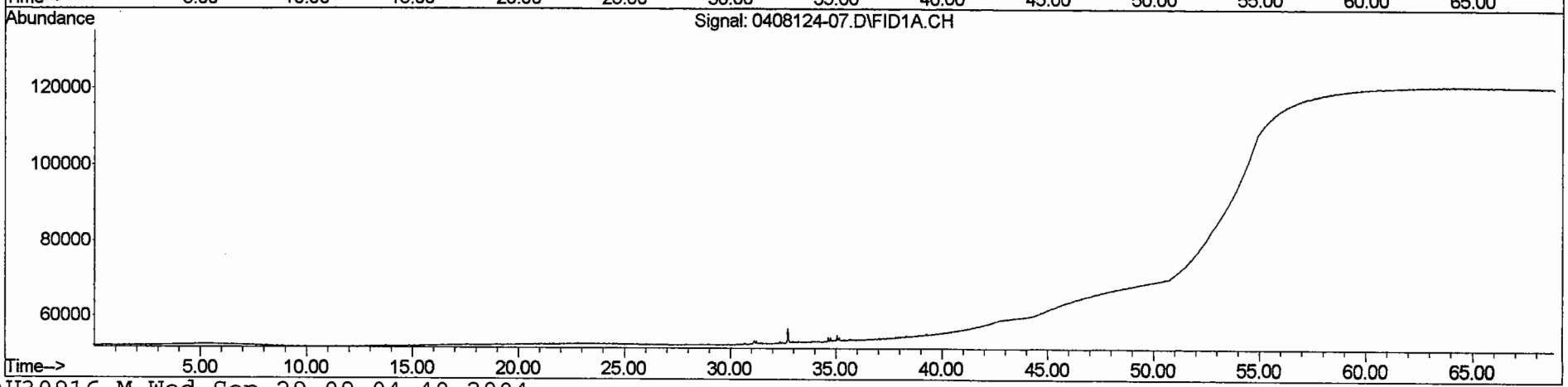
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-07.D
Acq On : 21 Sep 2004 2:07 am
Operator : BL
Sample : 0408124-07
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 24 11:46:11 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





019

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-36-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-08**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	79.5	30.63	2	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	7.4		Fluoranthene	180
C1-Naphthalenes	6.7		Pyrene	150
C2-Naphthalenes	11		C1-Fluoranthenes/Pyrenes	85
C3-Naphthalenes	5.4		C2-Fluoranthenes/Pyrenes	44
C4-Naphthalenes	2.8		C3-Fluoranthenes/Pyrenes	19
Biphenyl	2.3		C4-Fluoranthenes/Pyrenes	10
Dibenzofuran	17		Naphthobenzothiophenes	29
Acenaphthylene	9.4		C1-Naphthobenzothiophenes	12
Acenaphthene	14		C2-Naphthobenzothiophenes	9.2
Fluorene	28		C3-Naphthobenzothiophenes	8.4
C1-Fluorenes	5.7		C4-Naphthobenzothiophenes	5.3
C2-Fluorenes	4.8		Benz[a]anthracene	86
C3-Fluorenes	4.0		Chrysene/Triphenylene	120
Anthracene	42		C1-Chrysenes	29
Phenanthrene	170		C2-Chrysenes	17
C1-Phenanthrenes/Anthracenes	49		C3-Chrysenes	16
C2-Phenanthrenes/Anthracenes	23		C4-Chrysenes	6.7
C3-Phenanthrenes/Anthracenes	9.1		Benzo[b]fluoranthene	87
C4-Phenanthrenes/Anthracenes	5.0		Benzo[k]fluoranthene	43
Retene	0.12	U	Benzo[a]fluoranthene	13
Dibenzothiophene	12		Benzo[e]pyrene	62
C1-Dibenzothiophenes	5.0		Benzo[a]pyrene	74
C2-Dibenzothiophenes	4.0		Perylene	20
C3-Dibenzothiophenes	3.4		Indeno[1,2,3-cd]pyrene	54
C4-Dibenzothiophenes	2.4		Dibenz[a,h]anthracene	15
Benzo(b)fluorene	0.083	U	Benzo[g,h,i]perylene	42

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	69	50-130
Pyrene-d10	94	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 14:05

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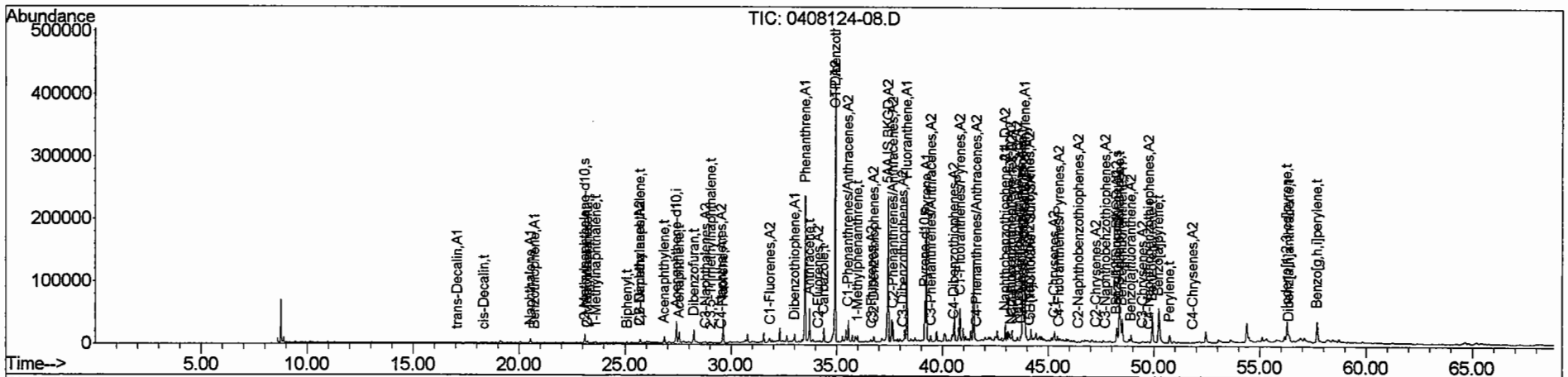
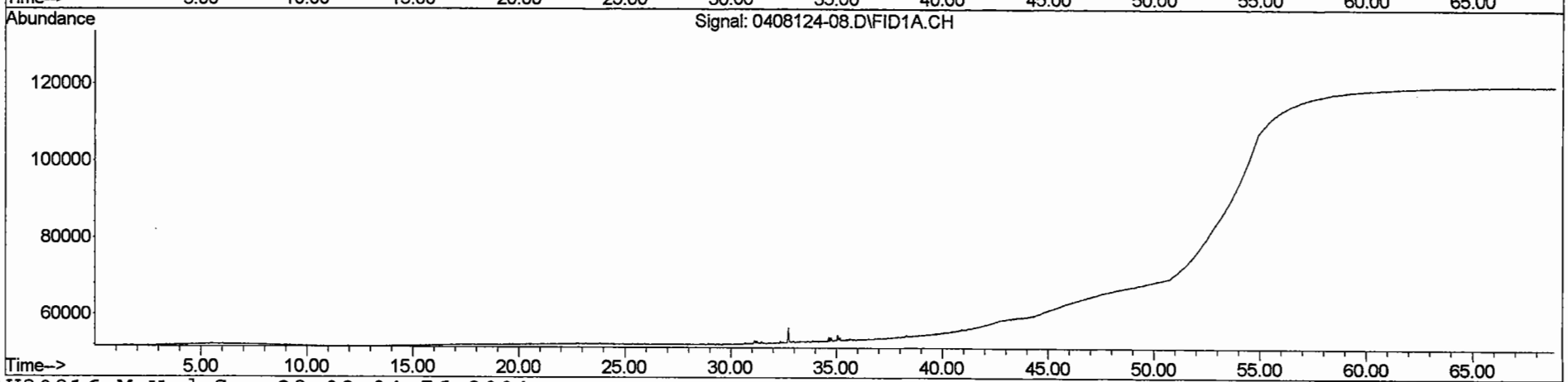
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-08.D
Acq On : 21 Sep 2004 4:54 am
Operator : BL
Sample : 0408124-08
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 24 12:12:30 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





021

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-09**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	80.9	30.35	2	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	4.8		Fluoranthene	230
C1-Naphthalenes	2.1		Pyrene	210
C2-Naphthalenes	3.2		C1-Fluoranthenes/Pyrenes	110
C3-Naphthalenes	4.0		C2-Fluoranthenes/Pyrenes	38
C4-Naphthalenes	4.3		C3-Fluoranthenes/Pyrenes	15
Biphenyl	0.65	J	C4-Fluoranthenes/Pyrenes	8.4
Dibenzofuran	2.3		Naphthobenzothiophenes	20
Acenaphthylene	24		C1-Naphthobenzothiophenes	9.1
Acenaphthene	1.8		C2-Naphthobenzothiophenes	5.3
Fluorene	6.1		C3-Naphthobenzothiophenes	3.0
C1-Fluorenes	4.1		C4-Naphthobenzothiophenes	1.2
C2-Fluorenes	5.4		Benz[a]anthracene	110
C3-Fluorenes	10		Chrysene/Triphenylene	100
Anthracene	26		C1-Chrysenes	38
Phenanthrene	74		C2-Chrysenes	19
C1-Phenanthrenes/Anthracenes	37		C3-Chrysenes	15
C2-Phenanthrenes/Anthracenes	28		C4-Chrysenes	6.8
C3-Phenanthrenes/Anthracenes	15		Benzo[b]fluoranthene	100
C4-Phenanthrenes/Anthracenes	6.0		Benzo[k]fluoranthene	54
Retene	1.3		Benzo[a]fluoranthene	24
Dibenzothiophene	4.1		Benzo[e]pyrene	77
C1-Dibenzothiophenes	3.5		Benzo[a]pyrene	120
C2-Dibenzothiophenes	4.6		Perylene	34
C3-Dibenzothiophenes	4.2		Indeno[1,2,3-cd]pyrene	93
C4-Dibenzothiophenes	2.1		Dibenz[a,h]anthracene	15
Benzo(b)fluorene	0.082	U	Benzo[g,h,i]perylene	76

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	76	50-130
Pyrene-d10	93	50-130
Benzo[b]fluoranthene-d12	99	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

022

10/13/04 08:30

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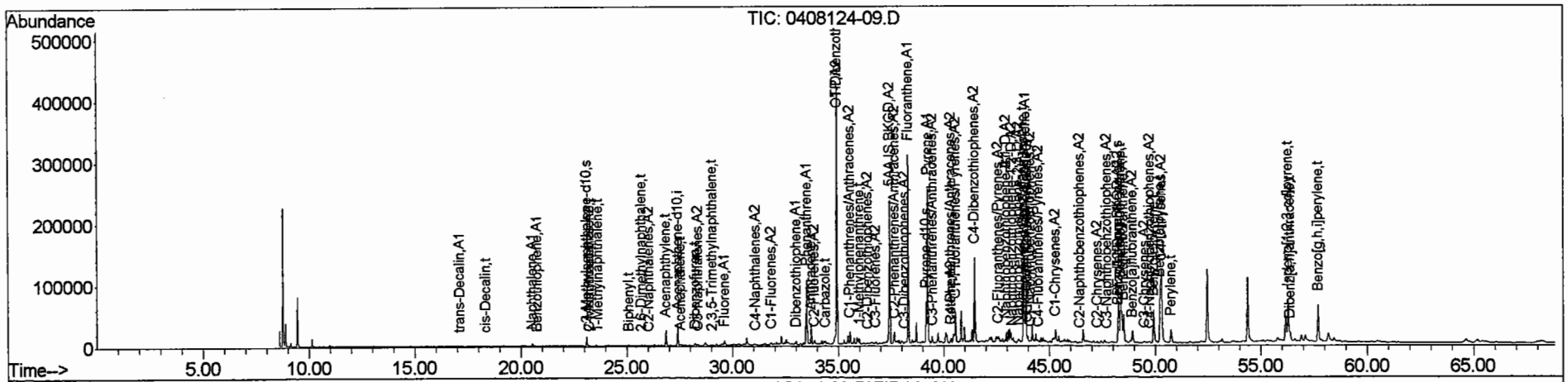
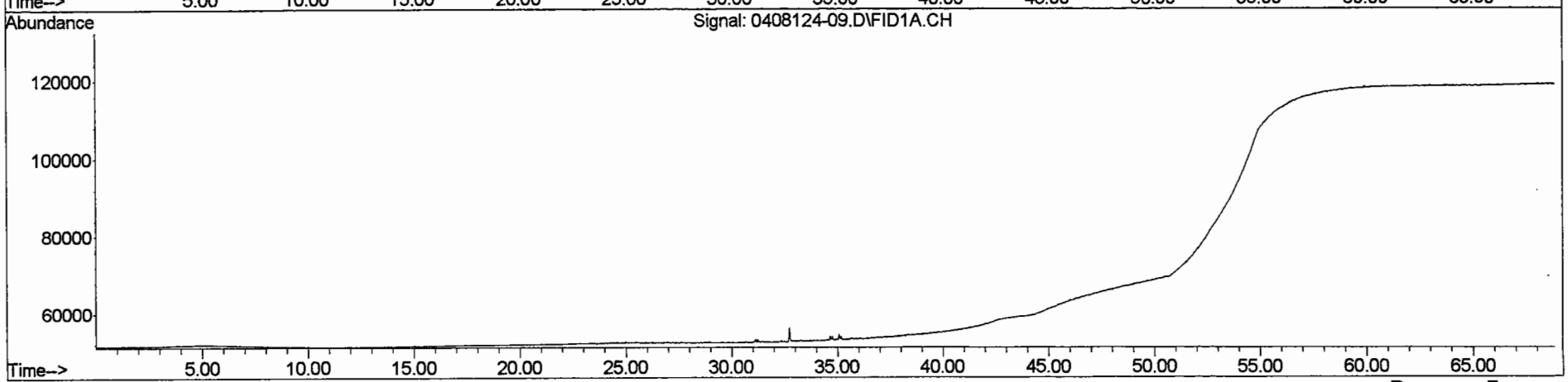
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-09.D
Acq On : 21 Sep 2004 6:17 am
Operator : BL
Sample : 0408124-09
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 27 11:23:00 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





023

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-10**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	80.3	30.32	2	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	2.4	Fluoranthene	57
C1-Naphthalenes	1.4	Pyrene	51
C2-Naphthalenes	2.6	C1-Fluoranthenes/Pyrenes	23
C3-Naphthalenes	2.0	C2-Fluoranthenes/Pyrenes	8.5
C4-Naphthalenes	1.9	C3-Fluoranthenes/Pyrenes	3.3
Biphenyl	0.45 J	C4-Fluoranthenes/Pyrenes	2.2
Dibenzofuran	1.3	Naphthobenzothiophenes	4.6
Acenaphthylene	5.4	C1-Naphthobenzothiophenes	2.6
Acenaphthene	1.1	C2-Naphthobenzothiophenes	1.7
Fluorene	2.7	C3-Naphthobenzothiophenes	1.4
C1-Fluorenes	1.4	C4-Naphthobenzothiophenes	0.63 J
C2-Fluorenes	1.8	Benz[a]anthracene	25
C3-Fluorenes	4.0	Chrysene/Triphenylene	25
Anthracene	8.2	C1-Chrysenes	9.3
Phenanthrene	25	C2-Chrysenes	4.8
C1-Phenanthrenes/Anthracenes	12	C3-Chrysenes	4.9
C2-Phenanthrenes/Anthracenes	7.5	C4-Chrysenes	4.2
C3-Phenanthrenes/Anthracenes	3.6	Benzo[b]fluoranthene	23
C4-Phenanthrenes/Anthracenes	1.3	Benzo[k]fluoranthene	14
Retene	0.22 J	Benzo[a]fluoranthene	5.6
Dibenzothiophene	1.4	Benzo[e]pyrene	18
C1-Dibenzothiophenes	1.3	Benzo[a]pyrene	29
C2-Dibenzothiophenes	1.2	Perylene	8.4
C3-Dibenzothiophenes	1.0	Indeno[1,2,3-cd]pyrene	19
C4-Dibenzothiophenes	0.84	Dibenz[a,h]anthracene	3.4
Benzo(b)fluorene	0.083 U	Benzo[g,h,i]perylene	16

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	75	50-130
Pyrene-d10	90	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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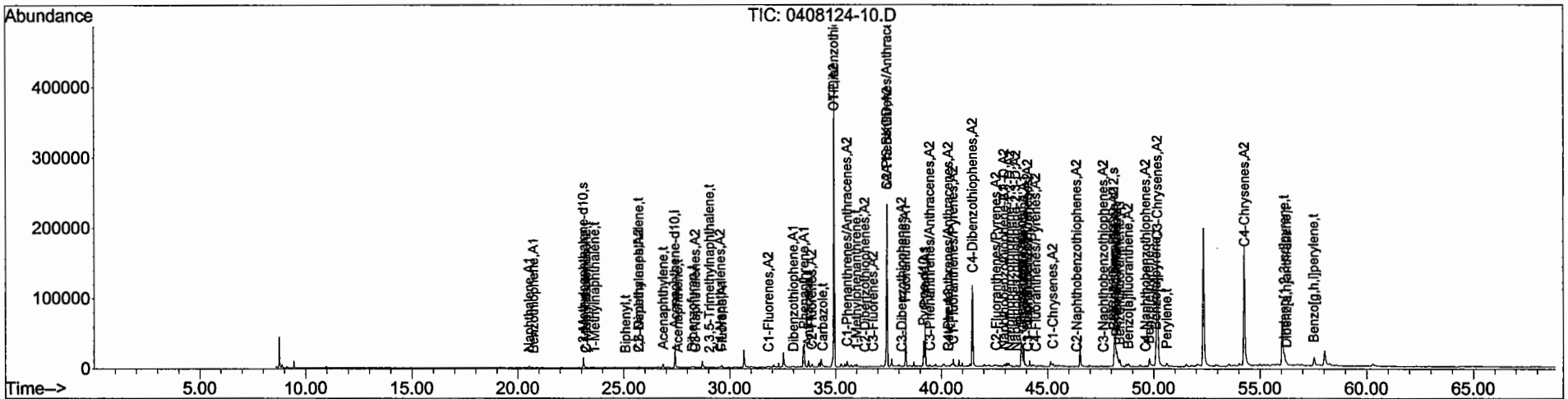
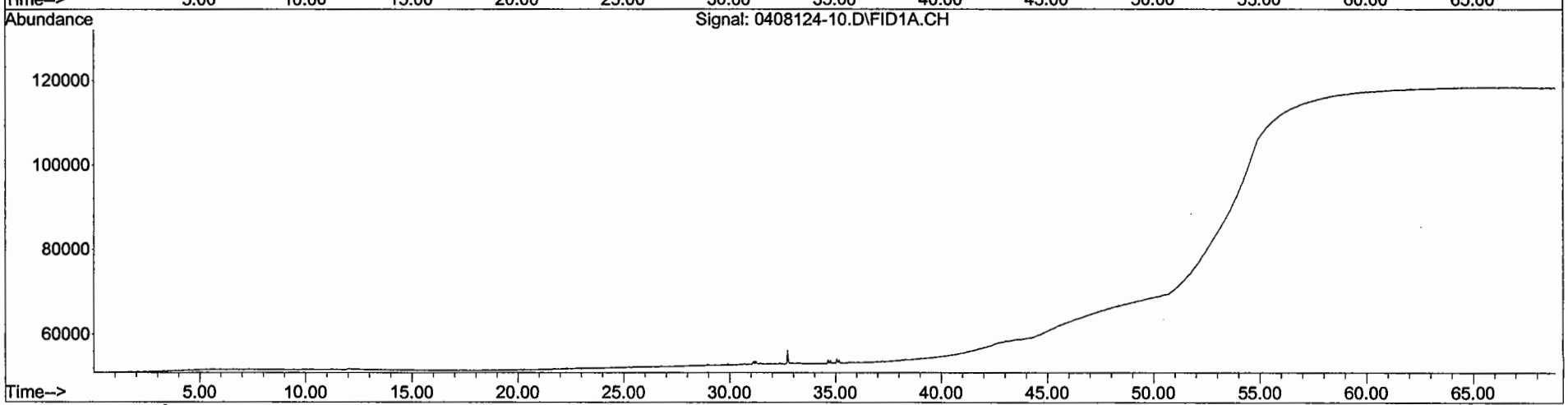
Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : 0408124-10.D
Acq On : 21 Sep 2004 7:39 am
Operator : BL
Sample : 0408124-10
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 30 10:31:22 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





025

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-11**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	80.0	30.71	20	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**2.8**	J	Fluoranthene	**49**	
C1-Naphthalenes	**2.7**	J	Pyrene	**48**	
C2-Naphthalenes	**4.7**	J	C1-Fluoranthenes/Pyrenes	**30**	
C3-Naphthalenes	**3.8**	J	C2-Fluoranthenes/Pyrenes	**12**	
C4-Naphthalenes	**7.6**	J	C3-Fluoranthenes/Pyrenes	**5.6**	J
Biphenyl	**0.65**	J	C4-Fluoranthenes/Pyrenes	**3.4**	J
Dibenzofuran	**0.89**	J	Naphthobenzothiophenes	**6.4**	J
Acenaphthylene	**6.6**	J	C1-Naphthobenzothiophenes	**5.2**	J
Acenaphthene	**0.96**	J	C2-Naphthobenzothiophenes	**3.3**	J
Fluorene	**2.0**	J	C3-Naphthobenzothiophenes	**3.1**	J
C1-Fluorenes	**2.3**	J	C4-Naphthobenzothiophenes	0.98	U
C2-Fluorenes	**4.1**	J	Benz[a]anthracene	**24**	
C3-Fluorenes	**6.6**	J	Chrysene/Triphenylene	**28**	
Anthracene	**10**		C1-Chrysenes	**11**	
Phenanthrene	**22**		C2-Chrysenes	**5.8**	J
C1-Phenanthrenes/Anthracenes	**18**		C3-Chrysenes	**5.0**	J
C2-Phenanthrenes/Anthracenes	**11**		C4-Chrysenes	**3.7**	J
C3-Phenanthrenes/Anthracenes	**4.6**	J	Benzo[b]fluoranthene	**20**	
C4-Phenanthrenes/Anthracenes	**2.1**	J	Benzo[k]fluoranthene	**11**	
Retene	1.2	U	Benzo[a]fluoranthene	**4.8**	J
Dibenzothiophene	**1.5**	J	Benzo[e]pyrene	**16**	
C1-Dibenzothiophenes	**1.9**	J	Benzo[a]pyrene	**24**	
C2-Dibenzothiophenes	**2.8**	J	Perylene	**6.5**	J
C3-Dibenzothiophenes	**1.7**	J	Indeno[1,2,3-cd]pyrene	**14**	
C4-Dibenzothiophenes	**1.2**	J	Dibenz[a,h]anthracene	**2.8**	J
Benzo(b)fluorene	0.82	U	Benzo[g,h,i]perylene	**13**	

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	81	50-130
Pyrene-d10	96	50-130
Benzo[b]fluoranthene-d12	94	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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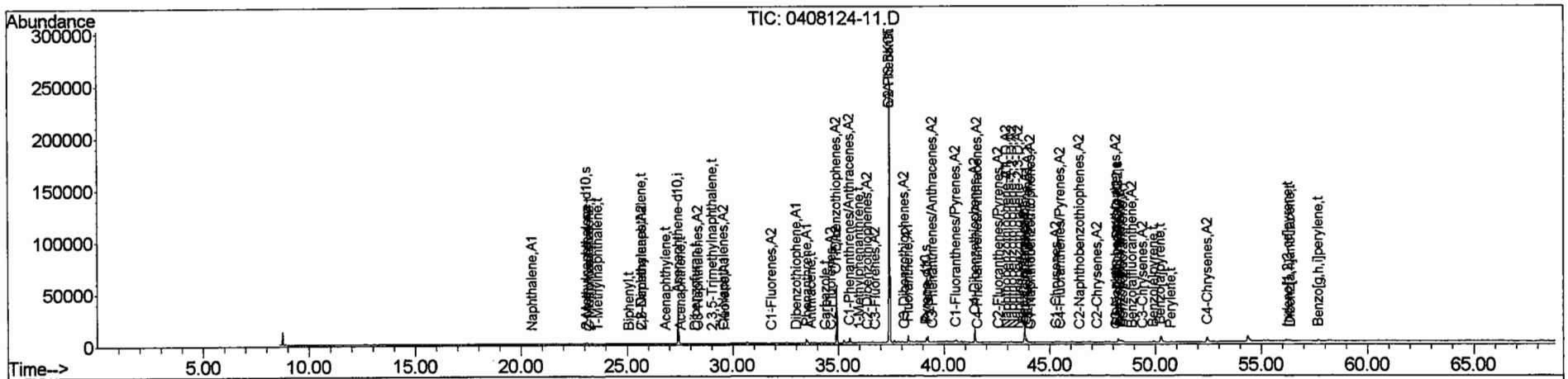
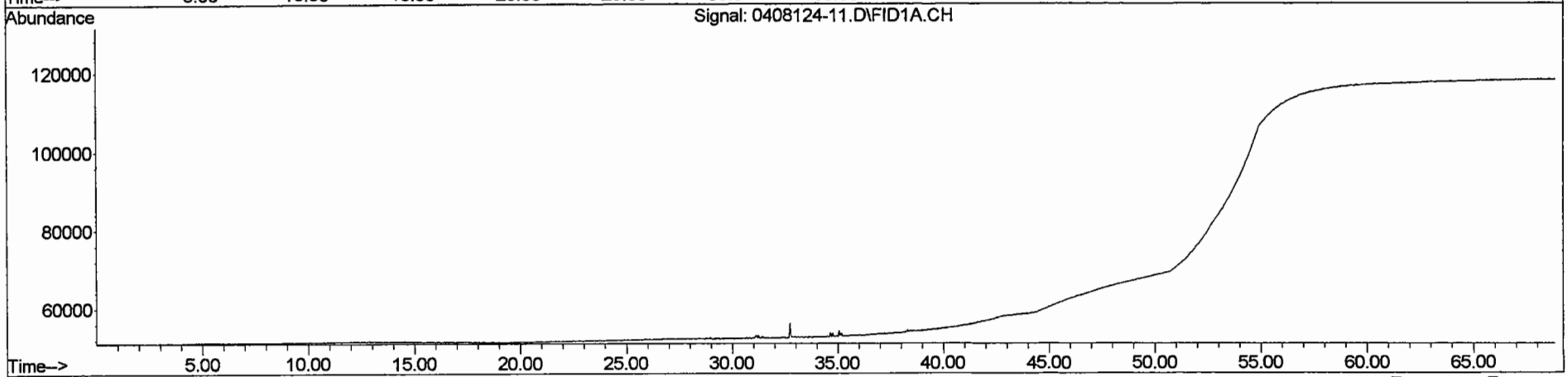
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-11.D
Acq On : 21 Sep 2004 9:03 am
Operator : BL
Sample : 0408124-11
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 27 03:29:00 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





027

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-12**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	79.0	30.24	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**0.88**		Fluoranthene	**38**	
C1-Naphthalenes	**0.38**	J	Pyrene	**38**	
C2-Naphthalenes	**2.9**		C1-Fluoranthenes/Pyrenes	**21**	
C3-Naphthalenes	**1.2**		C2-Fluoranthenes/Pyrenes	**12**	
C4-Naphthalenes	**1.4**		C3-Fluoranthenes/Pyrenes	**4.5**	
Biphenyl	**0.17**	J	C4-Fluoranthenes/Pyrenes	**2.2**	
Dibenzofuran	**0.27**	J	Naphthobenzothiophenes	**5.6**	
Acenaphthylene	**6.5**		C1-Naphthobenzothiophenes	**3.4**	
Acenaphthene	**0.44**	J	C2-Naphthobenzothiophenes	**1.8**	
Fluorene	**0.76**	J	C3-Naphthobenzothiophenes	**1.1**	
C1-Fluorenes	**0.76**	J	C4-Naphthobenzothiophenes	**0.74**	J
C2-Fluorenes	**2.2**		Benz[a]anthracene	**16**	
C3-Fluorenes	**3.2**		Chrysene/Triphenylene	**23**	
Anthracene	**5.5**		C1-Chrysenes	**9.9**	
Phenanthrene	**15**		C2-Chrysenes	**4.5**	
C1-Phenanthrenes/Anthracenes	**14**		C3-Chrysenes	**2.2**	
C2-Phenanthrenes/Anthracenes	**8.9**		C4-Chrysenes	**1.5**	
C3-Phenanthrenes/Anthracenes	**3.8**		Benzo[b]fluoranthene	**17**	
C4-Phenanthrenes/Anthracenes	**0.77**	J	Benzo[k]fluoranthene	**9.9**	
Retene	0.12	U	Benzo[a]fluoranthene	**3.6**	
Dibenzothiophene	**0.85**		Benzo[e]pyrene	**15**	
C1-Dibenzothiophenes	**1.9**		Benzo[a]pyrene	**21**	
C2-Dibenzothiophenes	**2.2**		Perylene	**4.4**	
C3-Dibenzothiophenes	**1.1**		Indeno[1,2,3-cd]pyrene	**13**	
C4-Dibenzothiophenes	**0.80**	J	Dibenz[a,h]anthracene	**3.1**	
Benzo(b)fluorene	0.085	U	Benzo[g,h,i]perylene	**12**	

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	78	50-130
Pyrene-d10	97	50-130
Benzo[b]fluoranthene-d12	100	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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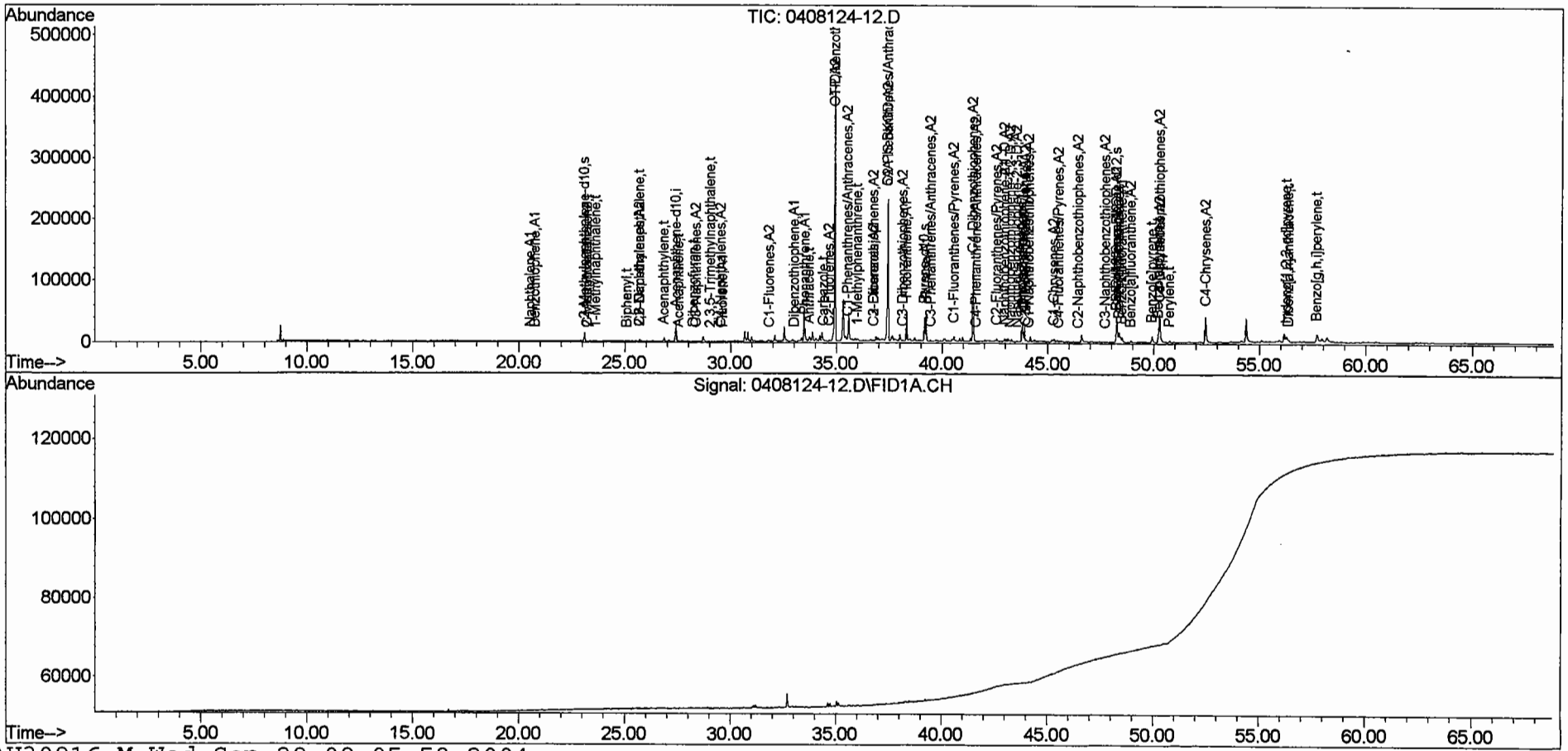
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-12.D
Acq On : 21 Sep 2004 10:26 am
Operator : BL
Sample : 0408124-12
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 27 03:32:00 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration



029

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-13**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	79.9	30.80	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	0.91		Fluoranthene	26	
C1-Naphthalenes	0.70	J	Pyrene	27	
C2-Naphthalenes	2.4		C1-Fluoranthenes/Pyrenes	15	
C3-Naphthalenes	1.0		C2-Fluoranthenes/Pyrenes	9.1	
C4-Naphthalenes	1.5		C3-Fluoranthenes/Pyrenes	3.2	
Biphenyl	0.16	J	C4-Fluoranthenes/Pyrenes	1.5	
Dibenzofuran	0.22	J	Naphthobenzothiophenes	4.1	
Acenaphthylene	5.9		C1-Naphthobenzothiophenes	2.6	
Acenaphthene	0.32	J	C2-Naphthobenzothiophenes	1.5	
Fluorene	0.58	J	C3-Naphthobenzothiophenes	0.55	J
C1-Fluorenes	0.58	J	C4-Naphthobenzothiophenes	0.39	J
C2-Fluorenes	1.7		Benz[a]anthracene	11	
C3-Fluorenes	2.9		Chrysene/Triphenylene	17	
Anthracene	4.4		C1-Chrysenes	8.6	
Phenanthrene	10		C2-Chrysenes	5.3	
C1-Phenanthrenes/Anthracenes	10		C3-Chrysenes	1.9	
C2-Phenanthrenes/Anthracenes	7.3		C4-Chrysenes	0.80	J
C3-Phenanthrenes/Anthracenes	2.8		Benzo[b]fluoranthene	14	
C4-Phenanthrenes/Anthracenes	0.74	J	Benzo[k]fluoranthene	7.5	
Retene	0.12	U	Benzo[a]fluoranthene	3.0	
Dibenzothiophene	0.63	J	Benzo[e]pyrene	12	
C1-Dibenzothiophenes	1.5		Benzo[a]pyrene	16	
C2-Dibenzothiophenes	1.5		Perylene	3.4	
C3-Dibenzothiophenes	0.97		Indeno[1,2,3-cd]pyrene	11	
C4-Dibenzothiophenes	0.70	J	Dibenz[a,h]anthracene	2.1	
Benzo(b)fluorene	0.082	U	Benzo[g,h,i]perylene	10	

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	79	50-130
Pyrene-d10	95	50-130
Benzo[b]fluoranthene-d12	98	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 14:06

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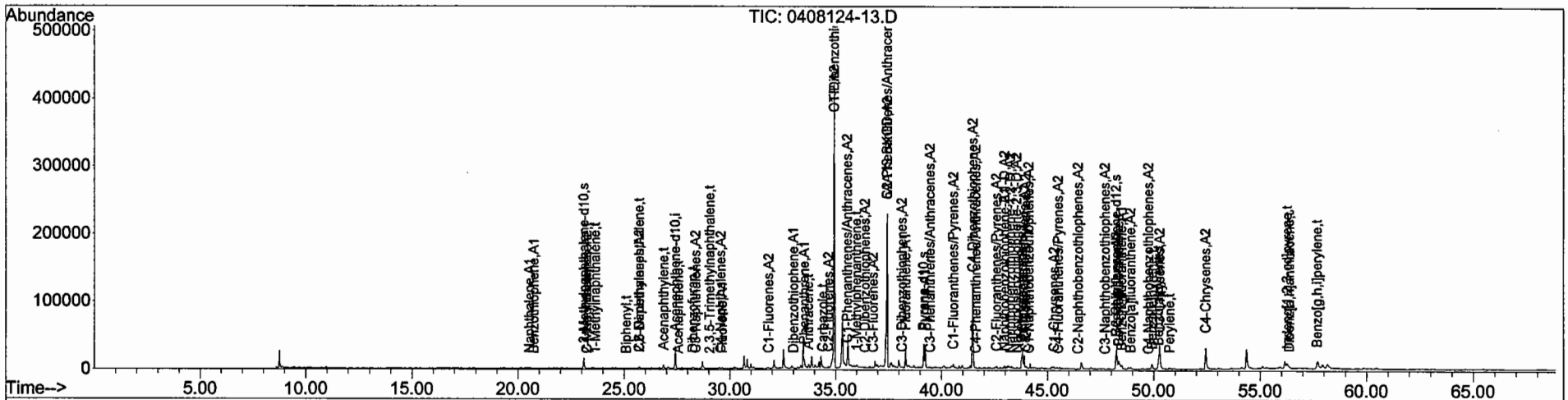
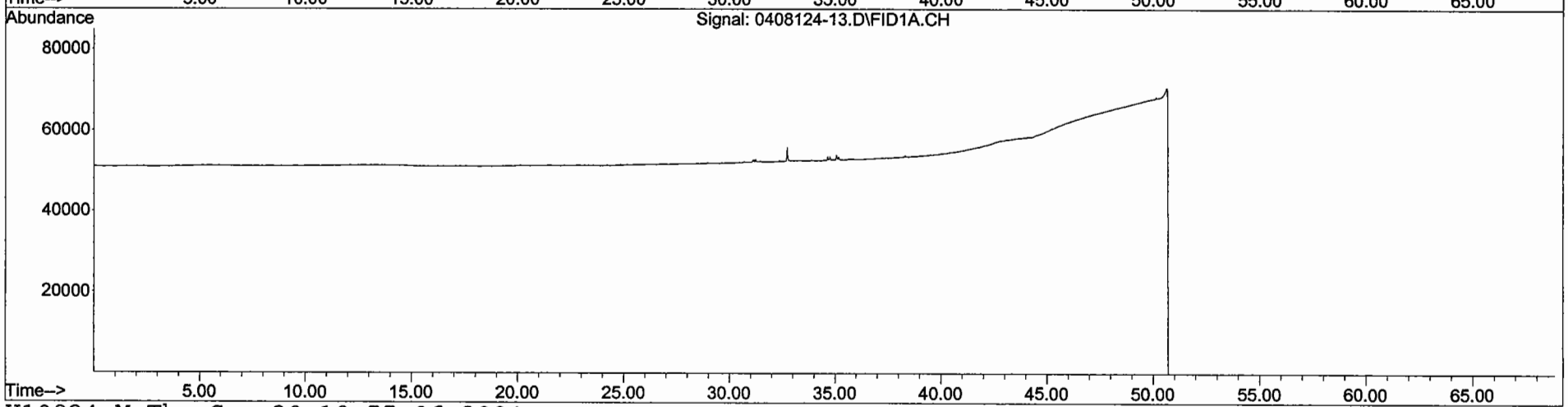
Quantitation Report (QT Reviewed)

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : 0408124-13.D
Acq On : 21 Sep 2004 11:49 am
Operator : BL
Sample : 0408124-13
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 30 10:45:43 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration





031

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	42.4	30.68	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	39	Fluoranthene	820
C1-Naphthalenes	19	Pyrene	840
C2-Naphthalenes	49	C1-Fluoranthenes/Pyrenes	640
C3-Naphthalenes	19	C2-Fluoranthenes/Pyrenes	400
C4-Naphthalenes	18	C3-Fluoranthenes/Pyrenes	300
Biphenyl	5.5	C4-Fluoranthenes/Pyrenes	190
Dibenzofuran	30	Naphthobenzothiophenes	150
Acenaphthylene	240	C1-Naphthobenzothiophenes	100
Acenaphthene	37	C2-Naphthobenzothiophenes	130
Fluorene	51	C3-Naphthobenzothiophenes	160
C1-Fluorenes	14	C4-Naphthobenzothiophenes	140
C2-Fluorenes	32	Benz[a]anthracene	480
C3-Fluorenes	66	Chrysene/Triphenylene	670
Anthracene	280	C1-Chrysenes	380
Phenanthrene	420	C2-Chrysenes	300
C1-Phenanthrenes/Anthracenes	190	C3-Chrysenes	360
C2-Phenanthrenes/Anthracenes	130	C4-Chrysenes	240
C3-Phenanthrenes/Anthracenes	78	Benzo[b]fluoranthene	660
C4-Phenanthrenes/Anthracenes	66	Benzo[k]fluoranthene	310
Retene	0.56 U	Benzo[a]fluoranthene	150
Dibenzothiophene	25	Benzo[e]pyrene	560
C1-Dibenzothiophenes	16	Benzo[a]pyrene	620
C2-Dibenzothiophenes	25	Perylene	180
C3-Dibenzothiophenes	36	Indeno[1,2,3-cd]pyrene	460
C4-Dibenzothiophenes	37	Dibenz[a,h]anthracene	130
Benzo(b)fluorene	0.39 U	Benzo[g,h,i]perylene	450

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	65	50-130
Pyrene-d10	92	50-130
Benzo[b]fluoranthene-d12	96	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/13/04 08:32

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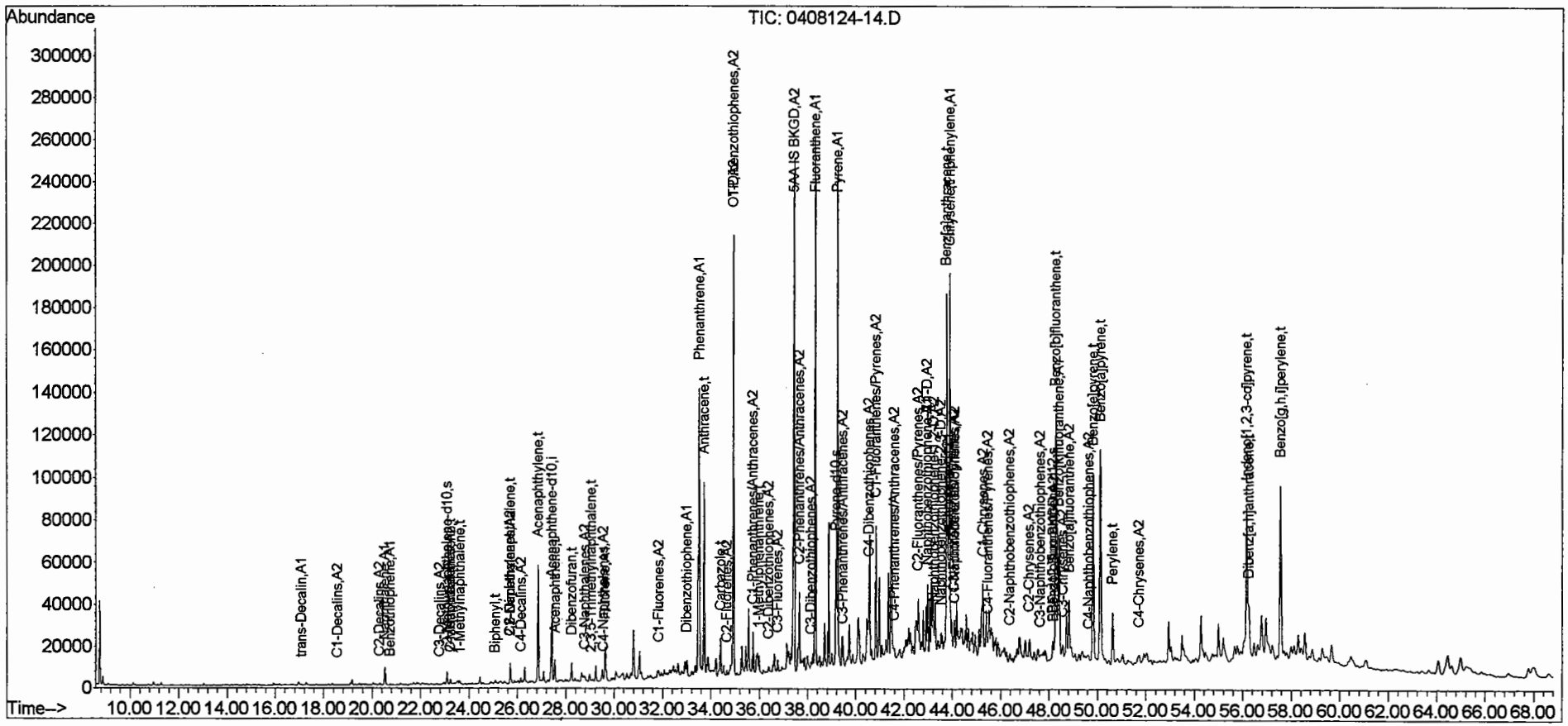
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-14.D
Acq On : 21 Sep 2004 1:16 pm
Operator : BL
Sample : 0408124-14
Misc : 1X
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 27 11:49:00 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration



033

Form I
Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 D**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	42.4	30.68	5	1	Cass

Parameter	Result	Parameter	Result
Naphthalene	15	Fluoranthene	560
C1-Naphthalenes	11	Pyrene	600
C2-Naphthalenes	34	C1-Fluoranthenes/Pyrenes	470
C3-Naphthalenes	16	C2-Fluoranthenes/Pyrenes	340
C4-Naphthalenes	14	C3-Fluoranthenes/Pyrenes	250
Biphenyl	3.2 J	C4-Fluoranthenes/Pyrenes	170
Dibenzofuran	11	Naphthobenzothiophenes	110
Acenaphthylene	180	C1-Naphthobenzothiophenes	90
Acenaphthene	15	C2-Naphthobenzothiophenes	120
Fluorene	21	C3-Naphthobenzothiophenes	150
C1-Fluorenes	10	C4-Naphthobenzothiophenes	140
C2-Fluorenes	28	Benz[a]anthracene	310
C3-Fluorenes	54	Chrysene/Triphenylene	480
Anthracene	200	C1-Chrysenes	280
Phenanthrene	210	C2-Chrysenes	230
C1-Phenanthrenes/Anthracenes	130	C3-Chrysenes	300
C2-Phenanthrenes/Anthracenes	100	C4-Chrysenes	210
C3-Phenanthrenes/Anthracenes	64	Benzo[b]fluoranthene	520
C4-Phenanthrenes/Anthracenes	52	Benzo[k]fluoranthene	210
Retene	0.56 U	Benzo[a]fluoranthene	110
Dibenzothiophene	12	Benzo[e]pyrene	410
C1-Dibenzothiophenes	13	Benzo[a]pyrene	440
C2-Dibenzothiophenes	21	Perylene	130
C3-Dibenzothiophenes	29	Indeno[1,2,3-cd]pyrene	320
C4-Dibenzothiophenes	30	Dibenz[a,h]anthracene	89
Benzo(b)fluorene	0.39 U	Benzo[g,h,i]perylene	330

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	66	50-130
Pyrene-d10	95	50-130
Benzo[b]fluoranthene-d12	100	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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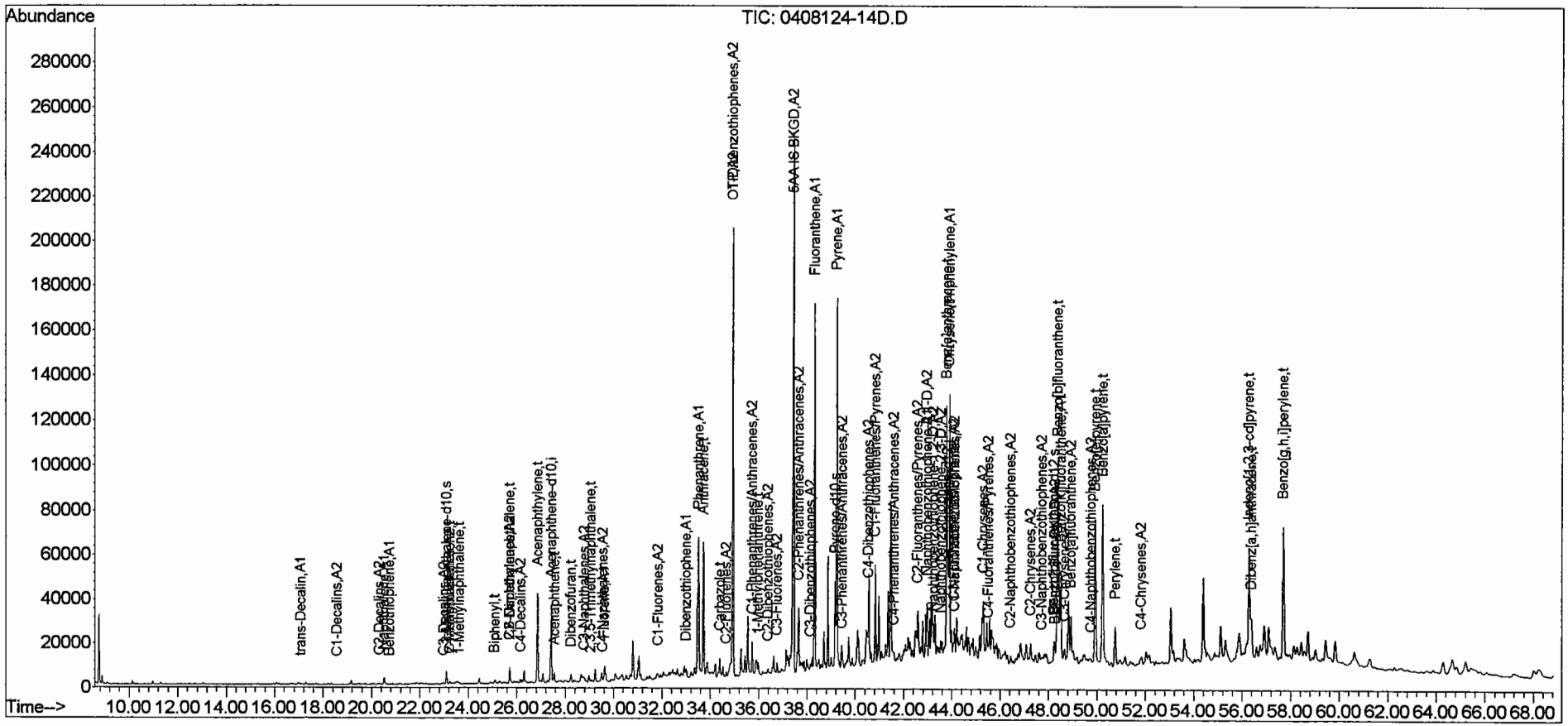
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-14D.D
Acq On : 21 Sep 2004 2:39 pm
Operator : BL
Sample : 0408124-14D
Misc : 1X
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 27 11:51:00 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration



Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
Naphthalene	39	15	89[a]	30
C1-Naphthalenes	19	11	54[a]	30
C2-Naphthalenes	49	34	35[a]	30
C3-Naphthalenes	19	16	18	30
C4-Naphthalenes	18	14	22	30
Biphenyl	5.5	3.2 J	55[a]	30
Dibenzofuran	30	11	89[a]	30
Acenaphthylene	240	180	27	30
Acenaphthene	37	15	85[a]	30
Fluorene	51	21	82[a]	30
C1-Fluorenes	14	10	31[a]	30
C2-Fluorenes	32	28	14	30
C3-Fluorenes	66	54	20	30
Anthracene	280	200	36[a]	30
Phenanthrene	420	210	68[a]	30
C1-Phenanthrenes/Anthracenes	190	130	35[a]	30
C2-Phenanthrenes/Anthracenes	130	100	25	30
C3-Phenanthrenes/Anthracenes	78	64	19	30
C4-Phenanthrenes/Anthracenes	66	52	25	30
Retene	0.56 U	0.56 U	N/A	30
Dibenzothiophene	25	12	67[a]	30
C1-Dibenzothiophenes	16	13	20	30
C2-Dibenzothiophenes	25	21	18	30
C3-Dibenzothiophenes	36	29	21	30
C4-Dibenzothiophenes	37	30	20	30
Benzo(b)fluorene	0.39 U	0.39 U	N/A	30
Fluoranthene	820	560	38[a]	30
Pyrene	840	600	33[a]	30
C1-Fluoranthenes/Pyrenes	640	470	30	30
C2-Fluoranthenes/Pyrenes	400	340	19	30
C3-Fluoranthenes/Pyrenes	300	250	20	30
C4-Fluoranthenes/Pyrenes	190	170	8	30
Naphthobenzothiophenes	150	110	32[a]	30
C1-Naphthobenzothiophenes	100	90	16	30
C2-Naphthobenzothiophenes	130	120	10	30

N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Duplicate
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
C3-Naphthobenzothiophenes	**160**	**150**	11	30
C4-Naphthobenzothiophenes	**140**	**140**	2	30
Benz[a]anthracene	**480**	**310**	43[a]	30
Chrysene/Triphenylene	**670**	**480**	34[a]	30
C1-Chrysenes	**380**	**280**	31[a]	30
C2-Chrysenes	**300**	**230**	27	30
C3-Chrysenes	**360**	**300**	16	30
C4-Chrysenes	**240**	**210**	12	30
Benzo[b]fluoranthene	**660**	**520**	23	30
Benzo[k]fluoranthene	**310**	**210**	38[a]	30
Benzo[a]fluoranthene	**150**	**110**	30	30
Benzo[e]pyrene	**560**	**410**	30	30
Benzo[a]pyrene	**620**	**440**	35[a]	30
Perylene	**180**	**130**	33[a]	30
Indeno[1,2,3-cd]pyrene	**460**	**320**	37[a]	30
Dibenz[a,h]anthracene	**130**	**89**	35[a]	30
Benzo[g,h,i]perylene	**450**	**330**	31[a]	30

Surrogate	% Recovery		Acceptance Range (%)
2-Methylnaphthalene-d10	65	66	50-130
Pyrene-d10	92	95	50-130
Benzo[b]fluoranthene-d12	96	100	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/13/04 08:33

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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **See Below**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	Cass

	0408124-14	0408124-14		
	Sample	Matrix Spike		% Recovery
Parameter	**Conc.**	**Conc.**	**% Recovery**	**Limits**
Naphthalene	39	65	35[a]	50-150
Acenaphthylene	240	330	114	50-150
Acenaphthene	37	77	51	50-150
Fluorene	51	99	62	50-150
Anthracene	280	350	85	50-150
Phenanthrene	420	310	0[a]	50-150
Fluoranthene	820	750	0[a]	50-150
Pyrene	840	780	0[a]	50-150
Benz[a]anthracene	480	570	115	50-150
Chrysene/Triphenylene	670	720	63	50-150
Benzo[b]fluoranthene	660	810	194[a]	50-150
Benzo[k]fluoranthene	310	370	78	50-150
Benzo[a]pyrene	620	720	129	50-150
Indeno[1,2,3-cd]pyrene	460	530	86	50-150
Dibenz[a,h]anthracene	130	230	129	50-150
Benzo[g,h,i]perylene	450	490	60	50-150

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	63	50-130
Pyrene-d10	97	50-130
Benzo[b]fluoranthene-d12	99	50-130
5B(H)Cholane	88	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/08/04 09:13

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Matrix Spike
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 M**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	42.4	30.54	5	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	65	S	Fluoranthene	750	S
C1-Naphthalenes	45		Pyrene	780	S
C2-Naphthalenes	37		C1-Fluoranthenes/Pyrenes	730	
C3-Naphthalenes	18		C2-Fluoranthenes/Pyrenes	490	
C4-Naphthalenes	19		C3-Fluoranthenes/Pyrenes	340	
Biphenyl	3.1	J	C4-Fluoranthenes/Pyrenes	210	
Dibenzofuran	12		Naphthobenzothiophenes	160	
Acenaphthylene	330	S	C1-Naphthobenzothiophenes	170	
Acenaphthene	77	S	C2-Naphthobenzothiophenes	170	
Fluorene	99	S	C3-Naphthobenzothiophenes	170	
C1-Fluorenes	16		C4-Naphthobenzothiophenes	160	
C2-Fluorenes	30		Benz[a]anthracene	570	S
C3-Fluorenes	38		Chrysene/Triphenylene	720	S
Anthracene	350	S	C1-Chrysenes	430	
Phenanthrene	310	S	C2-Chrysenes	320	
C1-Phenanthrenes/Anthracenes	160		C3-Chrysenes	370	
C2-Phenanthrenes/Anthracenes	130		C4-Chrysenes	250	
C3-Phenanthrenes/Anthracenes	100		Benzo[b]fluoranthene	810	S
C4-Phenanthrenes/Anthracenes	71		Benzo[k]fluoranthene	370	S
Retene	0.56	U	Benzo[a]fluoranthene	170	
Dibenzothiophene	15		Benzo[e]pyrene	570	
C1-Dibenzothiophenes	13		Benzo[a]pyrene	720	S
C2-Dibenzothiophenes	24		Perylene	160	
C3-Dibenzothiophenes	49		Indeno[1,2,3-cd]pyrene	530	S
C4-Dibenzothiophenes	43		Dibenz[a,h]anthracene	230	S
Benzo(b)fluorene	0.39	U	Benzo[g,h,i]perylene	490	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	63	50-130
Pyrene-d10	97	50-130
Benzo[b]fluoranthene-d12	99	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

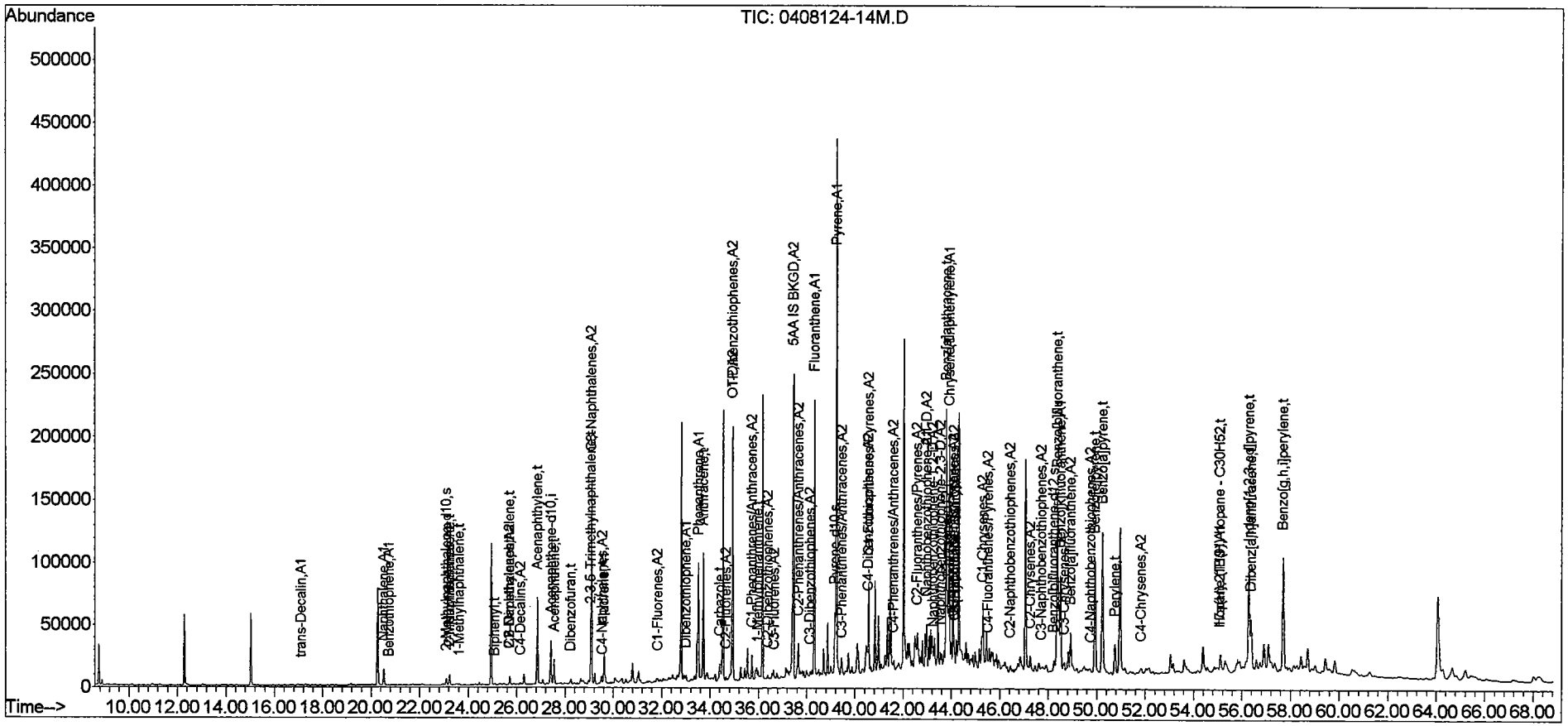
10/07/04 14:07

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-14M.D
Acq On : 21 Sep 2004 4:02 pm
Operator : BL
Sample : 0408124-14M
Misc : 1X
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 23 13:18:08 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 15:01:48 2004
Response via : Initial Calibration



Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-15**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/21/04	74.4	30.21	2.5	1	Cass

Parameter	Result		Parameter	Result
Naphthalene	**3.1**		Fluoranthene	**63**
C1-Naphthalenes	**2.3**		Pyrene	**68**
C2-Naphthalenes	**9.5**		C1-Fluoranthenes/Pyrenes	**54**
C3-Naphthalenes	**3.1**		C2-Fluoranthenes/Pyrenes	**51**
C4-Naphthalenes	**2.9**		C3-Fluoranthenes/Pyrenes	**43**
Biphenyl	**0.61**	J	C4-Fluoranthenes/Pyrenes	**28**
Dibenzofuran	**1.4**		Naphthobenzothiophenes	**9.7**
Acenaphthylene	**13**		C1-Naphthobenzothiophenes	**12**
Acenaphthene	**1.3**		C2-Naphthobenzothiophenes	**20**
Fluorene	**2.5**		C3-Naphthobenzothiophenes	**27**
C1-Fluorenes	**1.9**		C4-Naphthobenzothiophenes	**22**
C2-Fluorenes	**3.8**		Benz[a]anthracene	**29**
C3-Fluorenes	**9.3**		Chrysene/Triphenylene	**44**
Anthracene	**14**		C1-Chrysenes	**29**
Phenanthrene	**25**		C2-Chrysenes	**43**
C1-Phenanthrenes/Anthracenes	**18**		C3-Chrysenes	**48**
C2-Phenanthrenes/Anthracenes	**17**		C4-Chrysenes	**28**
C3-Phenanthrenes/Anthracenes	**11**		Benzo[b]fluoranthene	**48**
C4-Phenanthrenes/Anthracenes	**12**		Benzo[k]fluoranthene	**19**
Retene	0.16	U	Benzo[a]fluoranthene	**8.4**
Dibenzothiophene	**1.8**		Benzo[e]pyrene	**42**
C1-Dibenzothiophenes	**2.4**		Benzo[a]pyrene	**43**
C2-Dibenzothiophenes	**3.8**		Perylene	**20**
C3-Dibenzothiophenes	**4.1**		Indeno[1,2,3-cd]pyrene	**33**
C4-Dibenzothiophenes	**5.6**		Dibenz[a,h]anthracene	**8.2**
Benzo(b)fluorene	0.11	U	Benzo[g,h,i]perylene	**36**

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	63	50-130
Pyrene-d10	85	50-130
Benzo[b]fluoranthene-d12	87	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/13/04 08:33

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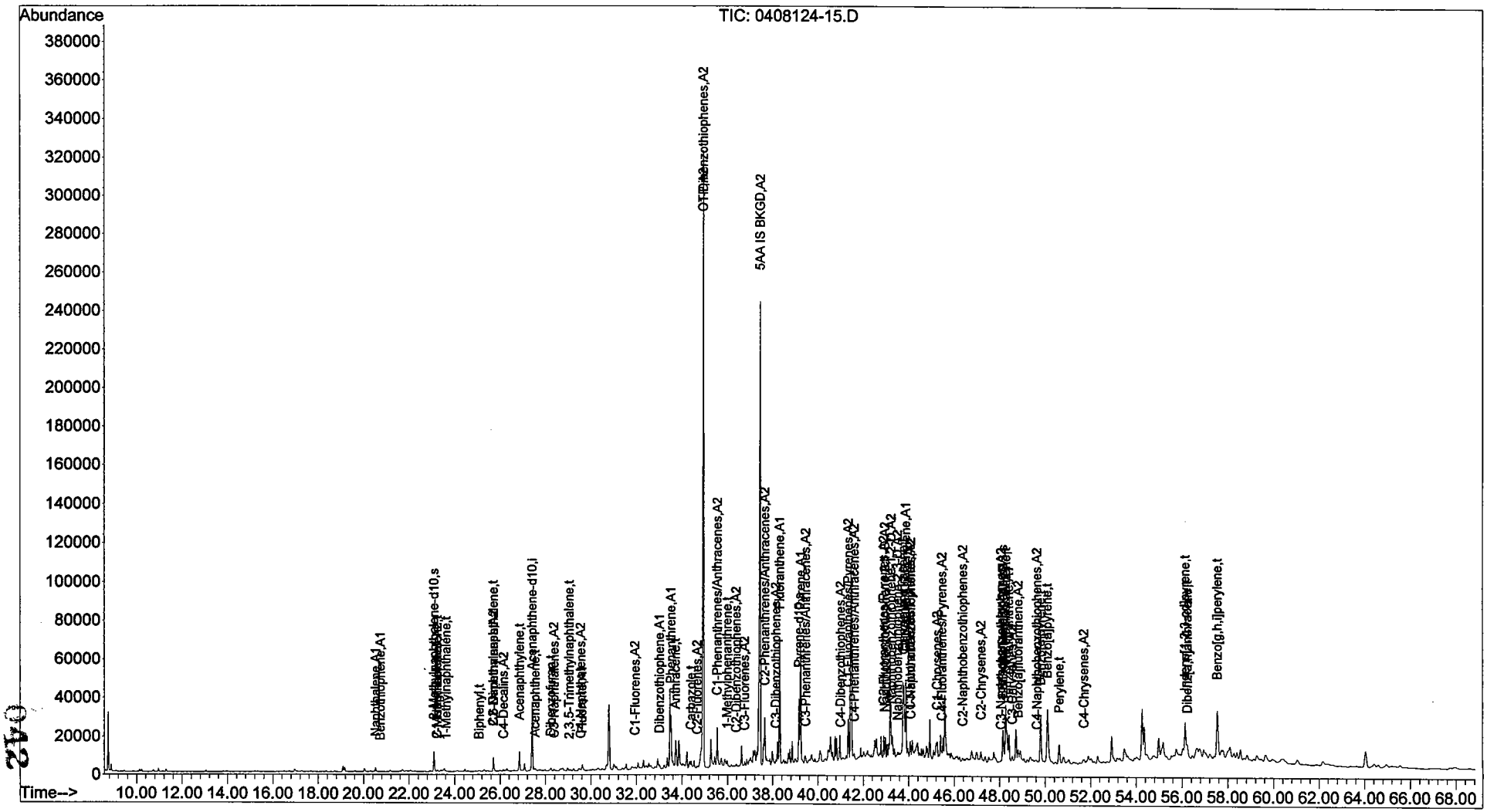
Quantitation Report (QT Reviewed)

Data Path : \\192.168.1.76\organics\DATA\PAH3\SEPT20\
Data File : 0408124-15.D
Acq On : 21 Sep 2004 5:25 pm
Operator : BL
Sample : 0408124-15
Misc : 1X
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 30 11:55:03 2004
Quant Method : \\192.168.1.76\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Wed Sep 22 17:25:31 2004
Response via : Initial Calibration



Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**0.069**	J	Fluoranthene	**0.045**	J
C1-Naphthalenes	**0.062**	J	Pyrene	**0.073**	J
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	0.12	U	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	0.077	U	C2-Naphthobenzothiophenes	0.081	U
Fluorene	0.077	U	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	0.10	U
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	0.072	U
Anthracene	0.089	U	C1-Chrysenes	0.072	U
Phenanthrene	**0.038**	J	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	0.097	U	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	0.071	U
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	0.14	U
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	0.074	U	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	0.093	U
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	0.16	U
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	0.13	U
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	0.12	U

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	62	50-130
Pyrene-d10	87	50-130
Benzo[b]fluoranthene-d12	88	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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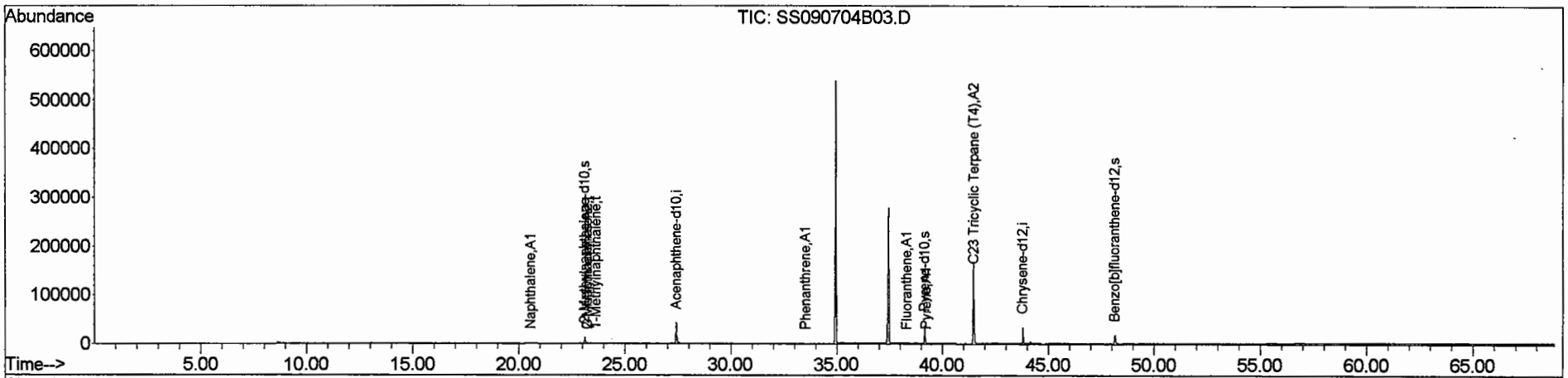
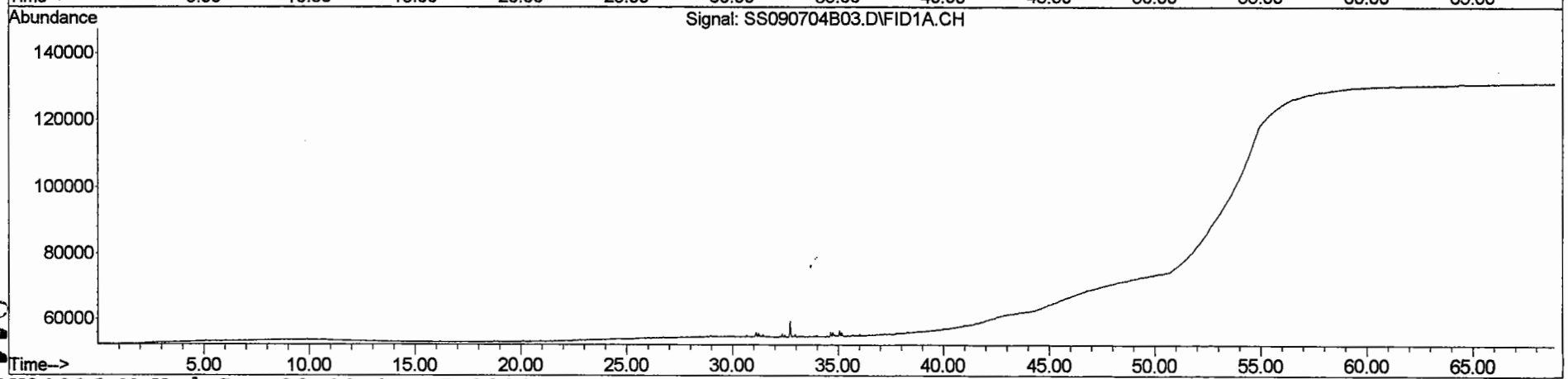
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : SS090704B03.D
Acq On : 20 Sep 2004 1:42 pm
Operator : BL
Sample : SS090704B03
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 24 14:22:16 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration





Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **See Below**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	09/07/04	100	Cass

Lab ID: SS090704B03 SS090704BS03 SS090704BSD03

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Naphthalene	0.069		24	73	25	75	2	30	50-130
Acenaphthylene	0.67	U	26	78	26	78	0	30	50-130
Acenaphthene	0.67	U	27	80	27	81	1	30	50-130
Fluorene	0.67	U	27	81	27	82	1	30	50-130
Anthracene	0.67	U	29	88	29	88	1	30	50-130
Phenanthrene	0.038		28	85	29	86	0	30	50-130
Fluoranthene	0.045		28	85	28	83	2	30	50-130
Pyrene	0.073		31	93	31	92	1	30	50-130
Benz[a]anthracene	0.67	U	28	85	28	84	1	30	50-130
Chrysene/Triphenylene	0.67	U	29	87	29	87	0	30	50-130
Benzo[b]fluoranthene	0.67	U	29	87	28	85	3	30	50-130
Benzo[k]fluoranthene	0.67	U	29	86	29	86	0	30	50-130
Benzo[a]pyrene	0.67	U	27	80	26	77	5	30	50-130
Indeno[1,2,3-cd]pyrene	0.67	U	24	72	21	64	11	30	50-130
Dibenz[a,h]anthracene	0.67	U	26	77	24	73	6	30	50-130
Benzo[g,h,i]perylene	0.67	U	26	77	24	72	6	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
2-Methylnaphthalene-d10	75	77	50-130
Pyrene-d10	93	94	50-130
Benzo[b]fluoranthene-d12	93	95	50-130
5B(H)Cholane	N/A	N/A	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/08/04 06:10

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Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704BS03**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**24**	S	Fluoranthene	**28**	S
C1-Naphthalenes	**17**		Pyrene	**31**	S
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	**26**	S	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	**27**	S	C2-Naphthobenzothiophenes	0.081	U
Fluorene	**27**	S	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	**28**	S
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	**29**	S
Anthracene	**29**	S	C1-Chrysenes	0.072	U
Phenanthrene	**28**	S	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	**0.097**	J	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	**29**	S
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	**29**	S
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	0.074	U	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	**27**	S
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	**24**	S
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	**26**	S
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	**26**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	75	50-130
Pyrene-d10	93	50-130
Benzo[b]fluoranthene-d12	93	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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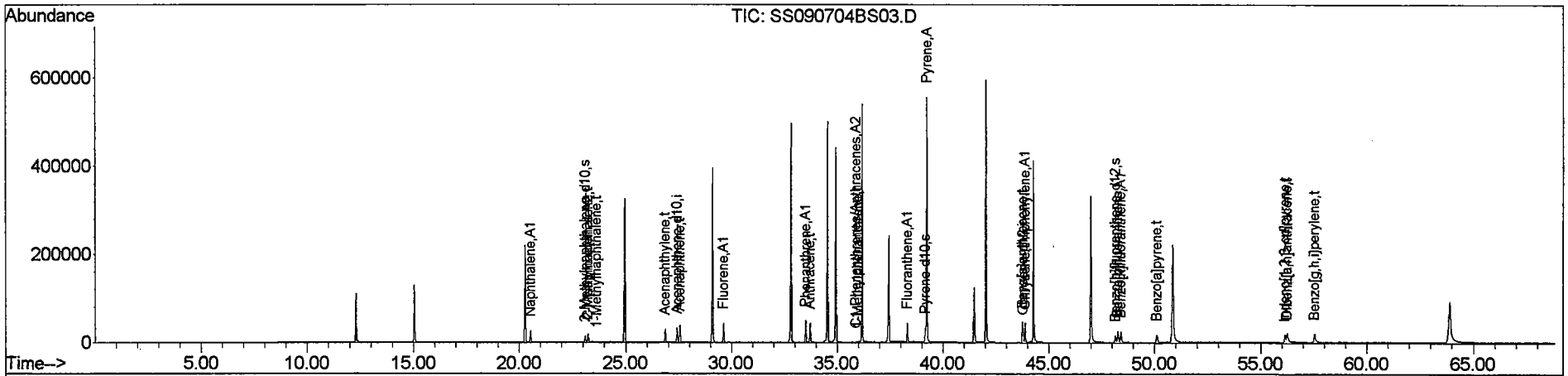
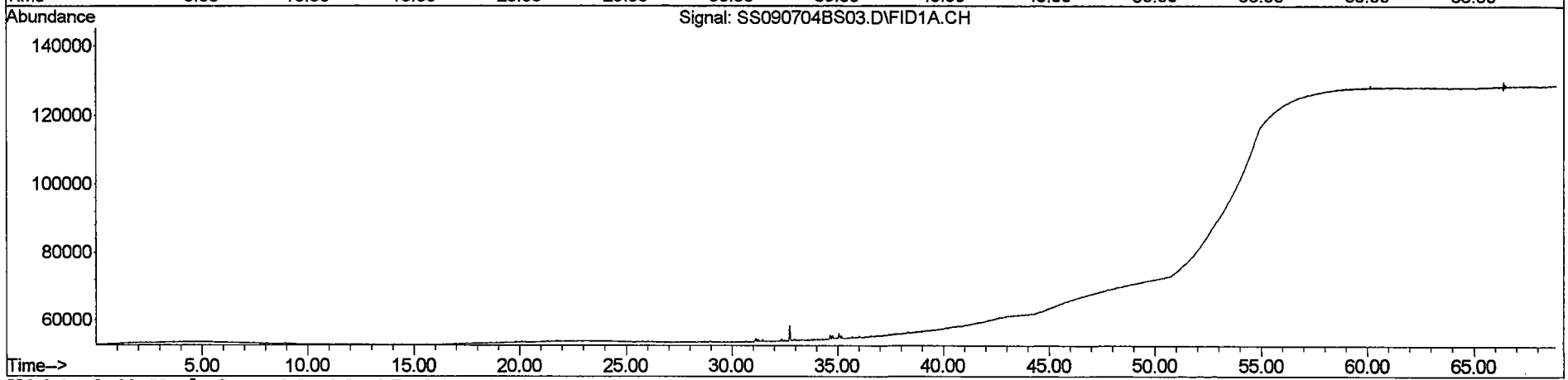
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : SS090704BS03.D
Acq On : 20 Sep 2004 3:05 pm
Operator : BL
Sample : SS090704BS03
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 22 10:17:10 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration





047

Form I
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704BSD03**
Associated Blank: **SS090704B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/20/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**25**	S	Fluoranthene	**28**	S
C1-Naphthalenes	**17**		Pyrene	**31**	S
C2-Naphthalenes	0.11	U	C1-Fluoranthenes/Pyrenes	0.059	U
C3-Naphthalenes	0.11	U	C2-Fluoranthenes/Pyrenes	0.059	U
C4-Naphthalenes	0.11	U	C3-Fluoranthenes/Pyrenes	0.059	U
Biphenyl	0.061	U	C4-Fluoranthenes/Pyrenes	0.059	U
Dibenzofuran	0.079	U	Naphthobenzothiophenes	0.081	U
Acenaphthylene	**26**	S	C1-Naphthobenzothiophenes	0.081	U
Acenaphthene	**27**	S	C2-Naphthobenzothiophenes	0.081	U
Fluorene	**27**	S	C3-Naphthobenzothiophenes	0.081	U
C1-Fluorenes	0.077	U	C4-Naphthobenzothiophenes	0.081	U
C2-Fluorenes	0.077	U	Benz[a]anthracene	**28**	S
C3-Fluorenes	0.077	U	Chrysene/Triphenylene	**29**	S
Anthracene	**29**	S	C1-Chrysenes	0.072	U
Phenanthrene	**29**	S	C2-Chrysenes	0.072	U
C1-Phenanthrenes/Anthracenes	**0.091**	J	C3-Chrysenes	0.072	U
C2-Phenanthrenes/Anthracenes	0.097	U	C4-Chrysenes	0.072	U
C3-Phenanthrenes/Anthracenes	0.097	U	Benzo[b]fluoranthene	**28**	S
C4-Phenanthrenes/Anthracenes	0.097	U	Benzo[k]fluoranthene	**29**	S
Retene	0.097	U	Benzo[a]fluoranthene	0.14	U
Dibenzothiophene	0.074	U	Benzo[e]pyrene	0.091	U
C1-Dibenzothiophenes	0.074	U	Benzo[a]pyrene	**26**	S
C2-Dibenzothiophenes	0.074	U	Perylene	0.12	U
C3-Dibenzothiophenes	0.074	U	Indeno[1,2,3-cd]pyrene	**21**	S
C4-Dibenzothiophenes	0.074	U	Dibenz[a,h]anthracene	**24**	S
Benzo(b)fluorene	0.067	U	Benzo[g,h,i]perylene	**24**	S

Surrogate	% Recovery	Acceptance Range (%)
2-Methylnaphthalene-d10	77	50-130
Pyrene-d10	94	50-130
Benzo[b]fluoranthene-d12	95	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

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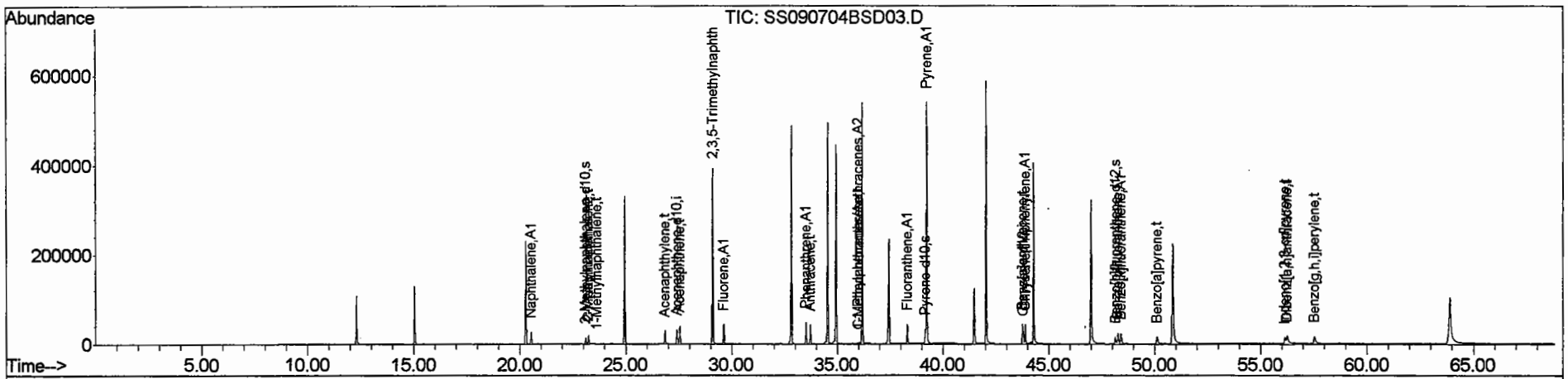
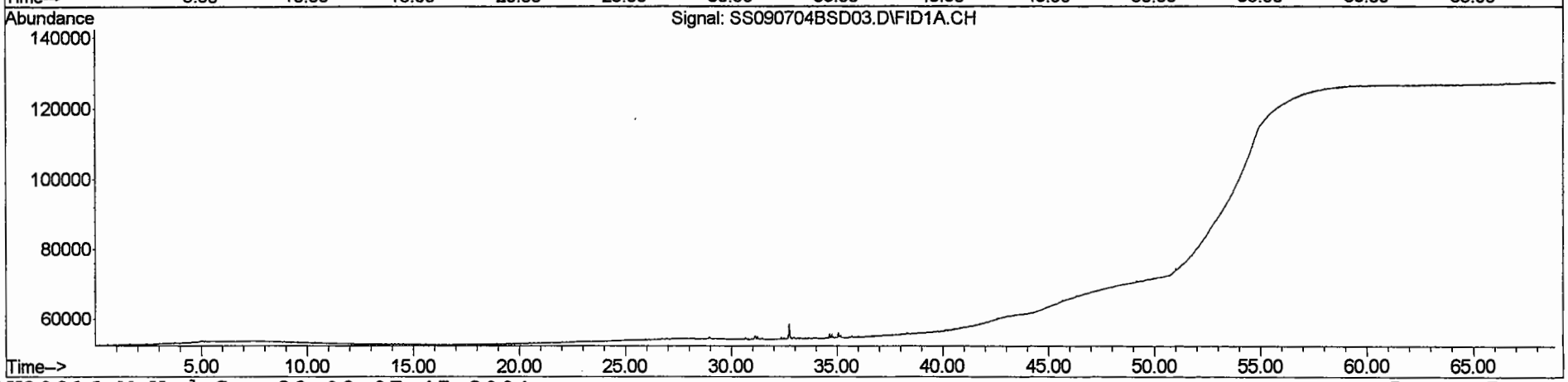
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : SS090704BSD03.D
Acq On : 20 Sep 2004 4:28 pm
Operator : BL
Sample : SS090704BSD03
Misc : 1X (Sig #1); (Sig #2)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 22 10:21:30 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration





049

Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS092404AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Naphthalene	714.43	550	77	65-135
C1-Naphthalenes	1534.53	1200	75	65-135
C2-Naphthalenes	1897.27	1400	76	65-135
C3-Naphthalenes	1436.53	1100	75	65-135
C4-Naphthalenes	773.42	580	75	65-135
Biphenyl	216.49	140	66	65-135
Acenaphthene	15.55	5.2	34[a]	65-135
Fluorene	87.56	70	80	65-135
C1-Fluorenes	219.89	180	80	65-135
C2-Fluorenes	341.2	260	77	65-135
C3-Fluorenes	299.61	280	93	65-135
Phenanthrene	272.58	230	83	65-135
C1-Phenanthrenes/Anthracenes	564.81	480	85	65-135
C2-Phenanthrenes/Anthracenes	660.43	470	71	65-135
C3-Phenanthrenes/Anthracenes	448.76	390	86	65-135
C4-Phenanthrenes/Anthracenes	175.88	140	82	65-135
Dibenzothiophene	218.8	160	75	65-135
C1-Dibenzothiophenes	434.54	320	74	65-135
C2-Dibenzothiophenes	551.44	500	90	65-135
C3-Dibenzothiophenes	460.96	450	98	65-135
C4-Dibenzothiophenes	236.77	210	89	65-135
Fluoranthene	4.26	11	267[a]	65-135
Pyrene	15.56	9.2	59[a]	65-135
C1-Fluoranthenes/Pyrenes	78.43	79	101	65-135
C2-Fluoranthenes/Pyrenes	132.93	100	78	65-135
C3-Fluoranthenes/Pyrenes	111.33	110	98	65-135
Chrysene/Triphenylene	50.99	46	90	65-135
C1-Chrysenes	81.69	76	93	65-135
C2-Chrysenes	95.93	100	106	65-135
C3-Chrysenes	89.87	96	107	65-135
C4-Chrysenes	51.86	52	101	65-135
Benzo[b]fluoranthene	6.54	8.2	125	65-135
Benzo[e]pyrene	12.88	15	117	65-135

10/13/04 14:06

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Form III
Spike Recovery Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS092404AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	N/A	100	Cass

Parameter	True Conc.	Conc.	% Recovery	% Recovery Limits
Dibenz[a,h]anthracene	1.02	1.4	133	65-135
Benzo[g,h,i]perylene	3.35	5.0	150[a]	65-135
Hopane (T19)	118.8	180	147[a]	65-135

N/A - Not Applicable
[a] - Value outside of QC Limits.

051

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/13/04 14:06

Form I
Alaska North Slope Crude
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS092404AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/17/04	100	0.05	10	1	Cass

Parameter	Result		Parameter	Result	
Naphthalene	**550**		Fluoranthene	**11**	
C1-Naphthalenes	**1200**		Pyrene	**9.2**	
C2-Naphthalenes	**1400**		C1-Fluoranthenes/Pyrenes	**79**	
C3-Naphthalenes	**1100**		C2-Fluoranthenes/Pyrenes	**100**	
C4-Naphthalenes	**580**		C3-Fluoranthenes/Pyrenes	**110**	
Biphenyl	**140**		C4-Fluoranthenes/Pyrenes	**72**	
Dibenzofuran	**60**		Naphthobenzothiophenes	**60**	
Acenaphthylene	0.35	U	C1-Naphthobenzothiophenes	**140**	
Acenaphthene	**5.2**		C2-Naphthobenzothiophenes	**180**	
Fluorene	**70**		C3-Naphthobenzothiophenes	**130**	
C1-Fluorenes	**180**		C4-Naphthobenzothiophenes	**75**	
C2-Fluorenes	**260**		Benz[a]anthracene	**2.6**	
C3-Fluorenes	**280**		Chrysene/Triphenylene	**46**	
Anthracene	0.26	U	C1-Chrysenes	**76**	
Phenanthrene	**230**		C2-Chrysenes	**100**	
C1-Phenanthrenes/Anthracenes	**480**		C3-Chrysenes	**96**	
C2-Phenanthrenes/Anthracenes	**470**		C4-Chrysenes	**52**	
C3-Phenanthrenes/Anthracenes	**390**		Benzo[b]fluoranthene	**8.2**	
C4-Phenanthrenes/Anthracenes	**140**		Benzo[k]fluoranthene	0.39	U
Retene	0.28	U	Benzo[a]fluoranthene	0.39	U
Dibenzothiophene	**160**		Benzo[e]pyrene	**15**	
C1-Dibenzothiophenes	**320**		Benzo[a]pyrene	**2.3**	
C2-Dibenzothiophenes	**500**		Perylene	**2.4**	
C3-Dibenzothiophenes	**450**		Indeno[1,2,3-cd]pyrene	**0.81**	J
C4-Dibenzothiophenes	**210**		Dibenz[a,h]anthracene	**1.4**	J
Benzo(b)fluorene	0.20	U	Benzo[g,h,i]perylene	**5.0**	

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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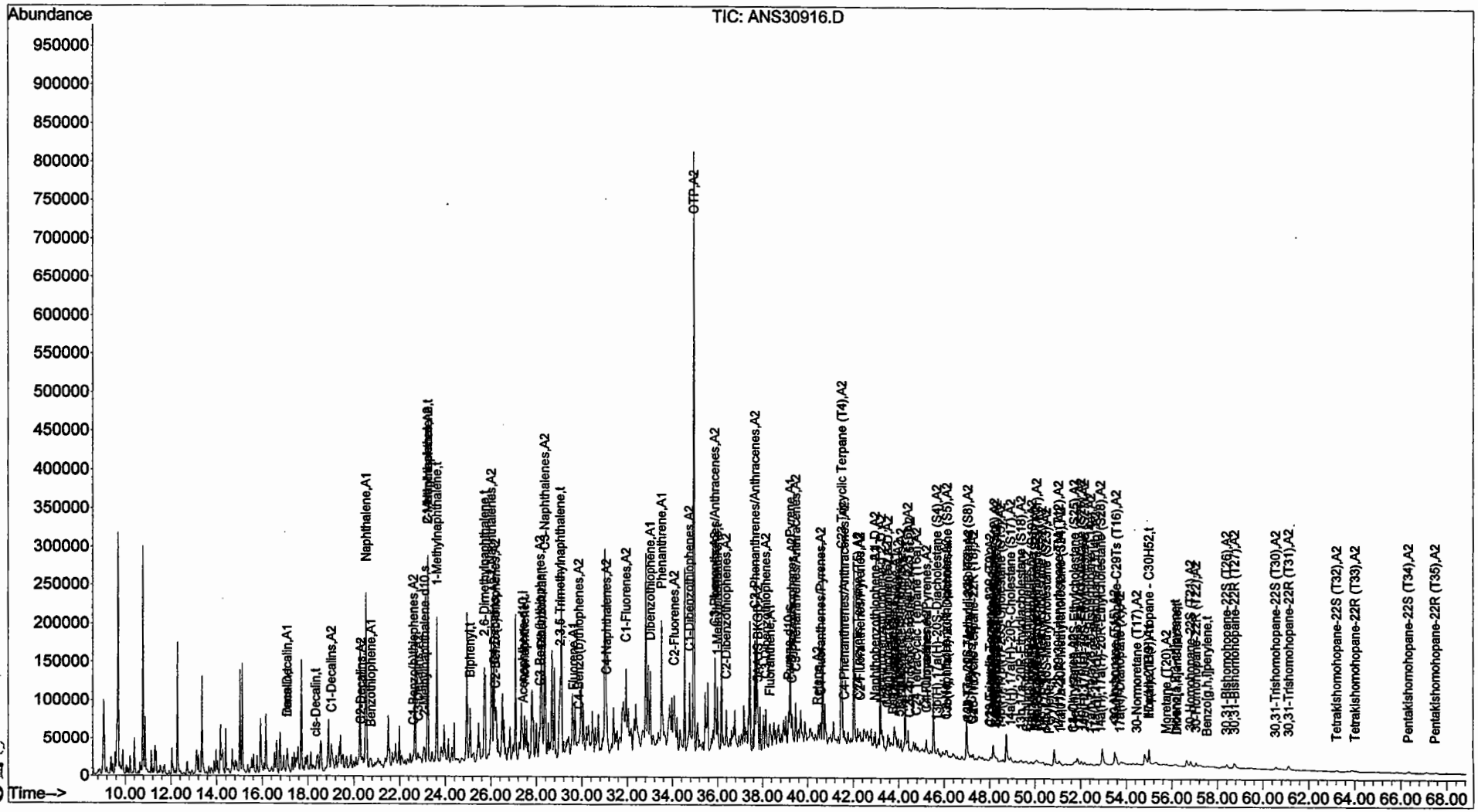
Quantitation Report (QT Reviewed)

Data Path : \\192.168.1.76\ORGANICS\DATA\PAH3\SEPT16\
Data File : ANS30916.D
Acq On : 17 Sep 2004 12:56 pm
Operator : BL
Sample : SS092404AWS01
Misc : SW090104A 5.14 ug/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 24 14:41:42 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration



Steranes and Triterpanes

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-08-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-01F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	40.2	30.96	4	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**16**		30,31-Bishomohopane-22R (T27)	**7.9**	
C24 Tricyclic Terpane (T5)	**7.8**		30,31-Trishomohopane-22S (T30)	**6.8**	
C25 Tricyclic Terpane (T6)	**5.9**		30,31-Trishomohopane-22R (T31)	**5.6**	
C24 Tetracyclic Terpane (T6a)	**5.0**		Tetrakishomohopane-22S (T32)	**5.1**	
C26 Tricyclic Terpane-22S (T6b)	**2.6**	J	Tetrakishomohopane-22R (T33)	**3.4**	
C26 Tricyclic Terpane-22R (T6c)	**2.2**	J	Pentakishomohopane-22S (T34)	**5.3**	
C28 Tricyclic Terpane-22S (T7)	**2.4**	J	Pentakishomohopane-22R (T35)	**2.8**	J
C28 Tricyclic Terpane-22R (T8)	**2.4**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**11**	
C29 Tricyclic Terpane-22S (T9)	**2.3**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**6.3**	
C29 Tricyclic Terpane-22R (T10)	**2.0**	J	13b,17a-20S-Methyldiacholestane (S8)	**5.2**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**13**		14a(H),17a(H)-20S-Cholestane (S12)	**16**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**14**		14a(H),17a(H)-20R-Cholestane (S17)	**11**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**2.2**	J	13b,17a-20R-Ethyldiacholestane (S18)	**4.9**	
17a(H),21b(H)-25-Norhopane (T14b)	**6.6**		13a,17b-20S-Ethyldiacholestane (S19)	**1.2**	J
30-Norhopane (T15)	**43**		14a,17a-20S-Methylcholestane (S20)	**3.7**	
18a(H)-30-Norneohopane-C29Ts (T16)	**8.8**		14a,17a-20R-Methylcholestane (S24)	**4.9**	
17a(H)-Diahopane (X)	**5.0**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**5.1**	
30-Normoretane (T17)	**9.5**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**5.3**	
18a(H)&18b(H)-Oleananes (T18)	**6.5**		14b(H),17b(H)-20R-Cholestane (S14)	**6.8**	
Hopane (T19)	**58**		14b(H),17b(H)-20S-Cholestane (S15)	**5.7**	
Moretane (T20)	**13**		14b,17b-20R-Methylcholestane (S22)	**6.5**	
30-Homohopane-22S (T21)	**21**		14b,17b-20S-Methylcholestane (S23)	**4.7**	
30-Homohopane-22R (T22)	**16**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**13**	
30,31-Bishomohopane-22S (T26)	**25**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**9.5**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	71	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

10/07/04 14:07

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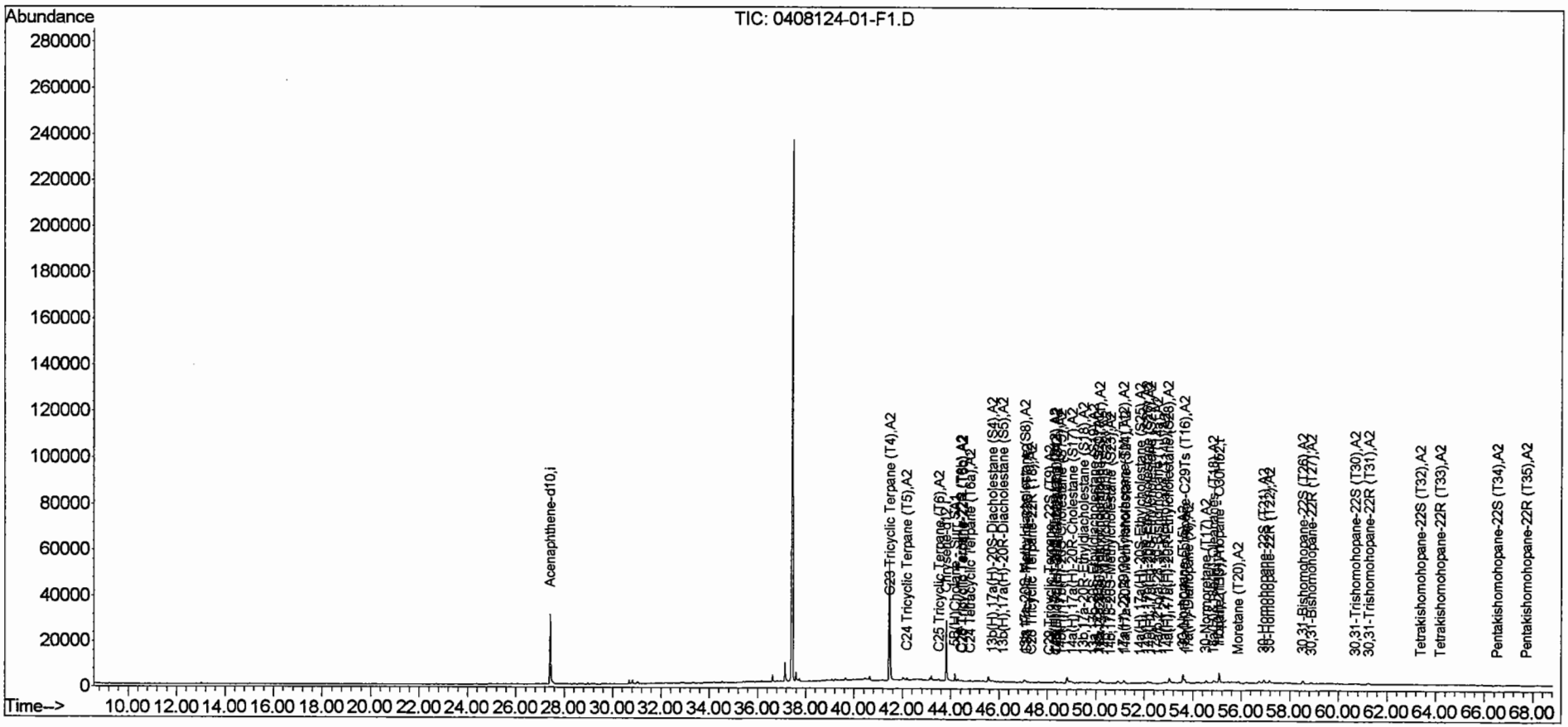
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-01-F1.D
Acq On : 22 Sep 2004 12:20 am
Operator : BL
Sample : 0408124-01-F1
Misc : 1X
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Sep 27 03:15:00 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration



056

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-04-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-02F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	36.8	30.44	4	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**42**	30,31-Bishomohopane-22R (T27)	**16**
C24 Tricyclic Terpane (T5)	**23**	30,31-Trishomohopane-22S (T30)	**18**
C25 Tricyclic Terpane (T6)	**22**	30,31-Trishomohopane-22R (T31)	**15**
C24 Tetracyclic Terpane (T6a)	**13**	Tetrakishomohopane-22S (T32)	**9.2**
C26 Tricyclic Terpane-22S (T6b)	**11**	Tetrakishomohopane-22R (T33)	**5.9**
C26 Tricyclic Terpane-22R (T6c)	**10**	Pentakishomohopane-22S (T34)	**8.9**
C28 Tricyclic Terpane-22S (T7)	**12**	Pentakishomohopane-22R (T35)	**5.2**
C28 Tricyclic Terpane-22R (T8)	**14**	13b(H),17a(H)-20S-Diacholestane (S4)	**16**
C29 Tricyclic Terpane-22S (T9)	**14**	13b(H),17a(H)-20R-Diacholestane (S5)	**14**
C29 Tricyclic Terpane-22R (T10)	**15**	13b,17a-20S-Methyldiacholestane (S8)	**13**
18a-22,29,30-Trisnorneohopane-TS (T11)	**33**	14a(H),17a(H)-20S-Cholestane (S12)	**31**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**28**	14a(H),17a(H)-20R-Cholestane (S17)	**21**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**11**	13b,17a-20R-Ethyldiacholestane (S18)	**17**
17a(H),21b(H)-25-Norhopane (T14b)	**17**	13a,17b-20S-Ethyldiacholestane (S19)	**2.8** J
30-Norhopane (T15)	**76**	14a,17a-20S-Methylcholestane (S20)	**7.7**
18a(H)-30-Norneohopane-C29Ts (T16)	**27**	14a,17a-20R-Methylcholestane (S24)	**12**
17a(H)-Diahopane (X)	**15**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**9.3**
30-Normoretane (T17)	**21**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**13**
18a(H)&18b(H)-Oleananes (T18)	**22**	14b(H),17b(H)-20R-Cholestane (S14)	**14**
Hopane (T19)	**110**	14b(H),17b(H)-20S-Cholestane (S15)	**12**
Moretane (T20)	**29**	14b,17b-20R-Methylcholestane (S22)	**11**
30-Homohopane-22S (T21)	**41**	14b,17b-20S-Methylcholestane (S23)	**12**
30-Homohopane-22R (T22)	**34**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**25**
30,31-Bishomohopane-22S (T26)	**46**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**22**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	76	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

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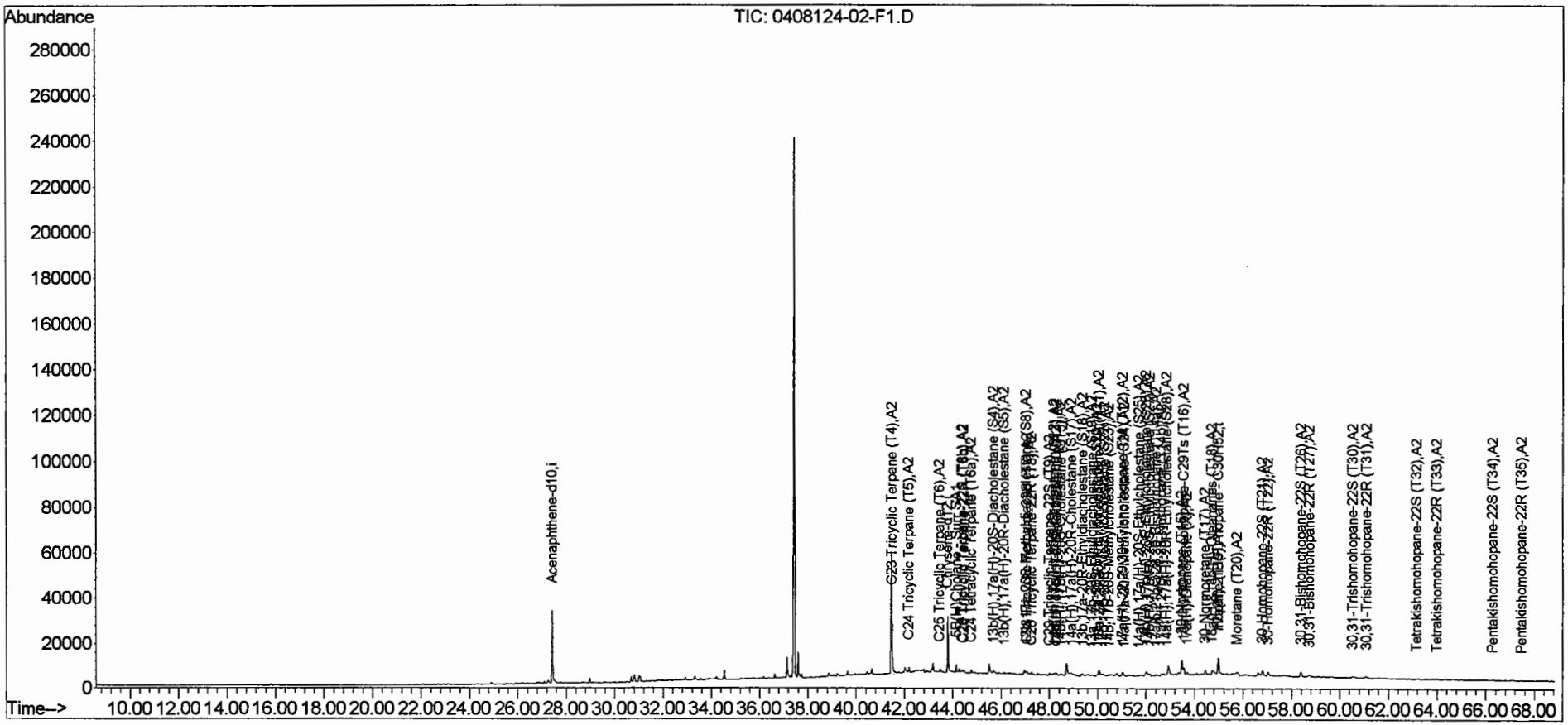
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-02-F1.D
Acq On : 22 Sep 2004 1:43 am
Operator : BL
Sample : 0408124-02-F1
Misc : 1X
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 27 03:16:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-20-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-03F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	37.7	30.27	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**12**		30,31-Bishomohopane-22R (T27)	**5.7**	
C24 Tricyclic Terpane (T5)	**5.2**		30,31-Trishomohopane-22S (T30)	**6.4**	
C25 Tricyclic Terpane (T6)	**4.1**		30,31-Trishomohopane-22R (T31)	**3.7**	
C24 Tetracyclic Terpane (T6a)	**3.1**		Tetrakishomohopane-22S (T32)	**3.3**	
C26 Tricyclic Terpane-22S (T6b)	**1.7**	J	Tetrakishomohopane-22R (T33)	**2.2**	
C26 Tricyclic Terpane-22R (T6c)	**1.7**	J	Pentakishomohopane-22S (T34)	**1.9**	
C28 Tricyclic Terpane-22S (T7)	**1.6**	J	Pentakishomohopane-22R (T35)	**1.7**	J
C28 Tricyclic Terpane-22R (T8)	**1.5**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**6.2**	
C29 Tricyclic Terpane-22S (T9)	**1.9**		13b(H),17a(H)-20R-Diacholestane (S5)	**3.8**	
C29 Tricyclic Terpane-22R (T10)	**1.5**	J	13b,17a-20S-Methyldiacholestane (S8)	**4.5**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**8.0**		14a(H),17a(H)-20S-Cholestane (S12)	**10**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**9.8**		14a(H),17a(H)-20R-Cholestane (S17)	**6.9**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**1.8**		13b,17a-20R-Ethyldiacholestane (S18)	**3.7**	
17a(H),21b(H)-25-Norhopane (T14b)	**4.2**		13a,17b-20S-Ethyldiacholestane (S19)	**1.4**	J
30-Norhopane (T15)	**28**		14a,17a-20S-Methylcholestane (S20)	**2.3**	
18a(H)-30-Norneohopane-C29Ts (T16)	**6.7**		14a,17a-20R-Methylcholestane (S24)	**3.5**	
17a(H)-Diahopane (X)	**2.7**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**3.5**	
30-Normoretane (T17)	**6.6**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**3.0**	
18a(H)&18b(H)-Oleananes (T18)	**5.1**		14b(H),17b(H)-20R-Cholestane (S14)	**4.1**	
Hopane (T19)	**39**		14b(H),17b(H)-20S-Cholestane (S15)	**4.2**	
Moretane (T20)	**8.1**		14b,17b-20R-Methylcholestane (S22)	**4.5**	
30-Homohopane-22S (T21)	**15**		14b,17b-20S-Methylcholestane (S23)	**4.1**	
30-Homohopane-22R (T22)	**12**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**9.3**	
30,31-Bishomohopane-22S (T26)	**16**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**7.0**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	76	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

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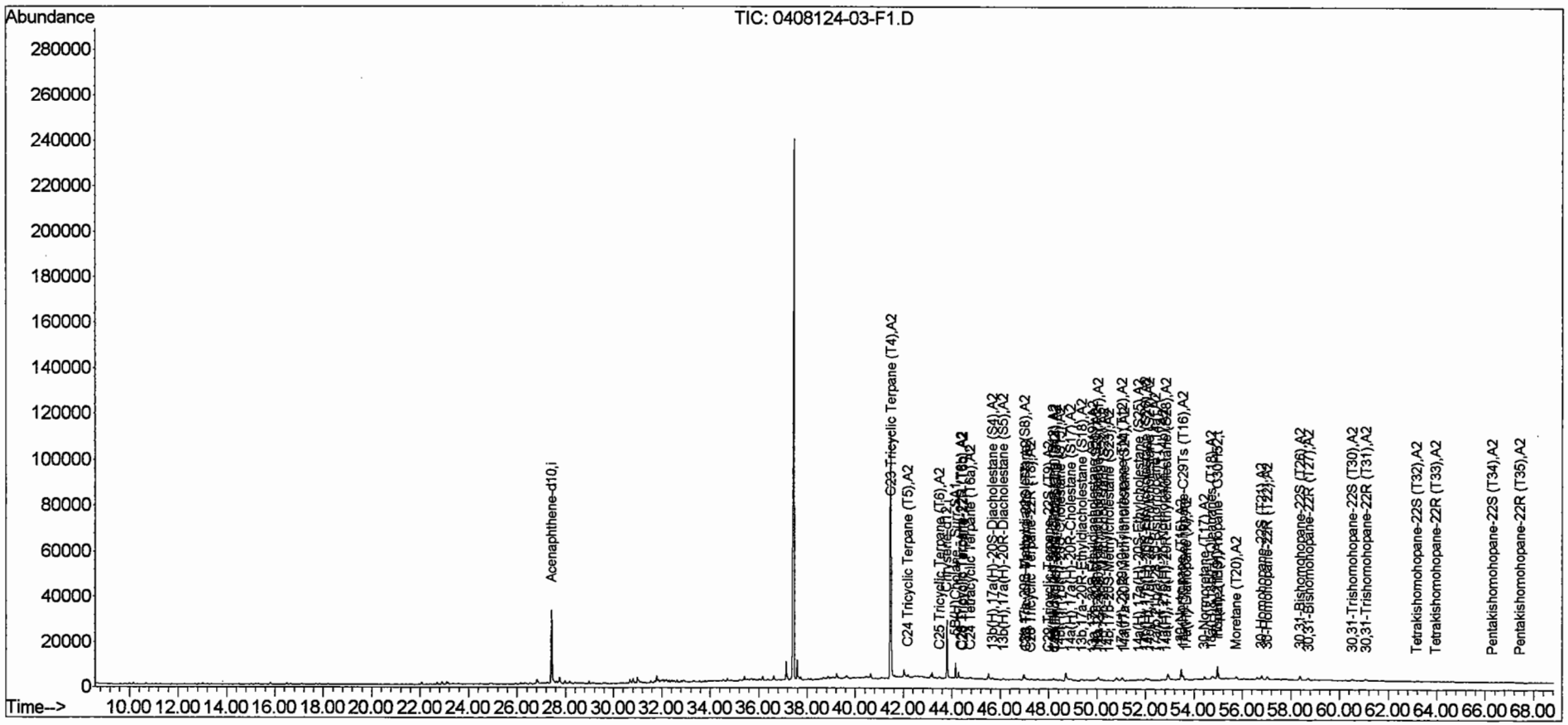
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-03-F1.D
Acq On : 22 Sep 2004 3:06 am
Operator : BL
Sample : 0408124-03-F1
Misc : 1X
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Sep 27 03:17:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-27-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-04F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	50.4	30.92	10	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**50**	30,31-Bishomohopane-22R (T27)	**36**
C24 Tricyclic Terpane (T5)	**29**	30,31-Trishomohopane-22S (T30)	**30**
C25 Tricyclic Terpane (T6)	**23**	30,31-Trishomohopane-22R (T31)	**22**
C24 Tetracyclic Terpane (T6a)	**22**	Tetrakishomohopane-22S (T32)	**20**
C26 Tricyclic Terpane-22S (T6b)	**11**	Tetrakishomohopane-22R (T33)	**10**
C26 Tricyclic Terpane-22R (T6c)	**10**	Pentakishomohopane-22S (T34)	**13**
C28 Tricyclic Terpane-22S (T7)	**8.0**	Pentakishomohopane-22R (T35)	**12**
C28 Tricyclic Terpane-22R (T8)	**9.3**	13b(H),17a(H)-20S-Diacholestane (S4)	**33**
C29 Tricyclic Terpane-22S (T9)	**11**	13b(H),17a(H)-20R-Diacholestane (S5)	**22**
C29 Tricyclic Terpane-22R (T10)	**9.4**	13b,17a-20S-Methyldiacholestane (S8)	**19**
18a-22,29,30-Trisnorneohopane-TS (T11)	**51**	14a(H),17a(H)-20S-Cholestane (S12)	**59**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**77**	14a(H),17a(H)-20R-Cholestane (S17)	**49**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**12**	13b,17a-20R-Ethyldiacholestane (S18)	**18**
17a(H),21b(H)-25-Norhopane (T14b)	**33**	13a,17b-20S-Ethyldiacholestane (S19)	**3.2** J
30-Norhopane (T15)	**210**	14a,17a-20S-Methylcholestane (S20)	**29**
18a(H)-30-Norneohopane-C29Ts (T16)	**37**	14a,17a-20R-Methylcholestane (S24)	**69**
17a(H)-Diahopane (X)	**24**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**29**
30-Normoretane (T17)	**46**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**60**
18a(H)&18b(H)-Oleananes (T18)	**34**	14b(H),17b(H)-20R-Cholestane (S14)	**22**
Hopane (T19)	**330**	14b(H),17b(H)-20S-Cholestane (S15)	**19**
Moretane (T20)	**68**	14b,17b-20R-Methylcholestane (S22)	**29**
30-Homohopane-22S (T21)	**84**	14b,17b-20S-Methylcholestane (S23)	**25**
30-Homohopane-22R (T22)	**66**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**45**
30,31-Bishomohopane-22S (T26)	**64**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**35**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	75	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

10/07/04 14:08

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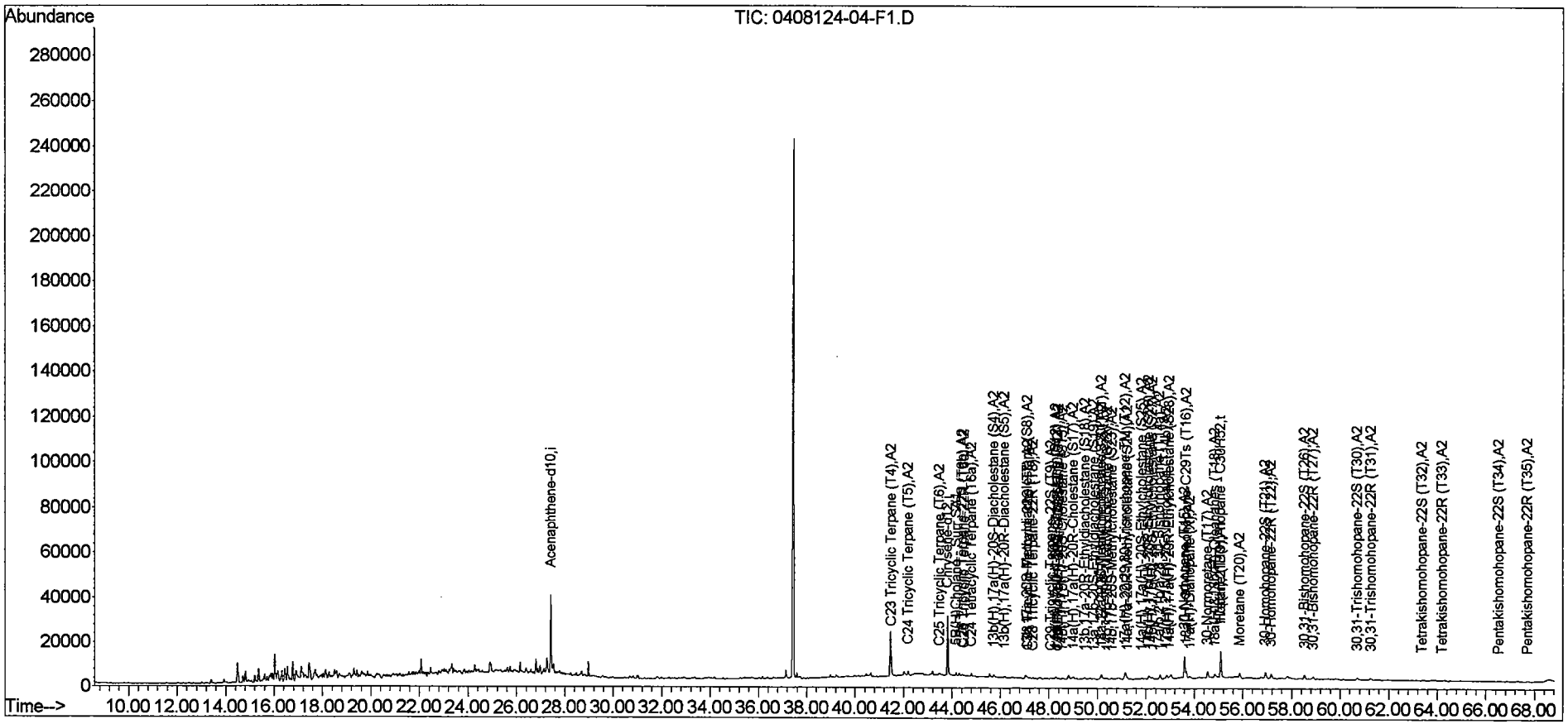
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-04-F1.D
Acq On : 22 Sep 2004 4:29 am
Operator : BL
Sample : 0408124-04-F1
Misc : 1X
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Sep 27 03:19:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-31-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-05F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	37.6	30.82	4	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	22		30,31-Bishomohopane-22R (T27)	13	
C24 Tricyclic Terpane (T5)	10		30,31-Trishomohopane-22S (T30)	10	
C25 Tricyclic Terpane (T6)	8.8		30,31-Trishomohopane-22R (T31)	8.1	
C24 Tetracyclic Terpane (T6a)	7.2		Tetrakishomohopane-22S (T32)	9.5	
C26 Tricyclic Terpane-22S (T6b)	3.9		Tetrakishomohopane-22R (T33)	4.1	
C26 Tricyclic Terpane-22R (T6c)	3.8		Pentakishomohopane-22S (T34)	7.0	
C28 Tricyclic Terpane-22S (T7)	4.0		Pentakishomohopane-22R (T35)	4.2	
C28 Tricyclic Terpane-22R (T8)	3.6		13b(H),17a(H)-20S-Diacholestane (S4)	13	
C29 Tricyclic Terpane-22S (T9)	3.4	J	13b(H),17a(H)-20R-Diacholestane (S5)	9.1	
C29 Tricyclic Terpane-22R (T10)	3.3	J	13b,17a-20S-Methyldiacholestane (S8)	8.7	
18a-22,29,30-Trisnorneohopane-TS (T11)	17		14a(H),17a(H)-20S-Cholestane (S12)	22	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	20		14a(H),17a(H)-20R-Cholestane (S17)	15	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	4.6		13b,17a-20R-Ethyldiacholestane (S18)	9.0	
17a(H),21b(H)-25-Norhopane (T14b)	10		13a,17b-20S-Ethyldiacholestane (S19)	1.6	J
30-Norhopane (T15)	62		14a,17a-20S-Methylcholestane (S20)	4.3	
18a(H)-30-Norneohopane-C29Ts (T16)	14		14a,17a-20R-Methylcholestane (S24)	8.7	
17a(H)-Diahopane (X)	7.4		14a(H),17a(H)-20S-Ethylcholestane (S25)	7.8	
30-Normoretane (T17)	14		14a(H),17a(H)-20R-Ethylcholestane (S28)	6.8	
18a(H)&18b(H)-Oleananes (T18)	11		14b(H),17b(H)-20R-Cholestane (S14)	10	
Hopane (T19)	84		14b(H),17b(H)-20S-Cholestane (S15)	8.9	
Moretane (T20)	17		14b,17b-20R-Methylcholestane (S22)	9.8	
30-Homohopane-22S (T21)	30		14b,17b-20S-Methylcholestane (S23)	9.8	
30-Homohopane-22R (T22)	26		14b(H),17b(H)-20R-Ethylcholestane (S26)	20	
30,31-Bishomohopane-22S (T26)	34		14b(H),17b(H)-20S-Ethylcholestane (S27)	16	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

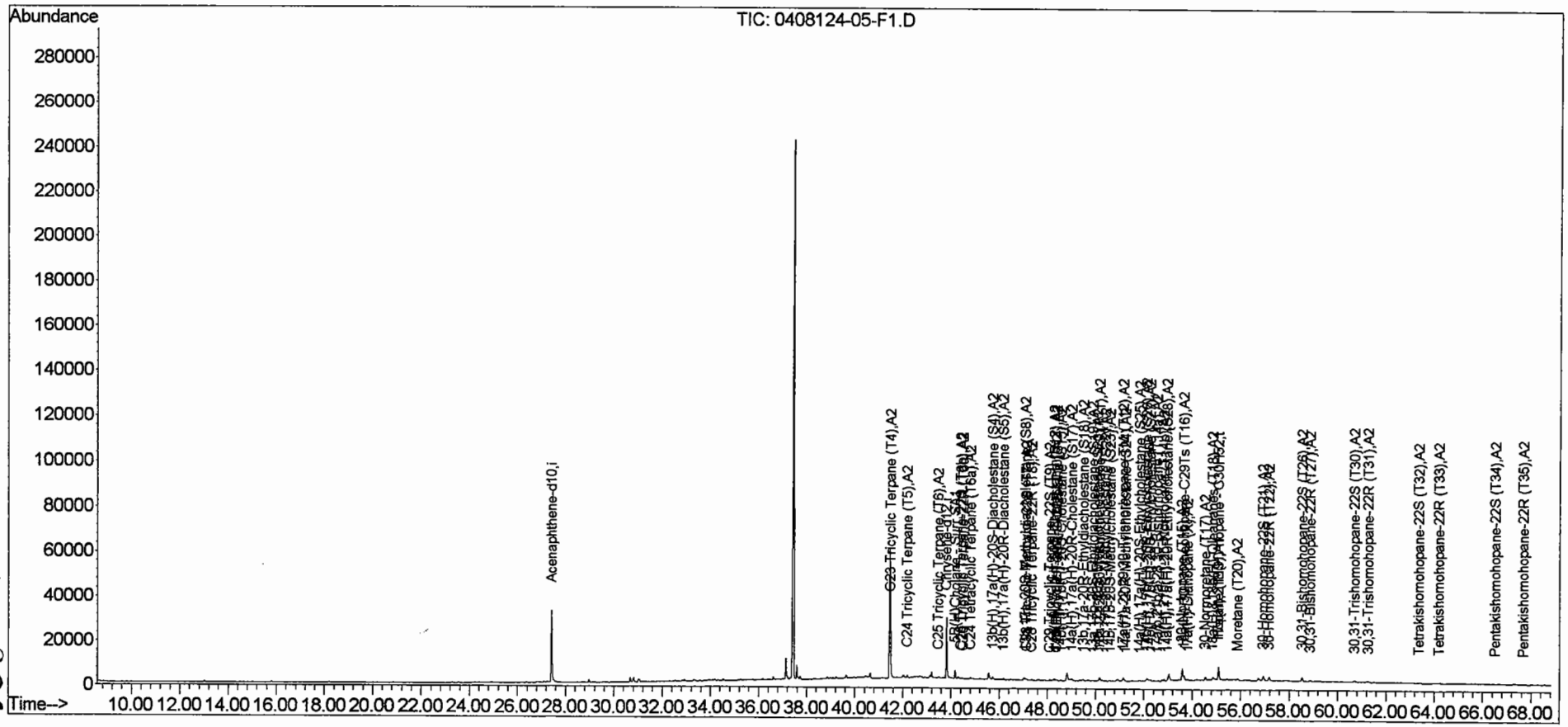
10/07/04 14:08

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-05-F1.D
Acq On : 22 Sep 2004 5:53 am
Operator : BL
Sample : 0408124-05-F1
Misc : 1X
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Sep 27 03:20:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-11-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-06F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	48.5	30.54	5	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	**83**	30,31-Bishomohopane-22R (T27)	**58**
C24 Tricyclic Terpane (T5)	**46**	30,31-Trishomohopane-22S (T30)	**63**
C25 Tricyclic Terpane (T6)	**39**	30,31-Trishomohopane-22R (T31)	**50**
C24 Tetracyclic Terpane (T6a)	**27**	Tetrakishomohopane-22S (T32)	**43**
C26 Tricyclic Terpane-22S (T6b)	**18**	Tetrakishomohopane-22R (T33)	**30**
C26 Tricyclic Terpane-22R (T6c)	**16**	Pentakishomohopane-22S (T34)	**46**
C28 Tricyclic Terpane-22S (T7)	**18**	Pentakishomohopane-22R (T35)	**40**
C28 Tricyclic Terpane-22R (T8)	**18**	13b(H),17a(H)-20S-Diacholestane (S4)	**70**
C29 Tricyclic Terpane-22S (T9)	**23**	13b(H),17a(H)-20R-Diacholestane (S5)	**48**
C29 Tricyclic Terpane-22R (T10)	**22**	13b,17a-20S-Methyldiacholestane (S8)	**42**
18a-22,29,30-Trisnorneohopane-TS (T11)	**74**	14a(H),17a(H)-20S-Cholestane (S12)	**110**
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**75**	14a(H),17a(H)-20R-Cholestane (S17)	**87**
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**20**	13b,17a-20R-Ethyldiacholestane (S18)	**45**
17a(H),21b(H)-25-Norhopane (T14b)	**36**	13a,17b-20S-Ethyldiacholestane (S19)	**6.8**
30-Norhopane (T15)	**220**	14a,17a-20S-Methylcholestane (S20)	**26**
18a(H)-30-Norneohopane-C29Ts (T16)	**63**	14a,17a-20R-Methylcholestane (S24)	**46**
17a(H)-Diahopane (X)	**38**	14a(H),17a(H)-20S-Ethylcholestane (S25)	**35**
30-Normoretane (T17)	**50**	14a(H),17a(H)-20R-Ethylcholestane (S28)	**46**
18a(H)&18b(H)-Oleananes (T18)	**41**	14b(H),17b(H)-20R-Cholestane (S14)	**50**
Hopane (T19)	**360**	14b(H),17b(H)-20S-Cholestane (S15)	**45**
Moretane (T20)	**67**	14b,17b-20R-Methylcholestane (S22)	**48**
30-Homohopane-22S (T21)	**140**	14b,17b-20S-Methylcholestane (S23)	**43**
30-Homohopane-22R (T22)	**100**	14b(H),17b(H)-20R-Ethylcholestane (S26)	**86**
30,31-Bishomohopane-22S (T26)	**110**	14b(H),17b(H)-20S-Ethylcholestane (S27)	**72**

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	84	50-130

N/A - Not Applicable

10/07/04 14:08

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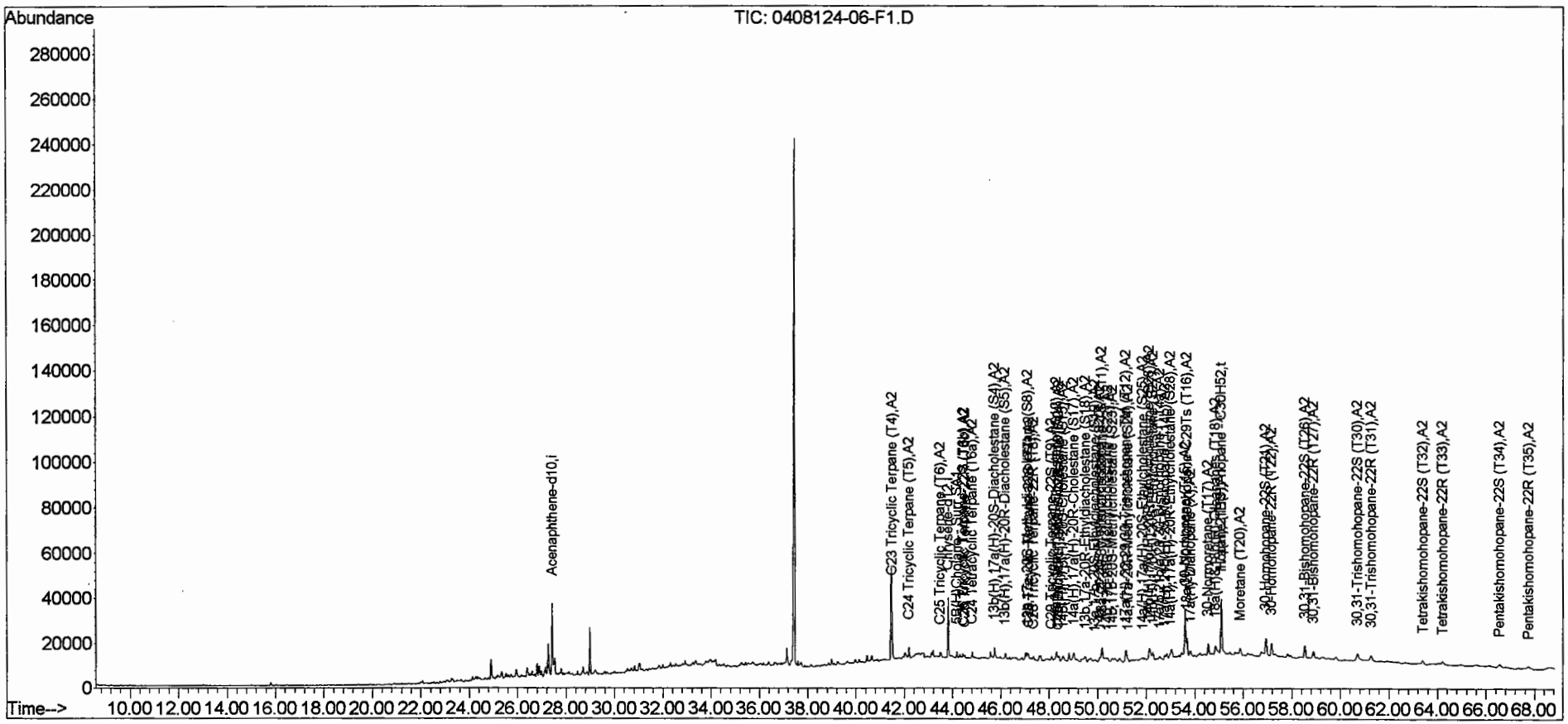
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-06-F1.D
Acq On : 22 Sep 2004 7:16 am
Operator : BL
Sample : 0408124-06-F1
Misc : 1X
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Sep 27 03:21:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



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Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-32-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-07F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	38.7	30.74	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**9.3**		30,31-Bishomohopane-22R (T27)	**4.4**	
C24 Tricyclic Terpane (T5)	**3.8**		30,31-Trishomohopane-22S (T30)	**4.6**	
C25 Tricyclic Terpane (T6)	**3.1**		30,31-Trishomohopane-22R (T31)	**3.3**	
C24 Tetracyclic Terpane (T6a)	**2.2**		Tetrakishomohopane-22S (T32)	**3.4**	
C26 Tricyclic Terpane-22S (T6b)	**1.1**	J	Tetrakishomohopane-22R (T33)	**2.8**	
C26 Tricyclic Terpane-22R (T6c)	**1.3**	J	Pentakishomohopane-22S (T34)	**3.1**	
C28 Tricyclic Terpane-22S (T7)	**1.2**	J	Pentakishomohopane-22R (T35)	**2.8**	
C28 Tricyclic Terpane-22R (T8)	**1.2**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**4.7**	
C29 Tricyclic Terpane-22S (T9)	**1.2**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**3.0**	
C29 Tricyclic Terpane-22R (T10)	**1.2**	J	13b,17a-20S-Methyldiacholestane (S8)	**2.4**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**6.5**		14a(H),17a(H)-20S-Cholestane (S12)	**7.9**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**6.6**		14a(H),17a(H)-20R-Cholestane (S17)	**4.8**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**1.7**		13b,17a-20R-Ethyldiacholestane (S18)	**3.1**	
17a(H),21b(H)-25-Norhopane (T14b)	**3.4**		13a,17b-20S-Ethyldiacholestane (S19)	**0.52**	J
30-Norhopane (T15)	**20**		14a,17a-20S-Methylcholestane (S20)	**1.5**	J
18a(H)-30-Norneohopane-C29Ts (T16)	**5.4**		14a,17a-20R-Methylcholestane (S24)	**2.5**	
17a(H)-Diahopane (X)	**2.3**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**2.5**	
30-Normoretane (T17)	**4.5**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**2.6**	
18a(H)&18b(H)-Oleananes (T18)	**3.7**		14b(H),17b(H)-20R-Cholestane (S14)	**3.4**	
Hopane (T19)	**29**		14b(H),17b(H)-20S-Cholestane (S15)	**3.0**	
Moretane (T20)	**4.7**		14b,17b-20R-Methylcholestane (S22)	**3.2**	
30-Homohopane-22S (T21)	**10**		14b,17b-20S-Methylcholestane (S23)	**3.1**	
30-Homohopane-22R (T22)	**8.8**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**6.5**	
30,31-Bishomohopane-22S (T26)	**12**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**5.6**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	77	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

10/07/04 14:08

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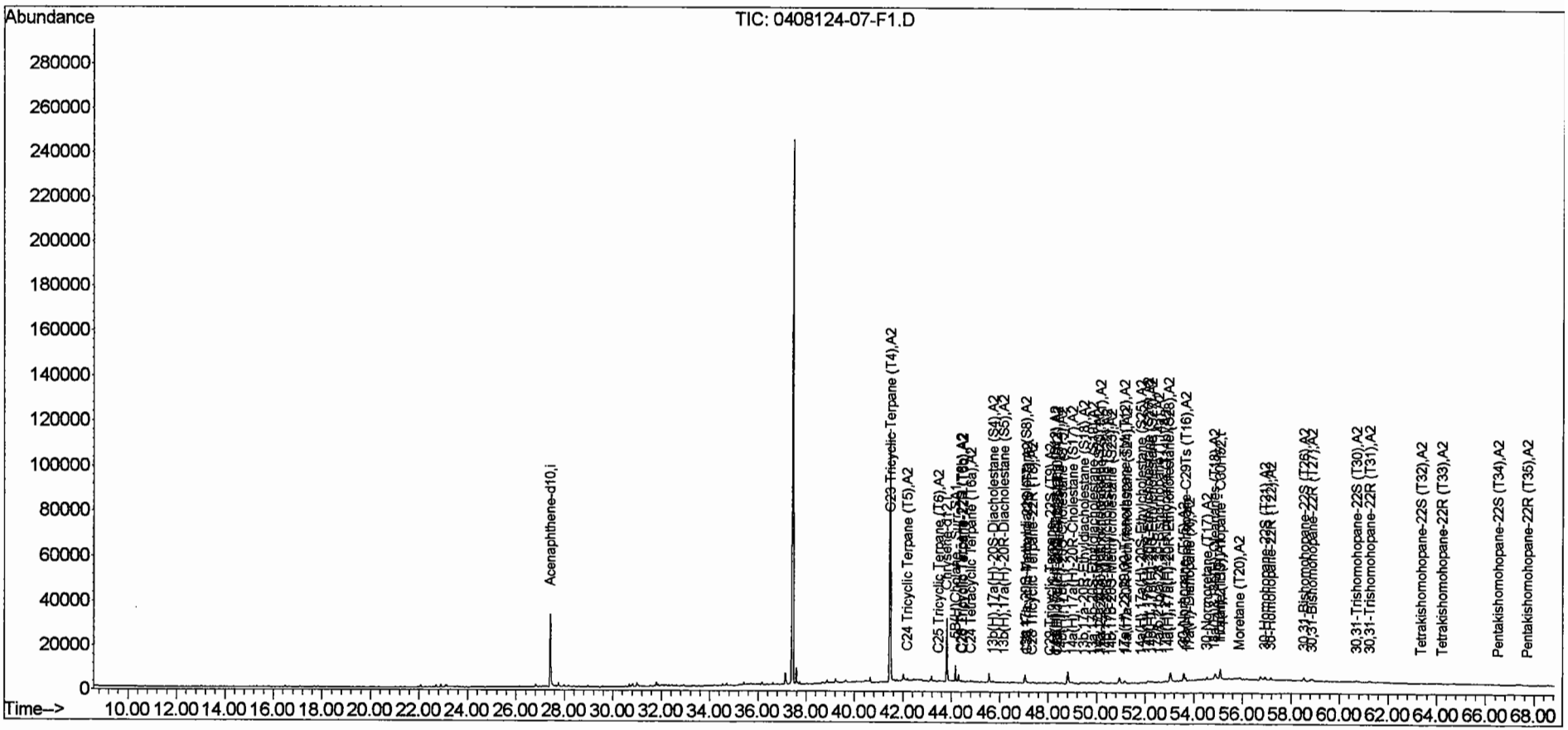
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-07-F1.D
Acq On : 22 Sep 2004 8:39 am
Operator : BL
Sample : 0408124-07-F1
Misc : 1X
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Sep 27 03:22:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-36-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-08F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	79.5	30.63	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**5.6**		30,31-Bishomohopane-22R (T27)	**2.5**	
C24 Tricyclic Terpane (T5)	**2.1**		30,31-Trishomohopane-22S (T30)	**2.0**	
C25 Tricyclic Terpane (T6)	**1.7**		30,31-Trishomohopane-22R (T31)	**1.4**	
C24 Tetracyclic Terpane (T6a)	**1.3**		Tetrakishomohopane-22S (T32)	**1.6**	
C26 Tricyclic Terpane-22S (T6b)	**0.60**	J	Tetrakishomohopane-22R (T33)	**0.76**	J
C26 Tricyclic Terpane-22R (T6c)	**0.68**	J	Pentakishomohopane-22S (T34)	**1.5**	
C28 Tricyclic Terpane-22S (T7)	**0.67**	J	Pentakishomohopane-22R (T35)	**0.67**	J
C28 Tricyclic Terpane-22R (T8)	**0.68**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**2.3**	
C29 Tricyclic Terpane-22S (T9)	**0.63**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**1.6**	
C29 Tricyclic Terpane-22R (T10)	**0.71**	J	13b,17a-20S-Methyldiacholestane (S8)	**1.6**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**3.7**		14a(H),17a(H)-20S-Cholestane (S12)	**4.3**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**4.0**		14a(H),17a(H)-20R-Cholestane (S17)	**3.0**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**0.74**	J	13b,17a-20R-Ethyldiacholestane (S18)	**1.4**	
17a(H),21b(H)-25-Norhopane (T14b)	**1.9**		13a,17b-20S-Ethyldiacholestane (S19)	**0.24**	J
30-Norhopane (T15)	**11**		14a,17a-20S-Methylcholestane (S20)	**0.99**	
18a(H)-30-Norneohopane-C29Ts (T16)	**3.1**		14a,17a-20R-Methylcholestane (S24)	**1.5**	
17a(H)-Diahopane (X)	**1.4**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**1.4**	
30-Normoretane (T17)	**2.6**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**1.3**	
18a(H)&18b(H)-Oleananes (T18)	**1.9**		14b(H),17b(H)-20R-Cholestane (S14)	**1.8**	
Hopane (T19)	**16**		14b(H),17b(H)-20S-Cholestane (S15)	**1.6**	
Moretane (T20)	**3.6**		14b,17b-20R-Methylcholestane (S22)	**1.8**	
30-Homohopane-22S (T21)	**5.6**		14b,17b-20S-Methylcholestane (S23)	**1.5**	
30-Homohopane-22R (T22)	**4.9**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**3.4**	
30,31-Bishomohopane-22S (T26)	**6.6**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**3.0**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	82	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

069

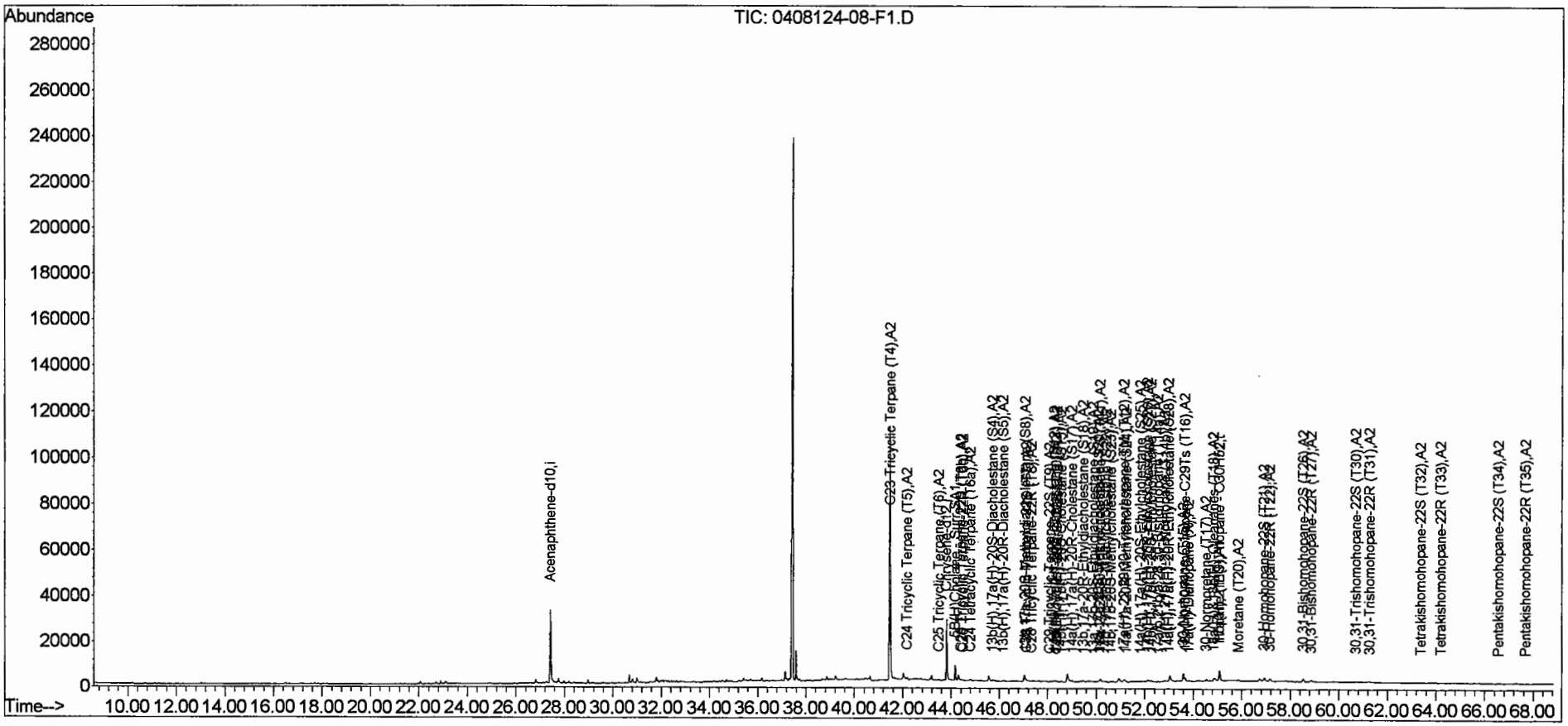
10/07/04 14:09

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-08-F1.D
Acq On : 22 Sep 2004 11:26 am
Operator : BL
Sample : 0408124-08-F1
Misc : 1X
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Sep 27 03:23:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



070

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-09F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	80.9	30.35	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**3.2**		30,31-Bishomohopane-22R (T27)	**0.53**	J
C24 Tricyclic Terpane (T5)	**0.69**	J	30,31-Trishomohopane-22S (T30)	0.23	U
C25 Tricyclic Terpane (T6)	**0.61**	J	30,31-Trishomohopane-22R (T31)	0.23	U
C24 Tetracyclic Terpane (T6a)	**0.47**	J	Tetrakishomohopane-22S (T32)	0.23	U
C26 Tricyclic Terpane-22S (T6b)	**0.22**	J	Tetrakishomohopane-22R (T33)	0.23	U
C26 Tricyclic Terpane-22R (T6c)	**0.18**	J	Pentakishomohopane-22S (T34)	0.23	U
C28 Tricyclic Terpane-22S (T7)	**0.17**	J	Pentakishomohopane-22R (T35)	0.23	U
C28 Tricyclic Terpane-22R (T8)	**0.19**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**0.80**	J
C29 Tricyclic Terpane-22S (T9)	**0.17**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**0.45**	J
C29 Tricyclic Terpane-22R (T10)	**0.14**	J	13b,17a-20S-Methyldiacholestane (S8)	**0.55**	J
18a-22,29,30-Trisnorneohopane-TS (T11)	**0.97**		14a(H),17a(H)-20S-Cholestane (S12)	**1.4**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**1.4**		14a(H),17a(H)-20R-Cholestane (S17)	**1.1**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	0.23	U	13b,17a-20R-Ethyldiacholestane (S18)	**0.55**	J
17a(H),21b(H)-25-Norhopane (T14b)	**0.50**	J	13a,17b-20S-Ethyldiacholestane (S19)	0.23	U
30-Norhopane (T15)	**3.2**		14a,17a-20S-Methylcholestane (S20)	**0.32**	J
18a(H)-30-Norneohopane-C29Ts (T16)	**0.82**		14a,17a-20R-Methylcholestane (S24)	**0.35**	J
17a(H)-Diahopane (X)	**0.45**	J	14a(H),17a(H)-20S-Ethylcholestane (S25)	**0.45**	J
30-Normoretane (T17)	**0.84**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**0.30**	J
18a(H)&18b(H)-Oleananes (T18)	**0.70**	J	14b(H),17b(H)-20R-Cholestane (S14)	**0.63**	J
Hopane (T19)	**4.6**		14b(H),17b(H)-20S-Cholestane (S15)	**0.57**	J
Moretane (T20)	**0.74**	J	14b,17b-20R-Methylcholestane (S22)	**0.50**	J
30-Homohopane-22S (T21)	**1.4**		14b,17b-20S-Methylcholestane (S23)	**0.52**	J
30-Homohopane-22R (T22)	**1.3**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**0.94**	
30,31-Bishomohopane-22S (T26)	**2.0**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**0.82**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

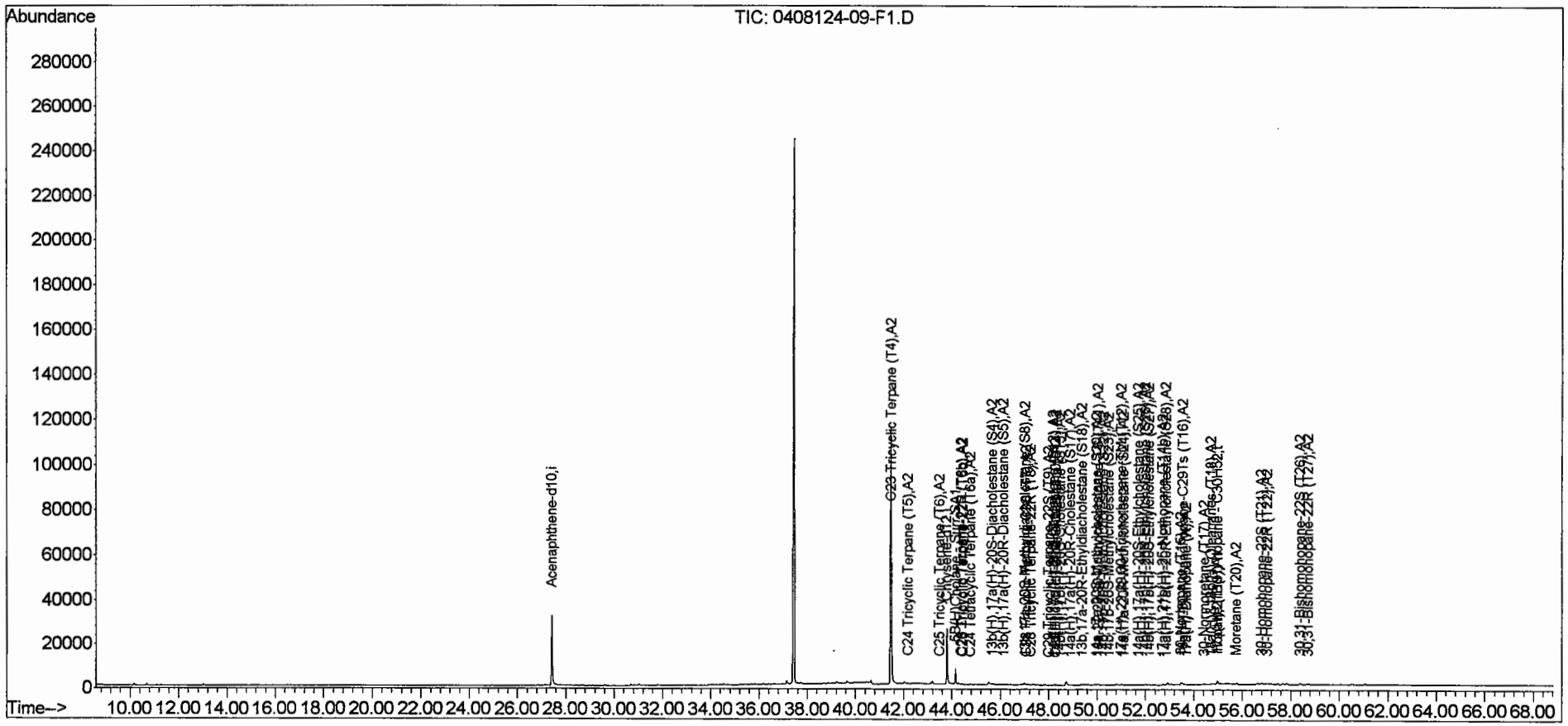
N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-09-F1.D
Acq On : 22 Sep 2004 12:50 pm
Operator : BL
Sample : 0408124-09-F1
Misc : 1X
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Sep 27 03:24:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



072

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-10F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	80.3	30.32	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**2.8**		30,31-Bishomohopane-22R (T27)	**0.53**	J
C24 Tricyclic Terpane (T5)	**0.61**	J	30,31-Trishomohopane-22S (T30)	**0.54**	J
C25 Tricyclic Terpane (T6)	**0.36**	J	30,31-Trishomohopane-22R (T31)	**0.34**	J
C24 Tetracyclic Terpane (T6a)	**0.38**	J	Tetrakishomohopane-22S (T32)	0.23	U
C26 Tricyclic Terpane-22S (T6b)	**0.16**	J	Tetrakishomohopane-22R (T33)	0.23	U
C26 Tricyclic Terpane-22R (T6c)	**0.15**	J	Pentakishomohopane-22S (T34)	0.23	U
C28 Tricyclic Terpane-22S (T7)	**0.22**	J	Pentakishomohopane-22R (T35)	0.23	U
C28 Tricyclic Terpane-22R (T8)	**0.20**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**0.76**	J
C29 Tricyclic Terpane-22S (T9)	**0.17**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**0.53**	J
C29 Tricyclic Terpane-22R (T10)	**0.11**	J	13b,17a-20S-Methyldiacholestane (S8)	**0.38**	J
18a-22,29,30-Trisnorneohopane-TS (T11)	**0.82**	J	14a(H),17a(H)-20S-Cholestane (S12)	**1.1**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**0.93**		14a(H),17a(H)-20R-Cholestane (S17)	**0.94**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**0.35**	J	13b,17a-20R-Ethyldiacholestane (S18)	**0.38**	J
17a(H),21b(H)-25-Norhopane (T14b)	**0.39**	J	13a,17b-20S-Ethyldiacholestane (S19)	**0.16**	J
30-Norhopane (T15)	**2.7**		14a,17a-20S-Methylcholestane (S20)	**0.23**	J
18a(H)-30-Norneohopane-C29Ts (T16)	**0.81**	J	14a,17a-20R-Methylcholestane (S24)	**0.37**	J
17a(H)-Diahopane (X)	**0.34**	J	14a(H),17a(H)-20S-Ethylcholestane (S25)	**0.29**	J
30-Normoretane (T17)	**0.68**	J	14a(H),17a(H)-20R-Ethylcholestane (S28)	**0.42**	J
18a(H)&18b(H)-Oleananes (T18)	**0.46**	J	14b(H),17b(H)-20R-Cholestane (S14)	**0.45**	J
Hopane (T19)	**4.4**		14b(H),17b(H)-20S-Cholestane (S15)	**0.36**	J
Moretane (T20)	**0.86**		14b,17b-20R-Methylcholestane (S22)	**0.45**	J
30-Homohopane-22S (T21)	**1.2**		14b,17b-20S-Methylcholestane (S23)	**0.40**	J
30-Homohopane-22R (T22)	**1.3**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**0.82**	
30,31-Bishomohopane-22S (T26)	**2.0**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**0.70**	J

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	73	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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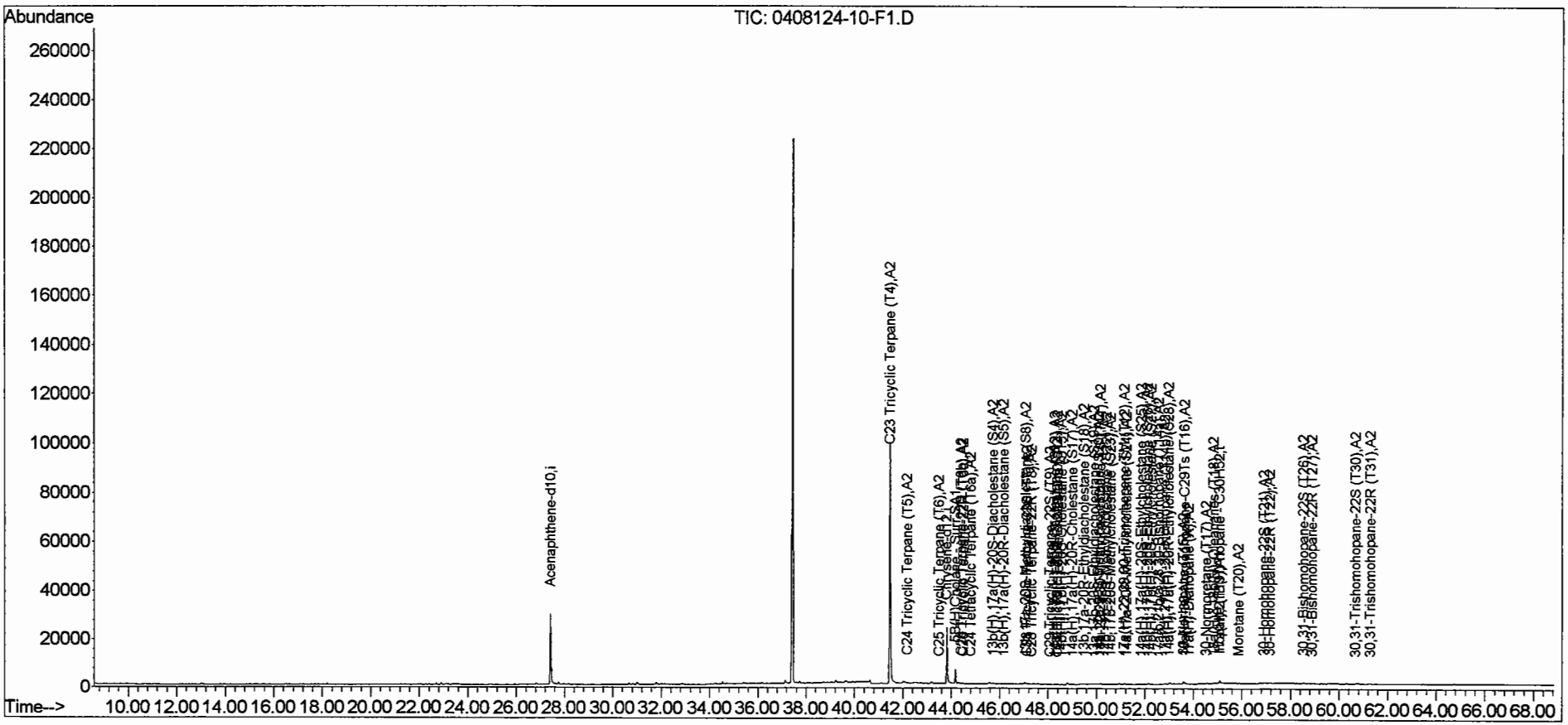
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-10-F1.D
Acq On : 22 Sep 2004 2:15 pm
Operator : BL
Sample : 0408124-10-F1
Misc : 1X
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Sep 27 03:25:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



074

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-11F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	80.0	30.71	20	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**5.4**	J	30,31-Bishomohopane-22R (T27)	2.3	U
C24 Tricyclic Terpane (T5)	2.3	U	30,31-Trishomohopane-22S (T30)	2.3	U
C25 Tricyclic Terpane (T6)	2.3	U	30,31-Trishomohopane-22R (T31)	2.3	U
C24 Tetracyclic Terpane (T6a)	2.3	U	Tetrakishomohopane-22S (T32)	2.3	U
C26 Tricyclic Terpane-22S (T6b)	2.3	U	Tetrakishomohopane-22R (T33)	2.3	U
C26 Tricyclic Terpane-22R (T6c)	2.3	U	Pentakishomohopane-22S (T34)	2.3	U
C28 Tricyclic Terpane-22S (T7)	2.3	U	Pentakishomohopane-22R (T35)	2.3	U
C28 Tricyclic Terpane-22R (T8)	2.3	U	13b(H),17a(H)-20S-Diacholestane (S4)	2.3	U
C29 Tricyclic Terpane-22S (T9)	2.3	U	13b(H),17a(H)-20R-Diacholestane (S5)	2.3	U
C29 Tricyclic Terpane-22R (T10)	2.3	U	13b,17a-20S-Methyldiacholestane (S8)	2.3	U
18a-22,29,30-Trisnorneohopane-TS (T11)	2.3	U	14a(H),17a(H)-20S-Cholestane (S12)	2.3	U
17a(H)-22,29,30-Trisnorhopane-TM (T12)	2.3	U	14a(H),17a(H)-20R-Cholestane (S17)	2.3	U
17a/b,21b/a 28,30-Bisnorhopane (T14a)	2.3	U	13b,17a-20R-Ethyldiacholestane (S18)	2.3	U
17a(H),21b(H)-25-Norhopane (T14b)	2.3	U	13a,17b-20S-Ethyldiacholestane (S19)	2.3	U
30-Norhopane (T15)	**4.4**	J	14a,17a-20S-Methylcholestane (S20)	2.3	U
18a(H)-30-Norneohopane-C29Ts (T16)	**2.1**	J	14a,17a-20R-Methylcholestane (S24)	2.3	U
17a(H)-Diahopane (X)	2.3	U	14a(H),17a(H)-20S-Ethylcholestane (S25)	2.3	U
30-Normoretane (T17)	2.3	U	14a(H),17a(H)-20R-Ethylcholestane (S28)	2.3	U
18a(H)&18b(H)-Oleananes (T18)	2.3	U	14b(H),17b(H)-20R-Cholestane (S14)	2.3	U
Hopane (T19)	**4.7**	J	14b(H),17b(H)-20S-Cholestane (S15)	2.3	U
Moretane (T20)	2.3	U	14b,17b-20R-Methylcholestane (S22)	2.3	U
30-Homohopane-22S (T21)	2.3	U	14b,17b-20S-Methylcholestane (S23)	2.3	U
30-Homohopane-22R (T22)	2.3	U	14b(H),17b(H)-20R-Ethylcholestane (S26)	2.3	U
30,31-Bishomohopane-22S (T26)	2.3	U	14b(H),17b(H)-20S-Ethylcholestane (S27)	2.3	U

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	73	50-130

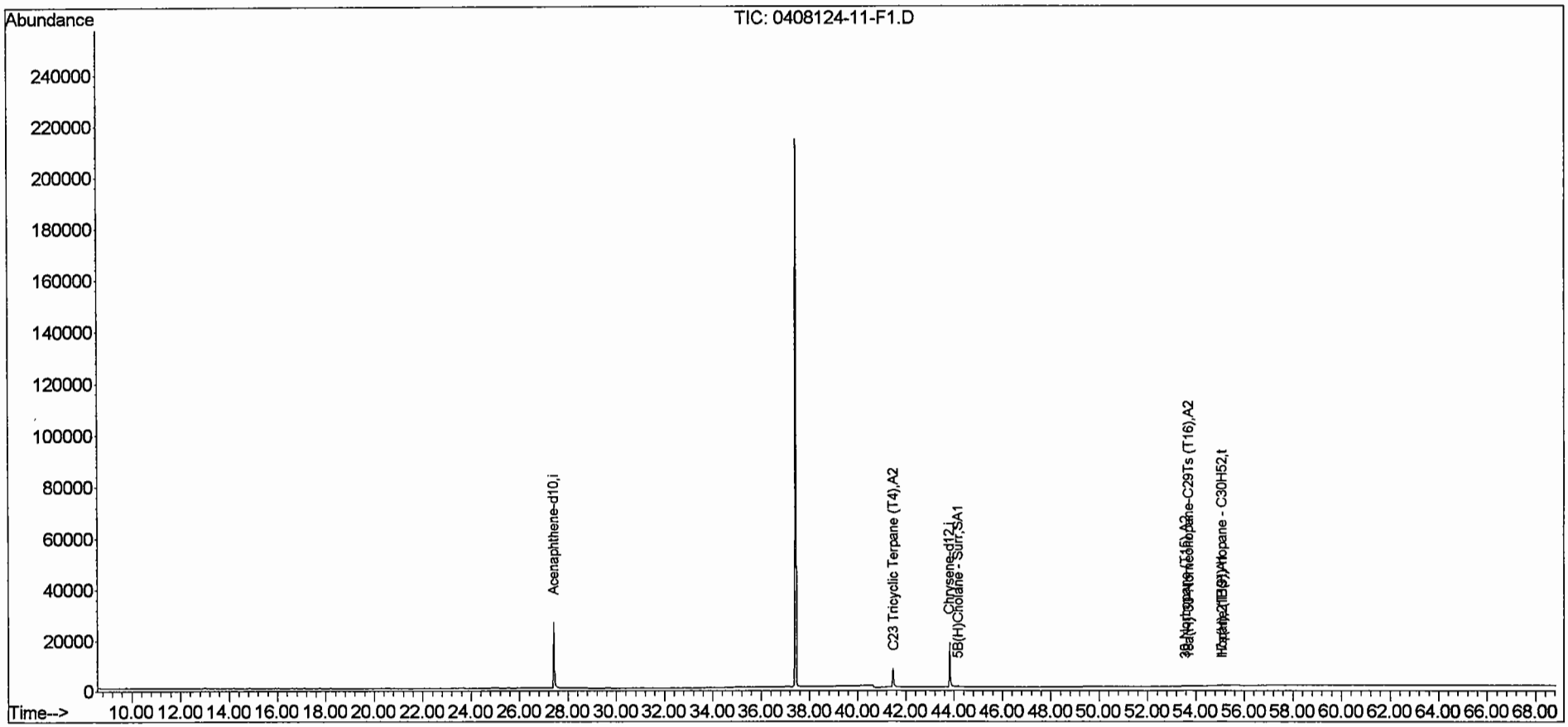
N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-11-F1.D
Acq On : 22 Sep 2004 3:39 pm
Operator : BL
Sample : 0408124-11-F1
Misc : 1X
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Sep 27 03:27:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



076

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC03-082604**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-12F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	79.0	30.24	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**3.0**		30,31-Bishomohopane-22R (T27)	0.24	U
C24 Tricyclic Terpane (T5)	**0.25**	J	30,31-Trishomohopane-22S (T30)	0.24	U
C25 Tricyclic Terpane (T6)	**0.25**	J	30,31-Trishomohopane-22R (T31)	0.24	U
C24 Tetracyclic Terpane (T6a)	0.24	U	Tetrakishomohopane-22S (T32)	0.24	U
C26 Tricyclic Terpane-22S (T6b)	0.24	U	Tetrakishomohopane-22R (T33)	0.24	U
C26 Tricyclic Terpane-22R (T6c)	0.24	U	Pentakishomohopane-22S (T34)	0.24	U
C28 Tricyclic Terpane-22S (T7)	0.24	U	Pentakishomohopane-22R (T35)	0.24	U
C28 Tricyclic Terpane-22R (T8)	0.24	U	13b(H),17a(H)-20S-Diacholestane (S4)	0.24	U
C29 Tricyclic Terpane-22S (T9)	0.24	U	13b(H),17a(H)-20R-Diacholestane (S5)	0.24	U
C29 Tricyclic Terpane-22R (T10)	0.24	U	13b,17a-20S-Methyldiacholestane (S8)	0.24	U
18a-22,29,30-Trisnorneohopane-TS (T11)	**0.31**	J	14a(H),17a(H)-20S-Cholestane (S12)	0.24	U
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**0.44**	J	14a(H),17a(H)-20R-Cholestane (S17)	0.24	U
17a/b,21b/a 28,30-Bisnorhopane (T14a)	0.24	U	13b,17a-20R-Ethyldiacholestane (S18)	0.24	U
17a(H),21b(H)-25-Norhopane (T14b)	0.24	U	13a,17b-20S-Ethyldiacholestane (S19)	0.24	U
30-Norhopane (T15)	**0.90**		14a,17a-20S-Methylcholestane (S20)	0.24	U
18a(H)-30-Norneohopane-C29Ts (T16)	**0.42**	J	14a,17a-20R-Methylcholestane (S24)	0.24	U
17a(H)-Diahopane (X)	0.24	U	14a(H),17a(H)-20S-Ethylcholestane (S25)	0.24	U
30-Normoretane (T17)	0.24	U	14a(H),17a(H)-20R-Ethylcholestane (S28)	0.24	U
18a(H)&18b(H)-Oleananes (T18)	0.24	U	14b(H),17b(H)-20R-Cholestane (S14)	0.24	U
Hopane (T19)	**1.1**		14b(H),17b(H)-20S-Cholestane (S15)	0.24	U
Moretane (T20)	**0.31**	J	14b,17b-20R-Methylcholestane (S22)	0.24	U
30-Homohopane-22S (T21)	**0.93**		14b,17b-20S-Methylcholestane (S23)	0.24	U
30-Homohopane-22R (T22)	**0.52**	J	14b(H),17b(H)-20R-Ethylcholestane (S26)	0.24	U
30,31-Bishomohopane-22S (T26)	**0.86**		14b(H),17b(H)-20S-Ethylcholestane (S27)	0.24	U

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	84	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

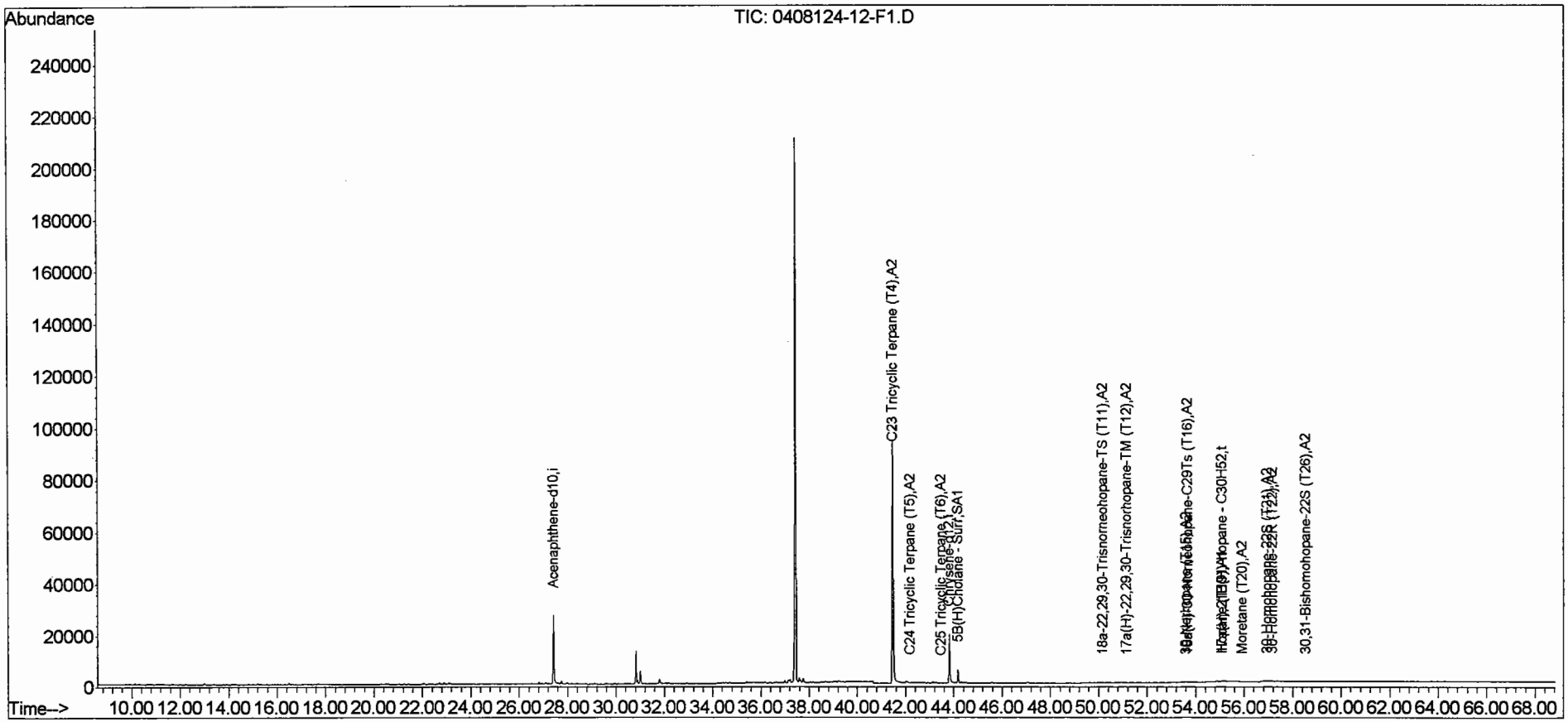
077

10/07/04 14:09

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-12-F1.D
Acq On : 22 Sep 2004 5:03 pm
Operator : BL
Sample : 0408124-12-F1
Misc : 1X
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Sep 27 03:30:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-13F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	79.9	30.80	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**2.6**		30,31-Bishomohopane-22R (T27)	0.23	U
C24 Tricyclic Terpane (T5)	**0.22**	J	30,31-Trishomohopane-22S (T30)	0.23	U
C25 Tricyclic Terpane (T6)	**0.21**	J	30,31-Trishomohopane-22R (T31)	0.23	U
C24 Tetracyclic Terpane (T6a)	0.23	U	Tetrakishomohopane-22S (T32)	0.23	U
C26 Tricyclic Terpane-22S (T6b)	0.23	U	Tetrakishomohopane-22R (T33)	0.23	U
C26 Tricyclic Terpane-22R (T6c)	0.23	U	Pentakishomohopane-22S (T34)	0.23	U
C28 Tricyclic Terpane-22S (T7)	0.23	U	Pentakishomohopane-22R (T35)	0.23	U
C28 Tricyclic Terpane-22R (T8)	0.23	U	13b(H),17a(H)-20S-Diacholestane (S4)	0.23	U
C29 Tricyclic Terpane-22S (T9)	0.23	U	13b(H),17a(H)-20R-Diacholestane (S5)	0.23	U
C29 Tricyclic Terpane-22R (T10)	0.23	U	13b,17a-20S-Methyldiacholestane (S8)	0.23	U
18a-22,29,30-Trisnorneohopane-TS (T11)	0.23	U	14a(H),17a(H)-20S-Cholestane (S12)	0.23	U
17a(H)-22,29,30-Trisnorhopane-TM (T12)	0.23	U	14a(H),17a(H)-20R-Cholestane (S17)	0.23	U
17a/b,21b/a 28,30-Bisnorhopane (T14a)	0.23	U	13b,17a-20R-Ethyldiacholestane (S18)	0.23	U
17a(H),21b(H)-25-Norhopane (T14b)	0.23	U	13a,17b-20S-Ethyldiacholestane (S19)	0.23	U
30-Norhopane (T15)	**0.92**		14a,17a-20S-Methylcholestane (S20)	0.23	U
18a(H)-30-Norneohopane-C29Ts (T16)	**0.33**	J	14a,17a-20R-Methylcholestane (S24)	0.23	U
17a(H)-Diahopane (X)	0.23	U	14a(H),17a(H)-20S-Ethylcholestane (S25)	0.23	U
30-Normoretane (T17)	0.23	U	14a(H),17a(H)-20R-Ethylcholestane (S28)	0.23	U
18a(H)&18b(H)-Oleananes (T18)	0.23	U	14b(H),17b(H)-20R-Cholestane (S14)	0.23	U
Hopane (T19)	**1.4**		14b(H),17b(H)-20S-Cholestane (S15)	0.23	U
Moretane (T20)	0.23	U	14b,17b-20R-Methylcholestane (S22)	0.23	U
30-Homohopane-22S (T21)	0.23	U	14b,17b-20S-Methylcholestane (S23)	0.23	U
30-Homohopane-22R (T22)	0.23	U	14b(H),17b(H)-20R-Ethylcholestane (S26)	0.23	U
30,31-Bishomohopane-22S (T26)	0.23	U	14b(H),17b(H)-20S-Ethylcholestane (S27)	0.23	U

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	76	50-130

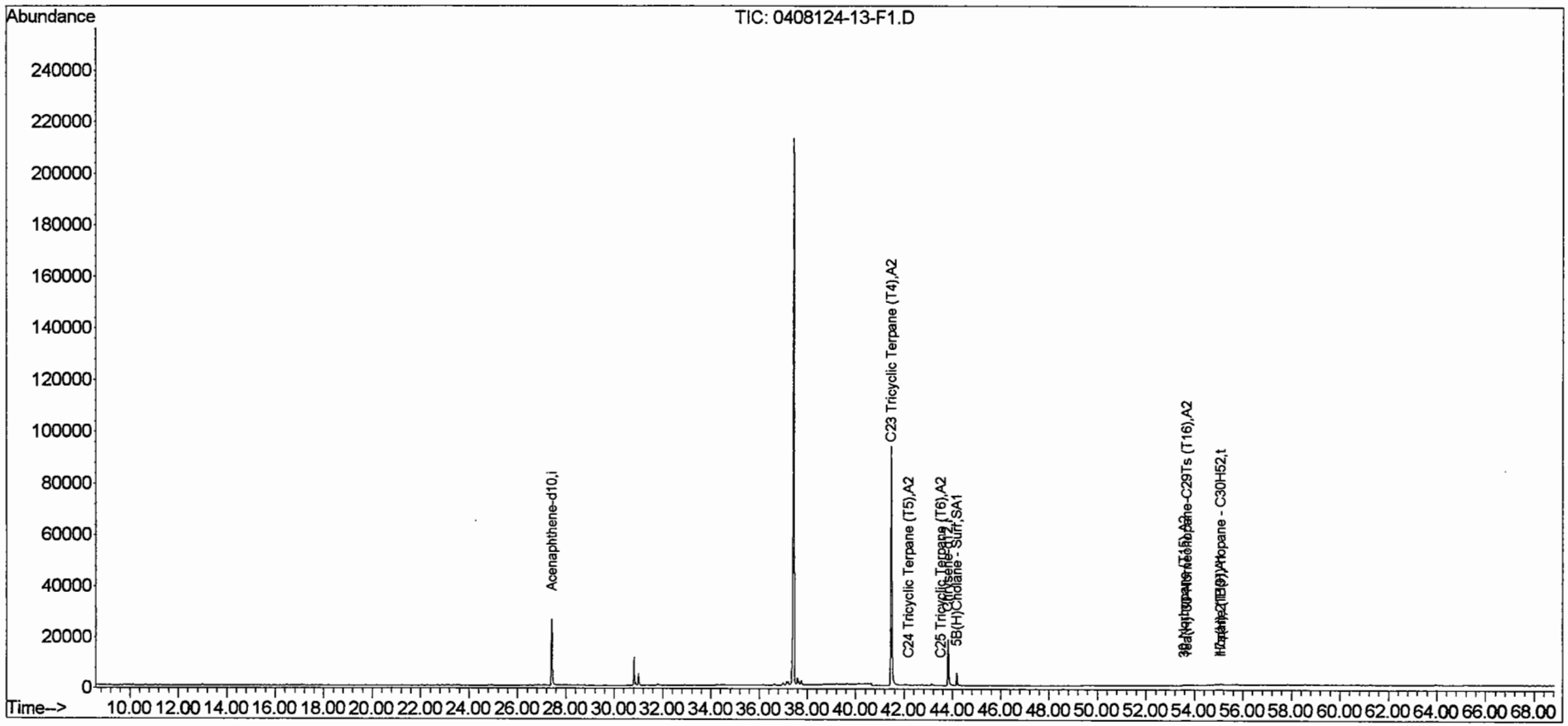
N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-13-F1.D
Acq On : 22 Sep 2004 6:27 pm
Operator : BL
Sample : 0408124-13-F1
Misc : 1X
ALS Vial : 40 Sample Multiplier: 1

Quant Time: Sep 27 03:33:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



080

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	42.4	30.68	5	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**43**		30,31-Bishomohopane-22R (T27)	**18**	
C24 Tricyclic Terpane (T5)	**24**		30,31-Trishomohopane-22S (T30)	**15**	
C25 Tricyclic Terpane (T6)	**19**		30,31-Trishomohopane-22R (T31)	**10**	
C24 Tetracyclic Terpane (T6a)	**16**		Tetrakishomohopane-22S (T32)	**8.8**	
C26 Tricyclic Terpane-22S (T6b)	**6.7**		Tetrakishomohopane-22R (T33)	**6.2**	
C26 Tricyclic Terpane-22R (T6c)	**6.2**		Pentakishomohopane-22S (T34)	**7.4**	
C28 Tricyclic Terpane-22S (T7)	**4.8**		Pentakishomohopane-22R (T35)	**3.7**	J
C28 Tricyclic Terpane-22R (T8)	**4.3**		13b(H),17a(H)-20S-Diacholestane (S4)	**15**	
C29 Tricyclic Terpane-22S (T9)	**5.0**		13b(H),17a(H)-20R-Diacholestane (S5)	**11**	
C29 Tricyclic Terpane-22R (T10)	**3.5**	J	13b,17a-20S-Methyldiacholestane (S8)	**10**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**44**		14a(H),17a(H)-20S-Cholestane (S12)	**34**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**45**		14a(H),17a(H)-20R-Cholestane (S17)	**25**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**6.6**		13b,17a-20R-Ethyldiacholestane (S18)	**15**	
17a(H),21b(H)-25-Norhopane (T14b)	**18**		13a,17b-20S-Ethyldiacholestane (S19)	**2.7**	J
30-Norhopane (T15)	**120**		14a,17a-20S-Methylcholestane (S20)	**8.6**	
18a(H)-30-Norneohopane-C29Ts (T16)	**33**		14a,17a-20R-Methylcholestane (S24)	**12**	
17a(H)-Diahopane (X)	**20**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**11**	
30-Normoretane (T17)	**29**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**15**	
18a(H)&18b(H)-Oleananes (T18)	**27**		14b(H),17b(H)-20R-Cholestane (S14)	**11**	
Hopane (T19)	**160**		14b(H),17b(H)-20S-Cholestane (S15)	**10**	
Moretane (T20)	**33**		14b,17b-20R-Methylcholestane (S22)	**12**	
30-Homohopane-22S (T21)	**55**		14b,17b-20S-Methylcholestane (S23)	**12**	
30-Homohopane-22R (T22)	**41**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**30**	
30,31-Bishomohopane-22S (T26)	**50**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**25**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

081

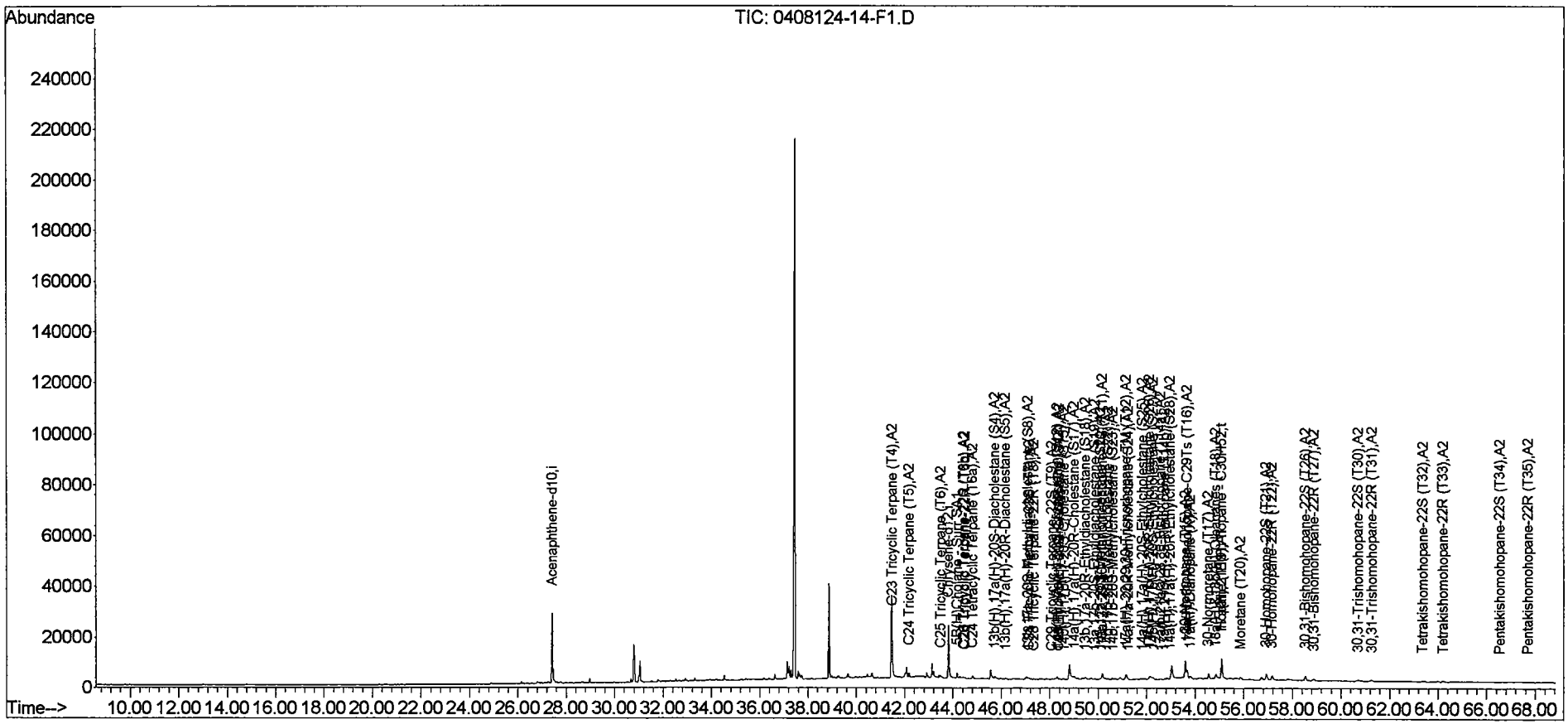
10/07/04 14:09

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-14-F1.D
Acq On : 22 Sep 2004 7:51 pm
Operator : BL
Sample : 0408124-14-F1
Misc : 1X
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Sep 27 03:37:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



082

Form I
Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14F1 D**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/22/04	42.4	30.68	5	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	36		30,31-Bishomohopane-22R (T27)	18	
C24 Tricyclic Terpane (T5)	19		30,31-Trishomohopane-22S (T30)	15	
C25 Tricyclic Terpane (T6)	15		30,31-Trishomohopane-22R (T31)	11	
C24 Tetracyclic Terpane (T6a)	13		Tetrakishomohopane-22S (T32)	8.6	
C26 Tricyclic Terpane-22S (T6b)	5.3		Tetrakishomohopane-22R (T33)	3.2	J
C26 Tricyclic Terpane-22R (T6c)	4.6		Pentakishomohopane-22S (T34)	8.6	
C28 Tricyclic Terpane-22S (T7)	3.6	J	Pentakishomohopane-22R (T35)	2.3	J
C28 Tricyclic Terpane-22R (T8)	3.5	J	13b(H),17a(H)-20S-Diacholestane (S4)	12	
C29 Tricyclic Terpane-22S (T9)	3.6	J	13b(H),17a(H)-20R-Diacholestane (S5)	8.7	
C29 Tricyclic Terpane-22R (T10)	2.6	J	13b,17a-20S-Methyldiacholestane (S8)	10	
18a-22,29,30-Trisnorneohopane-TS (T11)	36		14a(H),17a(H)-20S-Cholestane (S12)	28	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	36		14a(H),17a(H)-20R-Cholestane (S17)	21	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	6.6		13b,17a-20R-Ethyldiacholestane (S18)	13	
17a(H),21b(H)-25-Norhopane (T14b)	13		13a,17b-20S-Ethyldiacholestane (S19)	2.0	J
30-Norhopane (T15)	95		14a,17a-20S-Methylcholestane (S20)	8.8	
18a(H)-30-Norneohopane-C29Ts (T16)	25		14a,17a-20R-Methylcholestane (S24)	10	
17a(H)-Diahopane (X)	17		14a(H),17a(H)-20S-Ethylcholestane (S25)	9.7	
30-Normoretane (T17)	22		14a(H),17a(H)-20R-Ethylcholestane (S28)	10	
18a(H)&18b(H)-Oleananes (T18)	24		14b(H),17b(H)-20R-Cholestane (S14)	9.1	
Hopane (T19)	130		14b(H),17b(H)-20S-Cholestane (S15)	8.8	
Moretane (T20)	26		14b,17b-20R-Methylcholestane (S22)	10	
30-Homohopane-22S (T21)	43		14b,17b-20S-Methylcholestane (S23)	9.8	
30-Homohopane-22R (T22)	35		14b(H),17b(H)-20R-Ethylcholestane (S26)	26	
30,31-Bishomohopane-22S (T26)	41		14b(H),17b(H)-20S-Ethylcholestane (S27)	20	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

083

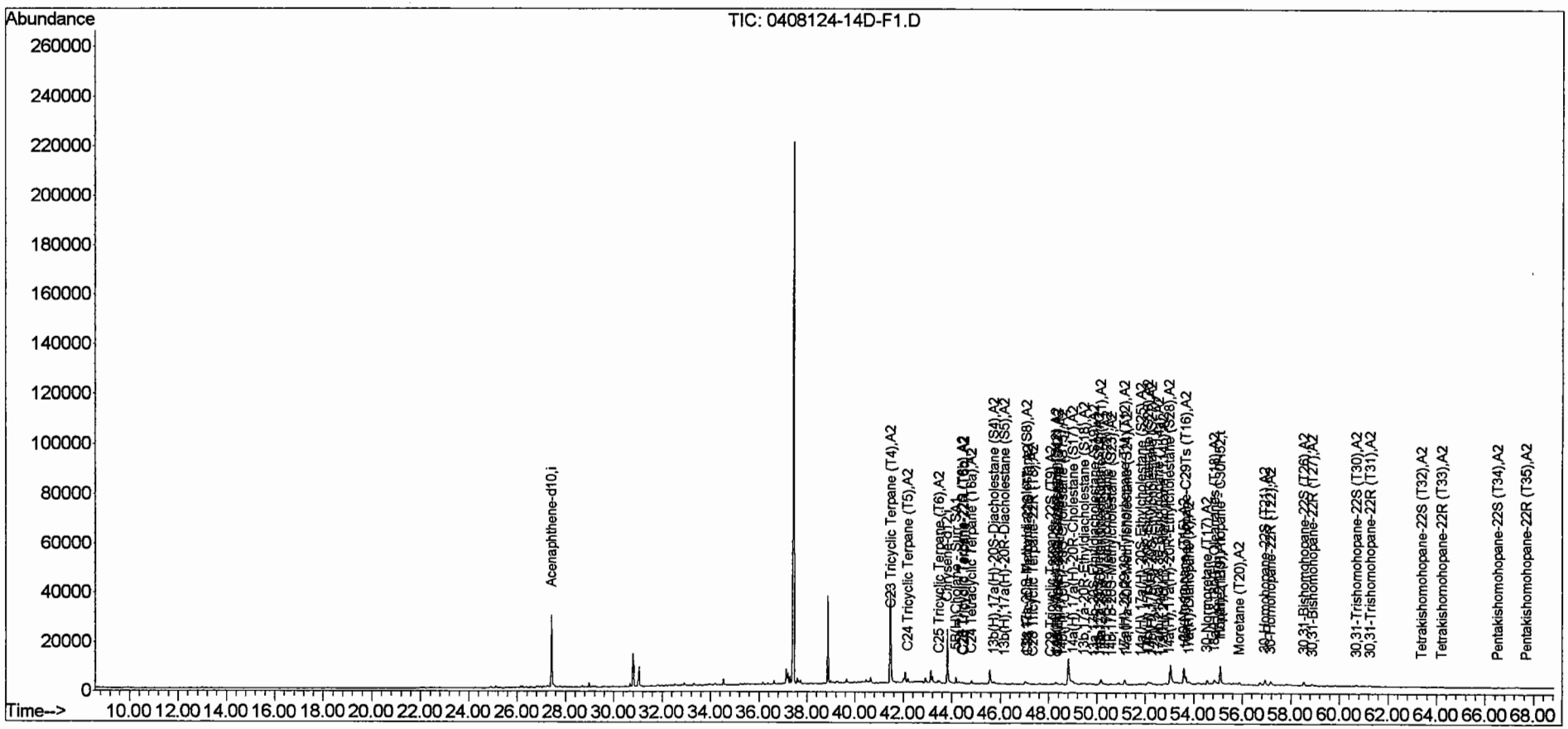
10/07/04 14:10

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-14D-F1.D
Acq On : 22 Sep 2004 9:15 pm
Operator : BL
Sample : 0408124-14D-F1
Misc : 1X
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Sep 27 11:53:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



084

Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
C23 Tricyclic Terpane (T4)	43	36	18	30
C24 Tricyclic Terpane (T5)	24	19	20	30
C25 Tricyclic Terpane (T6)	19	15	20	30
C24 Tetracyclic Terpane (T6a)	16	13	19	30
C26 Tricyclic Terpane-22S (T6b)	6.7	5.3	23	30
C26 Tricyclic Terpane-22R (T6c)	6.2	4.6	30	30
C28 Tricyclic Terpane-22S (T7)	4.8	3.6 J	30	30
C28 Tricyclic Terpane-22R (T8)	4.3	3.5 J	20	30
C29 Tricyclic Terpane-22S (T9)	5.0	3.6 J	34[a]	30
C29 Tricyclic Terpane-22R (T10)	3.5 J	2.6 J	29	30
18a-22,29,30-Trisnorneohopane-TS (T11)	44	36	20	30
17a(H)-22,29,30-Trisnorhopane-TM (T12)	45	36	24	30
17a/b,21b/a 28,30-Bisnorhopane (T14a)	6.6	6.6	0	30
17a(H),21b(H)-25-Norhopane (T14b)	18	13	31[a]	30
30-Norhopane (T15)	120	95	25	30
18a(H)-30-Norneohopane-C29Ts (T16)	33	25	25	30
17a(H)-Diahopane (X)	20	17	12	30
30-Normoretane (T17)	29	22	26	30
18a(H)&18b(H)-Oleananes (T18)	27	24	14	30
Hopane (T19)	160	130	21	30
Moretane (T20)	33	26	26	30
30-Homohopane-22S (T21)	55	43	25	30
30-Homohopane-22R (T22)	41	35	16	30
30,31-Bishomohopane-22S (T26)	50	41	20	30
30,31-Bishomohopane-22R (T27)	18	18	3	30
30,31-Trishomohopane-22S (T30)	15	15	3	30
30,31-Trishomohopane-22R (T31)	10	11	2	30
Tetrakishomohopane-22S (T32)	8.8	8.6	3	30
Tetrakishomohopane-22R (T33)	6.2	3.2 J	65[a]	30
Pentakishomohopane-22S (T34)	7.4	8.6	16	30
Pentakishomohopane-22R (T35)	3.7 J	2.3 J	47[a]	30
13b(H),17a(H)-20S-Diacholestane (S4)	15	12	20	30
13b(H),17a(H)-20R-Diacholestane (S5)	11	8.7	21	30
13b,17a-20S-Methyldiacholestane (S8)	10	10	0	30
14a(H),17a(H)-20S-Cholestane (S12)	34	28	18	30

N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.

085

10/07/04 14:22

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Duplicate
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	Cass

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
14a(H),17a(H)-20R-Cholestane (S17)	**25**	**21**	17	30
13b,17a-20R-Ethyldiacholestane (S18)	**15**	**13**	13	30
13a,17b-20S-Ethyldiacholestane (S19)	**2.7** J	**2.0** J	26	30
14a,17a-20S-Methylcholestane (S20)	**8.6**	**8.8**	2	30
14a,17a-20R-Methylcholestane (S24)	**12**	**10**	16	30
14a(H),17a(H)-20S-Ethylcholestane (S25)	**11**	**9.7**	17	30
14a(H),17a(H)-20R-Ethylcholestane (S28)	**15**	**10**	36[a]	30
14b(H),17b(H)-20R-Cholestane (S14)	**11**	**9.1**	21	30
14b(H),17b(H)-20S-Cholestane (S15)	**10**	**8.8**	16	30
14b,17b-20R-Methylcholestane (S22)	**12**	**10**	18	30
14b,17b-20S-Methylcholestane (S23)	**12**	**9.8**	23	30
14b(H),17b(H)-20R-Ethylcholestane (S26)	**30**	**26**	17	30
14b(H),17b(H)-20S-Ethylcholestane (S27)	**25**	**20**	25	30

Surrogate	% Recovery		Acceptance Range (%)
5B(H)Cholane	78	78	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.

086

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/07/04 14:22

Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-15F1**
Associated Blank: **SS090704B03F1**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/23/04	74.4	30.21	2.5	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	**7.9**		30,31-Bishomohopane-22R (T27)	**2.6**	
C24 Tricyclic Terpane (T5)	**3.5**		30,31-Trishomohopane-22S (T30)	**2.5**	
C25 Tricyclic Terpane (T6)	**2.7**		30,31-Trishomohopane-22R (T31)	**1.7**	
C24 Tetracyclic Terpane (T6a)	**2.2**		Tetrakishomohopane-22S (T32)	**2.0**	
C26 Tricyclic Terpane-22S (T6b)	**1.1**	J	Tetrakishomohopane-22R (T33)	**1.8**	
C26 Tricyclic Terpane-22R (T6c)	**0.90**	J	Pentakishomohopane-22S (T34)	**1.1**	J
C28 Tricyclic Terpane-22S (T7)	**0.85**	J	Pentakishomohopane-22R (T35)	**0.80**	J
C28 Tricyclic Terpane-22R (T8)	**0.88**	J	13b(H),17a(H)-20S-Diacholestane (S4)	**2.7**	
C29 Tricyclic Terpane-22S (T9)	**0.82**	J	13b(H),17a(H)-20R-Diacholestane (S5)	**1.7**	
C29 Tricyclic Terpane-22R (T10)	**0.60**	J	13b,17a-20S-Methyldiacholestane (S8)	**1.8**	
18a-22,29,30-Trisnorneohopane-TS (T11)	**5.4**		14a(H),17a(H)-20S-Cholestane (S12)	**5.1**	
17a(H)-22,29,30-Trisnorhopane-TM (T12)	**6.5**		14a(H),17a(H)-20R-Cholestane (S17)	**3.8**	
17a/b,21b/a 28,30-Bisnorhopane (T14a)	**1.7**		13b,17a-20R-Ethyldiacholestane (S18)	**2.3**	
17a(H),21b(H)-25-Norhopane (T14b)	**2.5**		13a,17b-20S-Ethyldiacholestane (S19)	**0.84**	J
30-Norhopane (T15)	**16**		14a,17a-20S-Methylcholestane (S20)	**1.4**	
18a(H)-30-Norneohopane-C29Ts (T16)	**4.5**		14a,17a-20R-Methylcholestane (S24)	**2.0**	
17a(H)-Diahopane (X)	**1.9**		14a(H),17a(H)-20S-Ethylcholestane (S25)	**1.9**	
30-Normoretane (T17)	**4.0**		14a(H),17a(H)-20R-Ethylcholestane (S28)	**1.7**	
18a(H)&18b(H)-Oleananes (T18)	**3.6**		14b(H),17b(H)-20R-Cholestane (S14)	**2.1**	
Hopane (T19)	**22**		14b(H),17b(H)-20S-Cholestane (S15)	**1.6**	
Moretane (T20)	**5.0**		14b,17b-20R-Methylcholestane (S22)	**2.0**	
30-Homohopane-22S (T21)	**7.2**		14b,17b-20S-Methylcholestane (S23)	**1.5**	
30-Homohopane-22R (T22)	**6.0**		14b(H),17b(H)-20R-Ethylcholestane (S26)	**4.2**	
30,31-Bishomohopane-22S (T26)	**7.8**		14b(H),17b(H)-20S-Ethylcholestane (S27)	**3.4**	

Surrogate	% Recovery	Acceptance Range (%)
5B(H)Cholane	72	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.

087

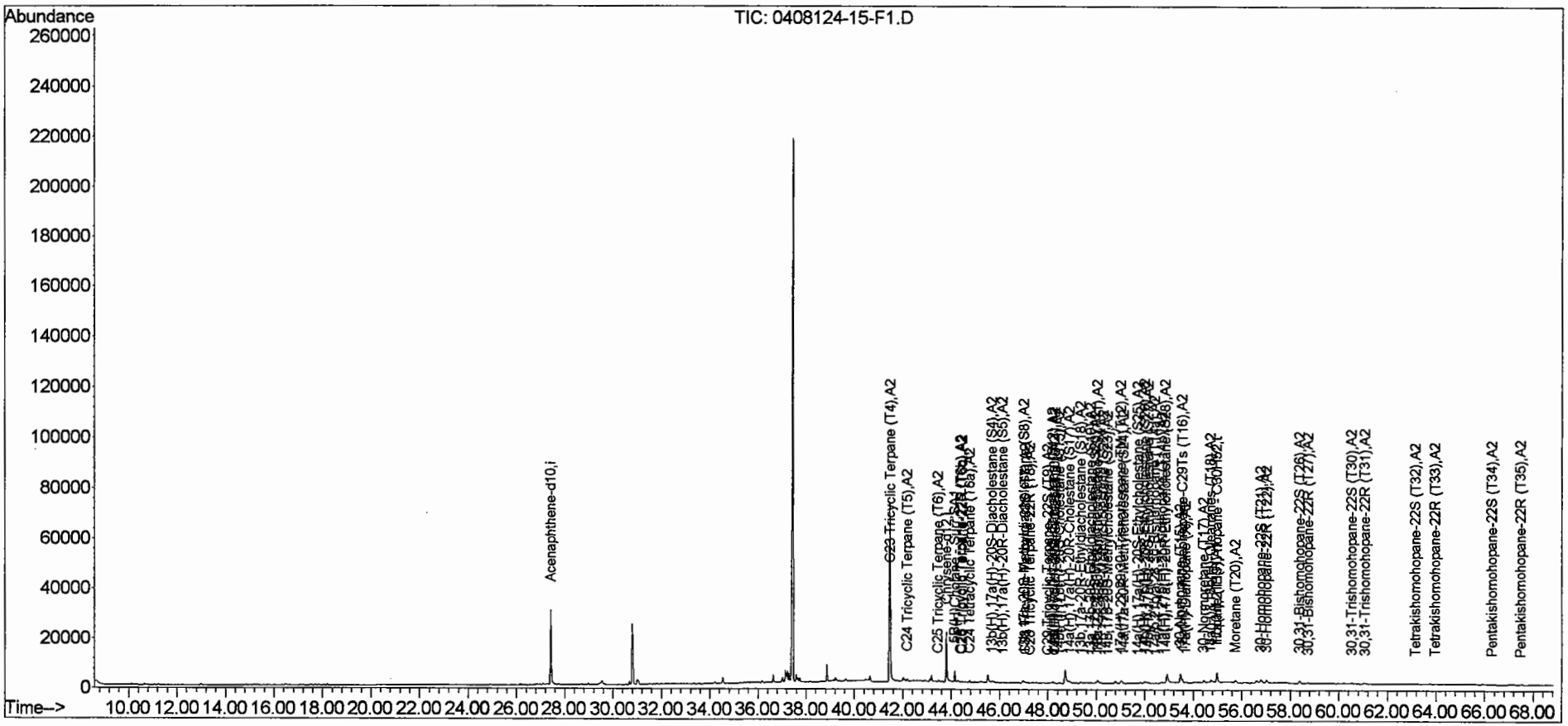
10/07/04 14:10

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : 0408124-15-F1.D
Acq On : 23 Sep 2004 6:21 am
Operator : BL
Sample : 0408124-15-F1
Misc : 1X
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Sep 27 03:39:00 2004
Quant Method : F:\MSDCHEM\1\DATA\2004\PAH #3\METHODS-SEQ\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 24 09:03:55 2004
Response via : Initial Calibration



Form I
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03F1**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/21/04	100	30.00	2	1	Cass

Parameter	Result		Parameter	Result	
C23 Tricyclic Terpane (T4)	0.19	U	30,31-Bishomohopane-22R (T27)	0.19	U
C24 Tricyclic Terpane (T5)	0.19	U	30,31-Trishomohopane-22S (T30)	0.19	U
C25 Tricyclic Terpane (T6)	0.19	U	30,31-Trishomohopane-22R (T31)	0.19	U
C24 Tetracyclic Terpane (T6a)	0.19	U	Tetrakishomohopane-22S (T32)	0.19	U
C26 Tricyclic Terpane-22S (T6b)	0.19	U	Tetrakishomohopane-22R (T33)	0.19	U
C26 Tricyclic Terpane-22R (T6c)	0.19	U	Pentakishomohopane-22S (T34)	0.19	U
C28 Tricyclic Terpane-22S (T7)	0.19	U	Pentakishomohopane-22R (T35)	0.19	U
C28 Tricyclic Terpane-22R (T8)	0.19	U	13b(H),17a(H)-20S-Diacholestane (S4)	0.19	U
C29 Tricyclic Terpane-22S (T9)	0.19	U	13b(H),17a(H)-20R-Diacholestane (S5)	0.19	U
C29 Tricyclic Terpane-22R (T10)	0.19	U	13b,17a-20S-Methyldiacholestane (S8)	0.19	U
18a-22,29,30-Trisnorneohopane-TS (T11)	0.19	U	14a(H),17a(H)-20S-Cholestane (S12)	0.19	U
17a(H)-22,29,30-Trisnorhopane-TM (T12)	0.19	U	14a(H),17a(H)-20R-Cholestane (S17)	0.19	U
17a/b,21b/a 28,30-Bisnorhopane (T14a)	0.19	U	13b,17a-20R-Ethyldiacholestane (S18)	0.19	U
17a(H),21b(H)-25-Norhopane (T14b)	0.19	U	13a,17b-20S-Ethyldiacholestane (S19)	0.19	U
30-Norhopane (T15)	0.19	U	14a,17a-20S-Methylcholestane (S20)	0.19	U
18a(H)-30-Norneohopane-C29Ts (T16)	0.19	U	14a,17a-20R-Methylcholestane (S24)	0.19	U
17a(H)-Diahopane (X)	0.19	U	14a(H),17a(H)-20S-Ethylcholestane (S25)	0.19	U
30-Normoretane (T17)	0.19	U	14a(H),17a(H)-20R-Ethylcholestane (S28)	0.19	U
18a(H)&18b(H)-Oleananes (T18)	0.19	U	14b(H),17b(H)-20R-Cholestane (S14)	0.19	U
Hopane (T19)	0.19	U	14b(H),17b(H)-20S-Cholestane (S15)	0.19	U
Moretane (T20)	0.19	U	14b,17b-20R-Methylcholestane (S22)	0.19	U
30-Homohopane-22S (T21)	0.19	U	14b,17b-20S-Methylcholestane (S23)	0.19	U
30-Homohopane-22R (T22)	0.19	U	14b(H),17b(H)-20R-Ethylcholestane (S26)	0.19	U
30,31-Bishomohopane-22S (T26)	0.19	U	14b(H),17b(H)-20S-Ethylcholestane (S27)	0.19	U

Surrogate	% Recovery		Acceptance Range (%)
5B(H)Cholane	38	§	50-130

N/A - Not Applicable
§ - Surrogate value outside of acceptable range.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 14:07

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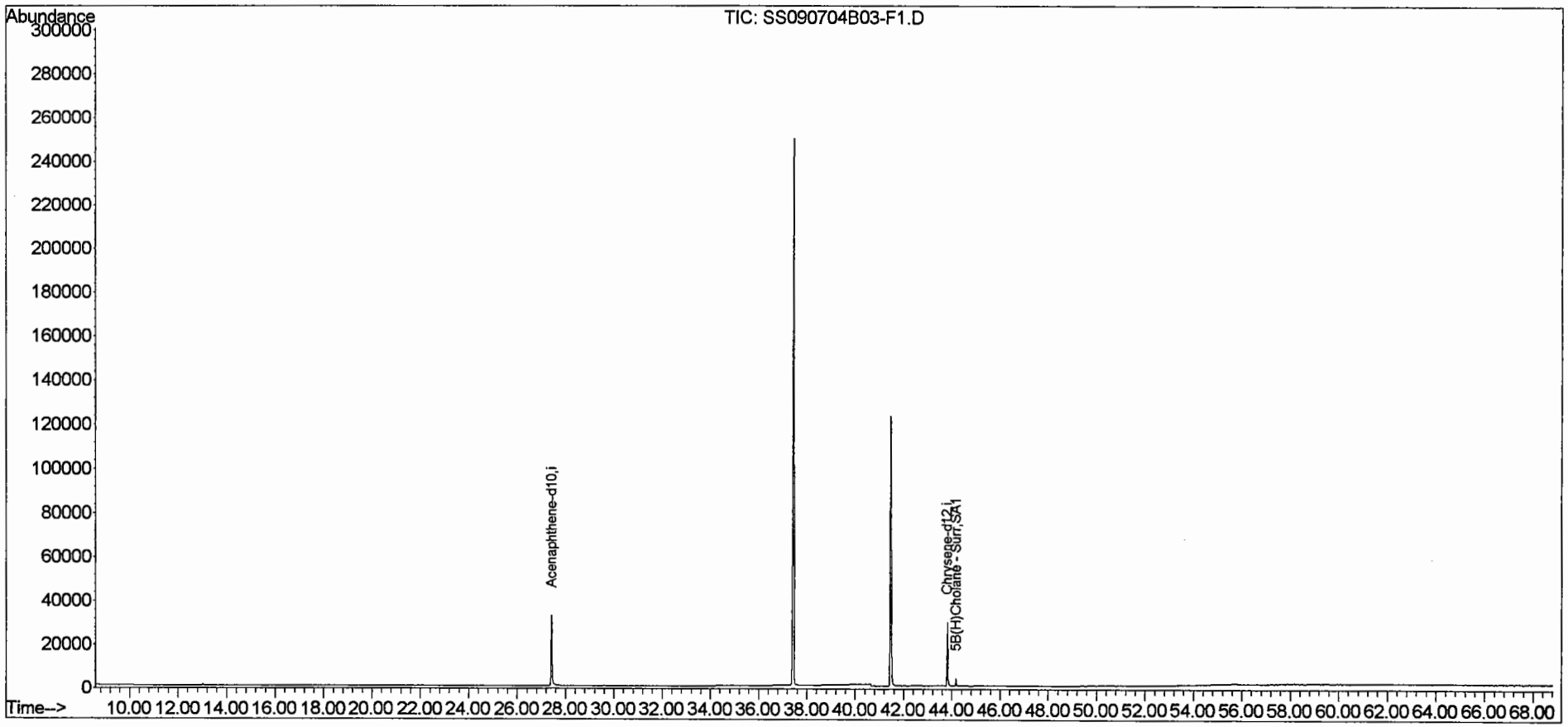
Quantitation Report (QT Reviewed)

Data Path : O:\ORGANICS\DATA\PAH3\SEPT20\
Data File : SS090704B03-F1.D
Acq On : 21 Sep 2004 8:11 pm
Operator : BL
Sample : SS090704B03-F1
Misc : 1X
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Sep 27 03:42:00 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration



Form I
Alaska North Slope Crude
Steranes and Triterpanes

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Alaska North Slope Crude**
Case: **N/A** SDG: **N/A**
Matrix: **Oil**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS092404AWS01**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	N/A	09/17/04	100	0.05	10	1	Cass

Parameter	Result	Parameter	Result
C23 Tricyclic Terpane (T4)	110	30,31-Bishomohopane-22R (T27)	39
C24 Tricyclic Terpane (T5)	65	30,31-Trishomohopane-22S (T30)	43
C25 Tricyclic Terpane (T6)	44	30,31-Trishomohopane-22R (T31)	34
C24 Tetracyclic Terpane (T6a)	16	Tetrakishomohopane-22S (T32)	30
C26 Tricyclic Terpane-22S (T6b)	18	Tetrakishomohopane-22R (T33)	20
C26 Tricyclic Terpane-22R (T6c)	18	Pentakishomohopane-22S (T34)	36
C28 Tricyclic Terpane-22S (T7)	17	Pentakishomohopane-22R (T35)	25
C28 Tricyclic Terpane-22R (T8)	21	13b(H),17a(H)-20S-Diacholestane (S4)	56
C29 Tricyclic Terpane-22S (T9)	22	13b(H),17a(H)-20R-Diacholestane (S5)	39
C29 Tricyclic Terpane-22R (T10)	21	13b,17a-20S-Methyldiacholestane (S8)	28
18a-22,29,30-Trisnorneohopane-TS (T11)	31	14a(H),17a(H)-20S-Cholestane (S12)	81
17a(H)-22,29,30-Trisnorhopane-TM (T12)	44	14a(H),17a(H)-20R-Cholestane (S17)	77
17a/b,21b/a 28,30-Bisnorhopane (T14a)	8.2	13b,17a-20R-Ethyldiacholestane (S18)	27
17a(H),21b(H)-25-Norhopane (T14b)	18	13a,17b-20S-Ethyldiacholestane (S19)	4.9
30-Norhopane (T15)	110	14a,17a-20S-Methylcholestane (S20)	18
18a(H)-30-Norneohopane-C29Ts (T16)	25	14a,17a-20R-Methylcholestane (S24)	43
17a(H)-Diahopane (X)	10	14a(H),17a(H)-20S-Ethylcholestane (S25)	31
30-Normoretane (T17)	11	14a(H),17a(H)-20R-Ethylcholestane (S28)	40
18a(H)&18b(H)-Oleananes (T18)	0.55 U	14b(H),17b(H)-20R-Cholestane (S14)	50
Hopane (T19)	180	14b(H),17b(H)-20S-Cholestane (S15)	49
Moretane (T20)	15	14b,17b-20R-Methylcholestane (S22)	44
30-Homohopane-22S (T21)	81	14b,17b-20S-Methylcholestane (S23)	43
30-Homohopane-22R (T22)	55	14b(H),17b(H)-20R-Ethylcholestane (S26)	66
30,31-Bishomohopane-22S (T26)	56	14b(H),17b(H)-20S-Ethylcholestane (S27)	56

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/08/04 06:15

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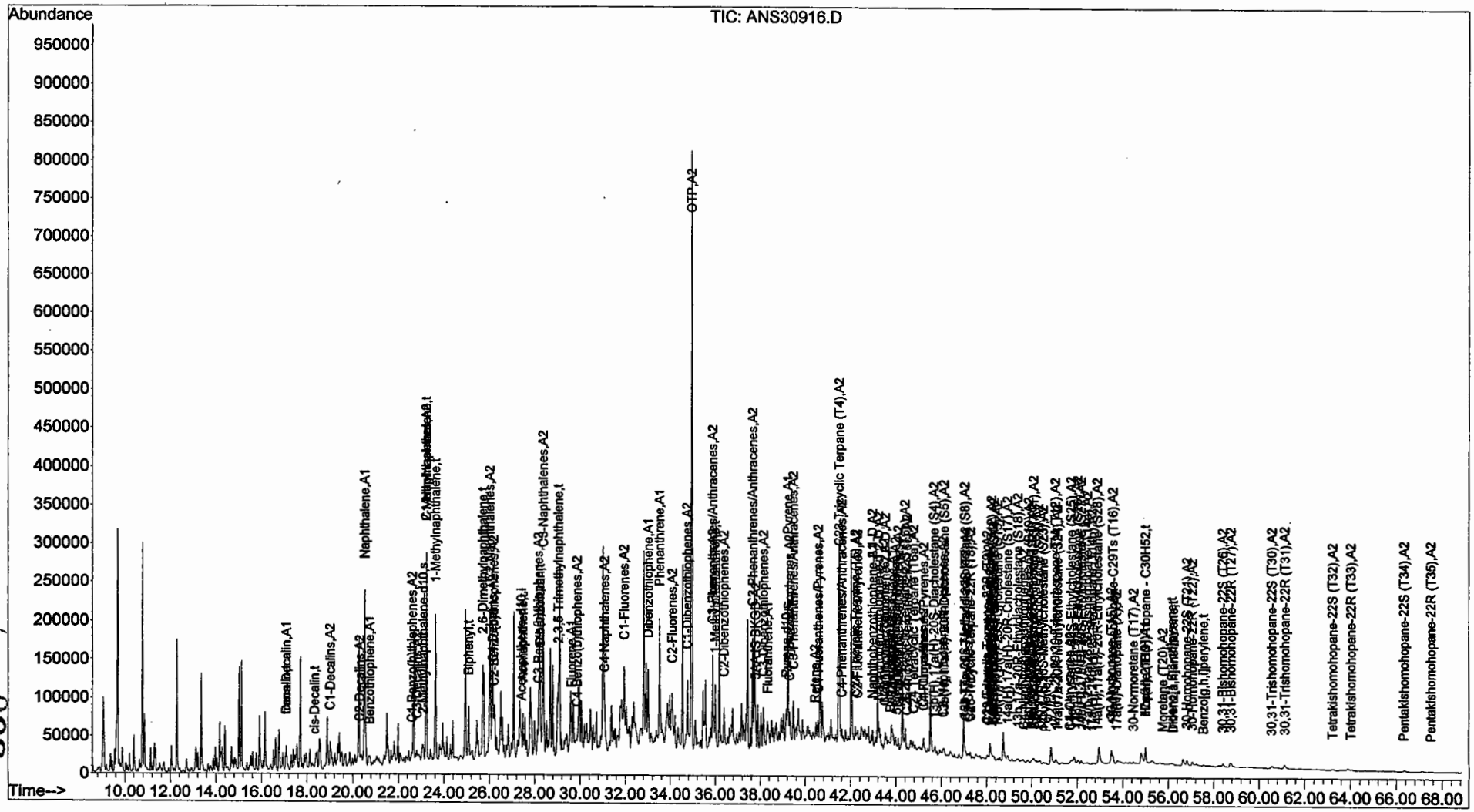
Quantitation Report (QT Reviewed)

Data Path : \\192.168.1.76\ORGANICS\DATA\PAH3\SEPT16\
Data File : ANS30916.D
Acq On : 17 Sep 2004 12:56 pm
Operator : BL
Sample : SS092404AWS01
Misc : SW090104A 5.14 ug/mL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 24 14:41:42 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration



092

Supporting Quality Control Results

Form IV
Method Blank Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03**
Date Analyzed: **09/20/04 13:42**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS090704BS03	09/20/04 15:05
LCSD	SS090704BSD03	09/20/04 16:28
DSY-SD-08-082604	0408124-01	09/20/04 17:50
DSY-SD-04-082604	0408124-02	09/20/04 19:13
DSY-SD-20-082604	0408124-03	09/20/04 20:36
DSY-SD-27-082604	0408124-04	09/20/04 21:59
DSY-SD-31-082604	0408124-05	09/20/04 23:21
DSY-SD-11-082604	0408124-06	09/21/04 00:44
DSY-SD-32-082604	0408124-07	09/21/04 02:07
DSY-SD-36-082604	0408124-08	09/21/04 04:54
DSY-SD-CC01-082604	0408124-09	09/21/04 06:17
DSY-SD-CC02-082604	0408124-10	09/21/04 07:39
DSY-SD-JPC01-082604	0408124-11	09/21/04 09:03
DSY-SD-JPC03-082604	0408124-12	09/21/04 10:26
DSY-SD-DUP03-082604	0408124-13	09/21/04 11:49
DSY-SD-CH01-082604	0408124-14	09/21/04 13:16
DSY-SD-CH01-082604	0408124-14 D	09/21/04 14:39
DSY-SD-CH01-082604	0408124-14 M	09/21/04 16:02
DSY-SD-CH02-082604	0408124-15	09/21/04 17:25

N/A - Not Applicable

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Form IV
Method Blank Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03F1**
Date Analyzed: **09/21/04 20:11**

Client ID	Lab ID	Date/Time Analyzed
DSY-SD-08-082604	0408124-01F1	09/22/04 00:20
DSY-SD-04-082604	0408124-02F1	09/22/04 01:43
DSY-SD-20-082604	0408124-03F1	09/22/04 03:06
DSY-SD-27-082604	0408124-04F1	09/22/04 04:29
DSY-SD-31-082604	0408124-05F1	09/22/04 05:53
DSY-SD-11-082604	0408124-06F1	09/22/04 07:16
DSY-SD-32-082604	0408124-07F1	09/22/04 08:39
DSY-SD-36-082604	0408124-08F1	09/22/04 11:26
DSY-SD-CC01-082604	0408124-09F1	09/22/04 12:50
DSY-SD-CC02-082604	0408124-10F1	09/22/04 14:15
DSY-SD-JPC01-082604	0408124-11F1	09/22/04 15:39
DSY-SD-JPC03-082604	0408124-12F1	09/22/04 17:03
DSY-SD-DUP03-082604	0408124-13F1	09/22/04 18:27
DSY-SD-CH01-082604	0408124-14F1	09/22/04 19:51
DSY-SD-CH01-082604	0408124-14F1 D	09/22/04 21:15
DSY-SD-CH02-082604	0408124-15F1	09/23/04 06:21

N/A - Not Applicable

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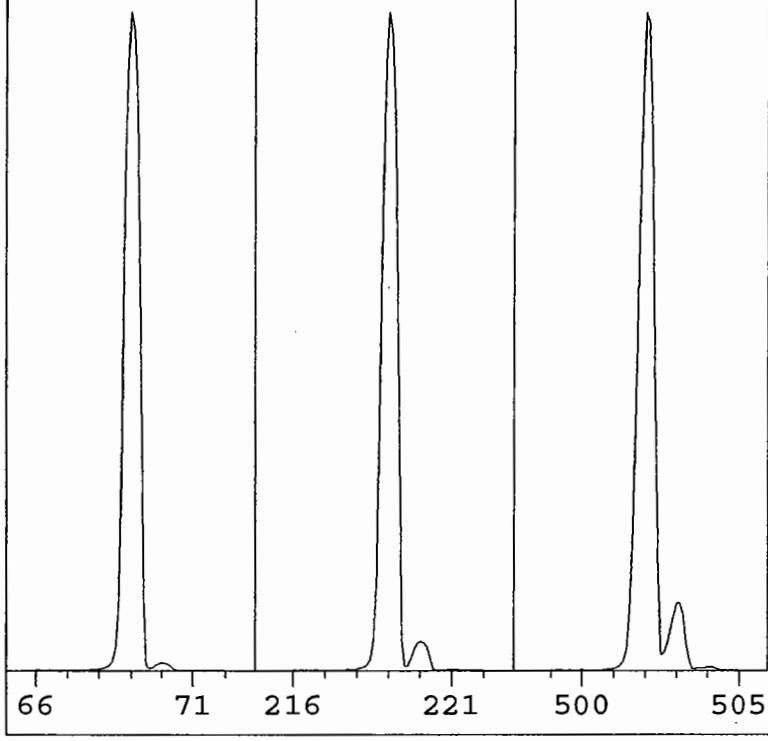
5973 QuickTune

Thu Sep 16 21:15:53 2004 Instrument: PAHINST3

C:\MSDCHEM\1\5973N\PFTBA.U BL

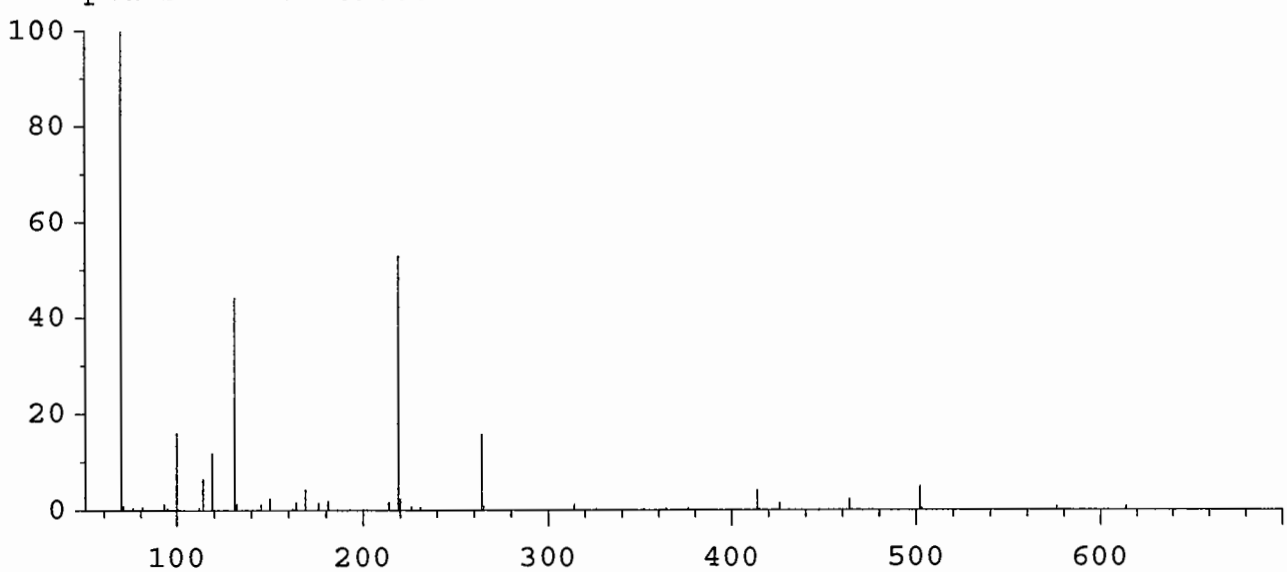
Mass	69.00	Mass	219.00	Mass	502.00
Ab	561848	Ab	300414	Ab	28422
Pw50	0.56	Pw50	0.54	Pw50	0.55



Ion Pol	POS	MassGain	59
		MassOffs	-11
Emission	34.6	AmuGain	2447
ElEnrgy	69.9	AmuOffs	129
Filament	1	Wid219	-0.051
		DC Pol	POS
Repeller	28.78		
IonFcus	90.2	HEDEnab	ON
EntLens	0.0	EMVolts	1153
EntOffs	VAR		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10
Zones:			
MS Source	230	Foreline	48
MS Quad	150		

Scan: 50.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10

156 peaks Base: 69.00 Abundance: 504768



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	504768	100.00	70.00	5462	1.08
219.00	267776	53.05	220.00	11598	4.33
502.00	25600	5.07	503.00	2722	10.63

TARGET MASS:	50	69	131	219	414	502
DYNAMIC ENT OFFSET:	18.8	18.3	18.3	18.6	17.1	29.9
TARGET ABUND(%):	1.0	100.0	45.0	55.0	3.5	6.5
ACTUAL TUNE ABUND(%):	0.0	100.0	44.2	53.0	4.3	5.1

Response Factor Report PAHINST3

Method Path : O:\ORGANICS\METHODS\PAH3\
Method File : PAH30916.M
Title : Decalins & Alkylated PAH's
Last Update : Wed Sep 22 17:25:31 2004
Response Via : Initial Calibration

Calibration Files
10 =I309161.D 25 =I309162.D 100 =I309163.D
500 =I309164.D 1250=I309165.D 5000=I309166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
1)	i	Acenaphthene-d10	----------	----------	----------	ISTD	----------	----------	----------	
2)	t	Decalin	0.437	0.373	0.299	0.333	0.351	0.351	0.359	11.84
3)	A1	trans-Decalin	0.433	0.390	0.364	0.391	0.407	0.401	0.402	5.88
4)	t	cis-Decalin	0.285	0.275	0.256	0.278	0.300	0.302	0.289	7.97
5)	A2	C1-Decalins	0.433	0.390	0.364	0.391	0.407	0.401	0.402	5.88
6)	A2	C2-Decalins	0.433	0.390	0.364	0.391	0.407	0.401	0.402	5.88
7)	A2	C3-Decalins	0.433	0.390	0.364	0.391	0.407	0.401	0.402	5.88
8)	A2	C4-Decalins	0.433	0.390	0.364	0.391	0.407	0.401	0.402	5.88
9)	A1	Naphthalene	1.938	1.983	2.029	2.264	2.361	2.314	2.187	9.07
10)	A2	C1-Naphthalenes	1.938	1.983	2.029	2.264	2.361	2.314	2.187	9.07
11)	A2	C2-Naphthalenes	1.938	1.983	2.029	2.264	2.361	2.314	2.187	9.07
12)	A2	C3-Naphthalenes	1.938	1.983	2.029	2.264	2.361	2.314	2.187	9.07
13)	A2	C4-Naphthalenes	1.938	1.983	2.029	2.264	2.361	2.314	2.187	9.07
14)	s	2-Methylnaphthale	0.886	1.013	1.006	1.113	1.157	1.144	1.073	10.22
15)	t	2-Methylnaphthale	1.338	1.255	1.278	1.481	1.556	1.536	1.435	9.87
16)	t	1-Methylnaphthale	1.173	1.135	1.201	1.350	1.424	1.412	1.310	10.54
17)	A1	Benzothiophene	1.653	1.761	1.731	1.896	1.964	1.929	1.851	7.38
18)	A2	C1-Benzo(b)thioph	1.653	1.761	1.731	1.896	1.964	1.929	1.851	7.38
19)	A2	C2-Benzo(b)thioph	1.653	1.761	1.731	1.896	1.964	1.929	1.851	7.38
20)	A2	C3-Benzo(b)thioph	1.653	1.761	1.731	1.896	1.964	1.929	1.851	7.38
21)	A2	C4-Benzo(b)thioph	1.653	1.761	1.731	1.896	1.964	1.929	1.851	7.38
22)	t	Biphenyl	1.792	1.509	1.627	1.817	1.913	1.862	1.781	8.89
23)	t	2,6-Dimethylnapht	1.068	1.086	1.097	1.236	1.313	1.308	1.211	10.40
24)	t	Dibenzofuran	1.873	1.916	1.901	2.106	2.199	2.163	2.060	7.76
25)	t	Acenaphthylene	2.022	1.990	2.025	2.263	2.418	2.421	2.242	10.30
26)	t	Acenaphthene	1.442	1.374	1.319	1.418	1.473	1.454	1.428	4.61
27)	t	2,3,5-Trimethylna	1.078	1.061	1.034	1.150	1.209	1.214	1.145	7.80
28)	A1	Fluorene	1.563	1.506	1.464	1.601	1.679	1.667	1.603	6.18
29)	A2	C1-Fluorenes	1.563	1.506	1.464	1.601	1.679	1.667	1.603	6.18
30)	A2	C2-Fluorenes	1.563	1.506	1.464	1.601	1.679	1.667	1.603	6.18
31)	A2	C3-Fluorenes	1.563	1.506	1.464	1.601	1.679	1.667	1.603	6.18
32)	A1	Dibenzothiophene	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
33)	A2	OTP	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
34)	A2	C1-Dibenzothiophe	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
35)	A2	C2-Dibenzothiophe	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
36)	A2	C3-Dibenzothiophe	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
37)	A2	C4-Dibenzothiophe	2.284	2.199	2.058	2.239	2.341	2.306	2.264	5.08
38)	A1	Phenanthrene	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
39)	A2	C1-Phenanthrenes/	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
40)	A2	C2-Phenanthrenes/	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
41)	A2	5AA IS BKGD	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
42)	A2	C3-Phenanthrenes/	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
43)	A2	C4-Phenanthrenes/	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
44)	A2	Retene	2.369	2.141	2.021	2.199	2.337	2.309	2.257	6.30
45)	t	Anthracene	1.992	1.613	1.734	2.119	2.310	2.374	2.091	15.82

Response Factor Report PAHINST3

Method Path : O:\ORGANICS\METHODS\PAH3\
Method File : PAH30916.M
Title : Decalins & Alkylated PAH's
Last Update : Wed Sep 22 17:25:31 2004
Response Via : Initial Calibration

Calibration Files
10 =I309161.D 25 =I309162.D 100 =I309163.D
500 =I309164.D 1250=I309165.D 5000=I309166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
46)	t	Carbazole				0.006	0.006	0.006	0.006#	3.97
47)	t	1-Methylphenanthr	1.421	1.331	1.335	1.484	1.598	1.621	1.499	9.68
48)	A1	Fluoranthene	2.476	2.410	2.292	2.490	2.626	2.629	2.522	5.94
49)	A2	Benzo(b)fluorene	2.476	2.410	2.292	2.490	2.626	2.629	2.522	5.94
50)	s	Pyrene-d10	1.371	1.491	1.443	1.610	1.696	1.701	1.581	9.29
51)	A1	Pyrene	2.355	2.230	2.194	2.446	2.590	2.595	2.441	7.78
52)	A2	C1-Fluoranthenes/	2.355	2.230	2.194	2.446	2.590	2.595	2.441	7.78
53)	A2	C2-Fluoranthenes/	2.355	2.230	2.194	2.446	2.590	2.595	2.441	7.78
54)	A2	C3-Fluoranthenes/	2.355	2.230	2.194	2.446	2.590	2.595	2.441	7.78
55)	A2	C4-Fluoranthenes/	2.355	2.230	2.194	2.446	2.590	2.595	2.441	7.78
56)	A1	Naphthobenzothiop	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
57)	A2	Naphthobenzothiop	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
58)	A2	Naphthobenzothiop	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
59)	A2	Naphthobenzothiop	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
60)	A2	C1-Naphthobenzoth	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
61)	A2	C2-Naphthobenzoth	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
62)	A2	C3-Naphthobenzoth	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
63)	A2	C4-Naphthobenzoth	2.098	1.921	1.813	1.988	2.097	2.131	2.032	6.40
64)	i	Chrysene-d12	----------ISTD----------							
65)	t	Benz[a]anthracene	1.845	1.646	1.534	1.660	1.716	1.704	1.695	5.74
66)	t	Chrysene	1.709	1.658	1.577	1.685	1.730	1.660	1.671	2.93
67)	A1	Chrysene/Tripheny	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
68)	A2	C1-Chrysenes	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
69)	A2	C2-Chrysenes	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
70)	A2	BBF-d12 Surr BKGD	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
71)	A2	C3-Chrysenes	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
72)	A2	C4-Chrysenes	1.709	1.658	1.577	1.685	1.730	1.660	1.675	3.01
73)	s	Benzo[b]fluoranth	0.904	0.995	0.904	0.989	1.024	1.037	0.991	6.78
74)	t	Benzo[b]fluoranth	1.551	1.468	1.442	1.598	1.699	1.697	1.603	7.68
75)	A1	Benzo[k]fluoranth	1.883	1.704	1.553	1.716	1.775	1.789	1.754	6.34
76)	A2	Benzo[a]fluoranth	1.883	1.704	1.553	1.716	1.775	1.789	1.754	6.34
77)	t	Benzo[e]pyrene	1.635	1.537	1.427	1.555	1.609	1.615	1.580	5.27
78)	t	Benzo[a]pyrene	1.639	1.437	1.341	1.488	1.560	1.636	1.548	8.75
79)	t	Perylene	1.618	1.496	1.305	1.465	1.548	1.614	1.536	8.49
80)	t	Indeno[1,2,3-cd]p	1.438	1.359	1.148	1.248	1.285	1.454	1.359	10.68
81)	t	Dibenz[a,h]anthra	1.571	1.325	1.192	1.290	1.366	1.519	1.411	11.26
82)	t	Benzo[g,h,i]peryl	1.773	1.736	1.554	1.637	1.677	1.700	1.690	4.50
83)	t	17a(H),21B(H)-hop	0.737	0.587	0.482	0.542	0.534	0.455	0.545	17.70
84)	A1	Hopane (T19)	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
85)	A2	C23 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
86)	A2	C24 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
87)	A2	C25 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
88)	A2	C24 Tetracyclic T	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
89)	A2	C26 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
90)	A2	C26 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37

Response Factor Report PAHINST3

Method Path : O:\ORGANICS\METHODS\PAH3\
Method File : PAH30916.M
Title : Decalins & Alkylated PAH's
Last Update : Wed Sep 22 17:25:31 2004
Response Via : Initial Calibration

Calibration Files
10 =I309161.D 25 =I309162.D 100 =I309163.D
500 =I309164.D 1250=I309165.D 5000=I309166.D

		Compound	10	25	100	500	1250	5000	Avg	%RSD
91)	A2	C28 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
92)	A2	C28 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
93)	A2	C29 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
94)	A2	C29 Tricyclic Ter	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
95)	A2	18a-22,29,30-Tris	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
96)	A2	17a(H)-22,29,30-T	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
97)	A2	17a/b,21b/a 28,30	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
98)	A2	17a(H),21b(H)-25-	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
99)	A2	30-Norhopane (T15	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
100)	A2	18a(H)-30-Norneoh	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
101)	A2	17a(H)-Diahopane	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
102)	A2	30-Normoretane (T	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
103)	A2	18a(H)&18b(H)-Ole	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
104)	A2	Moretane (T20)	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
105)	A2	30-Homohopane-22S	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
106)	A2	30-Homohopane-22R	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
107)	A2	30,31-Bishomohopa	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
108)	A2	30,31-Bishomohopa	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
109)	A2	30,31-Trishomohop	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
110)	A2	30,31-Trishomohop	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
111)	A2	Tetrakishomohopan	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
112)	A2	Tetrakishomohopan	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
113)	A2	Pentakishomohopan	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
114)	A2	Pentakishomohopan	0.731	0.587	0.482	0.542	0.534	0.455	0.544	17.37
115)	SA1	5B(H)Cholane - Su	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
116)	A2	13b(H),17a(H)-20S	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
117)	A2	13b(H),17a(H)-20R	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
118)	A2	13b,17a-20S-Methy	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
119)	A2	14a(H),17a(H)-20S	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
120)	A2	14a(H),17a(H)-20R	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
121)	A2	13b,17a-20R-Ethyl	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
122)	A2	13a,17b-20S-Ethyl	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
123)	A2	14a,17a-20S-Methy	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
124)	A2	14a,17a-20R-Methy	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
125)	A2	14a(H),17a(H)-20S	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
126)	A2	14a(H),17a(H)-20R	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
127)	A2	14b(H),17b(H)-20R	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
128)	A2	14b(H),17b(H)-20S	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
129)	A2	14b,17b-20R-Methy	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
130)	A2	14b,17b-20S-Methy	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
131)	A2	14b(H),17b(H)-20R	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49
132)	A2	14b(H),17b(H)-20S	0.198	0.191	0.186	0.203	0.205	0.205	0.200	4.49

(#) = Out of Range ### Number of calibration levels exceeded format ###

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT16\
Data File : Q30916B.D
Acq On : 17 Sep 2004 2:39 pm
Operator : BL
Sample : Q30916B
Misc : SW083104A 500 ng/mL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 17 15:53:18 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

CMY 9/17/04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	100	0.00
2	t	Decalin	0.359	0.000#	100.0#	0#	-17.10#
3	A1	trans-Decalin	0.402	0.000#	100.0#	0#	-17.10#
4	t	cis-Decalin	0.289	0.000#	100.0#	0#	-18.33#
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.026	7.4	90	0.00
10	A2	C1-Naphthalenes	2.187	0.000#	100.0#	0#	-23.23#
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.115	-3.9	100	-0.01
15	t	2-Methylnaphthalene	1.435	1.295	9.8	87	0.00
16	t	1-Methylnaphthalene	1.310	1.263	3.6	94	0.00
17	A1	Benzothiophene	1.851	0.000#	100.0#	0#	-20.74#
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.00#
22	t	Biphenyl	1.781	1.687	5.3	93	0.00
23	t	2,6-Dimethylnaphthalene	1.211	1.157	4.5	94	-0.01
24	t	Dibenzofuran	2.060	1.914	7.1	91	0.00
25	t	Acenaphthylene	2.242	2.064	7.9	91	0.00
26	t	Acenaphthene	1.428	1.314	8.0	93	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.076	6.0	94	0.00
28	A1	Fluorene	1.603	1.465	8.6	91	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	0.000#	100.0#	0#	-33.02#
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.96#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.109	6.6	96	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT16\
Data File : Q30916B.D
Acq On : 17 Sep 2004 2:39 pm
Operator : BL
Sample : Q30916B
Misc : SW083104A 500 ng/mL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 17 15:53:18 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.80#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	1.954	6.6	92	0.00
46	t	Carbazole	0.006	0.000#	100.0#	0#	-34.42#
47	t	1-Methylphenanthrene	1.499	0.000#	100.0#	0#	-36.00#
48	A1	Fluoranthene	2.522	2.314	8.2	93	0.00
49	A2	Benzo(b)fluorene	2.522	0.000#	100.0#	0#	-40.57#
50	s	Pyrene-d10	1.581	1.669	-5.6	104	0.00
51	A1	Pyrene	2.441	2.396	1.8	98	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	0.000#	100.0#	0#	-42.97#
57	A2	Naphthobenzothiophene-2,1-D	2.032	0.000#	100.0#	0#	-42.97#
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	105	0.00
65	t	Benz[a]anthracene	1.695	1.605	5.3	102	0.00
66	t	Chrysene	1.671	1.601	4.2	100	0.00
67	A1	Chrysene/Triphenylene	1.675	1.602	4.4	100	0.00
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	1.088	-9.8	116	-0.02
74	t	Benzo[b]fluoranthene	1.603	1.579	1.5	104	-0.02
75	A1	Benzo[k]fluoranthene	1.754	1.696	3.3	104	-0.01

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT16\
Data File : Q30916B.D
Acq On : 17 Sep 2004 2:39 pm
Operator : BL
Sample : Q30916B
Misc : SW083104A 500 ng/mL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 17 15:53:18 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-49.04#
77	t	Benzo[e]pyrene	1.580	1.567	0.8	106	-0.04
78	t	Benzo[a]pyrene	1.548	1.509	2.5	107	-0.02
79	t	Perylene	1.536	1.576	-2.6	113	-0.04
80	t	Indeno[1,2,3-cd]pyrene	1.359	1.408	-3.6	119	-0.02
81	t	Dibenz[a,h]anthracene	1.411	1.429	-1.3	117	-0.02
82	t	Benzo[g,h,i]perylene	1.690	1.716	-1.5	110	-0.04
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.000#	100.0#	0#	-55.01#
84	A1	Hopane (T19)	0.544	0.000#	100.0#	0#	-55.01#
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT16\
Data File : Q30916B.D
Acq On : 17 Sep 2004 2:39 pm
Operator : BL
Sample : Q30916B
Misc : SW083104A 500 ng/mL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 17 15:53:18 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.212	-6.0	110	0.00
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.75#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.20#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.12#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.32#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-49.04#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.51#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-51.75#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-51.88#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.27#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.88#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-53.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.43#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.61#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.44#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.63#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.15#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.30#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309201.D
Acq On : 20 Sep 2004 12:15 pm
Operator : BL
Sample : C309201
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

W.W 9/22/04

Quant Time: Sep 21 09:23:06 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	96	0.00
2	t	Decalin	0.359	0.000#	100.0#	0#	-17.10#
3	A1	trans-Decalin	0.402	0.392	2.5	96	0.00
4	t	cis-Decalin	0.289	0.291	-0.7	100	0.00
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.210	-1.1	94	-0.01
10	A2	C1-Naphthalenes	2.187	0.000#	100.0#	0#	-23.23#
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.100	-2.5	95	-0.01
15	t	2-Methylnaphthalene	1.435	1.444	-0.6	94	0.00
16	t	1-Methylnaphthalene	1.310	1.342	-2.4	95	0.00
17	A1	Benzothiophene	1.851	1.849	0.1	94	0.00
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-29.88#
22	t	Biphenyl	1.781	1.686	5.3	89	-0.01
23	t	2,6-Dimethylnaphthalene	1.211	1.243	-2.6	96	-0.01
24	t	Dibenzofuran	2.060	2.109	-2.4	96	0.00
25	t	Acenaphthylene	2.242	2.366	-5.5	100	0.00
26	t	Acenaphthene	1.428	1.411	1.2	95	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.184	-3.4	99	0.00
28	A1	Fluorene	1.603	1.609	-0.4	96	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	2.279	-0.7	98	-0.01
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.96#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.070	8.3	90	0.21

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309201.D
Acq On : 20 Sep 2004 12:15 pm
Operator : BL
Sample : C309201
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:23:06 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.80#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	2.284	-9.2	103	0.00
46	t	Carbazole	0.006	0.000#	100.0#	0#	-34.42#
47	t	1-Methylphenanthrene	1.499	0.000#	100.0#	0#	-36.00#
48	A1	Fluoranthene	2.522	2.641	-4.7	102	0.00
49	A2	Benzo(b)fluorene	2.522	0.000#	100.0#	0#	-40.82#
50	s	Pyrene-d10	1.581	1.687	-6.7	101	0.00
51	A1	Pyrene	2.441	2.779	-13.8	109	0.00
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	2.131	-4.9	103	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.032	2.119	-4.3	102	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	102	0.02
65	t	Benz[a]anthracene	1.695	1.729	-2.0	106	0.02
66	t	Chrysene	1.671	1.701	-1.8	103	0.02
67	A1	Chrysene/Triphenylene	1.675	1.701	-1.6	103	0.02
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	1.068	-7.8	110	0.07
74	t	Benzo[b]fluoranthene	1.603	1.698	-5.9	108	0.07
75	A1	Benzo[k]fluoranthene	1.754	1.799	-2.6	107	0.07

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309201.D
Acq On : 20 Sep 2004 12:15 pm
Operator : BL
Sample : C309201
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:23:06 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-49.04#
77	t	Benzo[e]pyrene	1.580	1.631	-3.2	107	0.08
78	t	Benzo[a]pyrene	1.548	1.645	-6.3	113	0.08
79	t	Perylene	1.536	1.612	-4.9	112	0.10
80	t	Indeno[1,2,3-cd]pyrene	1.359	1.499	-10.3	122	0.10
81	t	Dibenz[a,h]anthracene	1.411	1.445	-2.4	114	0.10
82	t	Benzo[g,h,i]perylene	1.690	1.716	-1.5	107	0.10
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.577	-5.9	108	0.09
84	A1	Hopane (T19)	0.544	0.577	-6.1	108	0.09
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309201.D
Acq On : 20 Sep 2004 12:15 pm
Operator : BL
Sample : C309201
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 21 09:23:06 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.214	-7.0	108	0.02
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.75#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.20#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.12#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.32#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-49.04#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.51#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-51.75#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-51.88#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.27#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.88#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-53.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.43#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.61#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.44#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.63#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.15#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.30#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309202.D
Acq On : 21 Sep 2004 3:31 am
Operator : BL
Sample : C309202
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

✓ w.w 9/22/04

Quant Time: Sep 21 09:19:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	98	0.00
2	t	Decalin	0.359	0.000#	100.0#	0#	-17.10#
3	A1	trans-Decalin	0.402	0.381	5.2	95	0.00
4	t	cis-Decalin	0.289	0.281	2.8	99	0.00
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.199	-0.5	95	0.00
10	A2	C1-Naphthalenes	2.187	0.000#	100.0#	0#	-23.23#
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.101	-2.6	97	0.00
15	t	2-Methylnaphthalene	1.435	1.448	-0.9	96	0.00
16	t	1-Methylnaphthalene	1.310	1.326	-1.2	96	0.00
17	A1	Benzothiophene	1.851	1.822	1.6	94	0.00
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-29.88#
22	t	Biphenyl	1.781	1.725	3.1	93	0.00
23	t	2,6-Dimethylnaphthalene	1.211	1.239	-2.3	98	-0.01
24	t	Dibenzofuran	2.060	2.071	-0.5	96	0.00
25	t	Acenaphthylene	2.242	2.341	-4.4	101	0.00
26	t	Acenaphthene	1.428	1.398	2.1	96	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.144	0.1	97	0.00
28	A1	Fluorene	1.603	1.586	1.1	97	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	2.209	2.4	97	-0.01
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.96#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.203	2.4	98	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309202.D
Acq On : 21 Sep 2004 3:31 am
Operator : BL
Sample : C309202
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 21 09:19:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.80#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	2.150	-2.8	99	0.00
46	t	Carbazole	0.006	0.000#	100.0#	0#	-34.42#
47	t	1-Methylphenanthrene	1.499	0.000#	100.0#	0#	-36.00#
48	A1	Fluoranthene	2.522	2.515	0.3	99	0.00
49	A2	Benzo(b)fluorene	2.522	0.000#	100.0#	0#	-40.82#
50	s	Pyrene-d10	1.581	1.652	-4.5	100	0.00
51	A1	Pyrene	2.441	2.489	-2.0	100	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	2.130	-4.8	105	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.032	2.115	-4.1	104	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	105	0.02
65	t	Benz[a]anthracene	1.695	1.714	-1.1	109	0.02
66	t	Chrysene	1.671	1.680	-0.5	105	0.02
67	A1	Chrysene/Triphenylene	1.675	1.680	-0.3	105	0.02
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	1.075	-8.5	114	0.07
74	t	Benzo[b]fluoranthene	1.603	1.724	-7.5	113	0.07
75	A1	Benzo[k]fluoranthene	1.754	1.814	-3.4	111	0.07

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309202.D
Acq On : 21 Sep 2004 3:31 am
Operator : BL
Sample : C309202
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

✓ W.W 9/22/04

Quant Time: Sep 21 09:19:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-49.04#
77	t	Benzo[e]pyrene	1.580	1.635	-3.5	110	0.08
78	t	Benzo[a]pyrene	1.548	1.688	-9.0	119	0.08
79	t	Perylene	1.536	1.635	-6.4	117	0.08
80	t	Indeno[1,2,3-cd]pyrene	1.359	1.487	-9.4	125	0.10
81	t	Dibenz[a,h]anthracene	1.411	1.532	-8.6	125	0.10
82	t	Benzo[g,h,i]perylene	1.690	1.710	-1.2	110	0.10
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.583	-7.0	113	0.08
84	A1	Hopane (T19)	0.544	0.583	-7.2	113	0.08
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309202.D
Acq On : 21 Sep 2004 3:31 am
Operator : BL
Sample : C309202
Misc : SW083004E 500 ng/mL (Sig #1); (Sig #2)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 21 09:19:13 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.208	-4.0	108	0.02
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.75#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.20#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.12#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.32#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-49.04#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.51#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-51.75#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-51.88#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.27#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.88#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-53.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.43#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.61#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.44#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.63#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.15#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.30#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309203.D
Acq On : 21 Sep 2004 6:48 pm
Operator : BL
Sample : C309203
Misc : SW083004E 500 ng/mL
ALS Vial : 23 Sample Multiplier: 1

W.W 9/22/04

Quant Time: Sep 22 09:03:25 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	90	0.00
2	t	Decalin	0.359	0.000#	100.0#	0#	-17.10#
3	A1	trans-Decalin	0.402	0.391	2.7	90	0.00
4	t	cis-Decalin	0.289	0.285	1.4	92	0.00
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.223	-1.6	88	0.00
10	A2	C1-Naphthalenes	2.187	2.863	-30.9#	114	0.00
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.117	-4.1	90	0.00
15	t	2-Methylnaphthalene	1.435	1.468	-2.3	89	0.00
16	t	1-Methylnaphthalene	1.310	1.329	-1.5	88	0.00
17	A1	Benzothiophene	1.851	1.851	0.0	88	0.00
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-29.88#
22	t	Biphenyl	1.781	1.825	-2.5	90	0.00
23	t	2,6-Dimethylnaphthalene	1.211	1.243	-2.6	90	0.00
24	t	Dibenzofuran	2.060	2.068	-0.4	88	0.00
25	t	Acenaphthylene	2.242	2.353	-5.0	93	0.00
26	t	Acenaphthene	1.428	1.399	2.0	89	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.147	-0.2	90	0.00
28	A1	Fluorene	1.603	1.587	1.0	89	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	2.234	1.3	90	-0.01
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.96#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.216	1.8	90	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309203.D
Acq On : 21 Sep 2004 6:48 pm
Operator : BL
Sample : C309203
Misc : SW083004E 500 ng/mL
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 22 09:03:25 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.80#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	2.160	-3.3	92	0.00
46	t	Carbazole	0.006	0.000#	100.0#	0#	-34.42#
47	t	1-Methylphenanthrene	1.499	1.538	-2.6	93	-0.01
48	A1	Fluoranthene	2.522	2.530	-0.3	91	0.00
49	A2	Benzo(b)fluorene	2.522	0.000#	100.0#	0#	-40.82#
50	s	Pyrene-d10	1.581	1.668	-5.5	93	-0.01
51	A1	Pyrene	2.441	2.512	-2.9	92	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	2.136	-5.1	96	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.032	2.122	-4.4	96	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	99	0.02
65	t	Benz[a]anthracene	1.695	1.681	0.8	100	0.02
66	t	Chrysene	1.671	1.646	1.5	97	0.02
67	A1	Chrysene/Triphenylene	1.675	1.648	1.6	97	0.02
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	1.038	-4.7	104	0.06
74	t	Benzo[b]fluoranthene	1.603	1.666	-3.9	103	0.07
75	A1	Benzo[k]fluoranthene	1.754	1.747	0.4	101	0.07

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309203.D
Acq On : 21 Sep 2004 6:48 pm
Operator : BL
Sample : C309203
Misc : SW083004E 500 ng/mL
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 22 09:03:25 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-49.04#
77	t	Benzo[e]pyrene	1.580	1.588	-0.5	101	0.07
78	t	Benzo[a]pyrene	1.548	1.626	-5.0	108	0.08
79	t	Perylene	1.536	1.573	-2.4	106	0.08
80	t	Indeno[1,2,3-cd]pyrene	1.359	1.432	-5.4	114	0.10
81	t	Dibenz[a,h]anthracene	1.411	1.476	-4.6	113	0.10
82	t	Benzo[g,h,i]perylene	1.690	1.577	6.7	95	0.10
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.554	-1.7	101	0.08
84	A1	Hopane (T19)	0.544	0.554	-1.8	101	0.08
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309203.D
Acq On : 21 Sep 2004 6:48 pm
Operator : BL
Sample : C309203
Misc : SW083004E 500 ng/mL
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 22 09:03:25 2004
Quant Method : C:\MSDCHEM\1\METHODS\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 19:51:32 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.203	-1.5	99	0.02
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.75#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.20#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.12#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.32#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-49.04#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.51#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-51.75#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-51.88#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.27#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.88#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-53.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.43#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.61#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.44#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.63#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.15#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.30#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309204.D
Acq On : 22 Sep 2004 10:03 am
Operator : BL
Sample : C309204
Misc : SW083004E 500 ng/mL
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 22 11:44:57 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

CW 9/22/04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	90	0.00
2	t	Decalin	0.359	0.341	5.0	92	0.00
3	A1	trans-Decalin	0.402	0.387	3.7	89	0.00
4	t	cis-Decalin	0.289	0.281	2.8	91	0.00
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.180	0.3	87	0.00
10	A2	C1-Naphthalenes	2.187	0.000#	100.0#	0#	-23.23#
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.098	-2.3	89	-0.01
15	t	2-Methylnaphthalene	1.435	1.441	-0.4	88	0.00
16	t	1-Methylnaphthalene	1.310	1.323	-1.0	88	0.00
17	A1	Benzothiophene	1.851	1.826	1.4	87	0.00
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.00#
22	t	Biphenyl	1.781	1.705	4.3	85	0.00
23	t	2,6-Dimethylnaphthalene	1.211	1.226	-1.2	90	0.00
24	t	Dibenzofuran	2.060	2.044	0.8	88	0.00
25	t	Acenaphthylene	2.242	2.308	-2.9	92	0.00
26	t	Acenaphthene	1.428	1.385	3.0	88	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.122	2.0	88	0.00
28	A1	Fluorene	1.603	1.571	2.0	89	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	0.000#	100.0#	0#	-33.02#
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.96#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.206	2.3	91	0.00

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309204.D
Acq On : 22 Sep 2004 10:03 am
Operator : BL
Sample : C309204
Misc : SW083004E 500 ng/mL
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 22 11:44:57 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.80#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	2.090	0.0	89	0.00
46	t	Carbazole	0.006	0.000#	100.0#	0#	-34.42#
47	t	1-Methylphenanthrene	1.499	0.000#	100.0#	0#	-36.00#
48	A1	Fluoranthene	2.522	2.488	1.3	90	0.00
49	A2	Benzo(b)fluorene	2.522	0.004#	99.8#	0#	0.28
50	s	Pyrene-d10	1.581	1.635	-3.4	92	-0.01
51	A1	Pyrene	2.441	2.468	-1.1	91	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	2.049	-0.8	93	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.032	2.026	0.3	92	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	92	0.02
65	t	Benz[a]anthracene	1.695	1.693	0.1	94	0.02
66	t	Chrysene	1.671	1.737	-3.9	95	0.02
67	A1	Chrysene/Triphenylene	1.675	1.737	-3.7	95	0.02
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.29#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	1.037	-4.6	97	0.07
74	t	Benzo[b]fluoranthene	1.603	1.647	-2.7	95	0.07
75	A1	Benzo[k]fluoranthene	1.754	1.821	-3.8	98	0.07

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309204.D
Acq On : 22 Sep 2004 10:03 am
Operator : BL
Sample : C309204
Misc : SW083004E 500 ng/mL
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 22 11:44:57 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-49.04#
77	t	Benzo[e]pyrene	1.580	1.609	-1.8	96	0.07
78	t	Benzo[a]pyrene	1.548	1.592	-2.8	99	0.08
79	t	Perylene	1.536	1.566	-2.0	99	0.08
80	t	Indeno[1,2,3-cd]pyrene	1.359	1.164	14.3	86	0.10
81	t	Dibenz[a,h]anthracene	1.411	1.363	3.4	98	0.10
82	t	Benzo[g,h,i]perylene	1.690	1.430	15.4	81	0.10
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.579	-6.2	99	0.08
84	A1	Hopane (T19)	0.544	0.579	-6.4	99	0.08
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : C:\MSDChem\1\DATA\SEPT20\
Data File : C309204.D
Acq On : 22 Sep 2004 10:03 am
Operator : BL
Sample : C309204
Misc : SW083004E 500 ng/mL
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Sep 22 11:44:57 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Fri Sep 17 13:27:49 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.211	-5.5	96	0.02
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.75#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.20#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.12#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.32#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-49.04#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.51#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-51.75#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-51.88#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.27#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.88#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-53.01#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.43#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.61#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.44#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.63#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.15#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.30#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : C3090205.D
Acq On : 23 Sep 2004 7:44 am
Operator : BL
Sample : C309205
Misc : SW083004E 500 ng/mL
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Sep 23 09:26:36 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Thu Sep 23 07:27:54 2004
Response via : Initial Calibration

BL 9-23-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	i	Acenaphthene-d10	1.000	1.000	0.0	88	0.00
2	t	Decalin	0.359	0.340	5.3	90	0.00
3	A1	trans-Decalin	0.402	0.390	3.0	88	0.00
4	t	cis-Decalin	0.289	0.285	1.4	90	0.00
5	A2	C1-Decalins	0.402	0.000#	100.0#	0#	-18.58#
6	A2	C2-Decalins	0.402	0.000#	100.0#	0#	-20.31#
7	A2	C3-Decalins	0.402	0.000#	100.0#	0#	-22.81#
8	A2	C4-Decalins	0.402	0.000#	100.0#	0#	-26.17#
9	A1	Naphthalene	2.187	2.203	-0.7	85	0.00
10	A2	C1-Naphthalenes	2.187	2.854	-30.5#	111	0.00
11	A2	C2-Naphthalenes	2.187	0.000#	100.0#	0#	-26.03#
12	A2	C3-Naphthalenes	2.187	0.000#	100.0#	0#	-28.38#
13	A2	C4-Naphthalenes	2.187	0.000#	100.0#	0#	-31.10#
14	s	2-Methylnaphthalene-d10	1.073	1.111	-3.5	88	-0.01
15	t	2-Methylnaphthalene	1.435	1.448	-0.9	86	0.00
16	t	1-Methylnaphthalene	1.310	1.330	-1.5	87	0.00
17	A1	Benzothiophene	1.851	1.827	1.3	85	0.00
18	A2	C1-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-22.62#
19	A2	C2-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-26.20#
20	A2	C3-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.18#
21	A2	C4-Benzo(b)thiophenes	1.851	0.000#	100.0#	0#	-28.00#
22	t	Biphenyl	1.781	1.801	-1.1	87	0.01
23	t	2,6-Dimethylnaphthalene	1.211	1.224	-1.1	87	-0.01
24	t	Dibenzofuran	2.060	2.065	-0.2	86	0.00
25	t	Acenaphthylene	2.242	2.309	-3.0	90	0.00
26	t	Acenaphthene	1.428	1.407	1.5	87	0.00
27	t	2,3,5-Trimethylnaphthalene	1.145	1.132	1.1	86	0.00
28	A1	Fluorene	1.603	1.555	3.0	85	0.00
29	A2	C1-Fluorenes	1.603	0.000#	100.0#	0#	-31.96#
30	A2	C2-Fluorenes	1.603	0.000#	100.0#	0#	-34.09#
31	A2	C3-Fluorenes	1.603	0.000#	100.0#	0#	-35.88#
32	A1	Dibenzothiophene	2.264	2.249	0.7	88	-0.01
33	A2	OTP	2.264	0.000#	100.0#	0#	-34.94#
34	A2	C1-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-34.76#
35	A2	C2-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-36.39#
36	A2	C3-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-38.15#
37	A2	C4-Dibenzothiophenes	2.264	0.000#	100.0#	0#	-40.55#
38	A1	Phenanthrene	2.257	2.224	1.5	89	0.00

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : C3090205.D
Acq On : 23 Sep 2004 7:44 am
Operator : BL
Sample : C309205
Misc : SW083004E 500 ng/mL
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Sep 23 09:26:36 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Thu Sep 23 07:27:54 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	A2	C1-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-35.89#
40	A2	C2-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-37.67#
41	A2	5AA IS BKGD	2.257	0.000#	100.0#	0#	-37.44#
42	A2	C3-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-39.48#
43	A2	C4-Phenanthrenes/Anthracene	2.257	0.000#	100.0#	0#	-41.62#
44	A2	Retene	2.257	0.000#	100.0#	0#	-40.44#
45	t	Anthracene	2.091	2.222	-6.3	92	-0.21
46	t	Carbazole	0.006	0.005#	16.7	78	0.00
47	t	1-Methylphenanthrene	1.499	1.491	0.5	88	-0.01
48	A1	Fluoranthene	2.522	2.492	1.2	88	0.00
49	A2	Benzo(b)fluorene	2.522	0.000#	100.0#	0#	-40.84#
50	s	Pyrene-d10	1.581	1.618	-2.3	88	-0.01
51	A1	Pyrene	2.441	2.490	-2.0	89	-0.01
52	A2	C1-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-40.57#
53	A2	C2-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-42.32#
54	A2	C3-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-44.01#
55	A2	C4-Fluoranthenes/Pyrenes	2.441	0.000#	100.0#	0#	-45.28#
56	A1	Naphthobenzothiophene	2.032	1.945	4.3	86	0.00
57	A2	Naphthobenzothiophene-2,1-D	2.032	1.956	3.7	86	0.00
58	A2	Naphthobenzothiophene-1,2-D	2.032	0.000#	100.0#	0#	-43.25#
59	A2	Naphthobenzothiophene-2,3-D	2.032	0.000#	100.0#	0#	-43.55#
60	A2	C1-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-44.13#
61	A2	C2-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-46.15#
62	A2	C3-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-48.18#
63	A2	C4-Naphthobenzothiophenes	2.032	0.000#	100.0#	0#	-49.78#
64	i	Chrysene-d12	1.000	1.000	0.0	87	0.00
65	t	Benz[a]anthracene	1.695	1.614	4.8	84	0.00
66	t	Chrysene	1.671	1.765	-5.6	91	0.00
67	A1	Chrysene/Triphenylene	1.675	1.770	-5.7	91	0.00
68	A2	C1-Chrysenes	1.675	0.000#	100.0#	0#	-45.27#
69	A2	C2-Chrysenes	1.675	0.000#	100.0#	0#	-47.28#
70	A2	BBF-d12 Surr BKGD	1.675	0.000#	100.0#	0#	-47.68#
71	A2	C3-Chrysenes	1.675	0.000#	100.0#	0#	-51.84#
72	A2	C4-Chrysenes	1.675	0.000#	100.0#	0#	-51.83#
73	s	Benzo[b]fluoranthene-d12	0.991	0.949	4.2	83	-0.07
74	t	Benzo[b]fluoranthene	1.603	1.495	6.7	81	-0.07
75	A1	Benzo[k]fluoranthene	1.754	1.745	0.5	88	-0.06

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : C3090205.D
Acq On : 23 Sep 2004 7:44 am
Operator : BL
Sample : C309205
Misc : SW083004E 500 ng/mL
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Sep 23 09:26:36 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Thu Sep 23 07:27:54 2004
Response via : Initial Calibration

① Non-target analytes.
BL 9-23-04

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
76	A2	Benzo[a]fluoranthene	1.754	0.000#	100.0#	0#	-48.95#
77	t	Benzo[e]pyrene	1.580	1.473	6.8	82	-0.09
78	t	Benzo[a]pyrene	1.548	1.345	13.1	78	-0.09
79	t	Perylene	1.536	1.398	9.0	83	-0.10
80	t	Indeno[1,2,3-cd]pyrene	1.359	0.632	53.5#	44	-0.10
81	t	Dibenz[a,h]anthracene	1.411	0.947	32.9#	64	-0.10
82	t	Benzo[g,h,i]perylene	1.690	1.072	36.6#	57	-0.11
83	t	17a(H),21B(H)-hopane - C30H	0.545	0.551	-1.1	88	-0.10
84	A1	Hopane (T19)	0.544	0.551	-1.3	88	-0.10
85	A2	C23 Tricyclic Terpane (T4)	0.544	0.000#	100.0#	0#	-41.51#
86	A2	C24 Tricyclic Terpane (T5)	0.544	0.000#	100.0#	0#	-42.21#
87	A2	C25 Tricyclic Terpane (T6)	0.544	0.000#	100.0#	0#	-43.53#
88	A2	C24 Tetracyclic Terpane (T6	0.544	0.000#	100.0#	0#	-44.83#
89	A2	C26 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-44.44#
90	A2	C26 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-44.53#
91	A2	C28 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-47.16#
92	A2	C28 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-47.36#
93	A2	C29 Tricyclic Terpane-22S (	0.544	0.000#	100.0#	0#	-48.12#
94	A2	C29 Tricyclic Terpane-22R (	0.544	0.000#	100.0#	0#	-48.41#
95	A2	18a-22,29,30-Trisnorneohopa	0.544	0.000#	100.0#	0#	-50.21#
96	A2	17a(H)-22,29,30-Trisnorhopa	0.544	0.000#	100.0#	0#	-51.19#
97	A2	17a/b,21b/a 28,30-Bisnorhop	0.544	0.000#	100.0#	0#	-52.57#
98	A2	17a(H),21b(H)-25-Norhopane	0.544	0.000#	100.0#	0#	-52.79#
99	A2	30-Norhopane (T15)	0.544	0.000#	100.0#	0#	-53.63#
100	A2	18a(H)-30-Norneohopane-C29T	0.544	0.000#	100.0#	0#	-53.70#
101	A2	17a(H)-Diahopane (X)	0.544	0.000#	100.0#	0#	-53.85#
102	A2	30-Normoretane (T17)	0.544	0.000#	100.0#	0#	-54.58#
103	A2	18a(H)&18b(H)-Oleananes (T1	0.544	0.000#	100.0#	0#	-55.07#
104	A2	Moretane (T20)	0.544	0.000#	100.0#	0#	-55.89#
105	A2	30-Homohopane-22S (T21)	0.544	0.000#	100.0#	0#	-56.97#
106	A2	30-Homohopane-22R (T22)	0.544	0.000#	100.0#	0#	-57.20#
107	A2	30,31-Bishomohopane-22S (T2	0.544	0.000#	100.0#	0#	-58.57#
108	A2	30,31-Bishomohopane-22R (T2	0.544	0.000#	100.0#	0#	-58.92#
109	A2	30,31-Trishomohopane-22S (T	0.544	0.000#	100.0#	0#	-60.74#
110	A2	30,31-Trishomohopane-22R (T	0.544	0.000#	100.0#	0#	-61.31#
111	A2	Tetrakishomohopane-22S (T32	0.544	0.000#	100.0#	0#	-63.43#
112	A2	Tetrakishomohopane-22R (T33	0.544	0.000#	100.0#	0#	-64.26#
113	A2	Pentakishomohopane-22S (T34	0.544	0.000#	100.0#	0#	-66.61#

Evaluate Continuing Calibration Report

Data Path : O:\Organics\DATA\PAH3\SEPT20\
Data File : C3090205.D
Acq On : 23 Sep 2004 7:44 am
Operator : BL
Sample : C309205
Misc : SW083004E 500 ng/mL
ALS Vial : 51 Sample Multiplier: 1

Quant Time: Sep 23 09:26:36 2004
Quant Method : O:\ORGANICS\METHODS\PAH3\PAH30916.M
Quant Title : Decalins & Alkylated PAH's
QLast Update : Thu Sep 23 07:27:54 2004
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 10% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
114	A2	Pentakishomohopane-22R (T35	0.544	0.000#	100.0#	0#	-67.78#
115	SA1	5B(H)Cholane - Surr	0.200	0.207	-3.5	89	-0.02
116	A2	13b(H),17a(H)-20S-Diacholes	0.200	0.000#	100.0#	0#	-45.69#
117	A2	13b(H),17a(H)-20R-Diacholes	0.200	0.000#	100.0#	0#	-46.13#
118	A2	13b,17a-20S-Methyldiacholes	0.200	0.000#	100.0#	0#	-47.05#
119	A2	14a(H),17a(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.23#
120	A2	14a(H),17a(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.93#
121	A2	13b,17a-20R-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.39#
122	A2	13a,17b-20S-Ethyldiacholest	0.200	0.000#	100.0#	0#	-49.89#
123	A2	14a,17a-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.06#
124	A2	14a,17a-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-51.14#
125	A2	14a(H),17a(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-51.74#
126	A2	14a(H),17a(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.88#
127	A2	14b(H),17b(H)-20R-Cholestan	0.200	0.000#	100.0#	0#	-48.34#
128	A2	14b(H),17b(H)-20S-Cholestan	0.200	0.000#	100.0#	0#	-48.50#
129	A2	14b,17b-20R-Methylcholestan	0.200	0.000#	100.0#	0#	-50.31#
130	A2	14b,17b-20S-Methylcholestan	0.200	0.000#	100.0#	0#	-50.51#
131	A2	14b(H),17b(H)-20R-Ethylchol	0.200	0.000#	100.0#	0#	-52.03#
132	A2	14b(H),17b(H)-20S-Ethylchol	0.200	0.000#	100.0#	0#	-52.18#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**
Lab ID: **C309201**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		43307	27.41	49320	43.81
Upper Limit:		86614	27.91	98640	44.31
Lower Limit:		21654	26.91	24660	43.31
Client ID	**Lab ID**				
Blank	SS090704B03	56954	27.41	62512	43.79
LCS	SS090704BS03	43415	27.41	48892	43.79
LCSD	SS090704BSD03	42922	27.41	47631	43.79
DSY-SD-08-082604	0408124-01	48580	27.41	55206	43.81
DSY-SD-04-082604	0408124-02	50035	27.41	56160	43.81
DSY-SD-20-082604	0408124-03	44479	27.41	51015	43.81
DSY-SD-27-082604	0408124-04	51400	27.41	57698	43.80
DSY-SD-31-082604	0408124-05	49385	27.41	57121	43.79
DSY-SD-11-082604	0408124-06	49362	27.41	56619	43.81
DSY-SD-32-082604	0408124-07	45852	27.41	52087	43.79
CCV	C309202	44165	27.41	50877	43.81

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

10/07/04 14:10

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**
Lab ID: **C309202**

Case: N/A SDG: N/A

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		44165	27.41	50877	43.81
Upper Limit:		88330	27.91	101754	44.31
Lower Limit:		22082	26.91	25438	43.31
Client ID	**Lab ID**				
DSY-SD-36-082604	0408124-08	45956	27.41	52499	43.81
DSY-SD-CC01-082604	0408124-09	44739	27.41	51829	43.81
DSY-SD-CC02-082604	0408124-10	43672	27.41	50139	43.79
DSY-SD-JPC01-082604	0408124-11	47276	27.41	54154	43.81
DSY-SD-JPC03-082604	0408124-12	44300	27.41	51237	43.81
DSY-SD-DUP03-082604	0408124-13	43811	27.41	50859	43.81
DSY-SD-CH01-082604	0408124-14	49396	27.41	54744	43.80
DSY-SD-CH01-082604	0408124-14 D	48023	27.41	55256	43.81
DSY-SD-CH01-082604	0408124-14 M	48168	27.41	55665	43.81
DSY-SD-CH02-082604	0408124-15	48193	27.41	55372	43.79
CCV	C309203	40530	27.41	47981	43.81

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

10/07/04 14:11

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Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**
Lab ID: **C309203**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		40530	27.41	47981	43.81
Upper Limit:		81060	27.91	95962	44.31
Lower Limit:		20265	26.91	23990	43.31
Client ID	**Lab ID**				
Blank	SS090704B03F1	43899	27.41	50955	43.81
DSY-SD-08-082604	0408124-01F1	41249	27.41	51359	43.81
DSY-SD-04-082604	0408124-02F1	41342	27.41	50729	43.79
DSY-SD-20-082604	0408124-03F1	42361	27.41	51707	43.79
DSY-SD-27-082604	0408124-04F1	44036	27.41	52121	43.81
DSY-SD-31-082604	0408124-05F1	42729	27.41	52859	43.81
DSY-SD-11-082604	0408124-06F1	42105	27.41	50781	43.81
DSY-SD-32-082604	0408124-07F1	43455	27.41	53777	43.81
CCV	C309204	40724	27.41	44796	43.81

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Form VIII
Internal Standard Summary
Alkylated Polynuclear Aromatic Hydrocarbons

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**
Lab ID: **C309204**

Case: **N/A** SDG: **N/A**

		Acenaphthene-d10		Chrysene-d12	
		Area	**RT**	**Area**	**RT**
Standard:		40724	27.41	44796	43.81
Upper Limit:		81448	27.91	89592	44.31
Lower Limit:		20362	26.91	22398	43.31
Client ID	**Lab ID**				
DSY-SD-36-082604	0408124-08F1	42238	27.41	49103	43.81
DSY-SD-CC01-082604	0408124-09F1	42533	27.41	51232	43.79
DSY-SD-CC02-082604	0408124-10F1	38487	27.41	46151	43.81
DSY-SD-JPC01-082604	0408124-11F1	34802	27.41	36533	43.81
DSY-SD-JPC03-082604	0408124-12F1	33376	27.41	36570	43.81
DSY-SD-DUP03-082604	0408124-13F1	33505	27.41	38449	43.81
DSY-SD-CH01-082604	0408124-14F1	35212	27.41	40887	43.81
DSY-SD-CH01-082604	0408124-14F1 D	37917	27.41	46259	43.81
DSY-SD-CH02-082604	0408124-15F1	38106	27.41	44704	43.80
CCV	C309205	39629	27.41	41924	43.80

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

10/07/04 14:11

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Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408124SST - OP NEWFIE

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408124-01	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-02	SAM	Shaker	JFR	9/7/04	9/14/04		30.44	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-03	SAM	Shaker	JFR	9/7/04	9/14/04		30.27	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-04	SAM	Shaker	JFR	9/7/04	9/14/04		30.92	10	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-05	SAM	Shaker	JFR	9/7/04	9/14/04		30.82	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-06	SAM	Shaker	JFR	9/7/04	9/14/04		30.54	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-07	SAM	Shaker	JFR	9/7/04	9/14/04		30.74	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-08	SAM	Shaker	JFR	9/7/04	9/14/04		30.63	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-09	SAM	Shaker	JFR	9/7/04	9/14/04		30.35	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-10	SAM	Shaker	JFR	9/7/04	9/14/04		30.32	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-11	SAM	Shaker	JFR	9/7/04	9/14/04		30.71	20	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-12	SAM	Shaker	JFR	9/7/04	9/14/04		30.24	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-13	SAM	Shaker	JFR	9/7/04	9/14/04		30.8	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	D	Shaker	JFR	9/7/04	9/14/04		30.68	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	M	Shaker	JFR	9/7/04	9/14/04		30.54	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	SAM	Shaker	JFR	9/7/04	9/14/04		30.68	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-15	SAM	Shaker	JFR	9/7/04	9/14/04		30.21	2.5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704B03	B	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704BS03	BS	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704BSD03	BSD	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	

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Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408124SST - OP NEWFIE

Lab ID	Notes
0408124-01	1st Prep: Copper Cleaned
0408124-02	1st Prep: Copper Cleaned
0408124-03	1st Prep: Copper Cleaned
0408124-04	1st Prep: Copper Cleaned
0408124-05	1st Prep: Copper Cleaned
0408124-06	1st Prep: Copper Cleaned
0408124-07	1st Prep: Copper Cleaned
0408124-08	1st Prep: Copper Cleaned
0408124-09	1st Prep: Copper Cleaned
0408124-10	1st Prep: Copper Cleaned
0408124-11	1st Prep: Copper Cleaned
0408124-12	1st Prep: Copper Cleaned
0408124-13	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-15	1st Prep: Copper Cleaned
SS090704B03	1st Prep: Copper Cleaned
SS090704BS03	1st Prep: Copper Cleaned
SS090704BSD03	1st Prep: Copper Cleaned

Woods Hole Group Environmental Laboratories
Batch Weight Report
09/07/2004

Lab ID	QC Type	0408124SST - Sample
0408124-01	SAM	30.96
0408124-02	SAM	30.44
0408124-03	SAM	30.27
0408124-04	SAM	30.92
0408124-05	SAM	30.82
0408124-06	SAM	30.54
0408124-07	SAM	30.74
0408124-08	SAM	30.63
0408124-09	SAM	30.35
0408124-10	SAM	30.32
0408124-11	SAM	30.71
0408124-12	SAM	30.24
0408124-13	SAM	30.8
0408124-14	D	30.68
0408124-14	SAM	30.68
0408124-14M	OP NEWFIE	30.54
0408124-14M	OP SHC	30.54
0408124-15	SAM	30.21
SS090704B03	B	30
SS090704BS03BS	OP NEWFIE	30
SS090704BS03BS	OP SHC	30
SS090704BSD03BSD	OP NEWFIE	30
SS090704BSD03BSD	OP SHC	30

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46

COPPER: A14601 SULFURIC ACID: 3102030

GLASS WOOL: 4303309989 SODIUM SULFATE: E13478

DIATEMACEOUS EARTH: 00504

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/07/2004 0408124SST - OP NEWFIE Analyst: JFR Witness: MP

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408124-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-05	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-06	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-07	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-08	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-09	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-10	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-11	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-12	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-13	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-14	D	SSW083104B	100	µl				SSW090104E	100	µl
0408124-14	M	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
0408124-14	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-15	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SS090704B03	B	SSW083104B	100	µl				SSW090104E	100	µl
SS090704BS03	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SS090704BSD03	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: NEWFIE
Standard Type: Surrogate / LCS / MS-MSD
LFB / Other
ID# SSW083104B
Conc. 10 ug/ml-PAH 500 ug/mL-SHC

Test: NEWFIE
Standard Type: Surrogate / LCS / MS-MSD
LFB / Other
ID# SSW090104E
Conc. 10 ug/ml

Test: NEWFIE
Standard Type: Surrogate / LCS / MS-MSD
LFB / Other
ID# SLW090104G
Conc. 10 ug/ml-PAH 500 ug/mL-SHC

Woods Hole Group Environmental Laboratories
Batch Clean Up Report
09/07/2004 0408124SST - OP NEWFIE

Lab ID	QC Type	Clean Up Method	Analyst	Clean Up Date	Flow Rate	Coll. Start	Coll. End	Concentration Analyst	Conc. Date	Solvent Ex.	Prefraction ation Volume	Fractionation Amount	Fractionation Factor	Transfer Volume
0408124-01	SAM	3630	RPR	9/14/04		18	25			False	2	0.5	0	1
0408124-02	SAM	3630	RPR	9/14/04		18	25			False	2	0.5	0	1
0408124-03	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-04	SAM	3630	RPR	9/14/04		18	25			False	2	0.2	0	1
0408124-05	SAM	3630	RPR	9/14/04		18	25			False	2	0.5	0	1
0408124-06	SAM	3630	RPR	9/14/04		18	25			False	2	0.4	0	1
0408124-07	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-08	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-09	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-10	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-11	SAM	3630	RPR	9/14/04		18	25			False	2	0.1	0	1
0408124-12	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-13	SAM	3630	RPR	9/14/04		18	25			False	2	1	0	1
0408124-14	D	3630	RPR	9/14/04		18	25			False	2	0.4	0	1
0408124-14	M	3630	RPR	9/14/04		18	25			False	2	0.4	0	1
0408124-14	SAM	3630	RPR	9/14/04		18	25			False	2	0.4	0	1
0408124-15	SAM	3630	RPR	9/14/04		18	25			False	2	0.8	0	1
SS090704B03	B	3630	RPR	9/14/04		18	25			False	2	1	0	1
SS090704BS03	BS	3630	RPR	9/14/04		18	25			False	2	1	0	1
SS090704BSD03	BSD	3630	RPR	9/14/04		18	25			False	2	1	0	1

Woods Hole Group Environmental Laboratories
Batch Clean Up Report
09/07/2004 0408124SST - OP NEWFIE

Lab ID	Notes
0408124-01	Fraction 1 transferred for analysis
0408124-02	Fraction 1 transferred for analysis
0408124-03	Fraction 1 transferred for analysis
0408124-04	Fraction 1 transferred for analysis
0408124-05	Fraction 1 transferred for analysis
0408124-06	Fraction 1 transferred for analysis
0408124-07	Fraction 1 transferred for analysis
0408124-08	Fraction 1 transferred for analysis
0408124-09	Fraction 1 transferred for analysis
0408124-10	Fraction 1 transferred for analysis
0408124-11	Fraction 1 transferred for analysis
0408124-12	Fraction 1 transferred for analysis
0408124-13	Fraction 1 transferred for analysis
0408124-14	Fraction 1 transferred for analysis
0408124-14	Fraction 1 transferred for analysis
0408124-14	Fraction 1 transferred for analysis
0408124-15	Fraction 1 transferred for analysis
SS090704B03	Fraction 1 transferred for analysis
SS090704BS03	Fraction 1 transferred for analysis
SS090704BSD03	Fraction 1 transferred for analysis

Gravimetric Determination For Column

Analyst: JR
Date: 9/11/04

BATCH: 0408124G

Entered by: JR
Verified by: RPR

ETR #	Sample #	QC (MB, LCS, D)	Final Volume of Extract (ul)	Aliquot Removed #1 (ul)	Aliquot Removed #2 (ul)	Aliquot Weight #1 (mg)	Aliquot Weight #2 (mg)	Total Extract Oil Weight (mg)	Volume Removed For Column (ul)	Oil to Column (mg)	Dilution Factor	QC (%R, RPD)
		LCS	10000	50	NA	0.241	NA	48.20	NA	NA	NA	96%
0408124	1		2000	50	NA	0.412	NA	16.48	500	4.12	4.00	
0408124	2		2000	50	NA	0.561	NA	22.44	500	5.61	4.00	
0408124	3		2000	50	NA	0.216	NA	8.64	1000	4.32	2.00	
0408124	4		2000	50	NA	1.256	NA	50.24	200	5.02	10.00	
0408124	5		2000	50	NA	0.389	NA	15.56	500	3.89	4.00	
0408124	6		2000	50	NA	0.575	NA	23.00	400	4.60	5.00	
0408124	7		2000	50	NA	0.151	NA	6.04	1000	3.02	2.00	
0408124	8		2000	50	NA	0.110	NA	4.40	1000	2.20	2.00	
0408124	9		2000	50	NA	0.068	NA	2.72	1000	1.36	2.00	
0408124	10		2000	50	NA	0.077	NA	3.08	1000	1.54	2.00	
0408124	11		2000	50	NA	1.940	NA	77.60	100	3.88	20.00	
0408124	12		2000	50	NA	0.120	NA	4.80	1000	2.40	2.00	
0408124	13		2000	50	NA	0.110	NA	4.40	1000	2.20	2.00	
0408124	14		2000	50	NA	0.720	NA	28.80	400	5.76	5.00	
0408124	14	D	2000	50	NA	0.575	NA	23.00	400	4.60	5.00	22%
0408124	14	MS	2000	50	NA	0.586	NA	23.44	400	4.69	5.00	
0408124	15		2000	50	NA	0.295	NA	11.80	800	4.72	2.50	

Total Extract Oil Weight (mg) = (Final Volume of Extract / Aliquot Removed) * Aliquot Weight
Sample Weight (mg/mL) = 20 * Aliquot Weight (mg)
LCS TV = 5 mg/mL

Oil to Column = Total Extract Oil Weight (mg) / Dilution Factor
Dilution Factor = Final Volumne of Extract (ul) / Volume Removed For Column (ul)

TEMPLATE: GravimetricT.XLT
Duplicates should agree within +/- 10%.

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408124ST

Lab ID	Extract Vol. (ml)	Sample Name Vial	Vial Acid (ml)	Extraction Volume (ml)	Final Volume Equivalent	Screened By	Verified By	Aliquot 1 Removed (ml)	Aliquot 2 Removed (ml)	Date
0408124-01	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-02	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-04	900	SSWO83104D 1OF3	100	1000	10	MAL	RPR	500	500	9/13/04
0408124-05	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-06	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-07	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-08	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-09	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-10	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-11	900	SSWO83104D 1OF3	100	1000	20	MAL	RPR	500	500	9/13/04
0408124-12	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-13	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-14	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-14D	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-14MS	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-15	900	SSWO83104D 1OF3	100	1000	2.5	MAL	RPR	500	500	9/13/04
SS090704B03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
SS090704BS03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
SS090704BSD03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04

[1] Includes Internal Std

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408124ST

Sample ID	Analysis ID	Standard Code Mix	Volume Added (ml)	Dilution Volume (ml)	Dilution Factor	Spike Conc.	Analyst	Aliquot Volume (ml)	Aliquot Conc. (ug/L)	Date
0408124-01-F1	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408124-02-F1	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408124-03-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-04-F1	900	SSWO83104D 1OF3	100	1000	10	MAL	RPR	1000	NA	9/14/04
0408124-05-F1	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	1000	NA	9/14/04
0408124-06-F1	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408124-07-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-08-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-09-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-10-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-11-F1	900	SSWO83104D 1OF3	100	1000	20	MAL	RPR	1000	NA	9/14/04
0408124-12-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-13-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
0408124-14-F1	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408124-14D-F1	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408124-14MS-F1	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	1000	NA	9/14/04
0408124-15-F1	900	SSWO83104D 1OF3	100	1000	2.5	MAL	RPR	1000	NA	9/14/04
SS090704B03-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BS03-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04
SS090704BSD03-F1	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	1000	NA	9/14/04

[1] Includes Internal Std

```
   Sequence Name: C:\MSDChem\1\sequence\S3091602.S
         Comment: Dural column collection
        Operator: BL
       Data Path: C:\MSDCHEM\1\DATA\SEPT16\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ----------------------------------------------------------------------
   Line                      Sample Name/Misc Info
 1)  DualTwr
 2)  SepGC1
 3) RearSamp        1
     Datafile           FID 50 ug/mL
     Method             PAH30916
 4) Sample          2
     Datafile           ANS primer 1
     Method             PAH30916
 5)  RearSamp       1  DCM1      PAH30916 DCM1
 6) Sample          3
     Datafile           SA primer
     Method             PAH30916
 7)  RearSamp       1  DCM2      PAH30916 DCM2.1
 8) Sample          4
     Datafile           SSF primer
     Method             PAH30916
 9)  RearSamp       1  DCM3      PAH30916 DCM3.1
10)  Sample         5  DCM       PAH30916 DCM
11)  RearSamp       1  DCM3D     PAH30916 DCM3D
12)  Sample         6  I309161   PAH30916 I309161
13)  RearSamp       1  DCM4      PAH30916 DCM4.1
14)  Sample         7  I309162   PAH30916 I309162
15)  RearSamp       1  DCM5      PAH30916 DCM5.1
16)  Sample         8  I309163   PAH30916 I309163
17)  RearSamp       1  DCM6      PAH30916 DCM6.1
18)  Sample         9  I309164   PAH30916 I309164
19)  RearSamp       1  DCM7      PAH30916 DCM7.1
20)  Sample        10  I309165   PAH30916 I309165
21)  RearSamp       1  DCM8      PAH30916 DCM8.1
22)  Sample        11  I309166   PAH30916 I309166
23)  RearSamp       1  DCM9      PAH30916 DCM9.1
24)  Sample        12  I309167   PAH30916 I309167
25)  RearSamp       1  DCM1A     PAH30916 DCM1A
26)  Sample        13  Q30916    PAH30916 Q30916
27)  RearSamp       1  DCM2A     PAH30916 DCM2A
28)  Sample        14  ANS30916  PAH30916 ANS30916
29)  RearSamp       1  DCM1C     PAH30916 DCM1C
30)  Sample        13  Q30916B   PAH30916 Q30916B
31)  RearSamp       1  DCM3E     PAH30916 DCM3E
32)  Sample        15  SA30916   PAH30916 SA30916
33)  RearSamp       1  DCM3A     PAH30916 DCM3A
34)  Sample        16  SSF30916  PAH30916 SSF30916
```

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35)  RearSamp      1  DCM4B     PAH30916 DCM4B
36)  Sample       17  C309161   PAH30916 C309161
37)  RearSamp      1  DCM5B     PAH30916 DCM5B
38)  Sample       18  B10916    PAH30916 B10916
39)  RearSamp      1  DCM10     PAH30916 DCM10
40) Sample        19
     Datafile         TS091504B05
     Method           PAH30916
41)  RearSamp      1  DCM11     PAH30916 DCM11
42) Sample        20
     Datafile         TS091504BS05
     Method           PAH30916
43)  RearSamp      1  DCM12     PAH30916 DCM12
```

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Sequence Name: C:\MSDChem\1\sequence\S3091602.S

	Line Type	Vial	DataFile	Method	Sample Name
44)	Sample	21			
	Datafile		TS091504BSD02		
	Method		PAH30916		
45)	RearSamp	1	DCM13	PAH30916	DCM13
46)	Sample	22			
	Datafile		*0409052-02		
	Method		PAH30916		
47)	RearSamp	1	DCM14	PAH30916	DCM14
48)	Sample	23			
	Datafile		0409052-02D		
	Method		PAH30916		
49)	RearSamp	1	DCM15	PAH30916	DCM15
50)	Sample	24	C309162	PAH30916	C309162
51)	RearSamp	1	DCM16	PAH30916	DCM16
52)	Sample	25			
	Datafile		TS091004B11		
	Method		PAH30916		
53)	RearSamp	1	DCM17	PAH30916	DCM17
54)	Sample	26			
	Datafile		TS091004BS06		
	Method		PAH30916		
55)	RearSamp	1	DCM18	PAH30916	DCM18
56)	Sample	27			
	Datafile		TS091004BSD06		
	Method		PAH30916		
57)	RearSamp	1	DCM19	PAH30916	DCM19
58)	Sample	28			
	Datafile		0409041-01		
	Method		PAH30916		
59)	RearSamp	1	DCM20	PAH30916	DCM20
60)	Sample	29			
	Datafile		0409041-01D		
	Method		PAH30916		
61)	RearSamp	1	DCM21	PAH30916	DCM21
62)	Sample	30			
	Datafile		0409041-03		
	Method		PAH30916		
63)	RearSamp	1	DCM22	PAH30916	DCM22
64)	Sample	31	C309163	PAH30916	C309163

Sequence Name: C:\MSDChem\1\sequence\S3092001.S
Comment:
Operator: BL
Data Path: C:\MSDCHEM\1\DATA\SEPT20\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

New new copy of the sequence

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

BL 9-20-04

Line		Sample Name/Misc Info
1) Sample	1	C309201 PAH30916 C309201 ✓ok w.w
2) Sample	2	
Datafile		SS090704B03 ✓ low SPCH)
Method		PAH30916
3) Sample	3	
Datafile		SS090704BS03 ✓ low SPCH), ok
Method		PAH30916
4) Sample	4	
Datafile		SS090704BSD03 ✓ ok
Method		PAH30916
5) Sample	5	
Datafile		0408124-01 ✓
Method		PAH30916
6) Sample	6	
Datafile		0408124-02
Method		PAH30916 ✓
7) Sample	7	
Datafile		0408124-03 ✓
Method		PAH30916
8) Sample	8	
Datafile		0408124-04 ✓
Method		PAH30916
9) Sample	9	
Datafile		0408124-05 ✓
Method		PAH30916
10) Sample	10	
Datafile		-0408124-06 ✓
Method		PAH30916
11) Sample	11	
Datafile		0408124-07 ✓ WW gms
Method		PAH30916
12) Sample	12	C309202 PAH30916 C309202 ✓ok w.w
13) Sample	13	
Datafile		0408124-08 ✓ gms
Method		PAH30916
14) Sample	14	
Datafile		0408124-09
Method		PAH30916
15) Sample	15	
Datafile		0408124-10
Method		PAH30916
16) Sample	16	

Last Modified: Mon Sep 20 11:21:30 2004 Page: 1

Datafile 0408124-11
Method PAH30916
17) Sample 17
Datafile 0408124-12
Method PAH30916
18) Sample 18
Datafile 0408124-13
Method PAH30916
19) Sample 19
Datafile 0408124-14
Method PAH30916
20) Sample 20
Datafile 0408124-14D
Method PAH30916
21) Sample 21
Datafile 0408124-14M ✓
Method PAH30916
22) Sample 22
Datafile 0408124-15
Method PAH30916
23) Sample 23 C309203 PAH30916 C309203 ✓ ok w.w
24) Sample 24
Datafile SS090704B03-F1
Method PAH30916
25) Sample 25
Datafile SS090704BS03-F1
Method PAH30916
26) Sample 26
Datafile SS090704BSD03-F1
Method PAH30916
27) Sample 27
Datafile 0408124-01-F1
Method PAH30916
28) Sample 28
Datafile 0408124-02-F1
Method PAH30916
29) Sample 29
Datafile 0408124-03-F1
Method PAH30916
30) Sample 30
Datafile 0408124-04-F1
Method PAH30916
31) Sample 31
Datafile 0408124-05-F1
Method PAH30916
32) Sample 32
Datafile 0408124-06-F1
Method PAH30916
33) Sample 33
Datafile 0408124-07-F1
Method PAH30916
34) Sample 34 C309204 PAH30916 C309204 ✓ cw
35) Sample 35
Datafile 0408124-08-F1
Method PAH30916
36) Sample 36
Datafile 0408124-09-F1
Method PAH30916
37) Sample 37
Datafile 0408124-10-F1

```
     Method              PAH30916
38)  Sample         38
     Datafile            0408124-11-F1
     Method              PAH30916
39)  Sample         39
     Datafile            0408124-12-F1
     Method              PAH30916
40)  Sample         40
     Datafile            0408124-13-F1
     Method              PAH30916
41)  Sample         41
     Datafile            0408124-14-F1
     Method              PAH30916
42)  Sample         42
     Datafile            0408124-14D-F1
     Method              PAH30916
43)  Sample         43
     Datafile            0408124-14MS-F1
     Method              PAH30916
```

Sequence Name: C:\MSDChem\1\sequence\S3092001.S

Line Type	Vial	DataFile	Method	Sample Name
44) Sample	44			
Datafile		0408124-15-F1		
Method		PAH30916		
45) Sample	45	C309205	PAH30916	C309205 ✓ok

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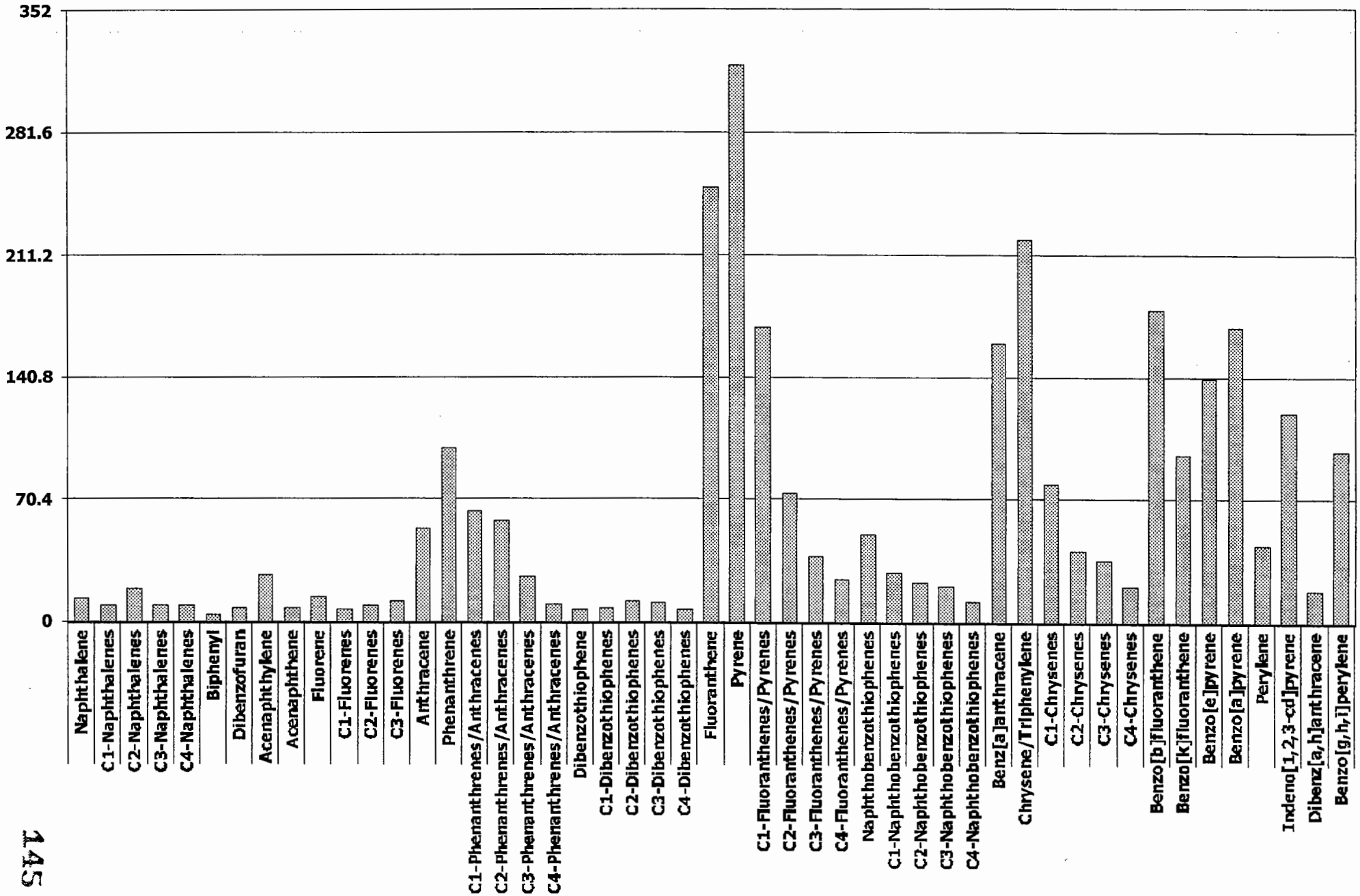
Ion Plots
&
Histograms

Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-08-082604** Lab ID: **0408124-01**

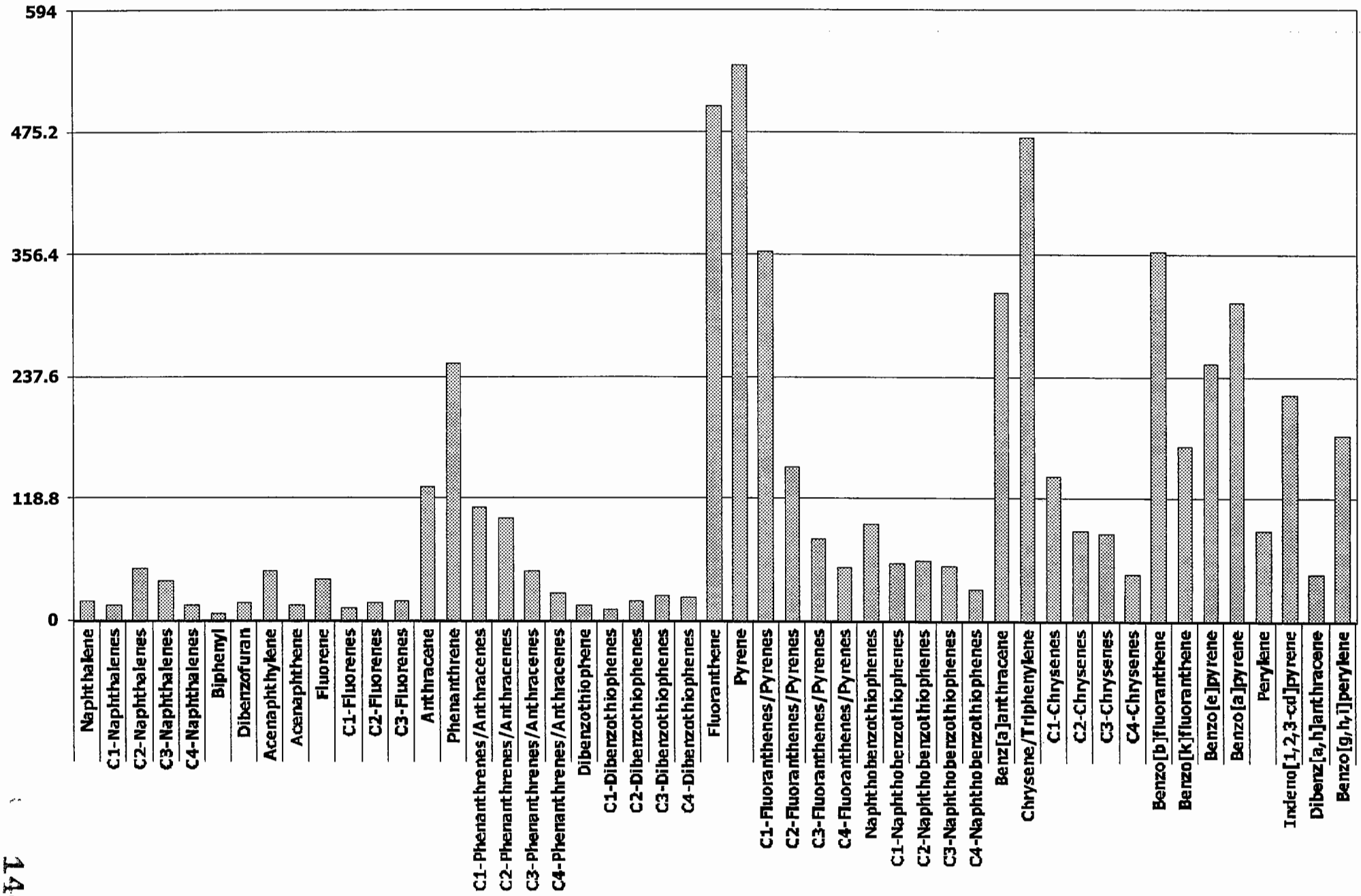
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-04-082604** Lab ID: **0408124-02**

Concentration: µg/Kg

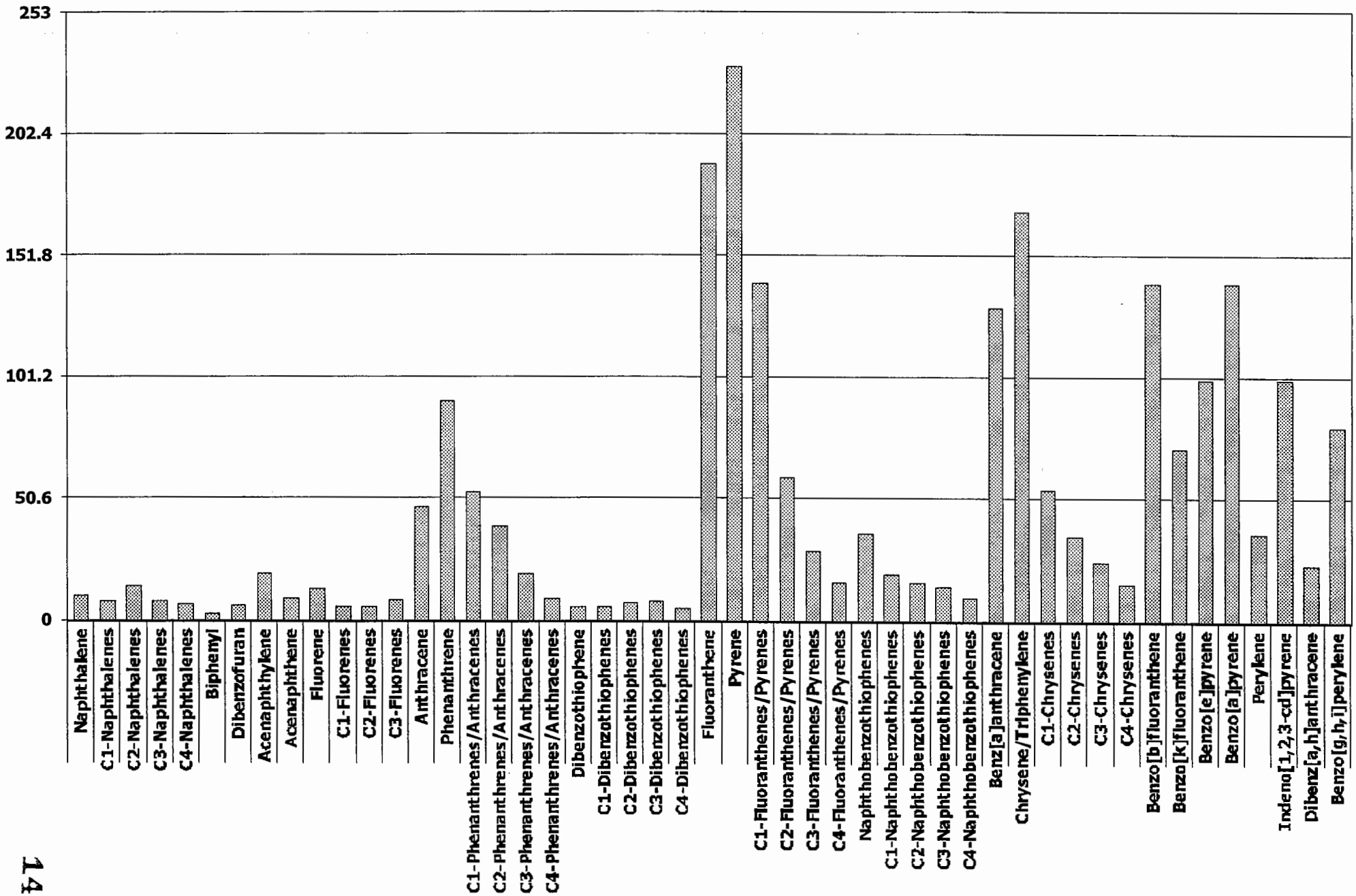


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-20-082604**

Lab ID: **0408124-03**

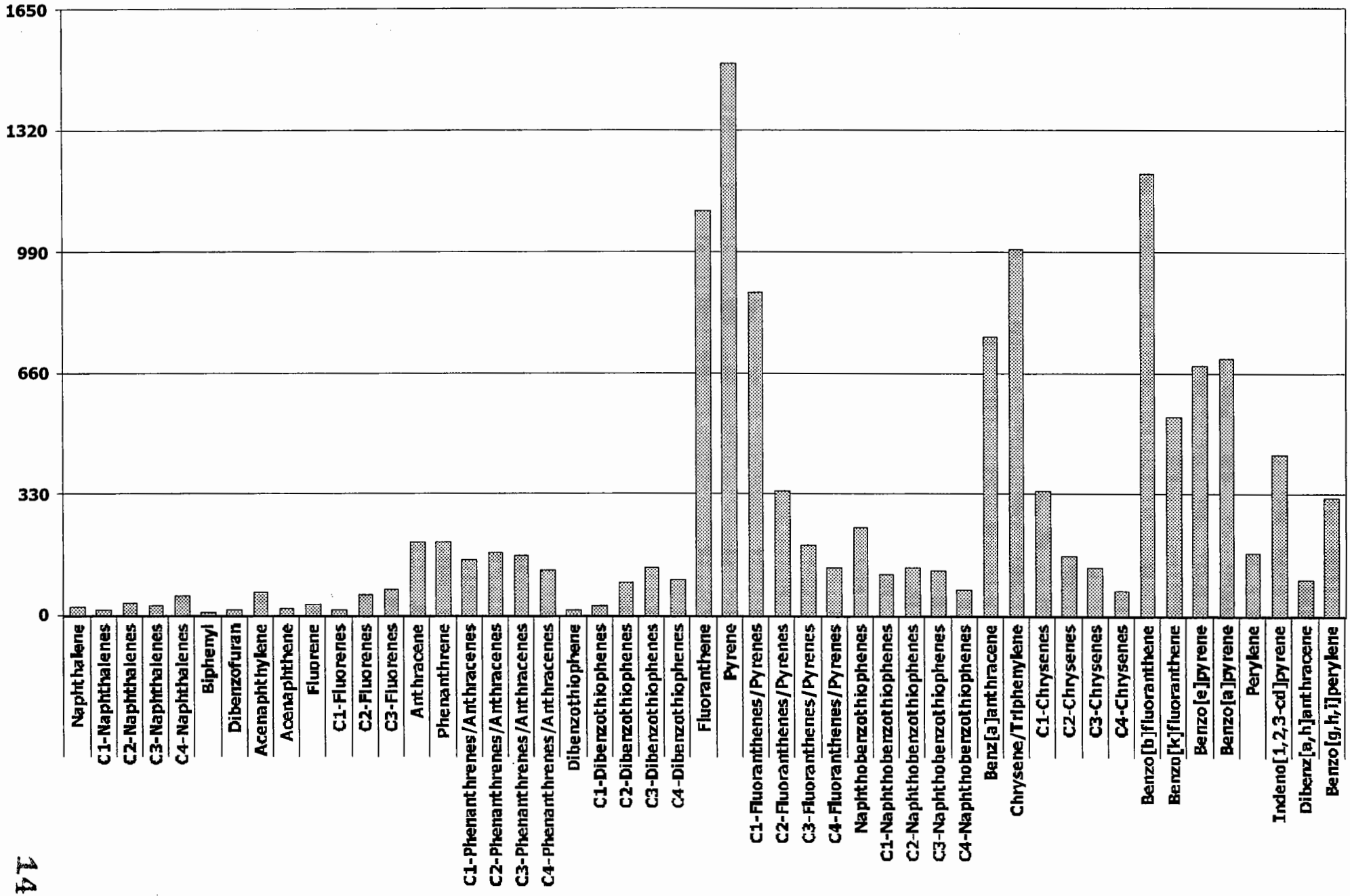
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-27-082604** Lab ID: **0408124-04**

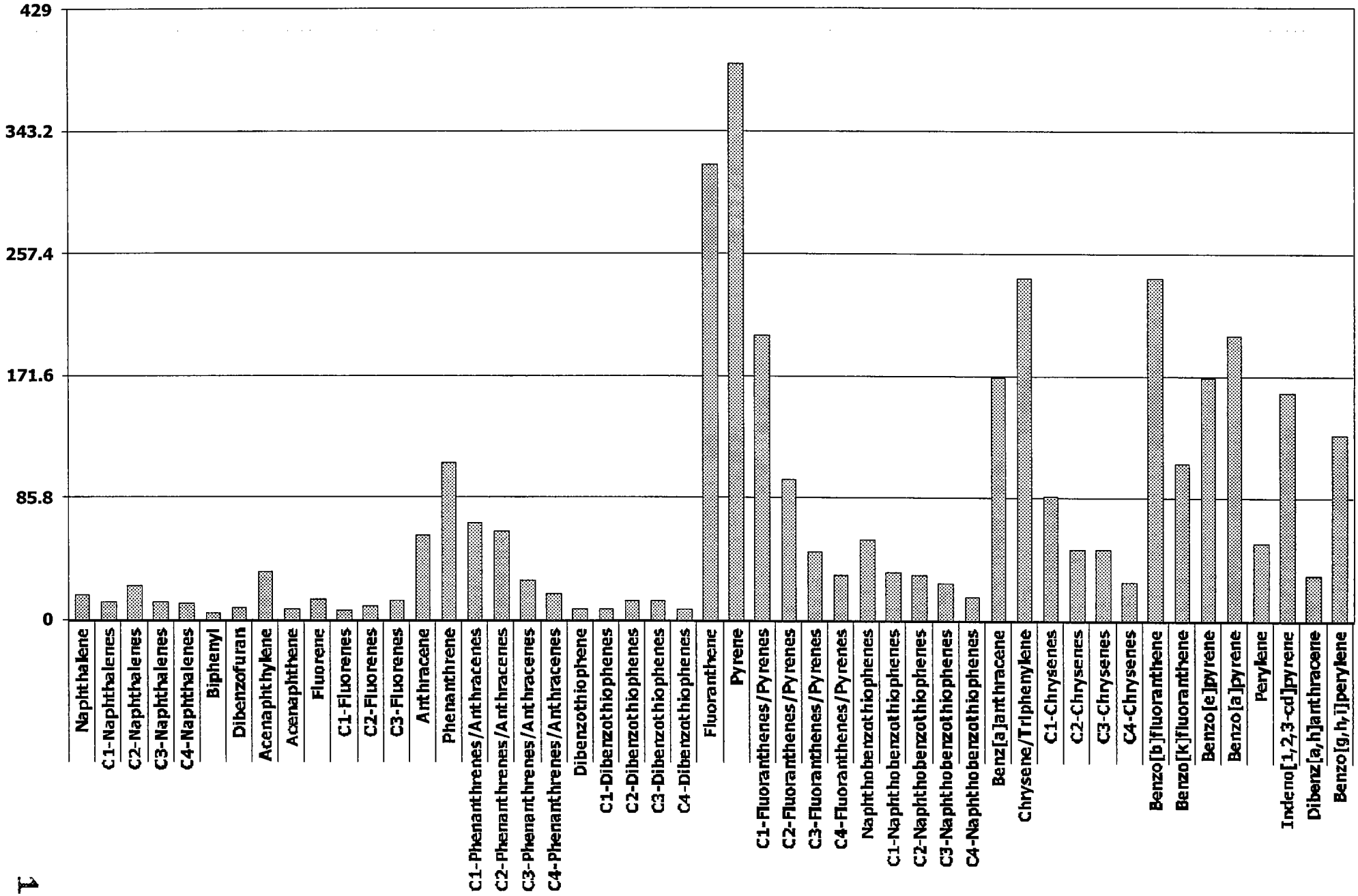
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-31-082604** Lab ID: **0408124-05**

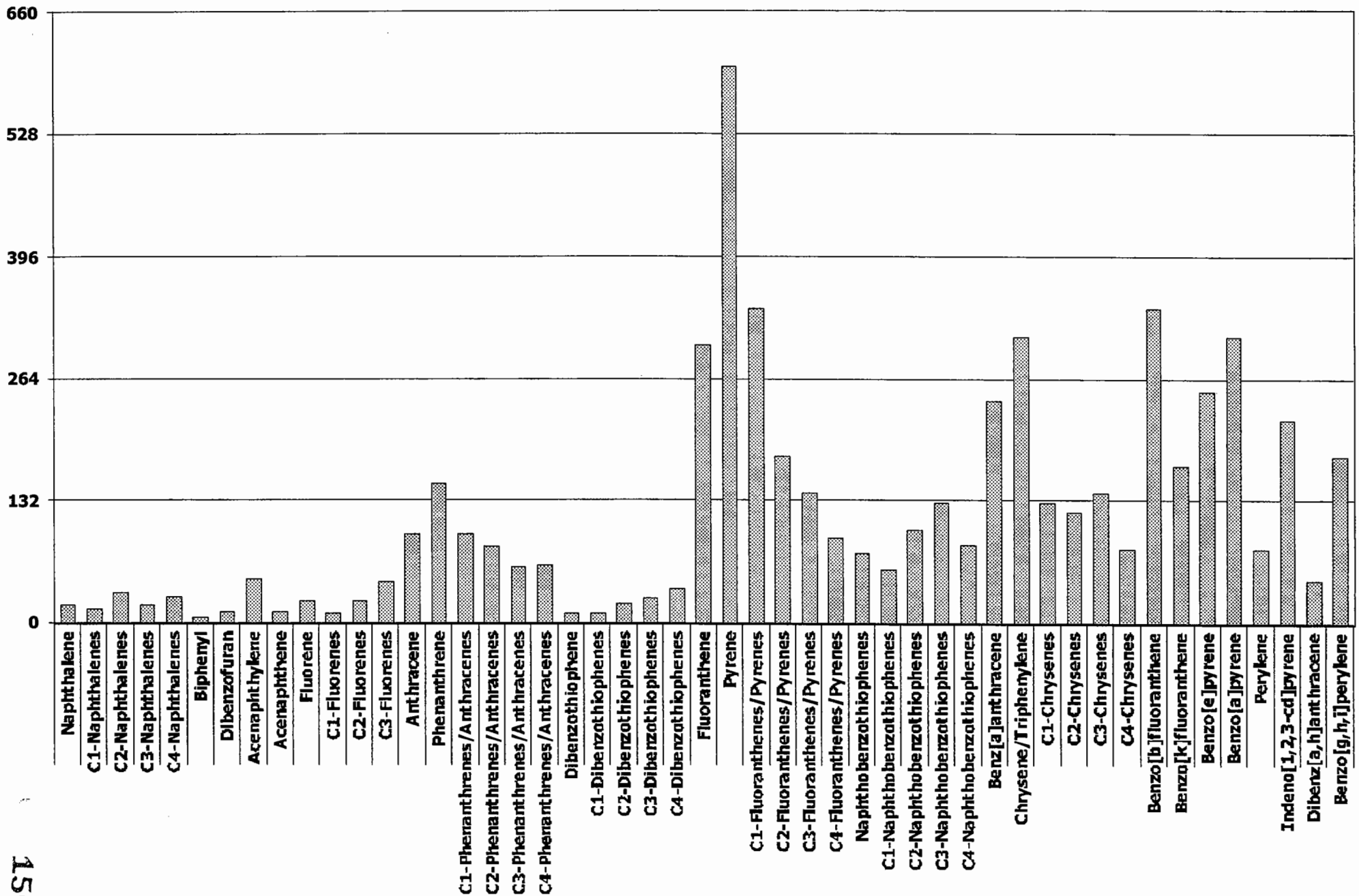
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-11-082604** Lab ID: **0408124-06**

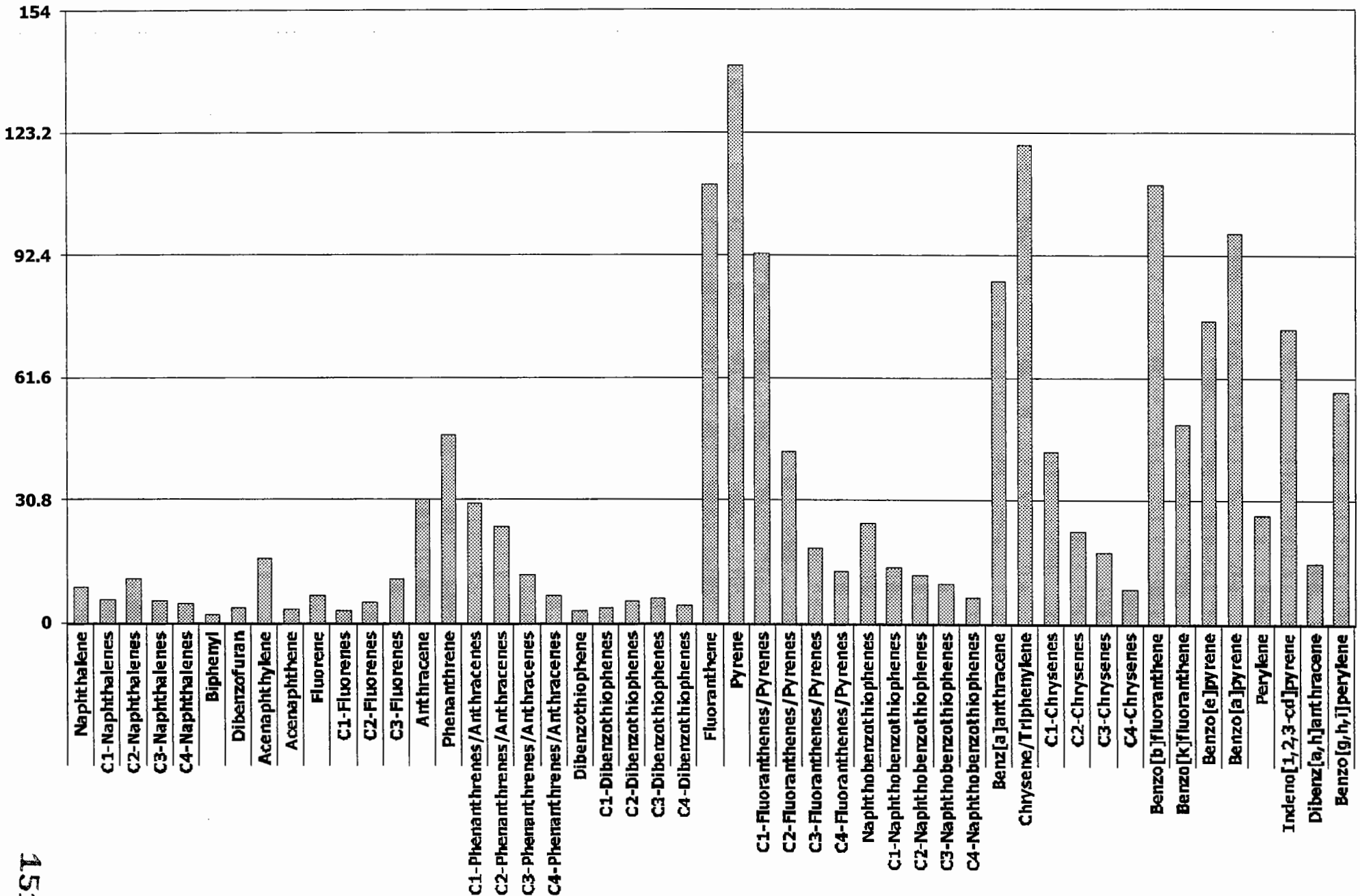
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-32-082604** Lab ID: **0408124-07**

Concentration: µg/Kg

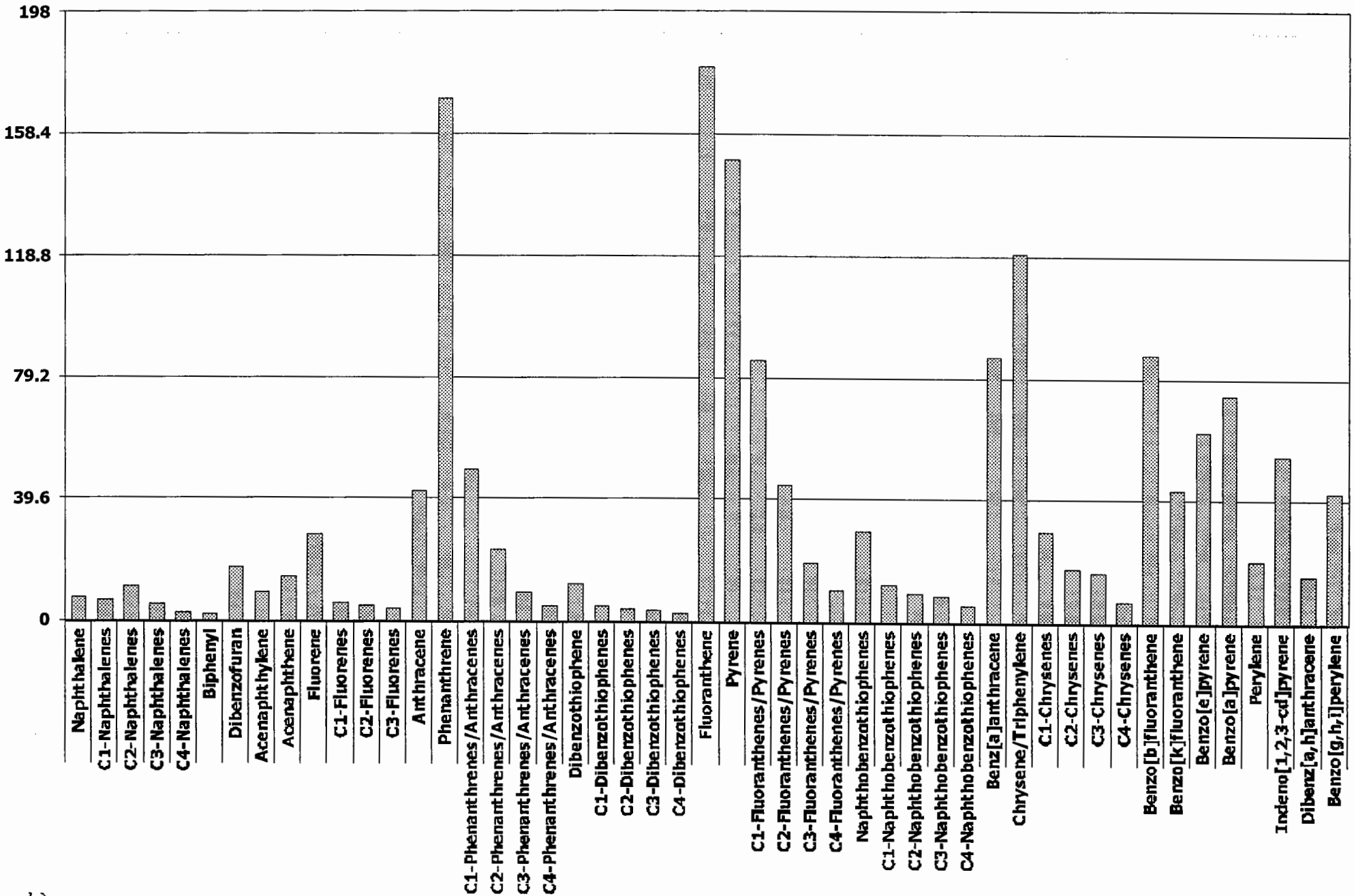


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-36-082604**

Lab ID: **0408124-08**

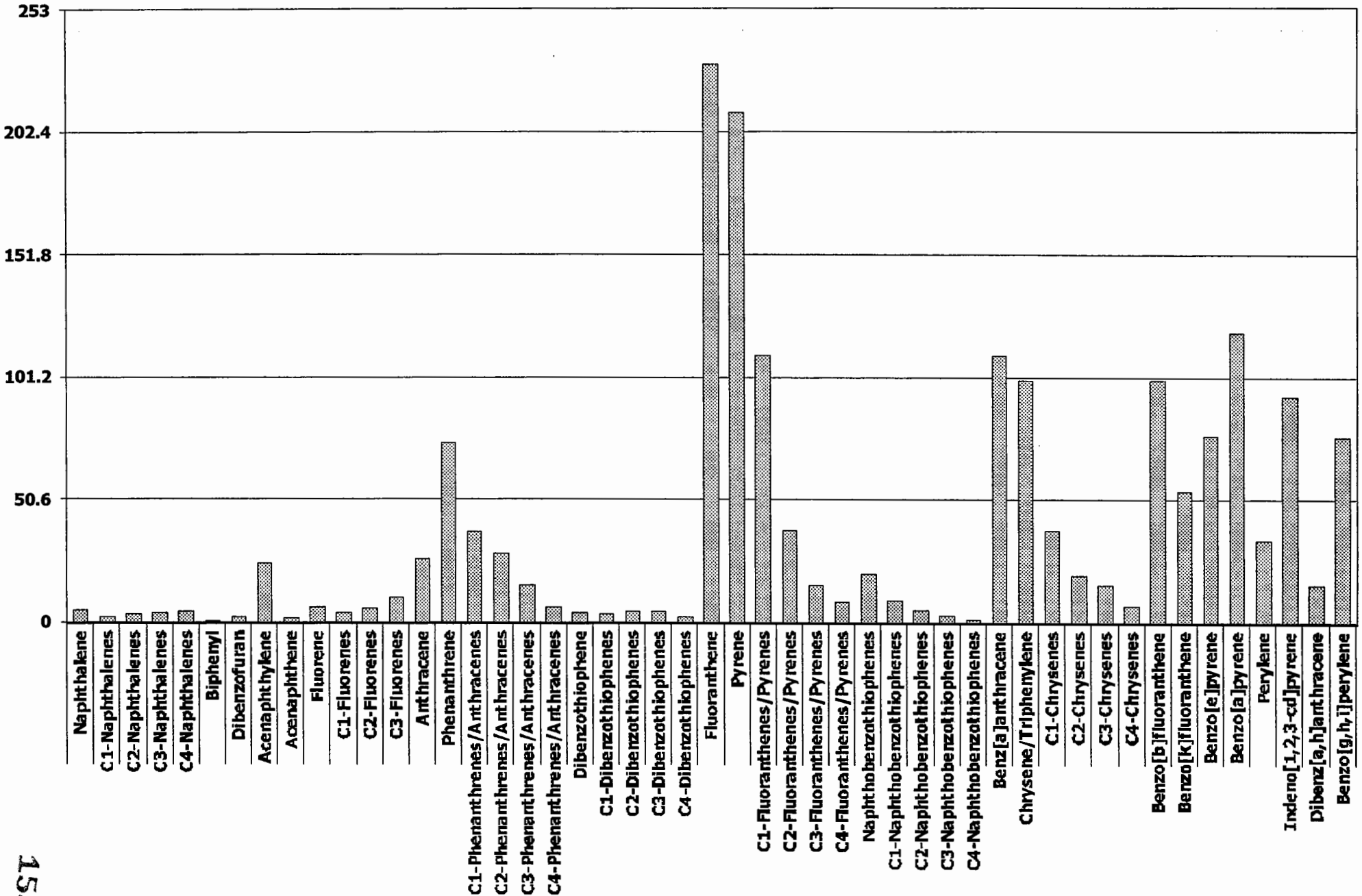
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-CC01-082604** Lab ID: **0408124-09**

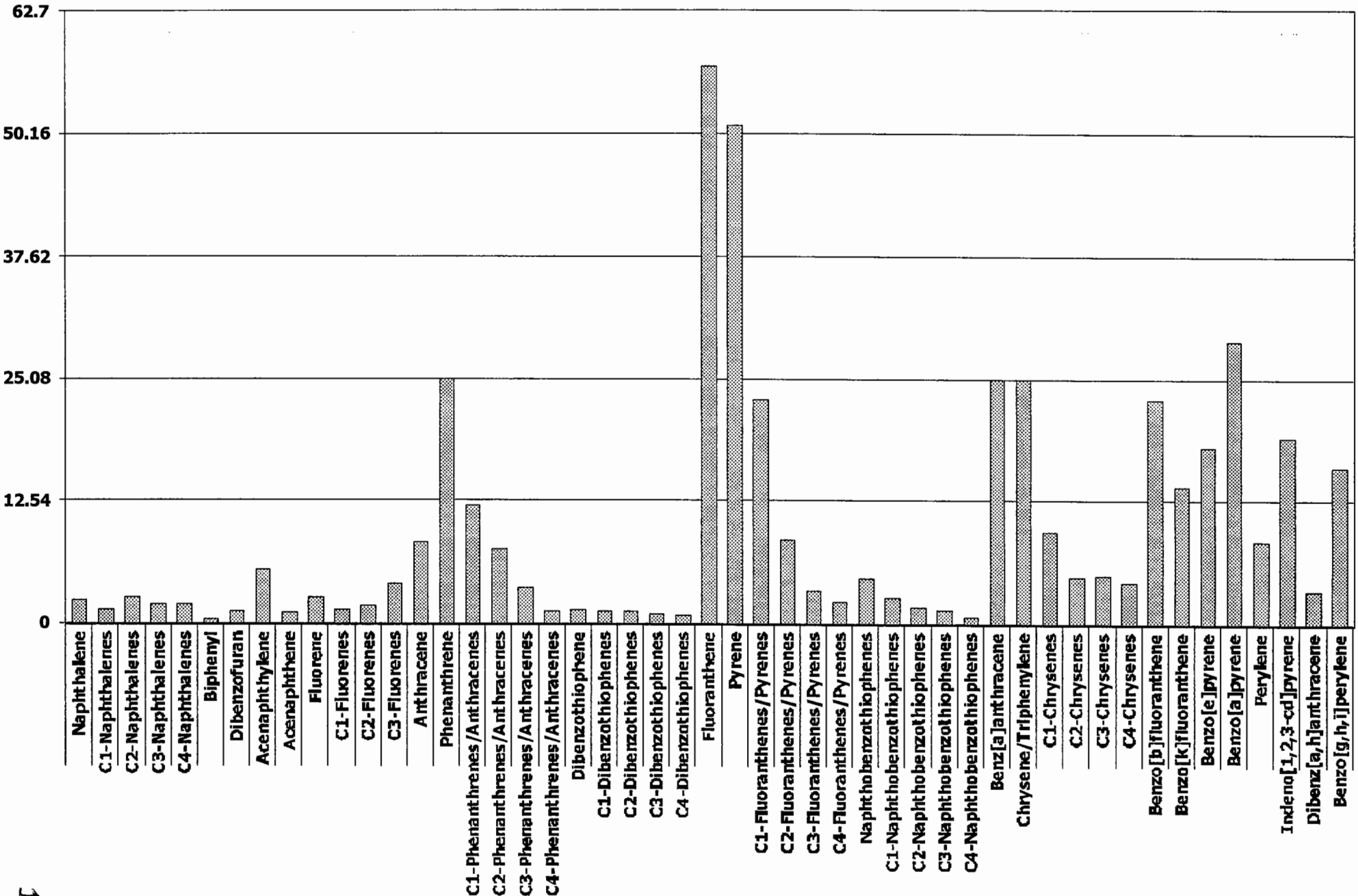
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-CC02-082604** Lab ID: **0408124-10**

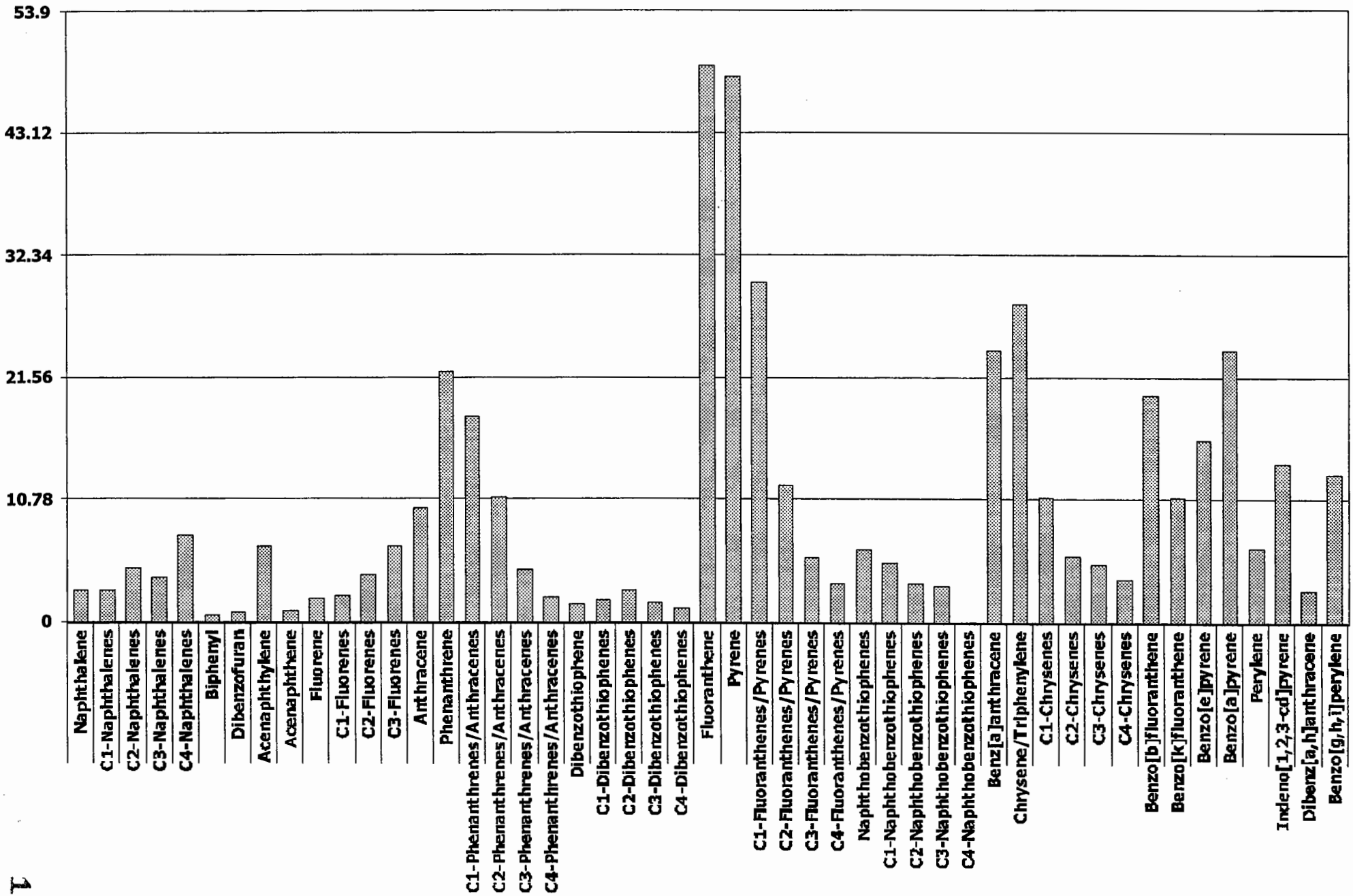
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-JPC01-082604** Lab ID: **0408124-11**

Concentration: µg/Kg

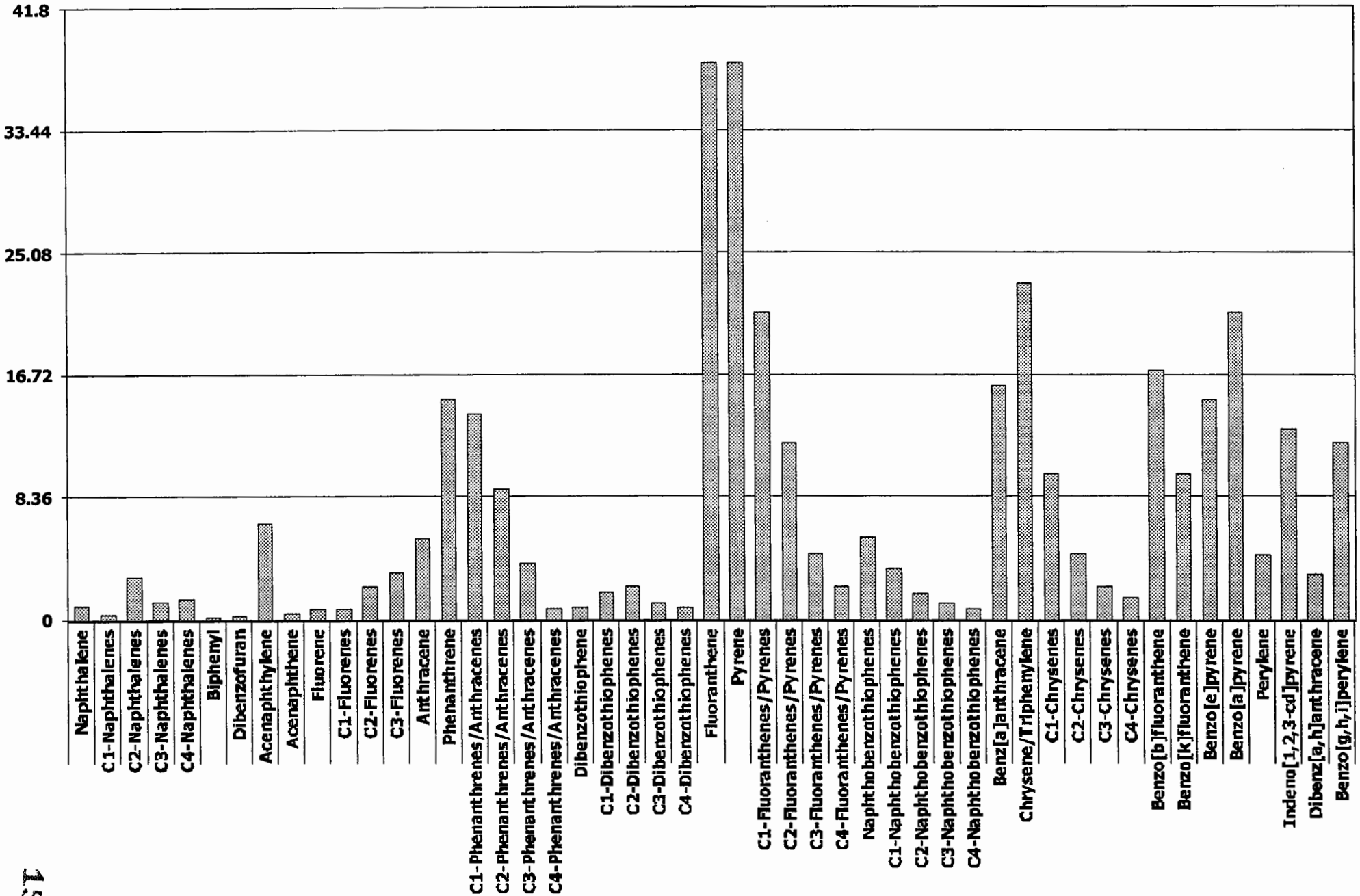


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-JPC03-082604**

Lab ID: **0408124-12**

Concentration: µg/Kg

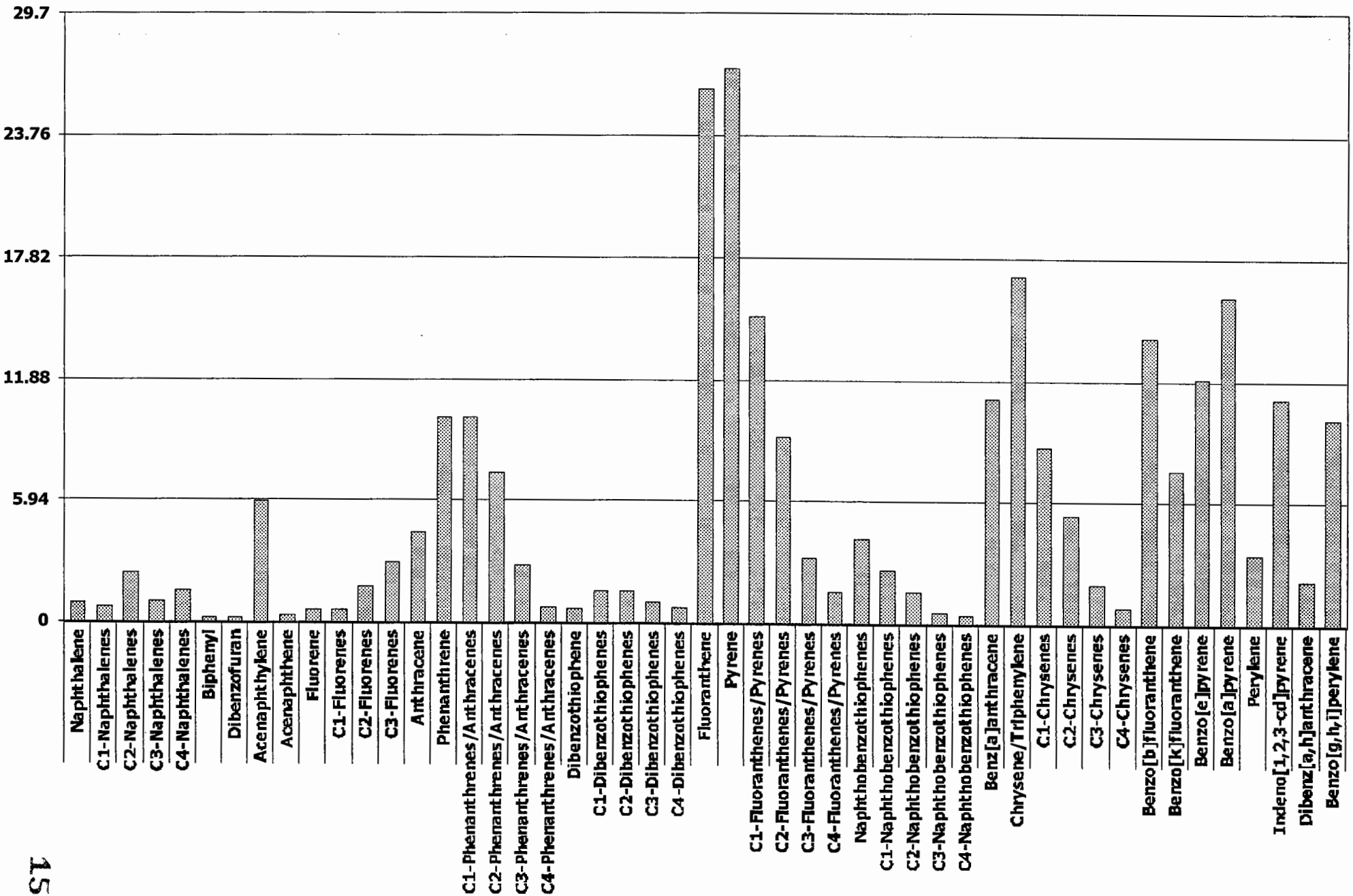


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-DUP03-082604**

Lab ID: **0408124-13**

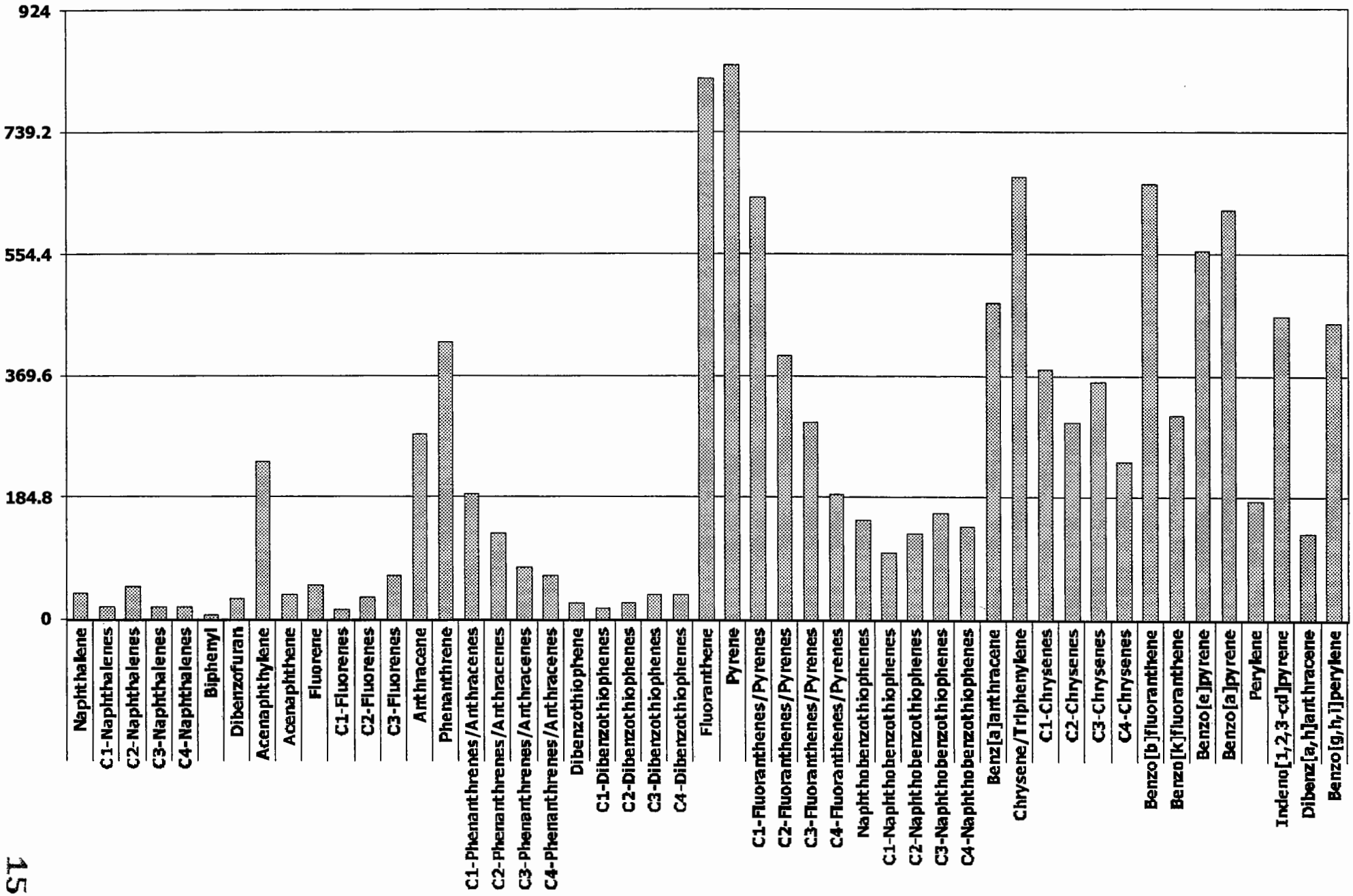
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-CH01-082604** Lab ID: **0408124-14**

Concentration: µg/Kg

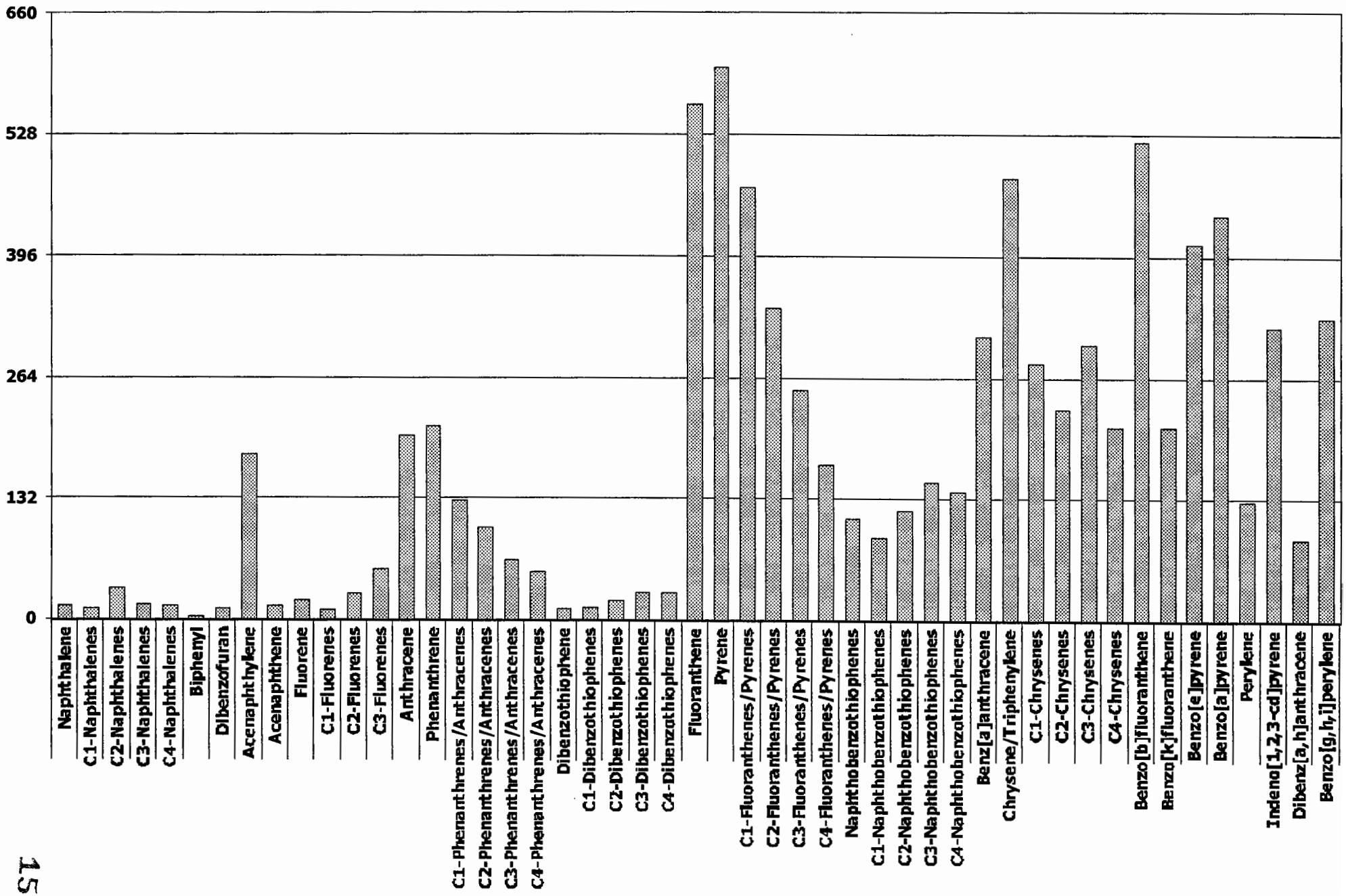


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-CH01-082604**

Lab ID: **0408124-14 D**

Concentration: µg/Kg

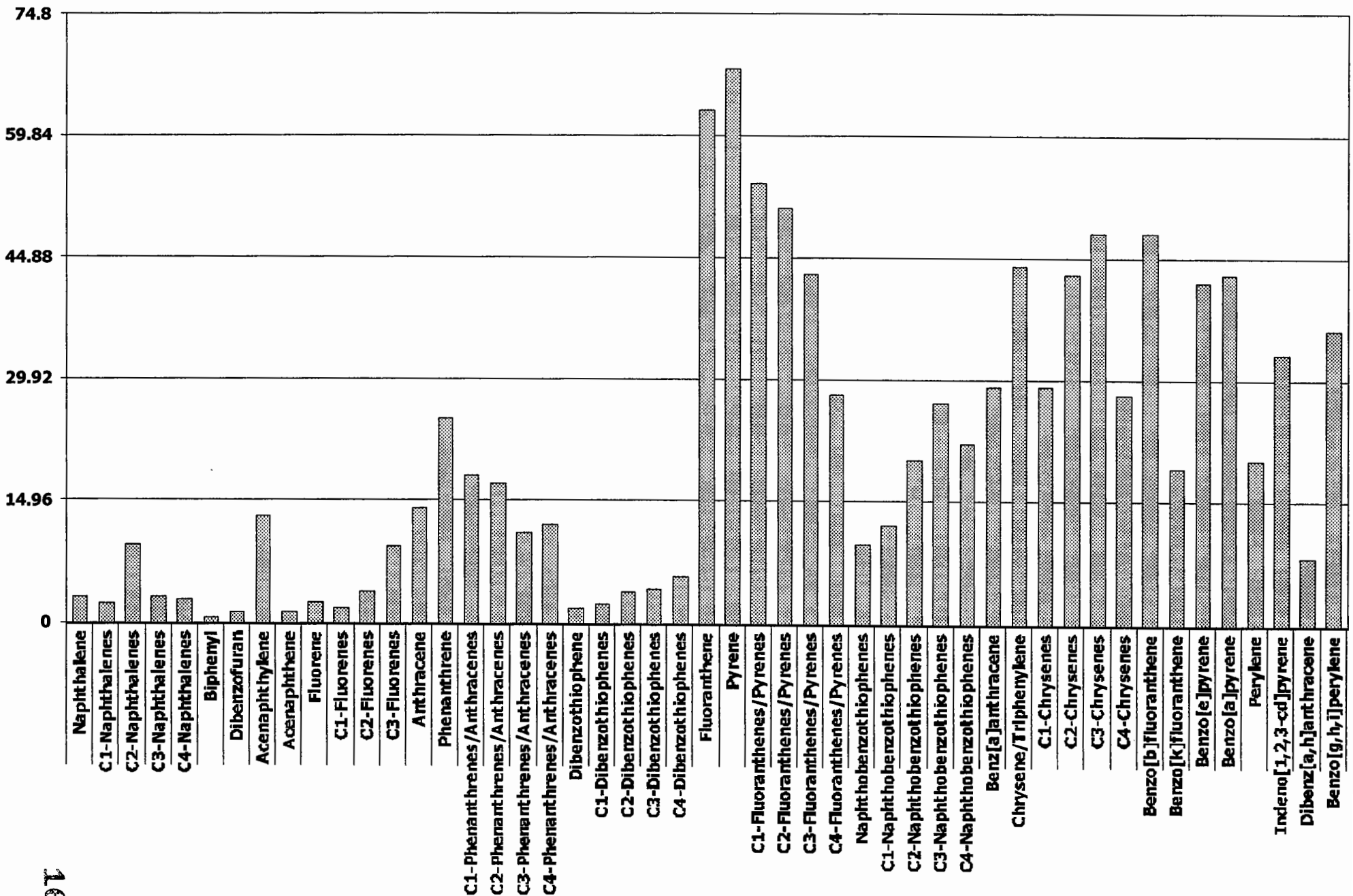


Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **DSY-SD-CH02-082604**

Lab ID: **0408124-15**

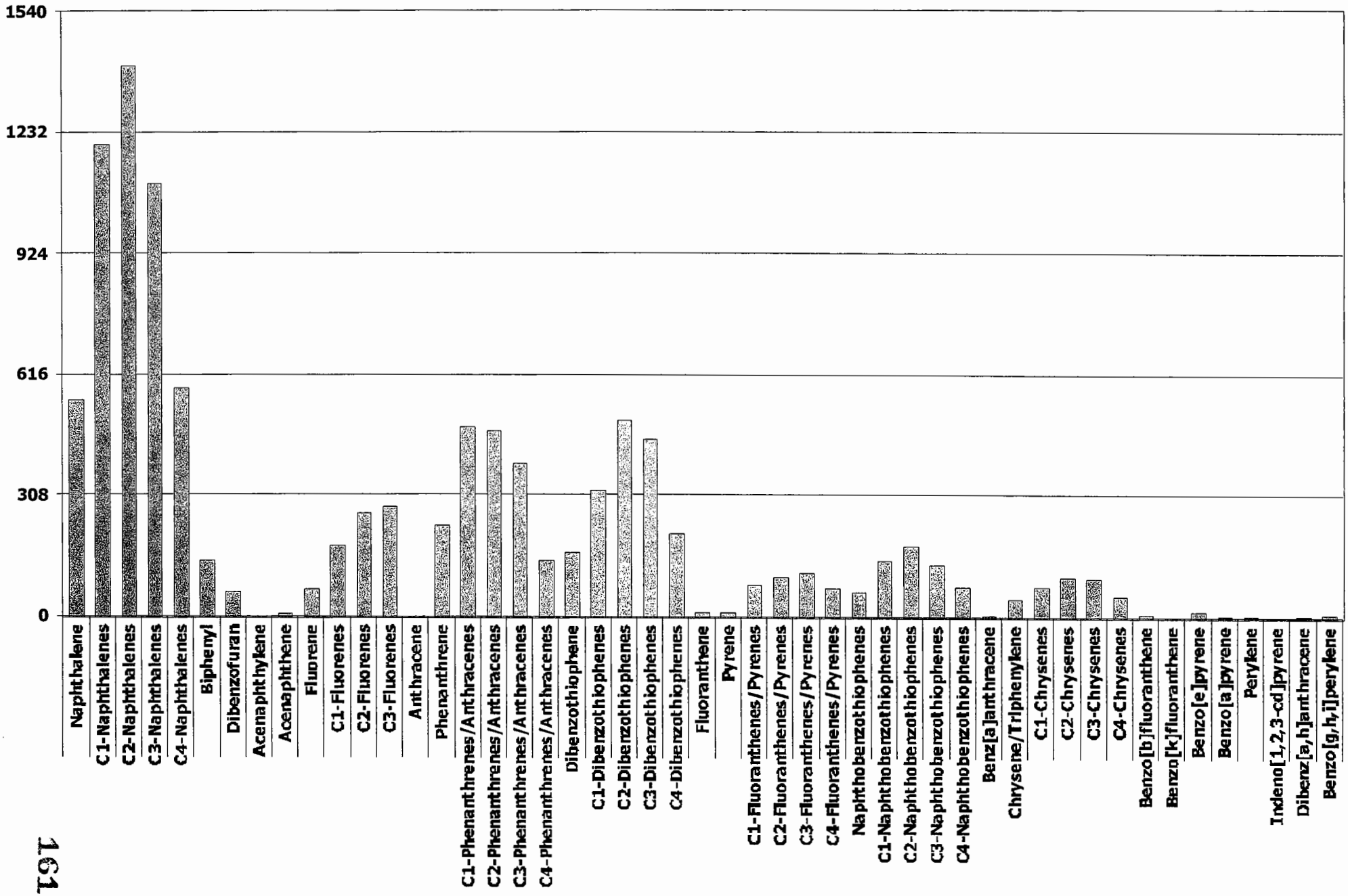
Concentration: µg/Kg



Alkylated Polynuclear Aromatic Hydrocarbons Distributions

Client ID: **Alaska North Slope Crude** Lab ID: **SS092404AWS01**

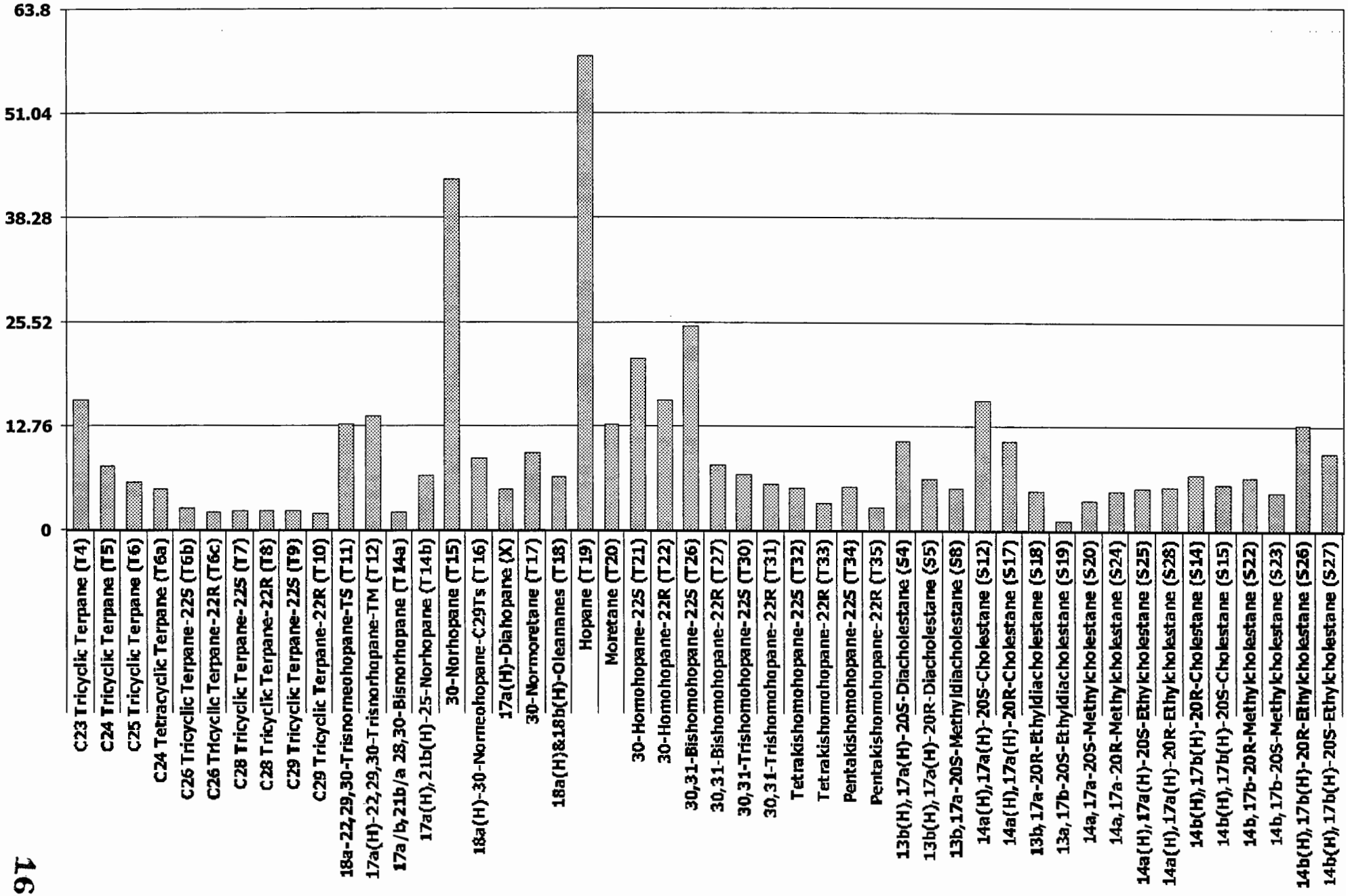
Concentration: mg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-08-082604** Lab ID: **0408124-01**

Concentration: µg/Kg

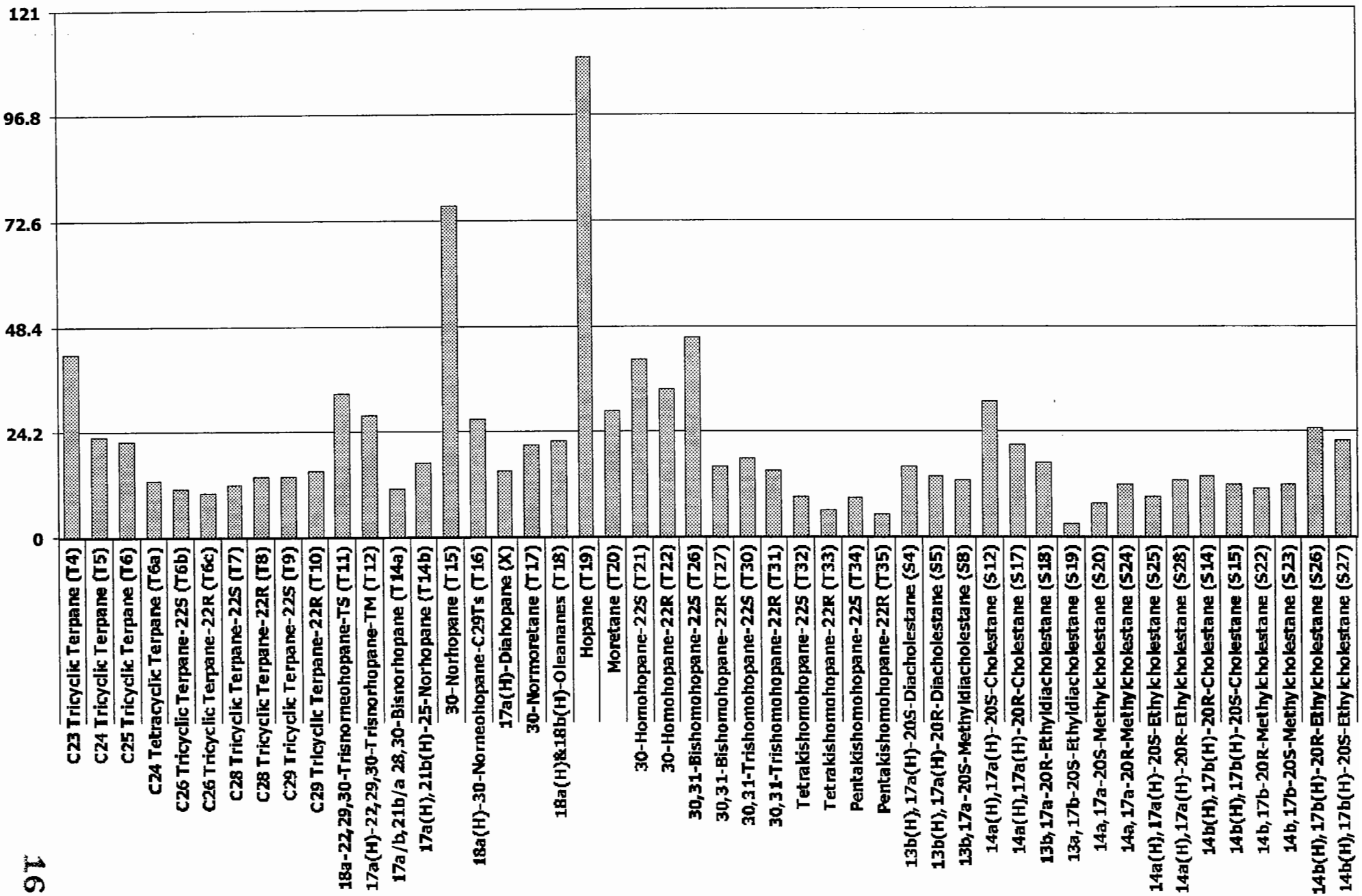


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-04-082604**

Lab ID: **0408124-02**

Concentration: µg/Kg

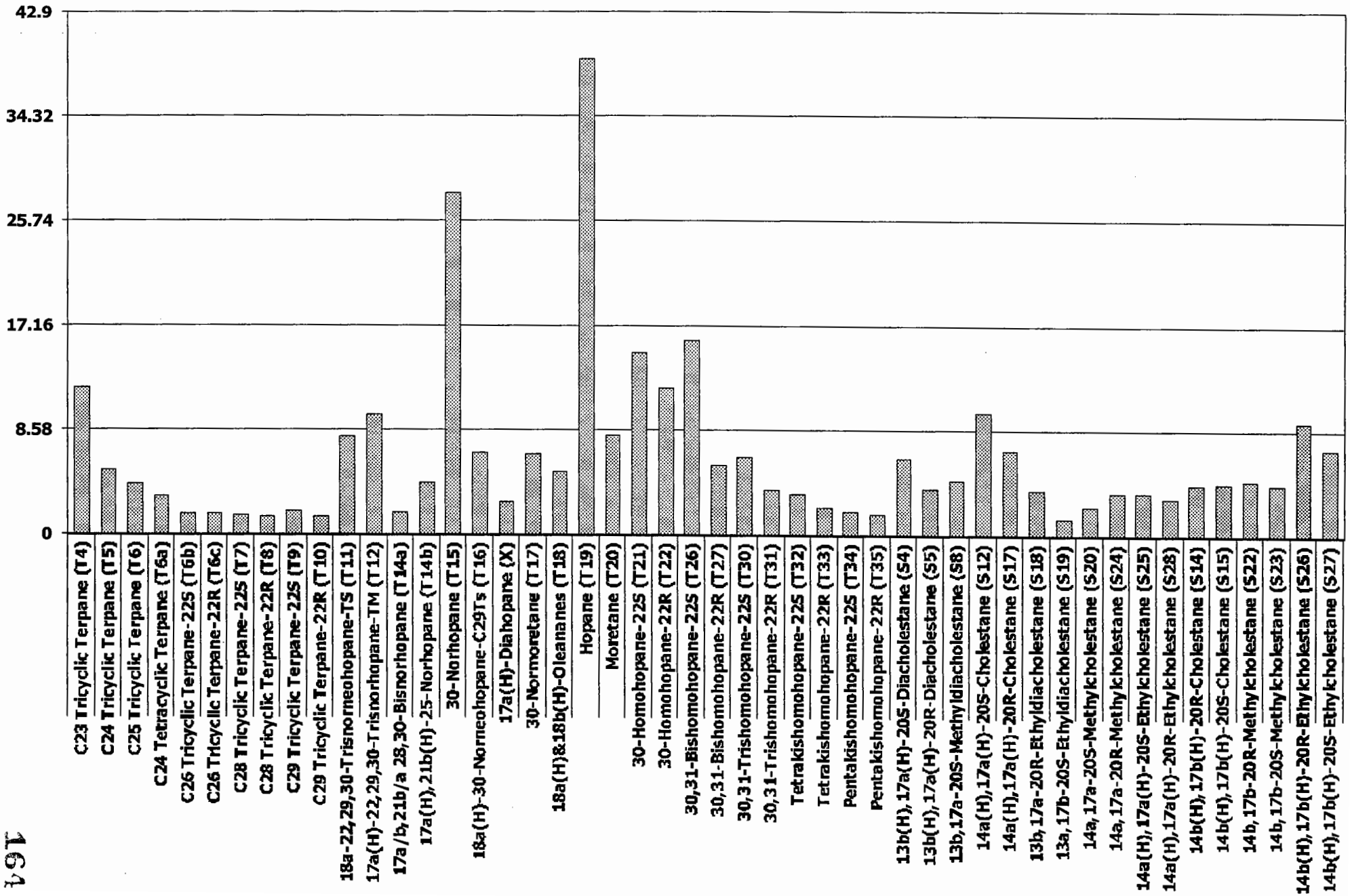


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-20-082604**

Lab ID: **0408124-03**

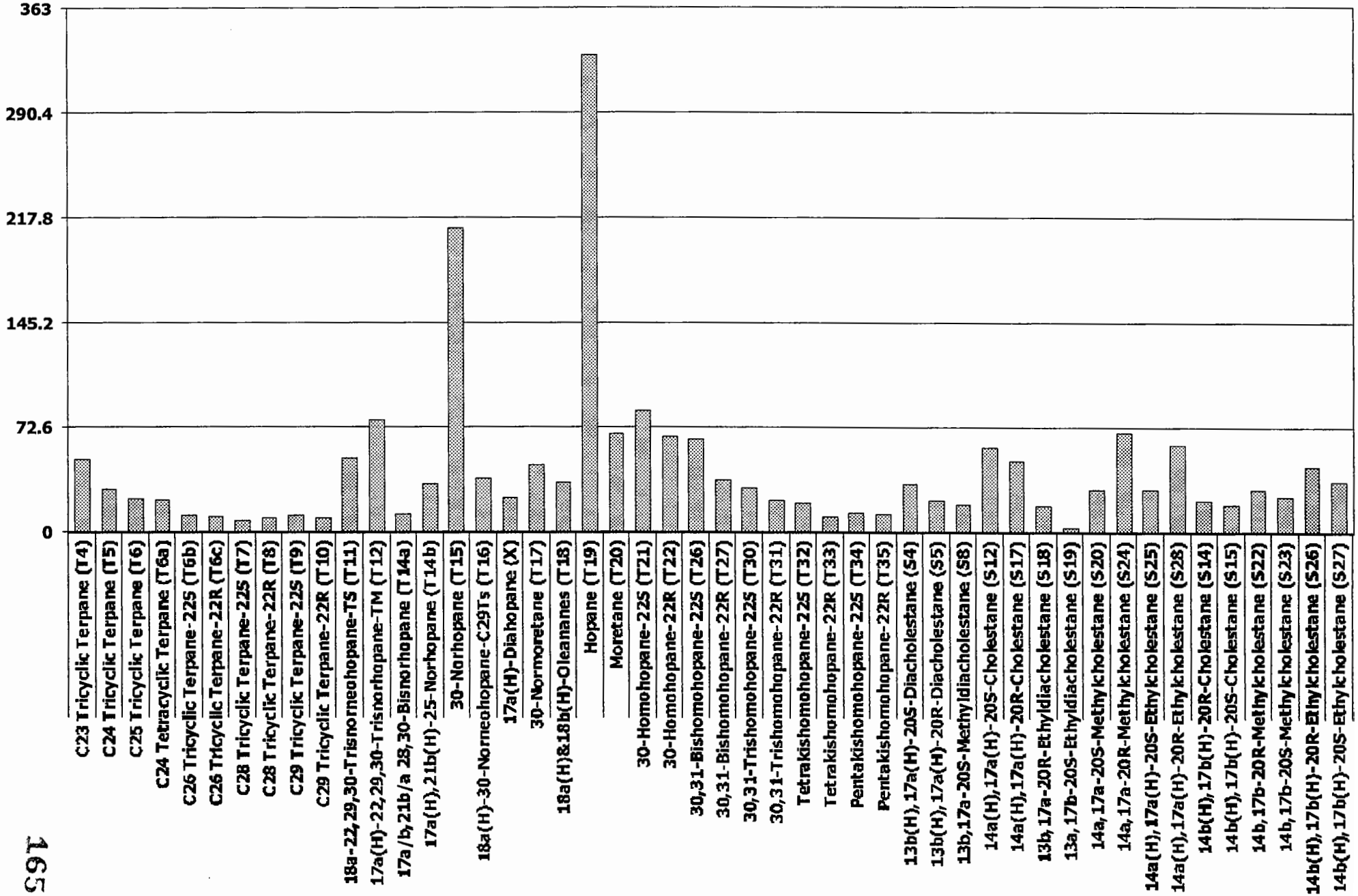
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-27-082604** Lab ID: **0408124-04**

Concentration: µg/Kg

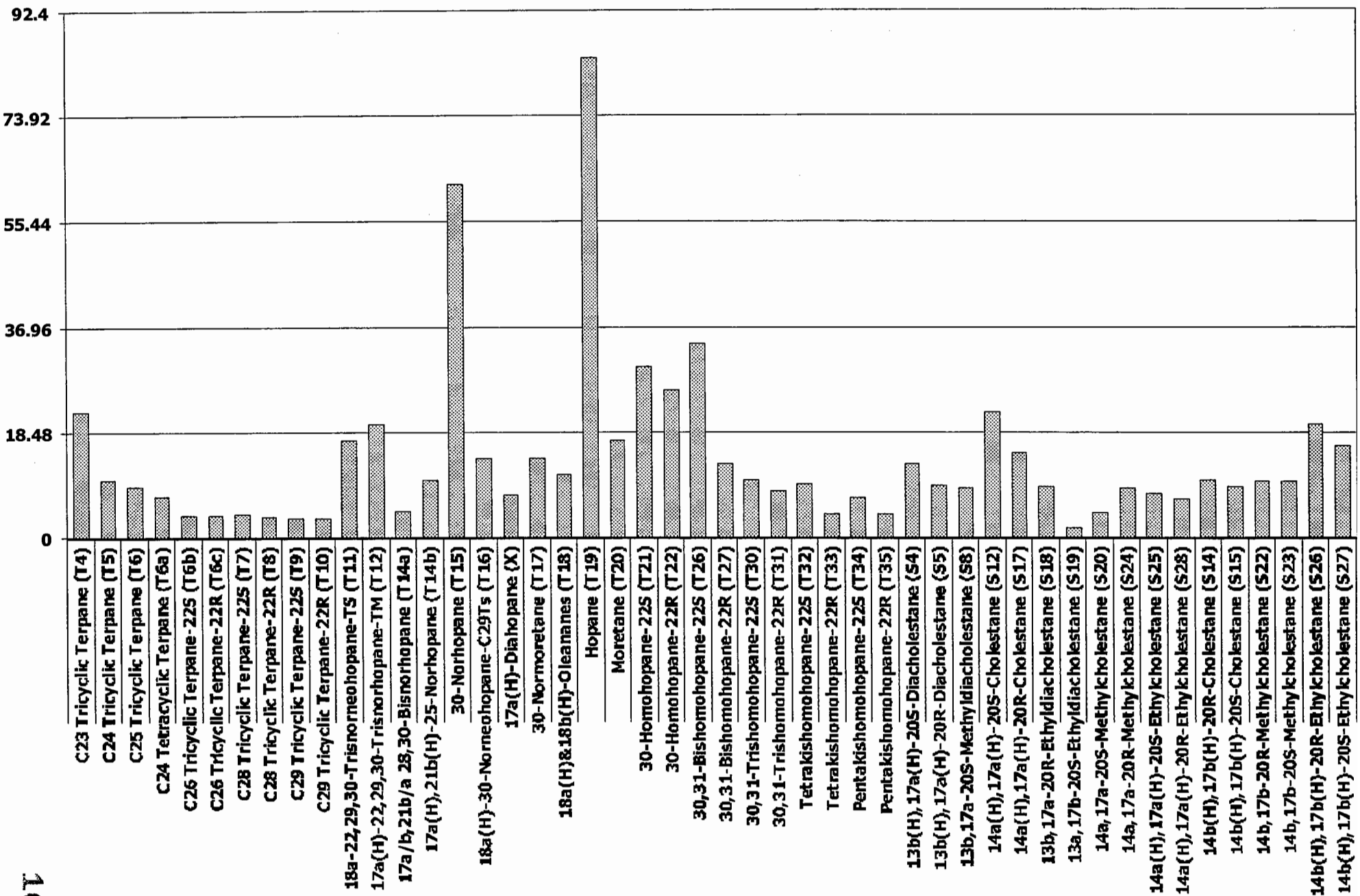


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-31-082604**

Lab ID: **0408124-05**

Concentration: µg/Kg

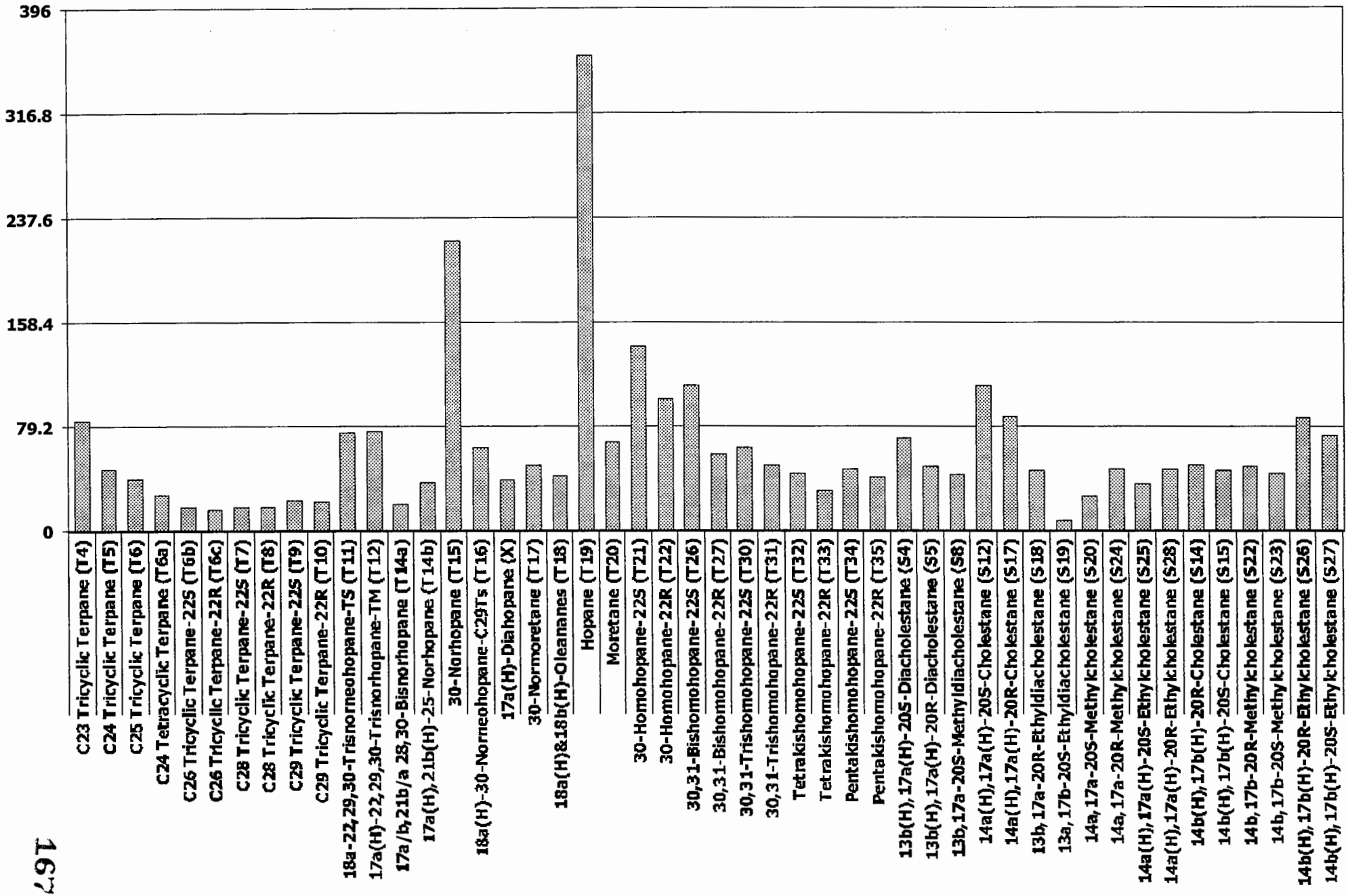


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-11-082604**

Lab ID: **0408124-06**

Concentration: µg/Kg

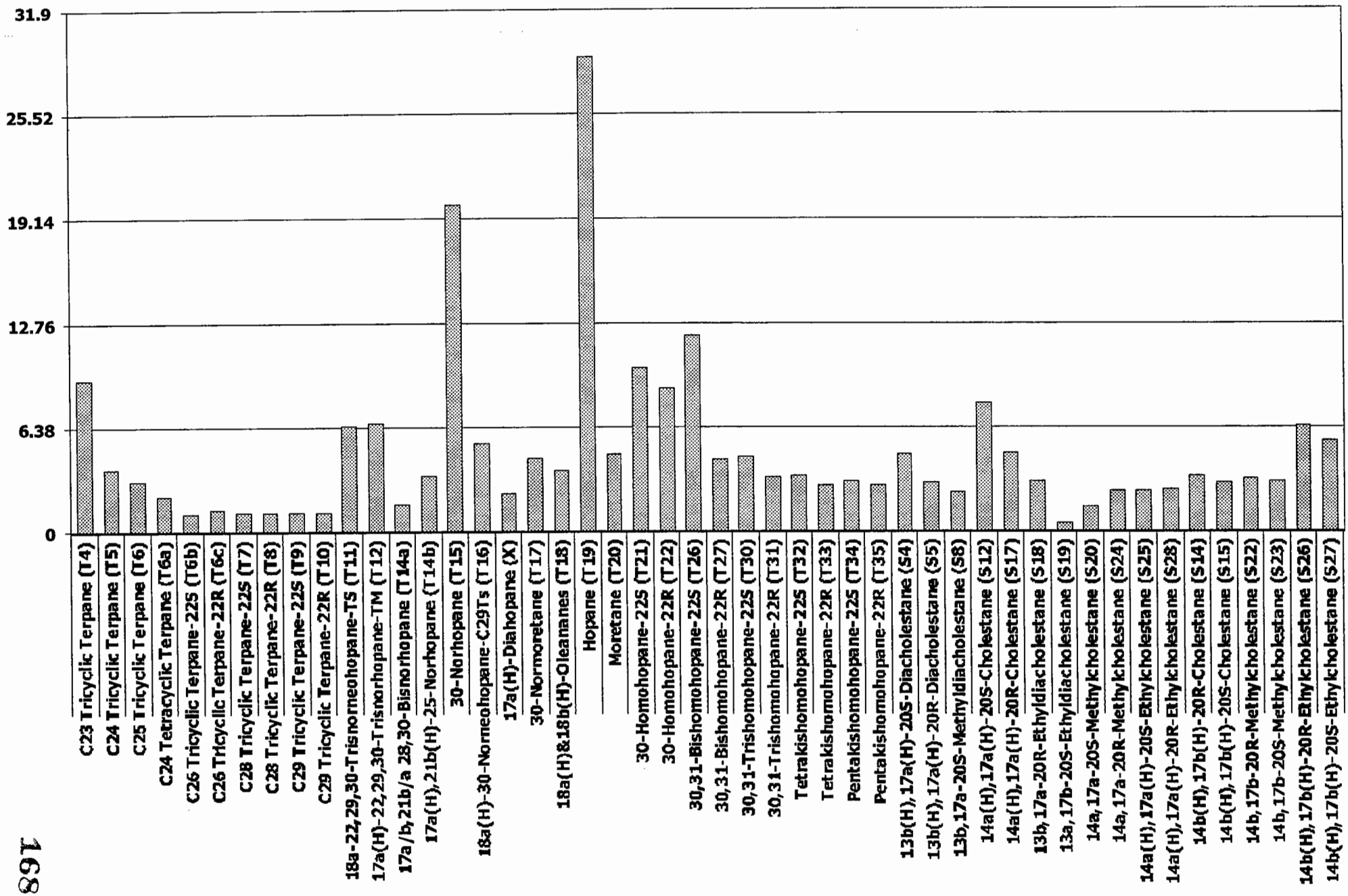


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-32-082604**

Lab ID: **0408124-07**

Concentration: µg/Kg

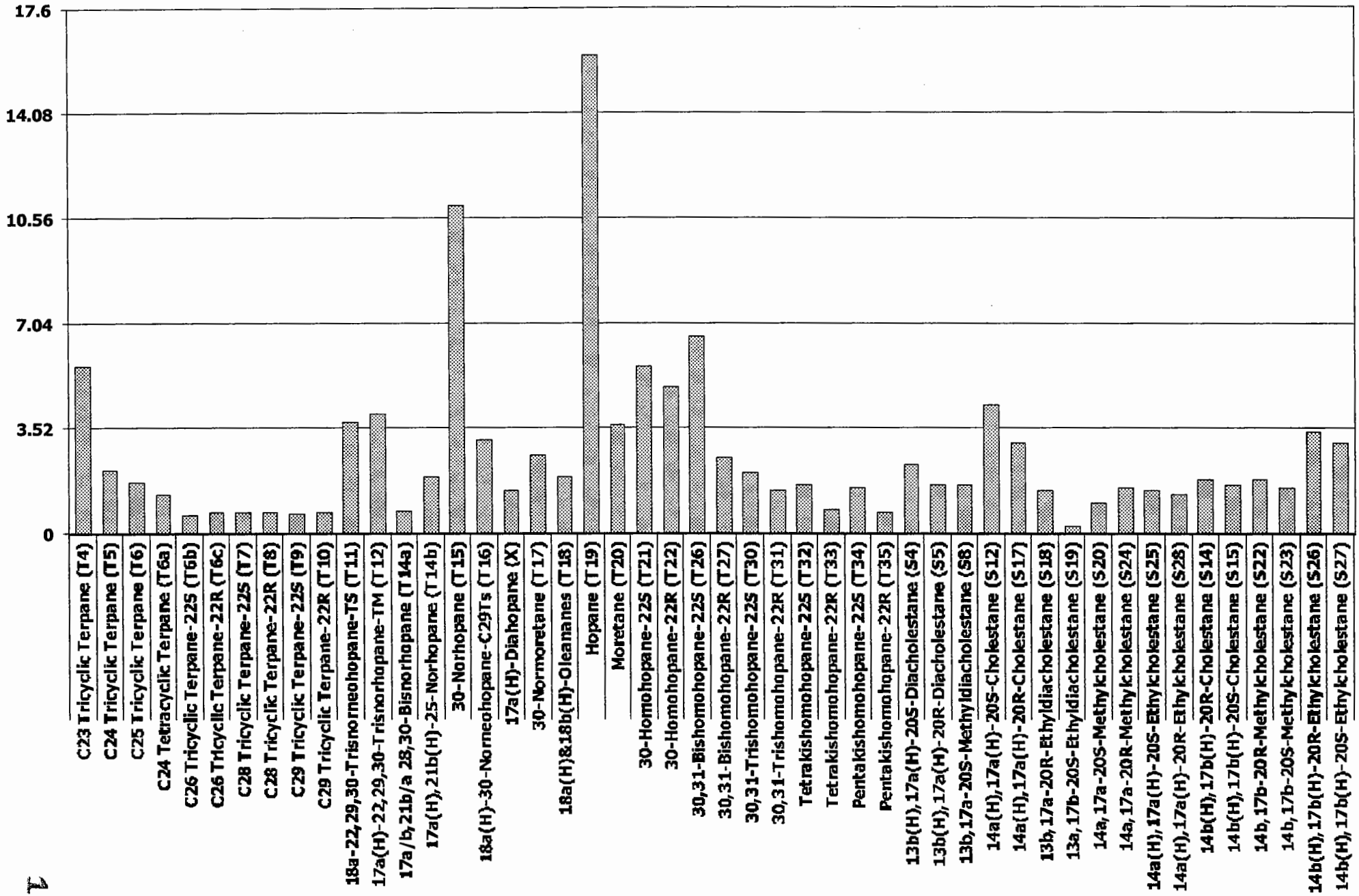


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-36-082604**

Lab ID: **0408124-08**

Concentration: µg/Kg

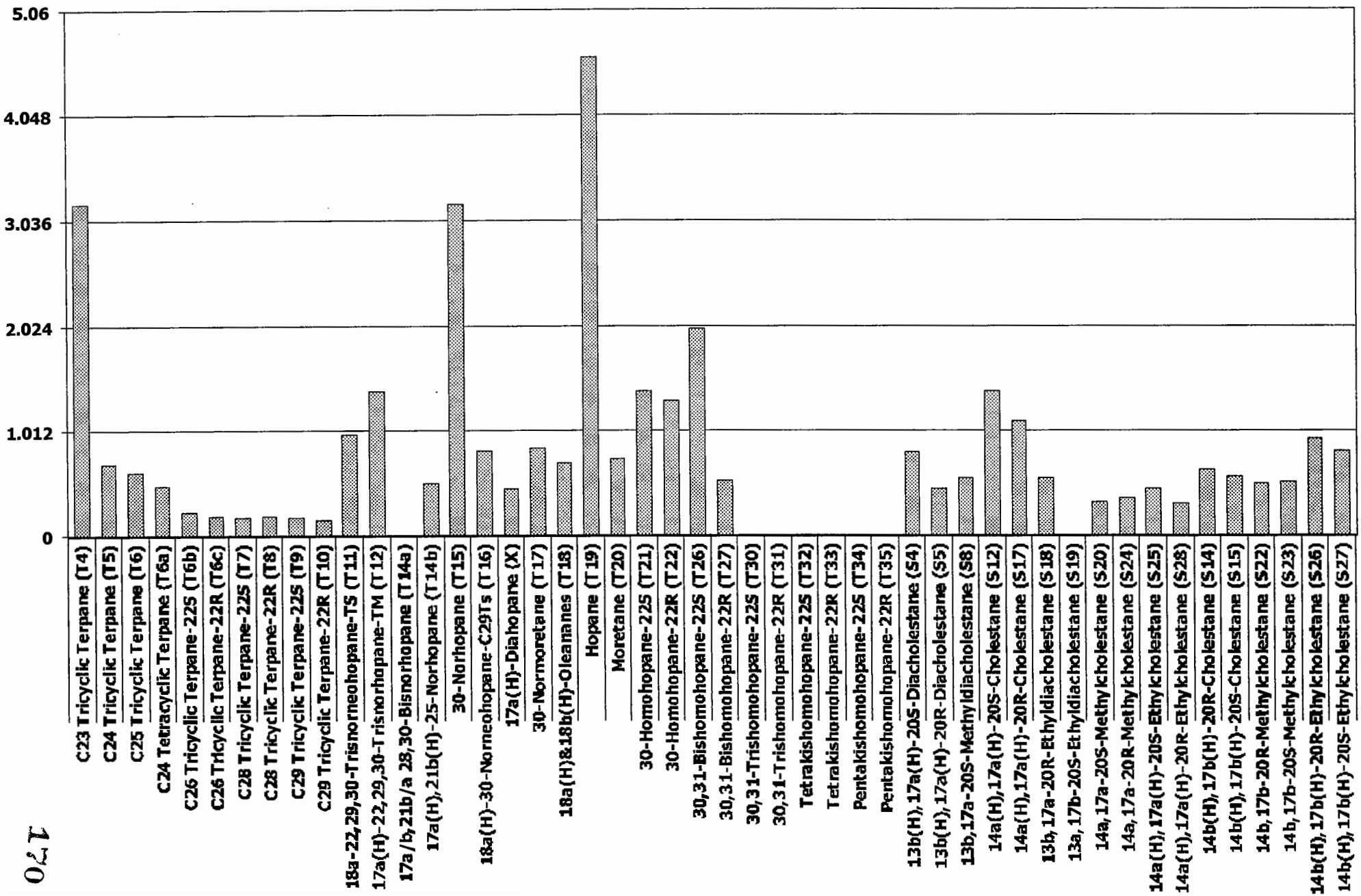


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-CC01-082604**

Lab ID: **0408124-09**

Concentration: µg/Kg

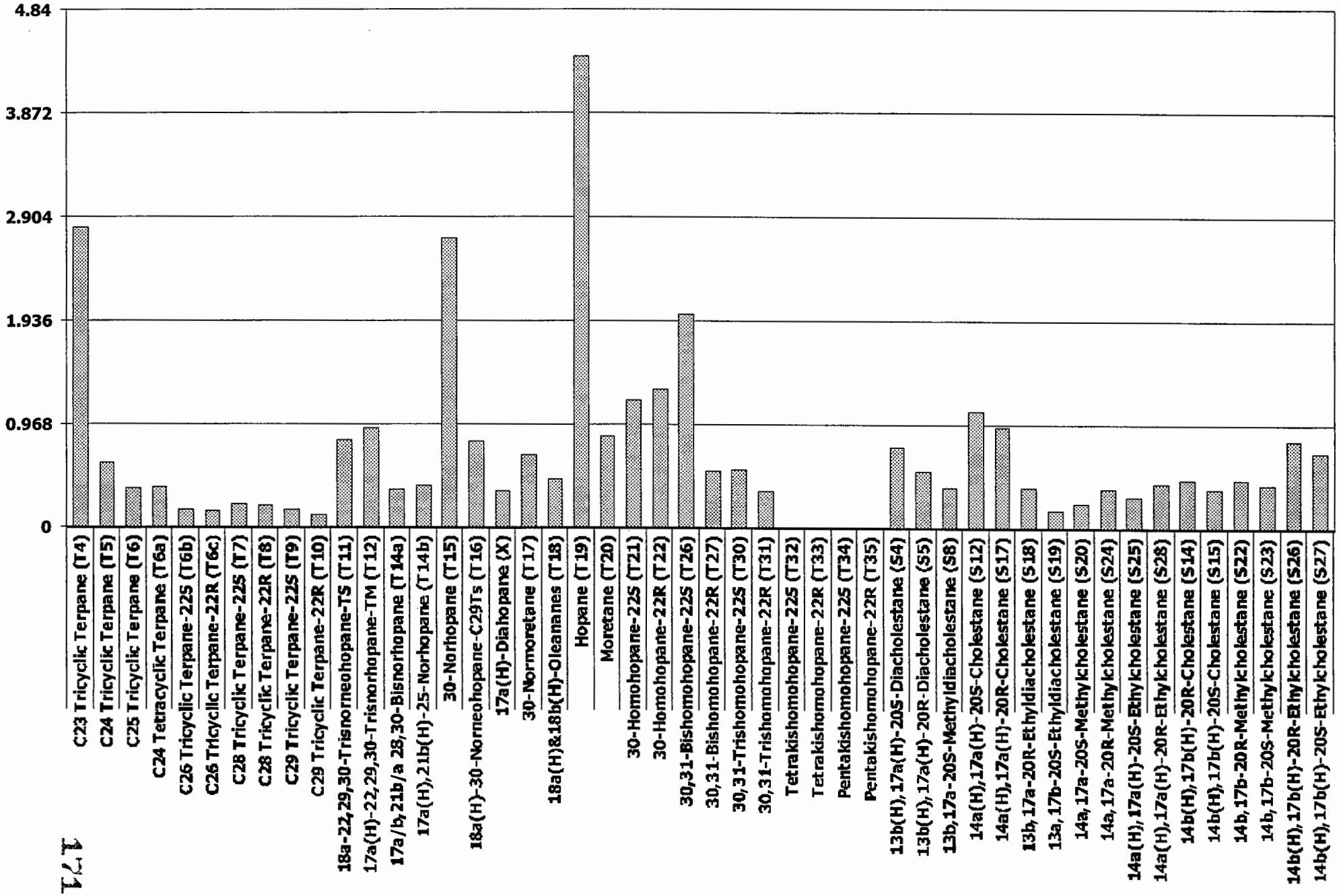


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-CC02-082604**

Lab ID: **0408124-10**

Concentration: µg/Kg

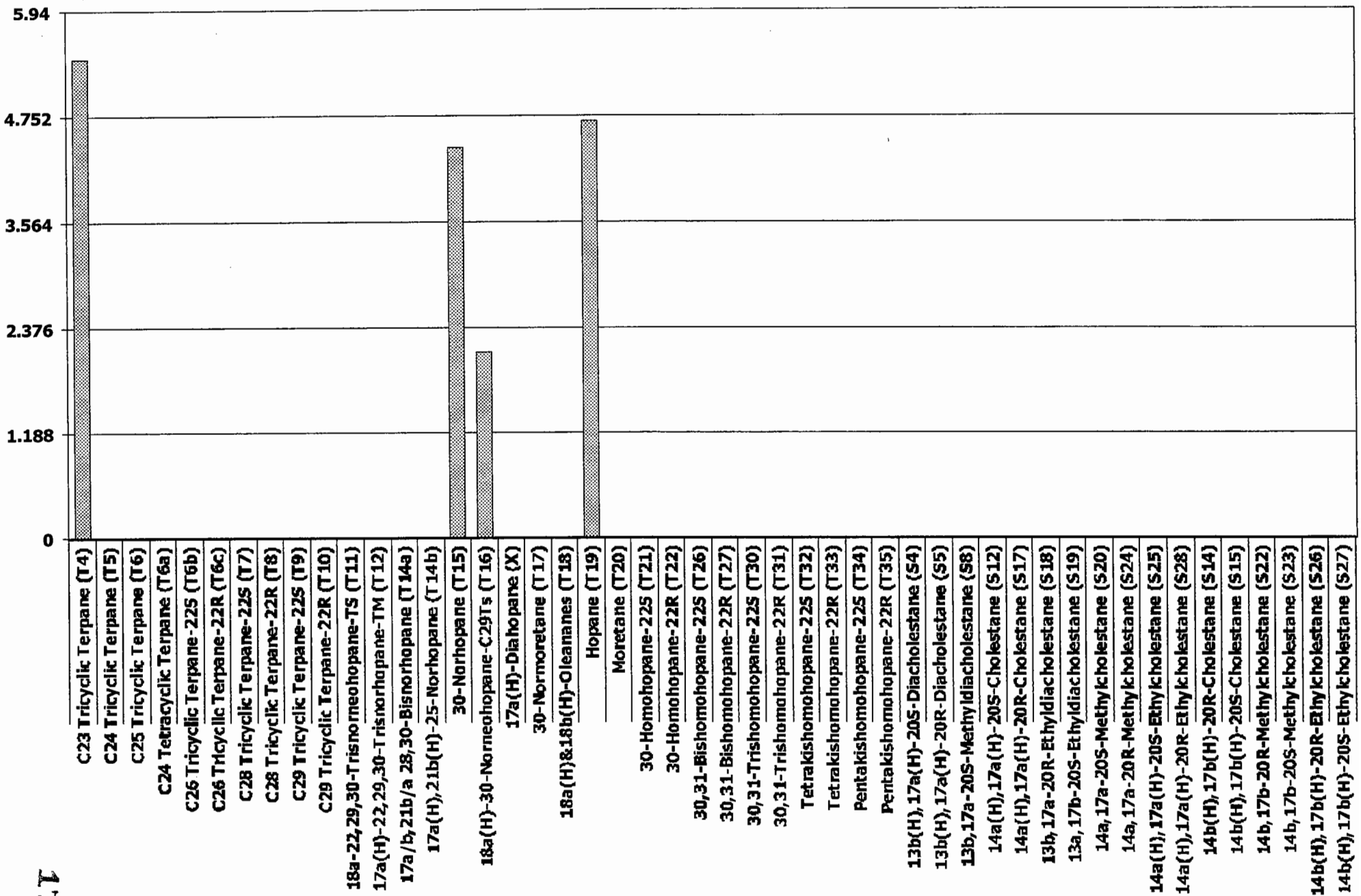


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-JPC01-082604**

Lab ID: **0408124-11**

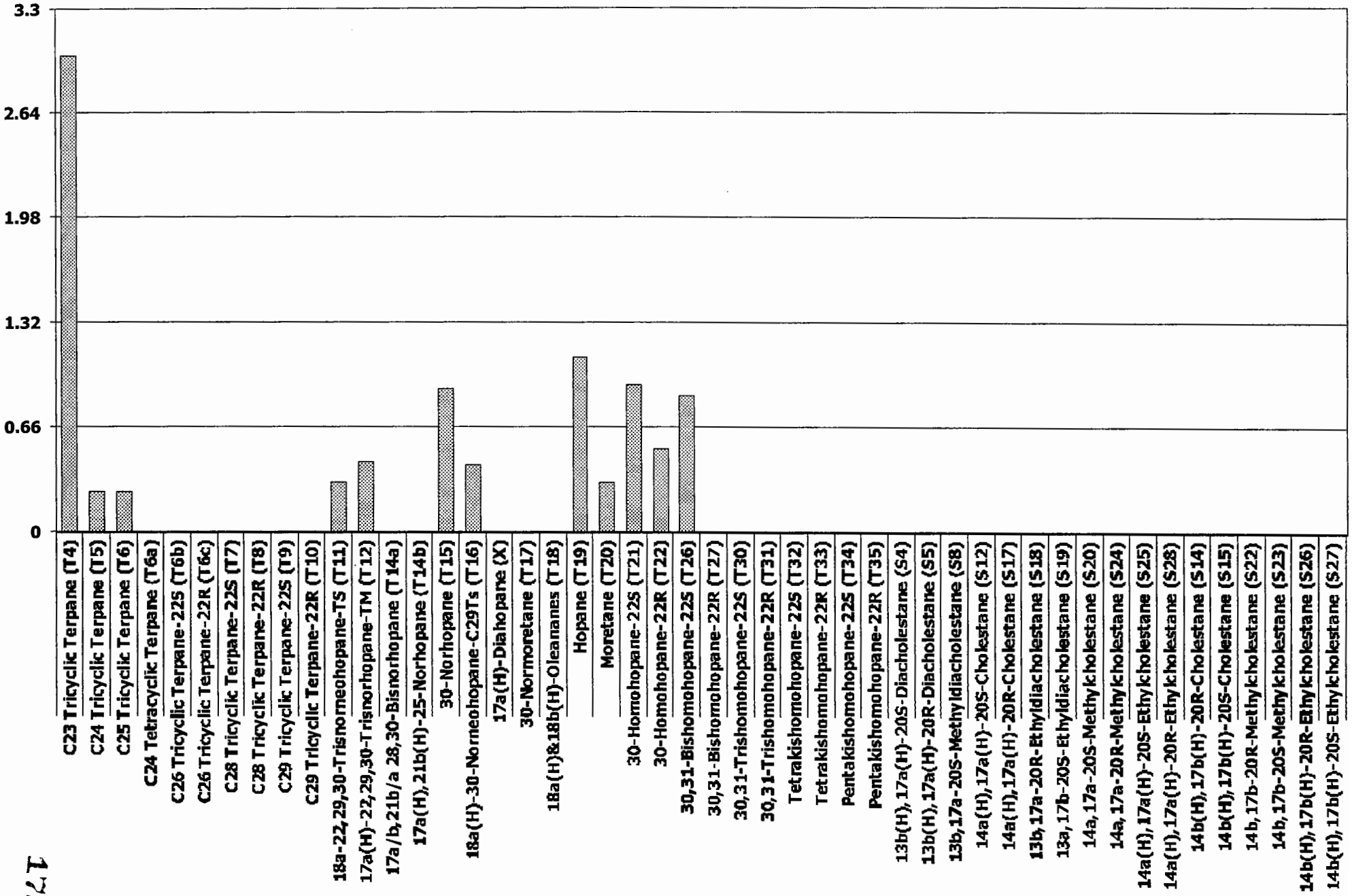
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-JPC03-082604** Lab ID: **0408124-12**

Concentration: µg/Kg

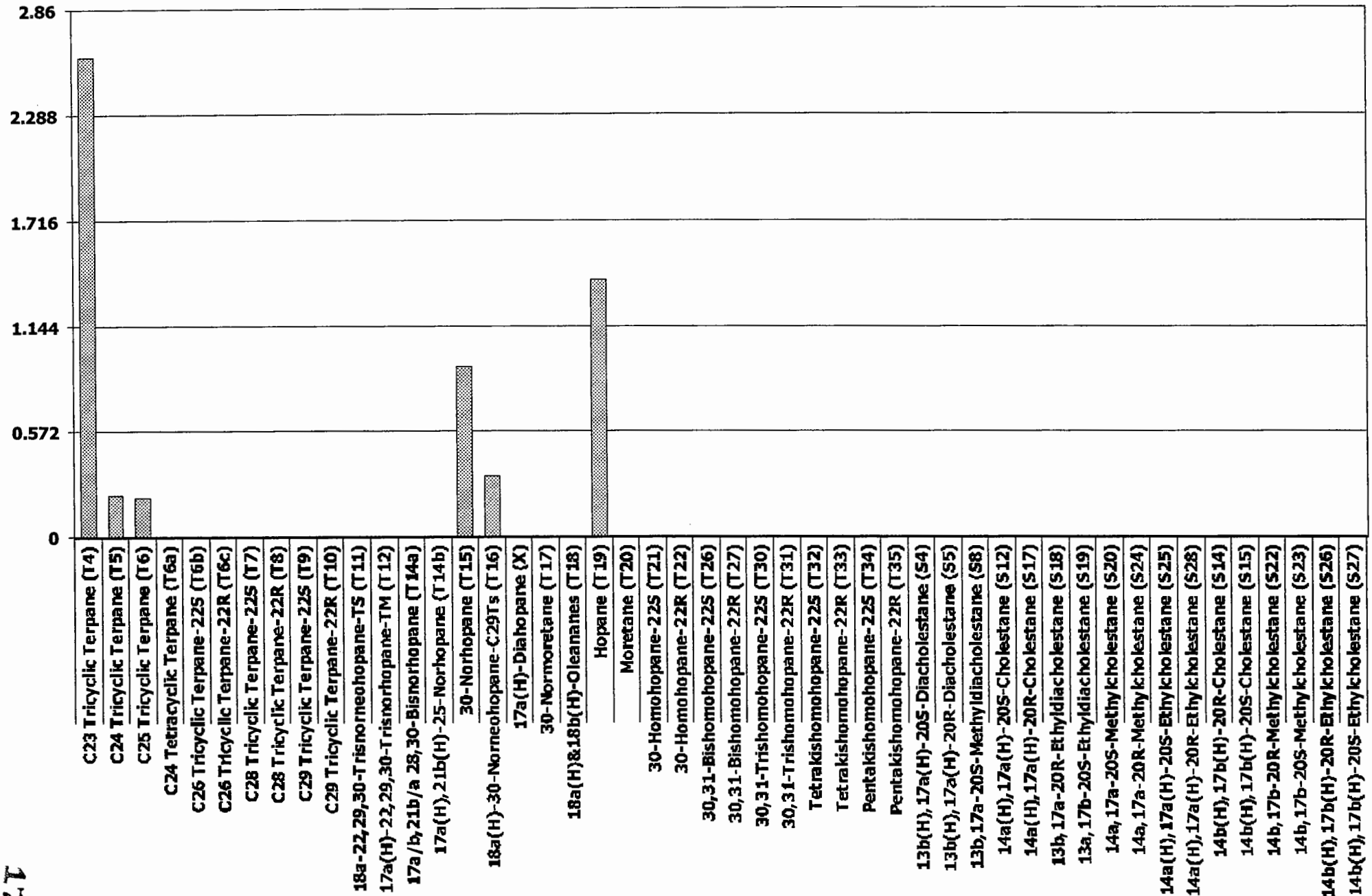


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-DUP03-082604**

Lab ID: **0408124-13**

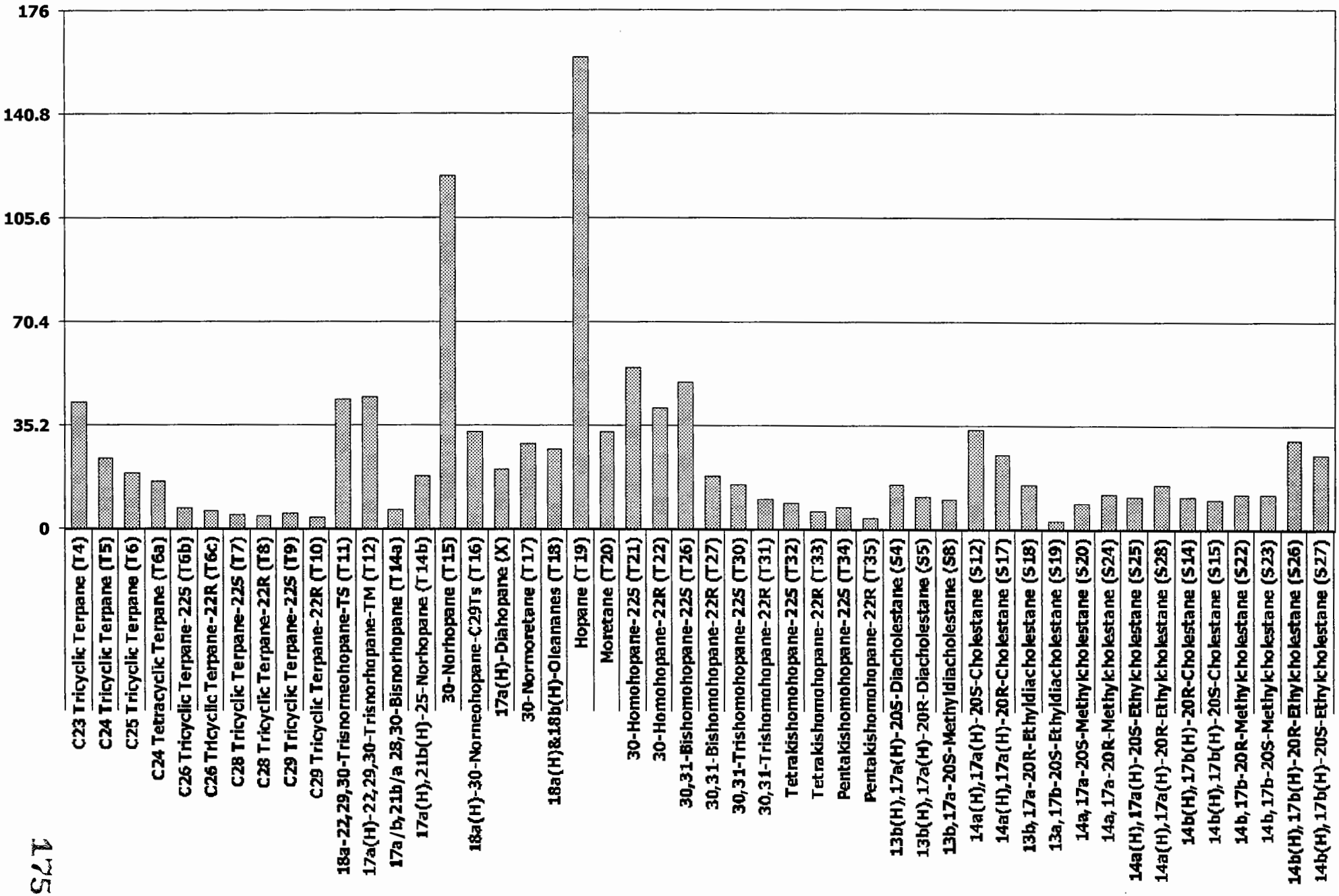
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-CH01-082604** Lab ID: **0408124-14**

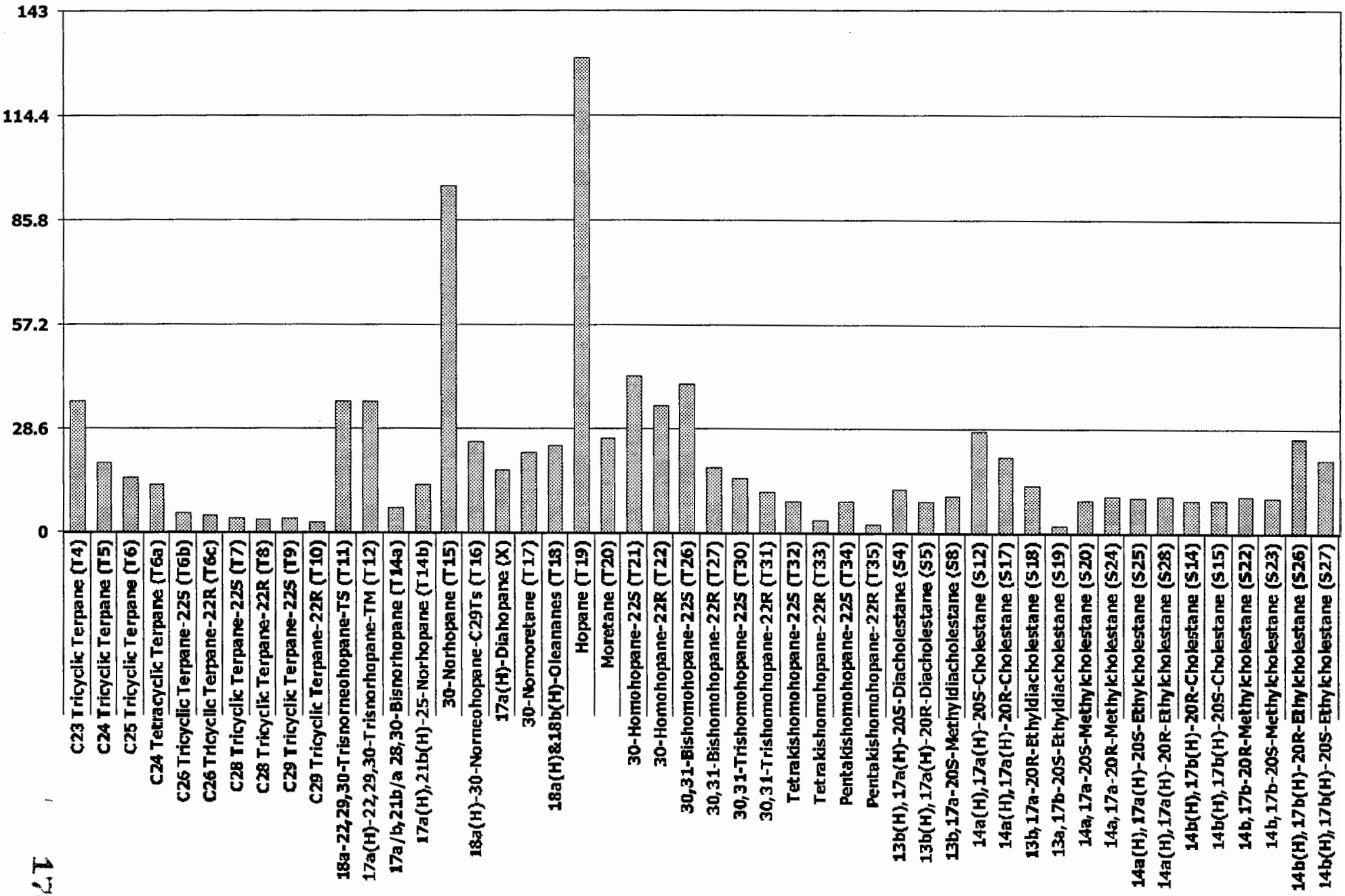
Concentration: µg/Kg



Steranes and Triterpanes Distributions

Client ID: **DSY-SD-CH01-082604** Lab ID: **0408124-14 D**

Concentration: µg/Kg

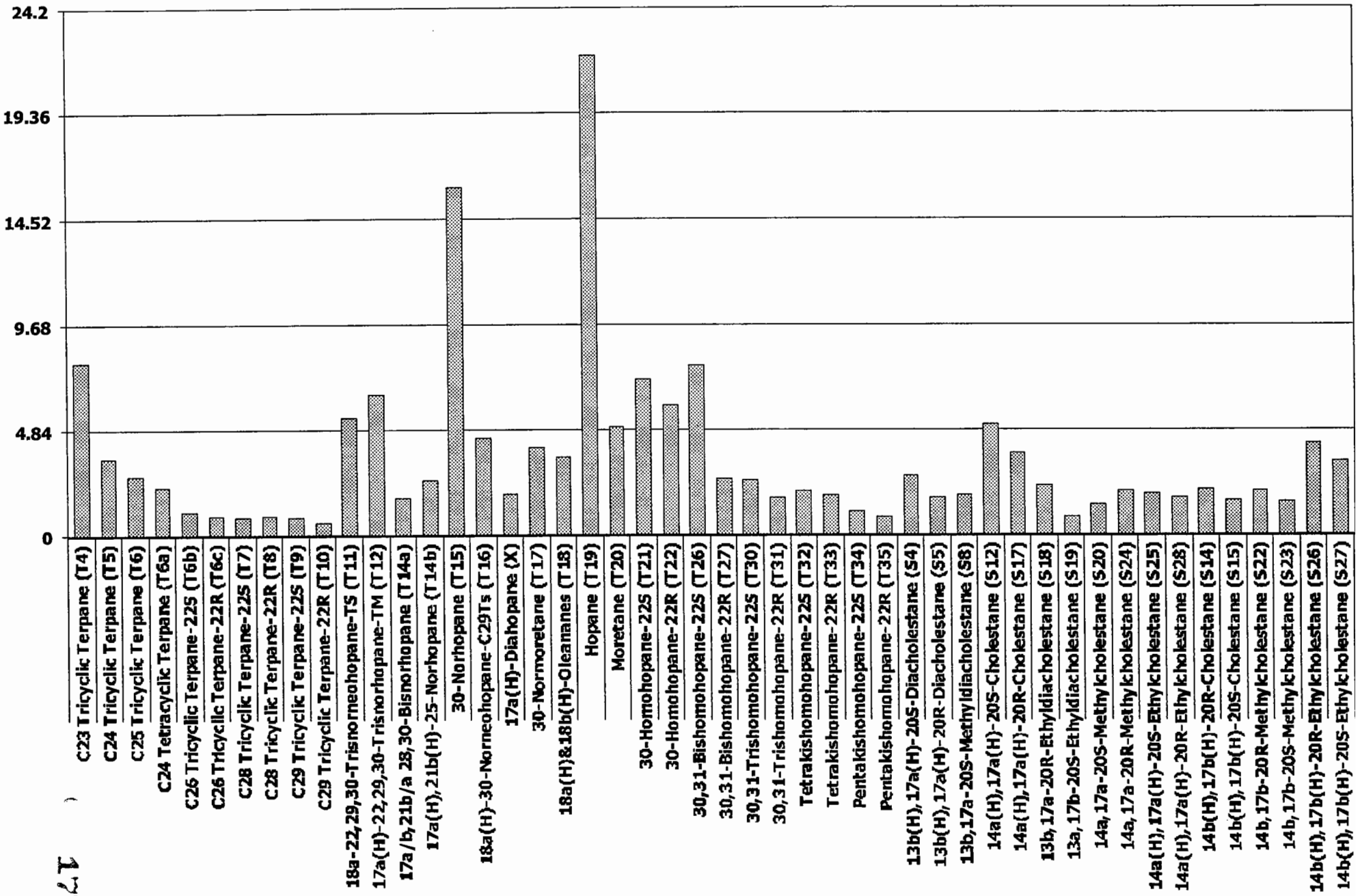


Steranes and Triterpanes Distributions

Client ID: **DSY-SD-CH02-082604**

Lab ID: **0408124-15**

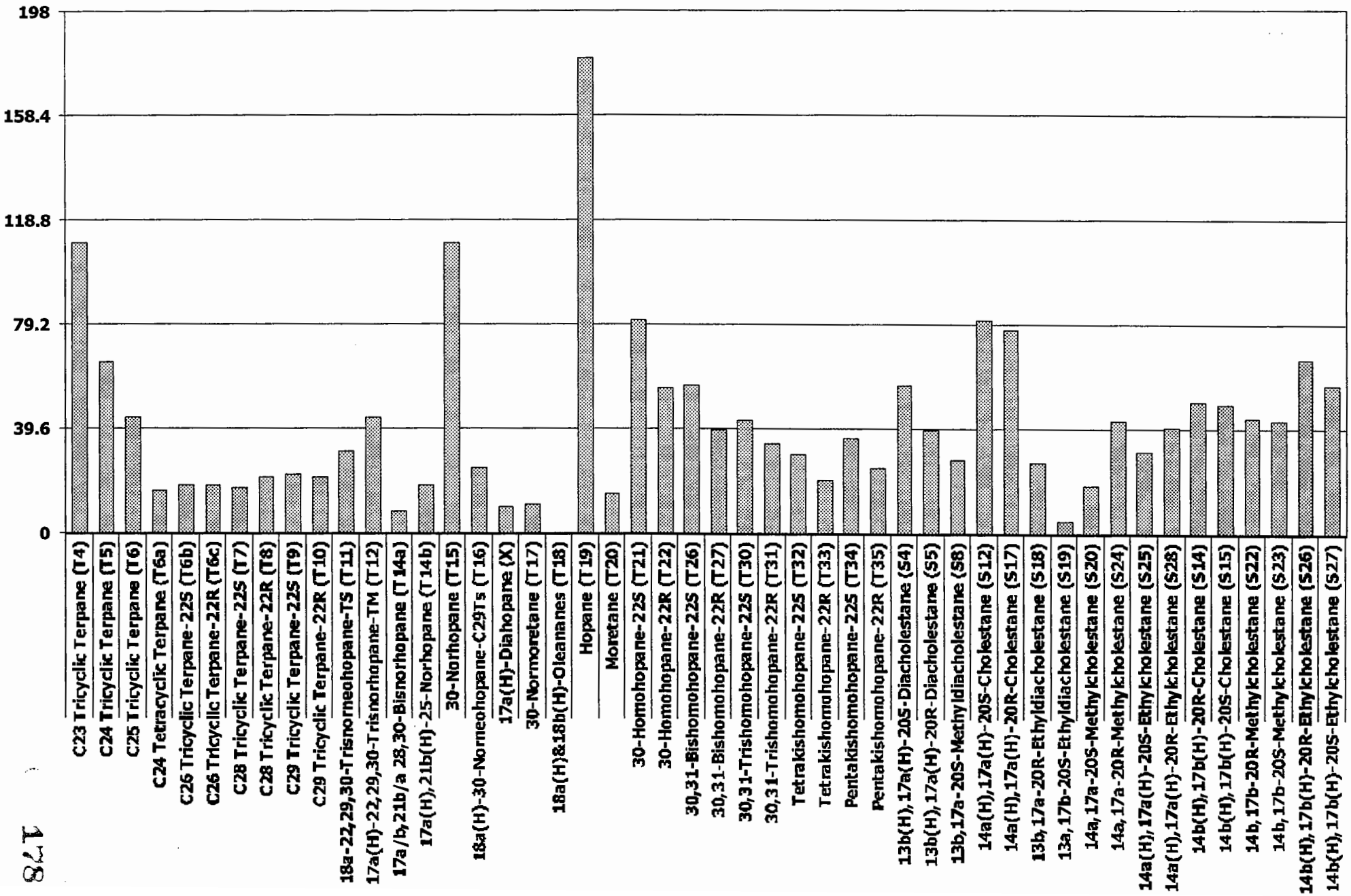
Concentration: µg/Kg



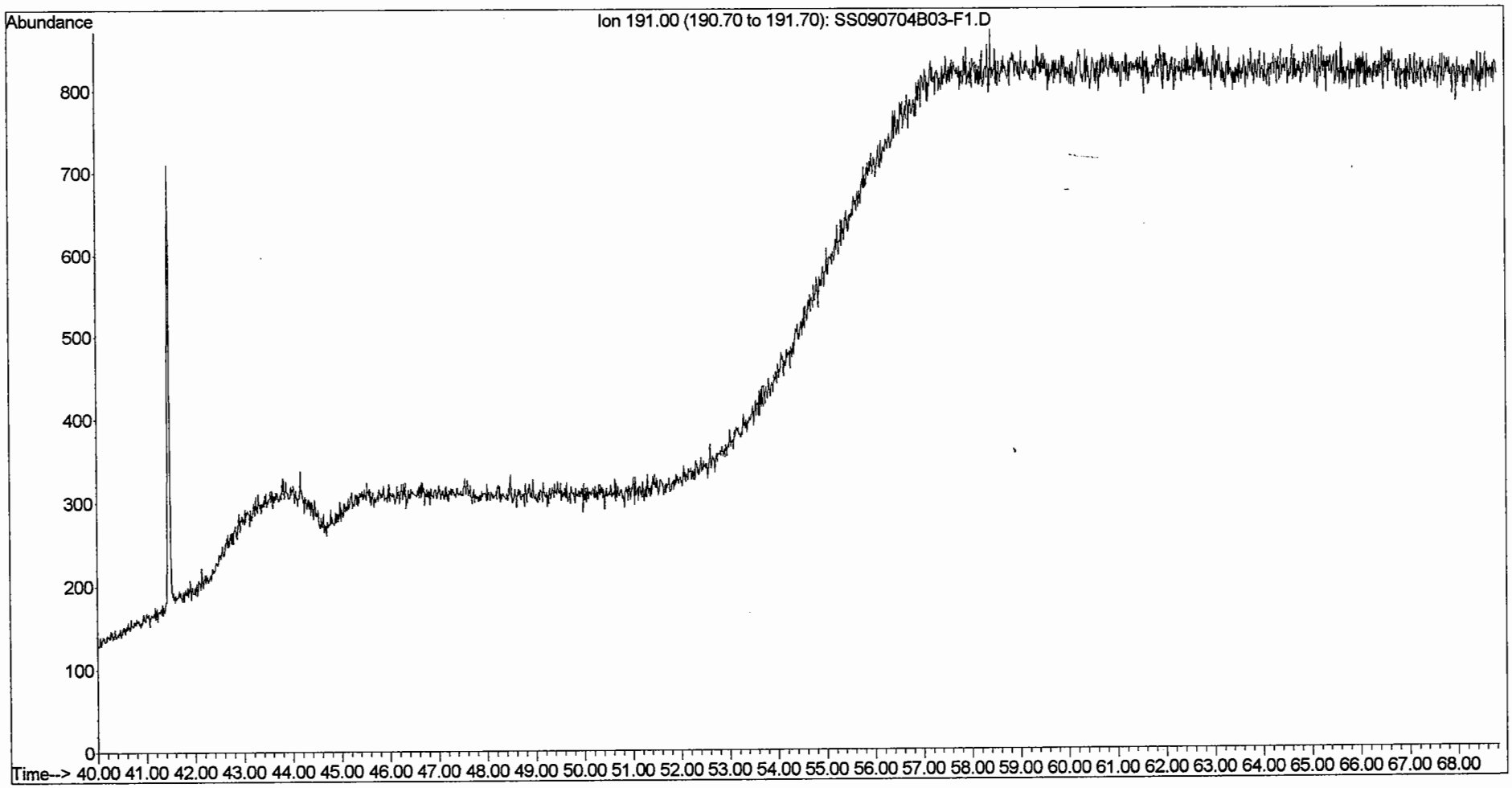
Steranes and Triterpanes Distributions

Client ID: **Alaska North Slope Crude** Lab ID: **SS092404AWS01**

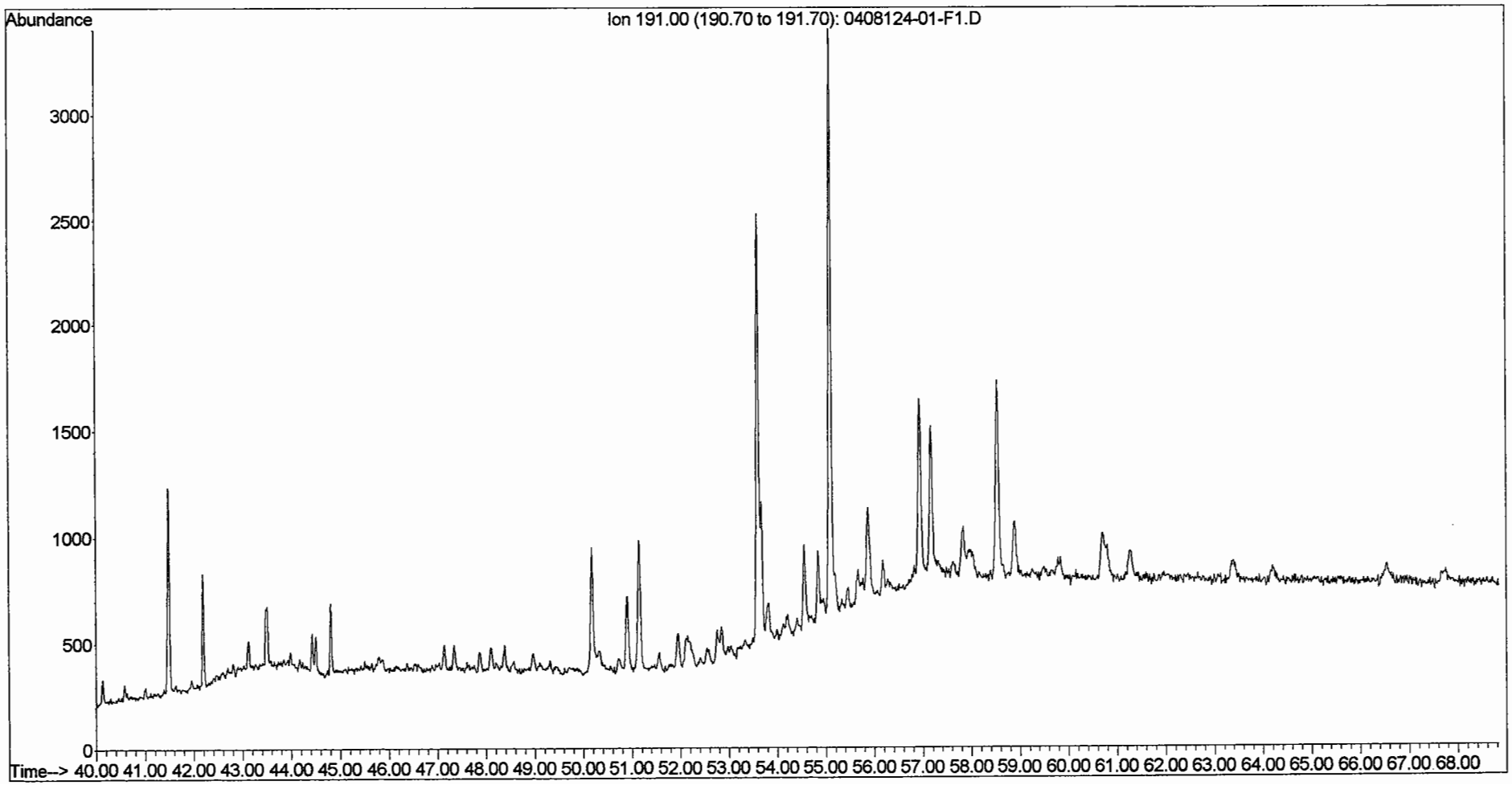
Concentration: mg/Kg



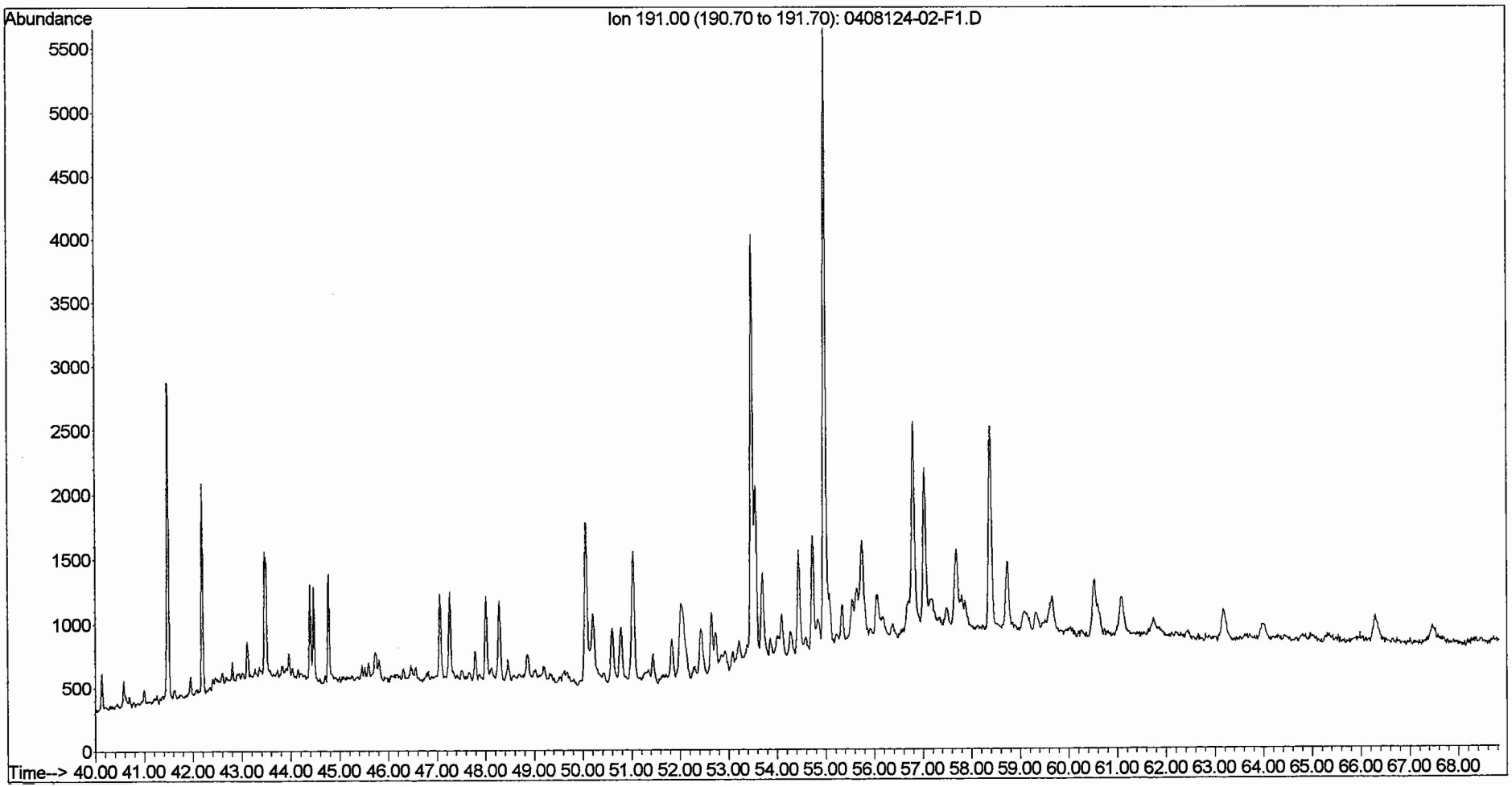
File :O:\Organics\DATA\PAH3\SEPT20\SS090704B03-F1.D
Operator : BL
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: SS090704B03-F1
Misc Info : 1X
Vial Number: 24



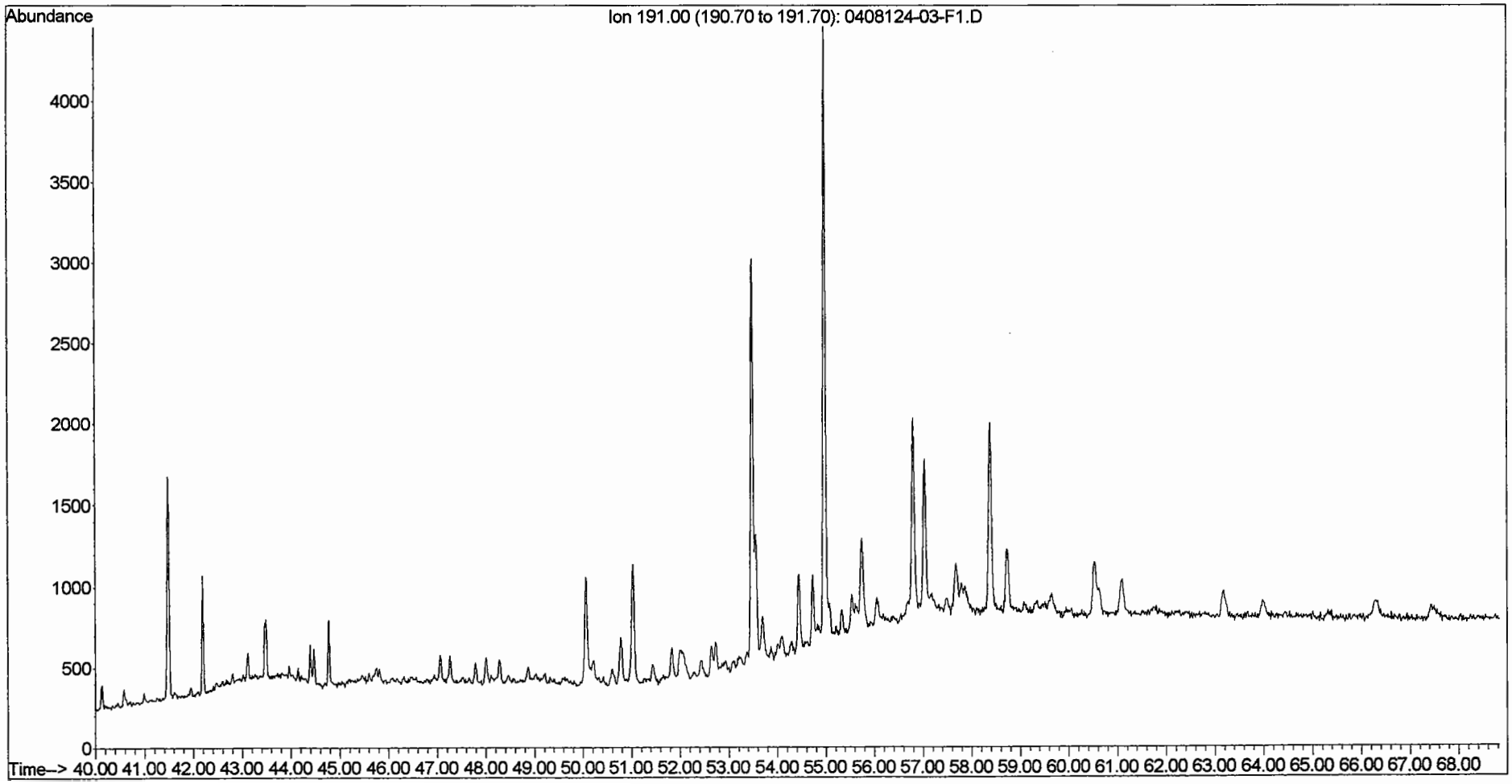
File :O:\Organics\DATA\PAH3\SEPT20\0408124-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-01-F1
Misc Info : 1X
Vial Number: 27



File :O:\Organics\DATA\PAH3\SEPT20\0408124-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-02-F1
Misc Info : 1X
Vial Number: 28



File :O:\Organics\DATA\PAH3\SEPT20\0408124-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-03-F1
Misc Info : 1X
Vial Number: 29



File :O:\Organics\DATA\PAH3\SEPT20\0408124-04-F1.D
Operator : BL
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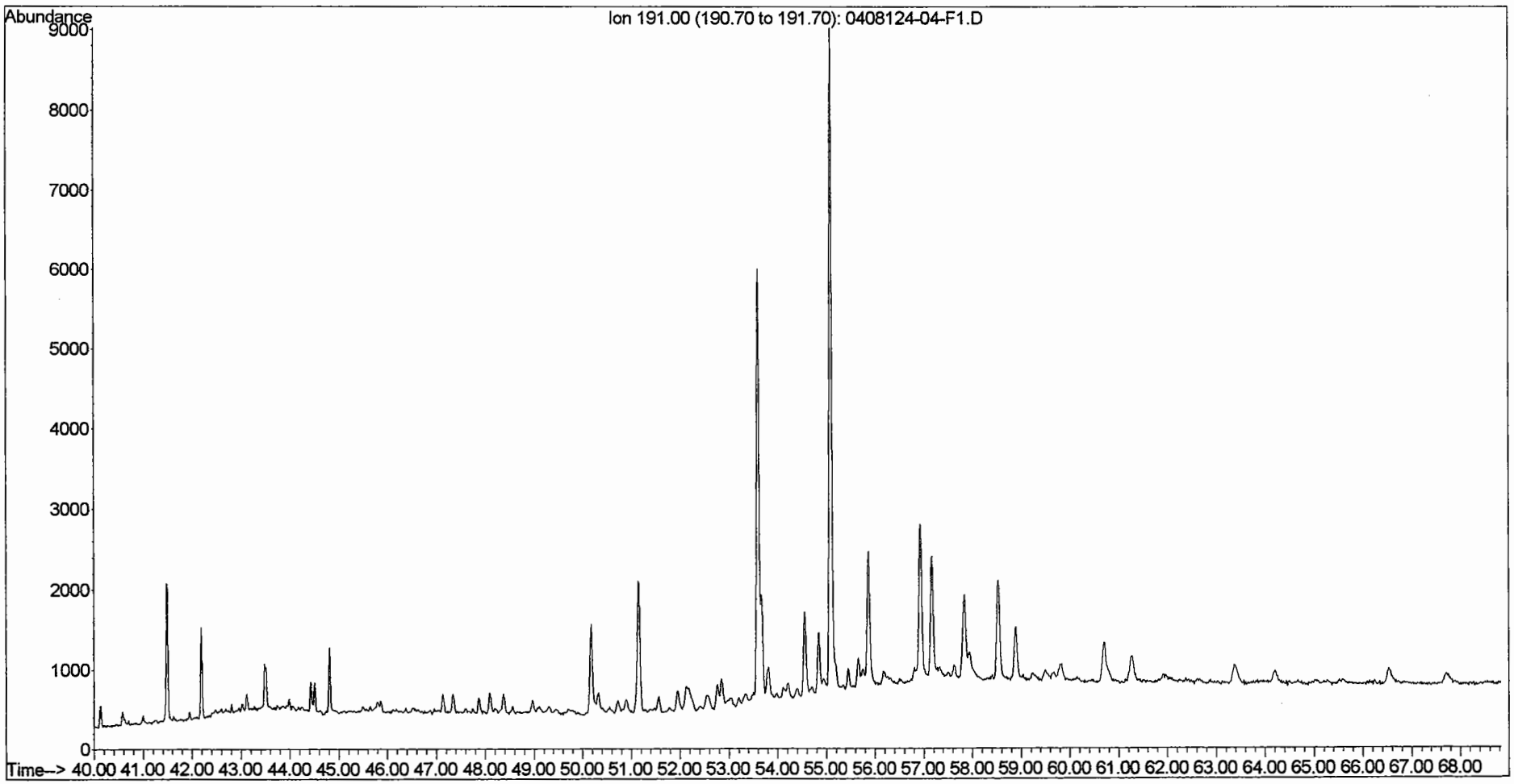
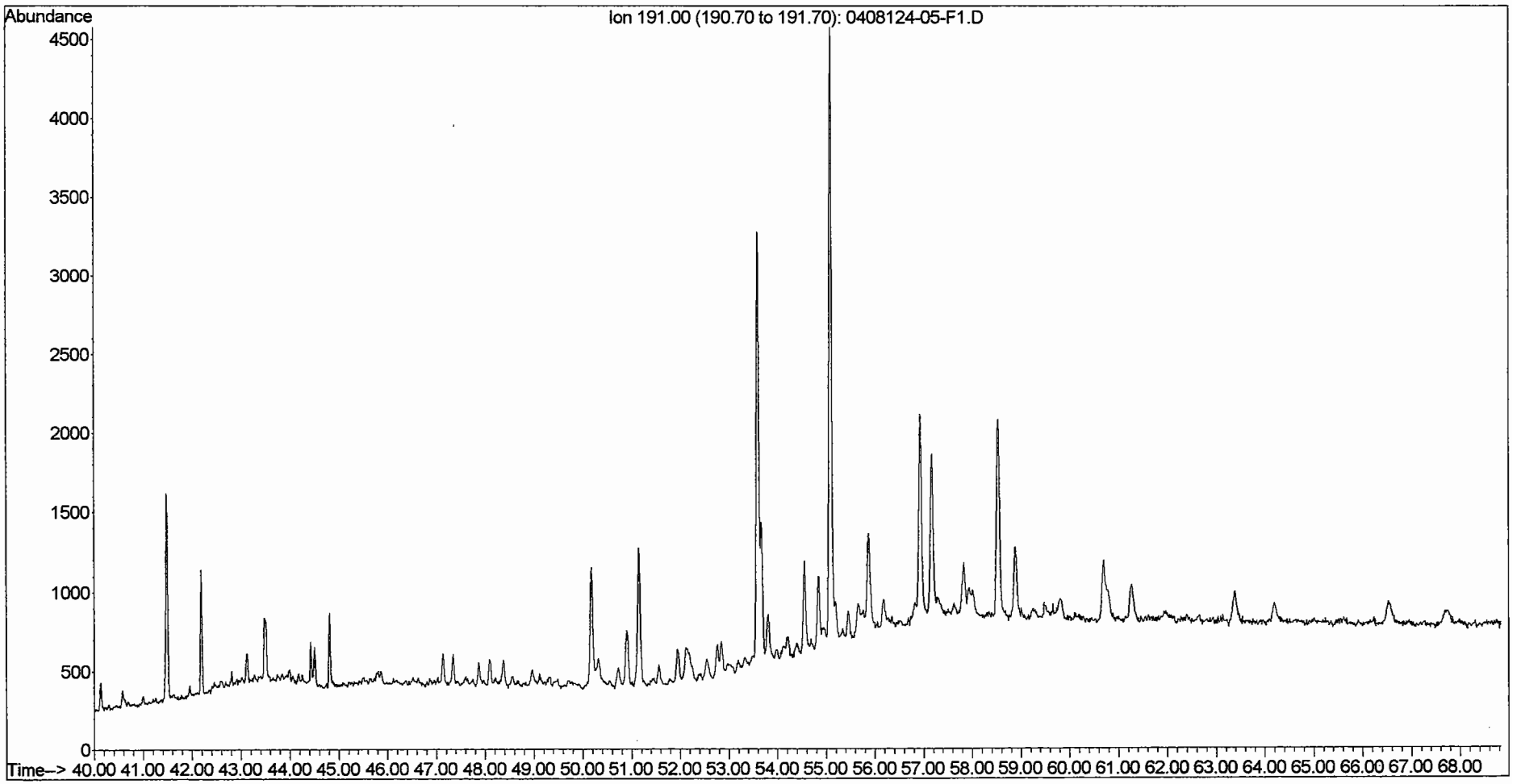
Instrument : PAHINST3
Sample Name: 0408124-04-F1
Misc Info : 1X
Vial Number: 30



File :O:\Organics\DATA\PAH3\SEPT20\0408124-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-05-F1
Misc Info : 1X
Vial Number: 31



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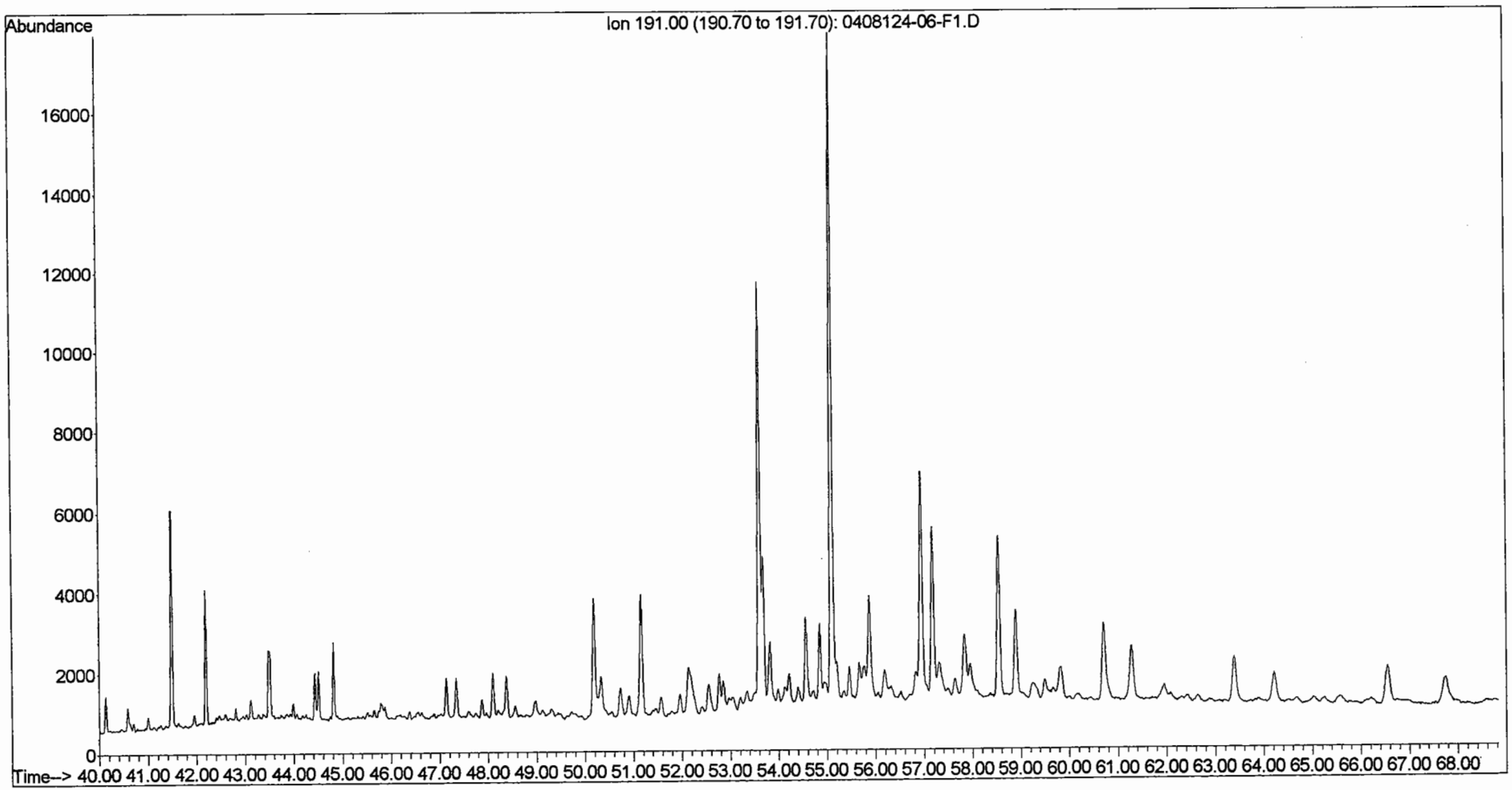
Operator : BL
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-06-F1
Misc Info : 1X
Vial Number: 32



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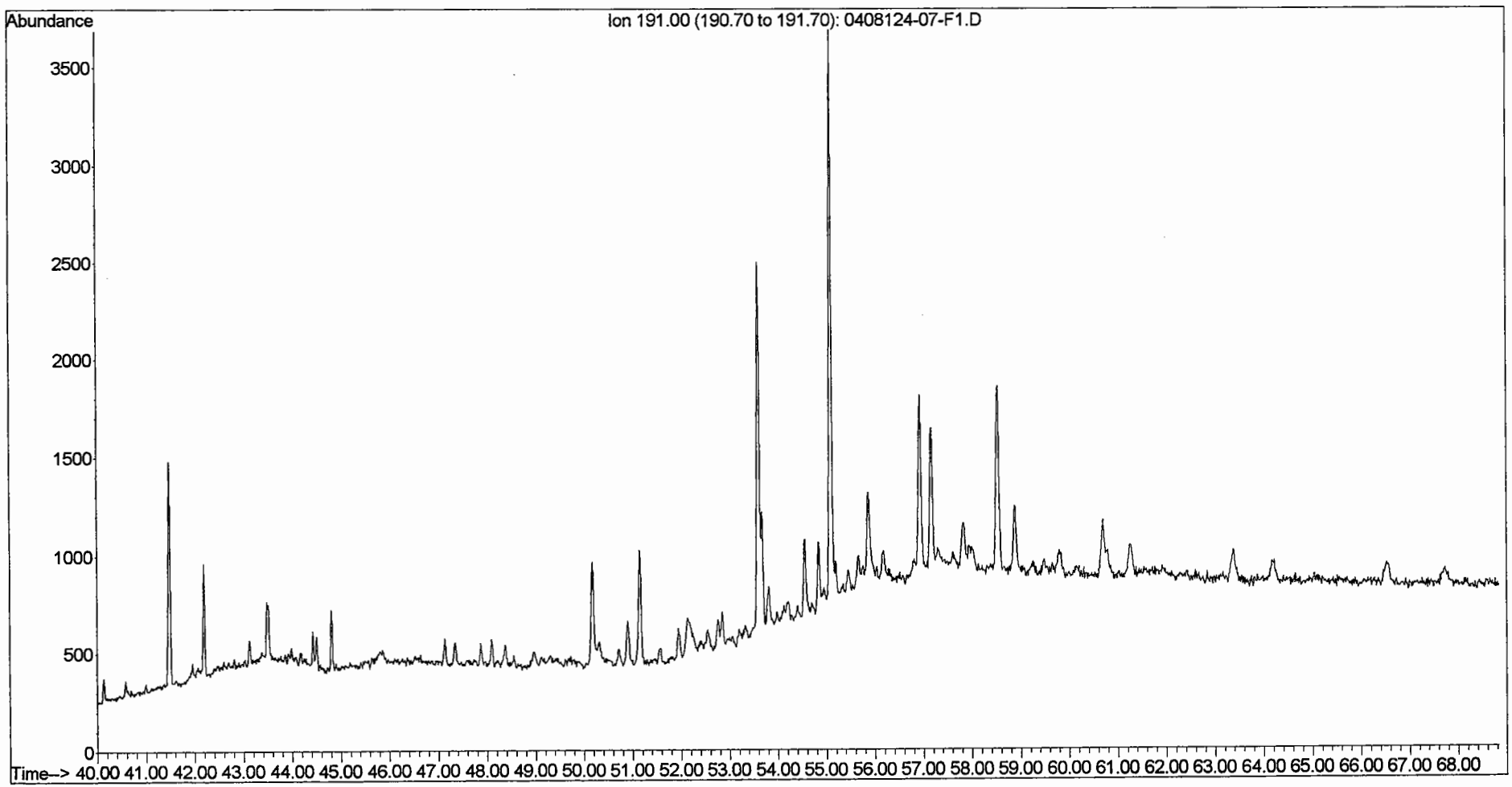
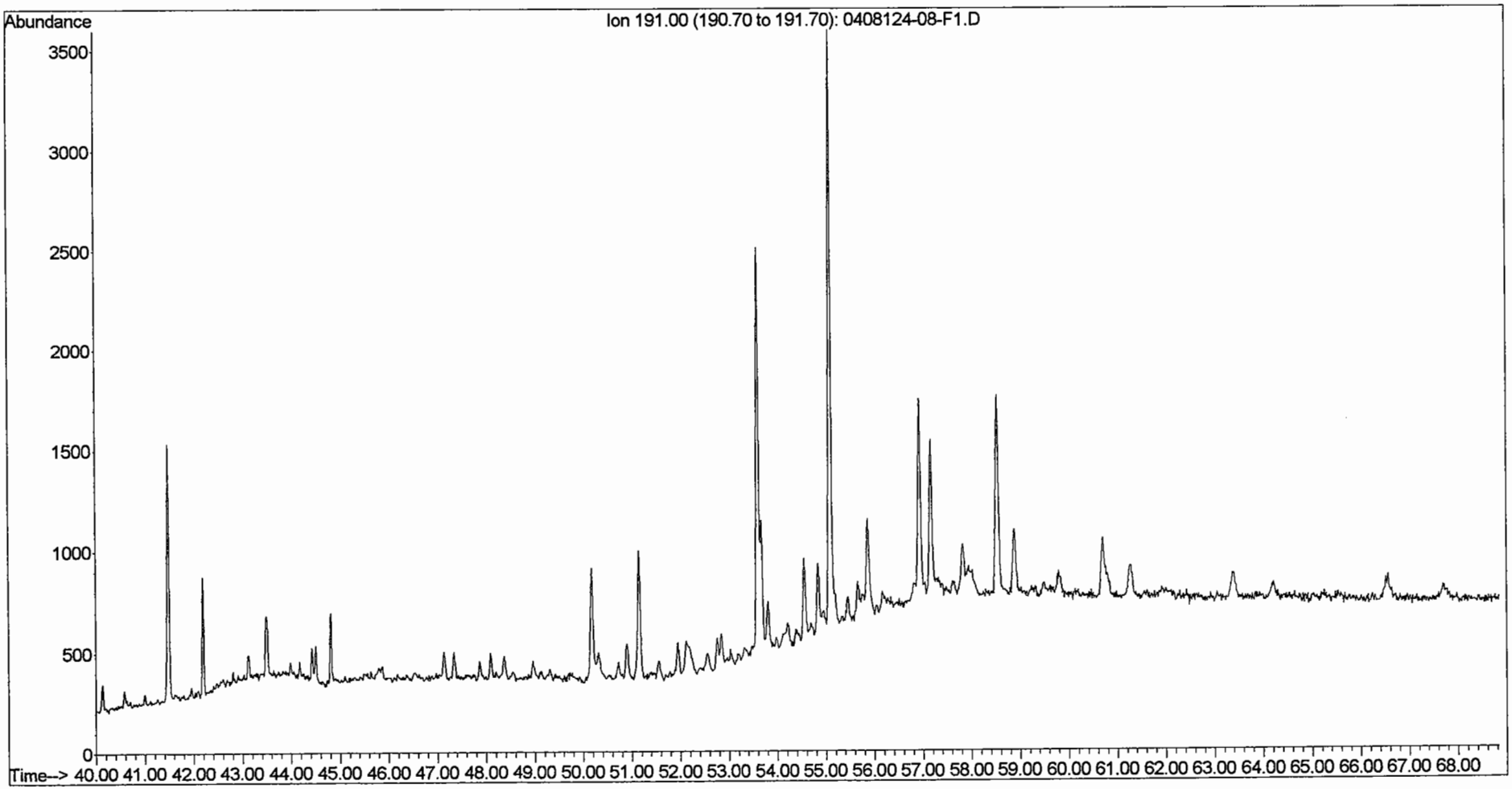
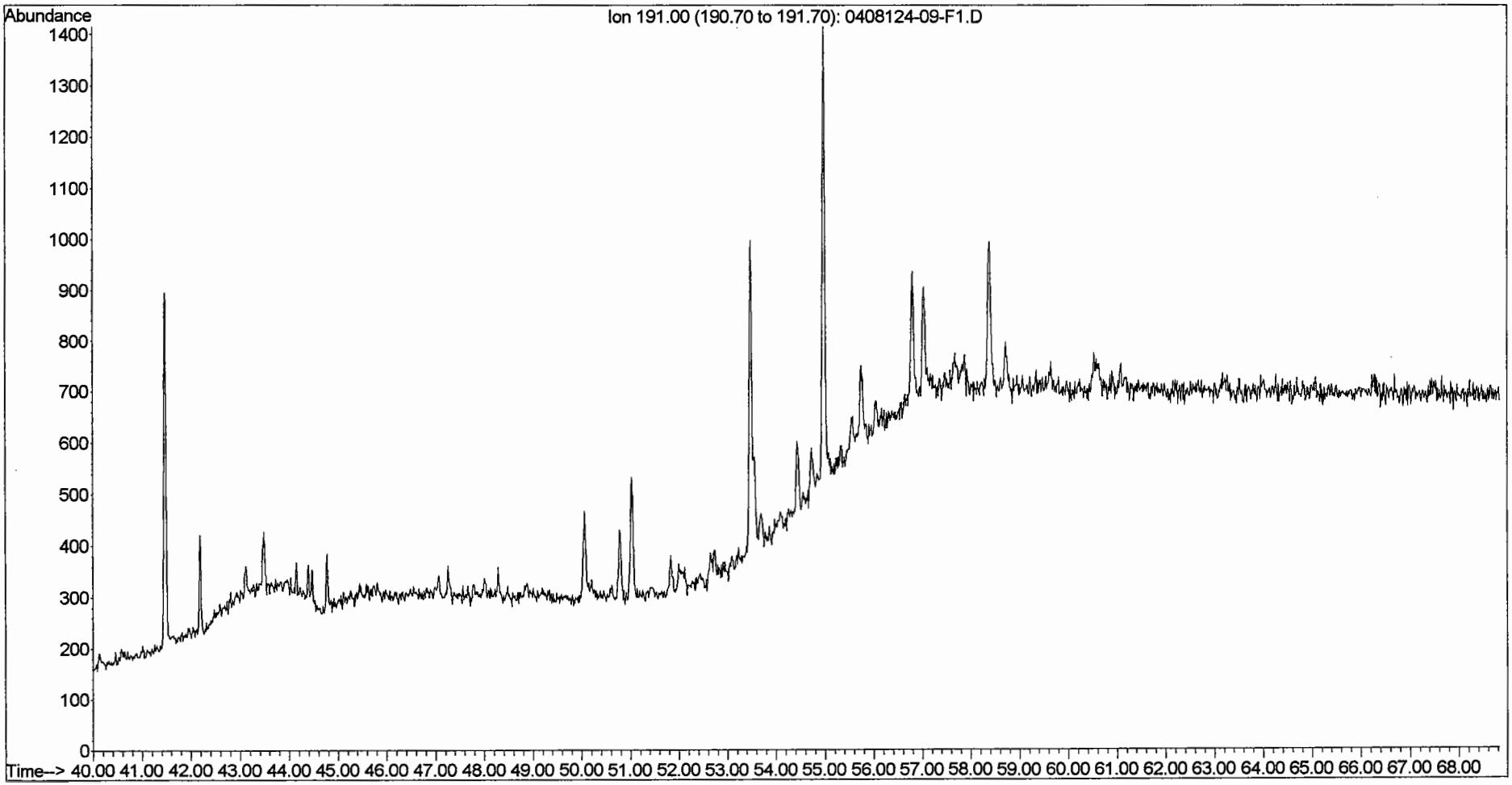
Operator : BL
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-07-F1
Misc Info : 1X
Vial Number: 33



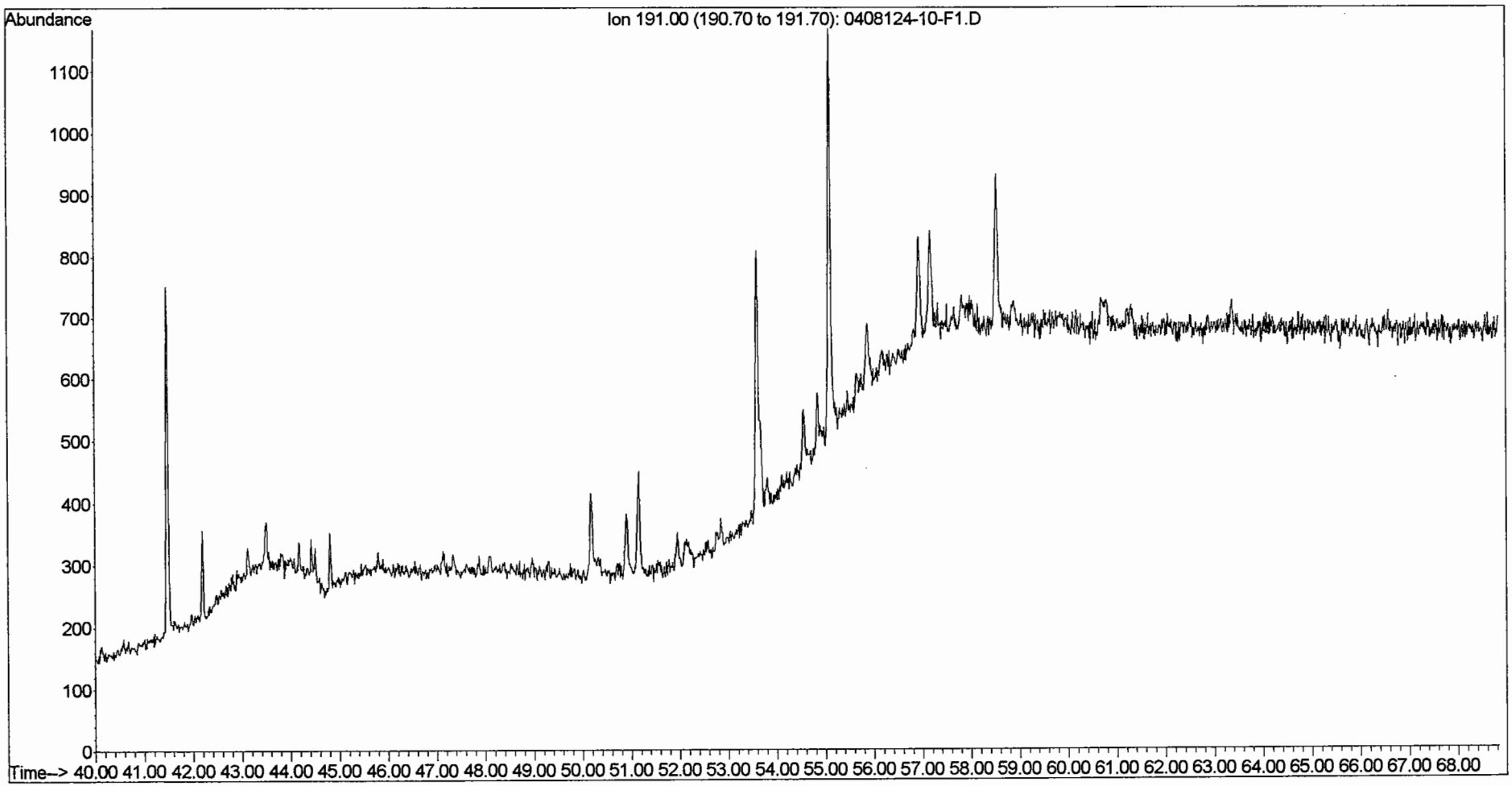
File :O:\Organics\DATA\PAH3\SEPT20\0408124-08-F1.D
Operator : BL
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-08-F1
Misc Info : 1X
Vial Number: 35



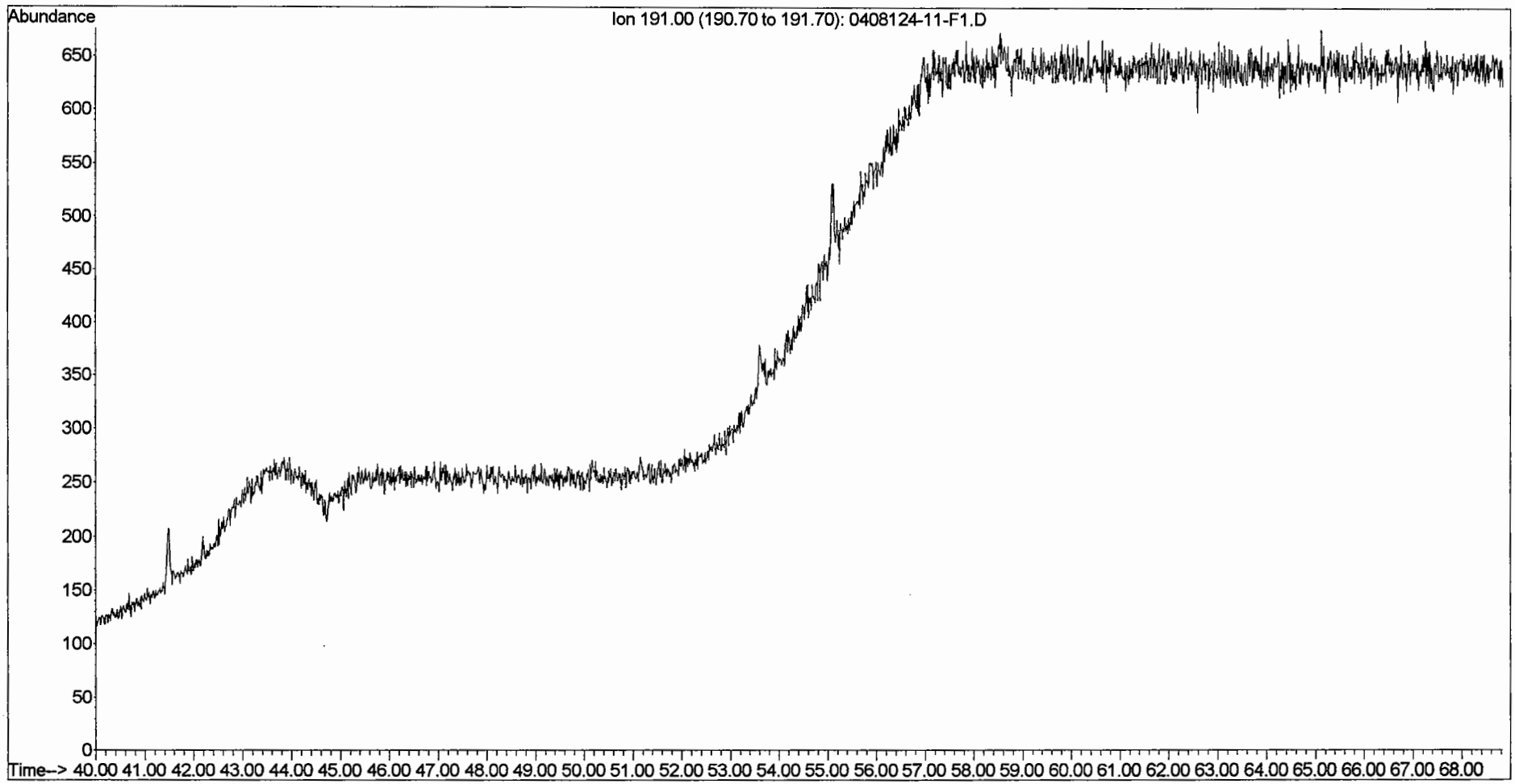
File :O:\Organics\DATA\PAH3\SEPT20\0408124-09-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-09-F1
Misc Info : 1X
Vial Number: 36



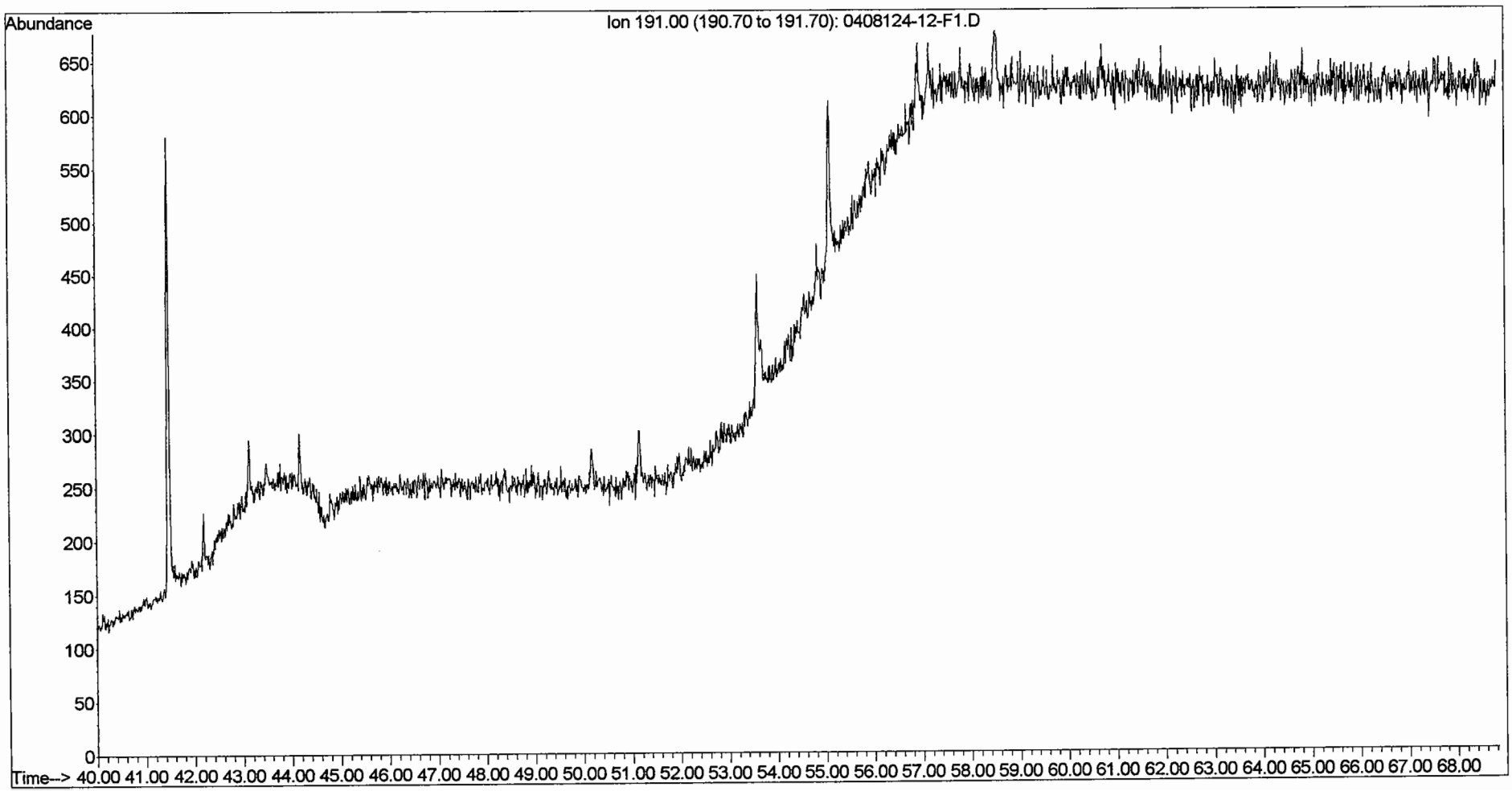
File :O:\Organics\DATA\PAH3\SEPT20\0408124-10-F1.D
Operator : BL
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-10-F1
Misc Info : 1X
Vial Number: 37



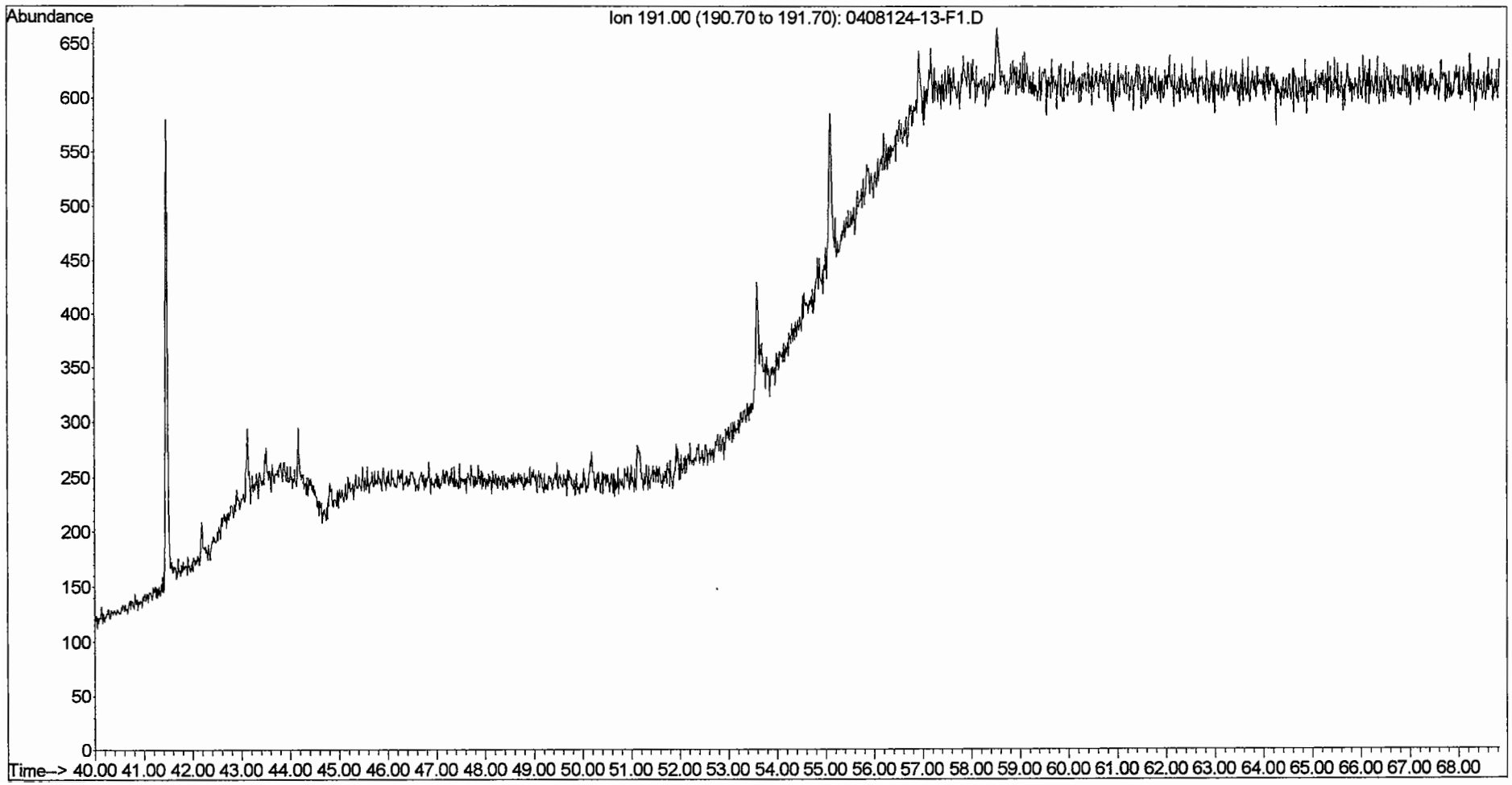
File :O:\Organics\DATA\PAH3\SEPT20\0408124-11-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-11-F1
Misc Info : 1X
Vial Number: 38



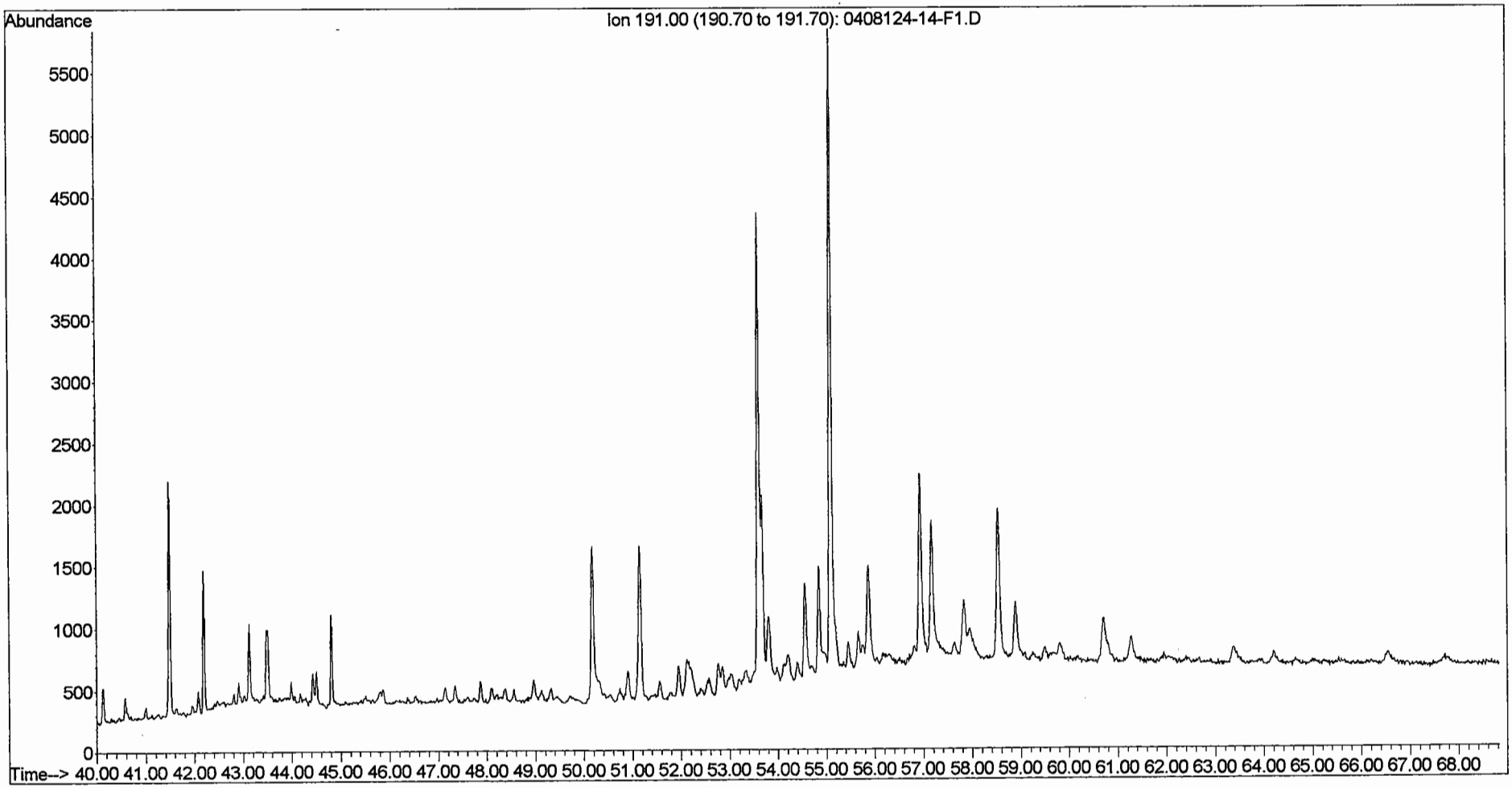
File :O:\Organics\DATA\PAH3\SEPT20\0408124-12-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-12-F1
Misc Info : 1X
Vial Number: 39



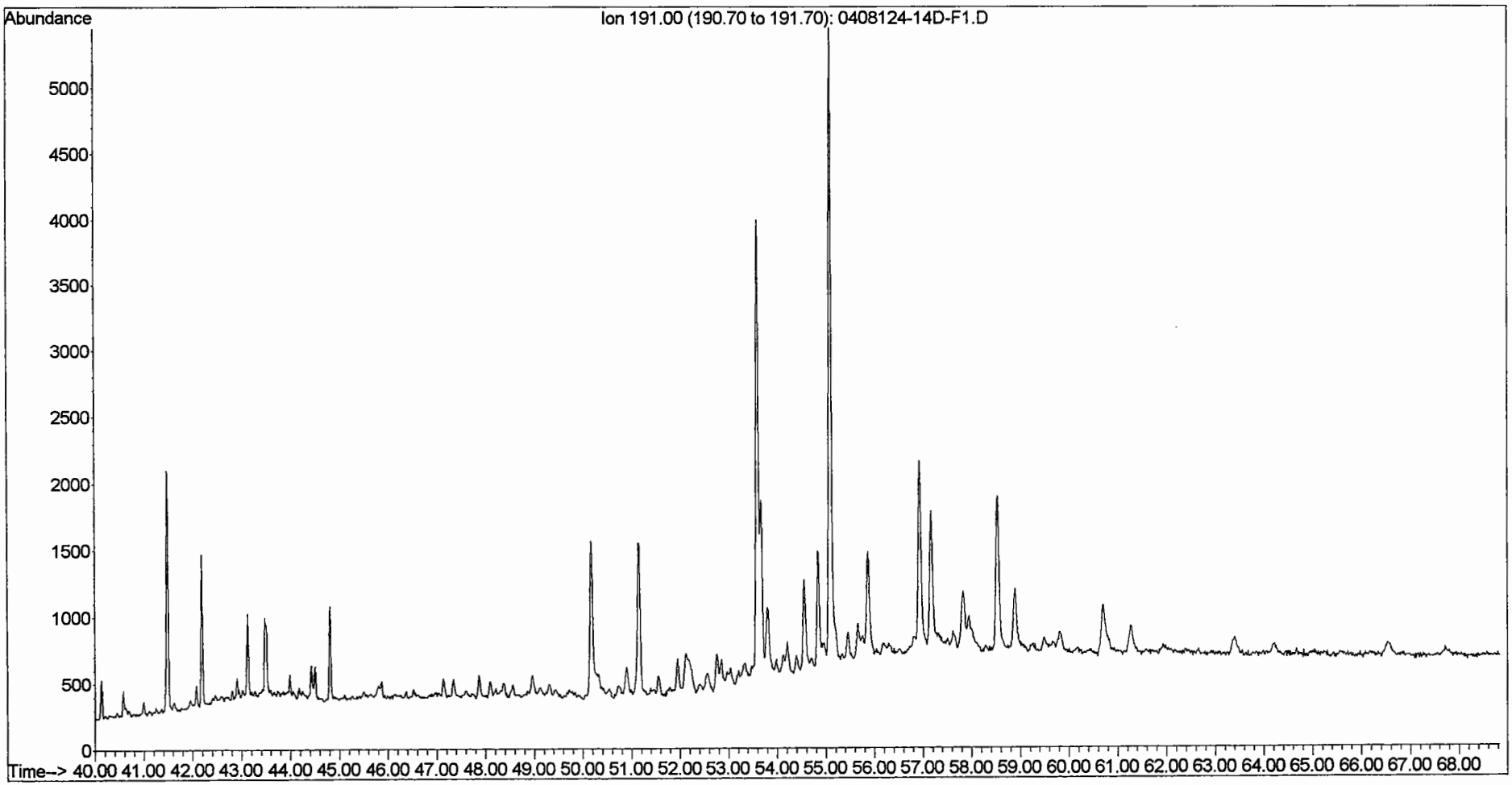
File :O:\Organics\DATA\PAH3\SEPT20\0408124-13-F1.D
Operator : BL
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-13-F1
Misc Info : 1X
Vial Number: 40



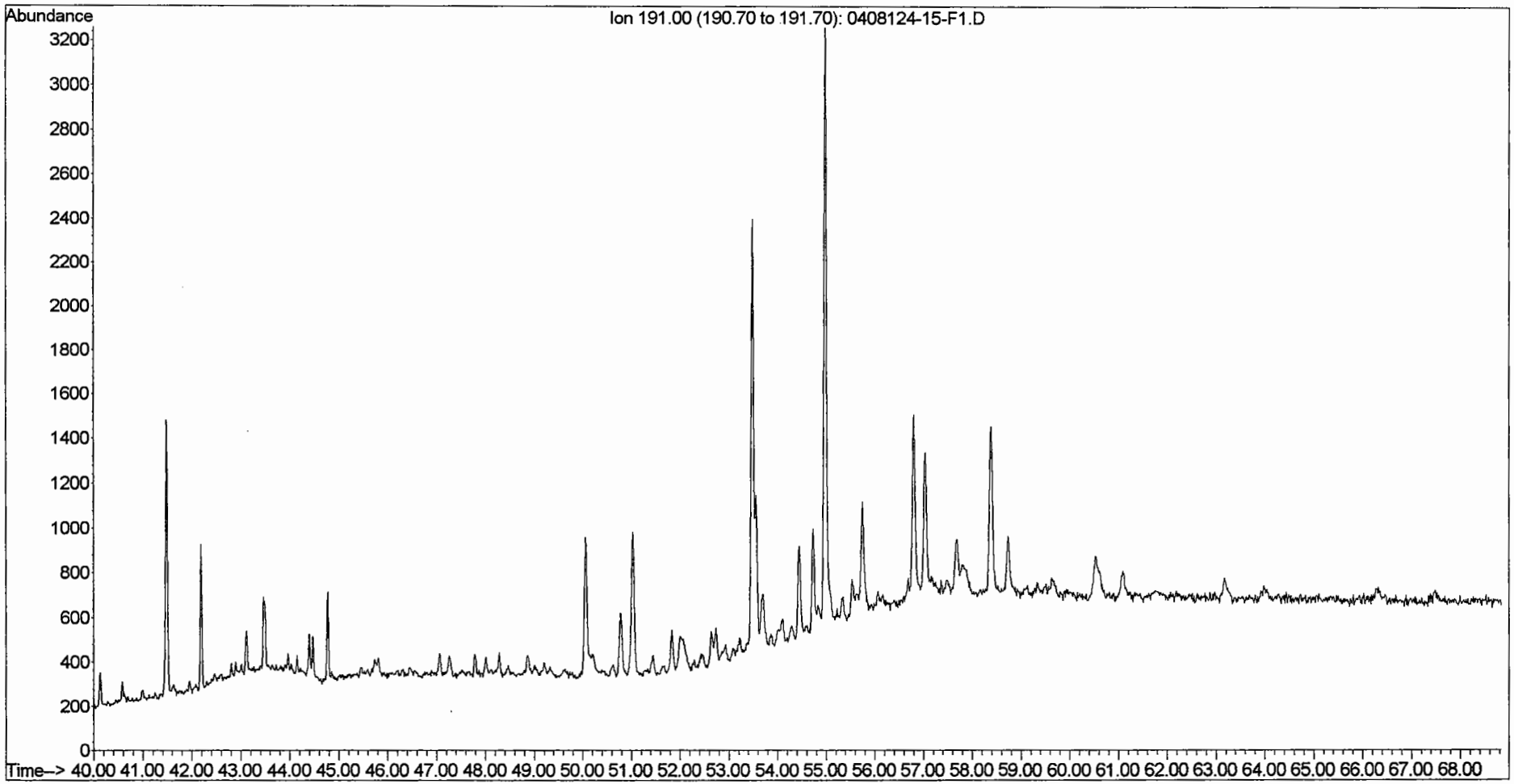
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14-F1
Misc Info : 1X
Vial Number: 41



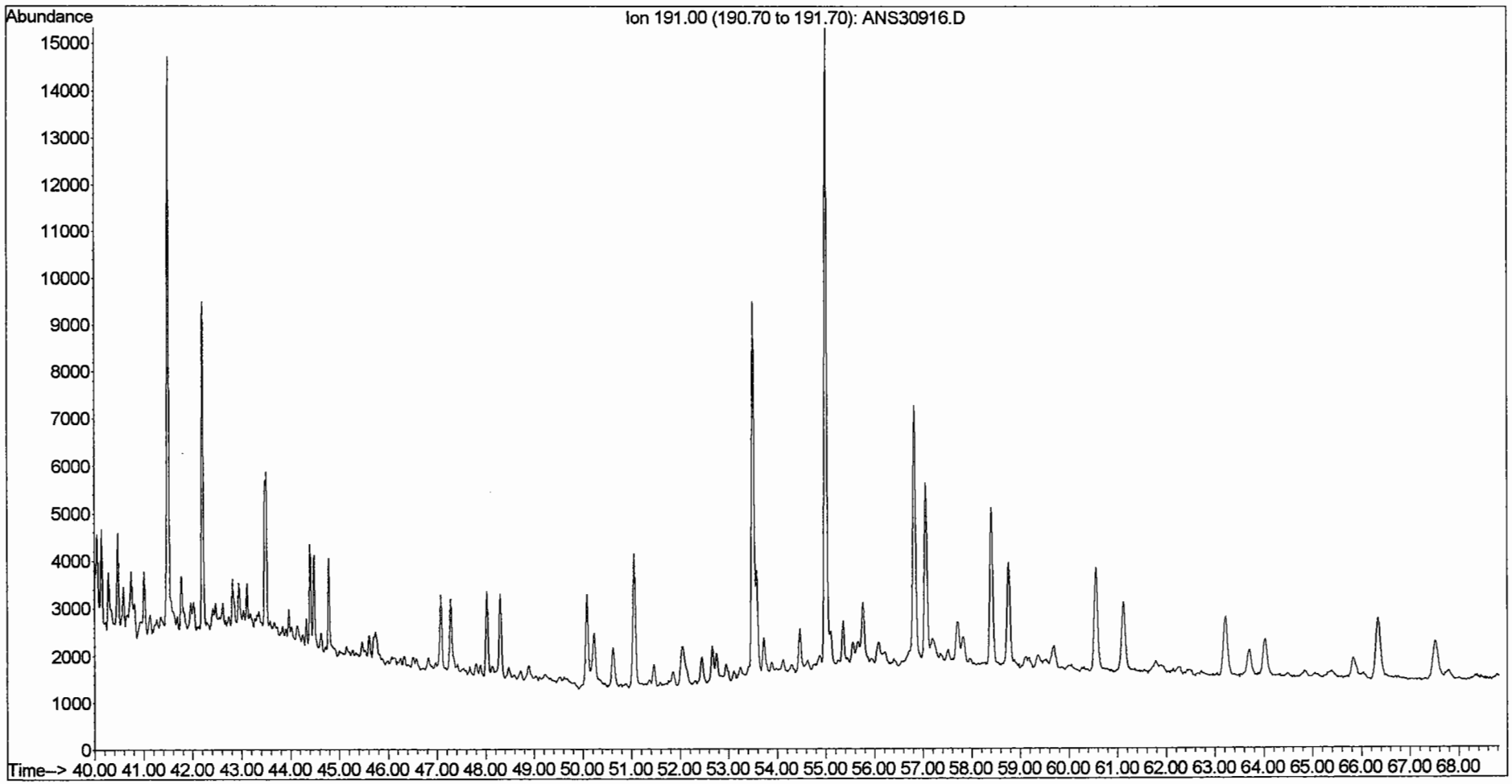
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14D-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14D-F1
Misc Info : 1X
Vial Number: 42



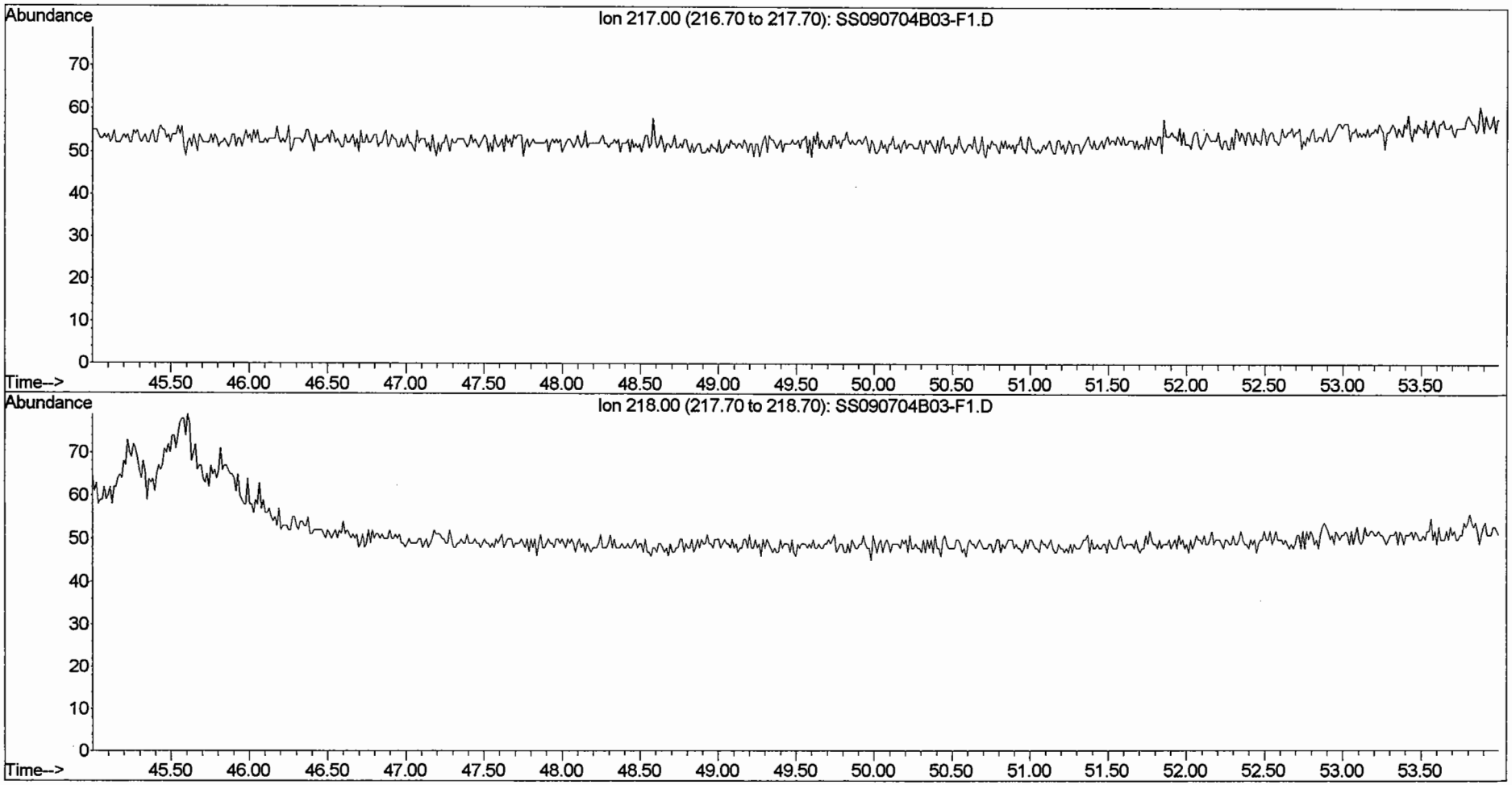
File :O:\Organics\DATA\PAH3\SEPT20\0408124-15-F1.D
Operator : BL
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-15-F1
Misc Info : 1X
Vial Number: 44



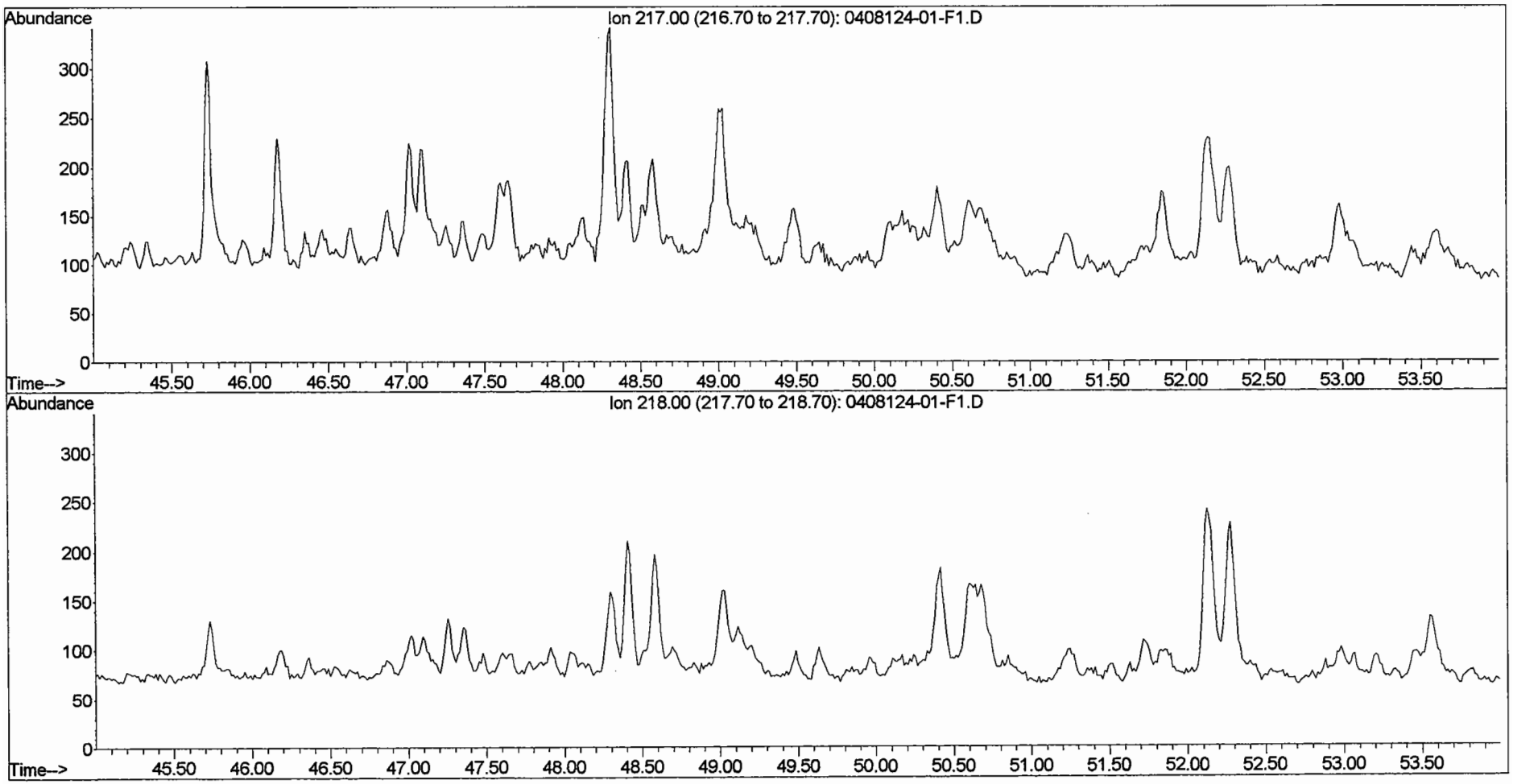
File :O:\Organics\DATA\PAH3\SEPT16\ANS30916.D
Operator : BL
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: ANS30916
Misc Info : SW090104A 5.14 ug/mL
Vial Number: 14



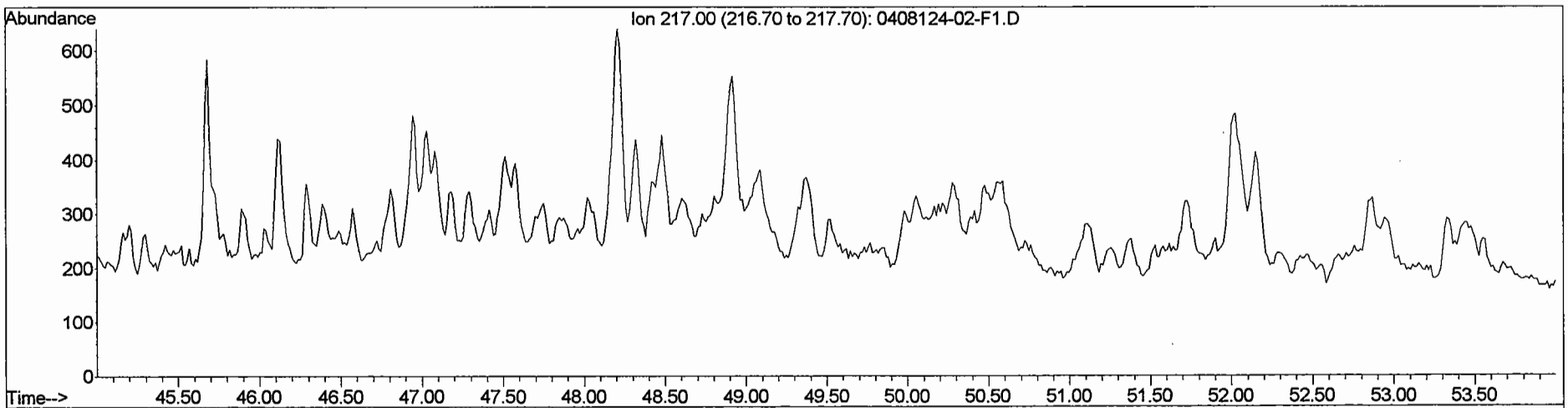
File :O:\Organics\DATA\PAH3\SEPT20\SS090704B03-F1.D
Operator : BL
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: SS090704B03-F1
Misc Info : 1X
Vial Number: 24

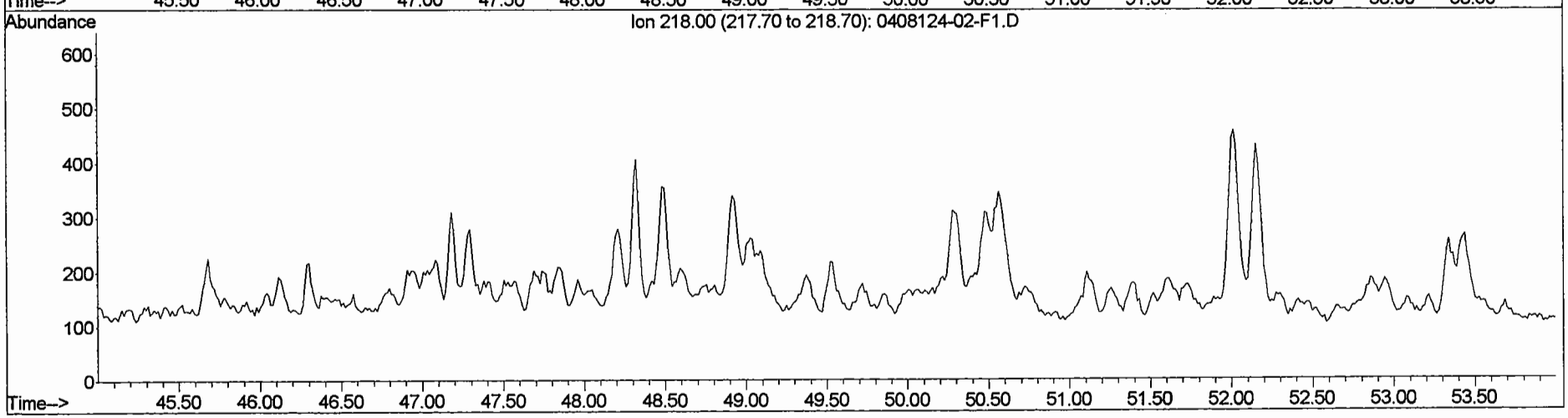


File :O:\Organics\DATA\PAH3\SEPT20\0408124-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-01-F1
Misc Info : 1X
Vial Number: 27

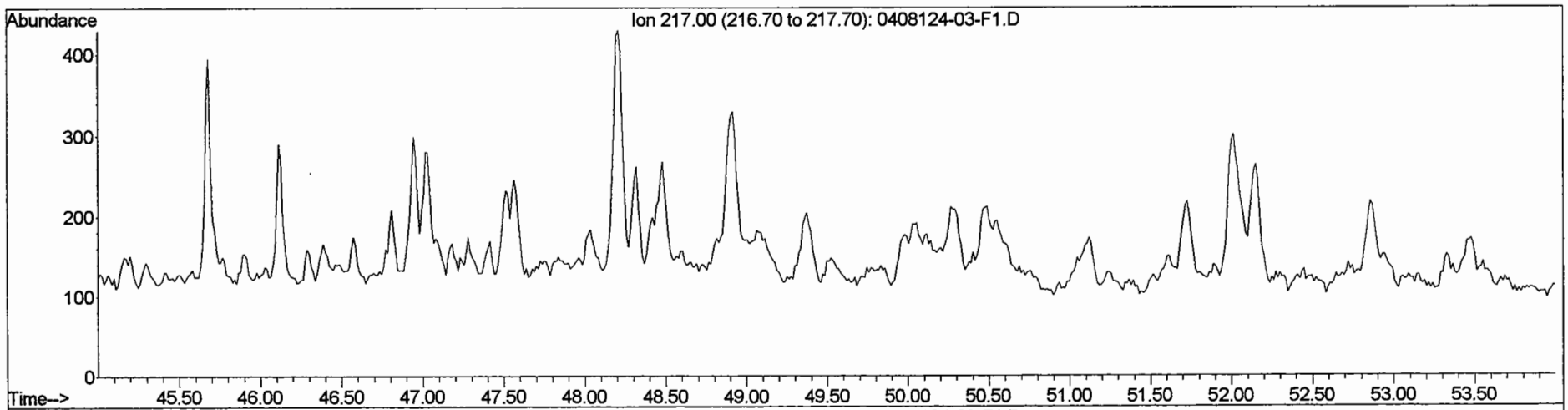


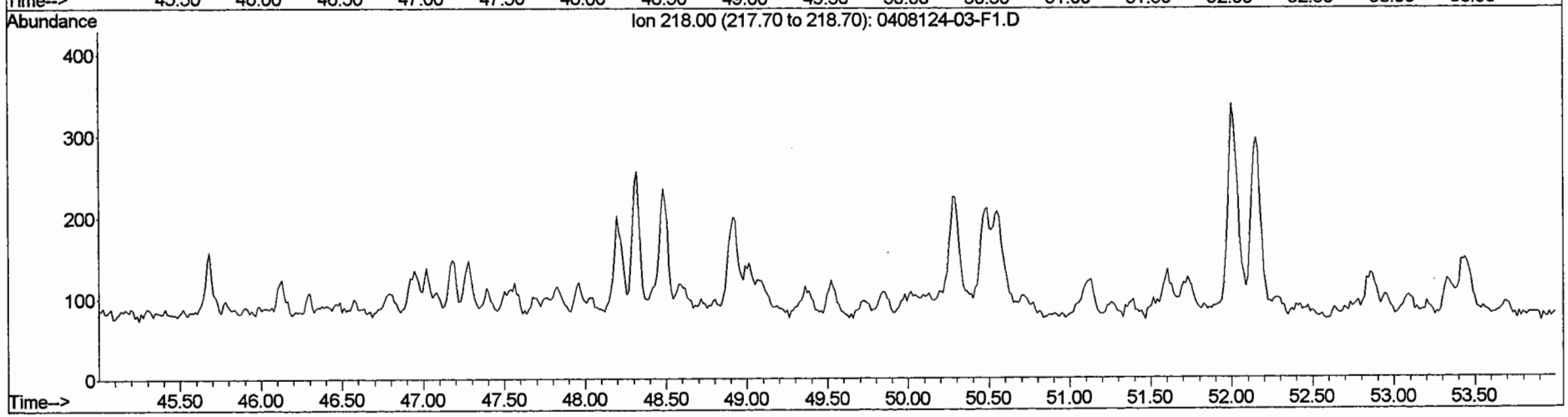
File :O:\Organics\DATA\PAH3\SEPT20\0408124-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-02-F1
Misc Info : 1X
Vial Number: 28



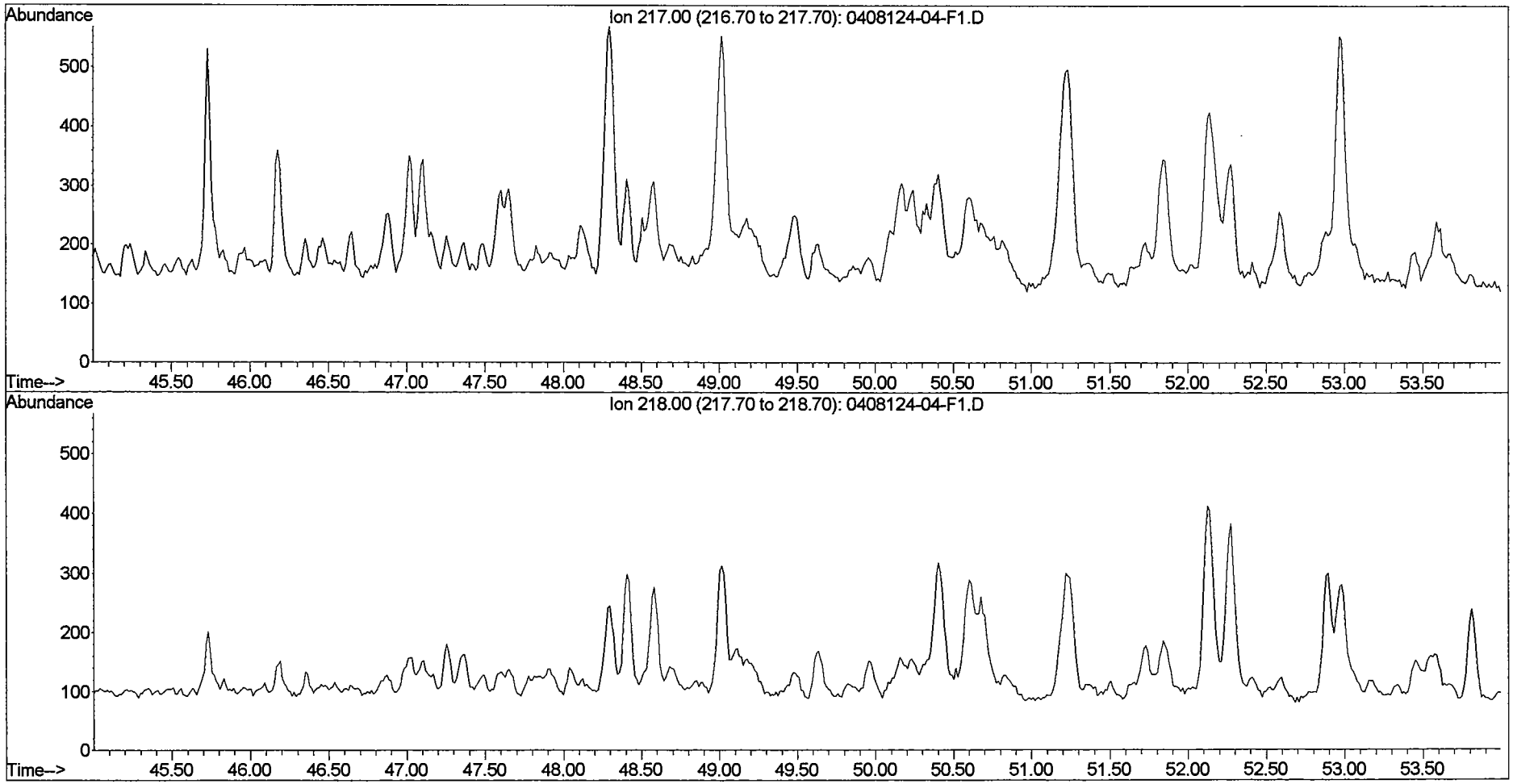


File :O:\Organics\DATA\PAH3\SEPT20\0408124-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-03-F1
Misc Info : 1X
Vial Number: 29

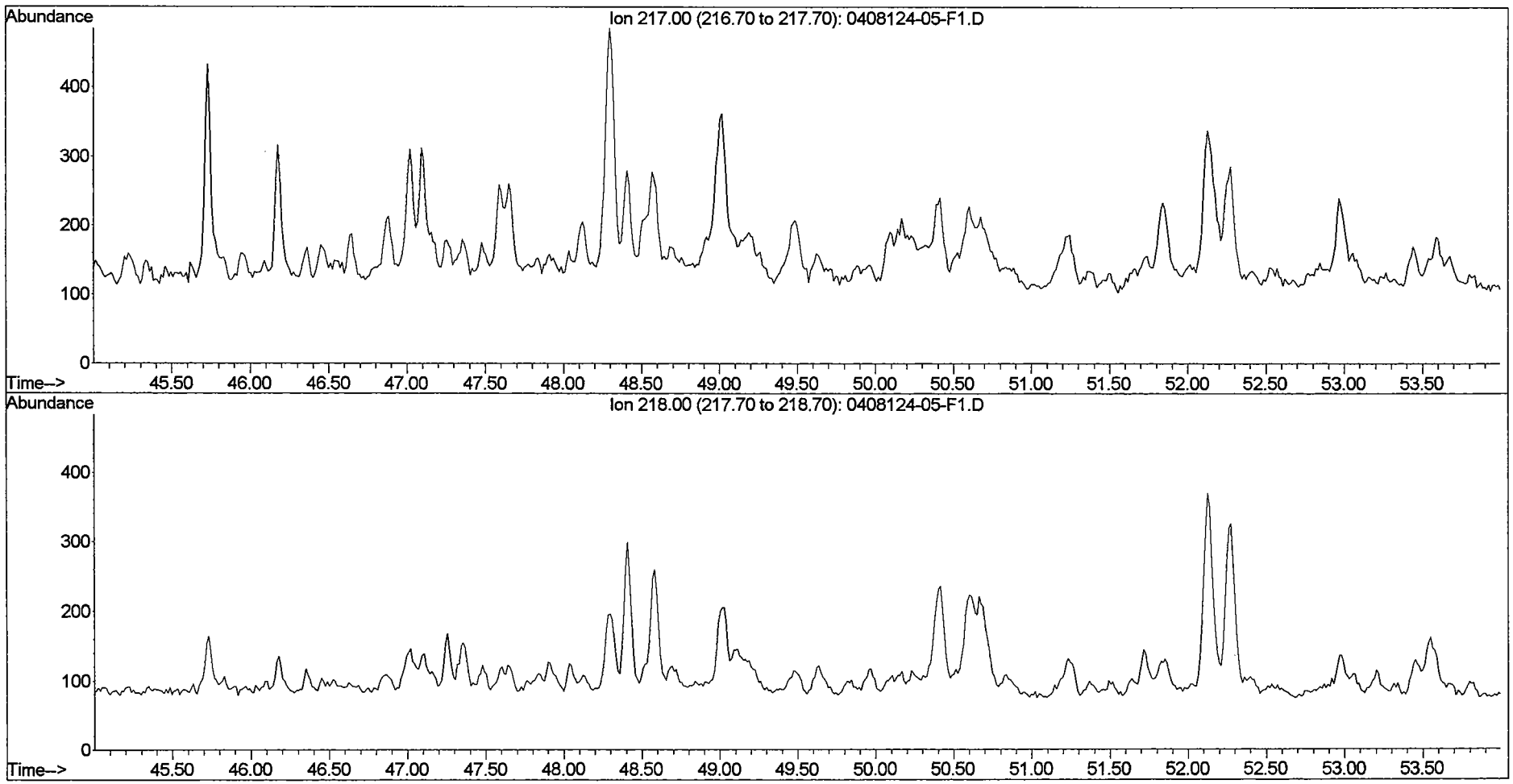




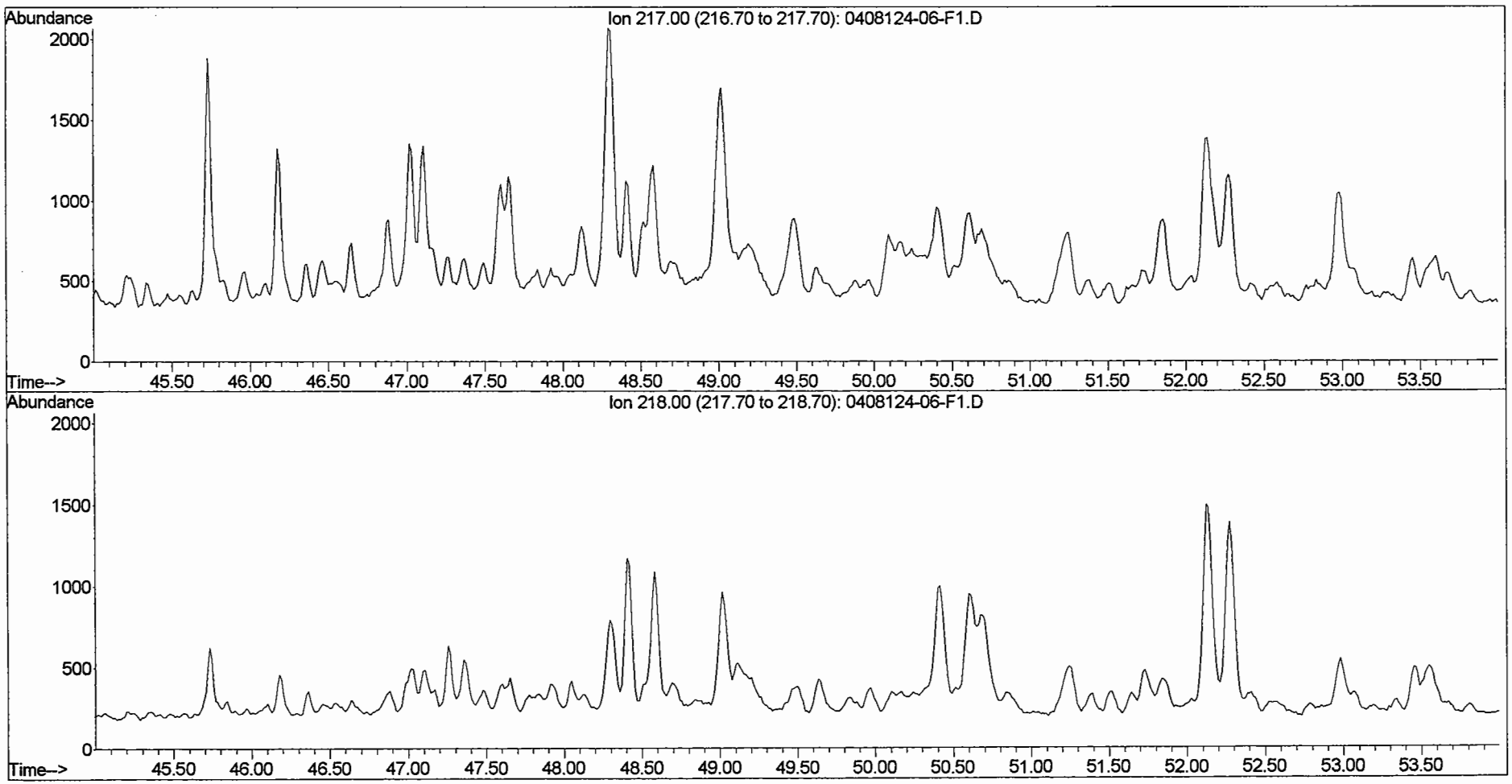
File :O:\Organics\DATA\PAH3\SEPT20\0408124-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-04-F1
Misc Info : 1X
Vial Number: 30



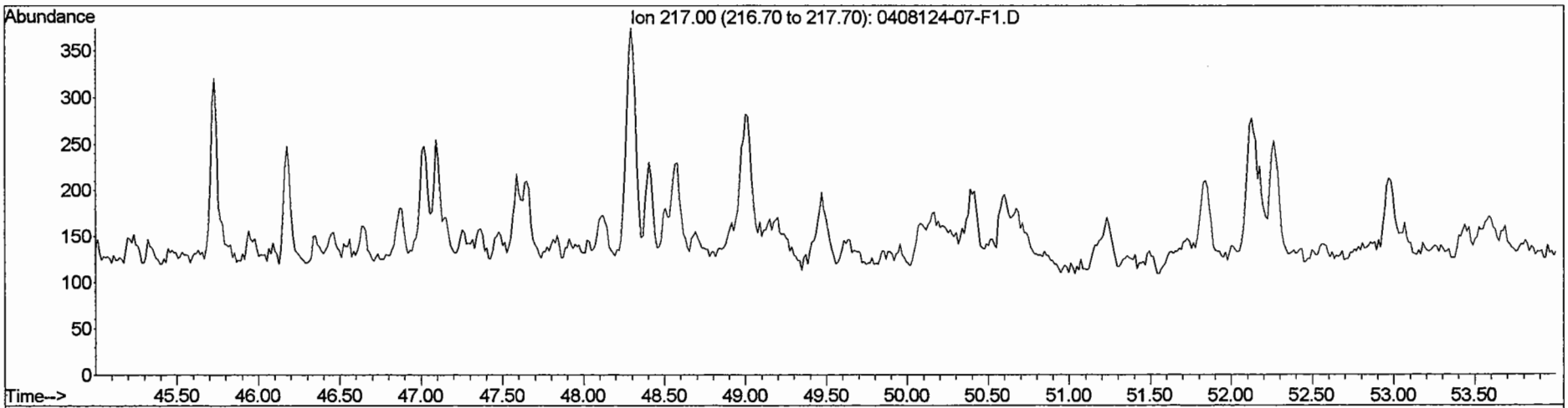
File :O:\Organics\DATA\PAH3\SEPT20\0408124-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-05-F1
Misc Info : 1X
Vial Number: 31

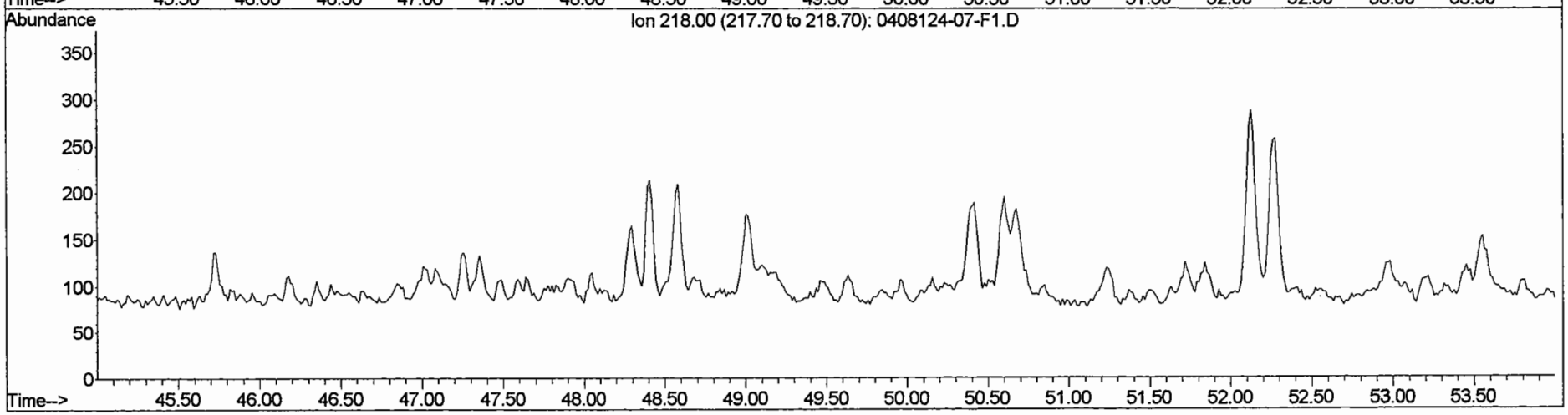


File :O:\Organics\DATA\PAH3\SEPT20\0408124-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-06-F1
Misc Info : 1X
Vial Number: 32

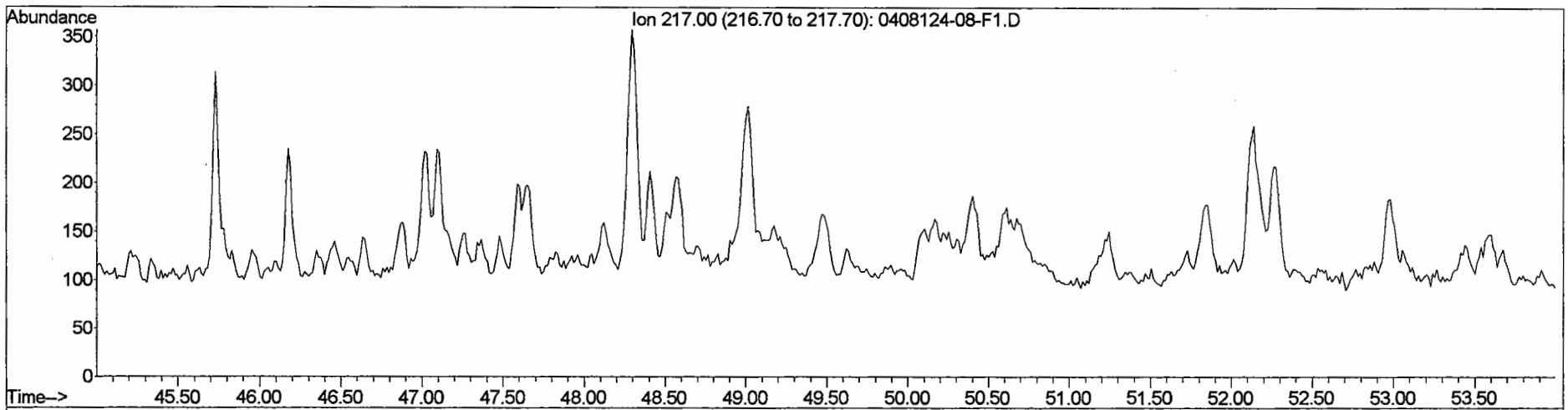


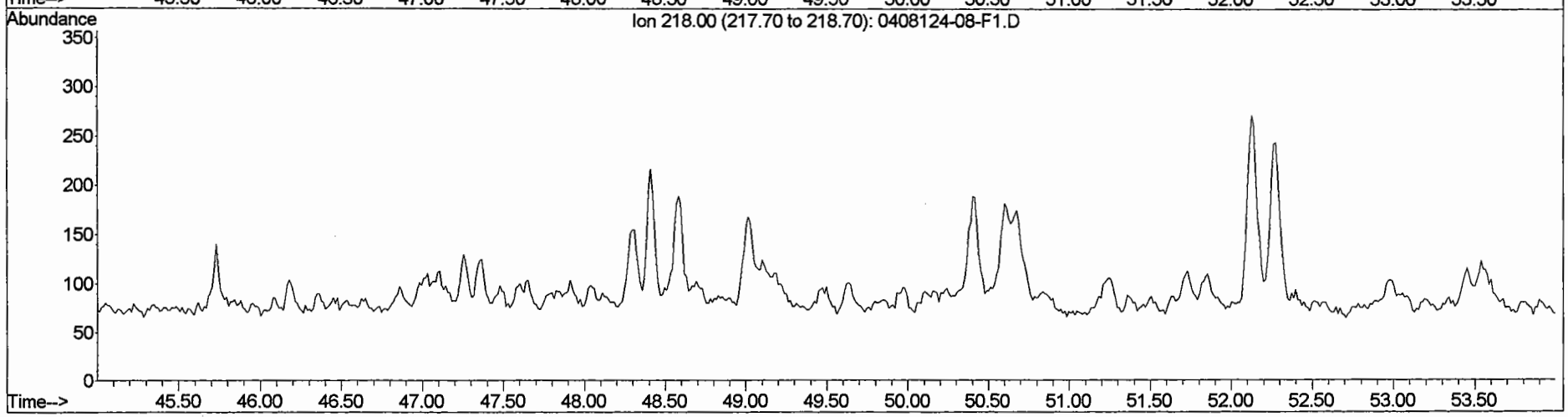
File :O:\Organics\DATA\PAH3\SEPT20\0408124-07-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-07-F1
Misc Info : 1X
Vial Number: 33



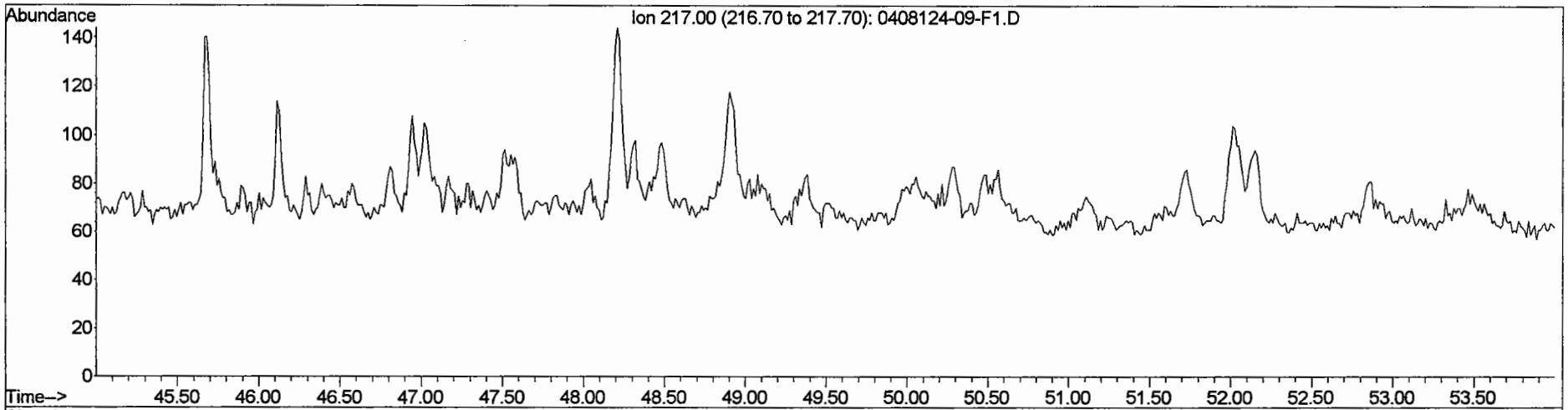


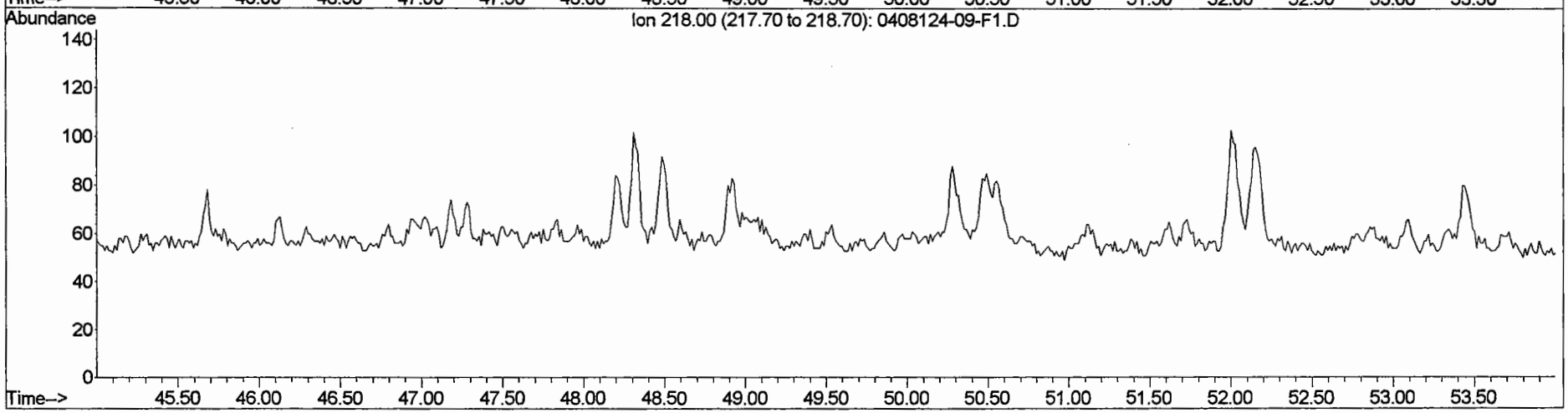
File :O:\Organics\DATA\PAH3\SEPT20\0408124-08-F1.D
Operator : BL
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-08-F1
Misc Info : 1X
Vial Number: 35



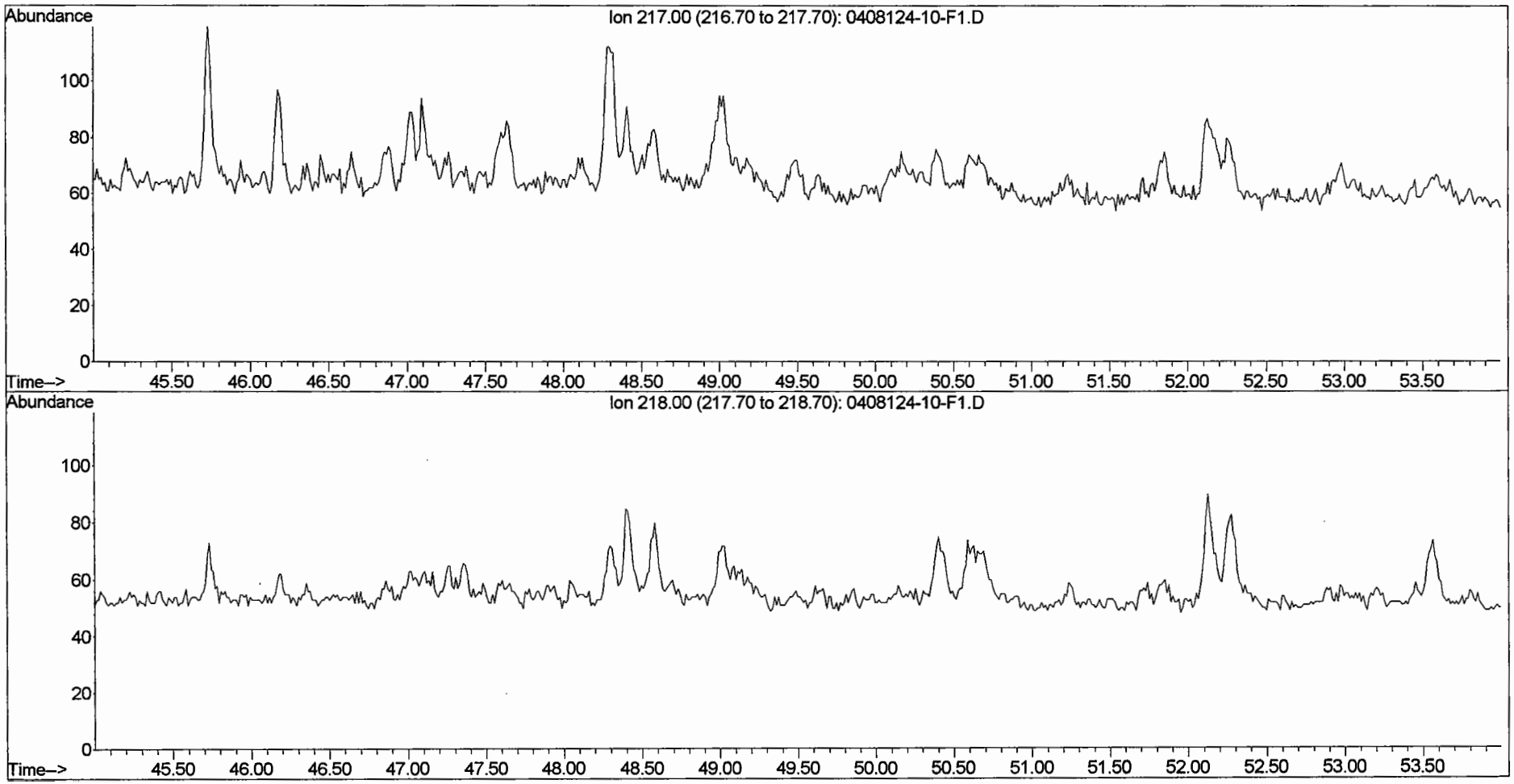


File :O:\Organics\DATA\PAH3\SEPT20\0408124-09-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-09-F1
Misc Info : 1X
Vial Number: 36

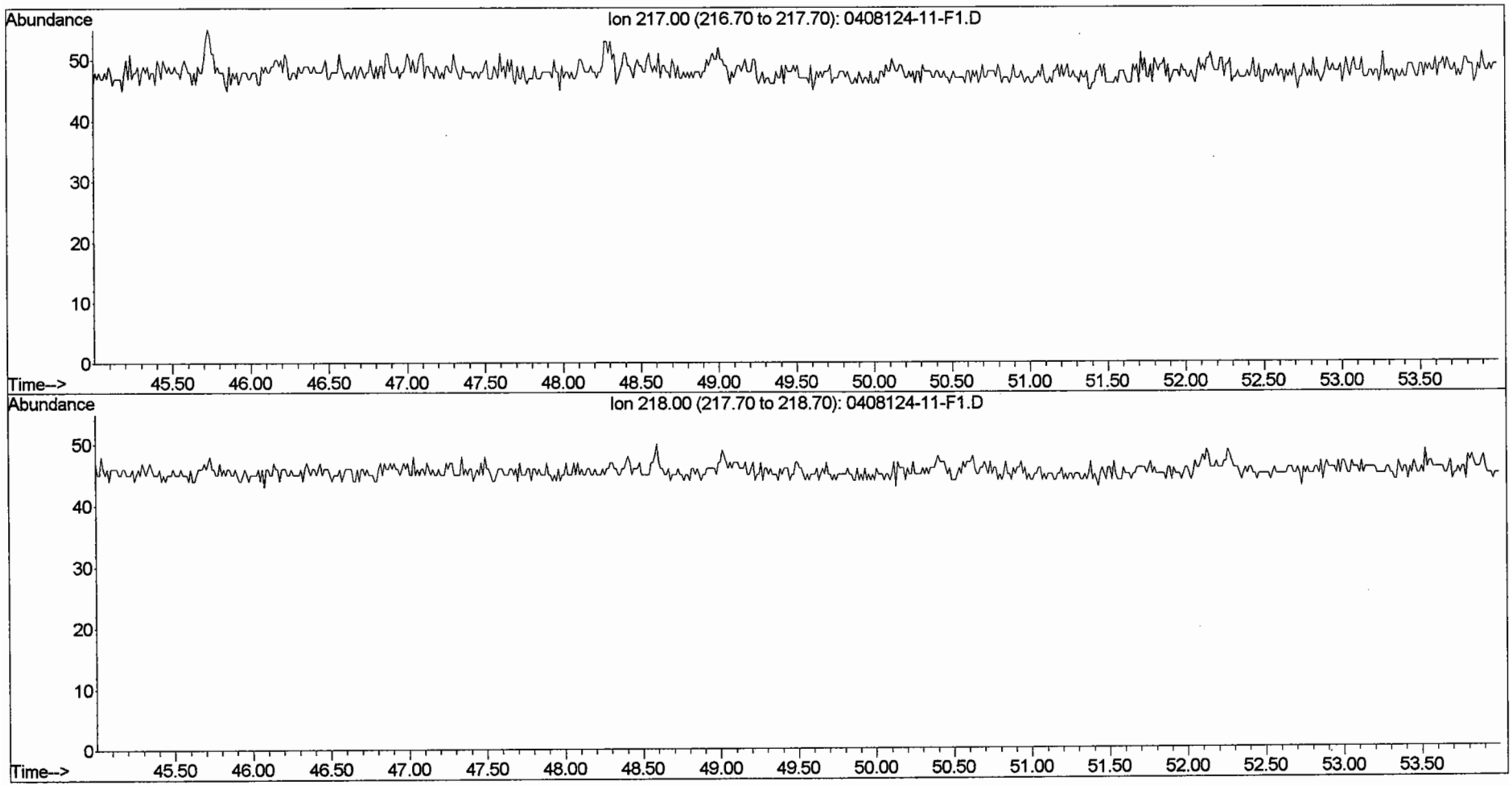




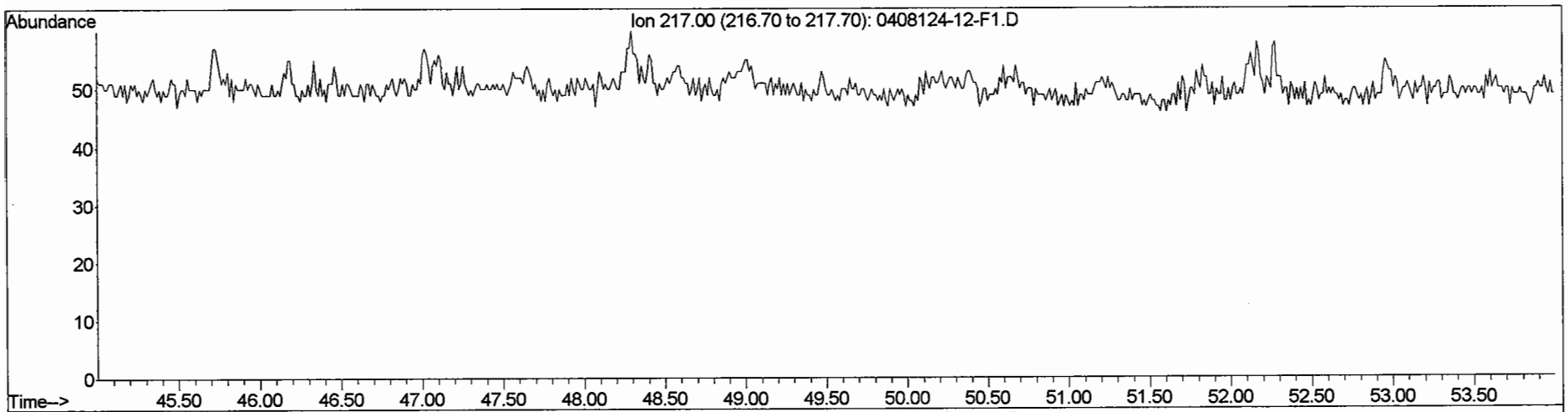
File :O:\Organics\DATA\PAH3\SEPT20\0408124-10-F1.D
Operator : BL
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-10-F1
Misc Info : 1X
Vial Number: 37

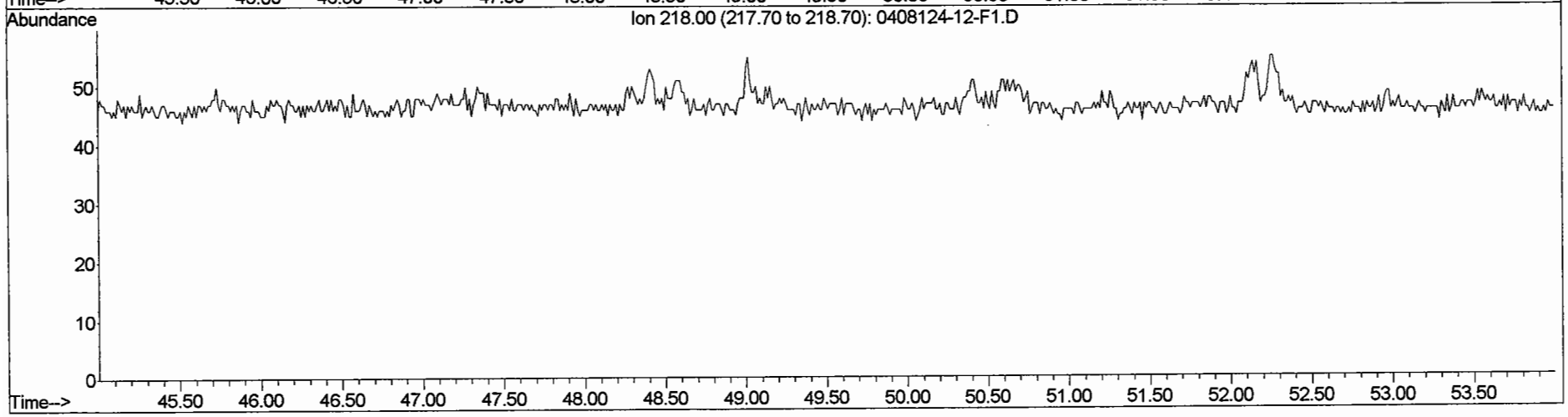


File :O:\Organics\DATA\PAH3\SEPT20\0408124-11-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-11-F1
Misc Info : 1X
Vial Number: 38

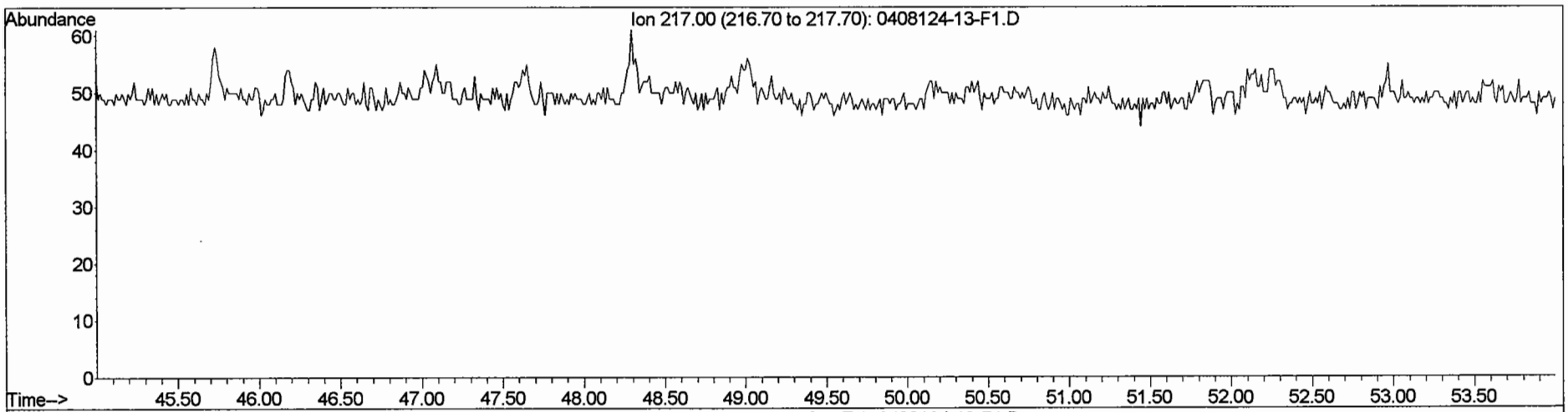


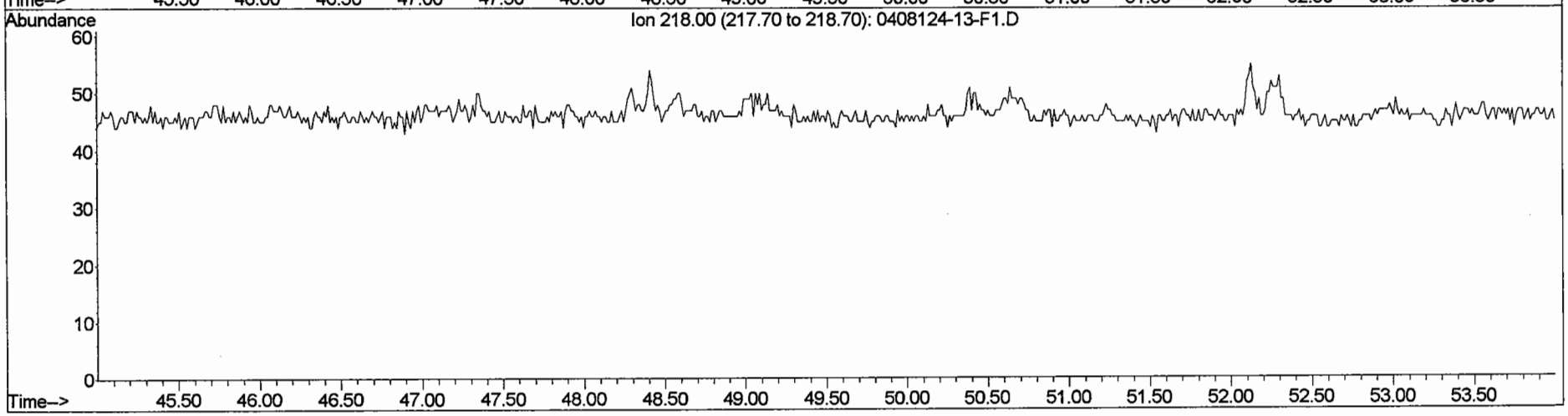
File :O:\Organics\DATA\PAH3\SEPT20\0408124-12-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-12-F1
Misc Info : 1X
Vial Number: 39



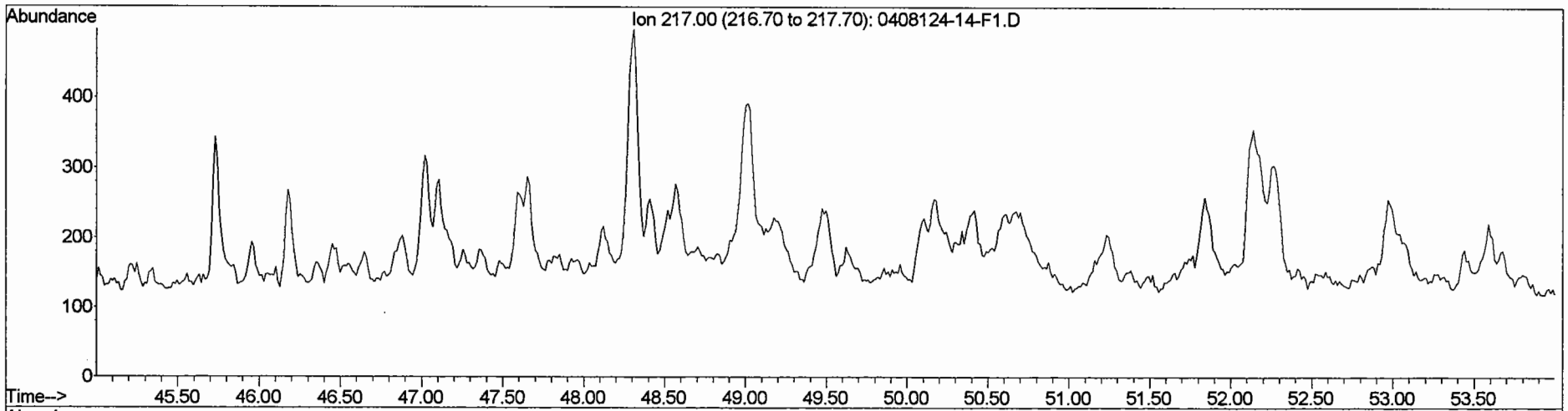


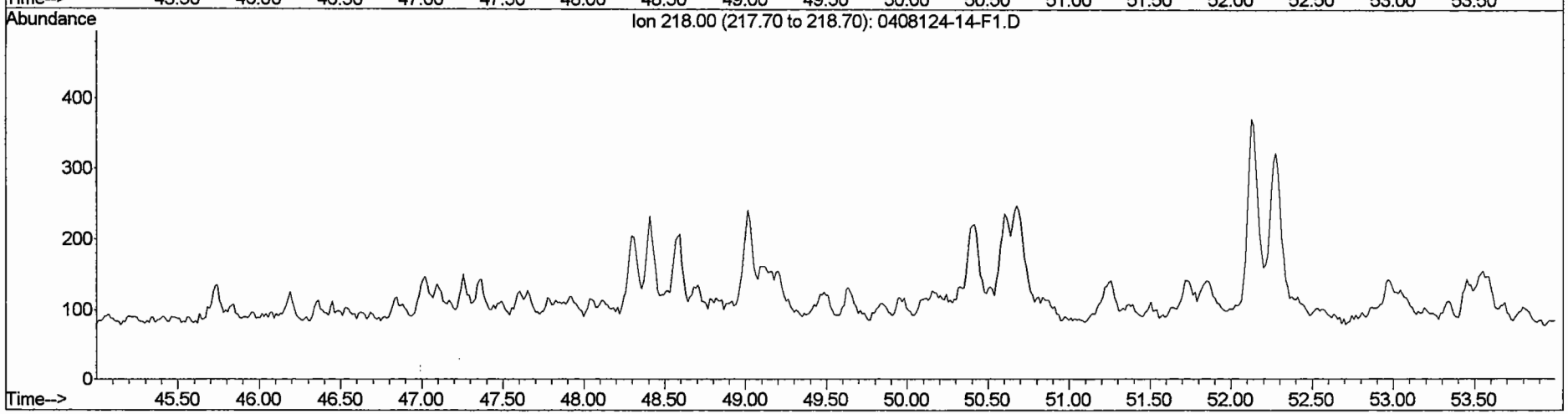
File :O:\Organics\DATA\PAH3\SEPT20\0408124-13-F1.D
Operator : BL
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-13-F1
Misc Info : 1X
Vial Number: 40



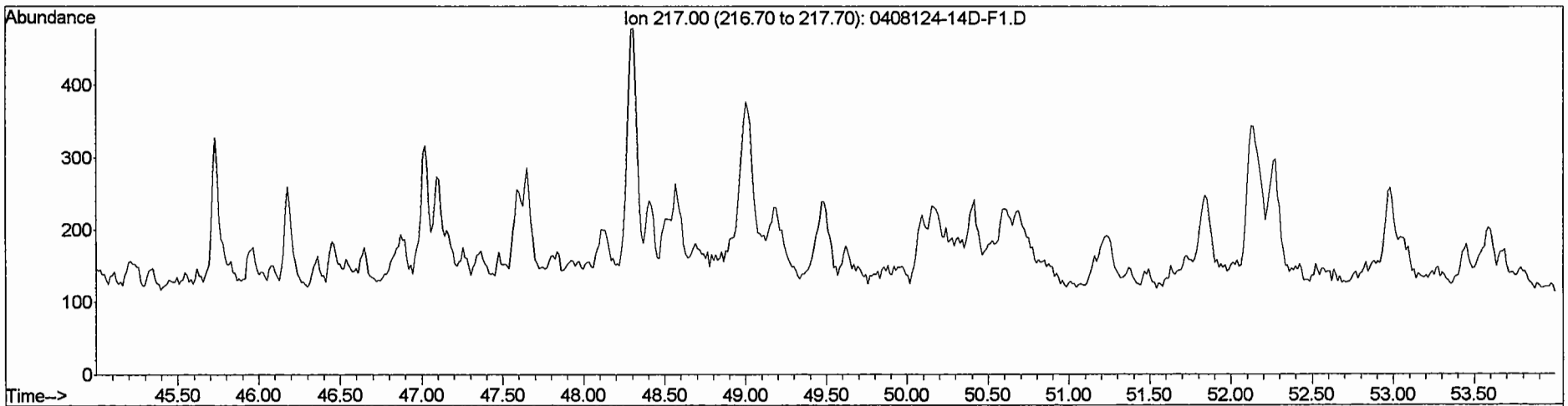


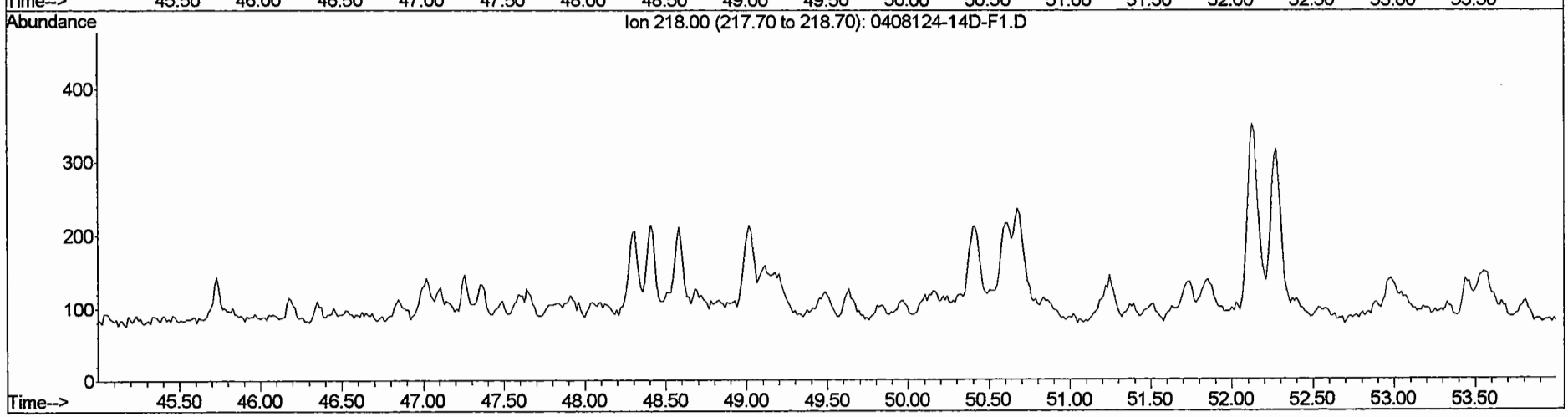
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14-F1
Misc Info : 1X
Vial Number: 41



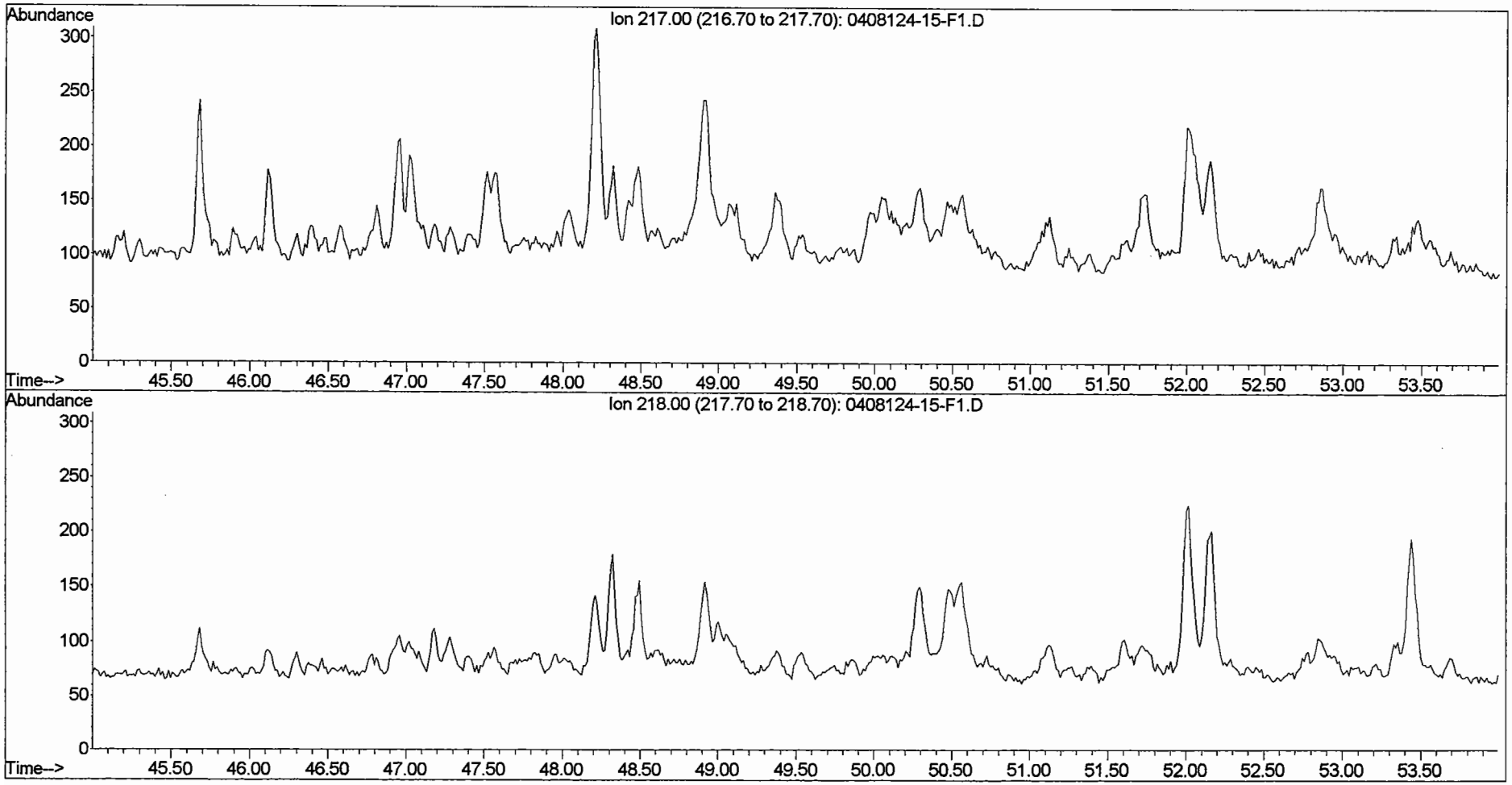


File :O:\Organics\DATA\PAH3\SEPT20\0408124-14D-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14D-F1
Misc Info : 1X
Vial Number: 42

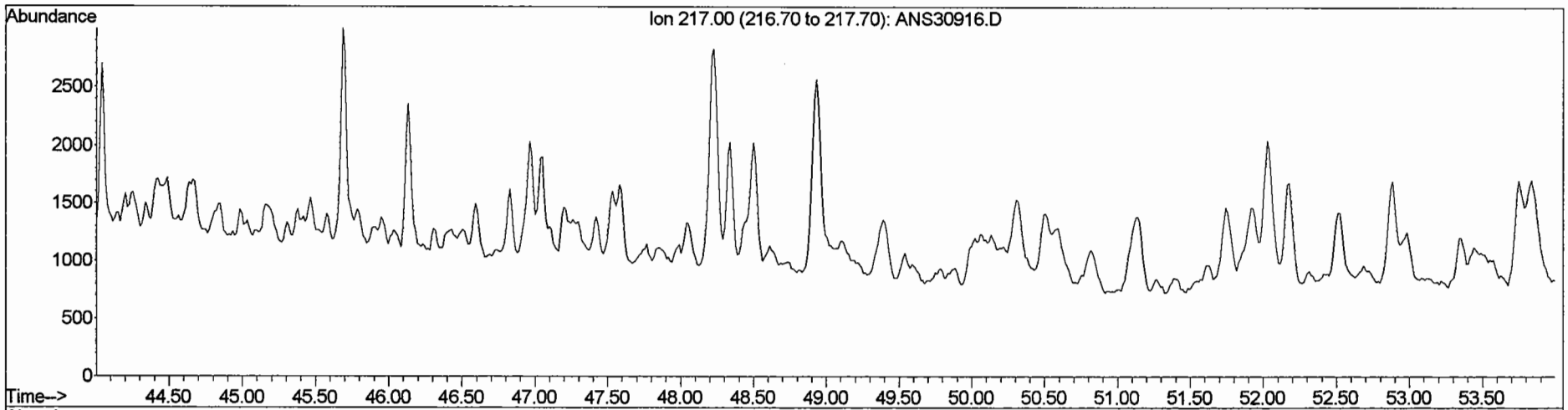


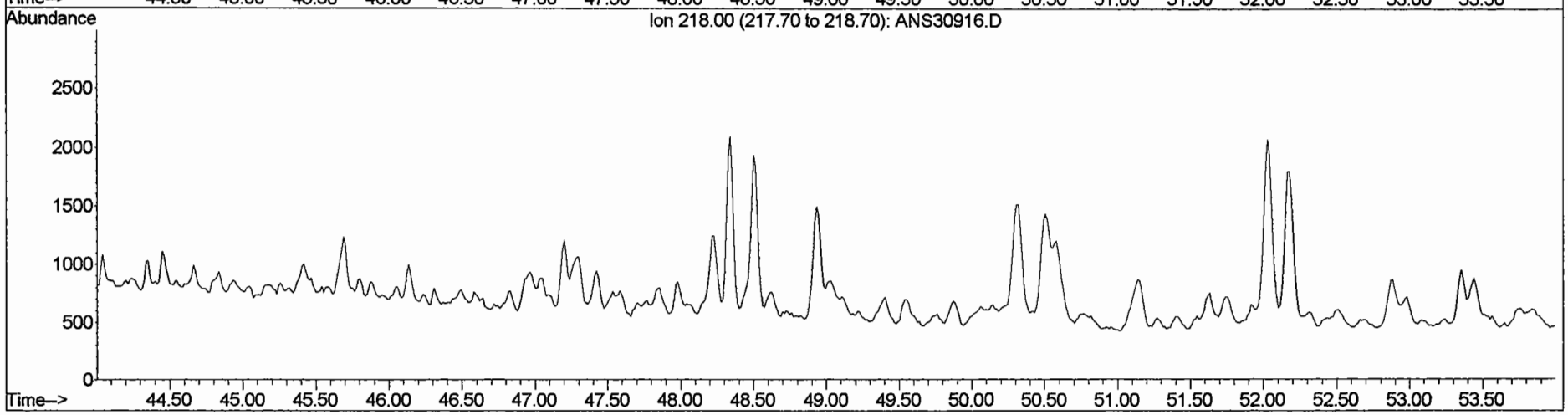


File :O:\Organics\DATA\PAH3\SEPT20\0408124-15-F1.D
Operator : BL
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-15-F1
Misc Info : 1X
Vial Number: 44

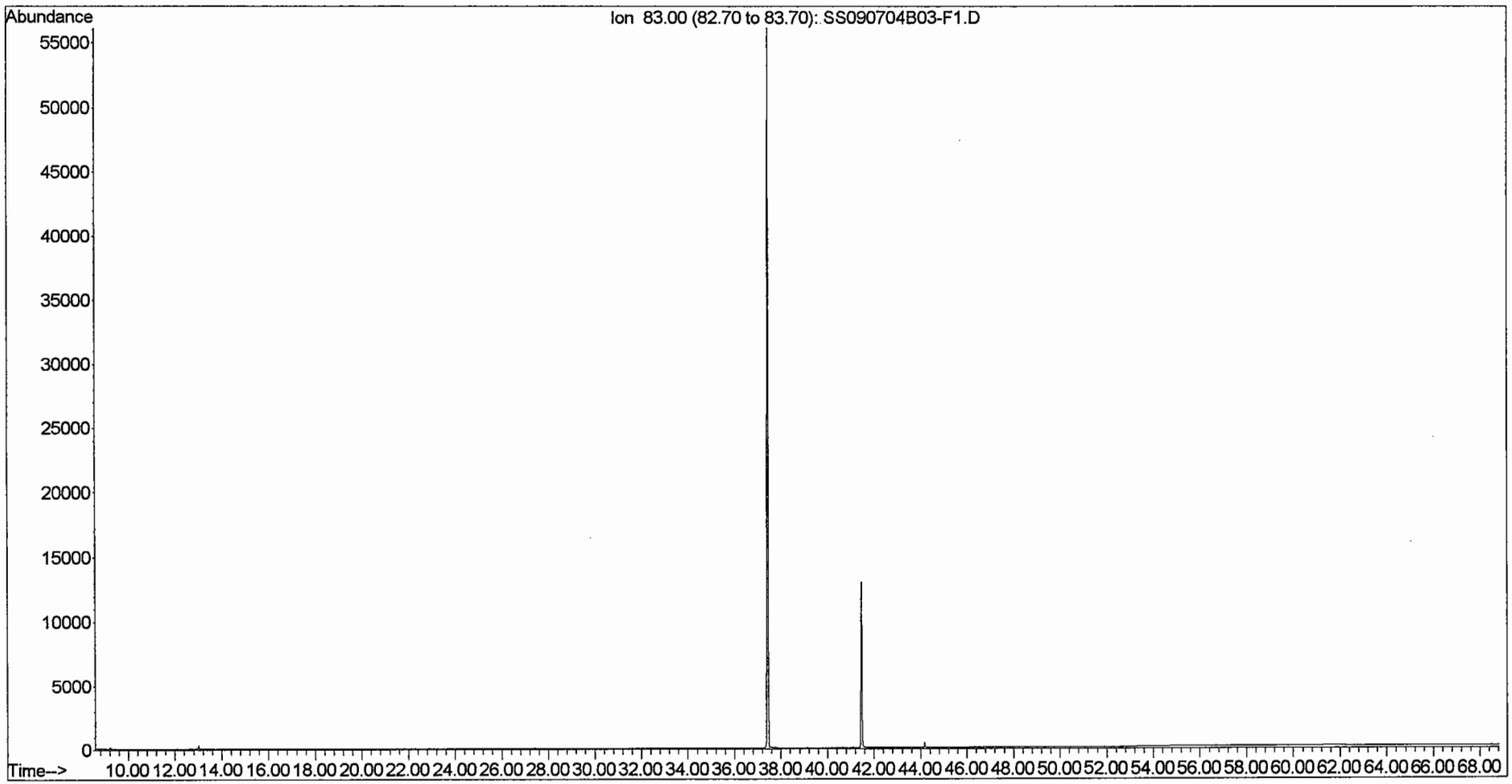


File :O:\Organics\DATA\PAH3\SEPT16\ANS30916.D
Operator : BL
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: ANS30916
Misc Info : SW090104A 5.14 ug/mL
Vial Number: 14

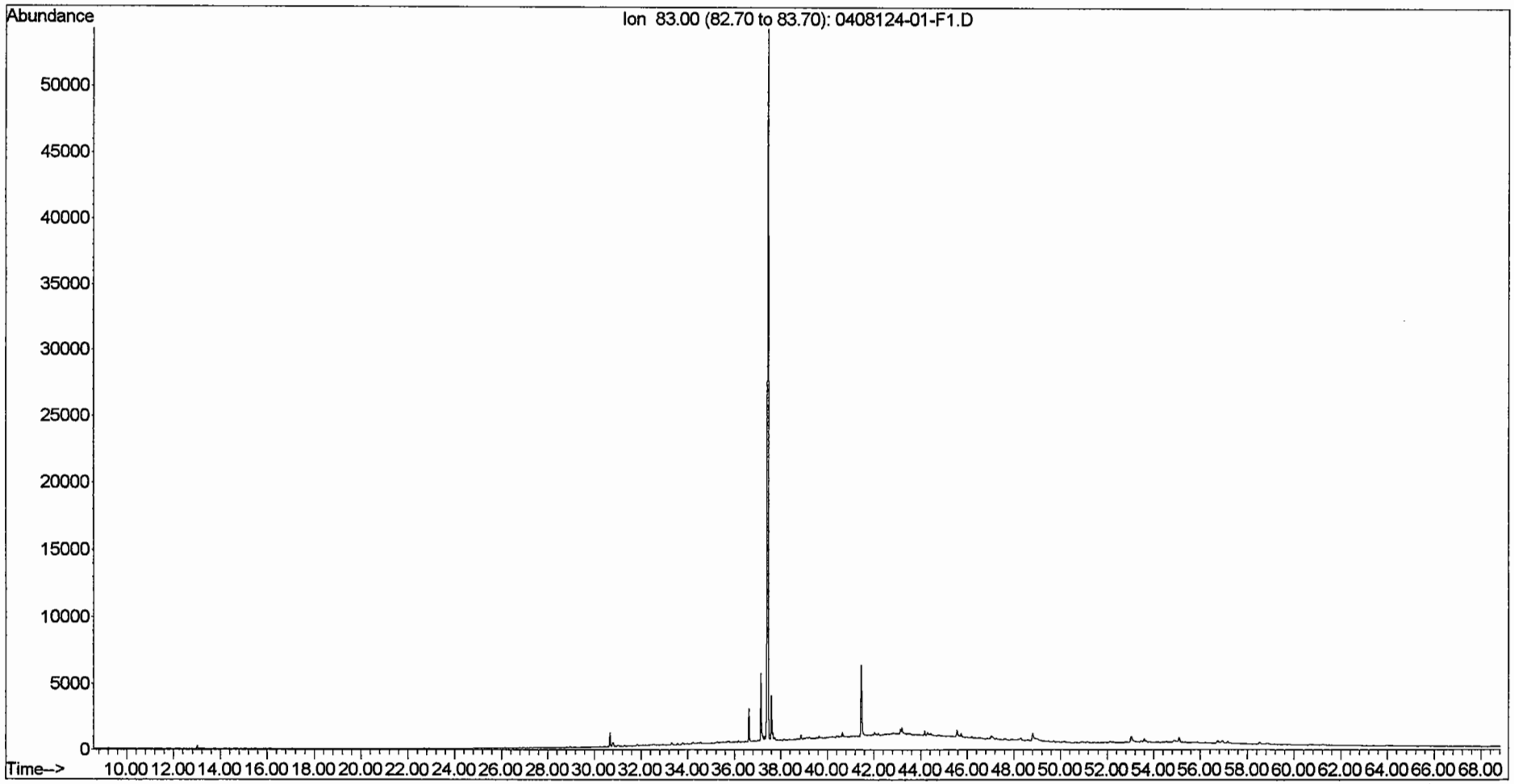




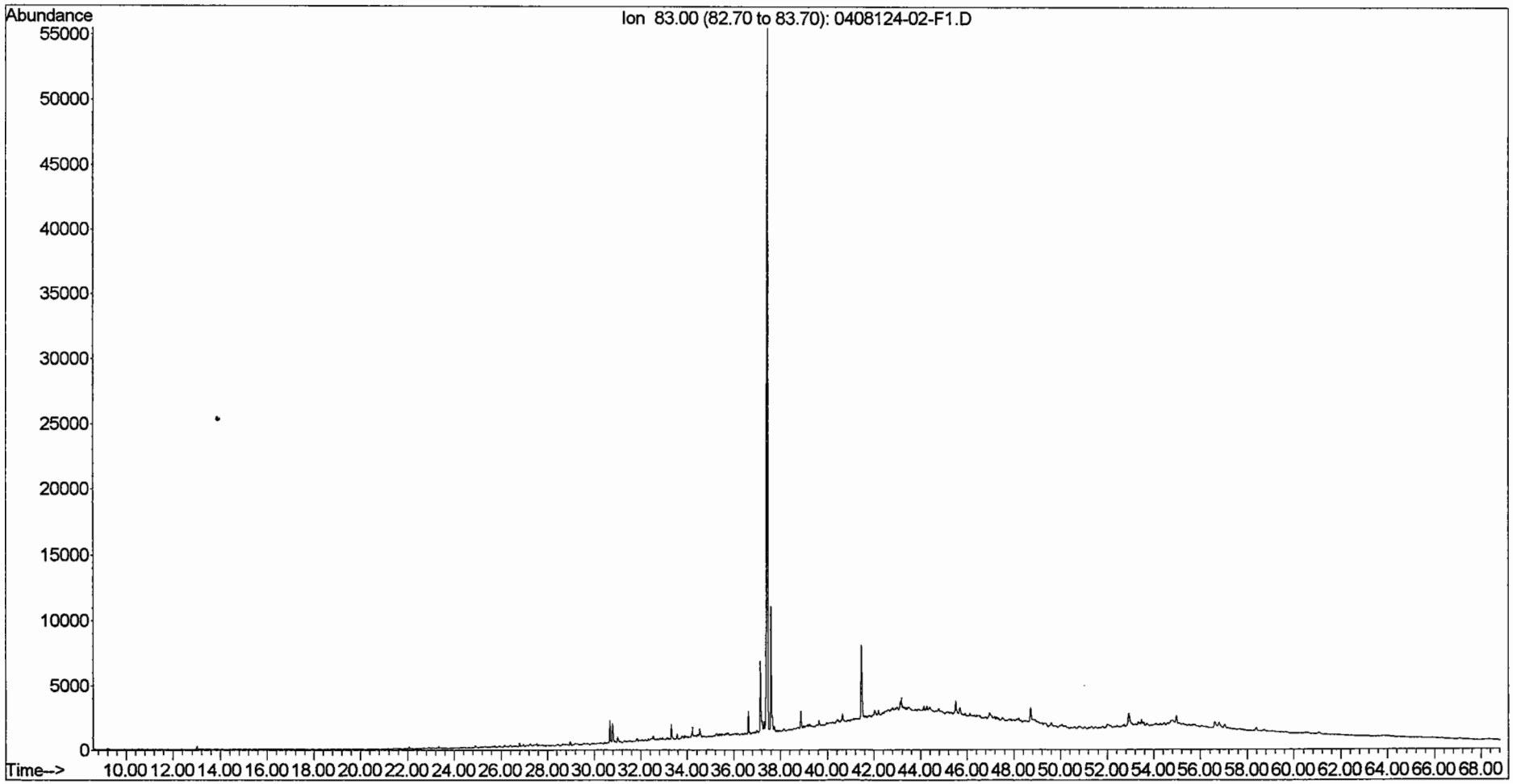
File :O:\Organics\DATA\PAH3\SEPT20\SS090704B03-F1.D
Operator : BL
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: SS090704B03-F1
Misc Info : 1X
Vial Number: 24



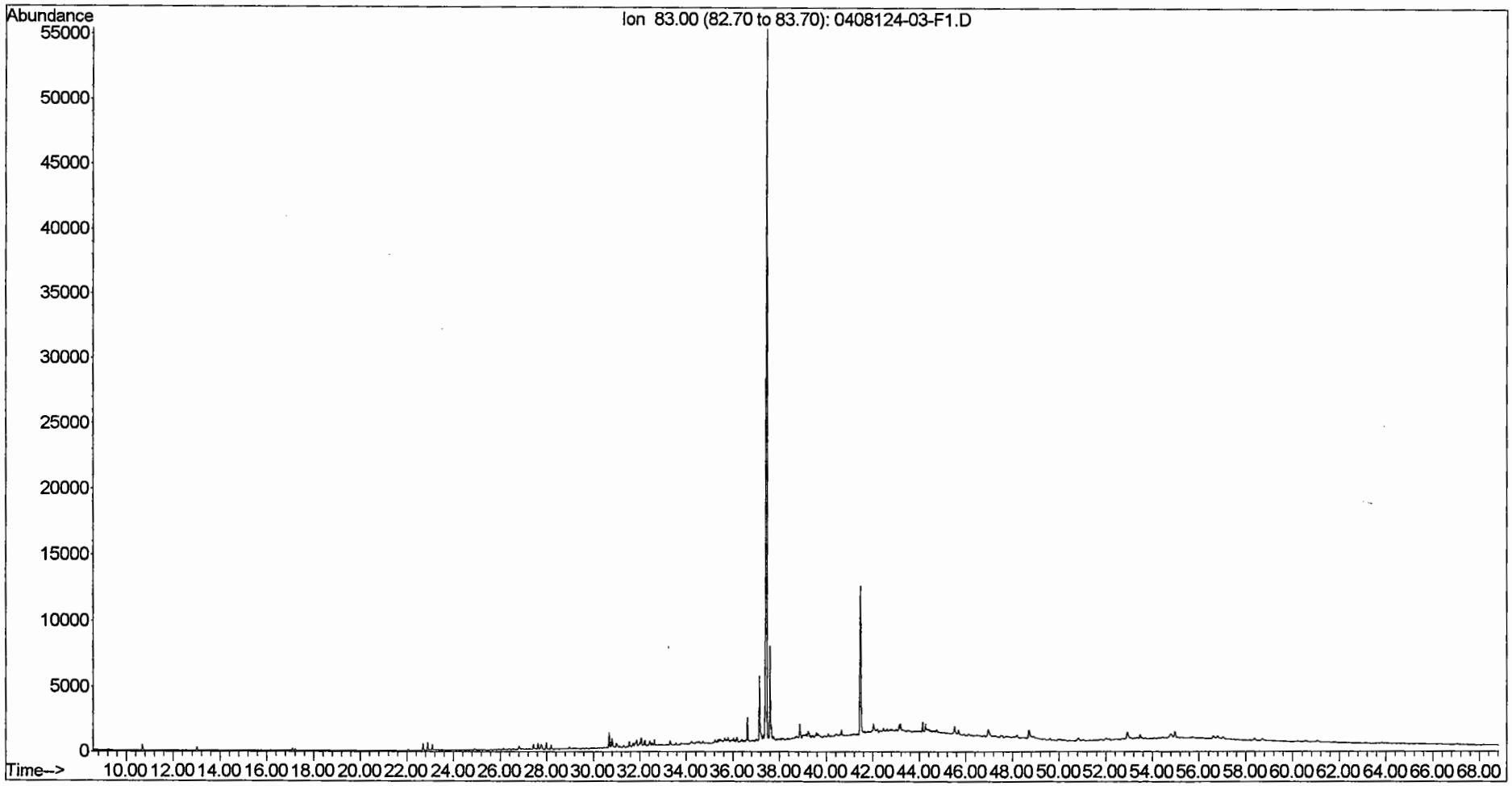
File :O:\Organics\DATA\PAH3\SEPT20\0408124-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-01-F1
Misc Info : 1X
Vial Number: 27



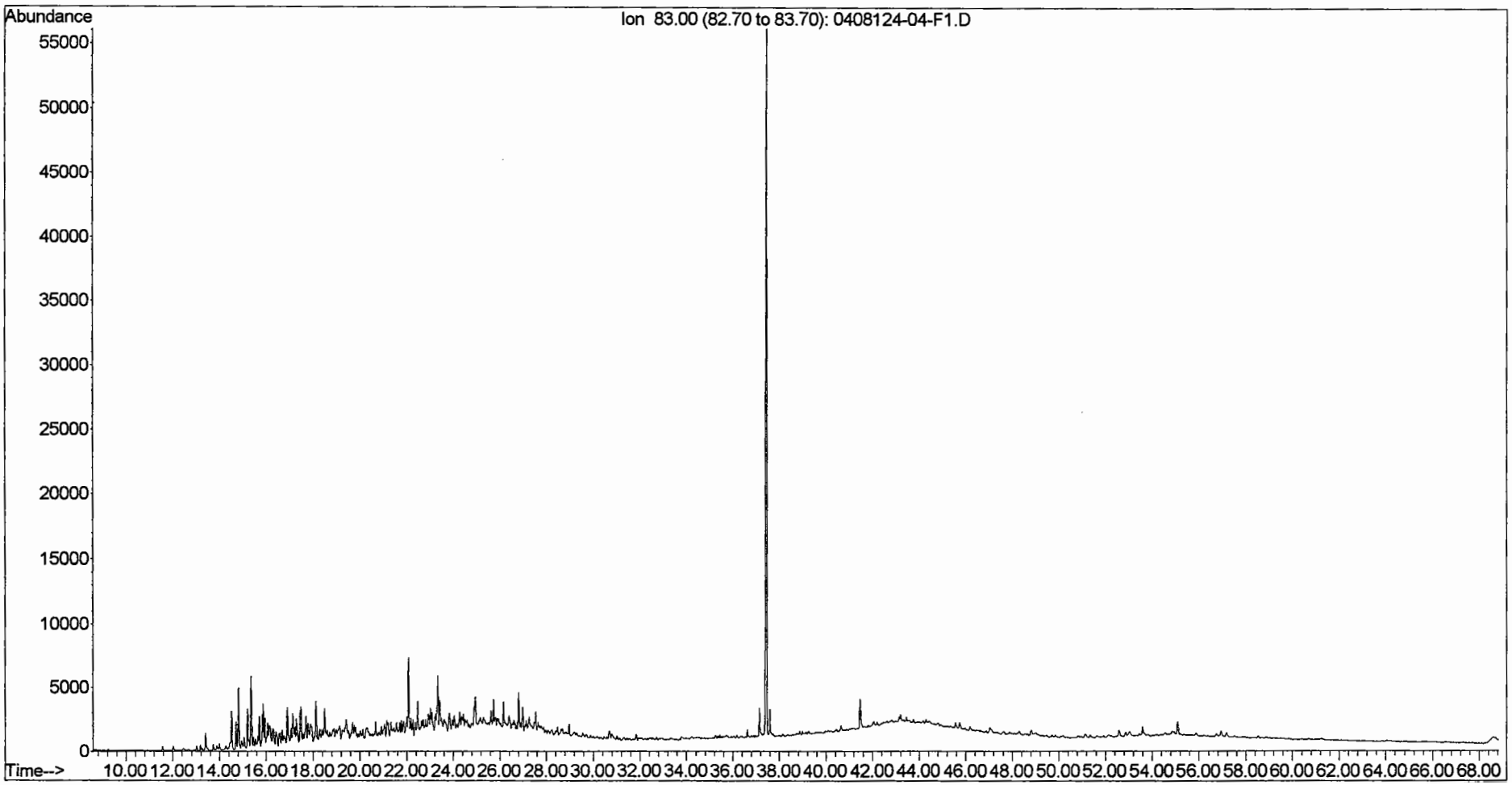
File :O:\Organics\DATA\PAH3\SEPT20\0408124-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-02-F1
Misc Info : 1X
Vial Number: 28



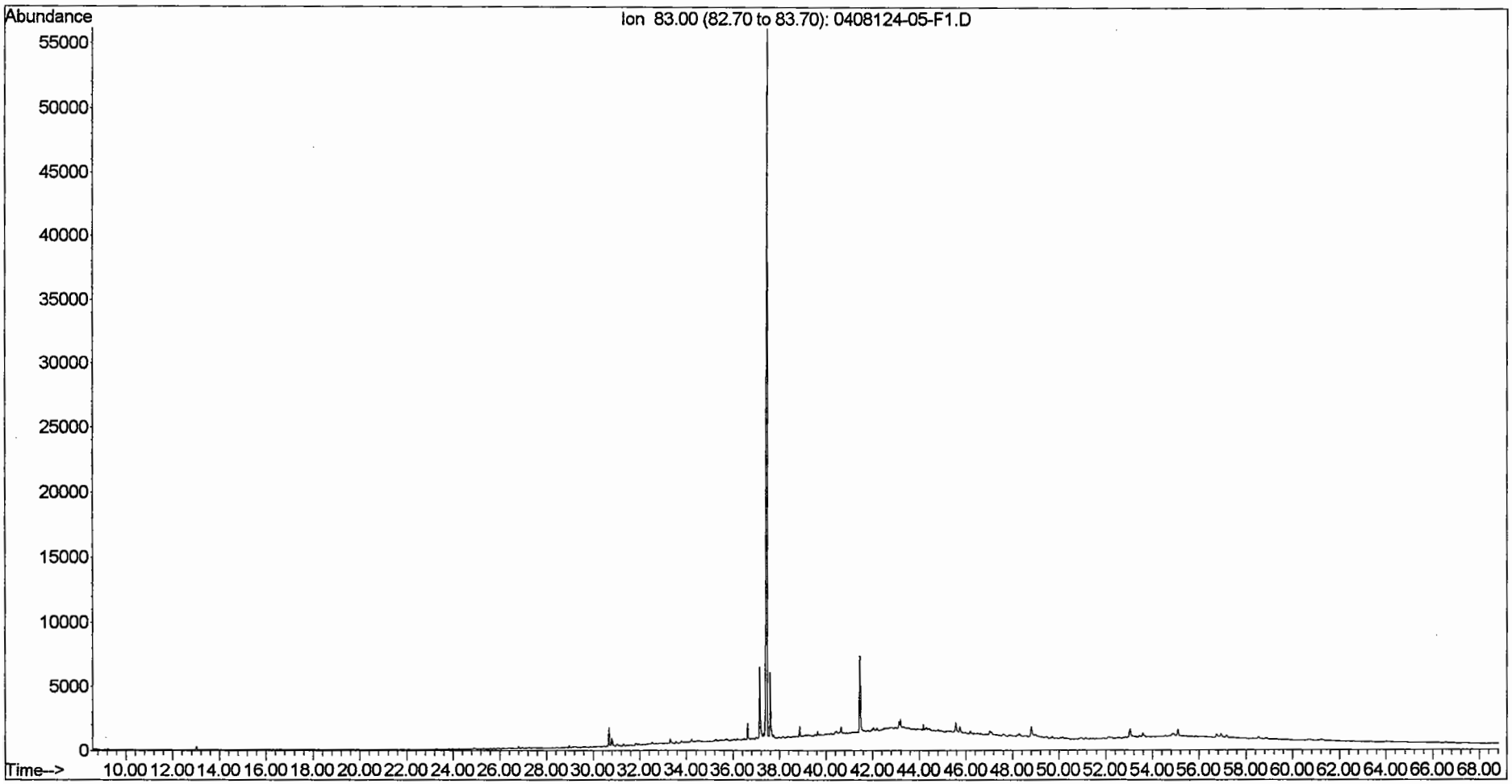
File :O:\Organics\DATA\PAH3\SEPT20\0408124-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-03-F1
Misc Info : 1X
Vial Number: 29



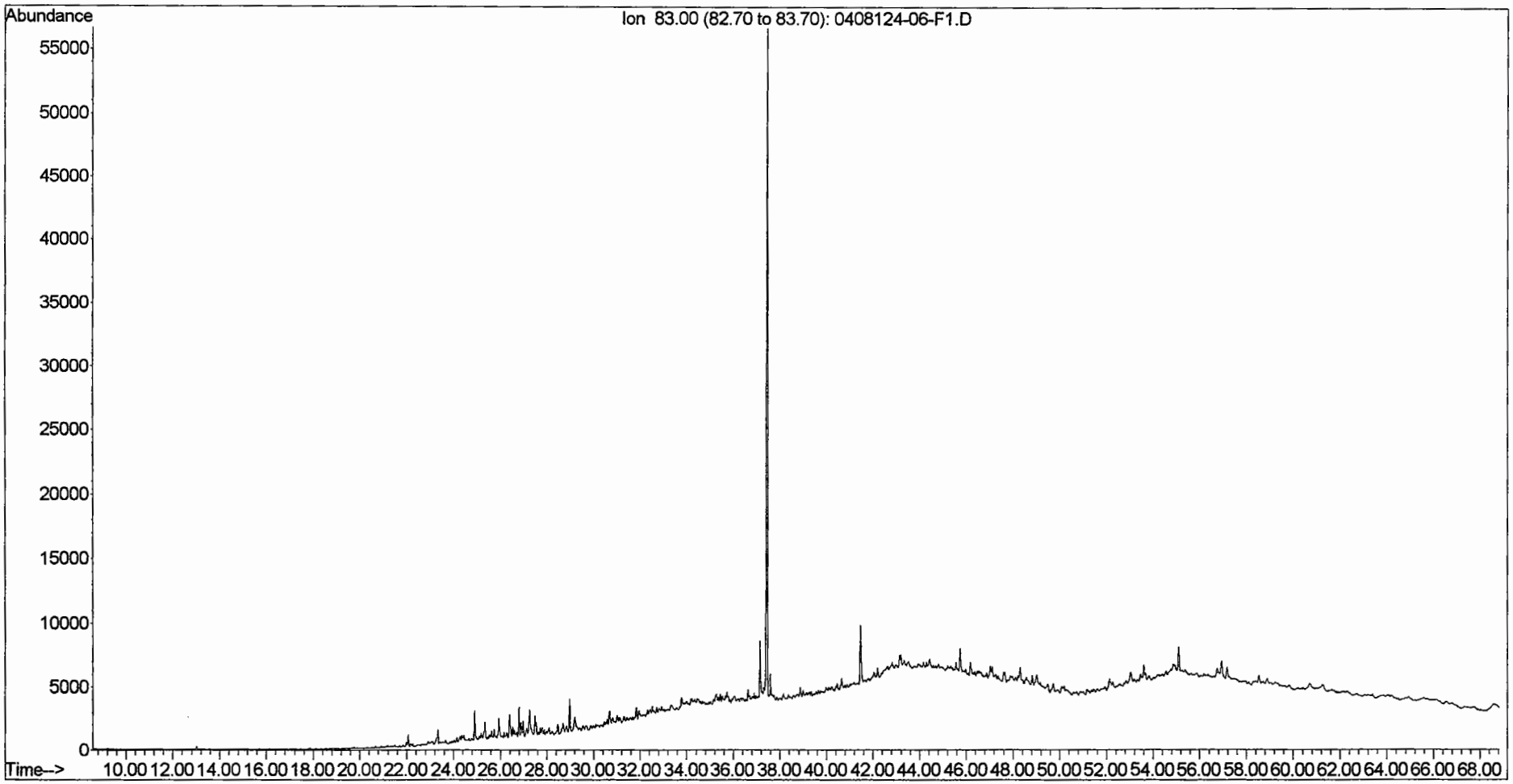
File :O:\Organics\DATA\PAH3\SEPT20\0408124-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-04-F1
Misc Info : 1X
Vial Number: 30



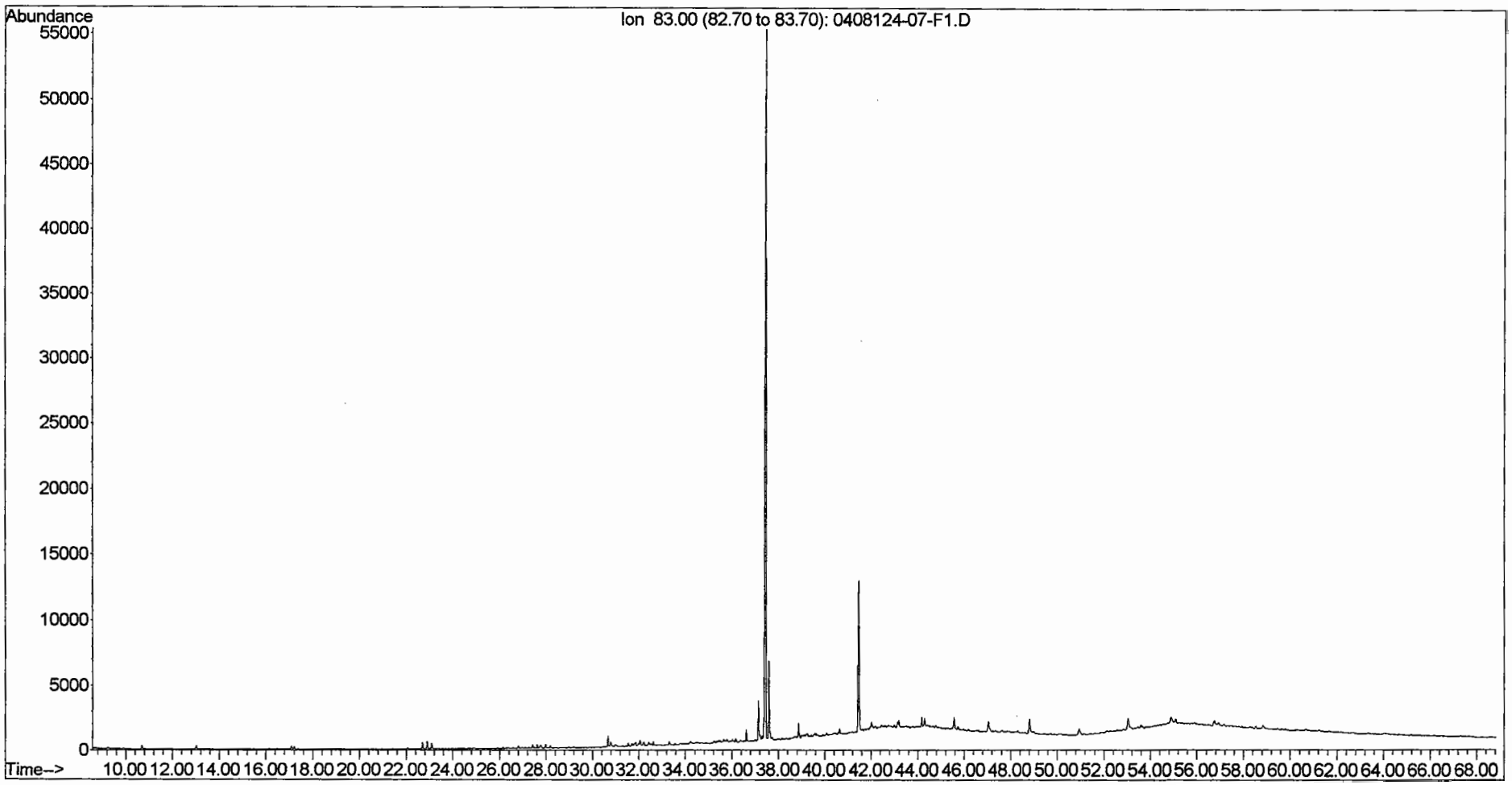
File :O:\Organics\DATA\PAH3\SEPT20\0408124-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-05-F1
Misc Info : 1X
Vial Number: 31



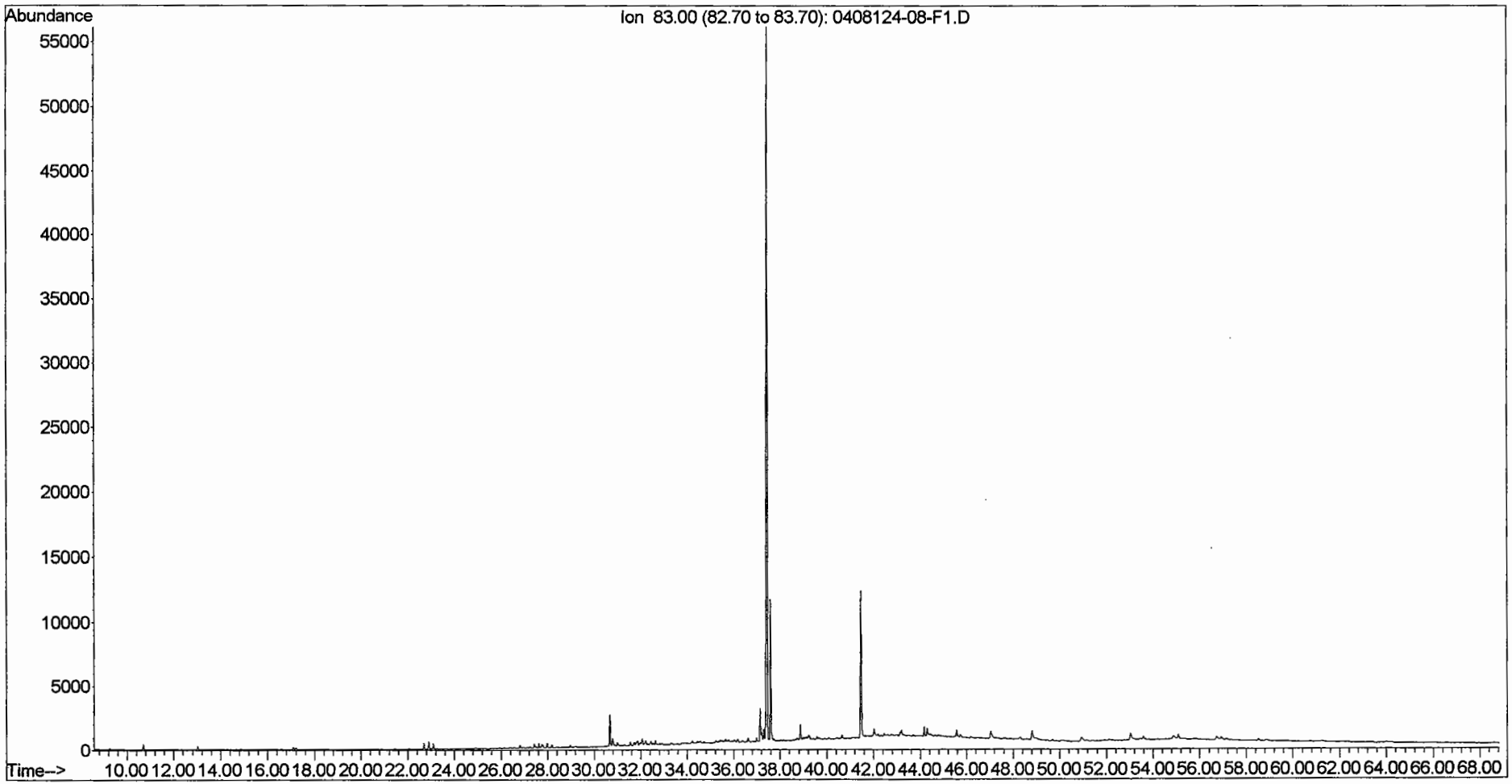
File :O:\Organics\DATA\PAH3\SEPT20\0408124-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-06-F1
Misc Info : 1X
Vial Number: 32



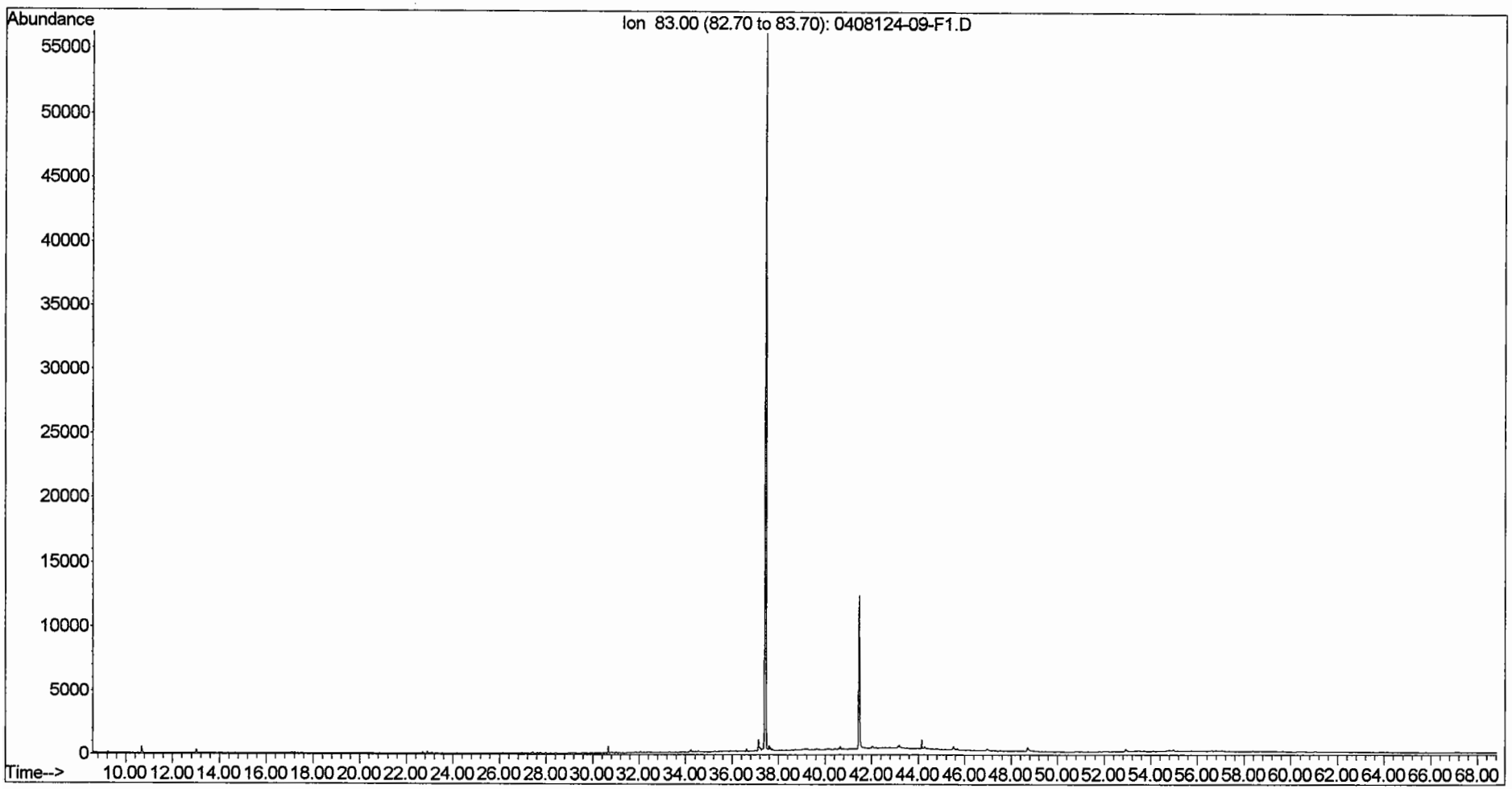
File :O:\Organics\DATA\PAH3\SEPT20\0408124-07-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-07-F1
Misc Info : 1X
Vial Number: 33



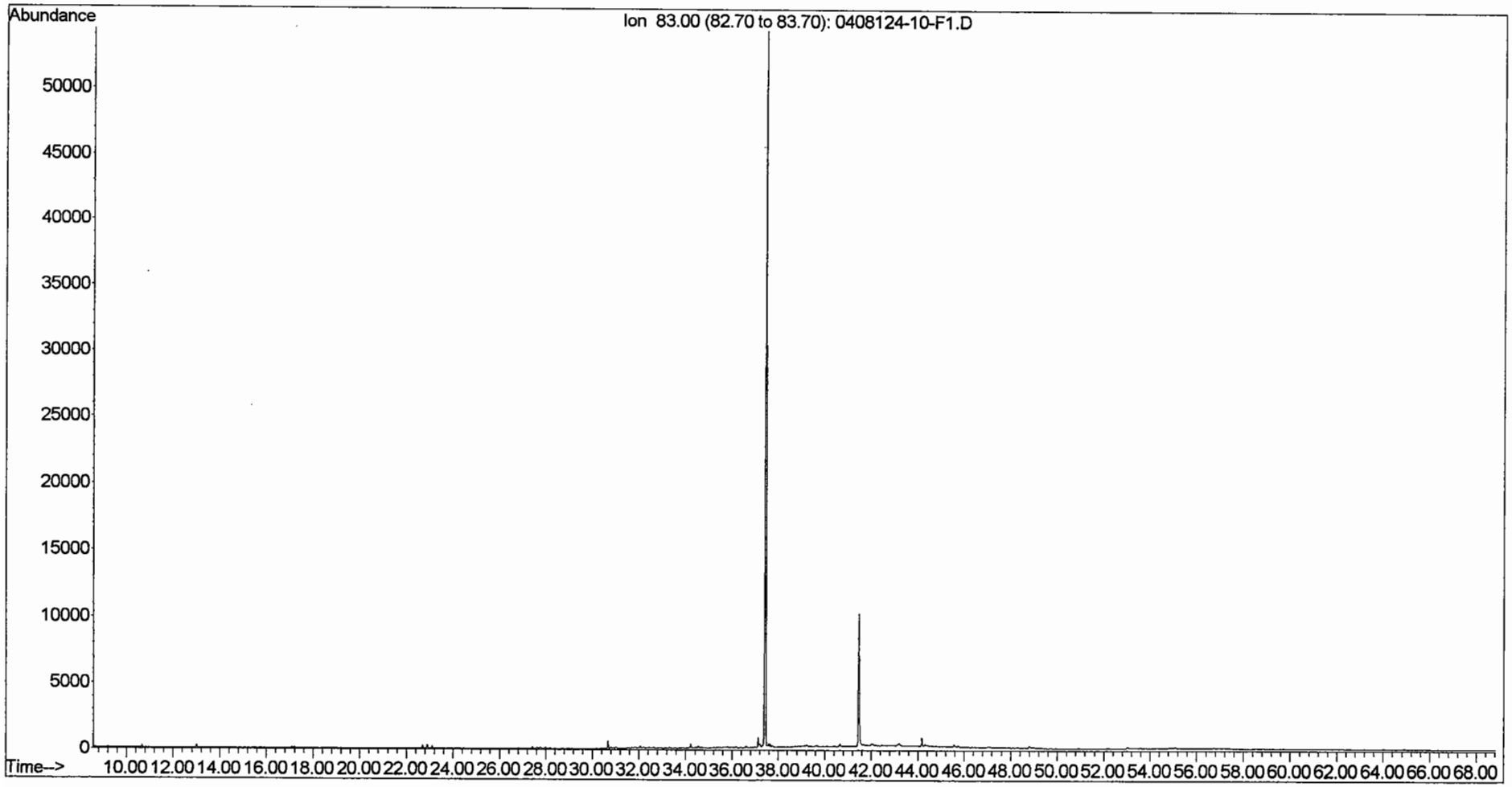
File :O:\Organics\DATA\PAH3\SEPT20\0408124-08-F1.D
Operator : BL
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-08-F1
Misc Info : 1X
Vial Number: 35



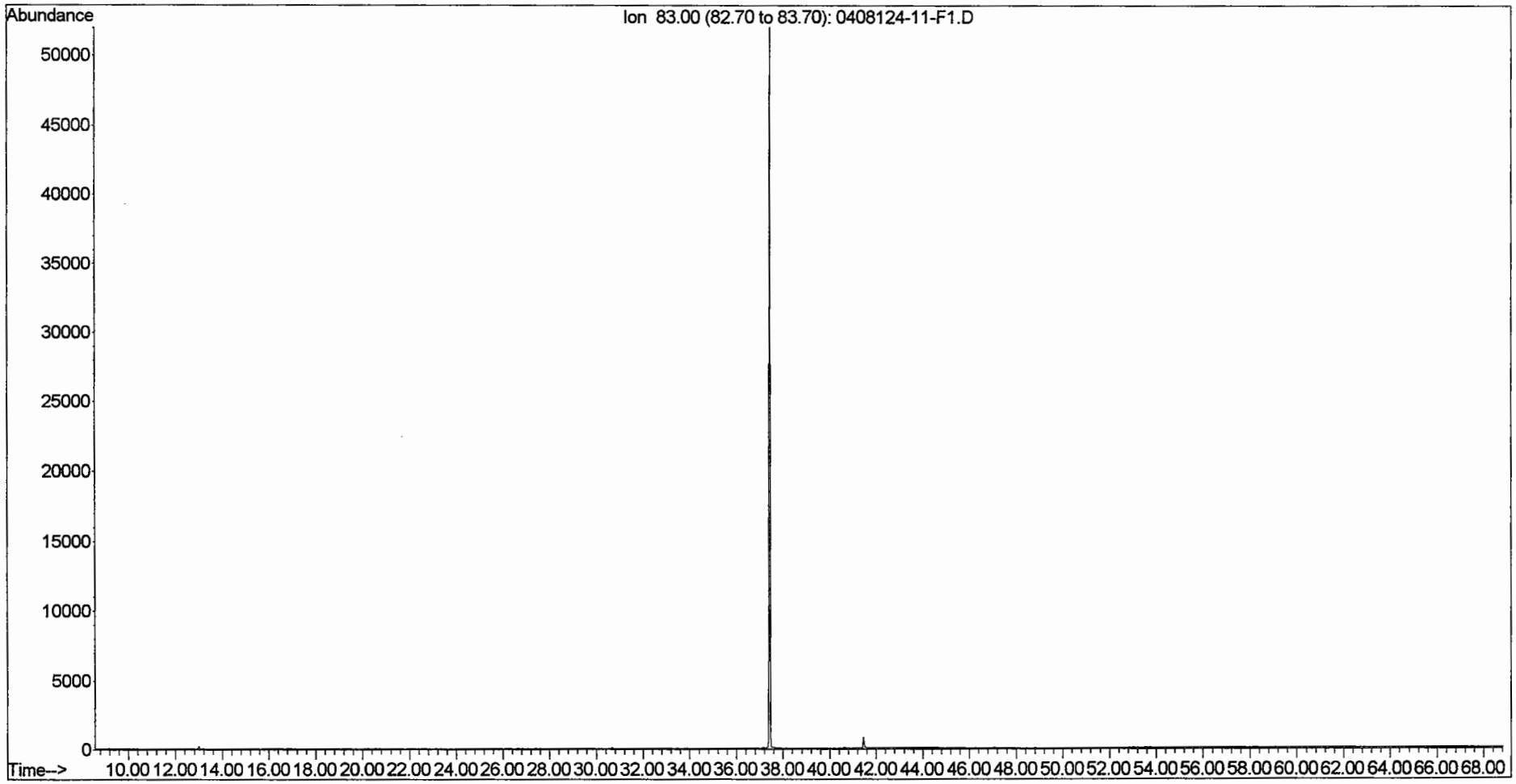
File :O:\Organics\DATA\PAH3\SEPT20\0408124-09-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-09-F1
Misc Info : 1X
Vial Number: 36



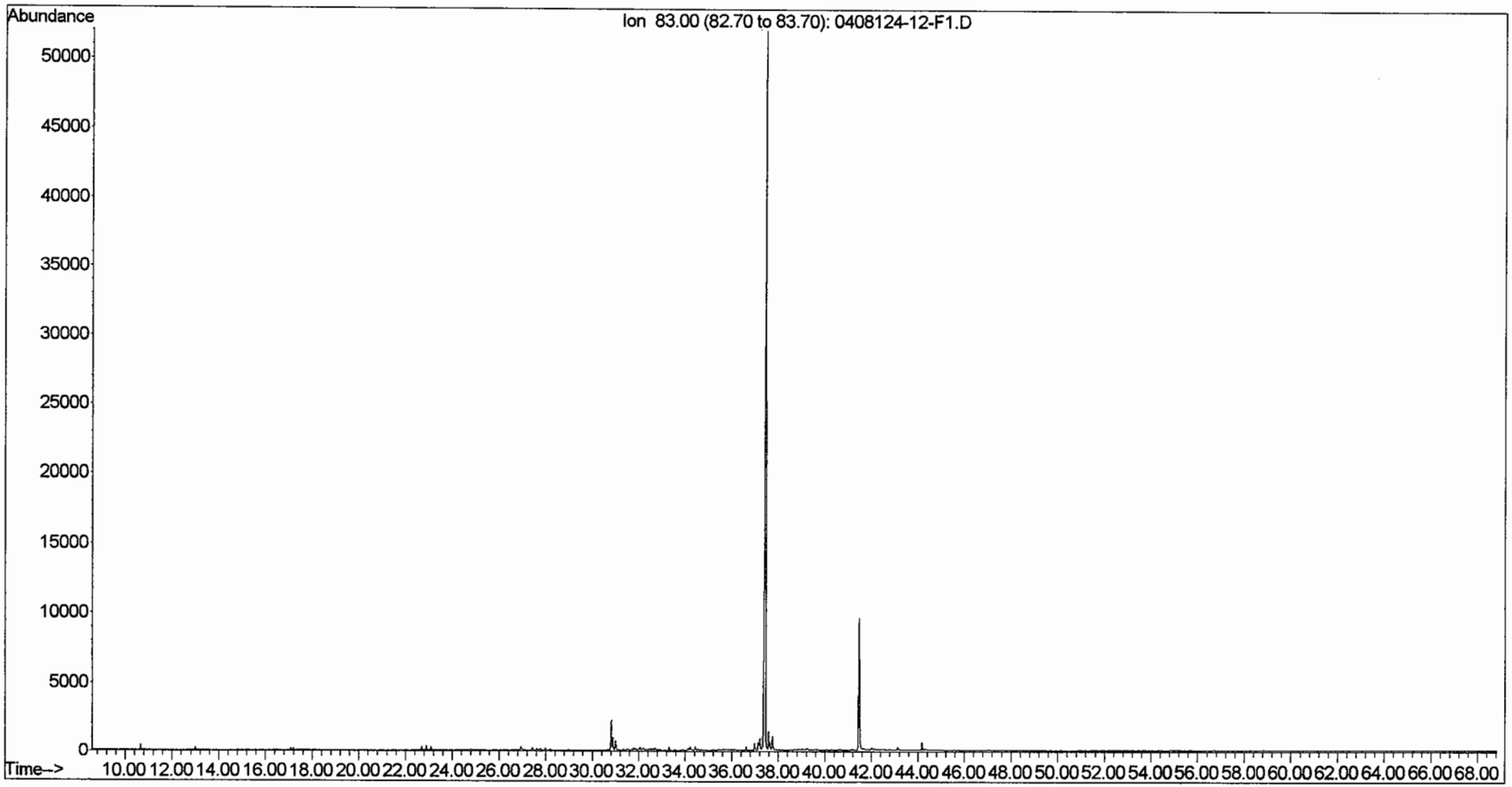
File :O:\Organics\DATA\PAH3\SEPT20\0408124-10-F1.D
Operator : BL
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-10-F1
Misc Info : 1X
Vial Number: 37



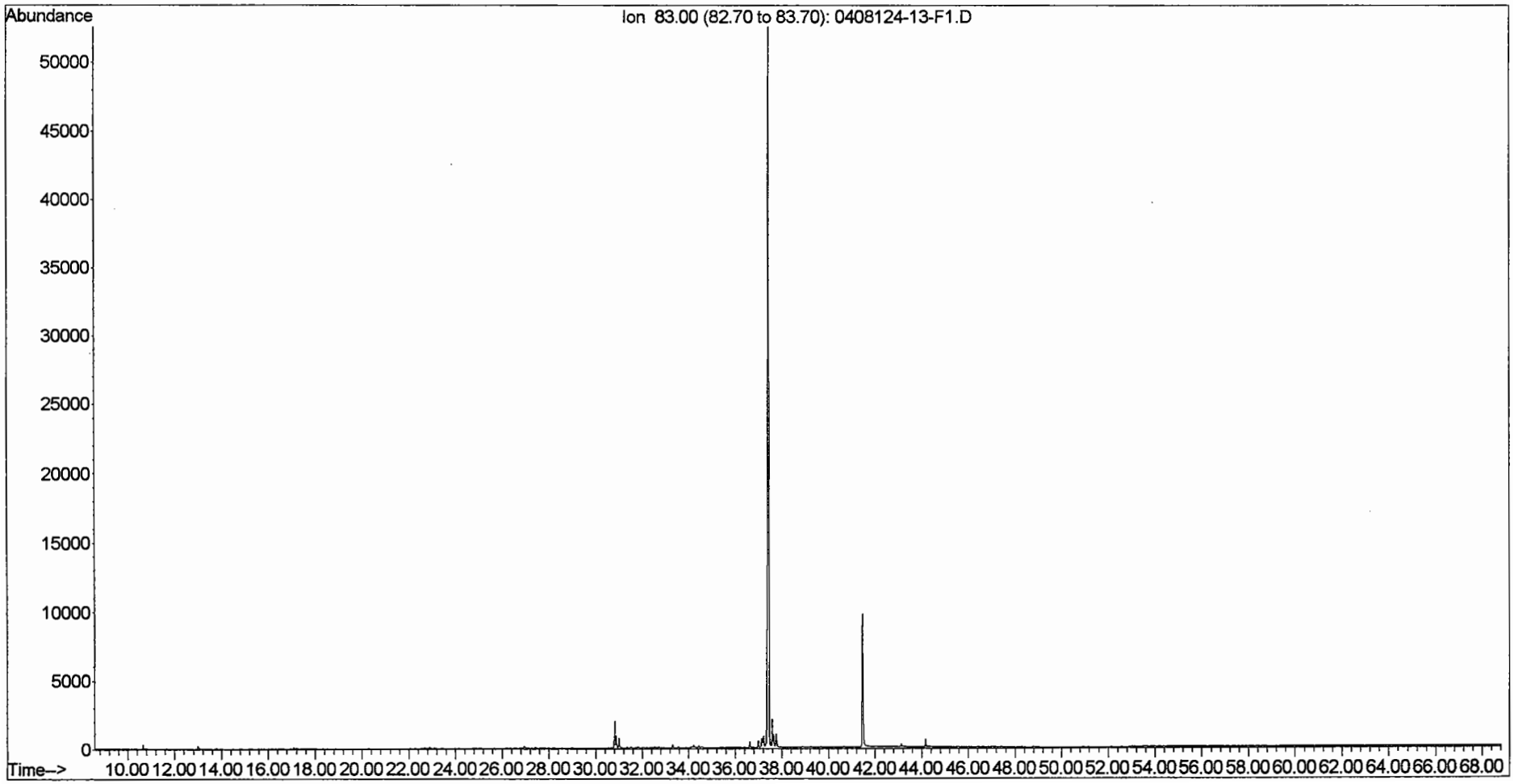
File :O:\Organics\DATA\PAH3\SEPT20\0408124-11-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-11-F1
Misc Info : 1X
Vial Number: 38



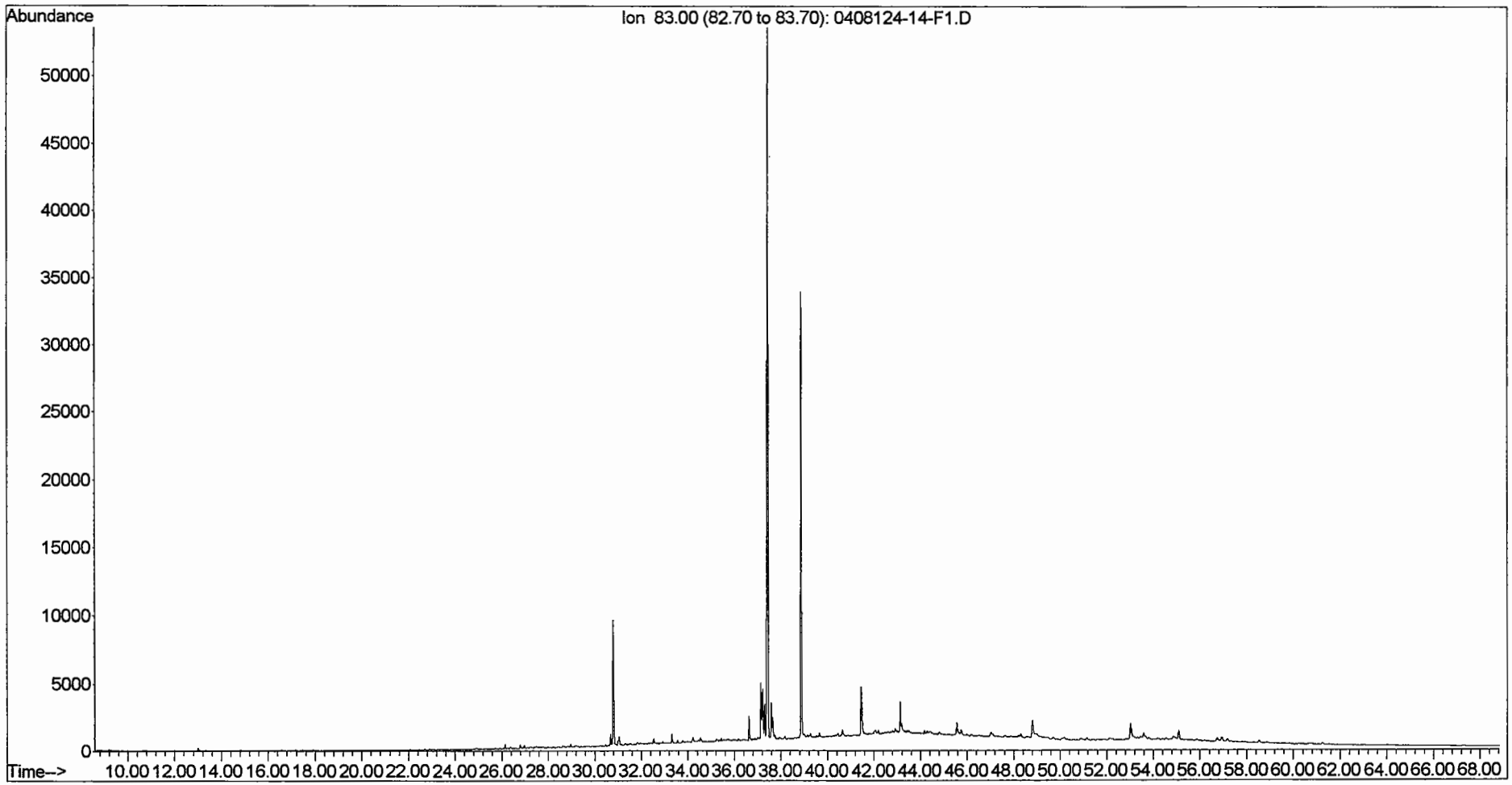
File :O:\Organics\DATA\PAH3\SEPT20\0408124-12-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-12-F1
Misc Info : 1X
Vial Number: 39



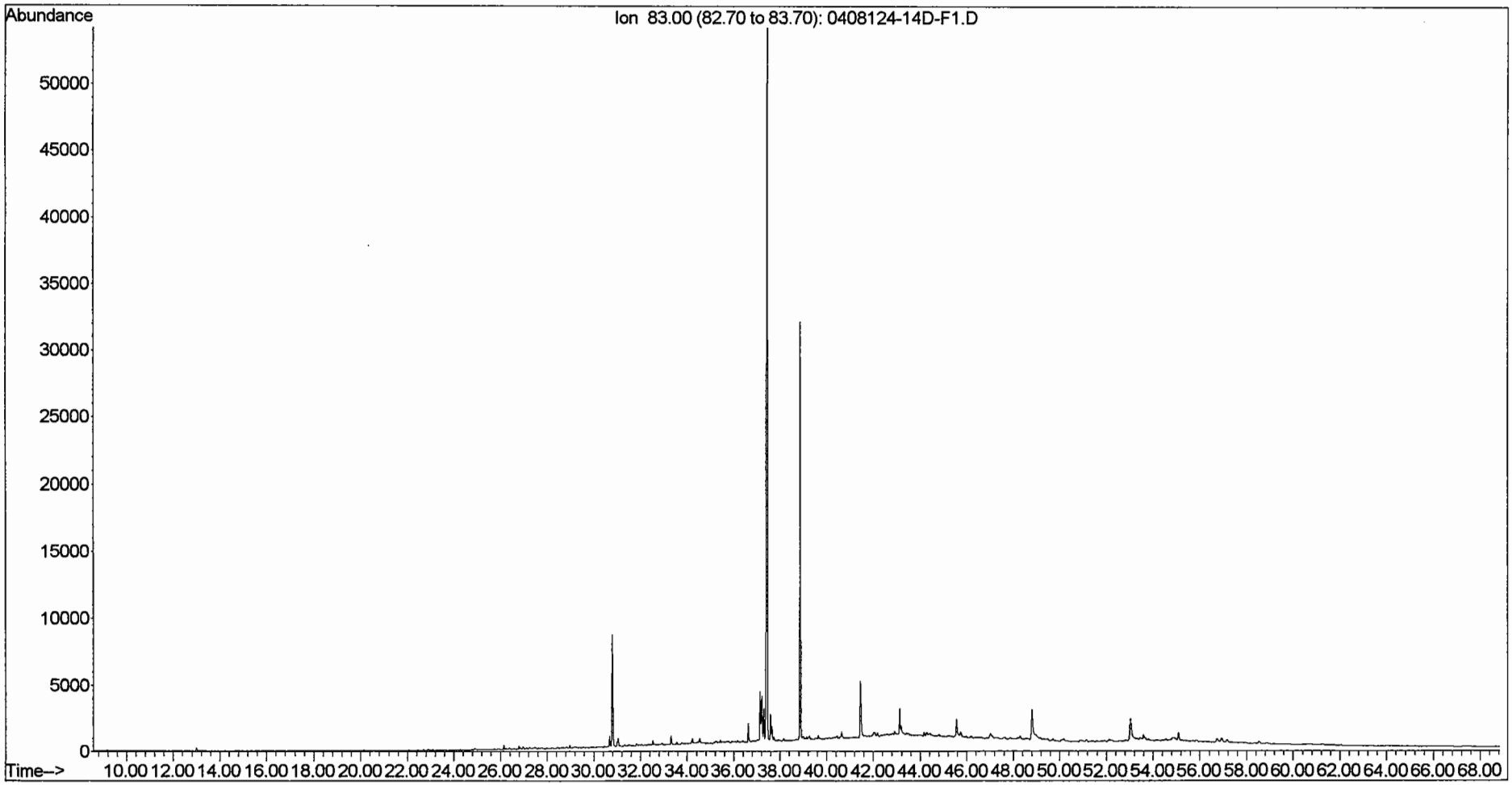
File :O:\Organics\DATA\PAH3\SEPT20\0408124-13-F1.D
Operator : BL
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-13-F1
Misc Info : 1X
Vial Number: 40



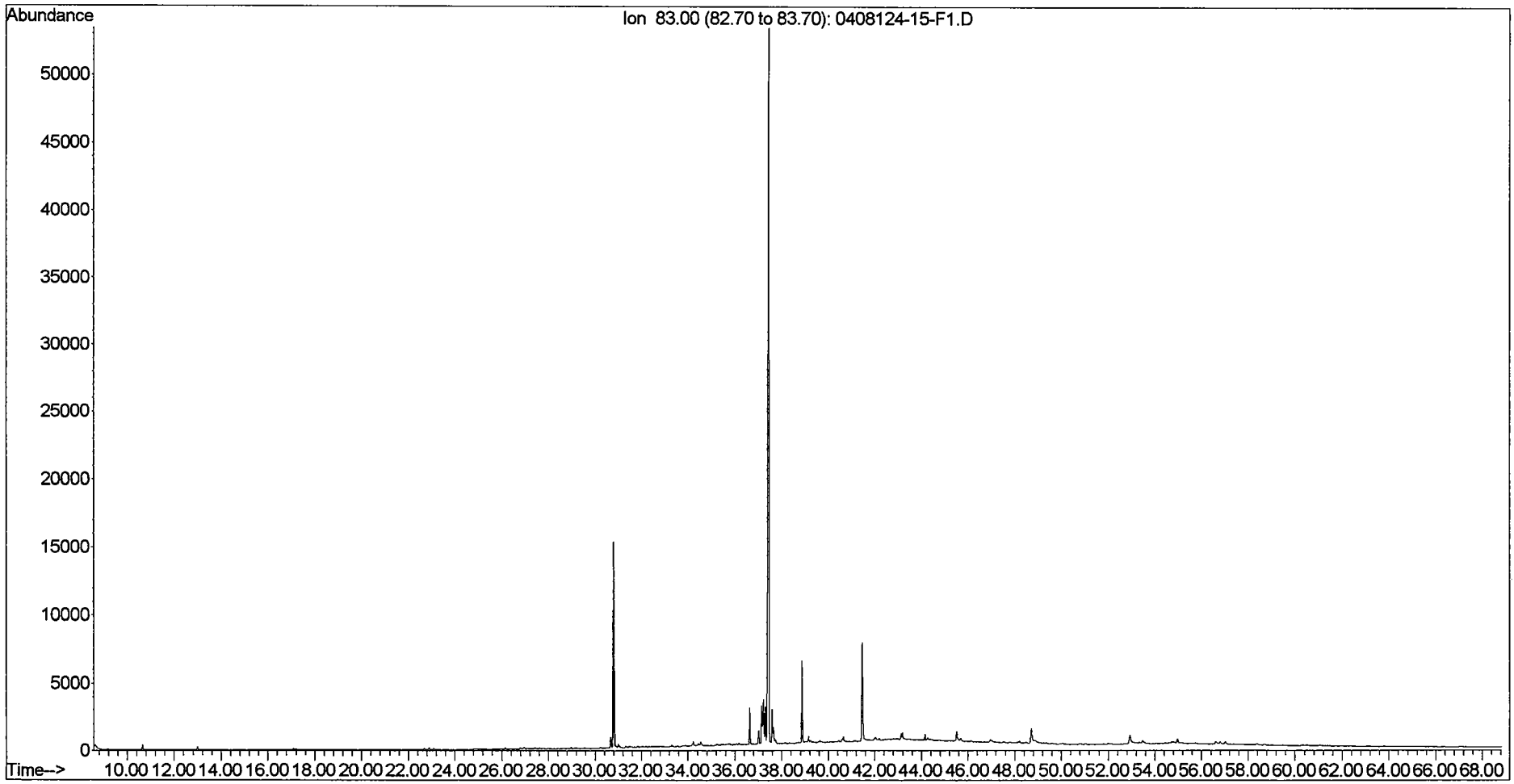
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14-F1
Misc Info : 1X
Vial Number: 41



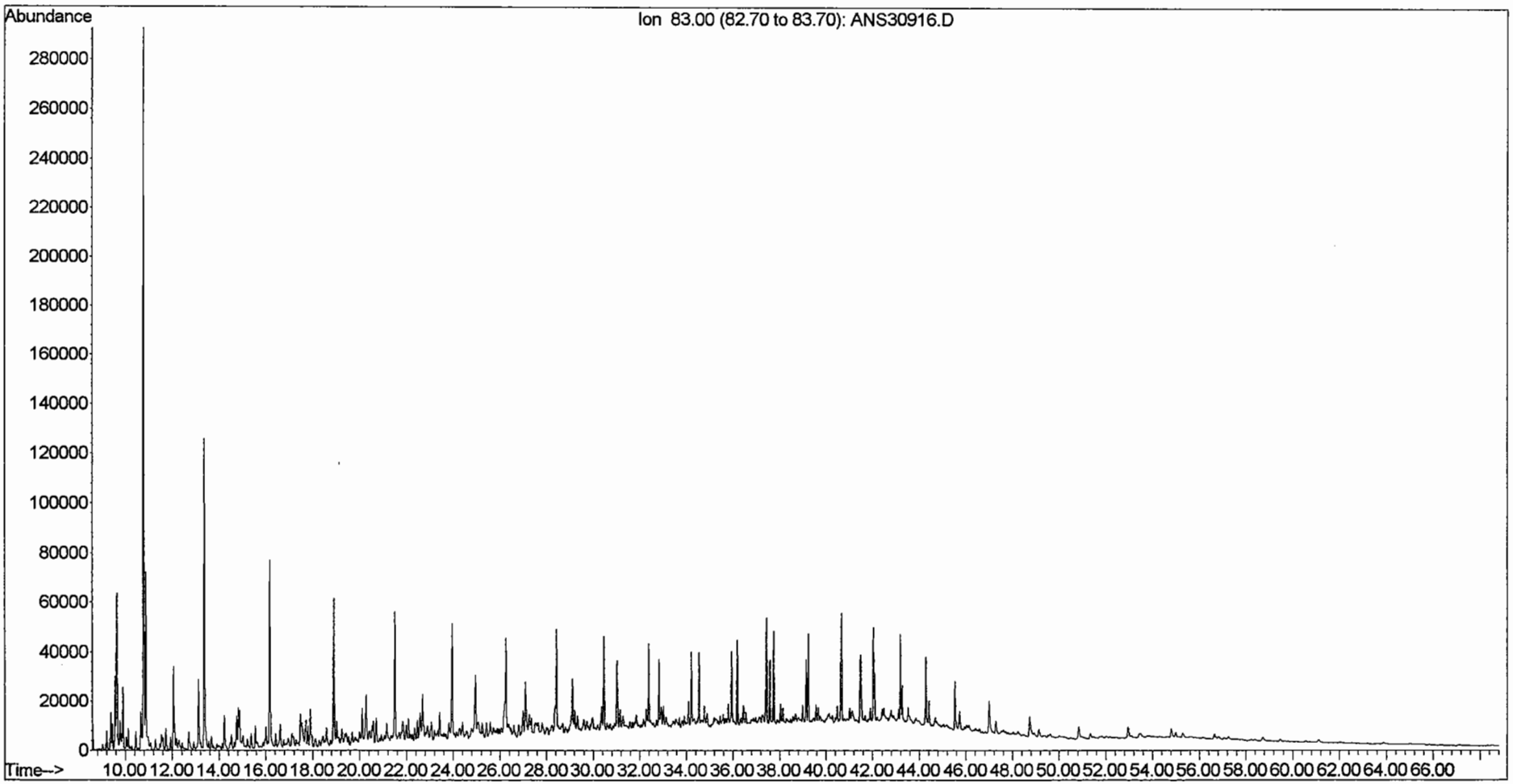
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14D-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14D-F1
Misc Info : 1X
Vial Number: 42



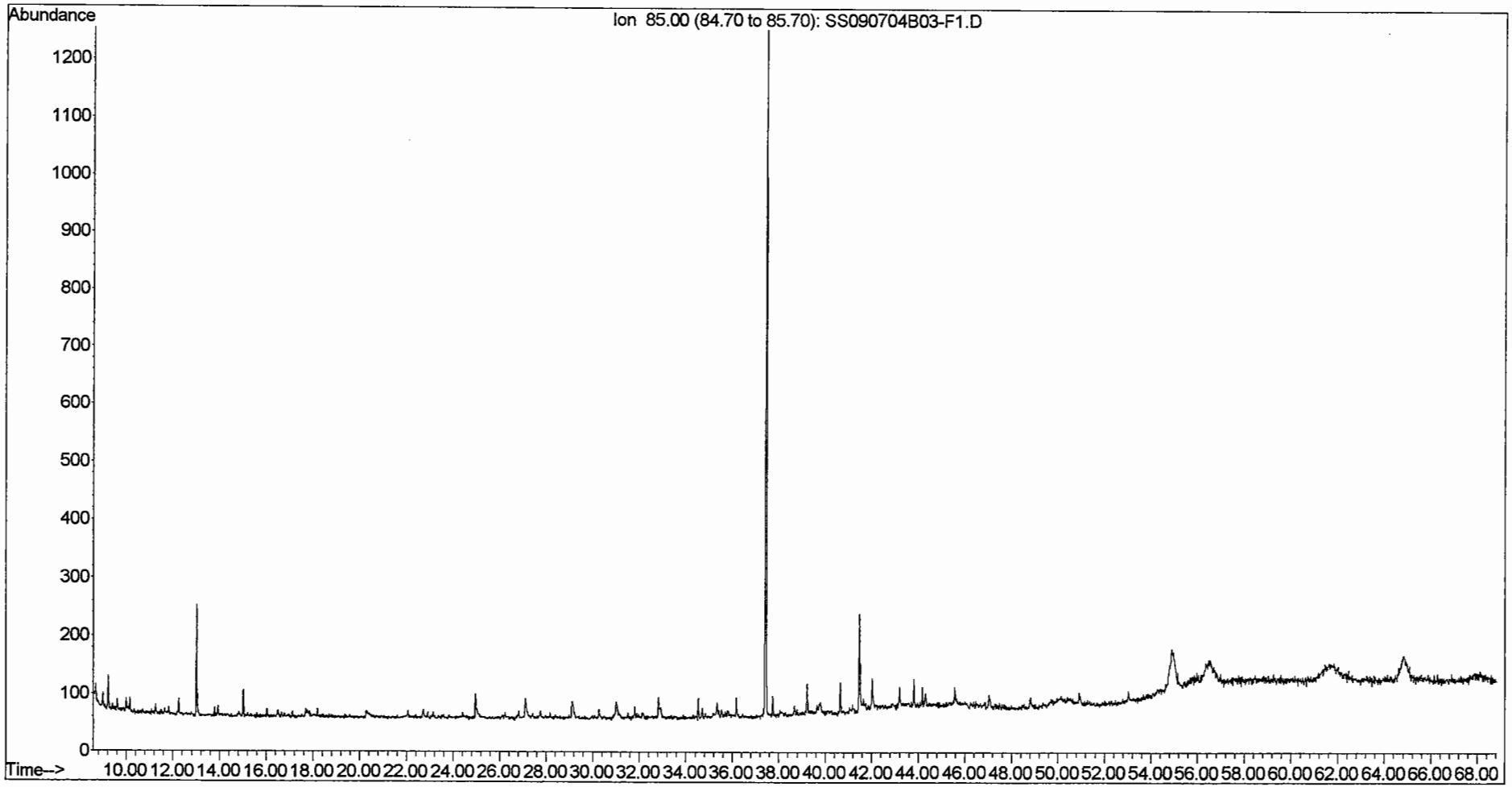
File :O:\Organics\DATA\PAH3\SEPT20\0408124-15-F1.D
Operator : BL
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-15-F1
Misc Info : 1X
Vial Number: 44



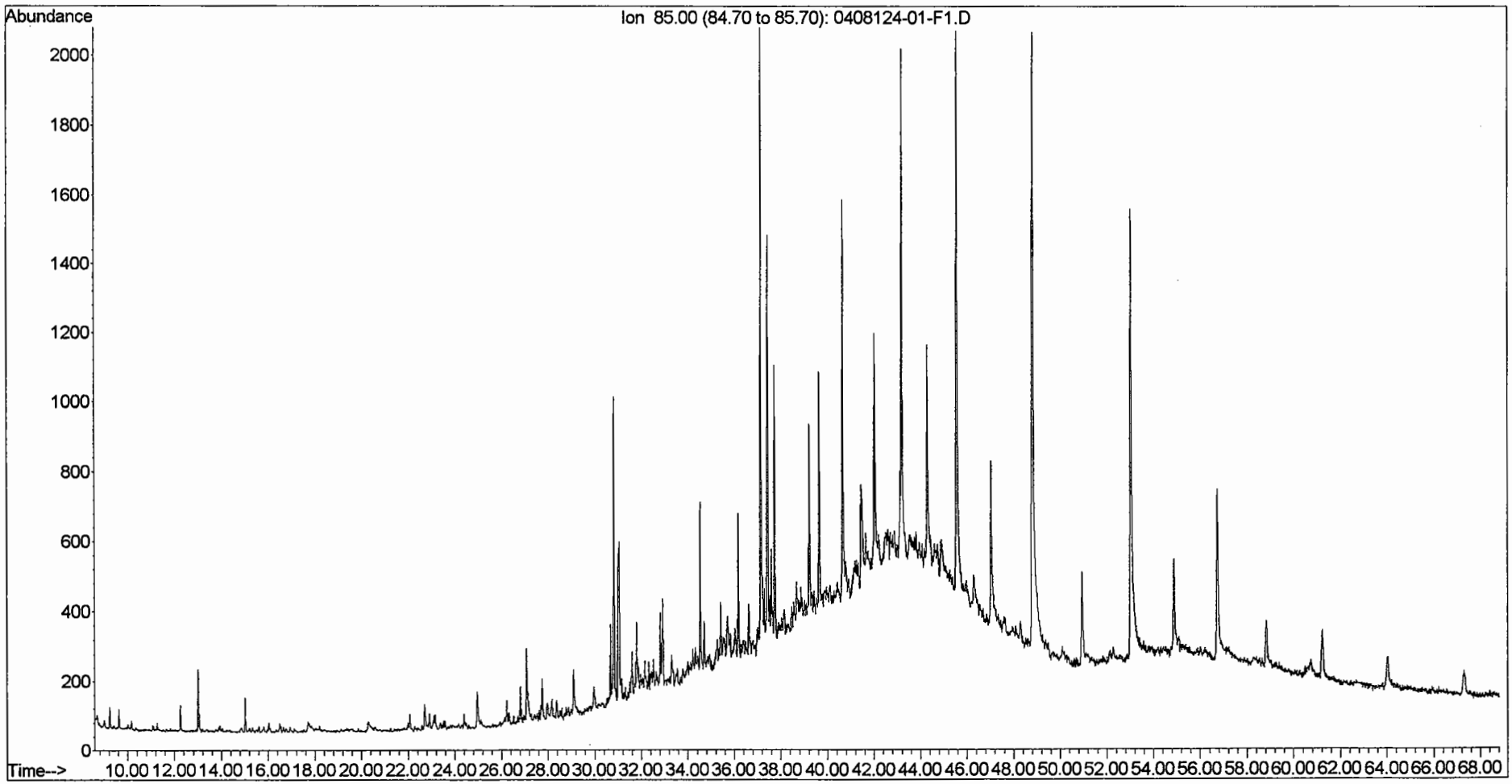
File :O:\Organics\DATA\PAH3\SEPT16\ANS30916.D
Operator : BL
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: ANS30916
Misc Info : SW090104A 5.14 ug/mL
Vial Number: 14



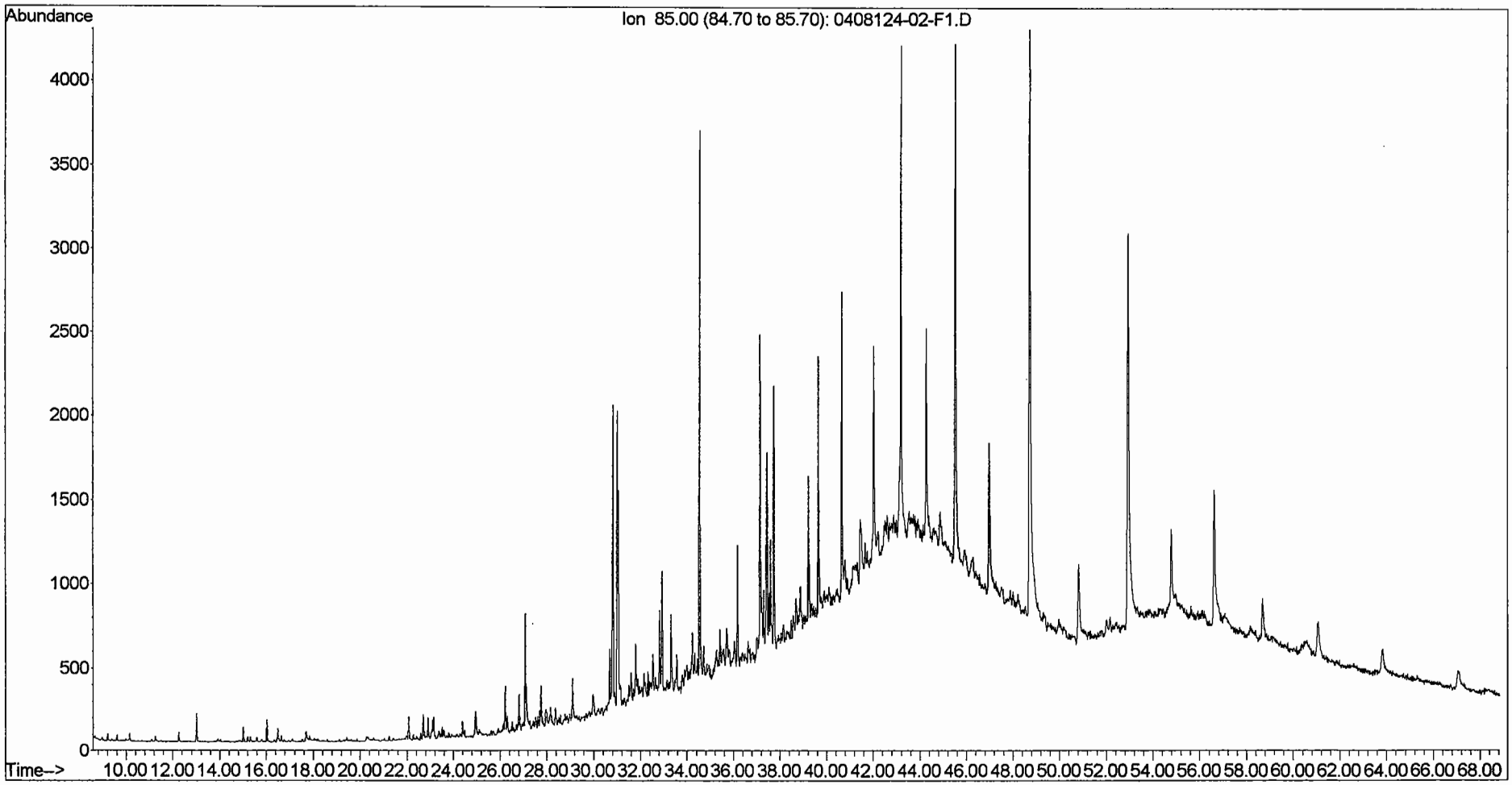
File :O:\Organics\DATA\PAH3\SEPT20\SS090704B03-F1.D
Operator : BL
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: SS090704B03-F1
Misc Info : 1X
Vial Number: 24



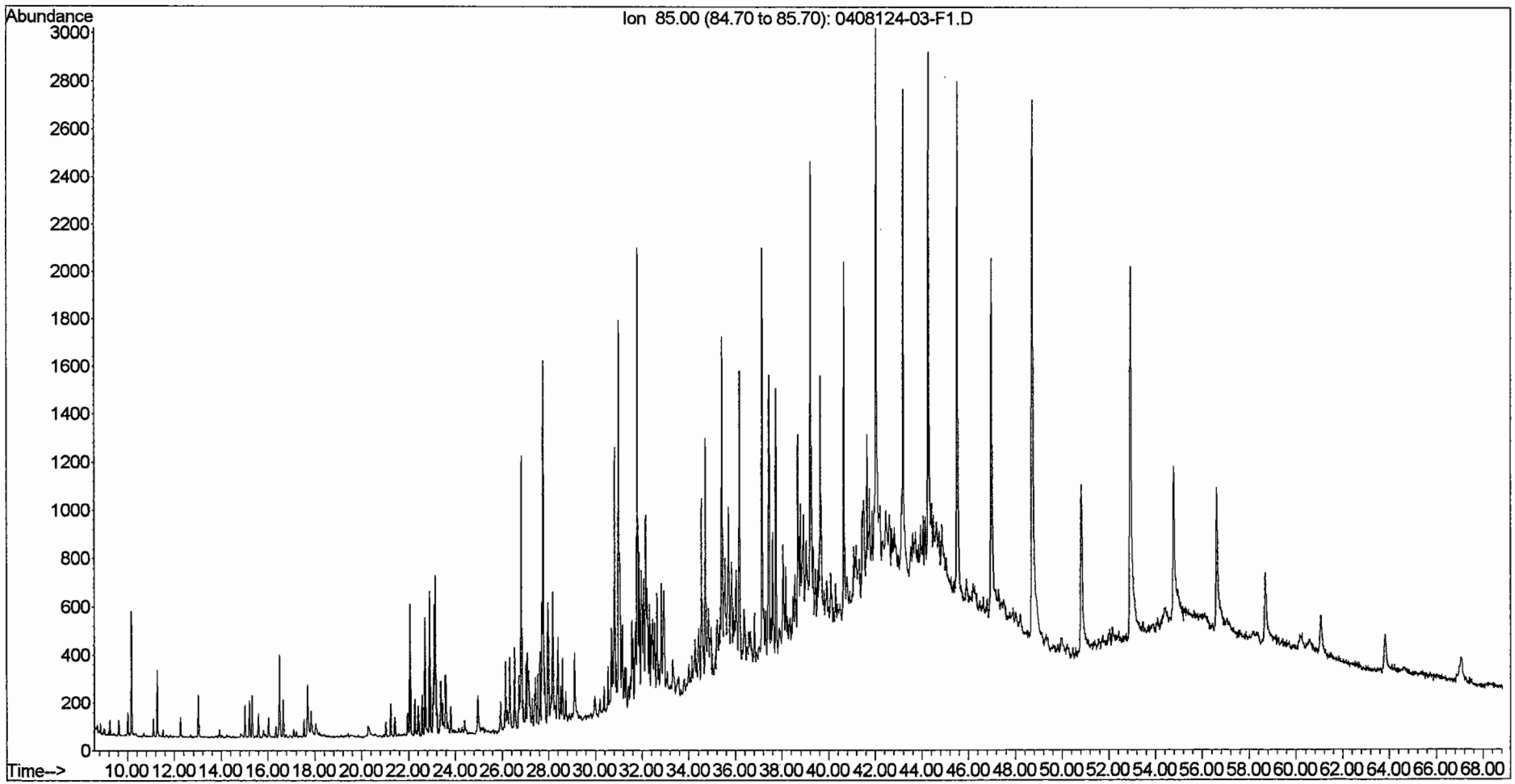
File :O:\Organics\DATA\PAH3\SEPT20\0408124-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-01-F1
Misc Info : 1X
Vial Number: 27



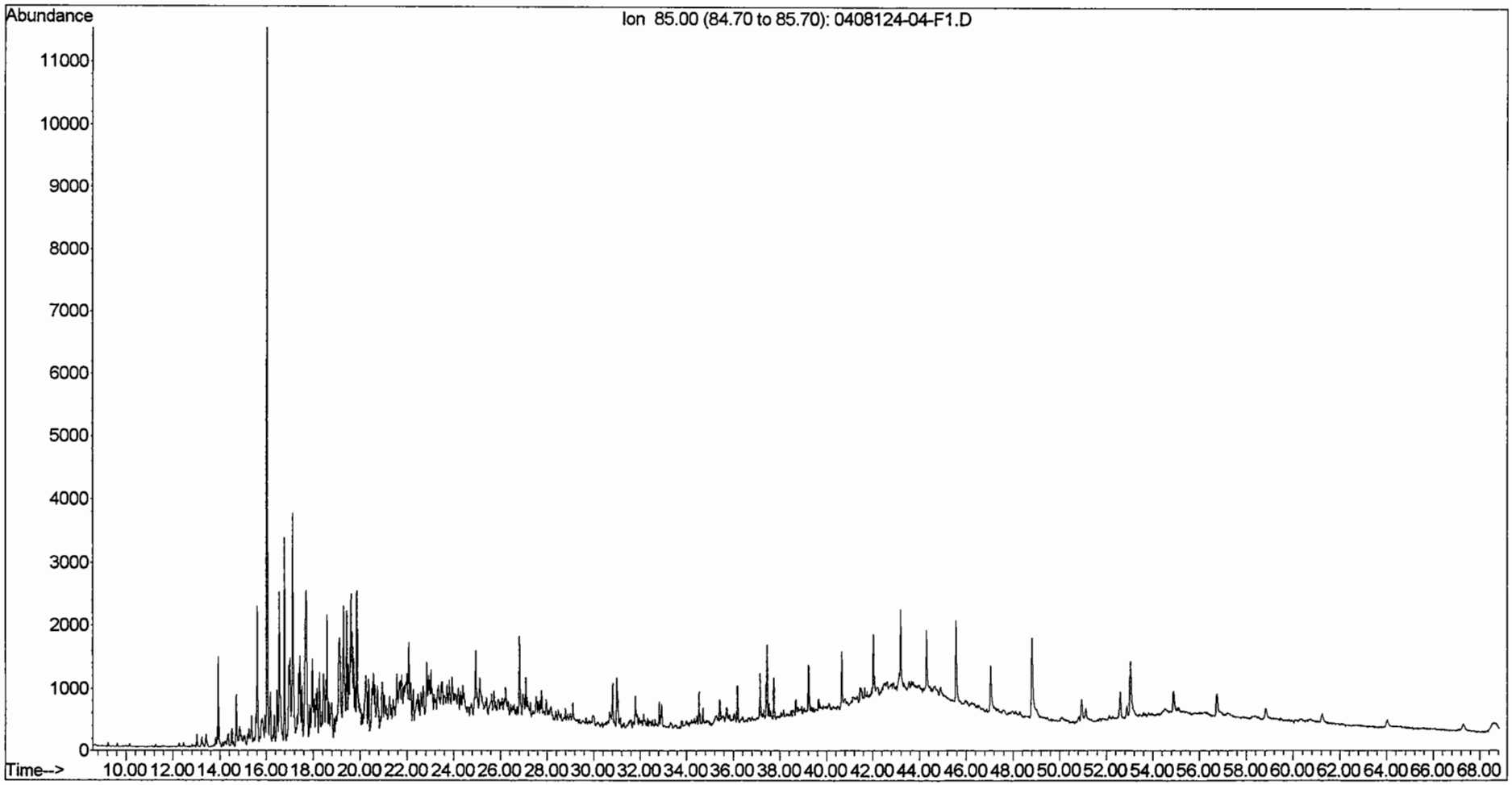
File :O:\Organics\DATA\PAH3\SEPT20\0408124-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-02-F1
Misc Info : 1X
Vial Number: 28



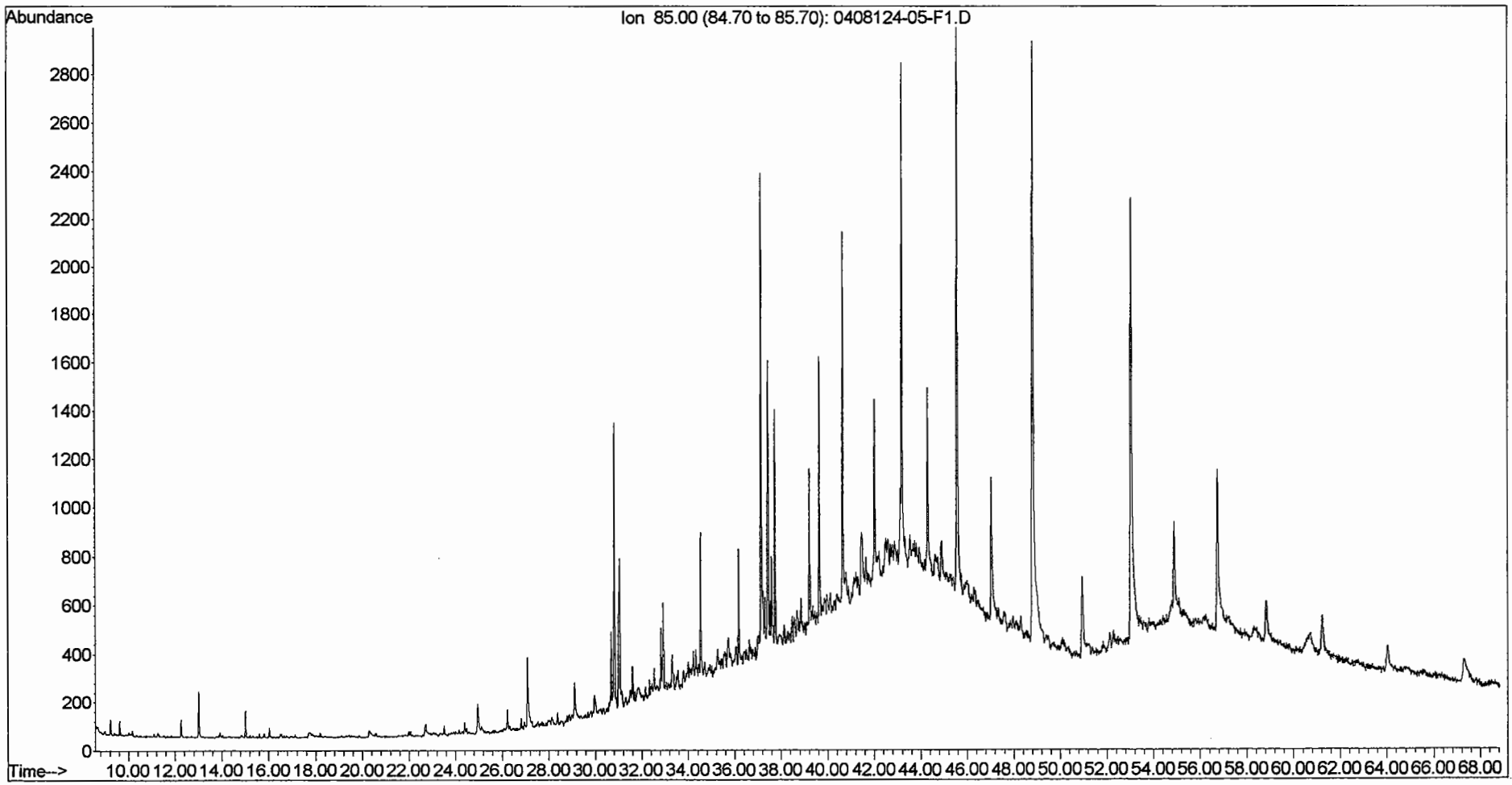
File :O:\Organics\DATA\PAH3\SEPT20\0408124-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-03-F1
Misc Info : 1X
Vial Number: 29



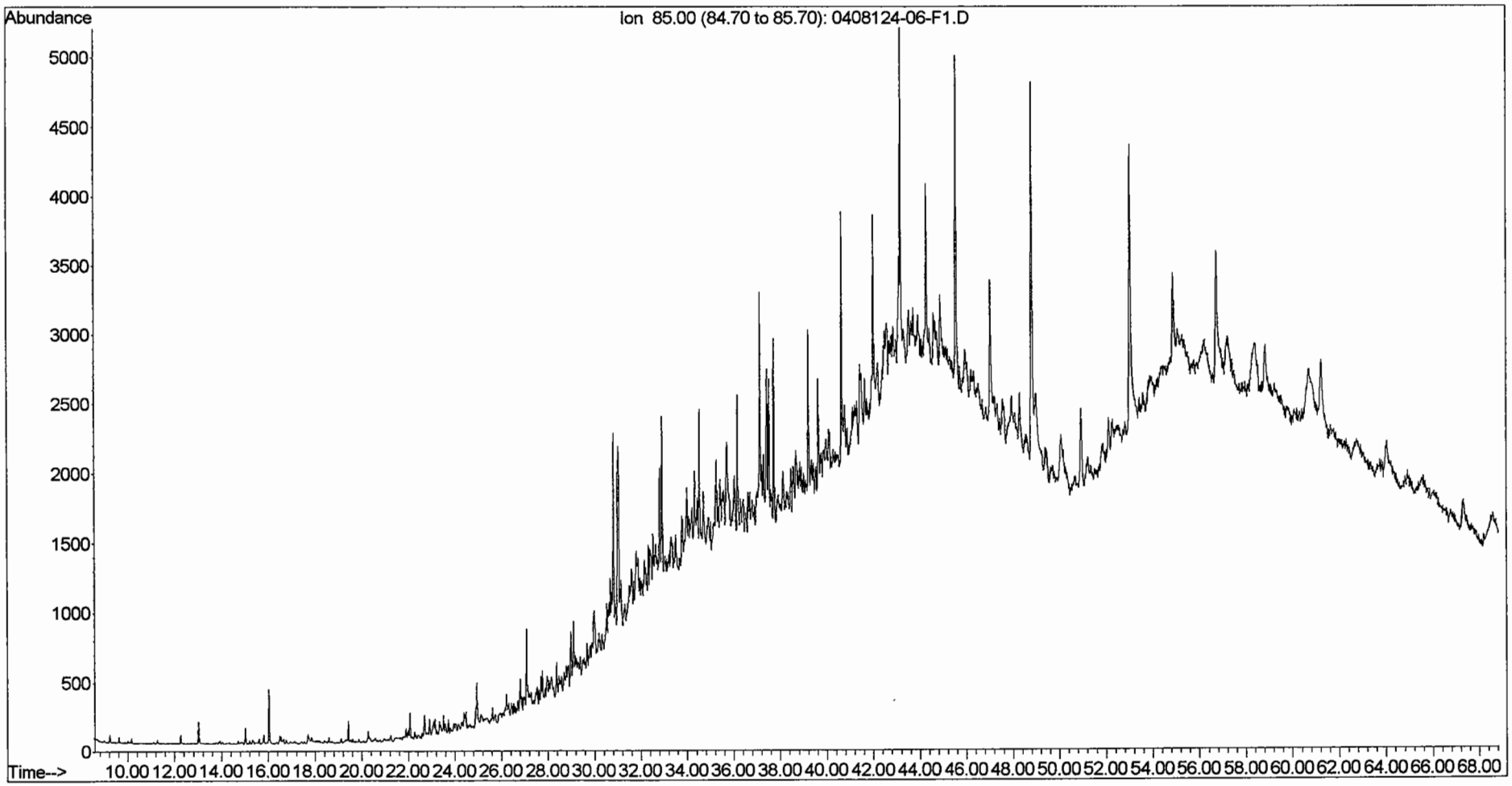
File :O:\Organics\DATA\PAH3\SEPT20\0408124-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-04-F1
Misc Info : 1X
Vial Number: 30



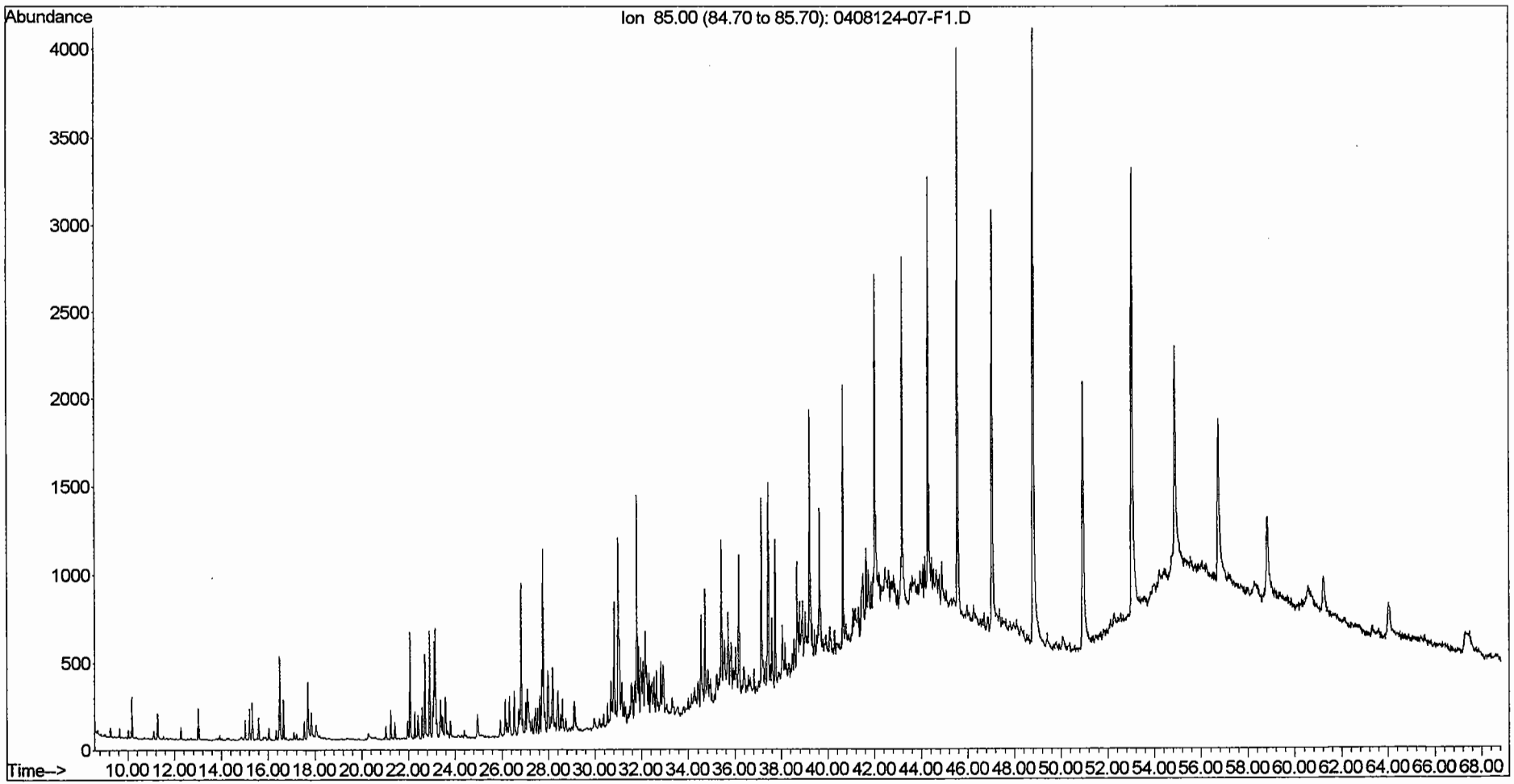
File :O:\Organics\DATA\PAH3\SEPT20\0408124-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-05-F1
Misc Info : 1X
Vial Number: 31



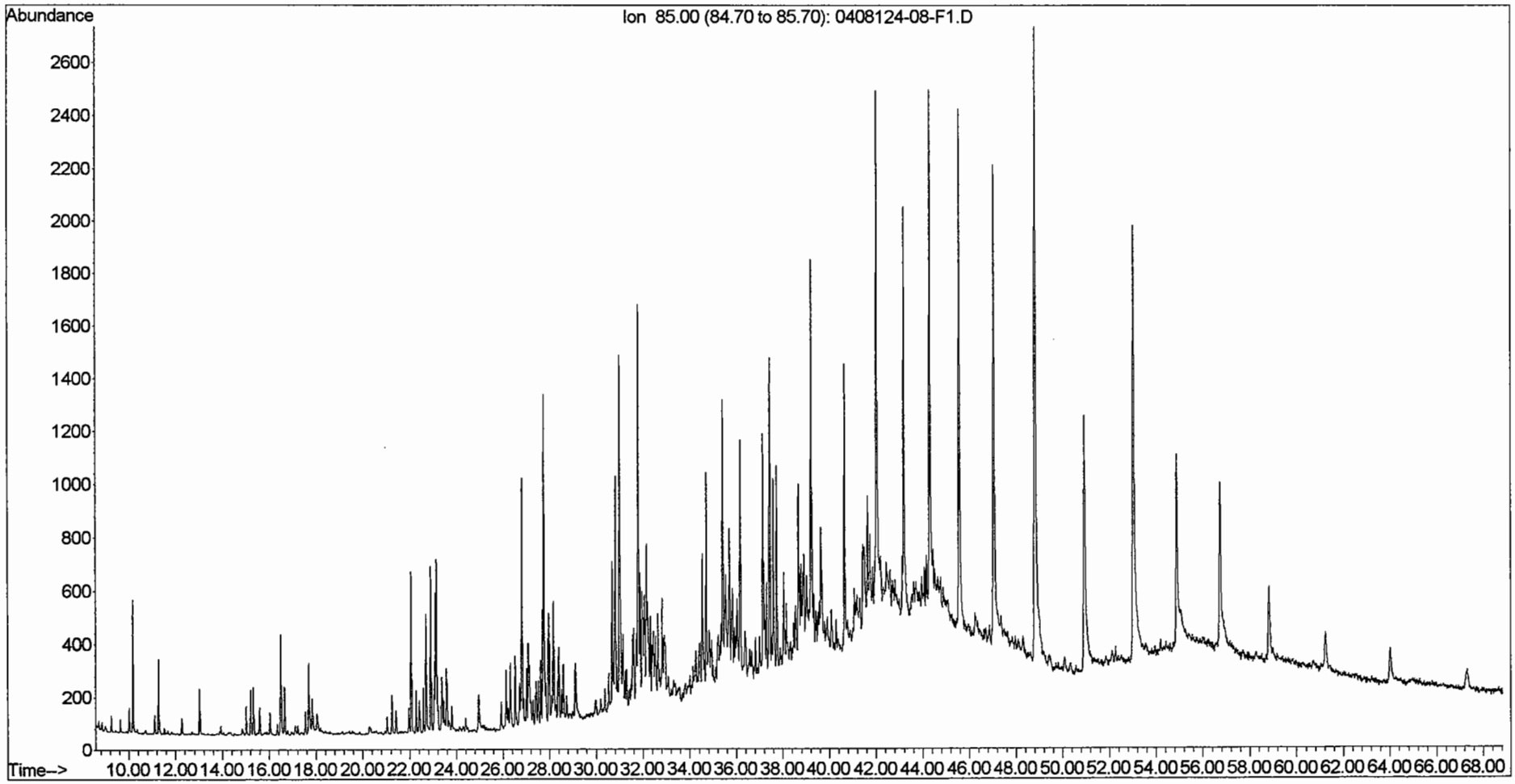
File :O:\Organics\DATA\PAH3\SEPT20\0408124-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-06-F1
Misc Info : 1X
Vial Number: 32



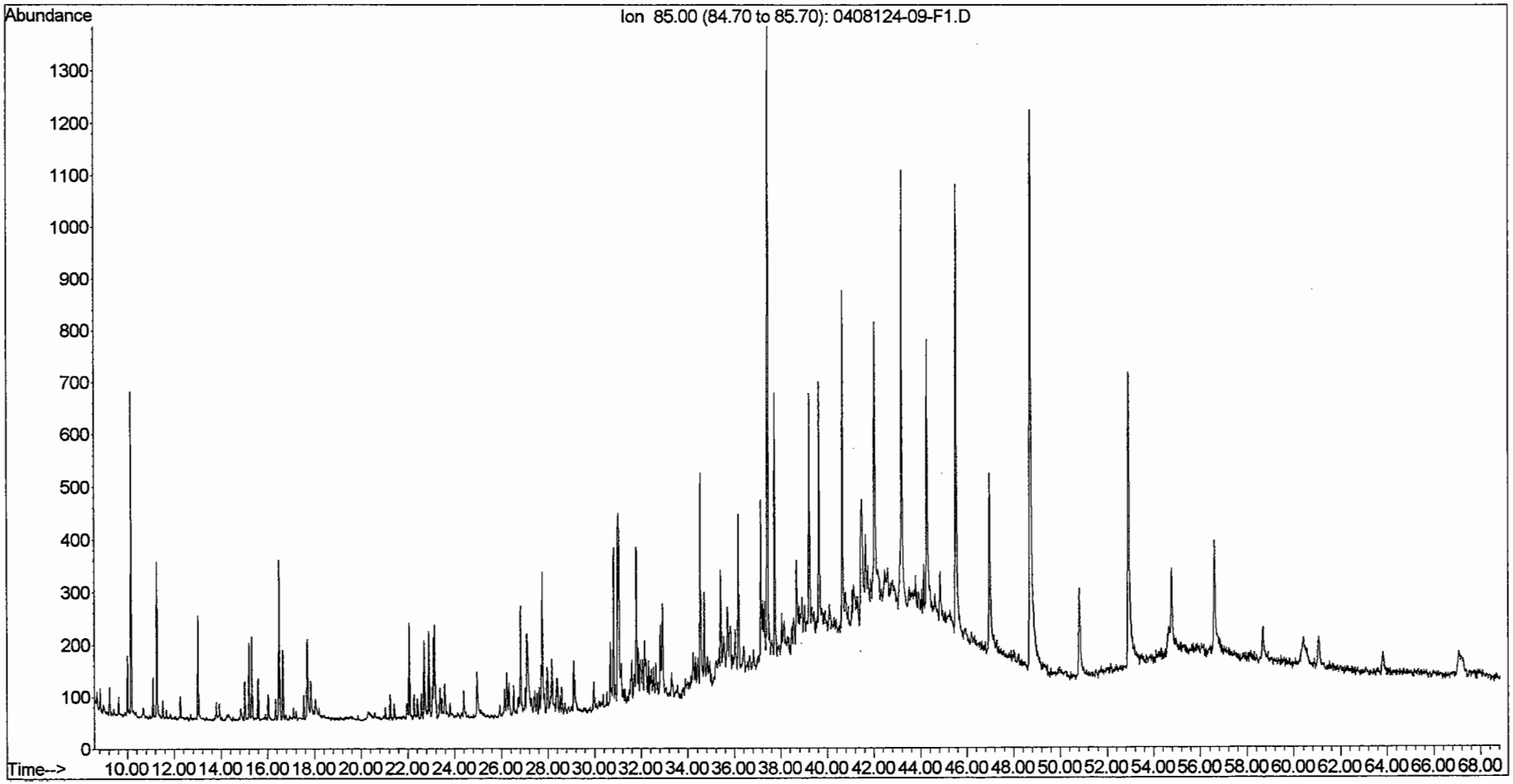
File :O:\Organics\DATA\PAH3\SEPT20\0408124-07-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-07-F1
Misc Info : 1X
Vial Number: 33



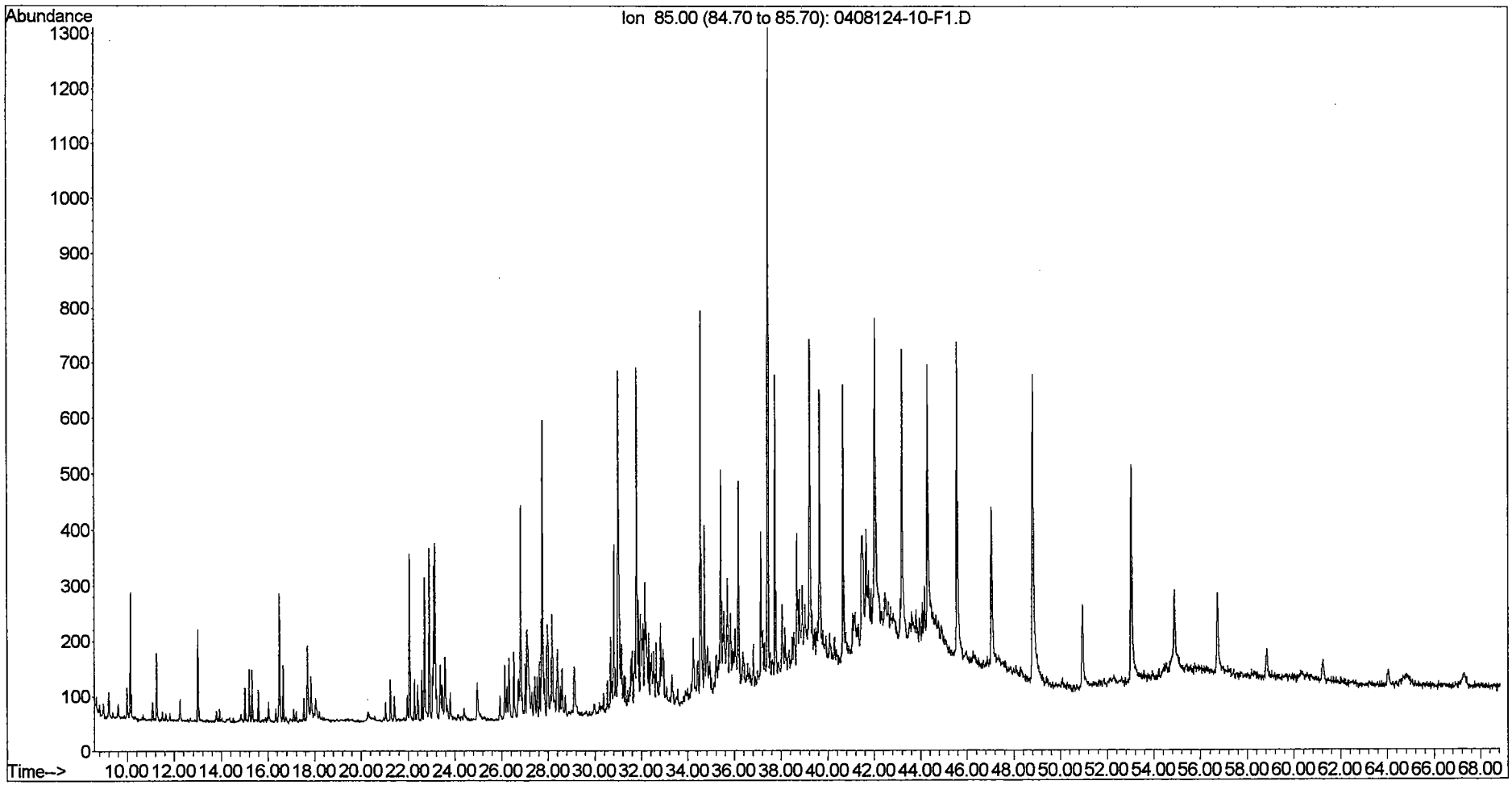
File :O:\Organics\DATA\PAH3\SEPT20\0408124-08-F1.D
Operator : BL
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-08-F1
Misc Info : 1X
Vial Number: 35



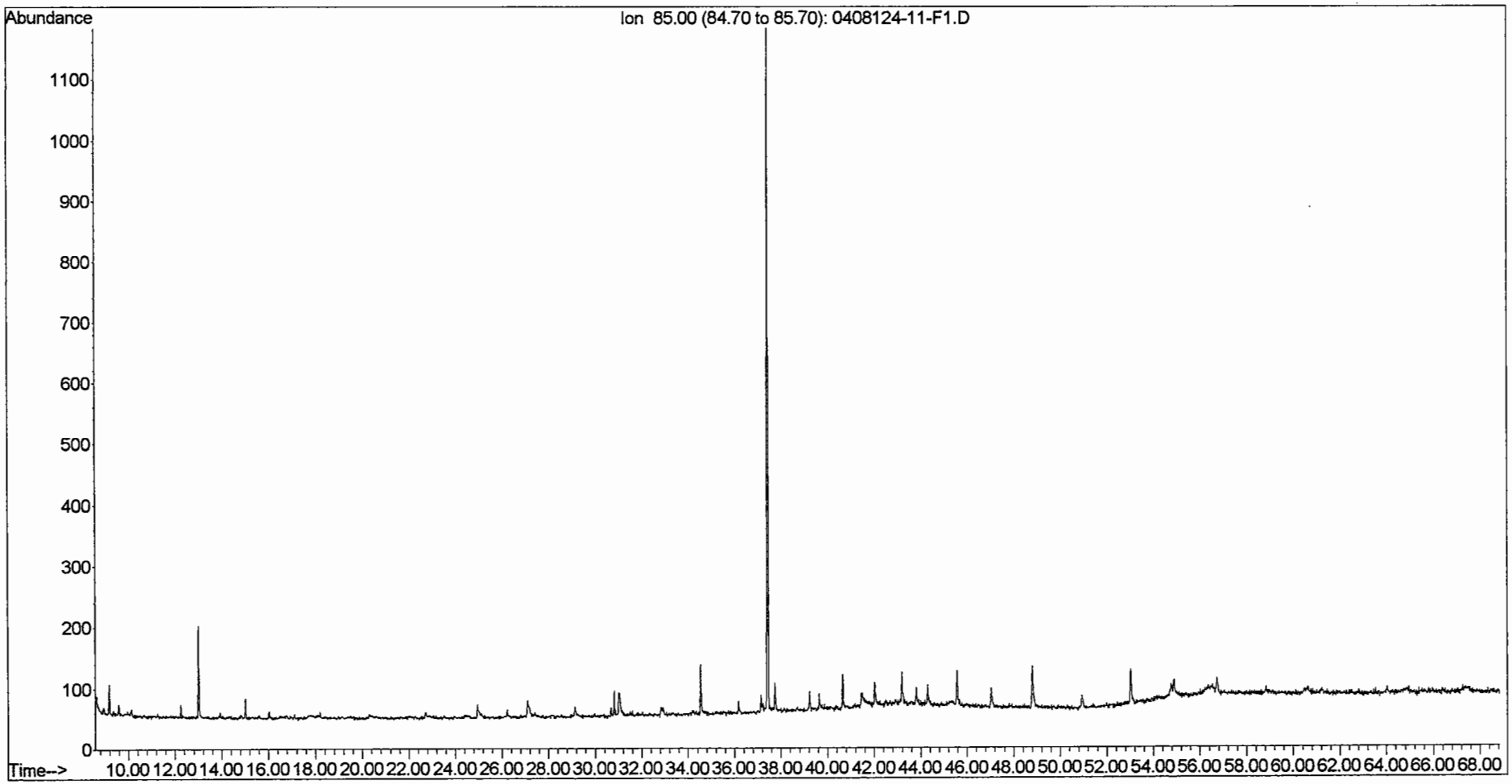
File :O:\Organics\DATA\PAH3\SEPT20\0408124-09-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-09-F1
Misc Info : 1X
Vial Number: 36



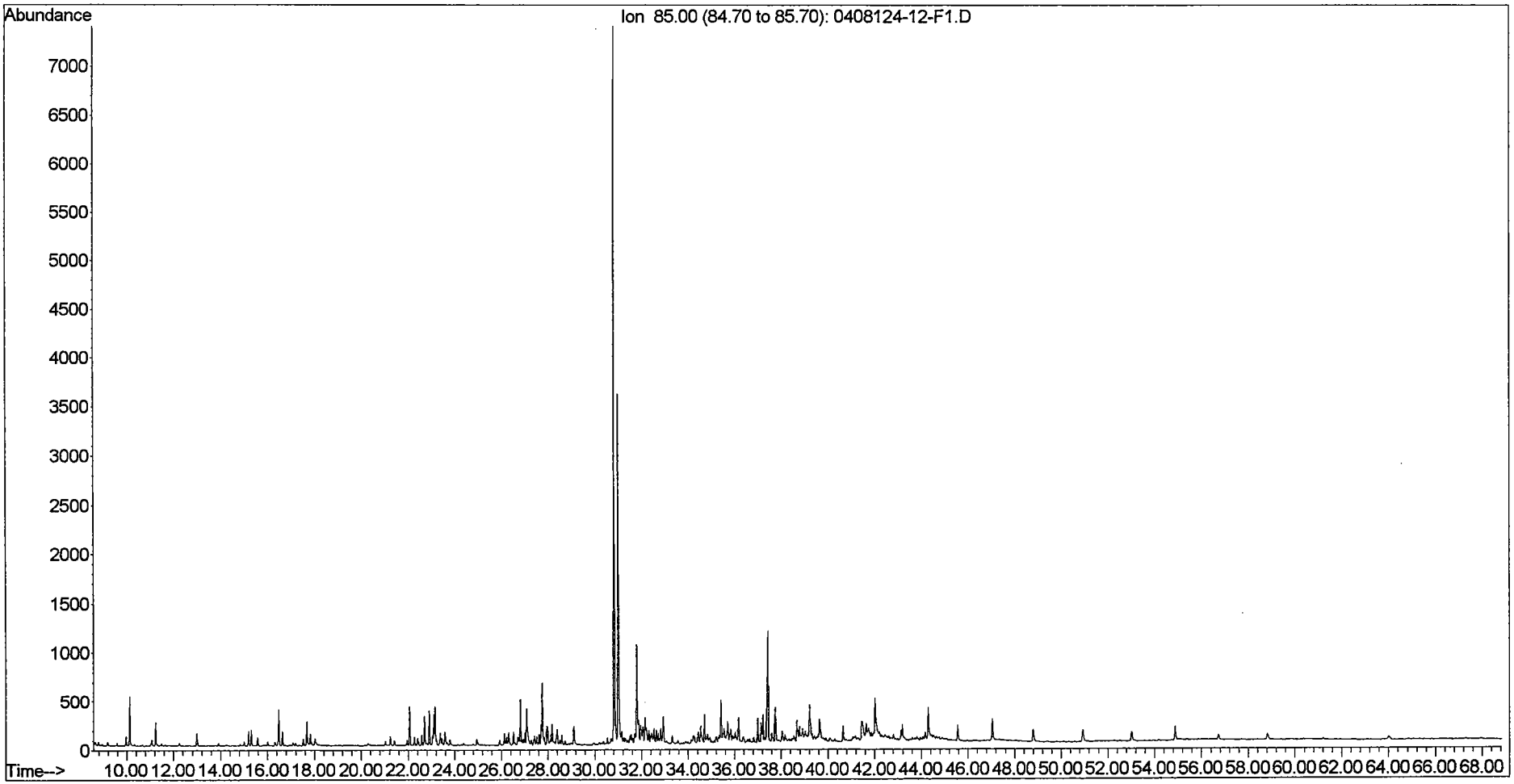
File :O:\Organics\DATA\PAH3\SEPT20\0408124-10-F1.D
Operator : BL
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-10-F1
Misc Info : 1X
Vial Number: 37



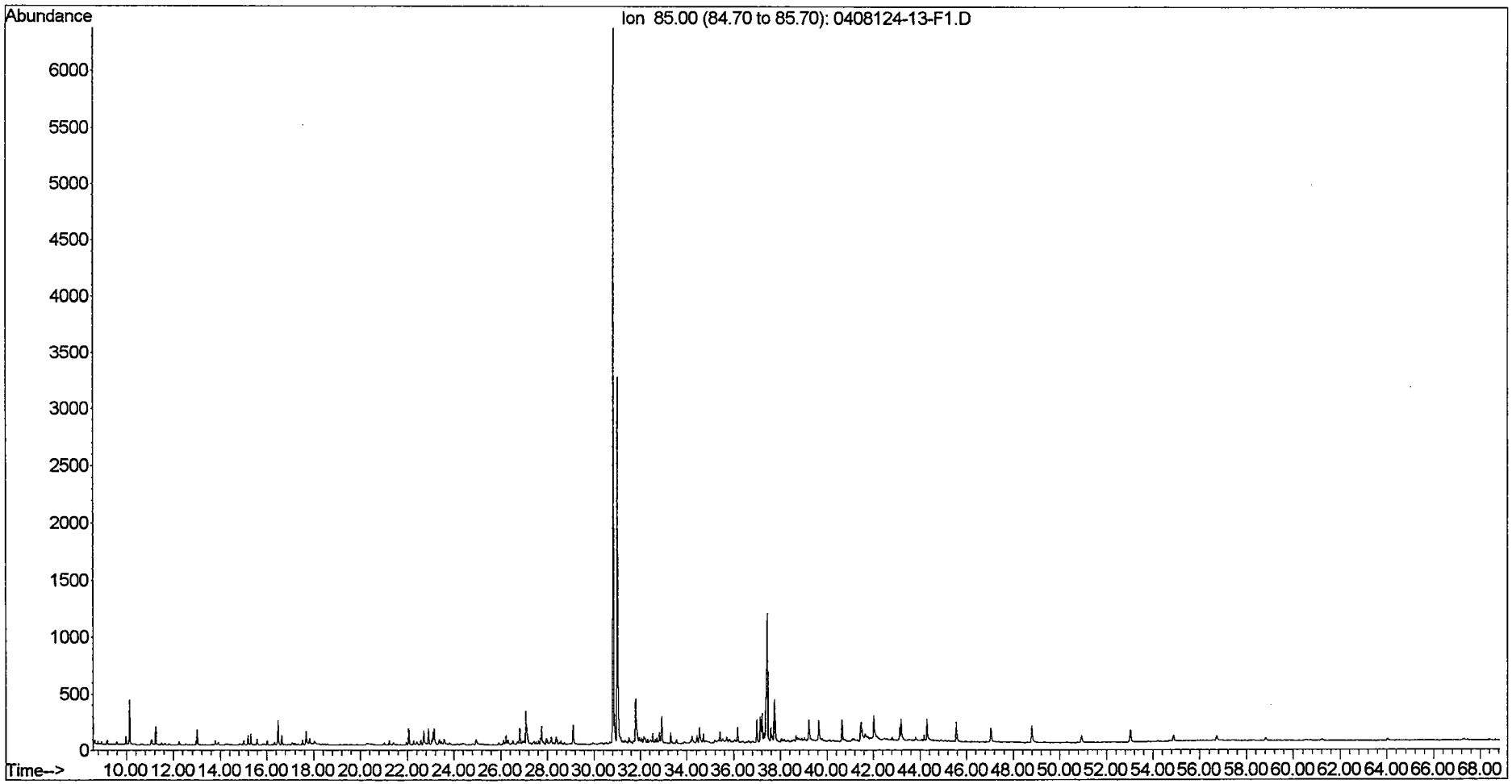
File :O:\Organics\DATA\PAH3\SEPT20\0408124-11-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-11-F1
Misc Info : 1X
Vial Number: 38



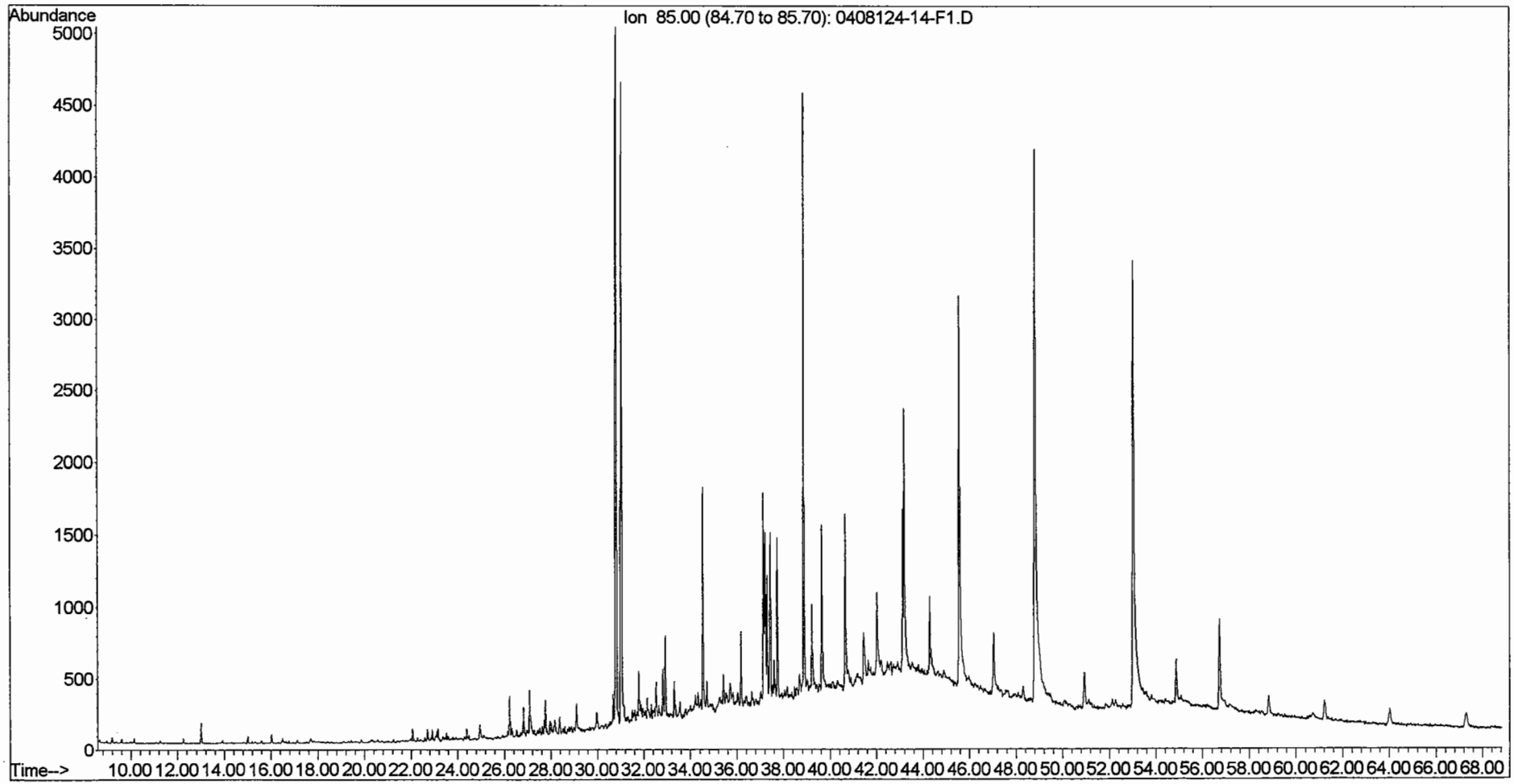
File :O:\Organics\DATA\PAH3\SEPT20\0408124-12-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-12-F1
Misc Info : 1X
Vial Number: 39



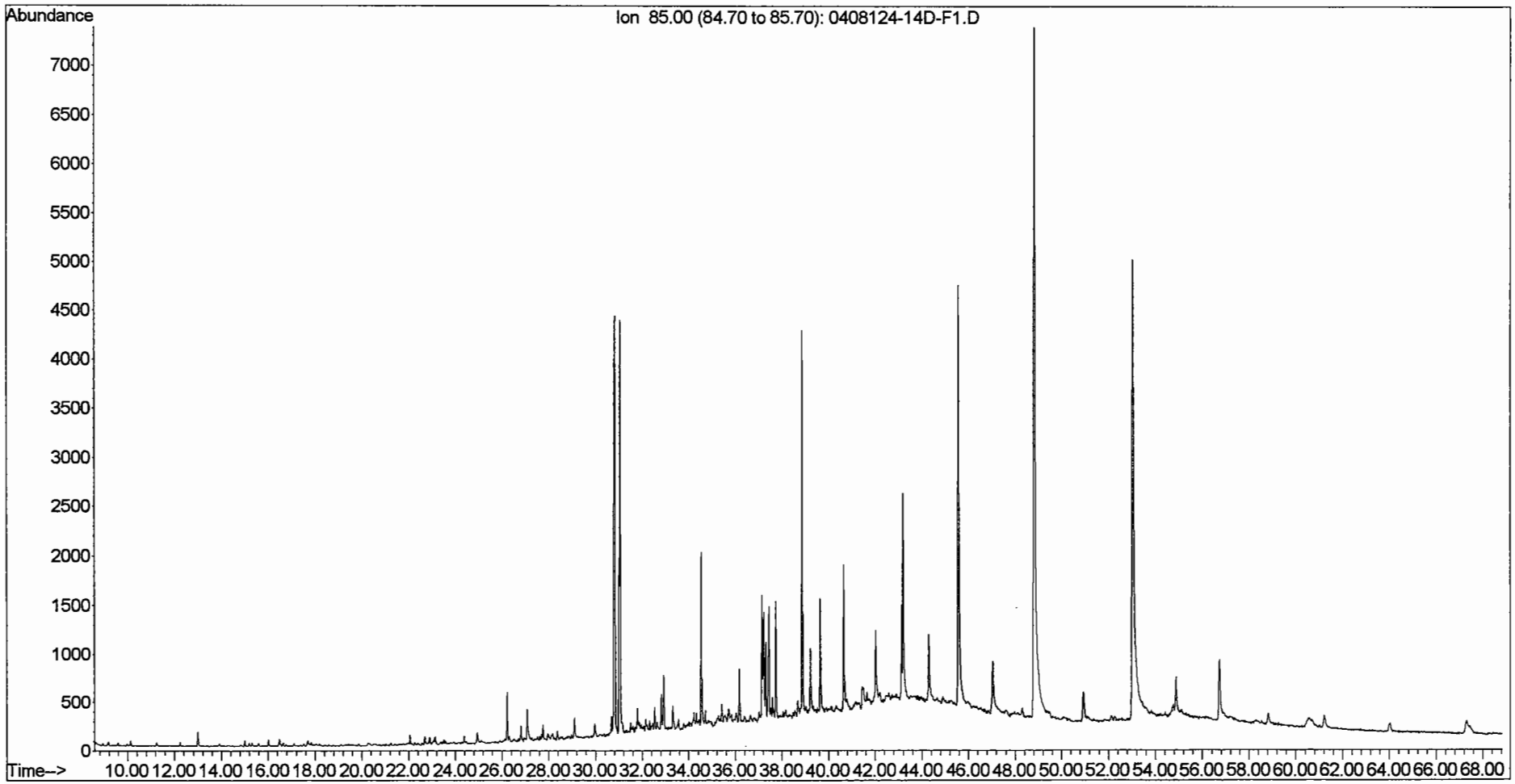
File :O:\Organics\DATA\PAH3\SEPT20\0408124-13-F1.D
Operator : BL
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-13-F1
Misc Info : 1X
Vial Number: 40



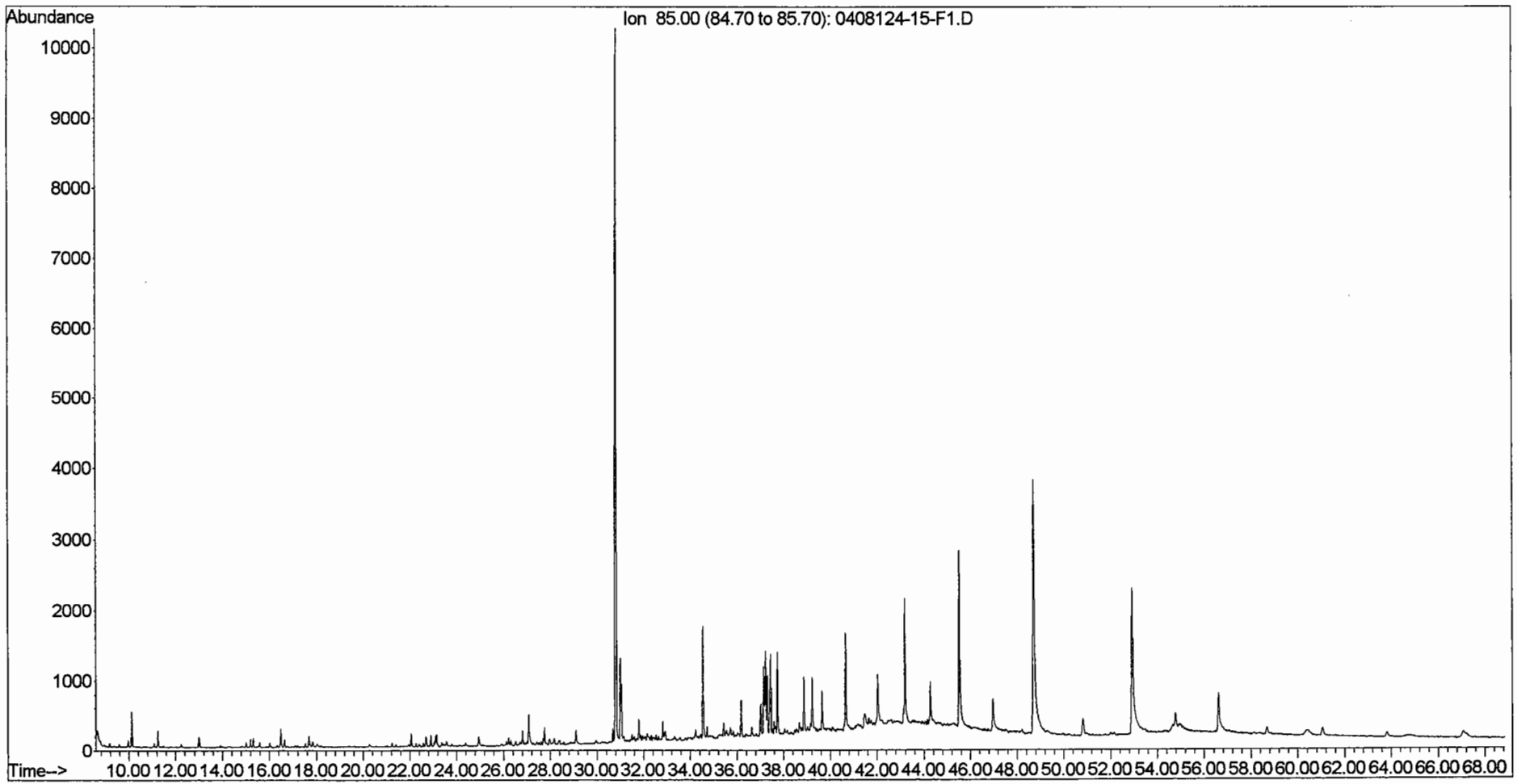
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14-F1
Misc Info : 1X
Vial Number: 41



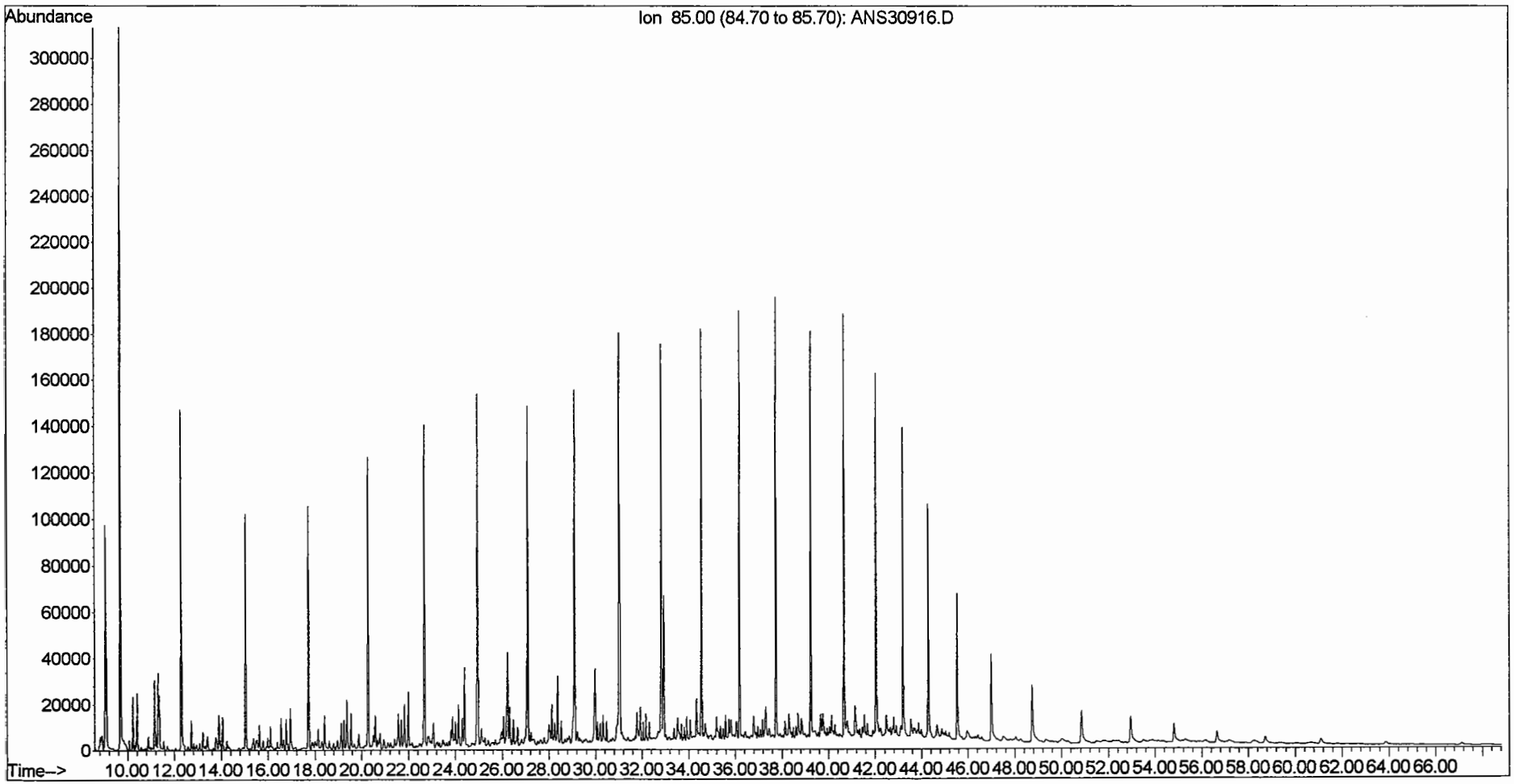
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14D-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14D-F1
Misc Info : 1X
Vial Number: 42



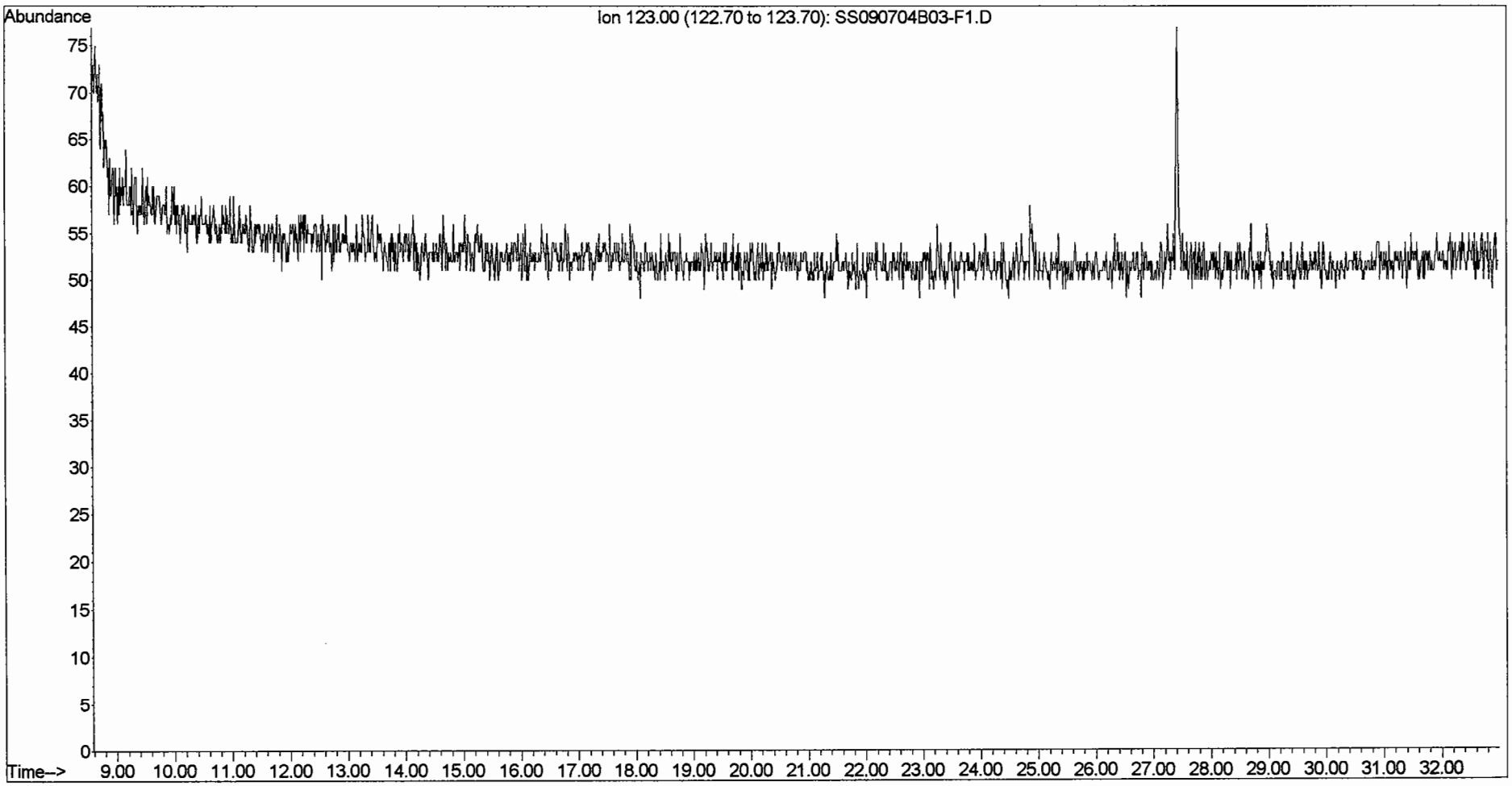
File :O:\Organics\DATA\PAH3\SEPT20\0408124-15-F1.D
Operator : BL
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-15-F1
Misc Info : 1X
Vial Number: 44



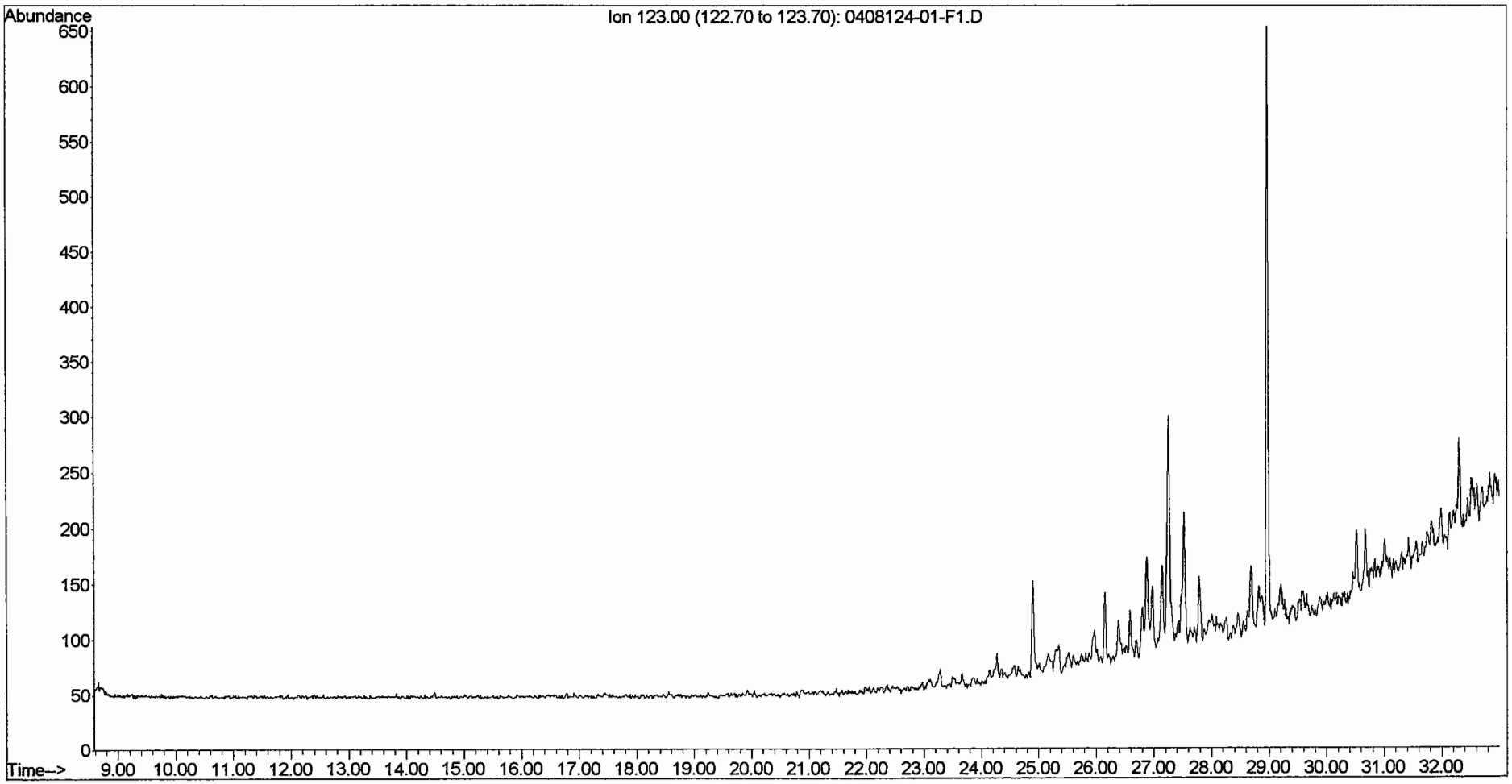
File :O:\Organics\DATA\PAH3\SEPT16\ANS30916.D
Operator : BL
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: ANS30916
Misc Info : SW090104A 5.14 ug/mL
Vial Number: 14



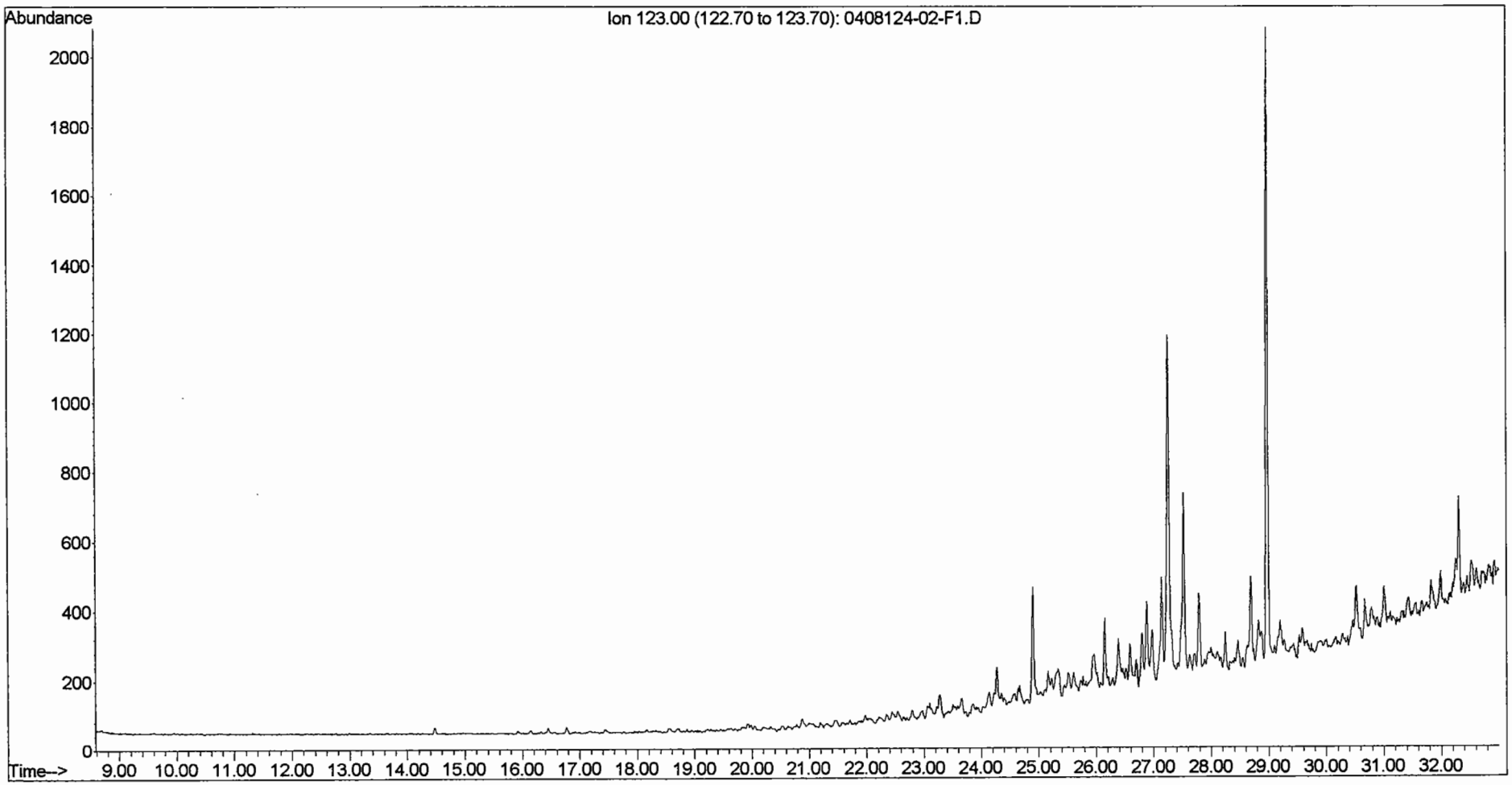
File :O:\Organics\DATA\PAH3\SEPT20\SS090704B03-F1.D
Operator : BL
Acquired : 21 Sep 2004 8:11 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: SS090704B03-F1
Misc Info : 1X
Vial Number: 24



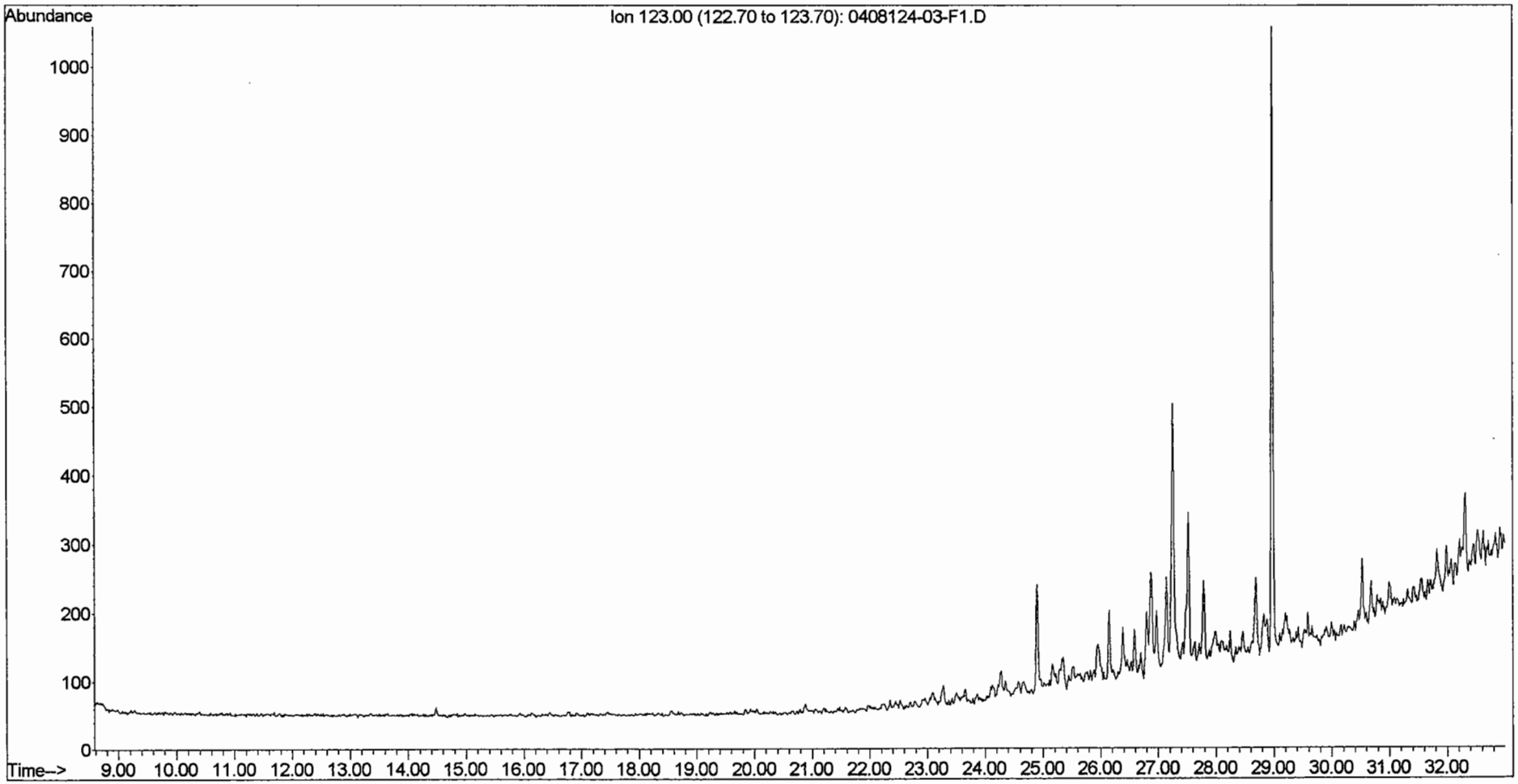
File :O:\Organics\DATA\PAH3\SEPT20\0408124-01-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:20 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-01-F1
Misc Info : 1X
Vial Number: 27



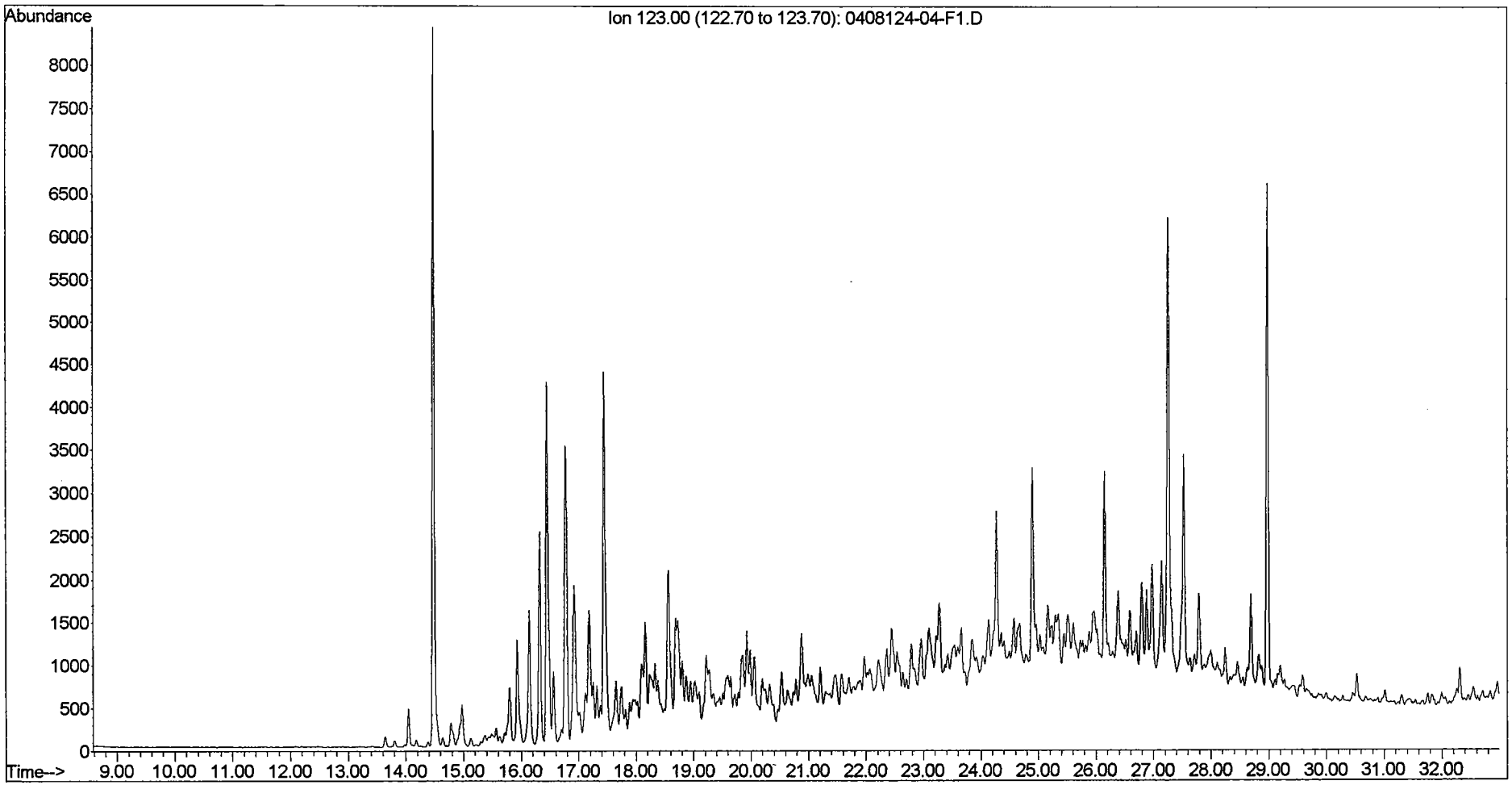
File :O:\Organics\DATA\PAH3\SEPT20\0408124-02-F1.D
Operator : BL
Acquired : 22 Sep 2004 1:43 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-02-F1
Misc Info : 1X
Vial Number: 28



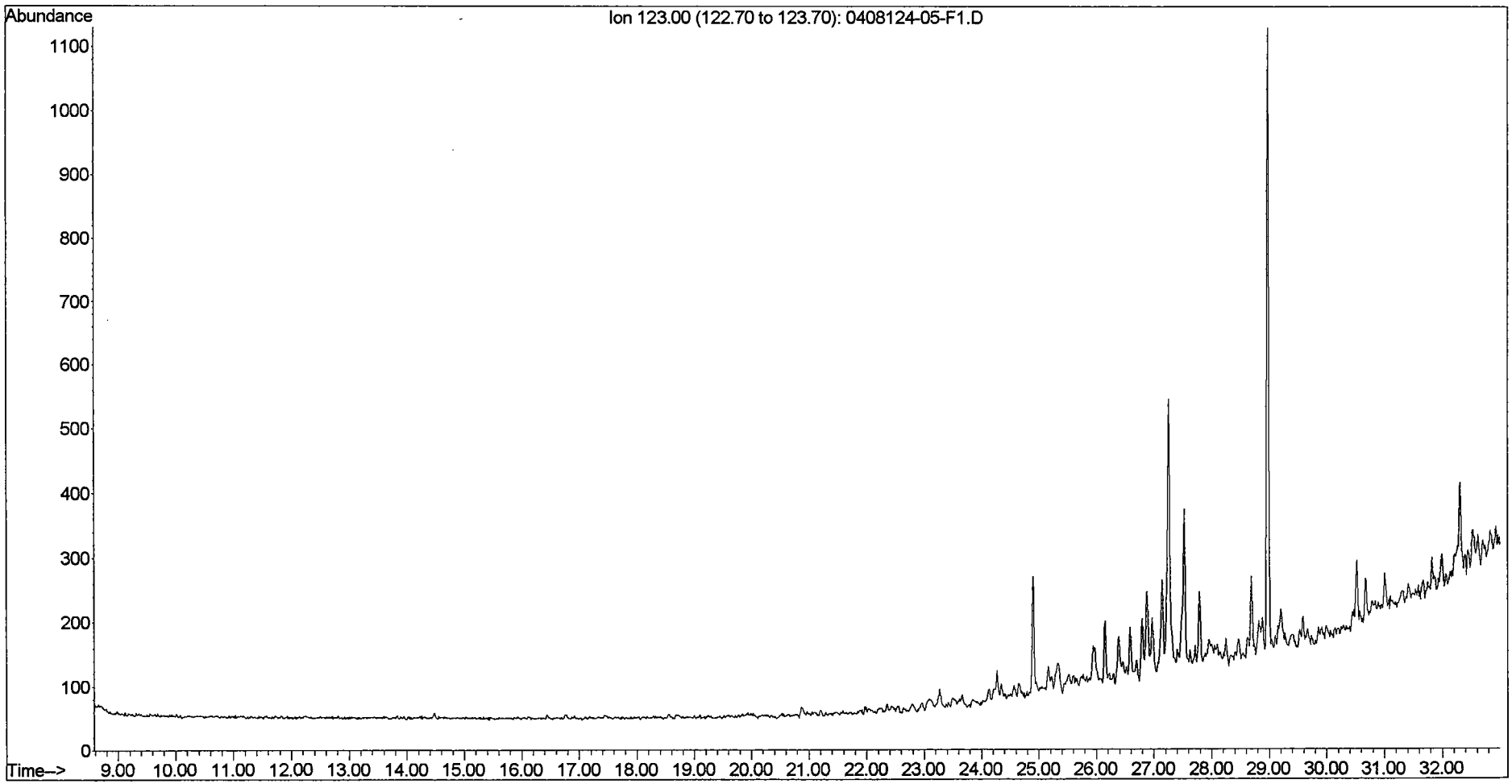
File :O:\Organics\DATA\PAH3\SEPT20\0408124-03-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:06 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-03-F1
Misc Info : 1X
Vial Number: 29



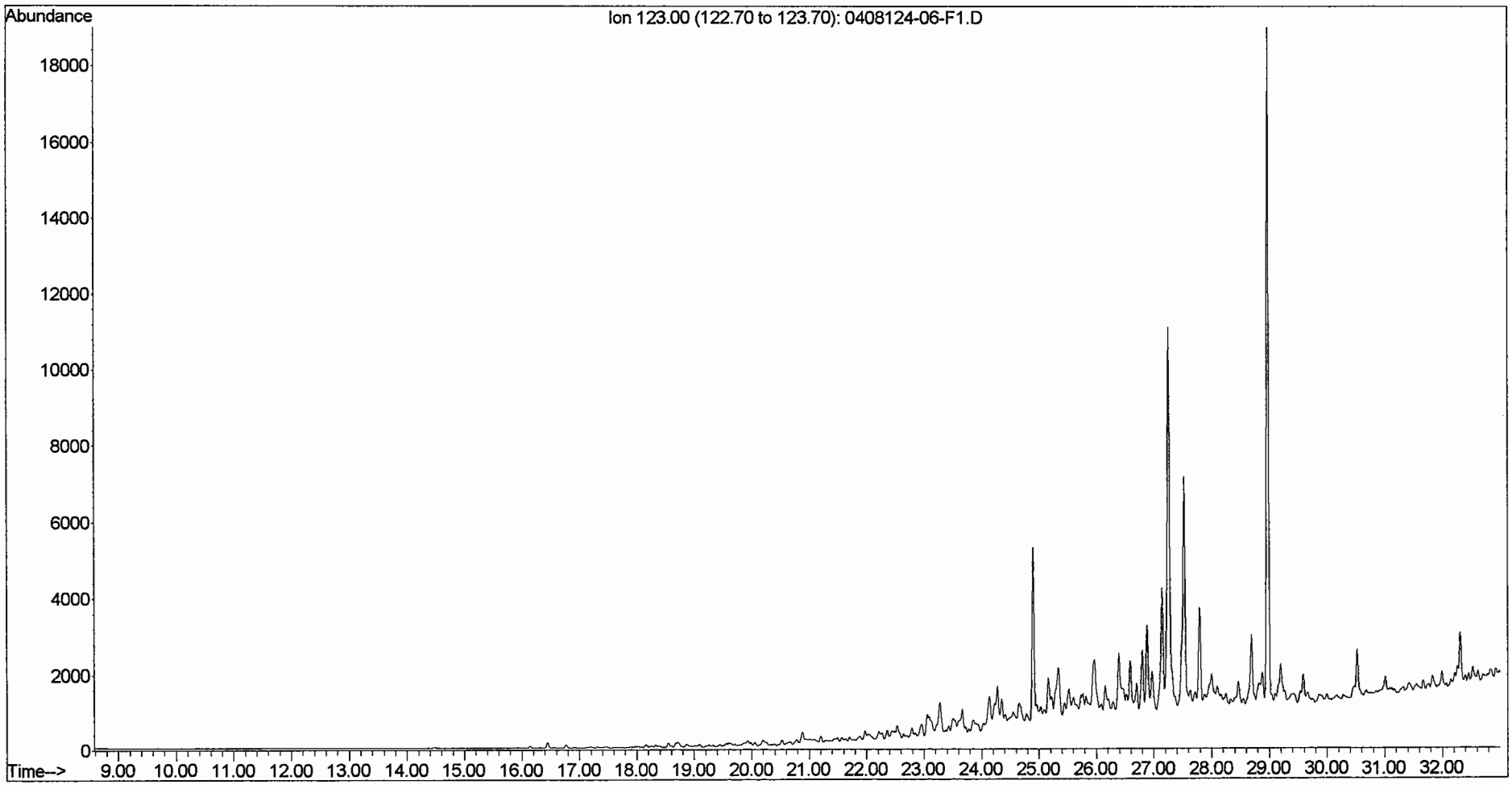
File :O:\Organics\DATA\PAH3\SEPT20\0408124-04-F1.D
Operator : BL
Acquired : 22 Sep 2004 4:29 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-04-F1
Misc Info : 1X
Vial Number: 30



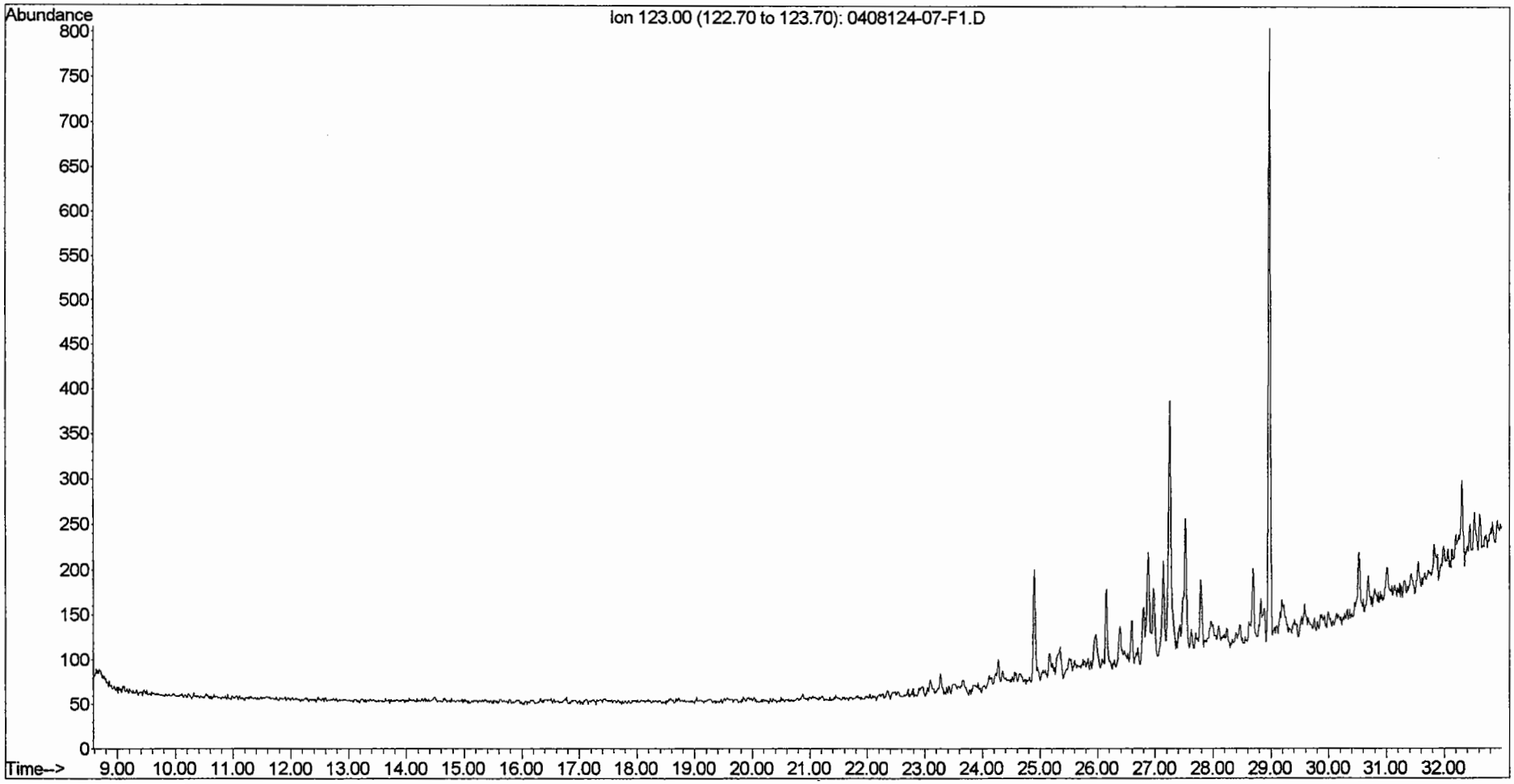
File :O:\Organics\DATA\PAH3\SEPT20\0408124-05-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:53 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-05-F1
Misc Info : 1X
Vial Number: 31



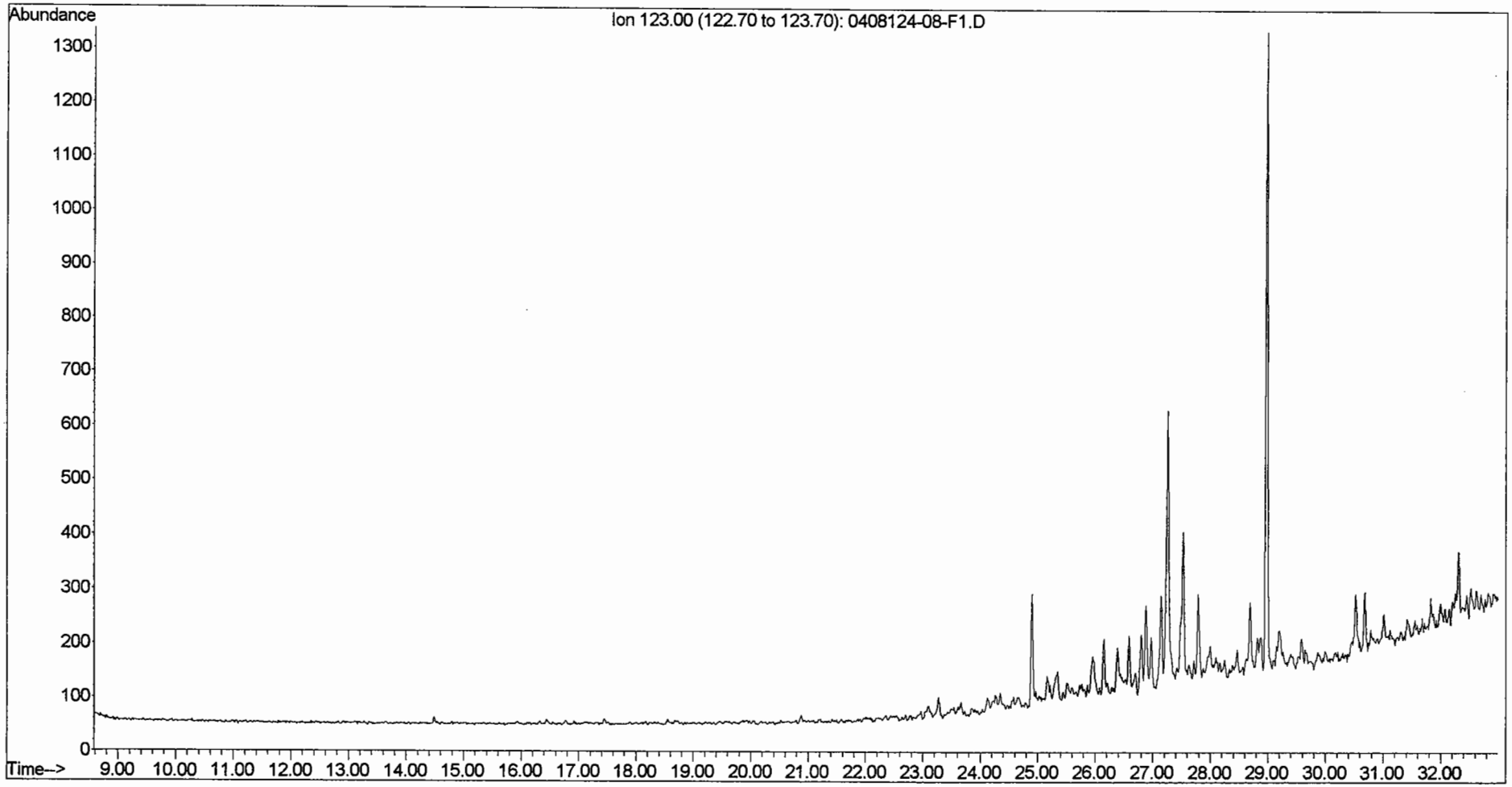
File :O:\Organics\DATA\PAH3\SEPT20\0408124-06-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:16 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-06-F1
Misc Info : 1X
Vial Number: 32



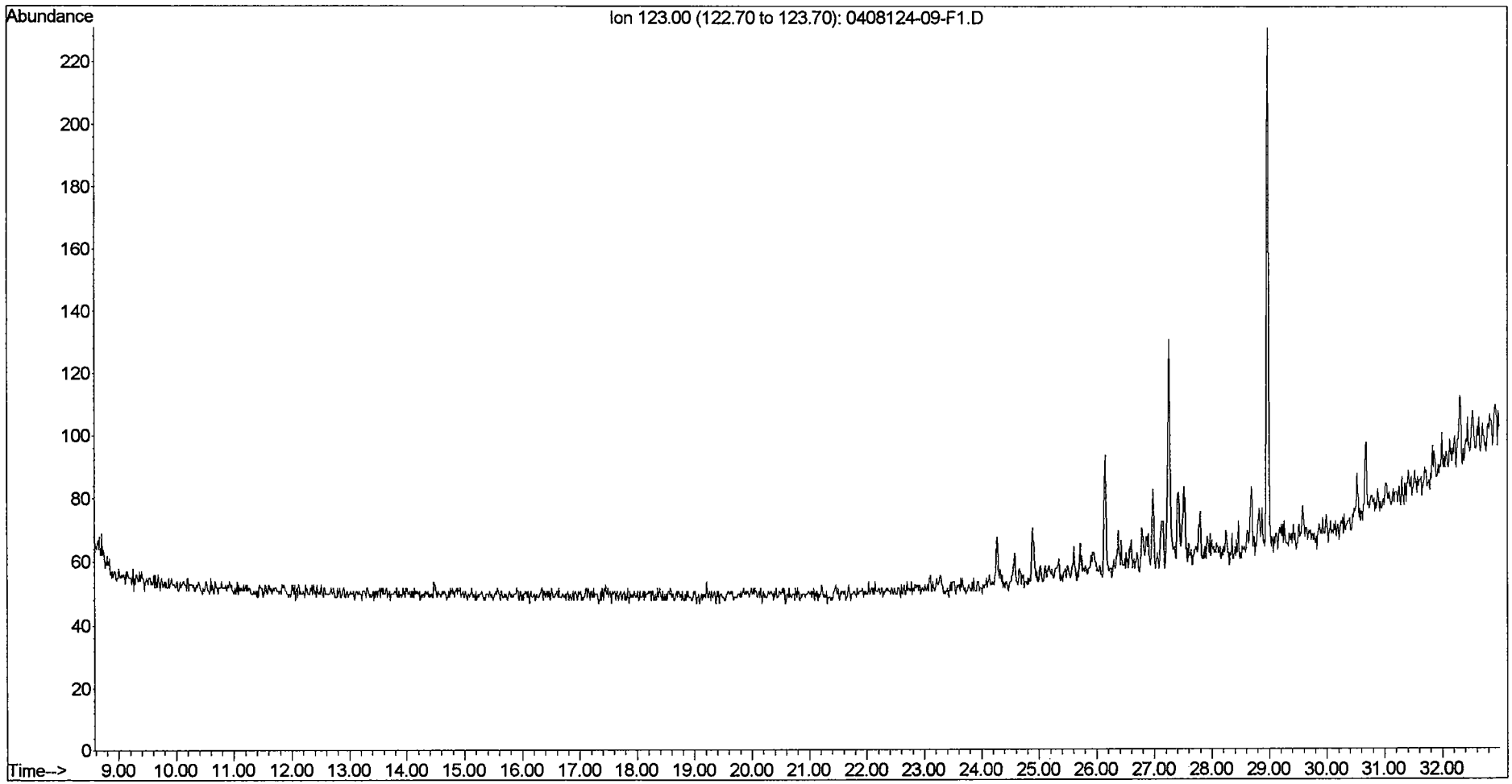
File :O:\Organics\DATA\PAH3\SEPT20\0408124-07-F1.D
Operator : BL
Acquired : 22 Sep 2004 8:39 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-07-F1
Misc Info : 1X
Vial Number: 33



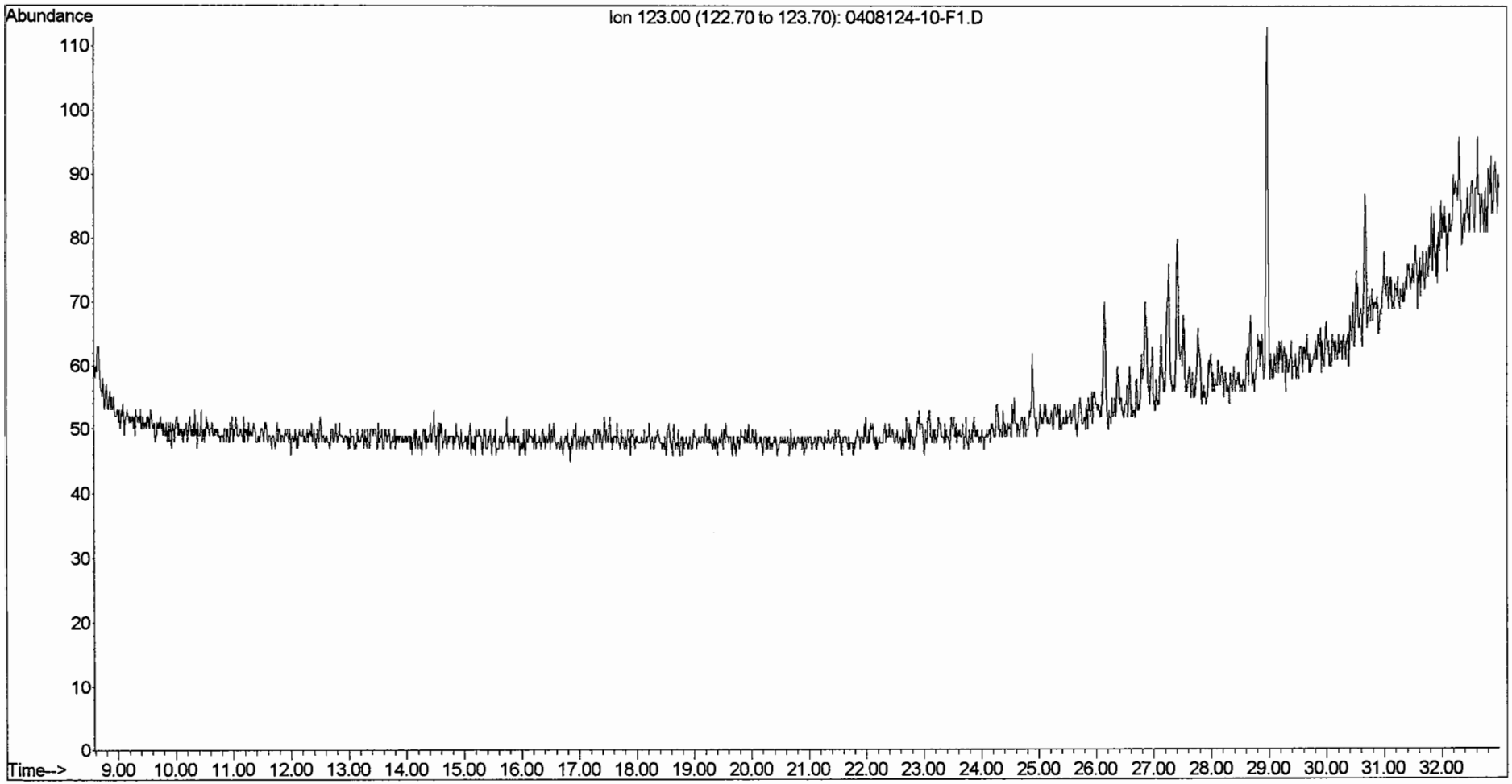
File :O:\Organics\DATA\PAH3\SEPT20\0408124-08-F1.D
Operator : BL
Acquired : 22 Sep 2004 11:26 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-08-F1
Misc Info : 1X
Vial Number: 35



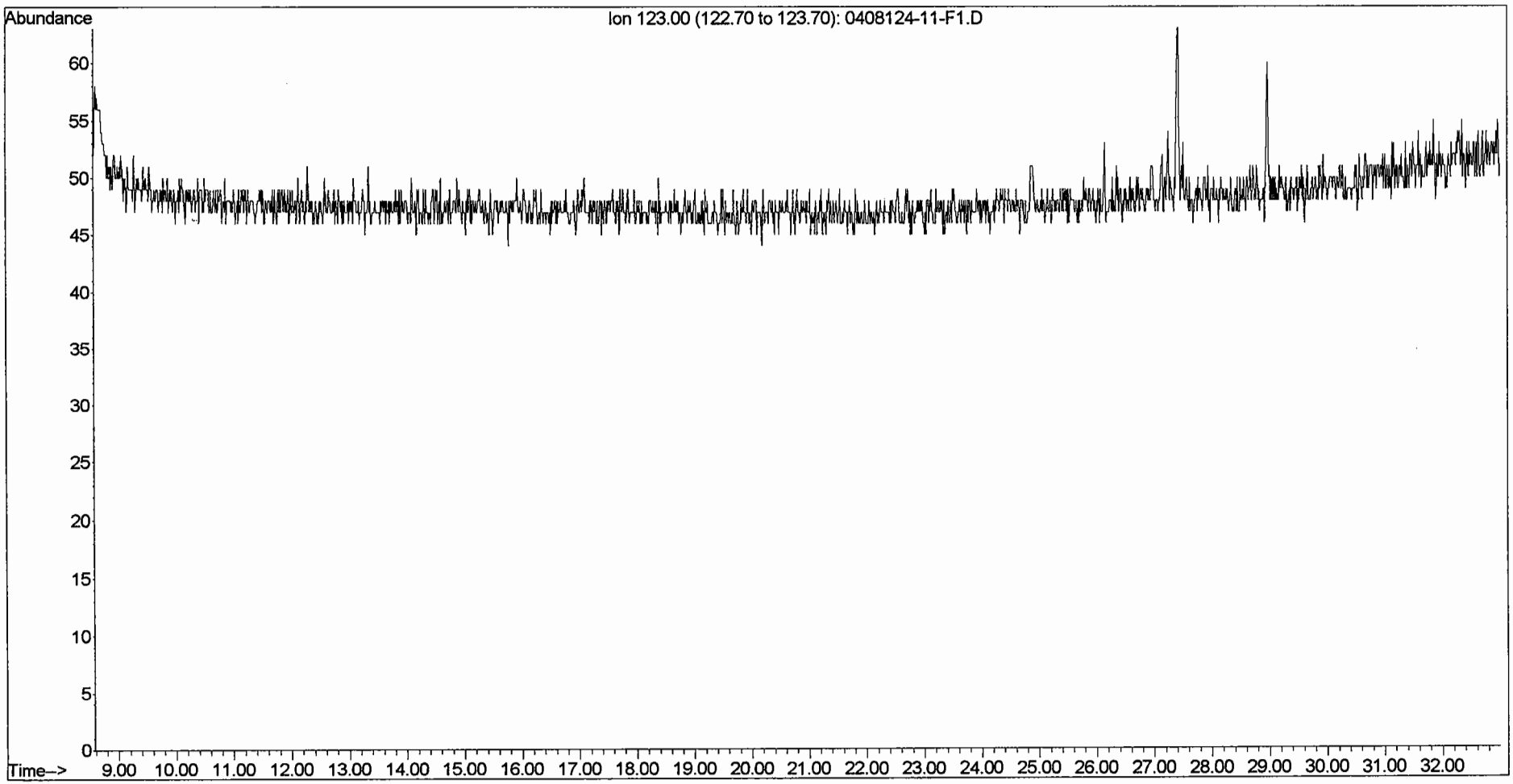
File :O:\Organics\DATA\PAH3\SEPT20\0408124-09-F1.D
Operator : BL
Acquired : 22 Sep 2004 12:50 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-09-F1
Misc Info : 1X
Vial Number: 36



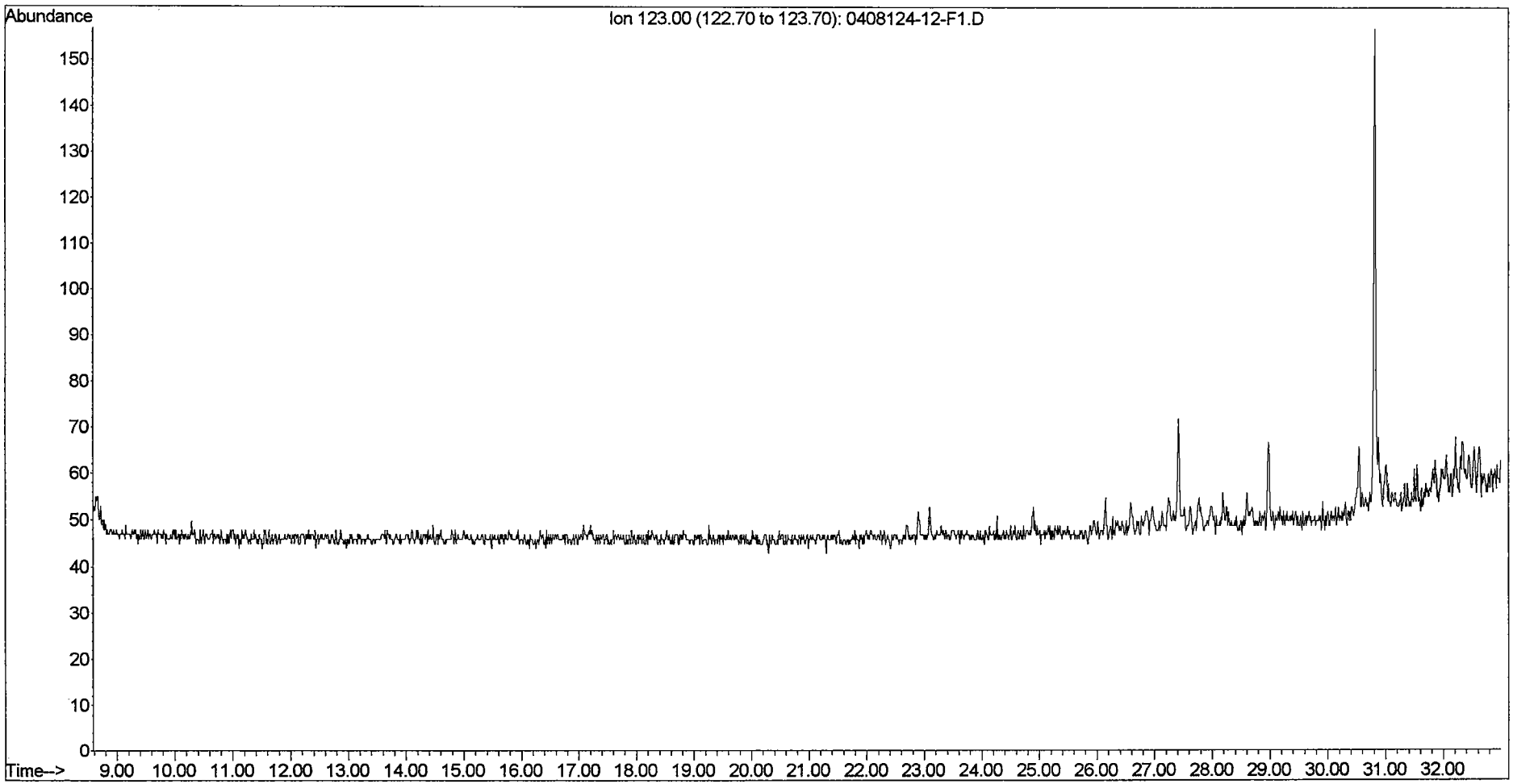
File :O:\Organics\DATA\PAH3\SEPT20\0408124-10-F1.D
Operator : BL
Acquired : 22 Sep 2004 2:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-10-F1
Misc Info : 1X
Vial Number: 37



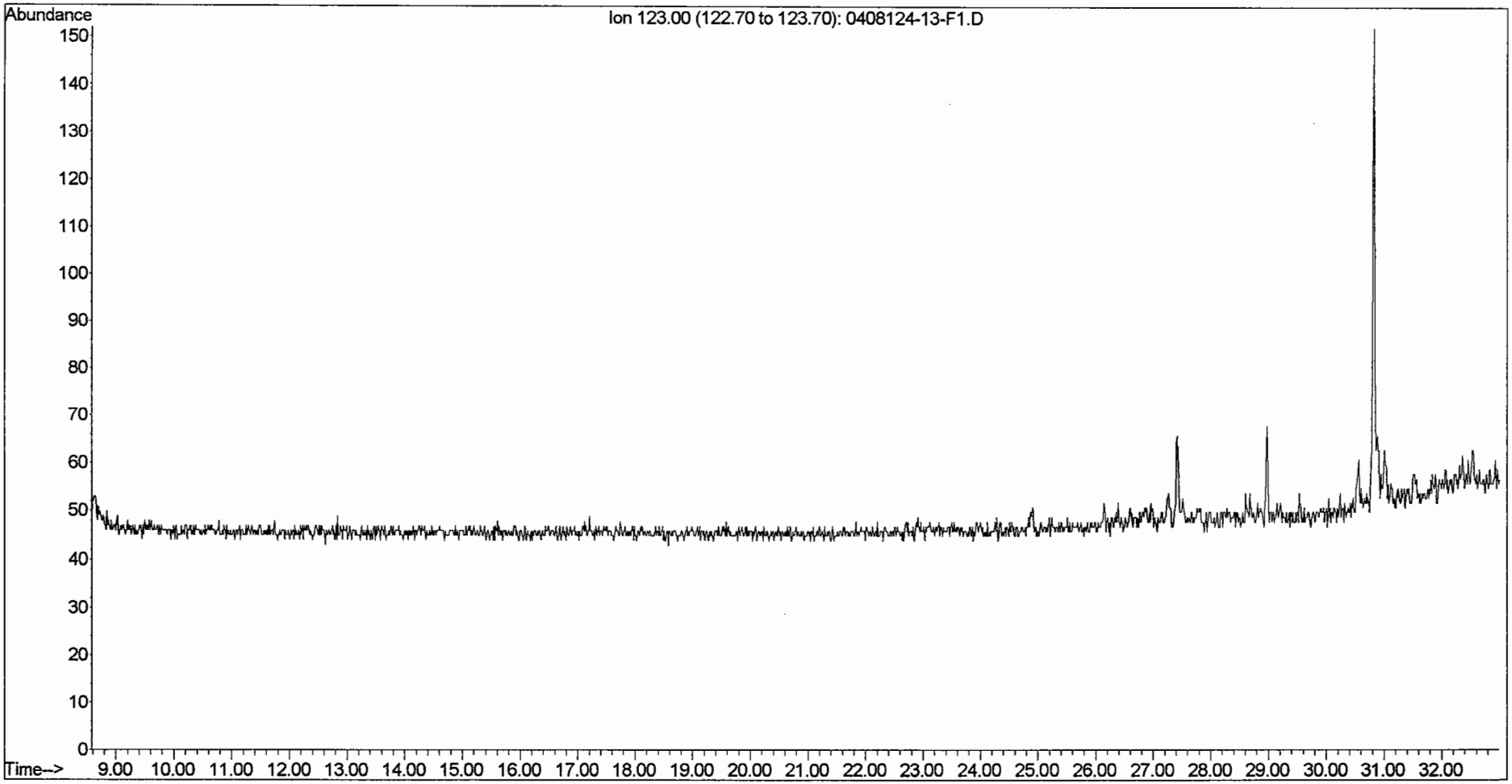
File :O:\Organics\DATA\PAH3\SEPT20\0408124-11-F1.D
Operator : BL
Acquired : 22 Sep 2004 3:39 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-11-F1
Misc Info : 1X
Vial Number: 38



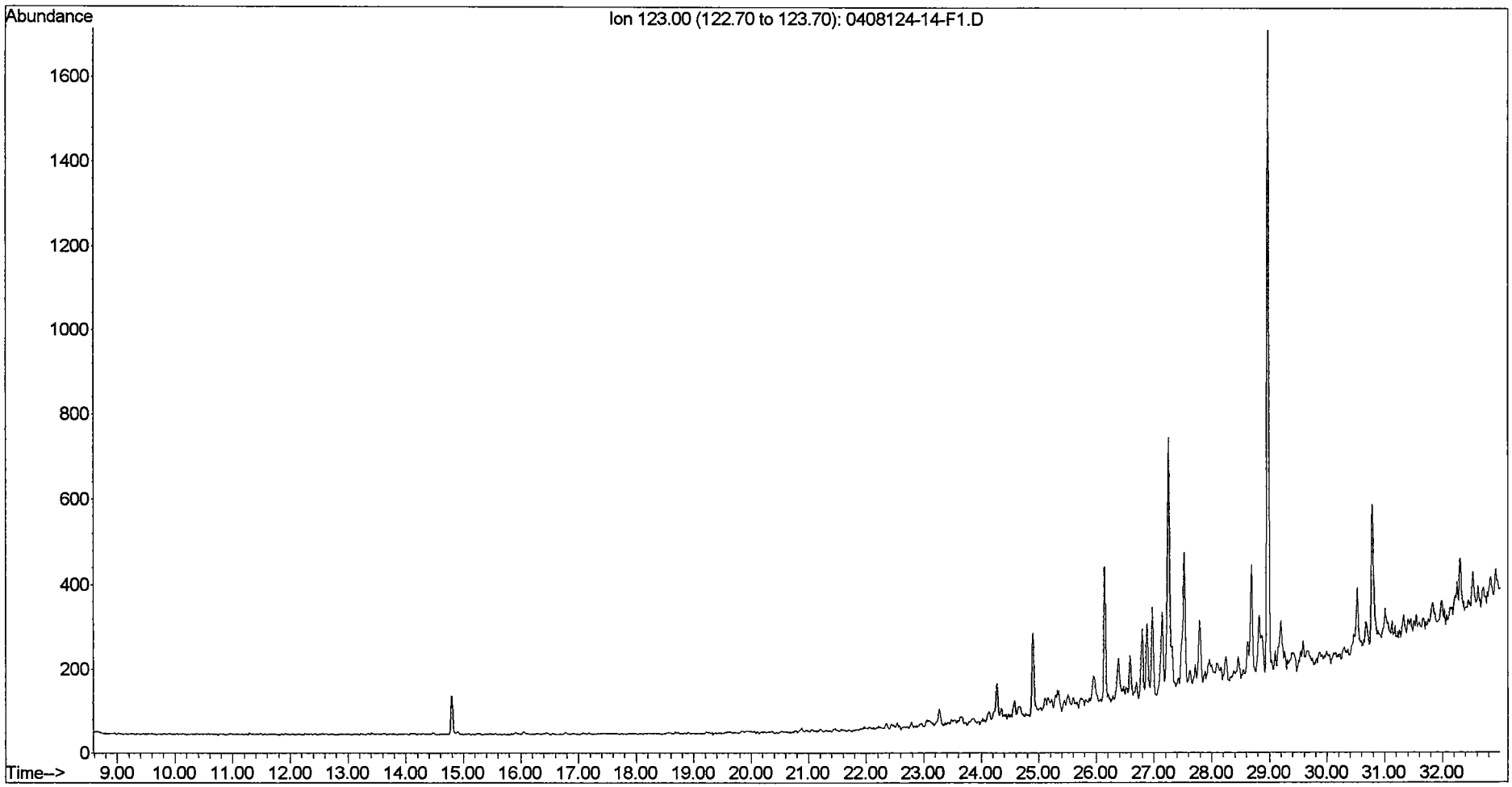
File :O:\Organics\DATA\PAH3\SEPT20\0408124-12-F1.D
Operator : BL
Acquired : 22 Sep 2004 5:03 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-12-F1
Misc Info : 1X
Vial Number: 39



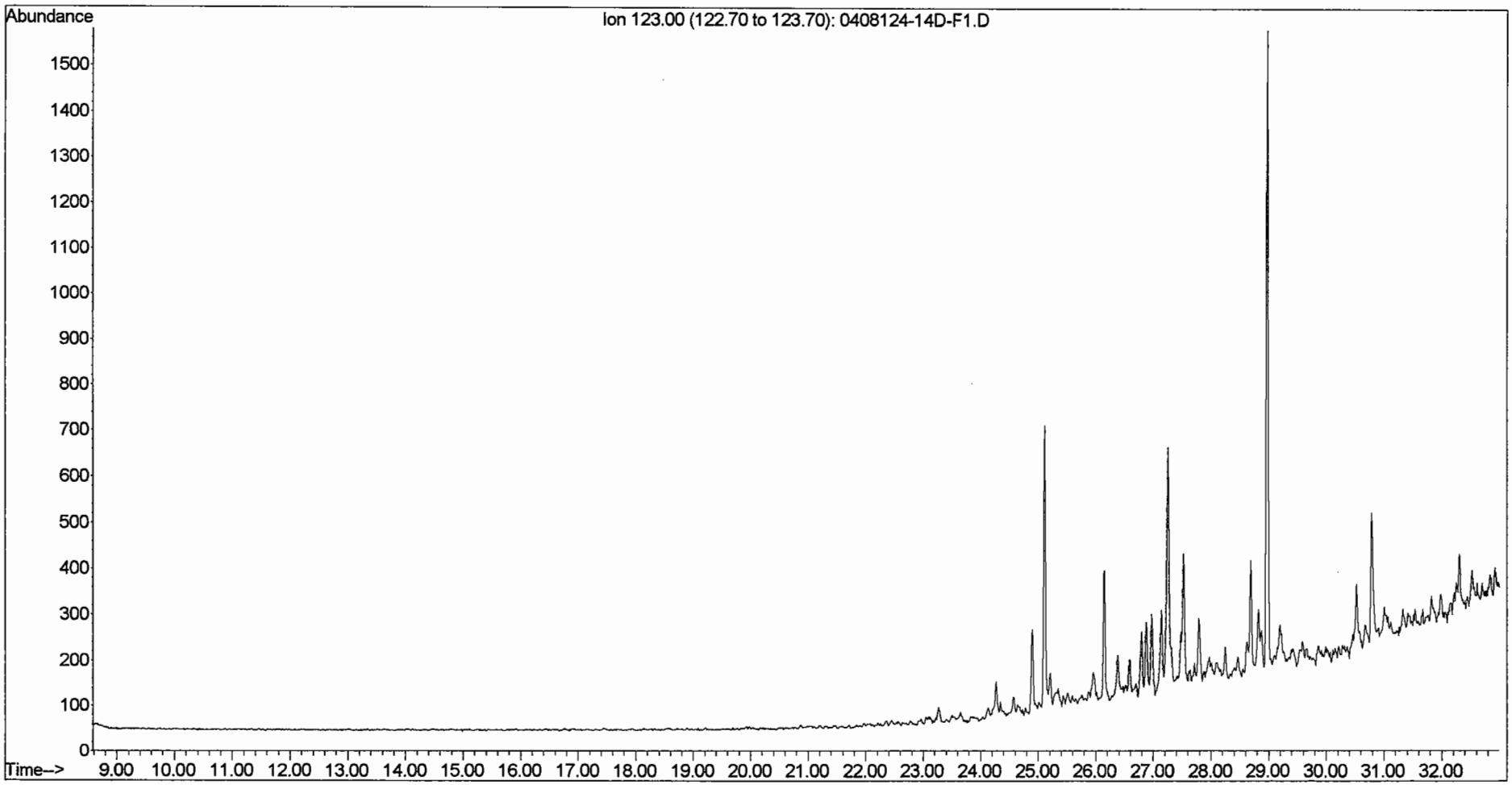
File :O:\Organics\DATA\PAH3\SEPT20\0408124-13-F1.D
Operator : BL
Acquired : 22 Sep 2004 6:27 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-13-F1
Misc Info : 1X
Vial Number: 40



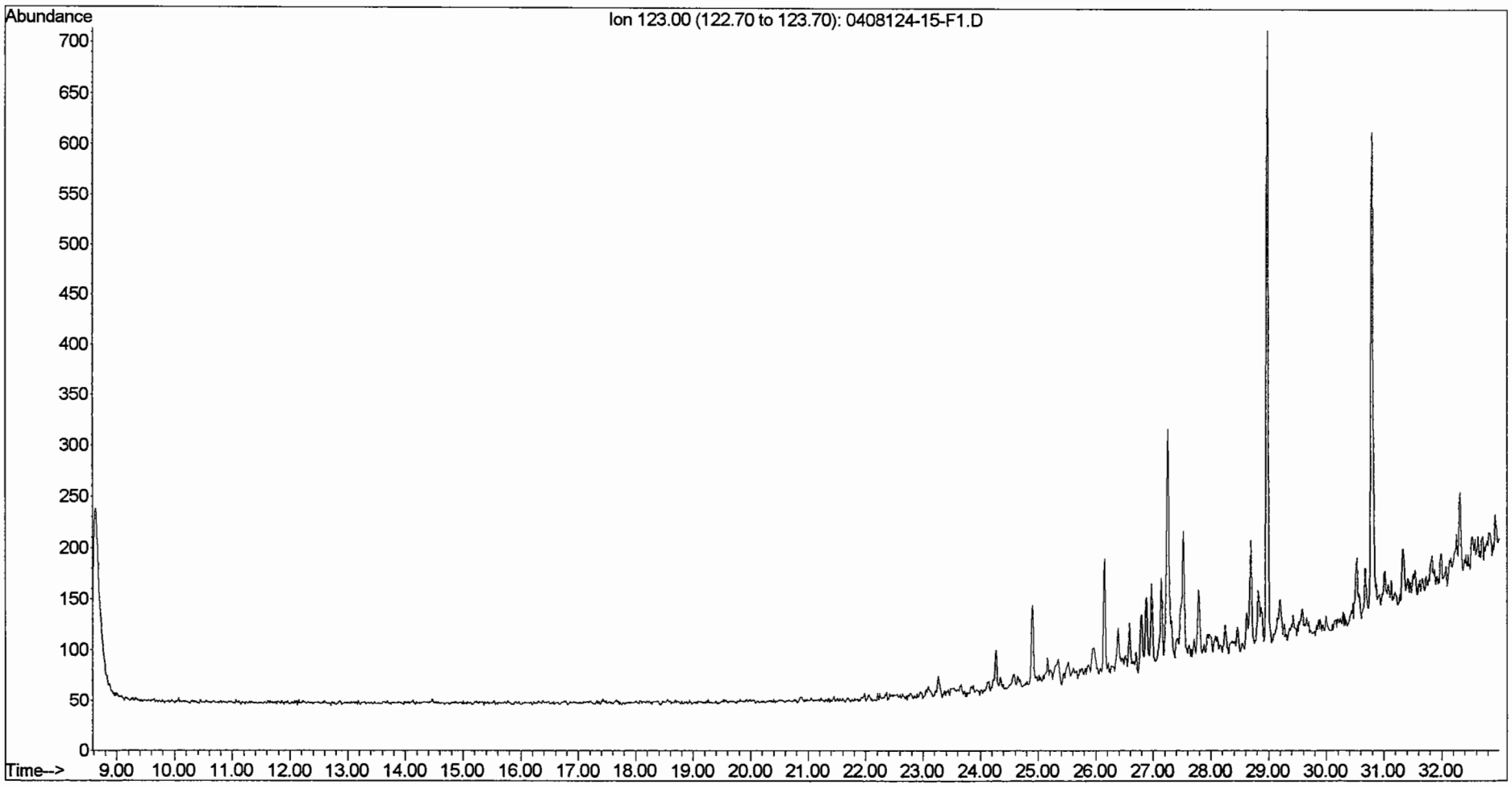
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14-F1.D
Operator : BL
Acquired : 22 Sep 2004 7:51 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14-F1
Misc Info : 1X
Vial Number: 41



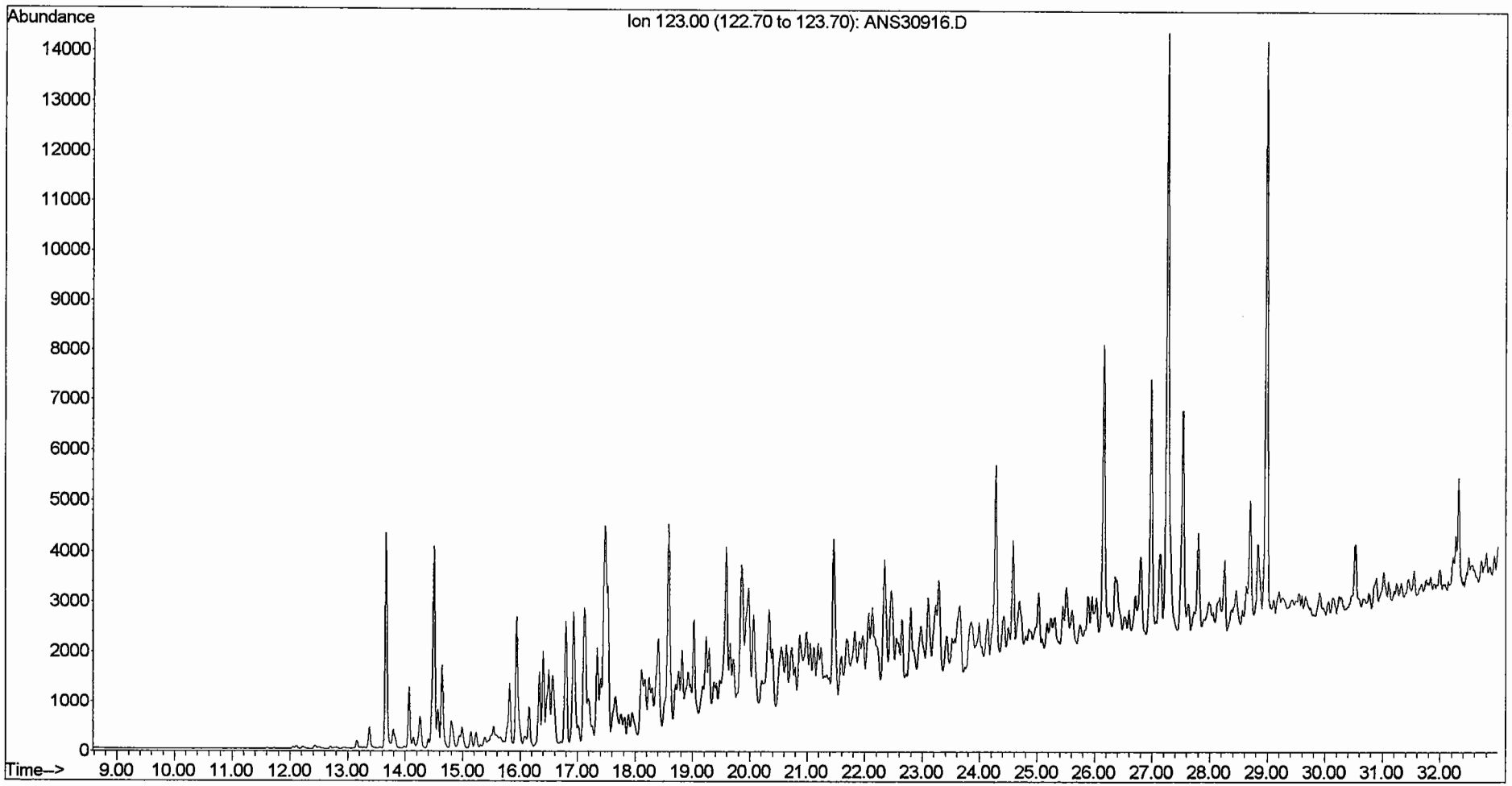
File :O:\Organics\DATA\PAH3\SEPT20\0408124-14D-F1.D
Operator : BL
Acquired : 22 Sep 2004 9:15 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-14D-F1
Misc Info : 1X
Vial Number: 42



File :O:\Organics\DATA\PAH3\SEPT20\0408124-15-F1.D
Operator : BL
Acquired : 23 Sep 2004 6:21 am using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: 0408124-15-F1
Misc Info : 1X
Vial Number: 44



File :O:\Organics\DATA\PAH3\SEPT16\ANS30916.D
Operator : BL
Acquired : 17 Sep 2004 12:56 pm using AcqMethod PAH30916.M
Instrument : PAHINST3
Sample Name: ANS30916
Misc Info : SW090104A 5.14 ug/mL
Vial Number: 14



SATURATED AND TOTAL PETROLEUM HYDROCARBONS

Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-08-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-01**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	40.2	30.96	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.17**	J	n-Docosane (C22)	**0.013**	J
n-Decane (C10)	**0.0032**	J	n-Tricosane (C23)	**0.039**	J
n-Undecane (C11)	**0.0064**	J	n-Tetracosane (C24)	**0.035**	J
n-Dodecane (C12)	**0.013**	J	n-Pentacosane (C25)	**0.12**	J
n-Tridecane (C13)	**0.0064**	J	n-Hexacosane (C26)	**0.061**	J
2,6,10 Trimethyldodecane (1380)	**0.023**	J	n-Heptacosane (C27)	**0.096**	J
n-Tetradecane (C14)	**0.0064**	J	n-Octacosane (C28)	**0.045**	J
2,6,10 Trimethyltridecane (1470)	**0.029**	J	n-Nonacosane (C29)	**0.22**	J
n-Pentadecane (C15)	**0.023**	J	n-Triacontane (C30)	**0.084**	J
n-Hexadecane (C16)	**0.0032**	J	n-Hentriacontane (C31)	**0.23**	J
Norpristane (1650)	**0.0096**	J	n-Dotriacontane (C32)	**0.058**	J
n-Heptadecane (C17)	**0.061**	J	n-Tritriacontane (C33)	**0.080**	J
Pristane	**0.032**	J	n-Tetratriacontane (C34)	0.32	U
n-Octadecane (C18)	**0.019**	J	n-Pentatriacontane (C35)	0.32	U
Phytane	**0.16**	J	n-Hexatriacontane (C36)	0.32	U
n-Nonadecane (C19)	**0.029**	J	n-Heptatriacontane (C37)	0.32	U
n-Eicosane (C20)	**0.0064**	J	n-Octatriacontane (C38)	0.32	U
n-Heneicosane (C21)	**0.019**	J	n-Tetracontane (C40)	0.32	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**1.6**
Total Extractable Material[2]	**86**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	79	50-130
d50-Tetracosane	79	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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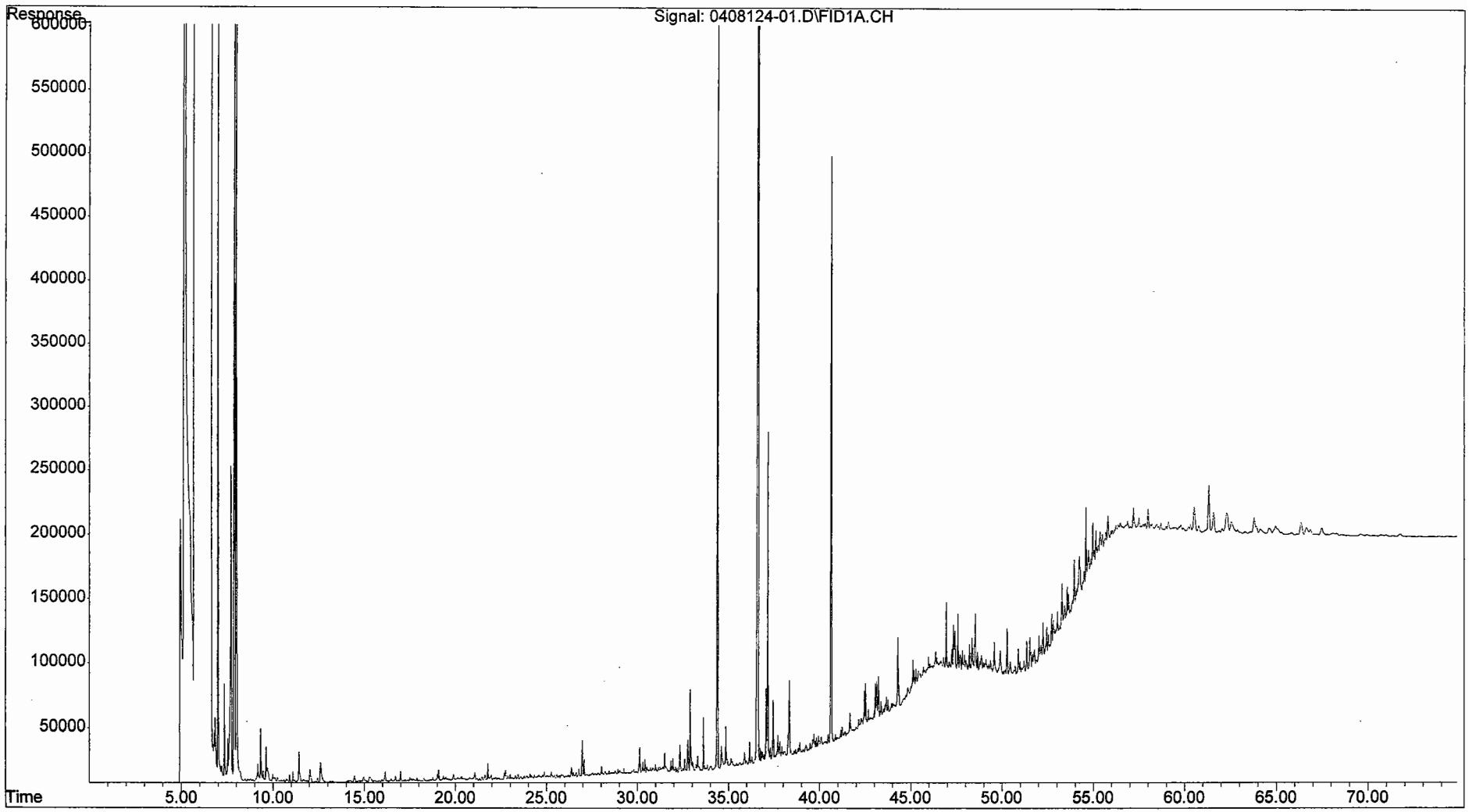
File :O:\Organics\DATA\PAH2\SEPT24\0408124-01.D
Operator : NLJr
Acquired : 27 Sep 2004 5:07 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-01
Misc Info : 1X
Vial Number: 49



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-04-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-02**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	36.8	30.44	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.20**	J	n-Docosane (C22)	**0.029**	J
n-Decane (C10)	**0.0036**	J	n-Tricosane (C23)	**0.050**	J
n-Undecane (C11)	**0.011**	J	n-Tetracosane (C24)	**0.054**	J
n-Dodecane (C12)	**0.025**	J	n-Pentacosane (C25)	**0.21**	J
n-Tridecane (C13)	**0.011**	J	n-Hexacosane (C26)	**0.097**	J
2,6,10 Trimethyldodecane (1380)	**0.050**	J	n-Heptacosane (C27)	**0.19**	J
n-Tetradecane (C14)	**0.018**	J	n-Octacosane (C28)	**0.082**	J
2,6,10 Trimethyltridecane (1470)	**0.054**	J	n-Nonacosane (C29)	**0.35**	J
n-Pentadecane (C15)	**0.057**	J	n-Triacontane (C30)	0.36	U
n-Hexadecane (C16)	**0.032**	J	n-Hentriacontane (C31)	**0.46**	
Norpristane (1650)	**0.021**	J	n-Dotriacontane (C32)	**0.16**	J
n-Heptadecane (C17)	**0.19**	J	n-Tritriacontane (C33)	**0.25**	J
Pristane	**0.068**	J	n-Tetratriacontane (C34)	0.36	U
n-Octadecane (C18)	**0.032**	J	n-Pentatriacontane (C35)	0.36	U
Phytane	**0.35**	J	n-Hexatriacontane (C36)	0.36	U
n-Nonadecane (C19)	**0.11**	J	n-Heptatriacontane (C37)	0.36	U
n-Eicosane (C20)	**0.014**	J	n-Octatriacontane (C38)	0.36	U
n-Heneicosane (C21)	**0.036**	J	n-Tetracontane (C40)	0.36	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**3.1**
Total Extractable Material[2]	**280**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	84	50-130
d50-Tetracosane	84	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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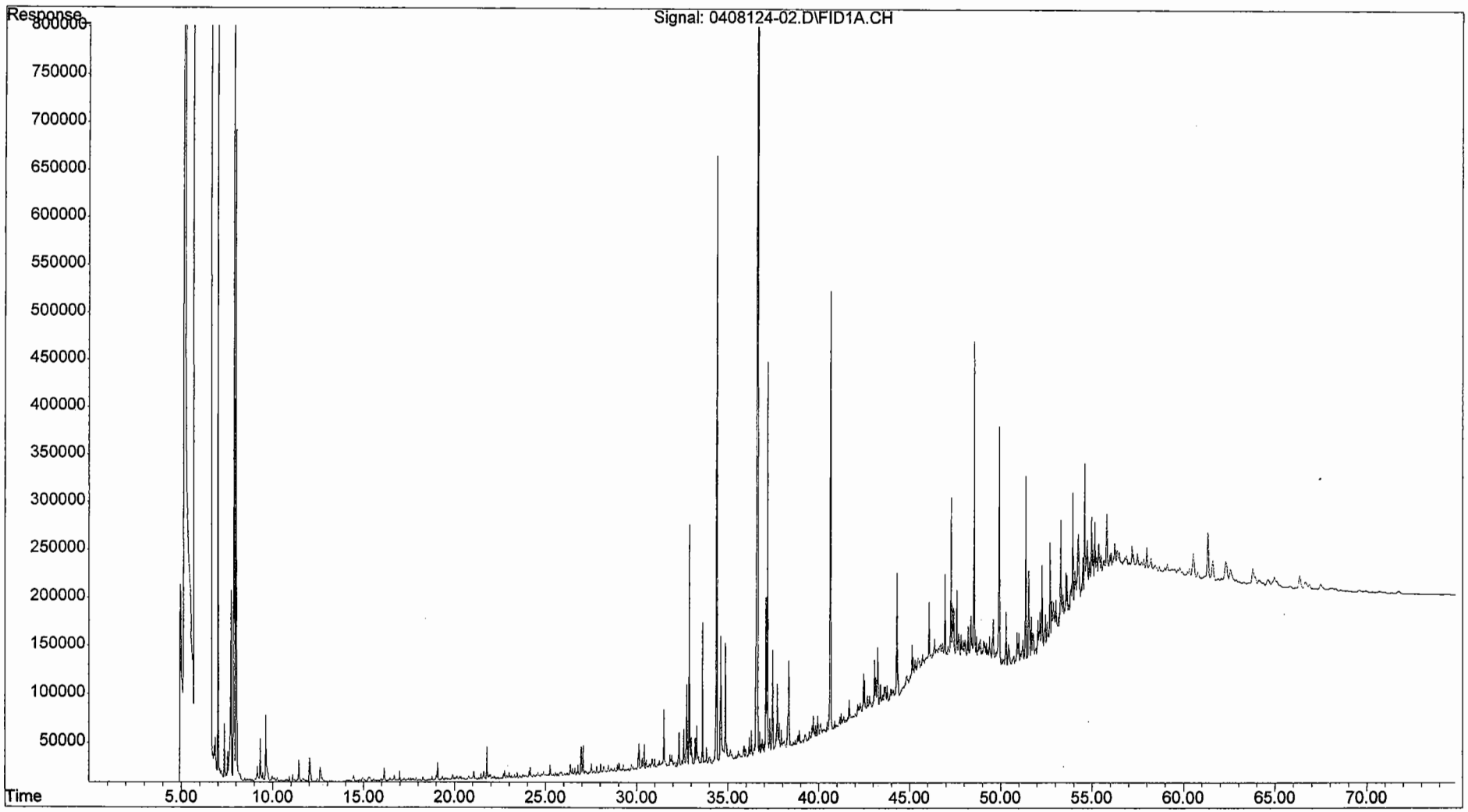
File :O:\Organics\DATA\PAH2\SEPT24\0408124-02.D
Operator : NLJr
Acquired : 27 Sep 2004 6:31 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-02
Misc Info : 1X
Vial Number: 50



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Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-20-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-03**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	37.7	30.27	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.11**	J	n-Docosane (C22)	**0.025**	J
n-Decane (C10)	**0.0018**	J	n-Tricosane (C23)	**0.019**	J
n-Undecane (C11)	**0.0035**	J	n-Tetracosane (C24)	**0.042**	J
n-Dodecane (C12)	**0.0088**	J	n-Pentacosane (C25)	**0.068**	J
n-Tridecane (C13)	**0.0053**	J	n-Hexacosane (C26)	**0.065**	J
2,6,10 Trimethyldodecane (1380)	**0.012**	J	n-Heptacosane (C27)	**0.056**	J
n-Tetradecane (C14)	**0.0035**	J	n-Octacosane (C28)	**0.075**	J
2,6,10 Trimethyltridecane (1470)	**0.018**	J	n-Nonacosane (C29)	**0.13**	J
n-Pentadecane (C15)	**0.026**	J	n-Triacontane (C30)	**0.079**	J
n-Hexadecane (C16)	**0.0070**	J	n-Hentriacontane (C31)	**0.14**	J
Norpristane (1650)	**0.0088**	J	n-Dotriacontane (C32)	**0.061**	J
n-Heptadecane (C17)	**0.047**	J	n-Tritriacontane (C33)	**0.054**	J
Pristane	**0.021**	J	n-Tetratriacontane (C34)	0.18	U
n-Octadecane (C18)	**0.016**	J	n-Pentatriacontane (C35)	0.18	U
Phytane	**0.11**	J	n-Hexatriacontane (C36)	0.18	U
n-Nonadecane (C19)	**0.019**	J	n-Heptatriacontane (C37)	0.18	U
n-Eicosane (C20)	**0.011**	J	n-Octatriacontane (C38)	0.18	U
n-Heneicosane (C21)	**0.012**	J	n-Tetracontane (C40)	0.18	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**1.2**
Total Extractable Material[2]	**67**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	82	50-130
d50-Tetracosane	81	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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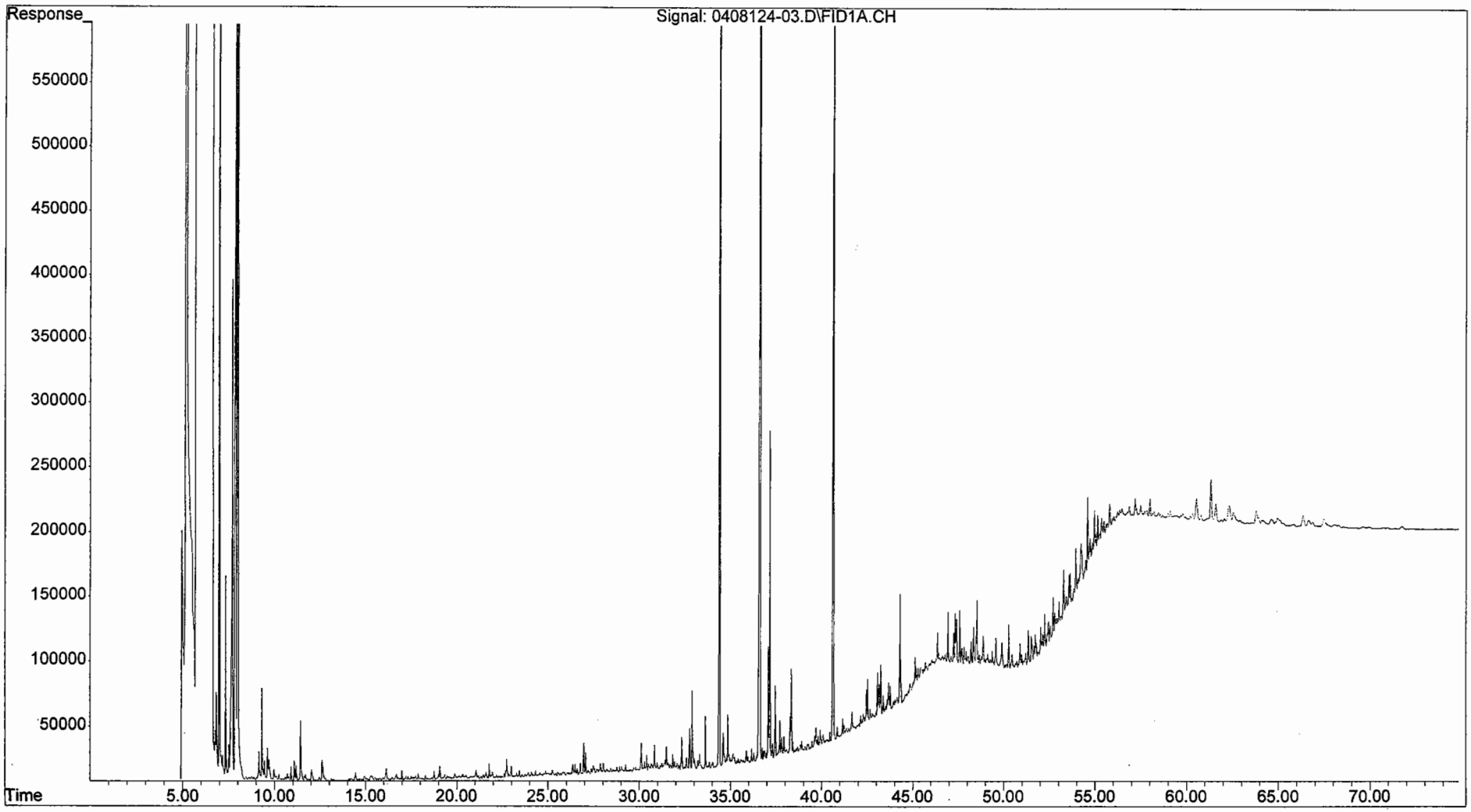
File :O:\Organics\DATA\PAH2\SEPT24\0408124-03.D
Operator : NLJr
Acquired : 27 Sep 2004 7:55 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-03
Misc Info : 1X
Vial Number: 51



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-27-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-04**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	50.4	30.92	10	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.66**		n-Docosane (C22)	**0.032**	J
n-Decane (C10)	**0.038**	J	n-Tricosane (C23)	**0.051**	J
n-Undecane (C11)	**0.54**	J	n-Tetracosane (C24)	**0.071**	J
n-Dodecane (C12)	0.64	U	n-Pentacosane (C25)	**0.12**	J
n-Tridecane (C13)	**0.026**	J	n-Hexacosane (C26)	**0.12**	J
2,6,10 Trimethyldodecane (1380)	**0.090**	J	n-Heptacosane (C27)	**0.68**	
n-Tetradecane (C14)	**0.22**	J	n-Octacosane (C28)	**0.23**	J
2,6,10 Trimethyltridecane (1470)	**0.12**	J	n-Nonacosane (C29)	**0.22**	J
n-Pentadecane (C15)	**0.090**	J	n-Triacontane (C30)	**0.37**	J
n-Hexadecane (C16)	**0.0064**	J	n-Hentriacontane (C31)	**0.68**	
Norpristane (1650)	**0.038**	J	n-Dotriacontane (C32)	**0.11**	J
n-Heptadecane (C17)	**0.12**	J	n-Tritriacontane (C33)	0.64	U
Pristane	**0.13**	J	n-Tetratriacontane (C34)	0.64	U
n-Octadecane (C18)	**0.038**	J	n-Pentatriacontane (C35)	0.64	U
Phytane	**0.22**	J	n-Hexatriacontane (C36)	0.64	U
n-Nonadecane (C19)	**0.11**	J	n-Heptatriacontane (C37)	0.64	U
n-Eicosane (C20)	**0.019**	J	n-Octatriacontane (C38)	0.64	U
n-Heneicosane (C21)	**0.038**	J	n-Tetracontane (C40)	0.64	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**5.0**
Total Extractable Material[2]	**570**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	90	50-130
d50-Tetracosane	86	50-130

10/07/04 15:55

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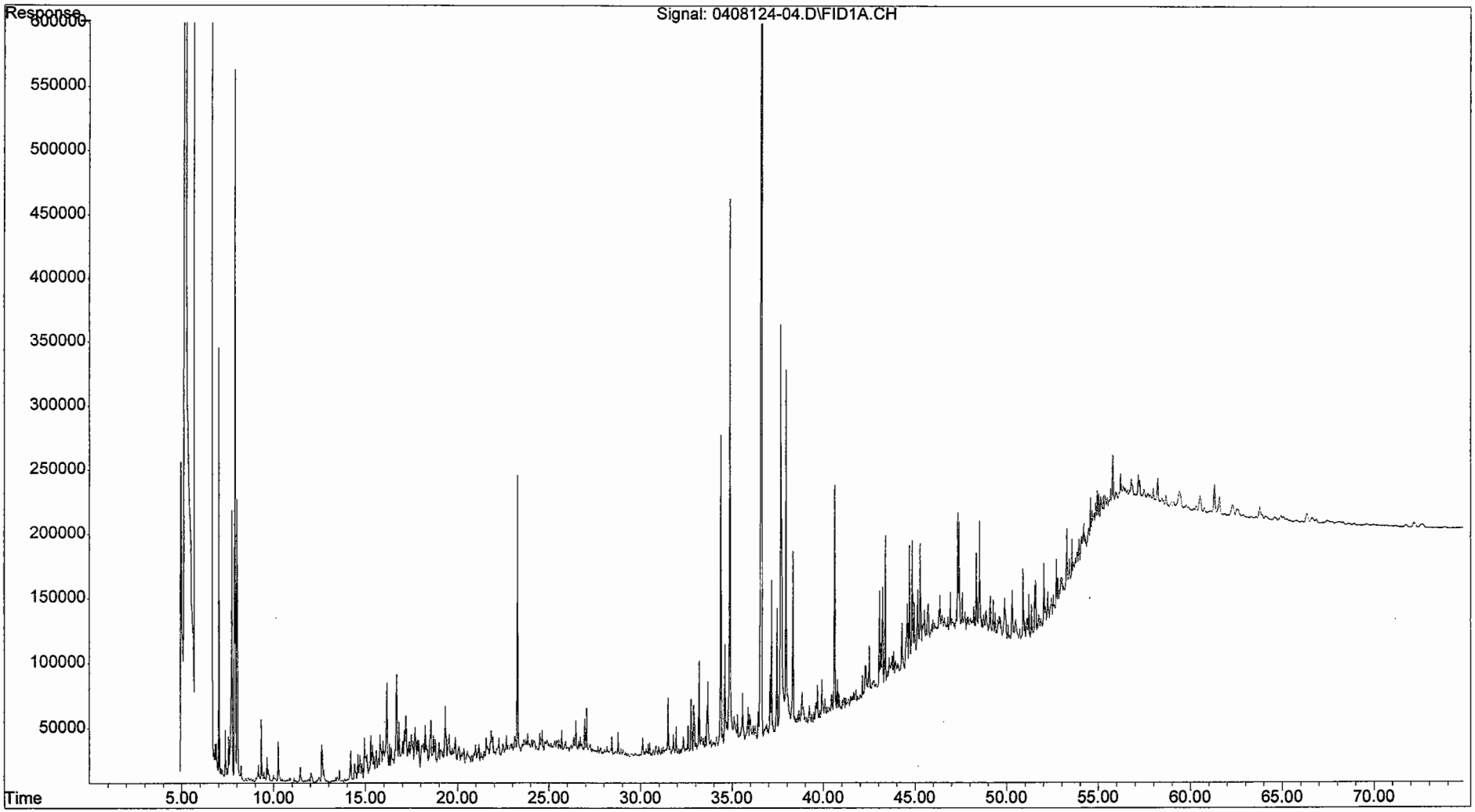
File :O:\Organics\DATA\PAH2\SEPT24\0408124-04.D
Operator : NLJr
Acquired : 27 Sep 2004 9:19 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-04
Misc Info : 1X
Vial Number: 52



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-31-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-05**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/27/04	37.6	30.82	4	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.21**	J	n-Docosane (C22)	**0.017**	J
n-Decane (C10)	**0.0034**	J	n-Tricosane (C23)	**0.045**	J
n-Undecane (C11)	**0.014**	J	n-Tetracosane (C24)	**0.035**	J
n-Dodecane (C12)	**0.017**	J	n-Pentacosane (C25)	**0.16**	J
n-Tridecane (C13)	**0.010**	J	n-Hexacosane (C26)	**0.066**	J
2,6,10 Trimethyldodecane (1380)	**0.031**	J	n-Heptacosane (C27)	**0.11**	J
n-Tetradecane (C14)	**0.010**	J	n-Octacosane (C28)	**0.066**	J
2,6,10 Trimethyltridecane (1470)	**0.017**	J	n-Nonacosane (C29)	**0.25**	J
n-Pentadecane (C15)	**0.024**	J	n-Triacontane (C30)	**0.045**	J
n-Hexadecane (C16)	**0.0034**	J	n-Hentriacontane (C31)	**0.28**	J
Norpristane (1650)	**0.010**	J	n-Dotriacontane (C32)	**0.069**	J
n-Heptadecane (C17)	**0.086**	J	n-Tritriacontane (C33)	**0.10**	J
Pristane	**0.038**	J	n-Tetratriacontane (C34)	0.35	U
n-Octadecane (C18)	**0.024**	J	n-Pentatriacontane (C35)	0.35	U
Phytane	**0.24**	J	n-Hexatriacontane (C36)	0.35	U
n-Nonadecane (C19)	**0.035**	J	n-Heptatriacontane (C37)	0.35	U
n-Eicosane (C20)	**0.010**	J	n-Octatriacontane (C38)	0.35	U
n-Heneicosane (C21)	**0.028**	J	n-Tetracontane (C40)	0.35	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.0**
Total Extractable Material[2]	**140**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	86	50-130
d50-Tetracosane	85	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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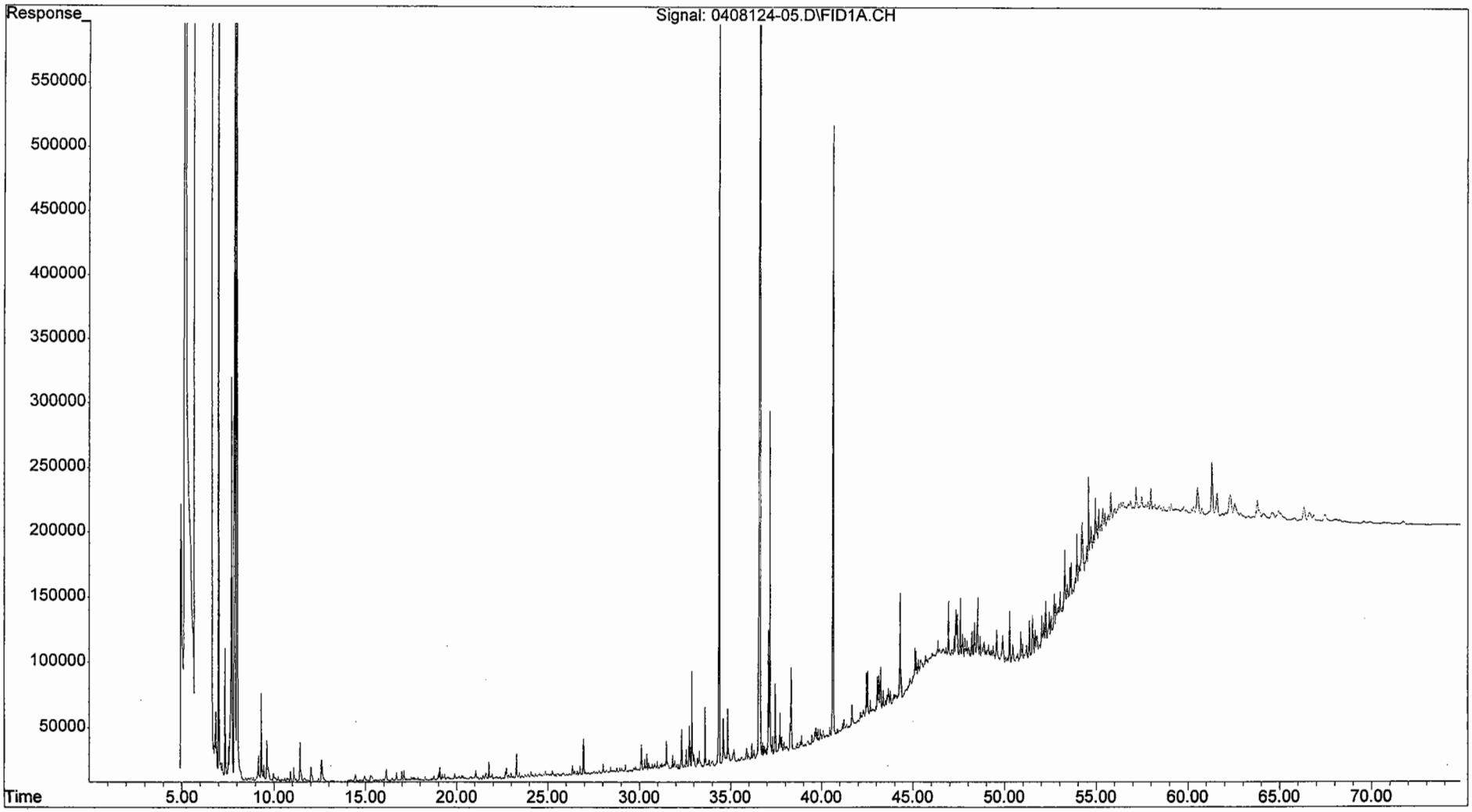
File :O:\Organics\DATA\PAH2\SEPT24\0408124-05.D
Operator : NLJr
Acquired : 27 Sep 2004 10:42 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-05
Misc Info : 1X
Vial Number: 53



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-11-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-06**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	48.5	30.54	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.20**	J	n-Docosane (C22)	**0.054**	J
n-Decane (C10)	**0.0068**	J	n-Tricosane (C23)	**0.044**	J
n-Undecane (C11)	**0.010**	J	n-Tetracosane (C24)	**0.041**	J
n-Dodecane (C12)	**0.024**	J	n-Pentacosane (C25)	**0.15**	J
n-Tridecane (C13)	**0.010**	J	n-Hexacosane (C26)	**0.088**	J
2,6,10 Trimethyldodecane (1380)	**0.071**	J	n-Heptacosane (C27)	**0.15**	J
n-Tetradecane (C14)	**0.0068**	J	n-Octacosane (C28)	**0.088**	J
2,6,10 Trimethyltridecane (1470)	**0.078**	J	n-Nonacosane (C29)	**0.17**	J
n-Pentadecane (C15)	**0.084**	J	n-Triacontane (C30)	**0.17**	J
n-Hexadecane (C16)	**0.27**	J	n-Hentriacontane (C31)	**0.38**	
Norpristane (1650)	**0.037**	J	n-Dotriacontane (C32)	**0.14**	J
n-Heptadecane (C17)	**0.091**	J	n-Tritriacontane (C33)	**0.16**	J
Pristane	**0.057**	J	n-Tetratriacontane (C34)	0.34	U
n-Octadecane (C18)	**0.037**	J	n-Pentatriacontane (C35)	0.34	U
Phytane	**0.25**	J	n-Hexatriacontane (C36)	0.34	U
n-Nonadecane (C19)	**0.068**	J	n-Heptatriacontane (C37)	0.34	U
n-Eicosane (C20)	0.34	U	n-Octatriacontane (C38)	0.34	U
n-Heneicosane (C21)	**0.061**	J	n-Tetracontane (C40)	0.34	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**2.8**
Total Extractable Material[2]	**580**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

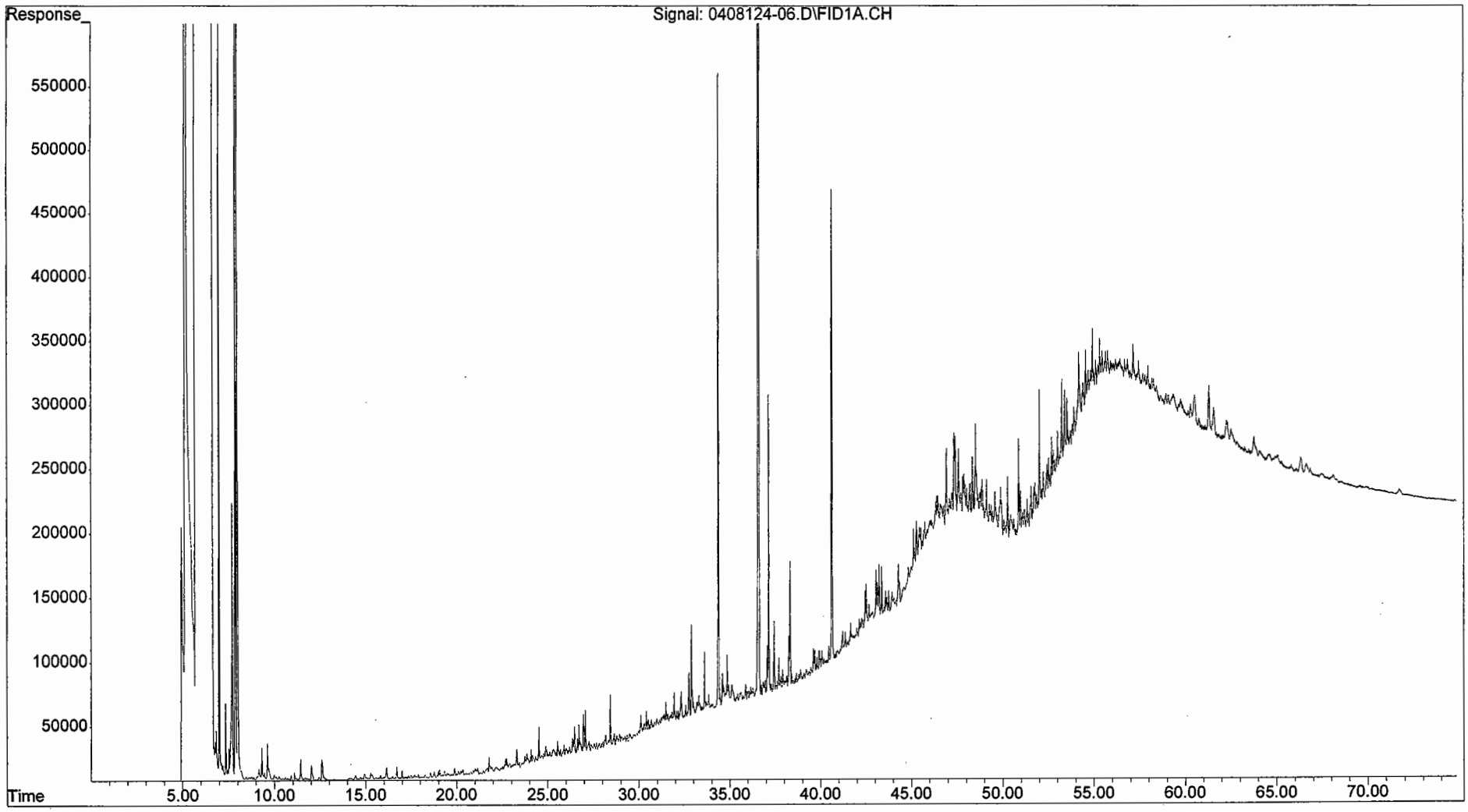
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	82	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408124-06.D
Operator : NLJr
Acquired : 28 Sep 2004 12:06 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-06
Misc Info : 1X
Vial Number: 54



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-32-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-07**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	38.7	30.74	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.11**	J	n-Docosane (C22)	**0.017**	J
n-Decane (C10)	**0.0017**	J	n-Tricosane (C23)	**0.024**	J
n-Undecane (C11)	**0.0067**	J	n-Tetracosane (C24)	**0.027**	J
n-Dodecane (C12)	**0.0034**	J	n-Pentacosane (C25)	**0.064**	J
n-Tridecane (C13)	**0.0034**	J	n-Hexacosane (C26)	**0.052**	J
2,6,10 Trimethyldodecane (1380)	**0.010**	J	n-Heptacosane (C27)	**0.057**	J
n-Tetradecane (C14)	**0.0034**	J	n-Octacosane (C28)	**0.064**	J
2,6,10 Trimethyltridecane (1470)	**0.010**	J	n-Nonacosane (C29)	**0.13**	J
n-Pentadecane (C15)	**0.010**	J	n-Triacontane (C30)	**0.074**	J
n-Hexadecane (C16)	**0.0067**	J	n-Hentriacontane (C31)	**0.13**	J
Norpristane (1650)	**0.0050**	J	n-Dotriacontane (C32)	**0.061**	J
n-Heptadecane (C17)	**0.030**	J	n-Tritriacontane (C33)	**0.054**	J
Pristane	**0.017**	J	n-Tetratriacontane (C34)	0.17	U
n-Octadecane (C18)	**0.010**	J	n-Pentatriacontane (C35)	0.17	U
Phytane	**0.076**	J	n-Hexatriacontane (C36)	0.17	U
n-Nonadecane (C19)	**0.013**	J	n-Heptatriacontane (C37)	0.17	U
n-Eicosane (C20)	**0.0050**	J	n-Octatriacontane (C38)	0.17	U
n-Heneicosane (C21)	**0.0084**	J	n-Tetracontane (C40)	0.17	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**1.1**
Total Extractable Material[2]	**72**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	81	50-130
d50-Tetracosane	84	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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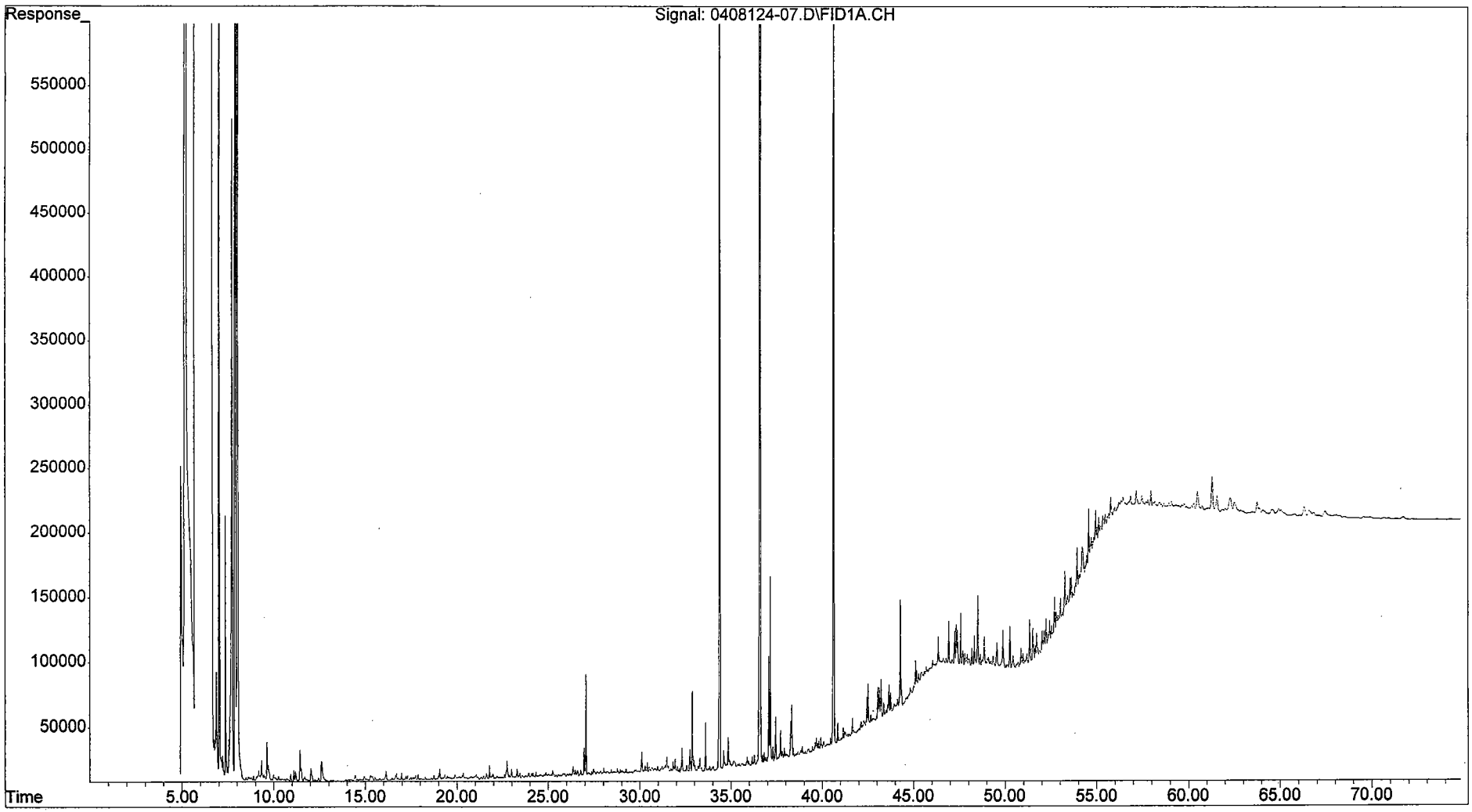
File :O:\Organics\DATA\PAH2\SEPT24\0408124-07.D
Operator : NLJr
Acquired : 28 Sep 2004 1:30 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-07
Misc Info : 1X
Vial Number: 55



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-36-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-08**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	79.5	30.63	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.044**	J	n-Docosane (C22)	**0.0090**	J
n-Decane (C10)	**0.00082**	J	n-Tricosane (C23)	**0.0082**	J
n-Undecane (C11)	**0.0025**	J	n-Tetracosane (C24)	**0.016**	J
n-Dodecane (C12)	**0.0033**	J	n-Pentacosane (C25)	**0.025**	J
n-Tridecane (C13)	**0.0025**	J	n-Hexacosane (C26)	**0.028**	J
2,6,10 Trimethyldodecane (1380)	**0.0090**	J	n-Heptacosane (C27)	**0.020**	J
n-Tetradecane (C14)	**0.0016**	J	n-Octacosane (C28)	**0.024**	J
2,6,10 Trimethyltridecane (1470)	**0.0066**	J	n-Nonacosane (C29)	**0.045**	J
n-Pentadecane (C15)	**0.0049**	J	n-Triacontane (C30)	**0.021**	J
n-Hexadecane (C16)	**0.0058**	J	n-Hentriacontane (C31)	**0.065**	J
Norpristane (1650)	**0.0074**	J	n-Dotriacontane (C32)	**0.021**	J
n-Heptadecane (C17)	**0.015**	J	n-Tritriacontane (C33)	**0.026**	J
Pristane	**0.037**	J	n-Tetratriacontane (C34)	**0.0082**	J
n-Octadecane (C18)	**0.0066**	J	n-Pentatriacontane (C35)	0.082	U
Phytane	**0.033**	J	n-Hexatriacontane (C36)	**0.015**	J
n-Nonadecane (C19)	**0.0066**	J	n-Heptatriacontane (C37)	0.082	U
n-Eicosane (C20)	**0.0033**	J	n-Octatriacontane (C38)	0.082	U
n-Heneicosane (C21)	**0.0033**	J	n-Tetracontane (C40)	0.082	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.50**
Total Extractable Material[2]	**37**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	84	50-130
d50-Tetracosane	83	50-130

10/07/04 15:55

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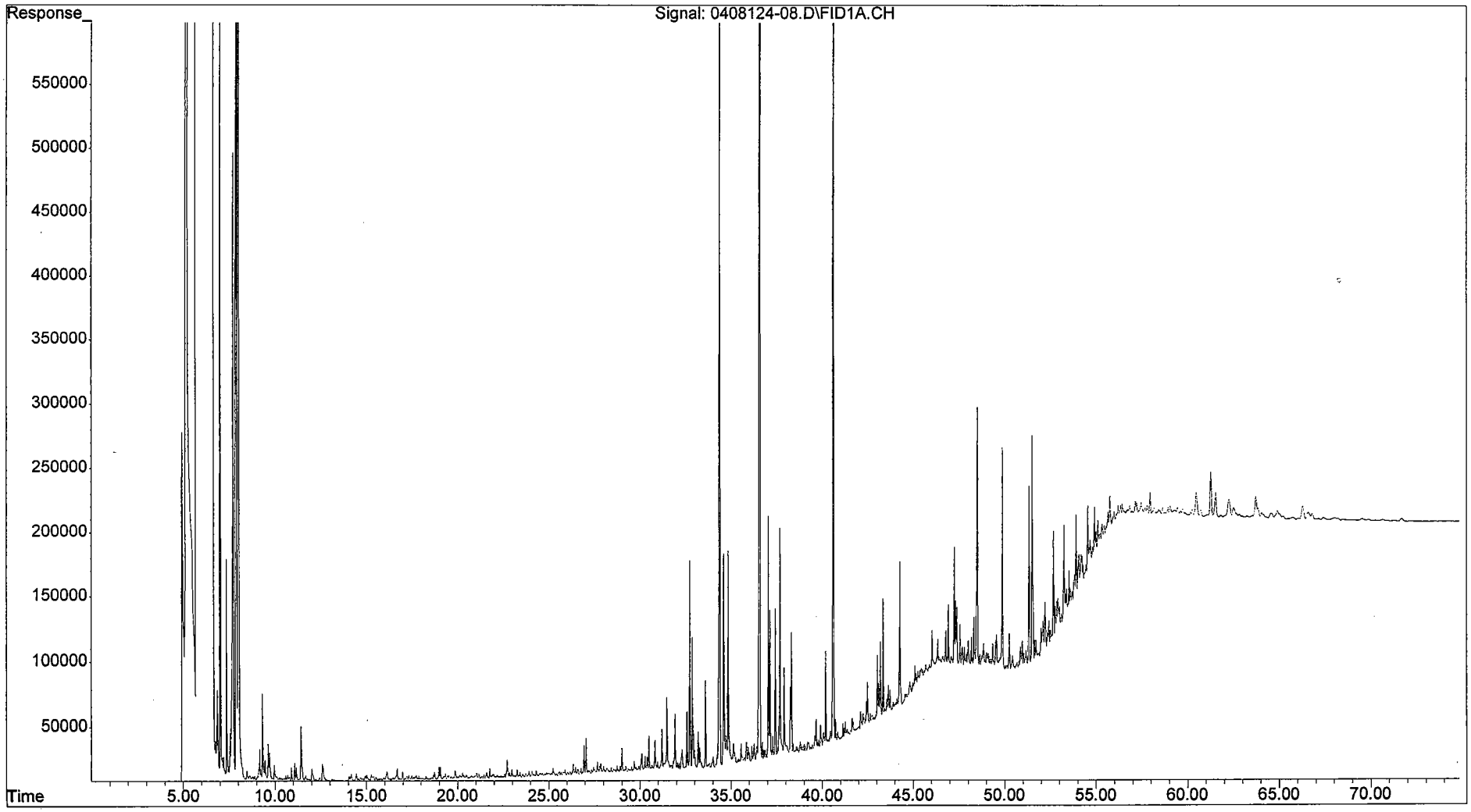
File :O:\Organics\DATA\PAH2\SEPT24\0408124-08.D
Operator : NLJr
Acquired : 28 Sep 2004 7:07 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-08
Misc Info : 1X
Vial Number: 59



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-09**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	80.9	30.35	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.042**	J	n-Docosane (C22)	**0.0049**	J
n-Decane (C10)	**0.00081**	J	n-Tricosane (C23)	**0.0081**	J
n-Undecane (C11)	**0.0016**	J	n-Tetracosane (C24)	**0.0041**	J
n-Dodecane (C12)	**0.00081**	J	n-Pentacosane (C25)	**0.015**	J
n-Tridecane (C13)	**0.0024**	J	n-Hexacosane (C26)	**0.026**	J
2,6,10 Trimethyldodecane (1380)	**0.0024**	J	n-Heptacosane (C27)	**0.011**	J
n-Tetradecane (C14)	**0.0041**	J	n-Octacosane (C28)	**0.016**	J
2,6,10 Trimethyltridecane (1470)	**0.016**	J	n-Nonacosane (C29)	**0.029**	J
n-Pentadecane (C15)	**0.0065**	J	n-Triacontane (C30)	0.081	U
n-Hexadecane (C16)	**0.0041**	J	n-Hentriacontane (C31)	**0.033**	J
Norpristane (1650)	**0.0041**	J	n-Dotriacontane (C32)	**0.013**	J
n-Heptadecane (C17)	**0.0090**	J	n-Tritriacontane (C33)	**0.0098**	J
Pristane	**0.011**	J	n-Tetratriacontane (C34)	0.081	U
n-Octadecane (C18)	**0.0041**	J	n-Pentatriacontane (C35)	0.081	U
Phytane	**0.027**	J	n-Hexatriacontane (C36)	0.081	U
n-Nonadecane (C19)	**0.0041**	J	n-Heptatriacontane (C37)	0.081	U
n-Eicosane (C20)	**0.00081**	J	n-Octatriacontane (C38)	0.081	U
n-Heneicosane (C21)	**0.0016**	J	n-Tetracontane (C40)	0.081	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.29**
Total Extractable Material[2]	**26**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

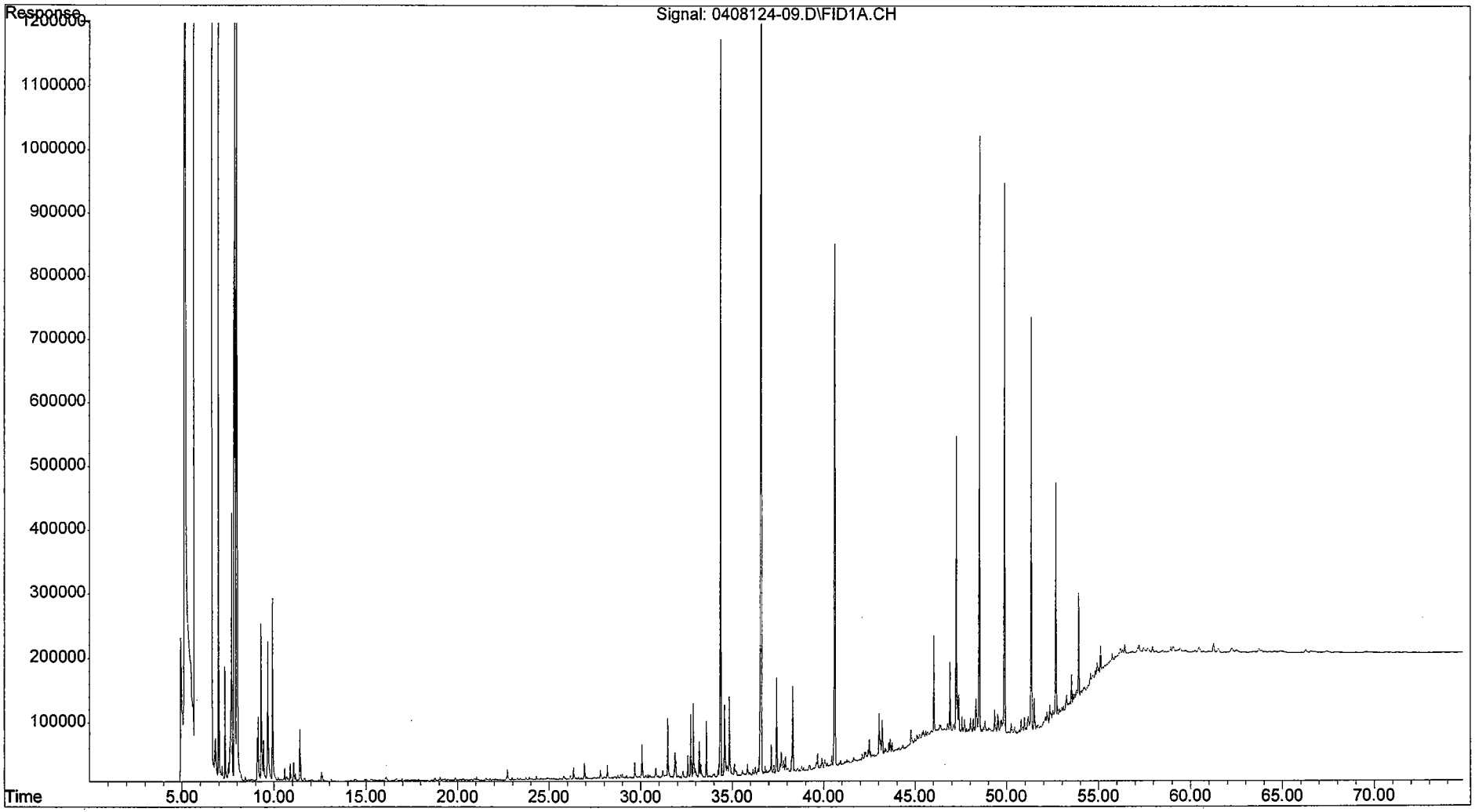
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	82	50-130
d50-Tetracosane	81	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408124-09.D
Operator : NLJr
Acquired : 28 Sep 2004 8:31 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-09
Misc Info : 1X
Vial Number: 60



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CC02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-10**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	80.3	30.32	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.044**	J	n-Docosane (C22)	**0.0058**	J
n-Decane (C10)	**0.00082**	J	n-Tricosane (C23)	**0.0074**	J
n-Undecane (C11)	**0.00082**	J	n-Tetracosane (C24)	**0.0082**	J
n-Dodecane (C12)	**0.0016**	J	n-Pentacosane (C25)	**0.016**	J
n-Tridecane (C13)	**0.0016**	J	n-Hexacosane (C26)	**0.018**	J
2,6,10 Trimethyldodecane (1380)	**0.0058**	J	n-Heptacosane (C27)	**0.020**	J
n-Tetradecane (C14)	**0.0025**	J	n-Octacosane (C28)	**0.025**	J
2,6,10 Trimethyltridecane (1470)	**0.019**	J	n-Nonacosane (C29)	**0.041**	J
n-Pentadecane (C15)	**0.0090**	J	n-Triacontane (C30)	**0.032**	J
n-Hexadecane (C16)	**0.016**	J	n-Hentriacontane (C31)	**0.048**	J
Norpristane (1650)	**0.0025**	J	n-Dotriacontane (C32)	**0.026**	J
n-Heptadecane (C17)	**0.014**	J	n-Tritriacontane (C33)	**0.025**	J
Pristane	**0.0074**	J	n-Tetratriacontane (C34)	0.082	U
n-Octadecane (C18)	**0.0033**	J	n-Pentatriacontane (C35)	**0.0074**	J
Phytane	**0.023**	J	n-Hexatriacontane (C36)	**0.0074**	J
n-Nonadecane (C19)	**0.0074**	J	n-Heptatriacontane (C37)	0.082	U
n-Eicosane (C20)	**0.0016**	J	n-Octatriacontane (C38)	0.082	U
n-Heneicosane (C21)	**0.0058**	J	n-Tetracontane (C40)	0.082	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.42**
Total Extractable Material[2]	**28**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	80	50-130
d50-Tetracosane	78	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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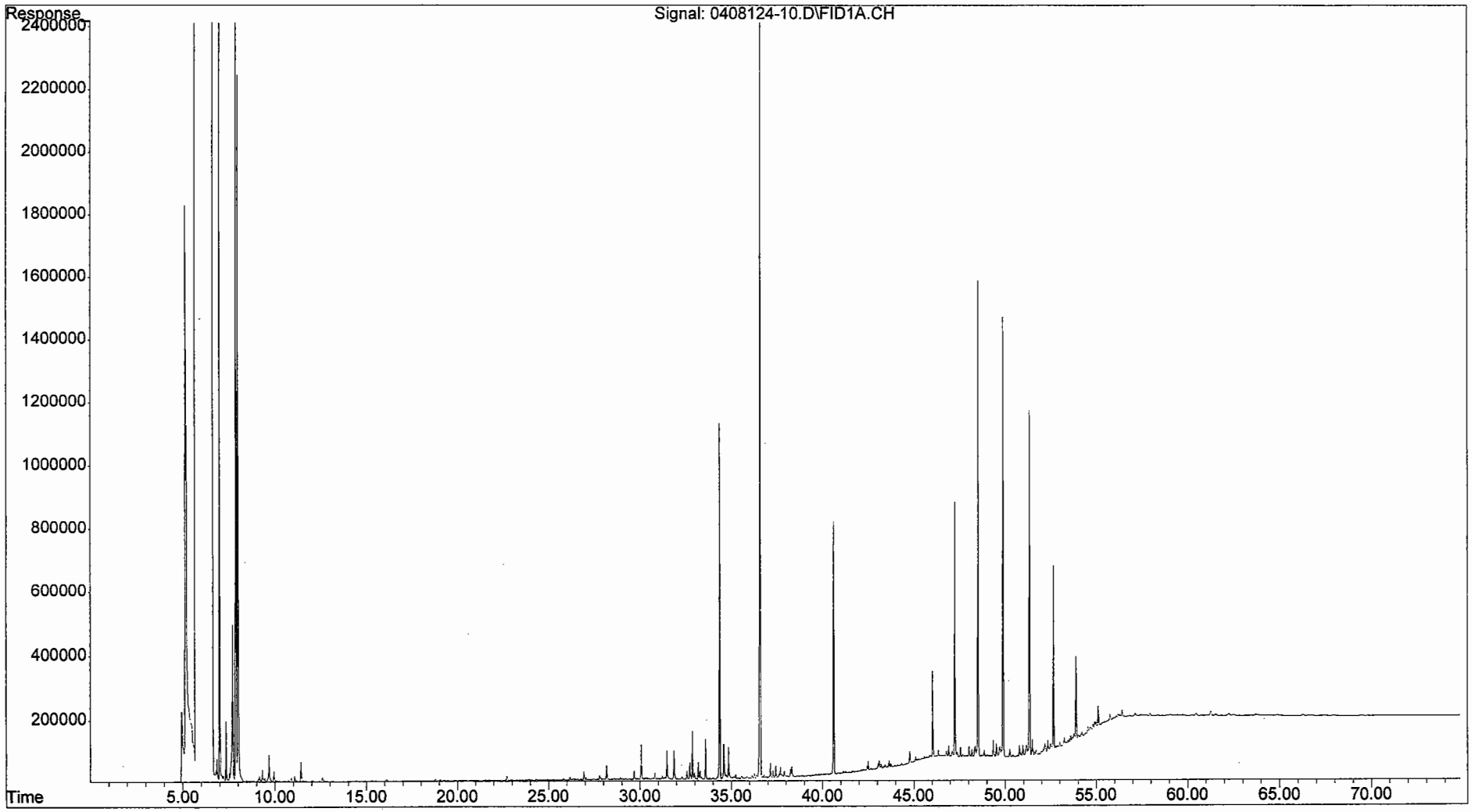
File :O:\Organics\DATA\PAH2\SEPT24\0408124-10.D
Operator : NLJr
Acquired : 28 Sep 2004 9:55 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-10
Misc Info : 1X
Vial Number: 61



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-11**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	80.0	30.71	20	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.41**	J	n-Docosane (C22)	0.81	U
n-Decane (C10)	**0.057**	J	n-Tricosane (C23)	0.81	U
n-Undecane (C11)	**0.0081**	J	n-Tetracosane (C24)	0.81	U
n-Dodecane (C12)	0.81	U	n-Pentacosane (C25)	0.81	U
n-Tridecane (C13)	0.81	U	n-Hexacosane (C26)	0.81	U
2,6,10 Trimethyldodecane (1380)	0.81	U	n-Heptacosane (C27)	0.81	U
n-Tetradecane (C14)	0.81	U	n-Octacosane (C28)	0.81	U
2,6,10 Trimethyltridecane (1470)	0.81	U	n-Nonacosane (C29)	0.81	U
n-Pentadecane (C15)	0.81	U	n-Triacontane (C30)	0.81	U
n-Hexadecane (C16)	0.81	U	n-Hentriacontane (C31)	0.81	U
Norpristane (1650)	0.81	U	n-Dotriacontane (C32)	0.81	U
n-Heptadecane (C17)	0.81	U	n-Tritriacontane (C33)	0.81	U
Pristane	0.81	U	n-Tetratriacontane (C34)	0.81	U
n-Octadecane (C18)	**0.057**	J	n-Pentatriacontane (C35)	0.81	U
Phytane	**0.057**	J	n-Hexatriacontane (C36)	0.81	U
n-Nonadecane (C19)	0.81	U	n-Heptatriacontane (C37)	0.81	U
n-Eicosane (C20)	0.81	U	n-Octatriacontane (C38)	0.81	U
n-Heneicosane (C21)	0.81	U	n-Tetracontane (C40)	0.81	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.59**	J
Total Extractable Material[2]	**120**	

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	88	50-130
d50-Tetracosane	91	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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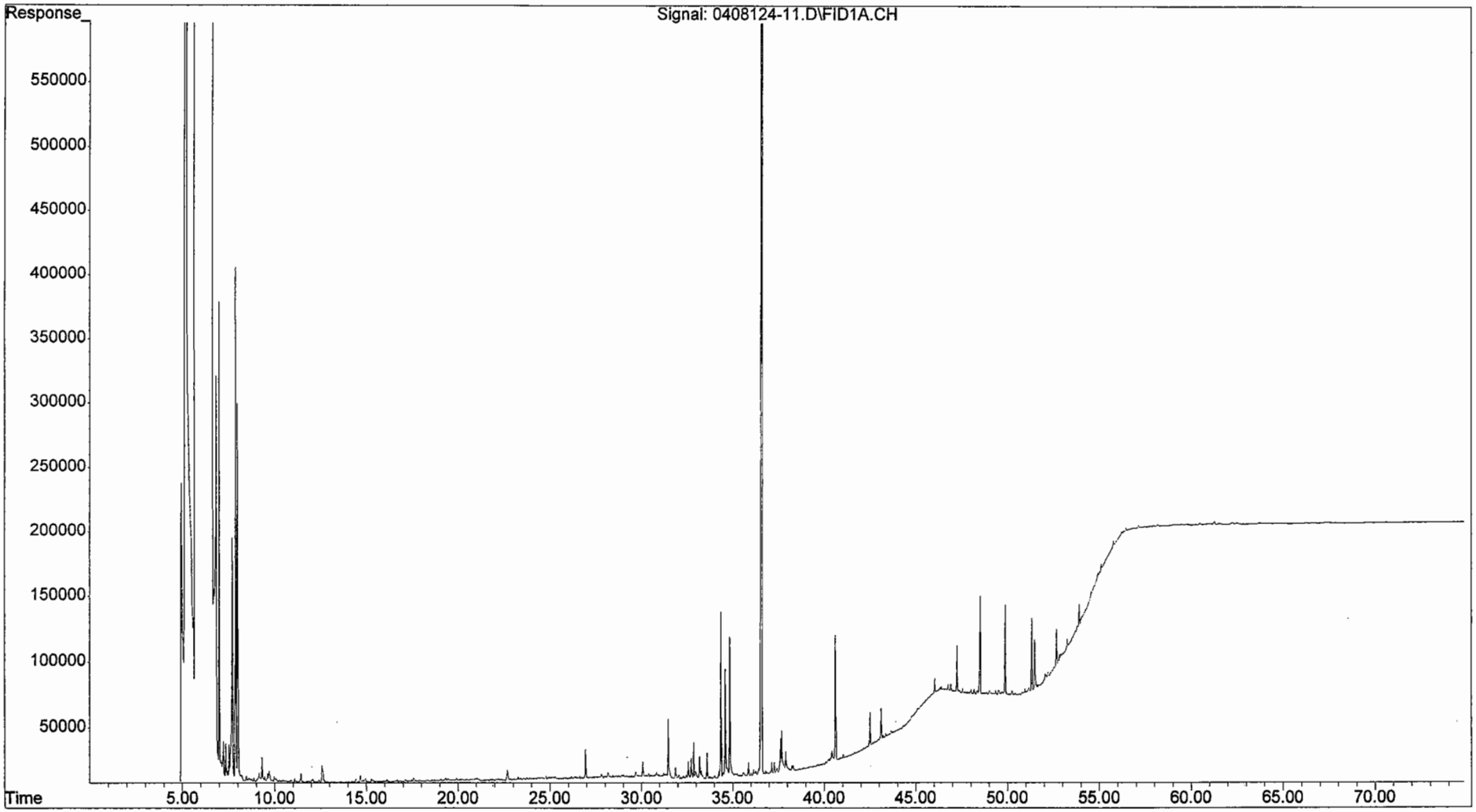
File :O:\Organics\DATA\PAH2\SEPT24\0408124-11.D
Operator : NLJr
Acquired : 28 Sep 2004 11:19 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-11
Misc Info : 1X
Vial Number: 62



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-JPC03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-12**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	79.0	30.24	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.044**	J	n-Docosane (C22)	**0.0050**	J
n-Decane (C10)	**0.0067**	J	n-Tricosane (C23)	**0.0059**	J
n-Undecane (C11)	0.084	U	n-Tetracosane (C24)	**0.0025**	J
n-Dodecane (C12)	0.084	U	n-Pentacosane (C25)	**0.0075**	J
n-Tridecane (C13)	0.084	U	n-Hexacosane (C26)	**0.013**	J
2,6,10 Trimethyldodecane (1380)	0.084	U	n-Heptacosane (C27)	0.084	U
n-Tetradecane (C14)	0.084	U	n-Octacosane (C28)	**0.012**	J
2,6,10 Trimethyltridecane (1470)	**0.025**	J	n-Nonacosane (C29)	**0.010**	J
n-Pentadecane (C15)	0.084	U	n-Triacontane (C30)	0.084	U
n-Hexadecane (C16)	0.084	U	n-Hentriacontane (C31)	**0.018**	J
Norpristane (1650)	0.084	U	n-Dotriacontane (C32)	0.084	U
n-Heptadecane (C17)	0.084	U	n-Tritriacontane (C33)	0.084	U
Pristane	0.084	U	n-Tetratriacontane (C34)	**0.013**	J
n-Octadecane (C18)	0.084	U	n-Pentatriacontane (C35)	0.084	U
Phytane	0.084	U	n-Hexatriacontane (C36)	0.084	U
n-Nonadecane (C19)	0.084	U	n-Heptatriacontane (C37)	**0.0067**	J
n-Eicosane (C20)	0.084	U	n-Octatriacontane (C38)	0.084	U
n-Heneicosane (C21)	0.084	U	n-Tetracontane (C40)	0.084	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.14**
Total Extractable Material[2]	**24**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	85	50-130
d50-Tetracosane	83	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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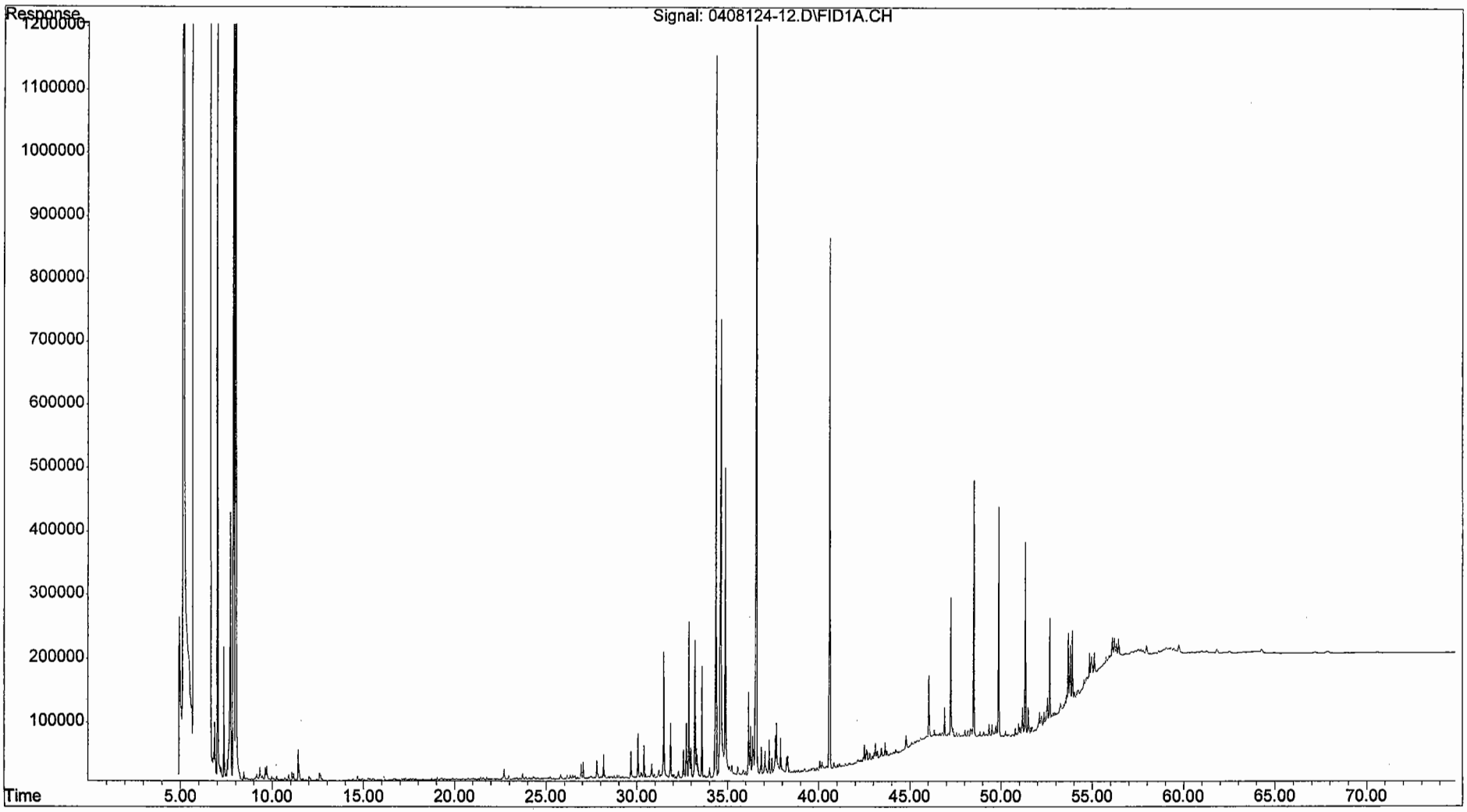
File :O:\Organics\DATA\PAH2\SEPT24\0408124-12.D
Operator : NLJr
Acquired : 28 Sep 2004 12:44 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-12
Misc Info : 1X
Vial Number: 63



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-DUP03-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-13**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	79.9	30.80	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.042**	J	n-Docosane (C22)	**0.0024**	J
n-Decane (C10)	0.081	U	n-Tricosane (C23)	**0.0049**	J
n-Undecane (C11)	**0.0016**	J	n-Tetracosane (C24)	**0.0065**	J
n-Dodecane (C12)	0.081	U	n-Pentacosane (C25)	**0.0098**	J
n-Tridecane (C13)	0.081	U	n-Hexacosane (C26)	**0.014**	J
2,6,10 Trimethyldodecane (1380)	**0.0049**	J	n-Heptacosane (C27)	**0.020**	J
n-Tetradecane (C14)	**0.0057**	J	n-Octacosane (C28)	**0.024**	J
2,6,10 Trimethyltridecane (1470)	**0.028**	J	n-Nonacosane (C29)	**0.034**	J
n-Pentadecane (C15)	**0.0089**	J	n-Triacontane (C30)	**0.031**	J
n-Hexadecane (C16)	**0.0057**	J	n-Hentriacontane (C31)	**0.040**	J
Norpristane (1650)	**0.0049**	J	n-Dotriacontane (C32)	**0.022**	J
n-Heptadecane (C17)	**0.071**	J	n-Tritriacontane (C33)	**0.018**	J
Pristane	**0.0098**	J	n-Tetratriacontane (C34)	**0.018**	J
n-Octadecane (C18)	**0.0033**	J	n-Pentatriacontane (C35)	0.081	U
Phytane	**0.035**	J	n-Hexatriacontane (C36)	0.081	U
n-Nonadecane (C19)	0.081	U	n-Heptatriacontane (C37)	0.081	U
n-Eicosane (C20)	0.081	U	n-Octatriacontane (C38)	0.081	U
n-Heneicosane (C21)	**0.0024**	J	n-Tetracontane (C40)	0.081	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.43**
Total Extractable Material[2]	**22**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	83	50-130
d50-Tetracosane	80	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:55

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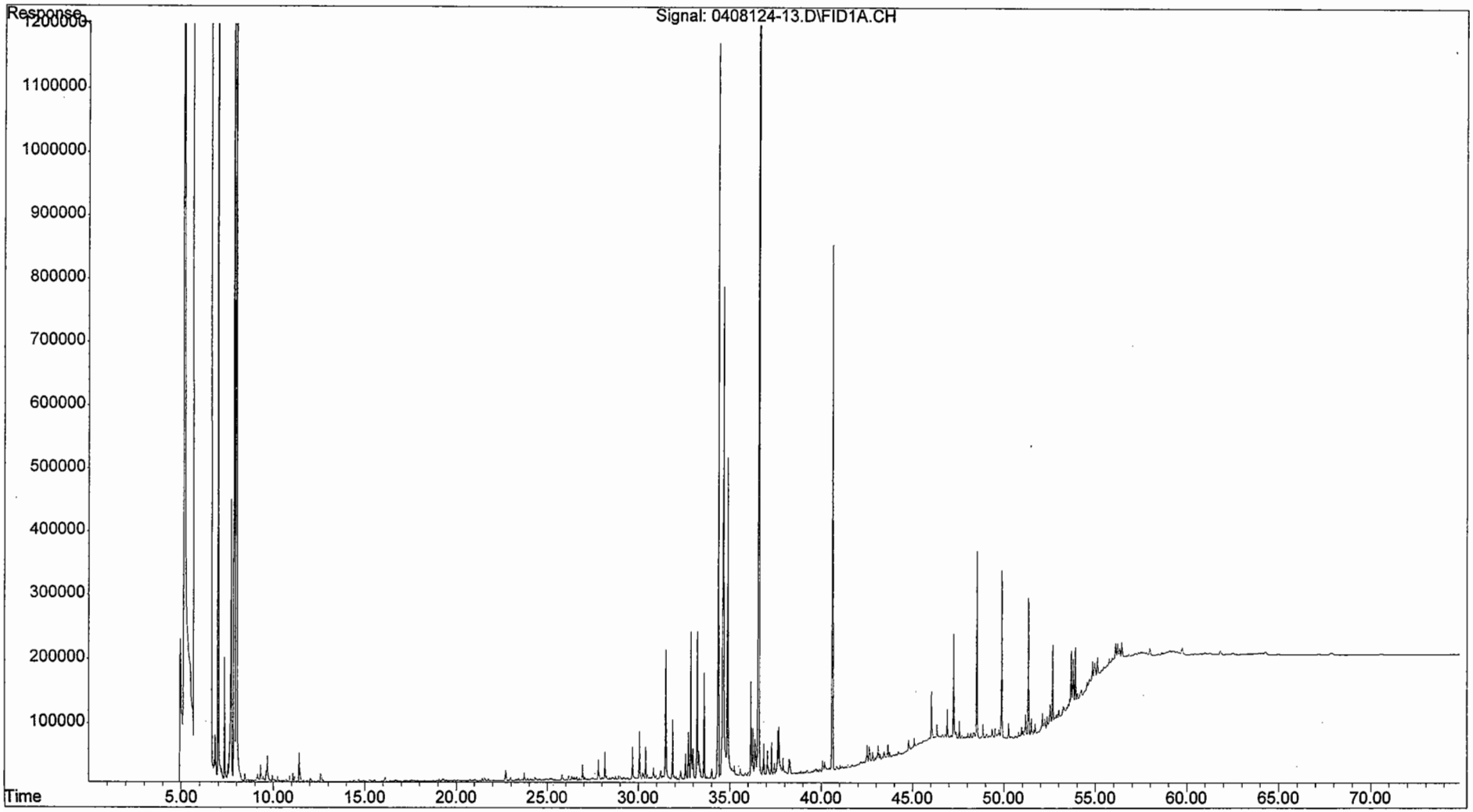
File :O:\Organics\DATA\PAH2\SEPT24\0408124-13.D
Operator : NLJr
Acquired : 28 Sep 2004 2:08 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-13
Misc Info : 1X
Vial Number: 64



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	42.4	30.68	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.18**	J	n-Docosane (C22)	**0.046**	J
n-Decane (C10)	**0.0038**	J	n-Tricosane (C23)	**0.088**	J
n-Undecane (C11)	**0.012**	J	n-Tetracosane (C24)	**0.058**	J
n-Dodecane (C12)	**0.023**	J	n-Pentacosane (C25)	**0.39**	
n-Tridecane (C13)	0.38	U	n-Hexacosane (C26)	**0.11**	J
2,6,10 Trimethyldodecane (1380)	**0.050**	J	n-Heptacosane (C27)	**0.26**	J
n-Tetradecane (C14)	**0.015**	J	n-Octacosane (C28)	0.38	U
2,6,10 Trimethyltridecane (1470)	**0.069**	J	n-Nonacosane (C29)	**0.70**	
n-Pentadecane (C15)	**0.035**	J	n-Triacontane (C30)	0.38	U
n-Hexadecane (C16)	**0.027**	J	n-Hentriacontane (C31)	**0.77**	
Norpristane (1650)	**0.042**	J	n-Dotriacontane (C32)	**0.12**	J
n-Heptadecane (C17)	**0.64**		n-Tritriacontane (C33)	**0.17**	J
Pristane	**0.21**	J	n-Tetratriacontane (C34)	0.38	U
n-Octadecane (C18)	**0.035**	J	n-Pentatriacontane (C35)	0.38	U
Phytane	**0.27**	J	n-Hexatriacontane (C36)	0.38	U
n-Nonadecane (C19)	**0.081**	J	n-Heptatriacontane (C37)	0.38	U
n-Eicosane (C20)	**0.0077**	J	n-Octatriacontane (C38)	0.38	U
n-Heneicosane (C21)	**0.031**	J	n-Tetracontane (C40)	0.38	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.3**
Total Extractable Material[2]	**380**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

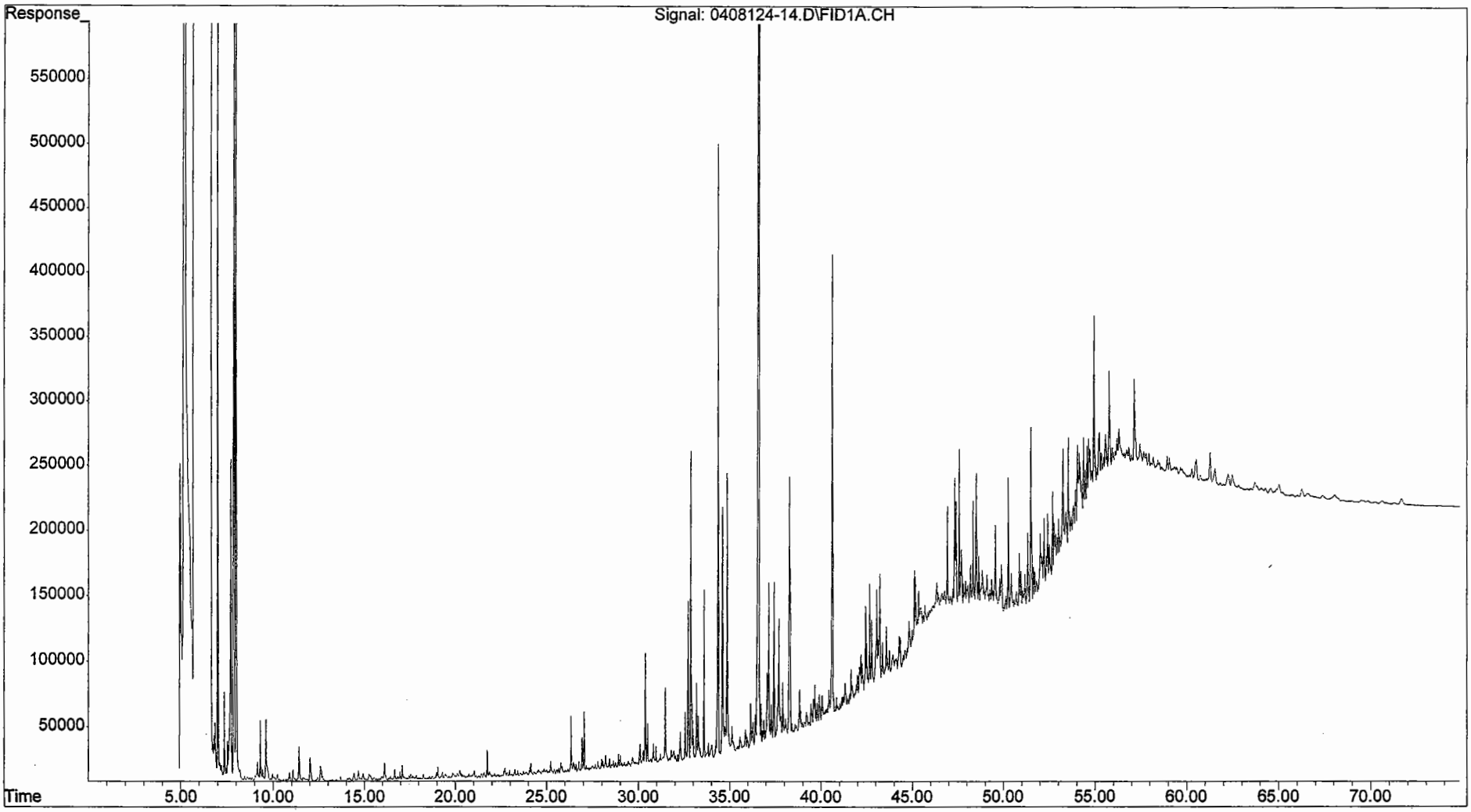
Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	81	50-130
d50-Tetracosane	83	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:56

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\0408124-14.D
Operator : NLJr
Acquired : 28 Sep 2004 3:35 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-14
Misc Info : 1X
Vial Number: 65



Form I
Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 D**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	42.4	30.68	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.18**	J	n-Docosane (C22)	**0.042**	J
n-Decane (C10)	**0.0038**	J	n-Tricosane (C23)	**0.081**	J
n-Undecane (C11)	**0.0077**	J	n-Tetracosane (C24)	**0.042**	J
n-Dodecane (C12)	**0.023**	J	n-Pentacosane (C25)	**0.36**	J
n-Tridecane (C13)	0.38	U	n-Hexacosane (C26)	**0.10**	J
2,6,10 Trimethyldodecane (1380)	**0.042**	J	n-Heptacosane (C27)	**0.31**	J
n-Tetradecane (C14)	**0.015**	J	n-Octacosane (C28)	0.38	U
2,6,10 Trimethyltridecane (1470)	**0.058**	J	n-Nonacosane (C29)	**0.86**	
n-Pentadecane (C15)	**0.031**	J	n-Triacontane (C30)	0.38	U
n-Hexadecane (C16)	**0.027**	J	n-Hentriacontane (C31)	**0.90**	
Norpristane (1650)	**0.038**	J	n-Dotriacontane (C32)	**0.096**	J
n-Heptadecane (C17)	**0.56**		n-Tritriacontane (C33)	**0.15**	J
Pristane	**0.19**	J	n-Tetratriacontane (C34)	0.38	U
n-Octadecane (C18)	**0.035**	J	n-Pentatriacontane (C35)	0.38	U
Phytane	**0.22**	J	n-Hexatriacontane (C36)	0.38	U
n-Nonadecane (C19)	**0.081**	J	n-Heptatriacontane (C37)	0.38	U
n-Eicosane (C20)	**0.0077**	J	n-Octatriacontane (C38)	0.38	U
n-Heneicosane (C21)	**0.031**	J	n-Tetracontane (C40)	0.38	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**4.4**
Total Extractable Material[2]	**320**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	86	50-130
d50-Tetracosane	87	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

10/07/04 15:56

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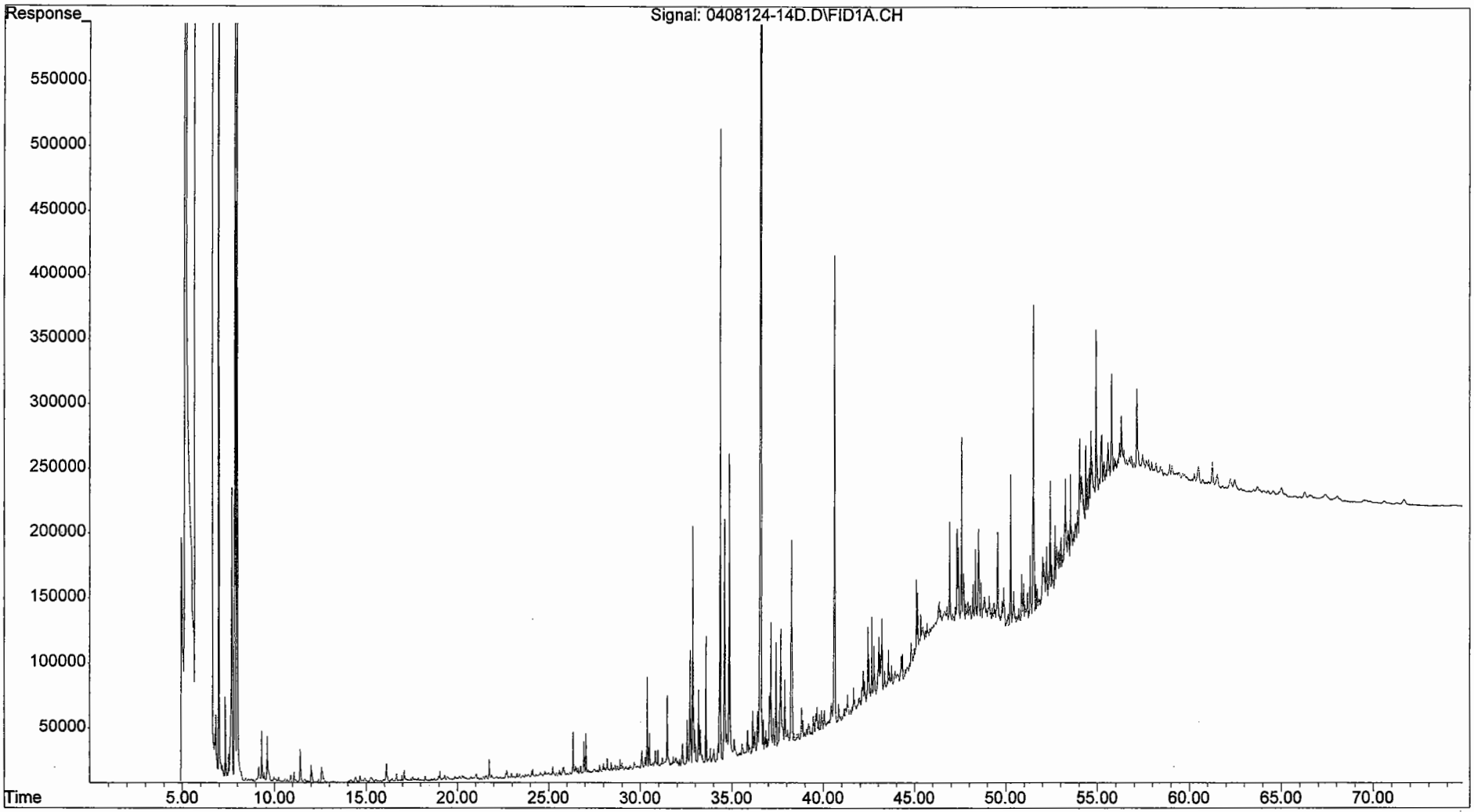
File :O:\Organics\DATA\PAH2\SEPT24\0408124-14D.D
Operator : NLJr
Acquired : 28 Sep 2004 4:59 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-14D
Misc Info : 1X
Vial Number: 66



Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	NLJr

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
n-Nonane (C9)	**0.18** J	**0.18** J	4	30
n-Decane (C10)	**0.0038** J	**0.0038** J	0	30
n-Undecane (C11)	**0.012** J	**0.0077** J	40[a]	30
n-Dodecane (C12)	**0.023** J	**0.023** J	0	30
n-Tridecane (C13)	0.38 U	0.38 U	N/A	30
2,6,10 Trimethyldodecane (1380)	**0.050** J	**0.042** J	17	30
n-Tetradecane (C14)	**0.015** J	**0.015** J	0	30
2,6,10 Trimethyltridecane (1470)	**0.069** J	**0.058** J	18	30
n-Pentadecane (C15)	**0.035** J	**0.031** J	12	30
n-Hexadecane (C16)	**0.027** J	**0.027** J	0	30
Norpristane (1650)	**0.042** J	**0.038** J	10	30
n-Heptadecane (C17)	**0.64**	**0.56**	13	30
Pristane	**0.21** J	**0.19** J	10	30
n-Octadecane (C18)	**0.035** J	**0.035** J	0	30
Phytane	**0.27** J	**0.22** J	20	30
n-Nonadecane (C19)	**0.081** J	**0.081** J	0	30
n-Eicosane (C20)	**0.0077** J	**0.0077** J	0	30
n-Heneicosane (C21)	**0.031** J	**0.031** J	0	30
n-Docosane (C22)	**0.046** J	**0.042** J	9	30
n-Tricosane (C23)	**0.088** J	**0.081** J	9	30
n-Tetracosane (C24)	**0.058** J	**0.042** J	31[a]	30
n-Pentacosane (C25)	**0.39**	**0.36** J	6	30
n-Hexacosane (C26)	**0.11** J	**0.10** J	11	30
n-Heptacosane (C27)	**0.26** J	**0.31** J	19	30
n-Octacosane (C28)	0.38 U	0.38 U	N/A	30
n-Nonacosane (C29)	**0.70**	**0.86**	21	30
n-Triacontane (C30)	0.38 U	0.38 U	N/A	30
n-Hentriacontane (C31)	**0.77**	**0.90**	16	30
n-Dotriacontane (C32)	**0.12** J	**0.096** J	18	30
n-Tritriacontane (C33)	**0.17** J	**0.15** J	10	30
n-Tetratriacontane (C34)	0.38 U	0.38 U	N/A	30
n-Pentatriacontane (C35)	0.38 U	0.38 U	N/A	30
n-Hexatriacontane (C36)	0.38 U	0.38 U	N/A	30
n-Heptatriacontane (C37)	0.38 U	0.38 U	N/A	30
n-Octatriacontane (C38)	0.38 U	0.38 U	N/A	30

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.
N/A - Not Applicable
[a] - Value outside of QC Limits.
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Duplicate
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	NLJr

Parameter	Sample Result	Duplicate Result	RPD	RPD Limit
n-Tetracontane (C40)	0.38 U	0.38 U	N/A	30
Total Saturated Hydrocarbons [1]	**4.3**	**4.4**	2	30
Total Extractable Material[2]	**380**	**320**	16	30

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery		Acceptance Range (%)
ortho-Terphenyl	81	86	50-130
d50-Tetracosane	83	87	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

10/07/04 15:57

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Form I
Matrix Spike
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 M**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	42.4	30.54	5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**1.9**	S	n-Docosane (C22)	**3.5**	S
n-Decane (C10)	**2.0**	S	n-Tricosane (C23)	**0.069**	J
n-Undecane (C11)	**0.012**	J	n-Tetracosane (C24)	**3.7**	S
n-Dodecane (C12)	**2.4**	S	n-Pentacosane (C25)	**0.33**	J
n-Tridecane (C13)	0.39	U	n-Hexacosane (C26)	**3.5**	S
2,6,10 Trimethyldodecane (1380)	**0.039**	J	n-Heptacosane (C27)	**0.23**	J
n-Tetradecane (C14)	**2.8**	S	n-Octacosane (C28)	**3.6**	S
2,6,10 Trimethyltridecane (1470)	**0.062**	J	n-Nonacosane (C29)	**0.42**	
n-Pentadecane (C15)	**0.039**	J	n-Triacontane (C30)	**3.8**	S
n-Hexadecane (C16)	**3.2**	S	n-Hentriacontane (C31)	**0.52**	
Norpristane (1650)	**0.042**	J	n-Dotriacontane (C32)	**0.085**	J
n-Heptadecane (C17)	**0.52**		n-Tritriacontane (C33)	**0.12**	J
Pristane	**0.18**	J	n-Tetratriacontane (C34)	0.39	U
n-Octadecane (C18)	**3.4**	S	n-Pentatriacontane (C35)	0.39	U
Phytane	**0.18**	J	n-Hexatriacontane (C36)	**3.4**	S
n-Nonadecane (C19)	**3.6**	S	n-Heptatriacontane (C37)	0.39	U
n-Eicosane (C20)	**3.6**	S	n-Octatriacontane (C38)	0.39	U
n-Heneicosane (C21)	**0.027**	J	n-Tetracontane (C40)	0.39	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**47**
Total Extractable Material[2]	**380**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 15:56

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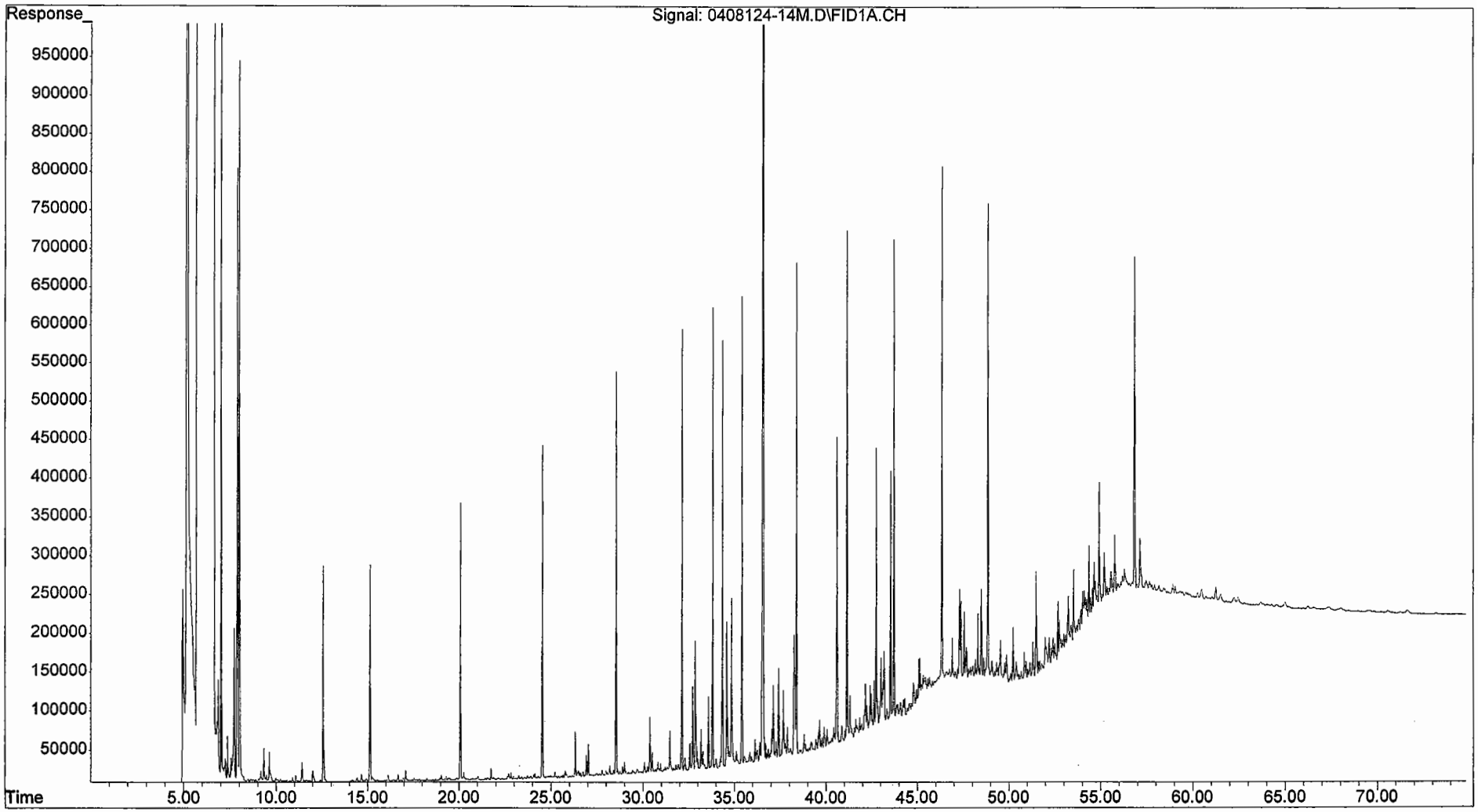
File :O:\Organics\DATA\PAH2\SEPT24\0408124-14M.D
Operator : NLJr
Acquired : 28 Sep 2004 6:23 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-14M
Misc Info : 1X
Vial Number: 67



Form III
Spike Recovery Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH01-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **See Below**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
08/26/04	08/31/04	09/07/04	42.4	NLJr

	0408124-14	0408124-14		
Parameter	**Sample Conc.**	**Matrix Spike Conc.**	**% Recovery**	**% Recovery Limits**
n-Nonane (C9)	0.18	1.9	46[a]	50-130
n-Decane (C10)	0.0038	2.0	53	50-130
n-Dodecane (C12)	0.023	2.4	60	50-130
n-Tetradecane (C14)	0.015	2.8	72	50-130
n-Hexadecane (C16)	0.027	3.2	82	50-130
n-Octadecane (C18)	0.035	3.4	88	50-130
n-Nonadecane (C19)	0.081	3.6	92	50-130
n-Eicosane (C20)	0.0077	3.6	93	50-130
n-Docosane (C22)	0.046	3.5	89	50-130
n-Tetracosane (C24)	0.058	3.7	94	50-130
n-Hexacosane (C26)	0.11	3.5	87	50-130
n-Octacosane (C28)	0.38 U	3.6	92	50-130
n-Triacontane (C30)	0.38 U	3.8	98	50-130
n-Hexatriacontane (C36)	0.38 U	3.4	89	50-130

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 16:15

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Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **DSY-SD-CH02-082604**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-15**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
08/26/04	08/31/04	09/07/04	09/28/04	74.4	30.21	2.5	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.050**	J	n-Docosane (C22)	**0.014**	J
n-Decane (C10)	**0.0011**	J	n-Tricosane (C23)	**0.020**	J
n-Undecane (C11)	**0.0022**	J	n-Tetracosane (C24)	**0.010**	J
n-Dodecane (C12)	**0.012**	J	n-Pentacosane (C25)	**0.28**	
n-Tridecane (C13)	**0.0022**	J	n-Hexacosane (C26)	**0.037**	J
2,6,10 Trimethyldodecane (1380)	**0.010**	J	n-Heptacosane (C27)	**0.067**	J
n-Tetradecane (C14)	**0.0044**	J	n-Octacosane (C28)	**0.030**	J
2,6,10 Trimethyltridecane (1470)	**0.010**	J	n-Nonacosane (C29)	**0.16**	
n-Pentadecane (C15)	**0.012**	J	n-Triacontane (C30)	**0.023**	J
n-Hexadecane (C16)	**0.0067**	J	n-Hentriacontane (C31)	**0.15**	
Norpristane (1650)	**0.0056**	J	n-Dotriacontane (C32)	**0.027**	J
n-Heptadecane (C17)	**0.28**		n-Tritriacontane (C33)	0.11	U
Pristane	**0.028**	J	n-Tetratriacontane (C34)	0.11	U
n-Octadecane (C18)	**0.010**	J	n-Pentatriacontane (C35)	0.11	U
Phytane	**0.062**	J	n-Hexatriacontane (C36)	0.11	U
n-Nonadecane (C19)	**0.018**	J	n-Heptatriacontane (C37)	0.11	U
n-Eicosane (C20)	**0.0033**	J	n-Octatriacontane (C38)	0.11	U
n-Heneicosane (C21)	**0.010**	J	n-Tetracontane (C40)	0.11	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**1.3**
Total Extractable Material[2]	**69**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	74	50-130
d50-Tetracosane	73	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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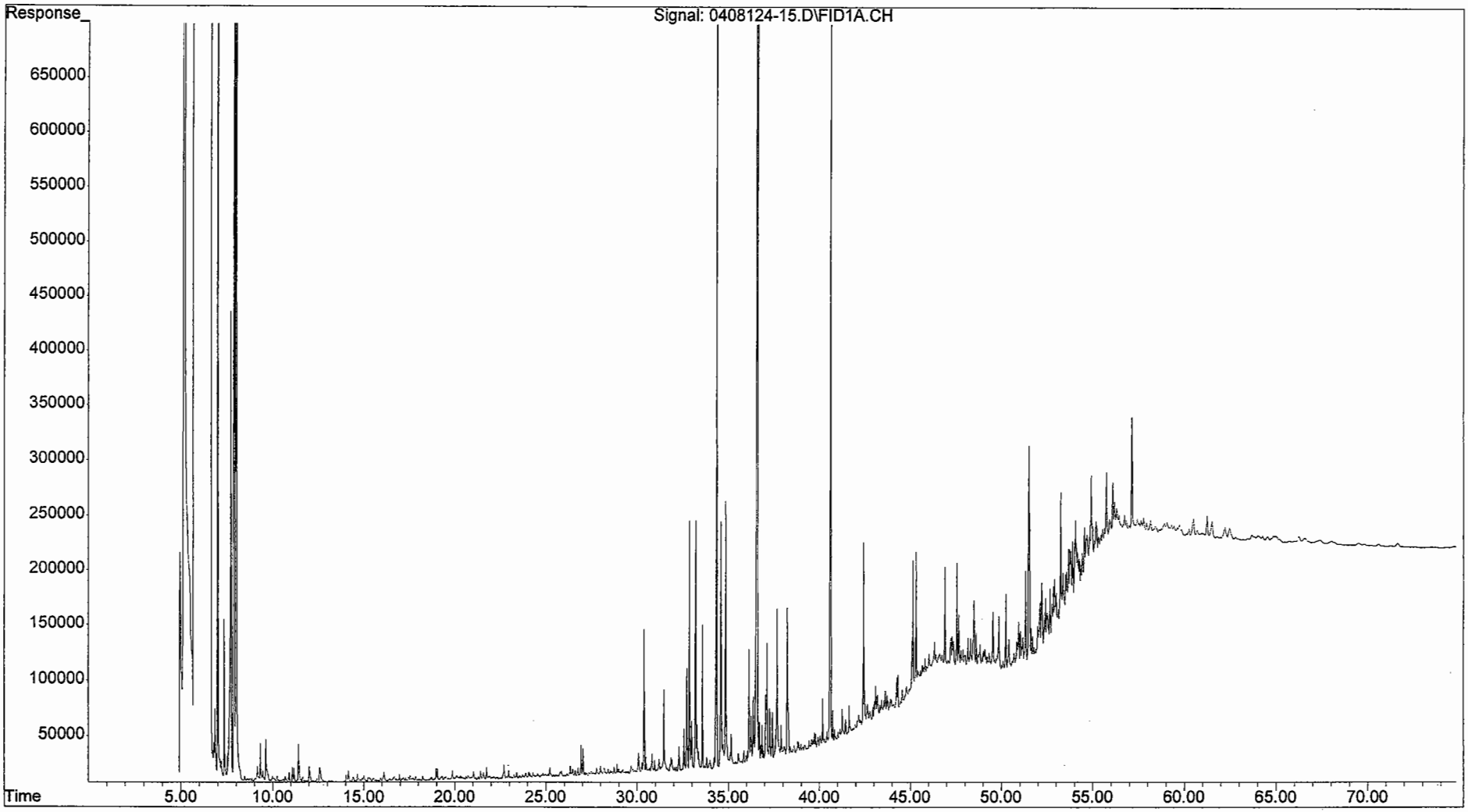
File :O:\Organics\DATA\PAH2\SEPT24\0408124-15.D
Operator : NLJr
Acquired : 28 Sep 2004 7:47 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: 0408124-15
Misc Info : 1X
Vial Number: 68



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03**
Associated Blank: **N/A**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/27/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	0.067	U	n-Docosane (C22)	0.067	U
n-Decane (C10)	0.067	U	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	0.067	U
n-Dodecane (C12)	0.067	U	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	0.067	U
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	0.067	U	n-Octacosane (C28)	**0.0040**	**J**
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	0.067	U
n-Hexadecane (C16)	0.067	U	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	0.067	U	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	0.067	U
n-Nonadecane (C19)	0.067	U	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	0.067	U	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**0.0040**	J
Total Extractable Material[2]	2.2	U

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	78	50-130
d50-Tetracosane	86	50-130

N/A - Not Applicable
J - Estimated value, below quantitation limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.

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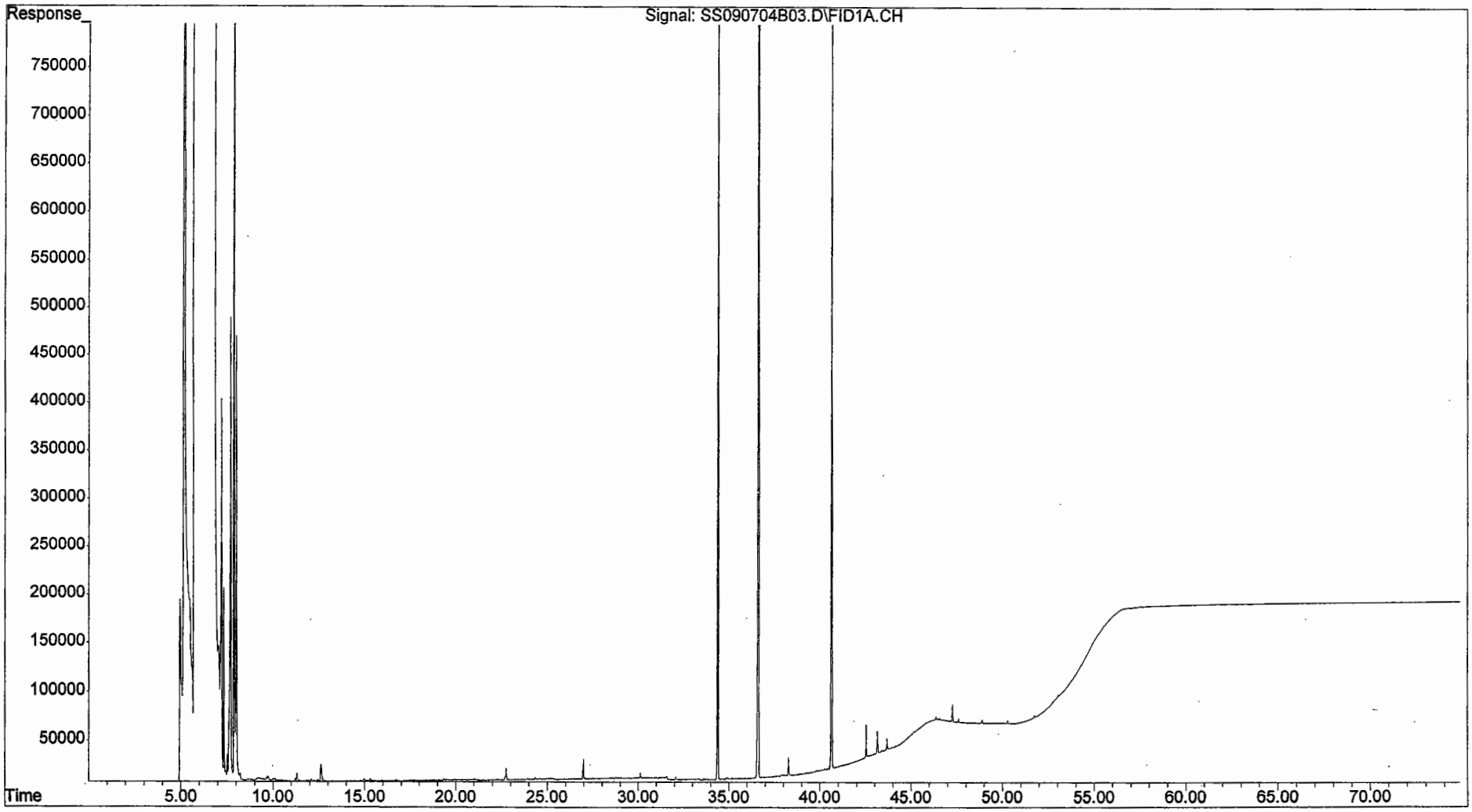
File :O:\Organics\DATA\PAH2\SEPT24\SS090704B03.D
Operator : NLJr
Acquired : 27 Sep 2004 12:55 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704B03
Misc Info : 1X
Vial Number: 46



Form I
Total Saturated Hydrocarbons by GC/FID

Woods Hole Group

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704BS03**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/27/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.69**	S	n-Docosane (C22)	**1.6**	S
n-Decane (C10)	**0.87**	S	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	**1.6**	S
n-Dodecane (C12)	**1.2**	S	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	**1.5**	S
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	**1.3**	S	n-Octacosane (C28)	**1.6**	S
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	**1.5**	S
n-Hexadecane (C16)	**1.4**	S	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	**1.4**	S	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	**1.3**	S
n-Nonadecane (C19)	**1.5**	S	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	**1.5**	S	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**19**
Total Extractable Material[2]	**12**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	84	50-130
d50-Tetracosane	87	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 15:54

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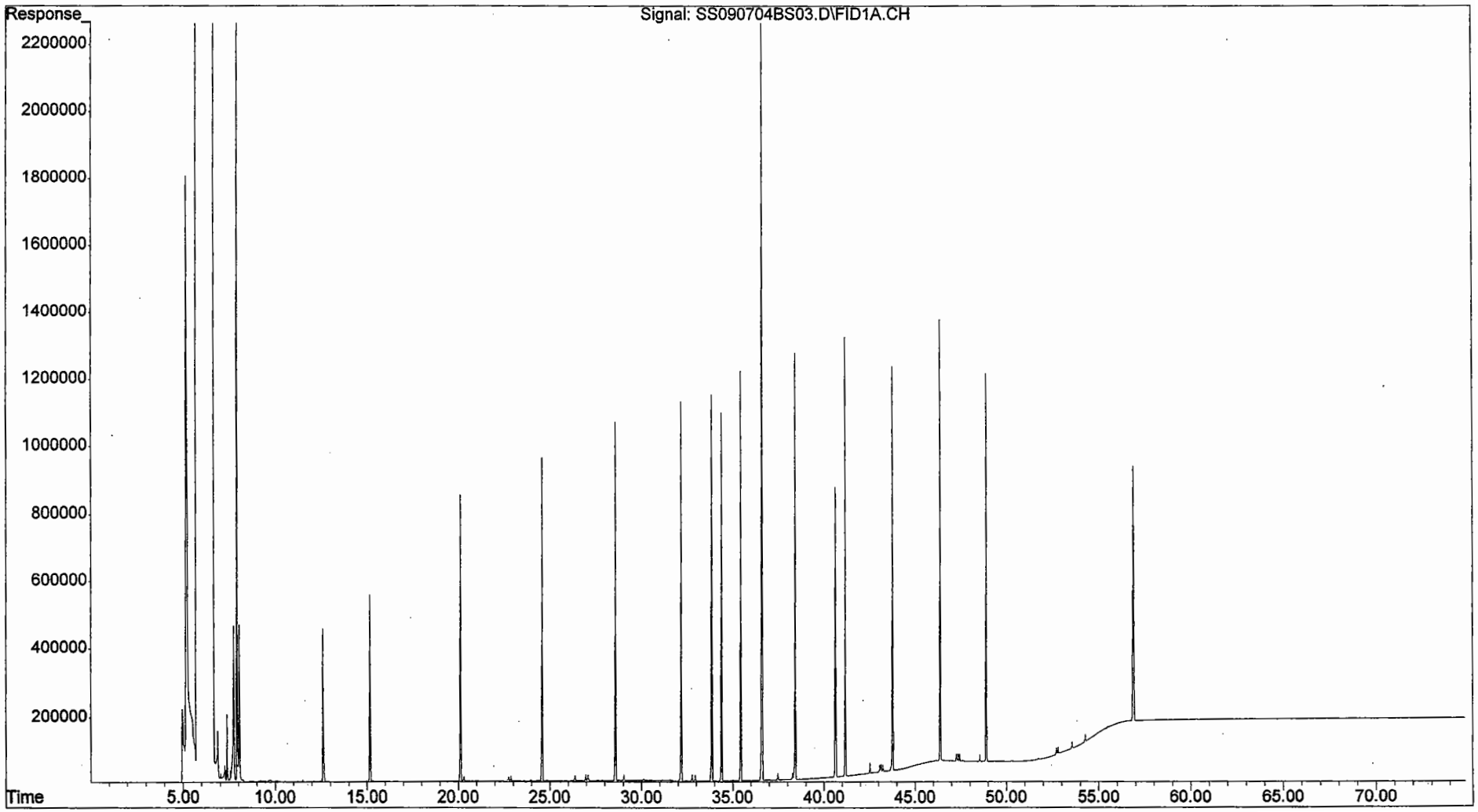
File :O:\Organics\DATA\PAH2\SEPT24\SS090704BS03.D
Operator : NLJr
Acquired : 27 Sep 2004 2:19 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704BS03
Misc Info : 1X
Vial Number: 47



Form I
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample Dup**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704BSD03**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	09/07/04	09/27/04	100	30.00	2	1	NLJr

Parameter	Result		Parameter	Result	
n-Nonane (C9)	**0.65**	S	n-Docosane (C22)	**1.6**	S
n-Decane (C10)	**0.87**	S	n-Tricosane (C23)	0.067	U
n-Undecane (C11)	0.067	U	n-Tetracosane (C24)	**1.6**	S
n-Dodecane (C12)	**1.3**	S	n-Pentacosane (C25)	0.067	U
n-Tridecane (C13)	0.067	U	n-Hexacosane (C26)	**1.5**	S
2,6,10 Trimethyldodecane (1380)	0.067	U	n-Heptacosane (C27)	0.067	U
n-Tetradecane (C14)	**1.4**	S	n-Octacosane (C28)	**1.6**	S
2,6,10 Trimethyltridecane (1470)	0.067	U	n-Nonacosane (C29)	0.067	U
n-Pentadecane (C15)	0.067	U	n-Triacontane (C30)	**1.5**	S
n-Hexadecane (C16)	**1.5**	S	n-Hentriacontane (C31)	0.067	U
Norpristane (1650)	0.067	U	n-Dotriacontane (C32)	0.067	U
n-Heptadecane (C17)	0.067	U	n-Tritriacontane (C33)	0.067	U
Pristane	0.067	U	n-Tetratriacontane (C34)	0.067	U
n-Octadecane (C18)	**1.5**	S	n-Pentatriacontane (C35)	0.067	U
Phytane	0.067	U	n-Hexatriacontane (C36)	**1.5**	S
n-Nonadecane (C19)	**1.5**	S	n-Heptatriacontane (C37)	0.067	U
n-Eicosane (C20)	**1.5**	S	n-Octatriacontane (C38)	0.067	U
n-Heneicosane (C21)	0.067	U	n-Tetracontane (C40)	0.067	U

Total Hydrocarbon Summary

Total Saturated Hydrocarbons [1]	**19**
Total Extractable Material[2]	**13**

[1] = Result is the summation of Saturated Hydrocarbons.
[2] = Range concentration includes all resolved and unresolved material. The range concentration also excludes the concentration of any surrogate(s) and/or system monitoring compounds eluting in that range.

Surrogate	% Recovery	Acceptance Range (%)
ortho-Terphenyl	87	50-130
d50-Tetracosane	85	50-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
S - Spike compound.

10/07/04 15:55

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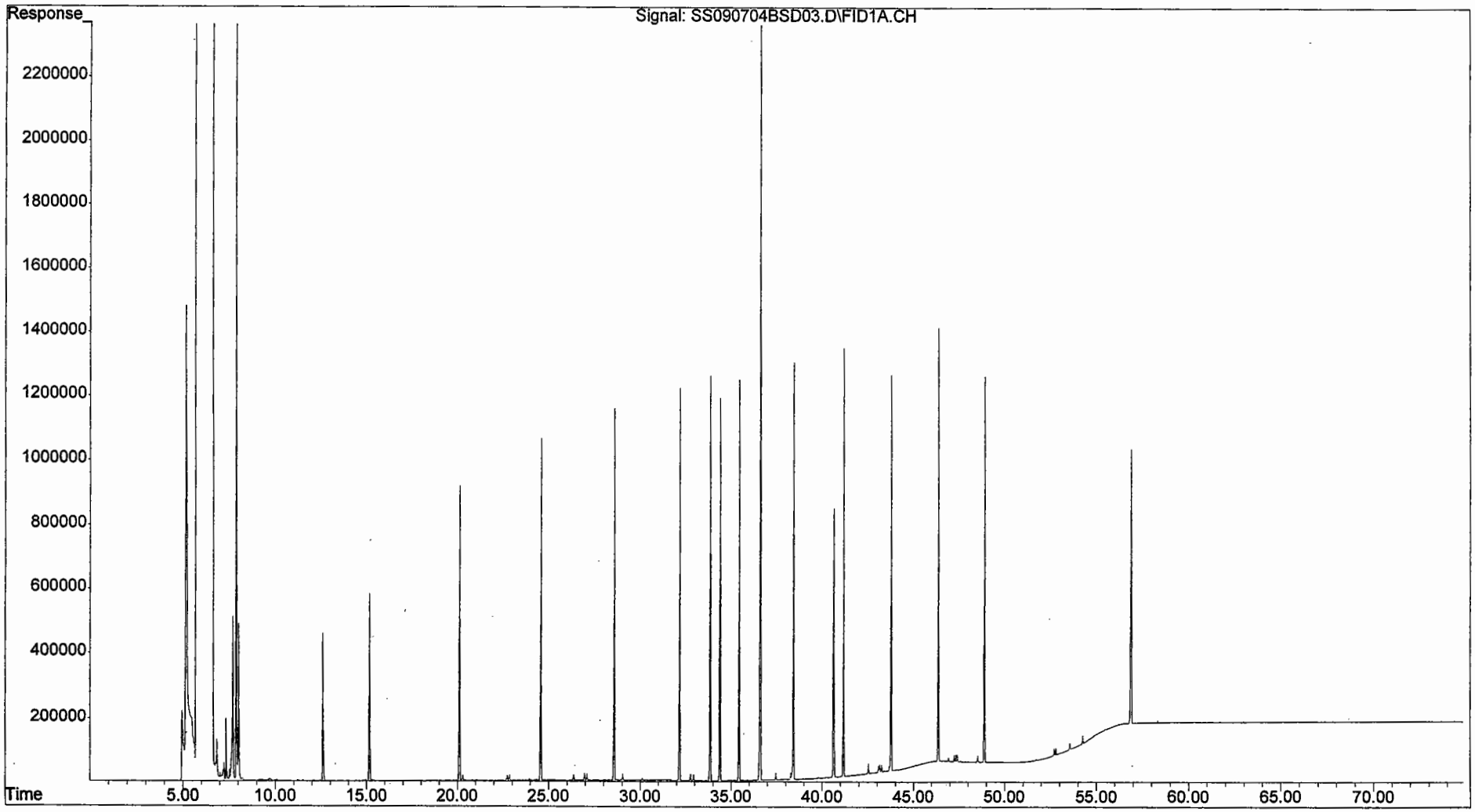
File :O:\Organics\DATA\PAH2\SEPT24\SS090704BSD03.D
Operator : NLJr
Acquired : 27 Sep 2004 3:43 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: SS090704BSD03
Misc Info : 1X
Vial Number: 48



Form III
Spike Recovery Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **See Below**
Associated Blank: **SS090704B03**
Concentration Units: **mg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	09/07/04	100	NLJr

Lab ID: SS090704B03 SS090704BS03 SS090704BSD03

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
n-Nonane (C9)	0.067	U	0.69	41[a]	0.65	39[a]	5	30	50-130
n-Decane (C10)	0.067	U	0.87	52	0.87	52	1	30	50-130
n-Dodecane (C12)	0.067	U	1.2	74	1.3	76	3	30	50-130
n-Tetradecane (C14)	0.067	U	1.3	80	1.4	83	4	30	50-130
n-Hexadecane (C16)	0.067	U	1.4	85	1.5	88	4	30	50-130
n-Octadecane (C18)	0.067	U	1.4	87	1.5	89	2	30	50-130
n-Nonadecane (C19)	0.067	U	1.5	89	1.5	90	1	30	50-130
n-Eicosane (C20)	0.067	U	1.5	91	1.5	91	0	30	50-130
n-Docosane (C22)	0.067	U	1.6	94	1.6	93	1	30	50-130
n-Tetracosane (C24)	0.067	U	1.6	97	1.6	95	2	30	50-130
n-Hexacosane (C26)	0.067	U	1.5	91	1.5	89	2	30	50-130
n-Octacosane (C28)	0.0040		1.6	96	1.6	94	1	30	50-130
n-Triacontane (C30)	0.067	U	1.5	91	1.5	91	0	30	50-130
n-Hexatriacontane (C36)	0.067	U	1.3	78	1.5	88	12	30	50-130

Surrogate	% Recovery		Acceptance Range (%)
ortho-Terphenyl	84	87	50-130
d50-Tetracosane	87	85	50-130

N/A - Not Applicable
[a] - Value outside of QC Limits.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

10/07/04 15:57

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Supporting Quality Control Results

Form II
Surrogate Recovery
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**
Matrix: **Sediment**

Case: **N/A** SDG: **N/A**

Client ID	Lab ID	ortho-Terphenyl	d50-Tetracosane
Blank	SS090704B03	78	86
LCS	SS090704BS03	84	87
LCSD	SS090704BSD03	87	85
DSY-SD-08-082604	0408124-01	79	79
DSY-SD-04-082604	0408124-02	84	84
DSY-SD-20-082604	0408124-03	82	81
DSY-SD-27-082604	0408124-04	90	86
DSY-SD-31-082604	0408124-05	86	85
DSY-SD-11-082604	0408124-06	82	86
DSY-SD-32-082604	0408124-07	81	84
DSY-SD-36-082604	0408124-08	84	83
DSY-SD-CC01-082604	0408124-09	82	81
DSY-SD-CC02-082604	0408124-10	80	78
DSY-SD-JPC01-082604	0408124-11	88	91
DSY-SD-JPC03-082604	0408124-12	85	83
DSY-SD-DUP03-082604	0408124-13	83	80
DSY-SD-CH01-082604	0408124-14	81	83
DSY-SD-CH01-082604	0408124-14 D	86	87
DSY-SD-CH01-082604	0408124-14 M	87	86
DSY-SD-CH02-082604	0408124-15	74	73

N/A - Not Applicable

Surrogate	QC Limit
ortho-Terphenyl	50-130
d50-Tetracosane	50-130

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Form IV
Method Blank Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **SS090704B03**
Date Analyzed: **09/27/04 12:55**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS090704BS03	09/27/04 14:19
LCSD	SS090704BSD03	09/27/04 15:43
DSY-SD-08-082604	0408124-01	09/27/04 17:07
DSY-SD-04-082604	0408124-02	09/27/04 18:31
DSY-SD-20-082604	0408124-03	09/27/04 19:55
DSY-SD-27-082604	0408124-04	09/27/04 21:19
DSY-SD-31-082604	0408124-05	09/27/04 22:42
DSY-SD-11-082604	0408124-06	09/28/04 00:06
DSY-SD-32-082604	0408124-07	09/28/04 01:30
DSY-SD-36-082604	0408124-08	09/28/04 07:07
DSY-SD-CC01-082604	0408124-09	09/28/04 08:31
DSY-SD-CC02-082604	0408124-10	09/28/04 09:55
DSY-SD-JPC01-082604	0408124-11	09/28/04 11:19
DSY-SD-JPC03-082604	0408124-12	09/28/04 12:44
DSY-SD-DUP03-082604	0408124-13	09/28/04 14:08
DSY-SD-CH01-082604	0408124-14	09/28/04 15:35
DSY-SD-CH01-082604	0408124-14 D	09/28/04 16:59
DSY-SD-CH01-082604	0408124-14 M	09/28/04 18:23
DSY-SD-CH02-082604	0408124-15	09/28/04 19:47

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Nonane (C9)	1.04	0.95	0.94	0.88	0.79	0.92	10.0
n-Decane (C10)	1.00	0.93	0.94	0.88	0.80	0.91	8.3
n-Undecane (C11)	1.02	0.93	0.93	0.87	0.81	0.91	8.5
n-Dodecane (C12)	1.00	0.90	0.93	0.87	0.81	0.90	7.9
n-Tridecane (C13)	1.00	0.90	0.93	0.86	0.82	0.90	7.7
2,6,10 Trimethyldodecane (1380)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
n-Tetradecane (C14)	1.00	0.88	0.93	0.86	0.83	0.90	7.4
2,6,10 Trimethyltridecane (1470)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Pentadecane (C15)	1.01	0.88	0.94	0.87	0.84	0.91	7.5
n-Hexadecane (C16)	1.00	0.87	0.94	0.86	0.85	0.91	7.2
Norpristane (1650)	1.10	0.90	0.99	0.92	0.90	0.96	9.0
n-Heptadecane (C17)	1.01	0.90	0.99	0.92	0.90	0.95	5.7
Pristane	1.06	0.91	0.97	0.88	0.86	0.94	8.5
n-Octadecane (C18)	1.01	0.90	0.98	0.89	0.88	0.93	6.5
Phytane	1.03	0.91	0.99	0.89	0.88	0.94	7.0
n-Nonadecane (C19)	1.04	0.90	0.97	0.87	0.88	0.93	7.8
n-Eicosane (C20)	1.01	0.90	0.98	0.88	0.88	0.93	6.3
n-Heneicosane (C21)	1.04	0.94	1.00	0.93	0.91	0.96	5.9
n-Docosane (C22)	1.05	0.94	1.01	0.93	0.91	0.97	6.0
n-Tricosane (C23)	1.04	0.94	1.01	0.93	0.90	0.96	5.8
n-Tetracosane (C24)	0.98	0.91	0.96	0.89	0.86	0.92	5.6
n-Pentacosane (C25)	1.06	0.96	1.01	0.94	0.90	0.97	6.2
n-Hexacosane (C26)	1.09	0.99	1.04	0.97	0.92	1.00	6.5
n-Heptacosane (C27)	1.04	0.96	1.02	0.94	0.89	0.97	6.4
n-Octacosane (C28)	1.07	0.98	1.03	0.95	0.90	0.99	6.9
n-Nonacosane (C29)	1.08	1.00	1.04	0.96	0.90	0.99	6.9
n-Triacontane (C30)	1.09	1.00	1.04	0.96	0.90	1.00	7.2
n-Hentriacontane (C31)	1.04	0.97	1.00	0.92	0.87	0.96	7.2
n-Dotriacontane (C32)	1.08	1.02	1.04	0.96	0.90	1.00	7.1
n-Tritriacontane (C33)	1.02	0.97	0.98	0.91	0.85	0.95	7.1
n-Tetratriacontane (C34)	1.09	1.03	1.06	0.98	0.91	1.01	6.8
n-Pentatriacontane (C35)	1.06	1.01	1.06	0.95	0.90	1.00	7.2
n-Hexatriacontane (C36)	1.14	1.04	1.07	0.99	0.95	1.04	7.2

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice** Lab Code: **MA00030**
Project: **Derecktor Shipyard** ETR: **0408124**

Case: **N/A** SDG: **N/A**

Lab ID	Date/Time Analyzed
I209240401	09/24/04 21:51
I209240402	09/24/04 23:20
I209240403	09/25/04 00:48
I209240404	09/25/04 02:17
I209240405	09/25/04 03:46

	Response Factors						
Parameter	**1**	**10**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Heptatriacontane (C37)	1.09	1.01	1.05	0.97	0.94	1.01	6.0
n-Octatriacontane (C38)	1.01	0.97	1.03	0.96	0.93	0.98	4.0
n-Nonatriacontane (C39)	0.079	0.071	0.077	0.072	0.071	0.074	5.0
n-Tetracontane (C40)	0.79	0.88	1.00	0.95	0.94	0.91	9.1
ortho-Terphenyl	1.14	1.04	1.08	0.96	0.96	1.04	7.6
d50-Tetracosane	0.99	0.99	0.98	0.91	0.88	0.95	5.7
Total Extractable Material[2]	1.10	1.01	1.06	0.97	1.10	1.05	5.4
Average RSD							7.0

N/A - Not Applicable

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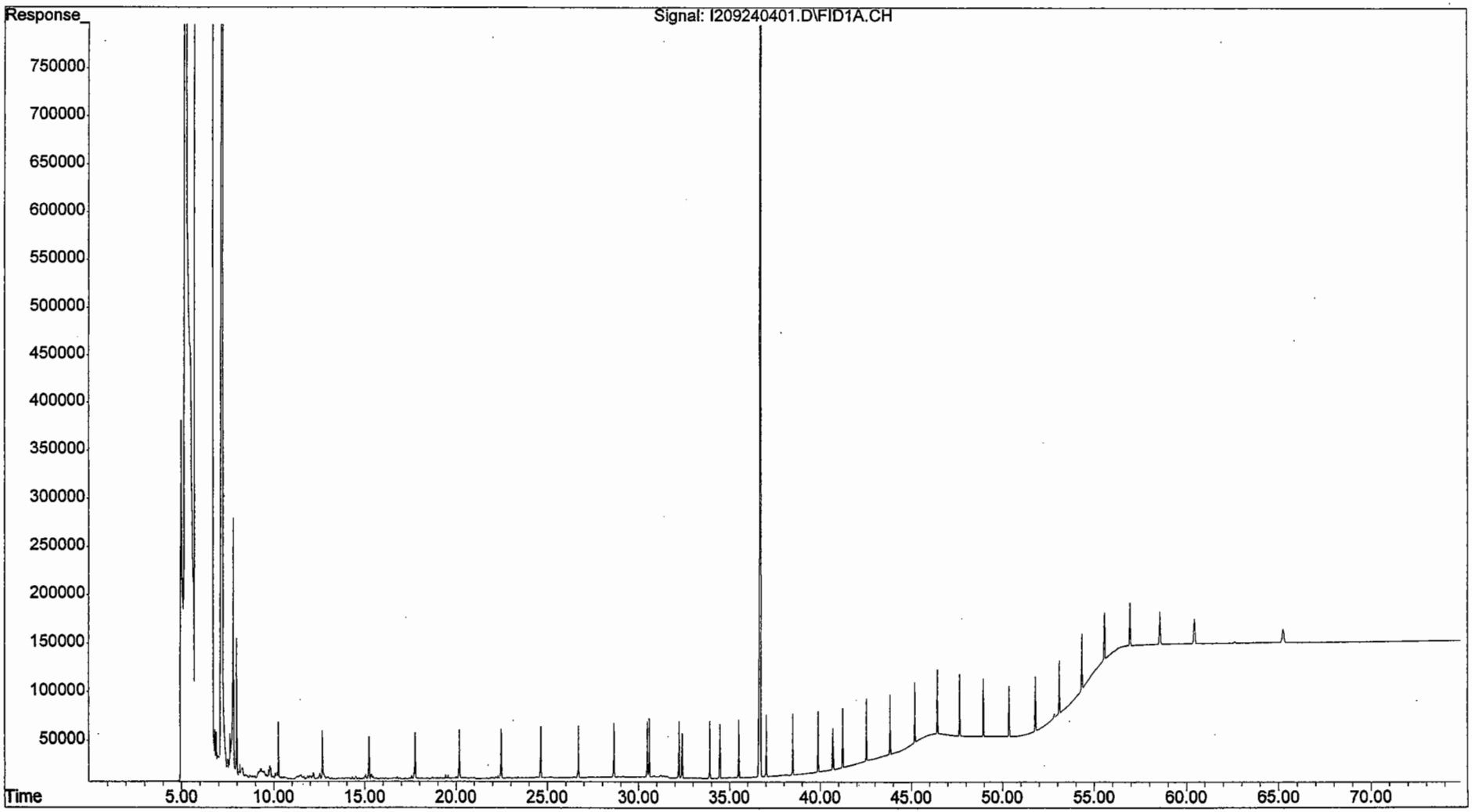
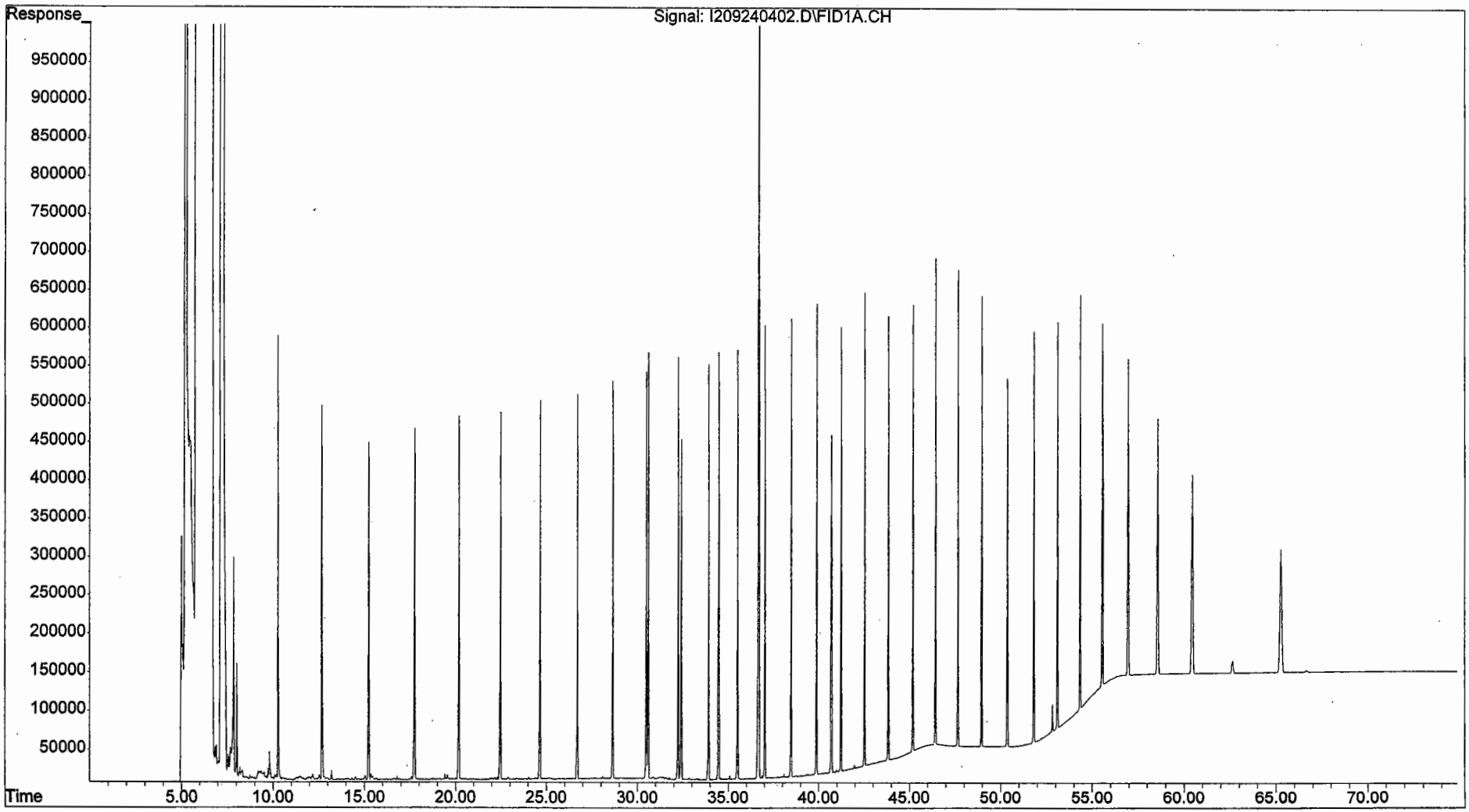
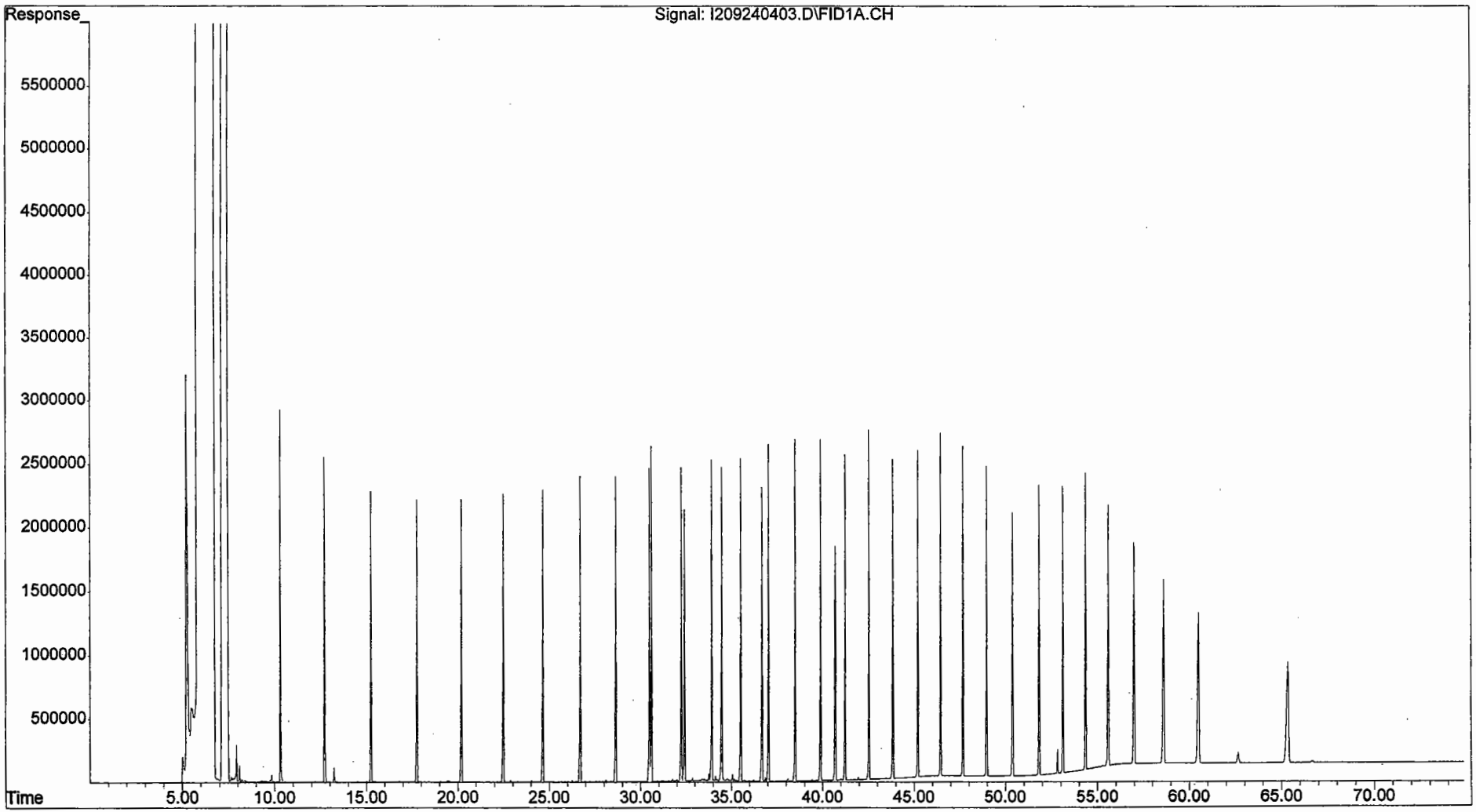
File :O:\Organics\DATA\PAH2\SEPT24\I209240401.D
Operator : NLJr
Acquired : 24 Sep 2004 9:51 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240401
Misc Info : HW081604C 1ug/mL
Vial Number: 3



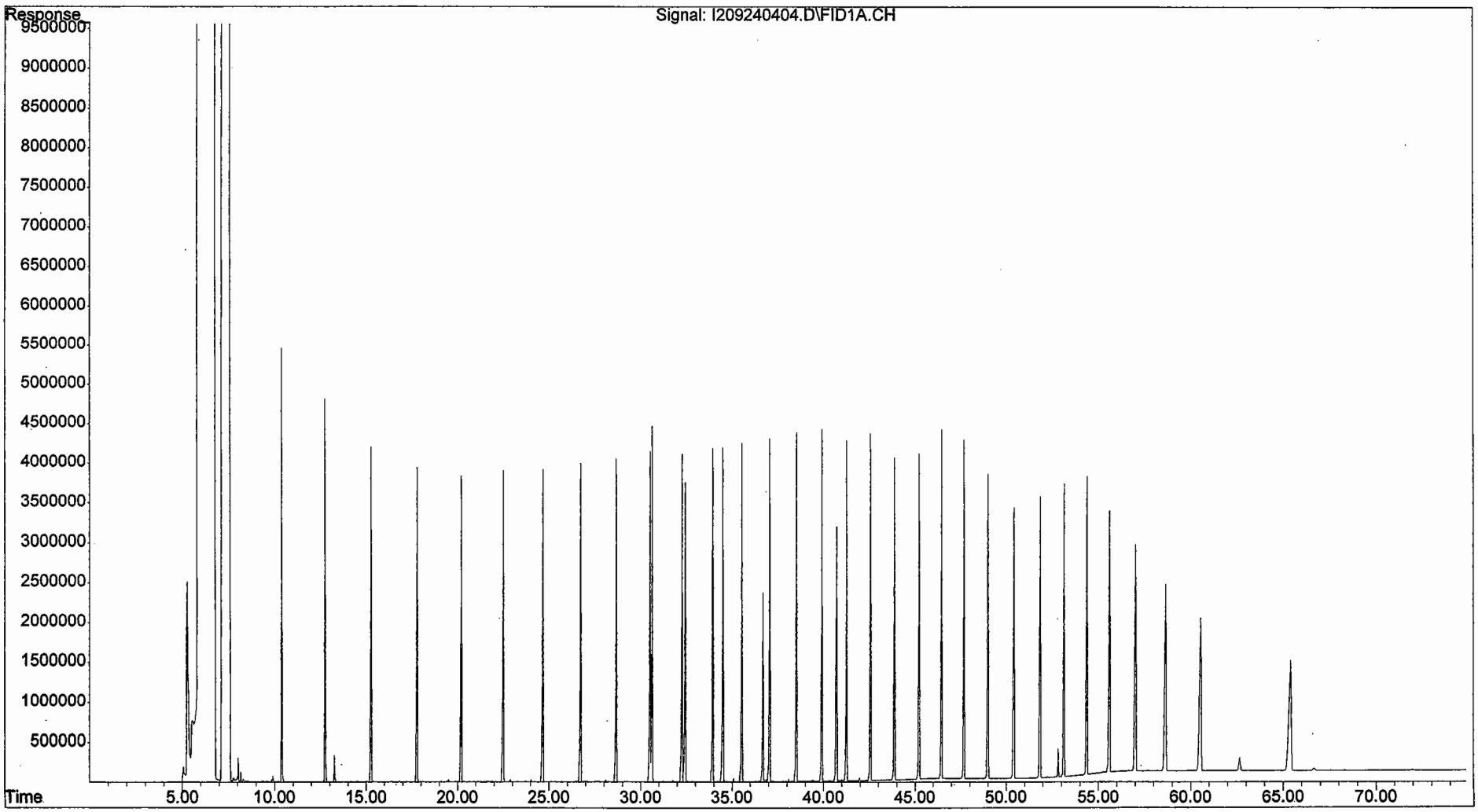
File :O:\Organics\DATA\PAH2\SEPT24\I209240402.D
Operator : NLJr
Acquired : 24 Sep 2004 11:20 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240402
Misc Info : HW081604D 10ug/mL
Vial Number: 4



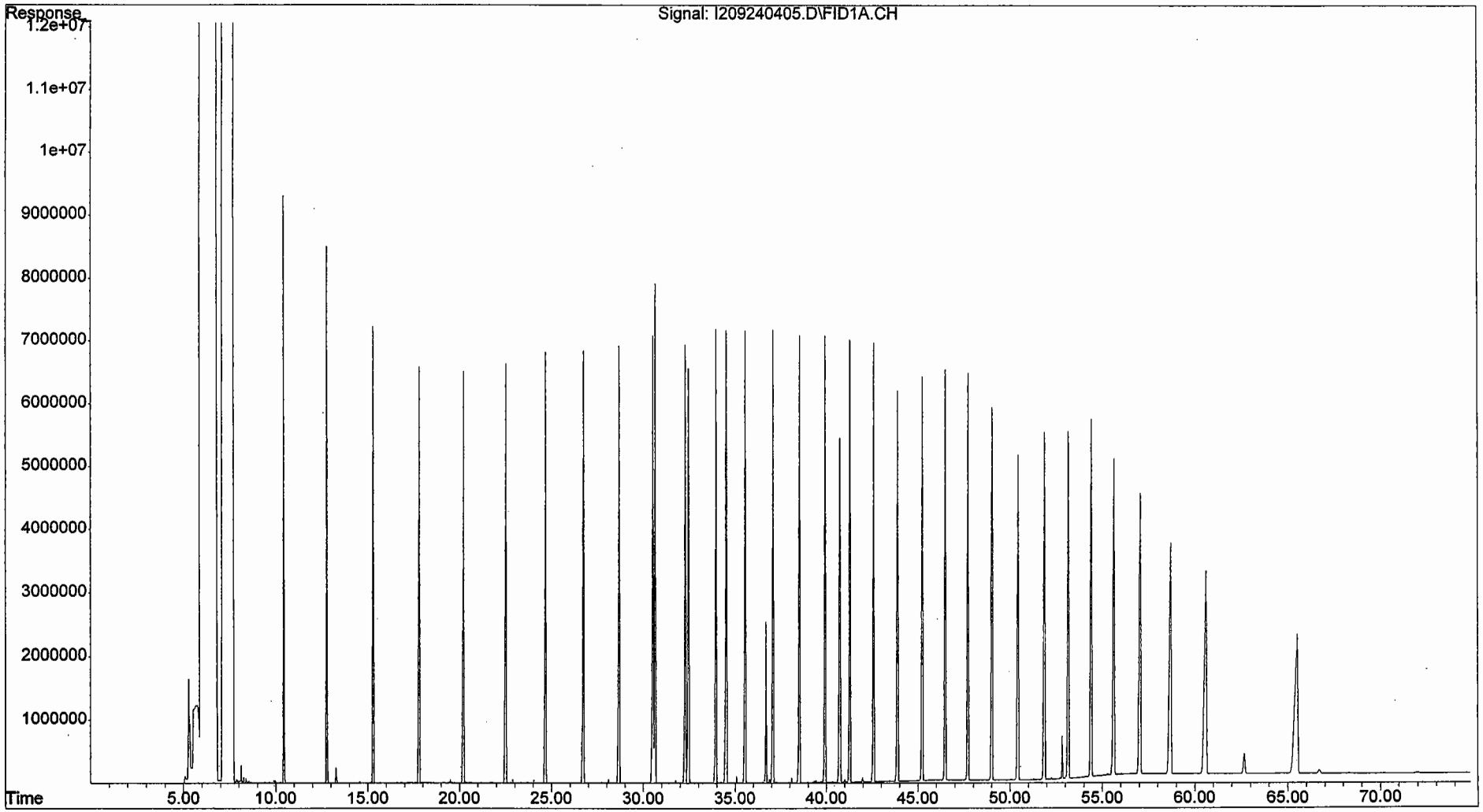
File :O:\Organics\DATA\PAH2\SEPT24\I209240403.D
Operator : NLJr
Acquired : 25 Sep 2004 12:48 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240403
Misc Info : HW081604E 50ug/mL
Vial Number: 5



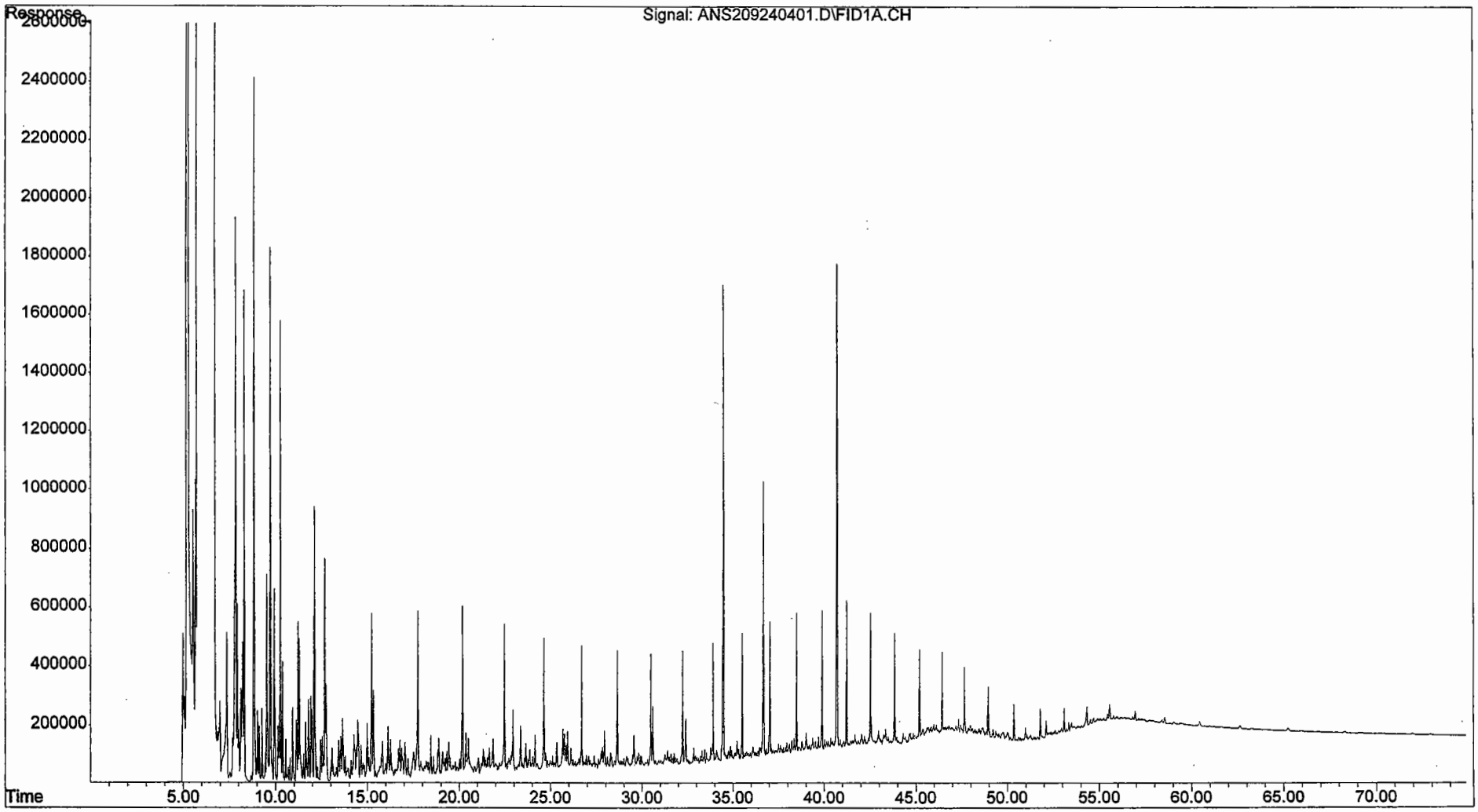
File :O:\Organics\DATA\PAH2\SEPT24\I209240404.D
Operator : NLJr
Acquired : 25 Sep 2004 2:17 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240404
Misc Info : HW081604F 100ug/mL
Vial Number: 6



File :O:\Organics\DATA\PAH2\SEPT24\I209240405.D
Operator : NLJr
Acquired : 25 Sep 2004 3:46 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: I209240405
Misc Info : HW081604G 200ug/mL
Vial Number: 7



File :O:\Organics\DATA\PAH2\SEPT24\ANS209240401.D
Operator : NLJr
Acquired : 25 Sep 2004 6:43 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: ANS209240401
Misc Info : SW090104A 5.14mg/mL
Vial Number: 9



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **C209240404**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	51.94	3.9	25
n-Decane (C10)	50.00	49.80	0.4	25
n-Undecane (C11)	50.00	49.13	1.7	25
n-Dodecane (C12)	50.00	48.77	2.5	25
n-Tridecane (C13)	50.00	48.46	3.1	25
n-Tetradecane (C14)	50.00	48.54	2.9	25
n-Pentadecane (C15)	50.00	48.61	2.8	25
n-Hexadecane (C16)	50.00	48.89	2.2	25
n-Heptadecane (C17)	50.00	48.39	3.2	25
Pristane	50.00	50.09	0.2	25
n-Octadecane (C18)	50.00	50.62	1.2	25
Phytane	50.00	50.36	0.7	25
n-Nonadecane (C19)	50.00	50.86	1.7	25
n-Eicosane (C20)	50.00	51.86	3.7	25
n-Heneicosane (C21)	50.00	51.82	3.6	25
n-Docosane (C22)	50.00	52.16	4.3	25
n-Tricosane (C23)	50.00	52.59	5.2	25
n-Tetracosane (C24)	50.00	52.97	5.9	25
n-Pentacosane (C25)	50.00	55.23	10.5	25
n-Hexacosane (C26)	50.00	53.56	7.1	25
n-Heptacosane (C27)	50.00	53.75	7.5	25
n-Octacosane (C28)	50.00	54.68	9.4	25
n-Nonacosane (C29)	50.00	54.24	8.5	25
n-Triacontane (C30)	50.00	54.30	8.6	25
n-Hentriacontane (C31)	50.00	54.51	9.0	25
n-Dotriacontane (C32)	50.00	54.66	9.3	25
n-Tritriacontane (C33)	50.00	54.95	9.9	25
n-Tetratriacontane (C34)	50.00	54.75	9.5	25
n-Pentatriacontane (C35)	50.00	54.49	9.0	25
n-Hexatriacontane (C36)	50.00	54.59	9.2	25
n-Heptatriacontane (C37)	50.00	54.97	9.9	25
n-Octatriacontane (C38)	50.00	55.99	12.0	25
n-Tetracontane (C40)	50.00	59.45	18.9	25
ortho-Terphenyl	50.00	51.17	2.3	25
d50-Tetracosane	50.00	52.05	4.1	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.12

N/A - Not Applicable

10/07/04 16:27

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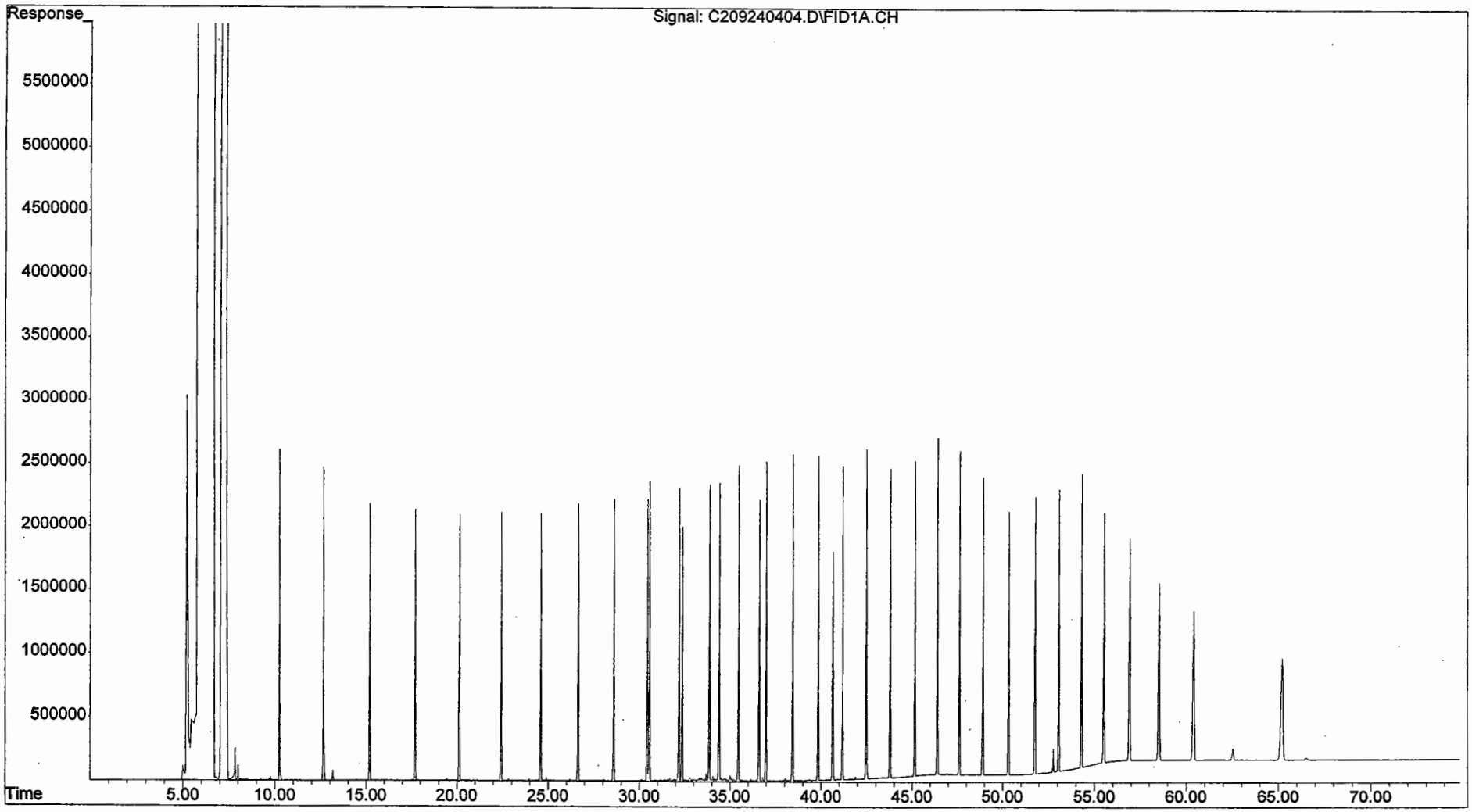
File :O:\Organics\DATA\PAH2\SEPT24\C209240404.D
Operator : NLJr
Acquired : 27 Sep 2004 10:07 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240404
Misc Info : HW081604E 50ug/mL
Vial Number: 44



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **C209240405**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	50.00	0.0	25
n-Decane (C10)	50.00	48.28	3.4	25
n-Undecane (C11)	50.00	47.77	4.5	25
n-Dodecane (C12)	50.00	48.03	3.9	25
n-Tridecane (C13)	50.00	48.53	2.9	25
n-Tetradecane (C14)	50.00	49.37	1.3	25
n-Pentadecane (C15)	50.00	49.93	0.1	25
n-Hexadecane (C16)	50.00	50.60	1.2	25
n-Heptadecane (C17)	50.00	49.99	0.0	25
Pristane	50.00	51.69	3.4	25
n-Octadecane (C18)	50.00	51.76	3.5	25
Phytane	50.00	51.55	3.1	25
n-Nonadecane (C19)	50.00	51.87	3.7	25
n-Eicosane (C20)	50.00	52.18	4.4	25
n-Heneicosane (C21)	50.00	51.89	3.8	25
n-Docosane (C22)	50.00	51.90	3.8	25
n-Tricosane (C23)	50.00	52.01	4.0	25
n-Tetracosane (C24)	50.00	51.99	4.0	25
n-Pentacosane (C25)	50.00	53.70	7.4	25
n-Hexacosane (C26)	50.00	51.98	4.0	25
n-Heptacosane (C27)	50.00	52.56	5.1	25
n-Octacosane (C28)	50.00	52.75	5.5	25
n-Nonacosane (C29)	50.00	52.14	4.3	25
n-Triacontane (C30)	50.00	52.09	4.2	25
n-Hentriacontane (C31)	50.00	52.19	4.4	25
n-Dotriacontane (C32)	50.00	52.29	4.6	25
n-Tritriacontane (C33)	50.00	52.46	4.9	25
n-Tetratriacontane (C34)	50.00	52.31	4.6	25
n-Pentatriacontane (C35)	50.00	52.31	4.6	25
n-Hexatriacontane (C36)	50.00	52.50	5.0	25
n-Heptatriacontane (C37)	50.00	53.03	6.1	25
n-Octatriacontane (C38)	50.00	54.25	8.5	25
n-Tetracontane (C40)	50.00	58.16	16.3	25
ortho-Terphenyl	50.00	52.14	4.3	25
d50-Tetracosane	50.00	51.22	2.4	25

Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.07

N/A - Not Applicable

10/07/04 16:27

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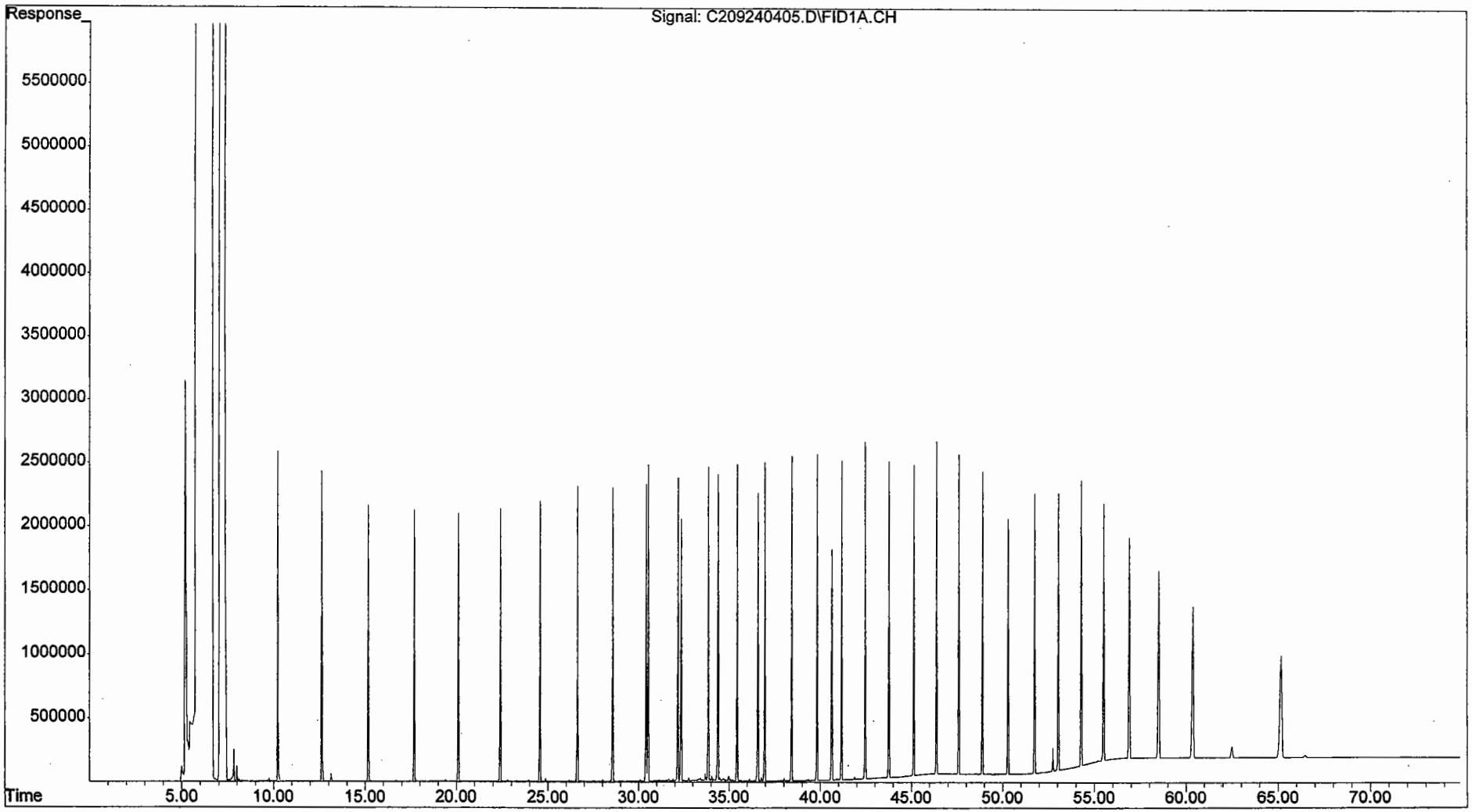
File :O:\Organics\DATA\PAH2\SEPT24\C209240405.D
Operator : NLJr
Acquired : 28 Sep 2004 4:18 am using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240405
Misc Info : HW081604E 50ug/mL
Vial Number: 57



Form VII
Calibration Verification
Total Saturated Hydrocarbons by GC/FID

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **C209240406**

Case: **N/A** SDG: **N/A**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
n-Nonane (C9)	50.00	50.65	1.3	25
n-Decane (C10)	50.00	49.18	1.6	25
n-Undecane (C11)	50.00	48.39	3.2	25
n-Dodecane (C12)	50.00	48.35	3.3	25
n-Tridecane (C13)	50.00	48.45	3.1	25
n-Tetradecane (C14)	50.00	49.07	1.9	25
n-Pentadecane (C15)	50.00	49.42	1.2	25
n-Hexadecane (C16)	50.00	49.91	0.2	25
n-Heptadecane (C17)	50.00	49.75	0.5	25
Pristane	50.00	50.60	1.2	25
n-Octadecane (C18)	50.00	51.11	2.2	25
Phytane	50.00	50.90	1.8	25
n-Nonadecane (C19)	50.00	51.18	2.4	25
n-Eicosane (C20)	50.00	51.87	3.7	25
n-Heneicosane (C21)	50.00	51.51	3.0	25
n-Docosane (C22)	50.00	51.54	3.1	25
n-Tricosane (C23)	50.00	51.69	3.4	25
n-Tetracosane (C24)	50.00	51.73	3.5	25
n-Pentacosane (C25)	50.00	53.11	6.2	25
n-Hexacosane (C26)	50.00	51.75	3.5	25
n-Heptacosane (C27)	50.00	52.15	4.3	25
n-Octacosane (C28)	50.00	52.18	4.4	25
n-Nonacosane (C29)	50.00	51.72	3.4	25
n-Triacontane (C30)	50.00	51.60	3.2	25
n-Hentriacontane (C31)	50.00	51.64	3.3	25
n-Dotriacontane (C32)	50.00	51.69	3.4	25
n-Tritriacontane (C33)	50.00	51.79	3.6	25
n-Tetratriacontane (C34)	50.00	51.66	3.3	25
n-Pentatriacontane (C35)	50.00	51.57	3.1	25
n-Hexatriacontane (C36)	50.00	51.81	3.6	25
n-Heptatriacontane (C37)	50.00	52.35	4.7	25
n-Octatriacontane (C38)	50.00	53.28	6.6	25
n-Tetracontane (C40)	50.00	56.91	13.8	25
ortho-Terphenyl	50.00	51.84	3.7	25
d50-Tetracosane	50.00	50.98	2.0	25

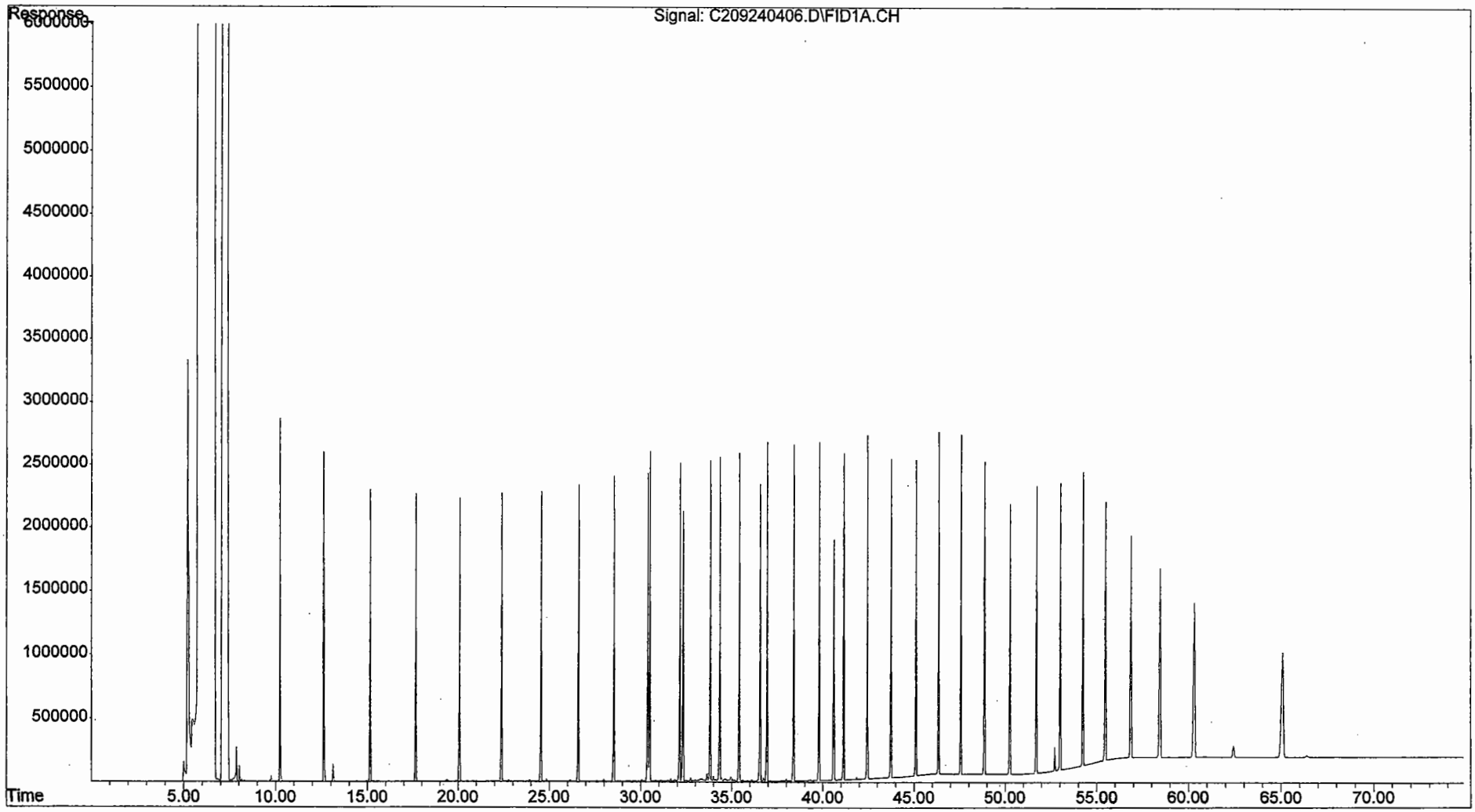
Area Response Ratio C30 to C20	Ratio
(Area C30/Area C20)	1.07

N/A - Not Applicable

10/07/04 16:28

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

File :O:\Organics\DATA\PAH2\SEPT24\C209240406.D
Operator : NLJr
Acquired : 28 Sep 2004 10:35 pm using AcqMethod MS2SHC092404REV02.M
Instrument : PAH #2 FI
Sample Name: C209240406
Misc Info : HW081604E 50ug/mL
Vial Number: 70



Woods Hole Group Environmental Laboratories
Batch Weight Report
09/07/2004

Lab ID	QC Type	0408124SST - Sample
0408124-01	SAM	30.96
0408124-02	SAM	30.44
0408124-03	SAM	30.27
0408124-04	SAM	30.92
0408124-05	SAM	30.82
0408124-06	SAM	30.54
0408124-07	SAM	30.74
0408124-08	SAM	30.63
0408124-09	SAM	30.35
0408124-10	SAM	30.32
0408124-11	SAM	30.71
0408124-12	SAM	30.24
0408124-13	SAM	30.8
0408124-14	D	30.68
0408124-14	SAM	30.68
0408124-14M	OP NEWFIE	30.54
0408124-14M	OP SHC	30.54
0408124-15	SAM	30.21
SS090704B03	B	30
SS090704BS03BS	OP NEWFIE	30
SS090704BS03BS	OP SHC	30
SS090704BSD03BS	DOP NEWFIE	30
SS090704BSD03BS	DOP SHC	30

METHYLENE CHLORIDE A20E31 (tank) X44E02(bottle)
ACETONE: Y10E42 HEXANE: A23E46

COPPER: A14601 SULFURIC ACID: 3102030

GLASS WOOL: 4303309989 SODIUM SULFATE: E13478

DIATEMACEOUS EARTH: 00504

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408124SST - OP SHC

Lab ID	QC Type	Prep Method	Analyst	Prep Start Date	Prep Completed	TCLP Date	Initial Amount	Final Volume	Solvent Ex	Conc. Analyst	Conc. Date	Conc. Method	Transfer Volume	Vialed By	Vialed Date	Cell Number
0408124-01	SAM	Shaker	JFR	9/7/04	9/14/04		30.96	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-02	SAM	Shaker	JFR	9/7/04	9/14/04		30.44	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-03	SAM	Shaker	JFR	9/7/04	9/14/04		30.27	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-04	SAM	Shaker	JFR	9/7/04	9/14/04		30.92	10	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-05	SAM	Shaker	JFR	9/7/04	9/14/04		30.82	4	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-06	SAM	Shaker	JFR	9/7/04	9/14/04		30.54	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-07	SAM	Shaker	JFR	9/7/04	9/14/04		30.74	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-08	SAM	Shaker	JFR	9/7/04	9/14/04		30.63	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-09	SAM	Shaker	JFR	9/7/04	9/14/04		30.35	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-10	SAM	Shaker	JFR	9/7/04	9/14/04		30.32	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-11	SAM	Shaker	JFR	9/7/04	9/14/04		30.71	20	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-12	SAM	Shaker	JFR	9/7/04	9/14/04		30.24	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-13	SAM	Shaker	JFR	9/7/04	9/14/04		30.8	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	D	Shaker	JFR	9/7/04	9/14/04		30.68	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	M	Shaker	JFR	9/7/04	9/14/04		30.54	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-14	SAM	Shaker	JFR	9/7/04	9/14/04		30.68	5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
0408124-15	SAM	Shaker	JFR	9/7/04	9/14/04		30.21	2.5	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704B03	B	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704BS03	BS	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	
SS090704BSD03	BSD	Shaker	JFR	9/7/04	9/14/04		30	2	False	MP	9/10/04	KD Flask	0.5	MAL	9/13/04	

Woods Hole Group Environmental Laboratories
Batch Prep Report
09/07/2004 0408124SST - OP SHC

Lab ID	Notes
0408124-01	1st Prep: Copper Cleaned
0408124-02	1st Prep: Copper Cleaned
0408124-03	1st Prep: Copper Cleaned
0408124-04	1st Prep: Copper Cleaned
0408124-05	1st Prep: Copper Cleaned
0408124-06	1st Prep: Copper Cleaned
0408124-07	1st Prep: Copper Cleaned
0408124-08	1st Prep: Copper Cleaned
0408124-09	1st Prep: Copper Cleaned
0408124-10	1st Prep: Copper Cleaned
0408124-11	1st Prep: Copper Cleaned
0408124-12	1st Prep: Copper Cleaned
0408124-13	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-14	1st Prep: Copper Cleaned
0408124-15	1st Prep: Copper Cleaned
SS090704B03	1st Prep: Copper Cleaned
SS090704BS03	1st Prep: Copper Cleaned
SS090704BSD03	1st Prep: Copper Cleaned

Woods Hole Group Environmental Laboratories
Batch Prep Spike Report

09/07/2004 0408124SST - OP NEWFIE Analyst: JFR Witness: MP

Lab ID	QC Type	OP NEWFIE - surr	Vol OP NEWFIE - surr	Units OP NEWFIE - surr	OP NEWFIE - spk 1	Vol OP NEWFIE - spk 1	Units OP NEWFIE - spk 1	OP NEWFIE - spk 2	Vol OP NEWFIE - spk 2	Units OP NEWFIE - spk 2
0408124-01	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-02	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-03	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-04	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-05	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-06	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-07	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-08	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-09	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-10	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-11	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-12	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-13	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-14	D	SSW083104B	100	µl				SSW090104E	100	µl
0408124-14	M	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
0408124-14	SAM	SSW083104B	100	µl				SSW090104E	100	µl
0408124-15	SAM	SSW083104B	100	µl				SSW090104E	100	µl
SS090704B03	B	SSW083104B	100	µl				SSW090104E	100	µl
SS090704BS03	BS	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl
SS090704BSD03	BSD	SSW083104B	100	µl	SLW090104G	100	µl	SSW090104E	100	µl

Test: NEWFIE

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW083104B

Conc. 10 ug/ml-PAH 500 ug/mL-SHC

Test: NEWFIE

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SSW090104E

Conc. 10 ug/ml

Test: NEWFIE

Standard Type: *Surrogate* / *LCS* / *MS-MSD*

LFB / *Other* _____

ID# SLW090104G

Conc. 10 ug/ml-PAH 500 ug/mL-SHC

Woods Hole Group Internal Std Tracking Form

Project Name: DEREKTOR
ETR: 0408124ST

Lab ID	Extract Vol (uL)	Standard Drum Volume	Vol is Added (uL)	Pre-Injection Vol (uL)[1]	Final Volume Equivalent	Spiked By	Wtlnd By	Aliquot 1 Removed (uL)	Aliquot 2 Removed (uL)	Date
0408124-01	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-02	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-04	900	SSWO83104D 1OF3	100	1000	10	MAL	RPR	500	500	9/13/04
0408124-05	900	SSWO83104D 1OF3	100	1000	4	MAL	RPR	500	500	9/13/04
0408124-06	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-07	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-08	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-09	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-10	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-11	900	SSWO83104D 1OF3	100	1000	20	MAL	RPR	500	500	9/13/04
0408124-12	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-13	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
0408124-14	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-14D	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-14MS	900	SSWO83104D 1OF3	100	1000	5	MAL	RPR	500	500	9/13/04
0408124-15	900	SSWO83104D 1OF3	100	1000	2.5	MAL	RPR	500	500	9/13/04
SS090704B03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
SS090704BS03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04
SS090704BSD03	900	SSWO83104D 1OF3	100	1000	2	MAL	RPR	500	500	9/13/04

[1] Includes Internal Std

Gravimetric Determination For Column

Analyst: JR
Date: 9/11/04

BATCH: 0408124G

Entered by: JR
Verified by: RPR

ETR #	Sample #	QC (MB, LCS, D)	Final Volume of Extract (ul)	Aliquot Removed #1 (ul)	Aliquot Removed #2 (ul)	Aliquot Weight #1 (mg)	Aliquot Weight #2 (mg)	Total Extract Oil Weight (mg)	Volume Removed For Column (ul)	Oil to Column (mg)	Dilution Factor	QC (%R, RPD)
		LCS	10000	50	NA	0.241	NA	48.20	NA	NA	NA	96%
0408124	1		2000	50	NA	0.412	NA	16.48	500	4.12	4.00	
0408124	2		2000	50	NA	0.561	NA	22.44	500	5.61	4.00	
0408124	3		2000	50	NA	0.216	NA	8.64	1000	4.32	2.00	
0408124	4		2000	50	NA	1.256	NA	50.24	200	5.02	10.00	
0408124	5		2000	50	NA	0.389	NA	15.56	500	3.89	4.00	
0408124	6		2000	50	NA	0.575	NA	23.00	400	4.60	5.00	
0408124	7		2000	50	NA	0.151	NA	6.04	1000	3.02	2.00	
0408124	8		2000	50	NA	0.110	NA	4.40	1000	2.20	2.00	
0408124	9		2000	50	NA	0.068	NA	2.72	1000	1.36	2.00	
0408124	10		2000	50	NA	0.077	NA	3.08	1000	1.54	2.00	
0408124	11		2000	50	NA	1.940	NA	77.60	100	3.88	20.00	
0408124	12		2000	50	NA	0.120	NA	4.80	1000	2.40	2.00	
0408124	13		2000	50	NA	0.110	NA	4.40	1000	2.20	2.00	
0408124	14		2000	50	NA	0.720	NA	28.80	400	5.76	5.00	
0408124	14	D	2000	50	NA	0.575	NA	23.00	400	4.60	5.00	22%
0408124	14	MS	2000	50	NA	0.586	NA	23.44	400	4.69	5.00	
0408124	15		2000	50	NA	0.295	NA	11.80	800	4.72	2.50	

Total Extract Oil Weight (mg) = (Final Volume of Extract / Aliquot Removed) * Aliquot Weight
Sample Weight (mg/mL) = 20 * Aliquot Weight (mg)
LCS TV = 5 mg/mL

Oil to Column = Total Extract Oil Weight (mg) / Dilution Factor
Dilution Factor = Final Volumne of Extract (ul) / Volume Removed For Column (ul)

TEMPLATE: GravimetricT.XLT
Duplicates should agree within +/- 10%.

336

```
   Sequence Name: C:\MSDChem\3\sequence\S209240401.S
         Comment:
        Operator: NLJr
       Data Path: C:\MSDChem\2\DATA\SEPT24\
Top                  Pre-Seq Cmd:
Instrument Control   Pre-Seq Cmd:
Data Analysis        Pre-Seq Cmd:

Top                 Post-Seq Cmd:
Instrument Control  Post-Seq Cmd:
Data Analysis       Post-Seq Cmd:

   Method Sections To Run     On A Barcode Mismatch
    (X) Full Method             (X) Inject Anyway
    ( ) Reprocessing Only       ( ) Don't Inject

   ----------------------------------------------------------------------
   Line                    Sample Name/Misc Info
 1) Sample          1
     Datafile           PRIMER01
     Method             MS2SHC092404REV02
 2) Sample          2
     Datafile           IB209240401
     Method             MS2SHC092404REV02
 3) Sample          3
     Datafile           I209240401
     Method             MS2SHC092404REV02
 4) Sample          4
     Datafile           I209240402
     Method             MS2SHC092404REV02
 5) Sample          5
     Datafile           I209240403
     Method             MS2SHC092404REV02
 6) Sample          6
     Datafile           I209240404
     Method             MS2SHC092404REV02
 7) Sample          7
     Datafile           I209240405
     Method             MS2SHC092404REV02
 8) Sample          8
     Datafile           IB209240402
     Method             MS2SHC092404REV02
 9) Sample          9
     Datafile           ANS209240401
     Method             MS2SHC092404REV02
10) Sample         10
     Datafile           Q209240401
     Method             MS2SHC092404REV02
11) Sample         11
     Datafile           C209240401
     Method             MS2SHC092404REV02
12) Sample         12
     Datafile           IB209240403
     Method             MS2SHC092404REV02
13) Sample         13
     Datafile           SW090104B11
     Method             MS2SHC092404REV02
14) Sample         14
     Datafile           SW090104BS07
     Method             MS2SHC092404REV02
```

15) Sample 15
Datafile SW090104BSD07
Method MS2SHC092404REV02
16) Sample 16
Datafile 0408122-04
Method MS2SHC092404REV02
17) Sample 17
Datafile IB209240404
Method MS2SHC092404REV02
18) Sample 18
Datafile C209240402
Method MS2SHC092404REV02
19) Sample 19
Datafile IB209240405
Method MS2SHC092404REV02
20) Sample 20
Datafile SS090704B02
Method MS2SHC092404REV02
21) Sample 21
Datafile SS090704BS02
Method MS2SHC092404REV02
22) Sample 22
Datafile SS090704BSD02
Method MS2SHC092404REV02
23) Sample 23
Datafile 0408123-01
Method MS2SHC092404REV02
24) Sample 24
Datafile 0408123-02
Method MS2SHC092404REV02
25) Sample 25
Datafile 0408123-03
Method MS2SHC092404REV02
26) Sample 26
Datafile 0408123-04
Method MS2SHC092404REV02
27) Sample 27
Datafile 0408123-05
Method MS2SHC092404REV02
28) Sample 28
Datafile 0408123-06
Method MS2SHC092404REV02
29) Sample 29
Datafile 0408123-07
Method MS2SHC092404REV02
30) Sample 30
Datafile IB209240406
Method MS2SHC092404REV02
31) Sample 31
Datafile C209240403
Method MS2SHC092404REV02
32) Sample 32
Datafile IB209240407
Method MS2SHC092404REV02
33) Sample 33
Datafile 0408123-08
Method MS2SHC092404REV02
34) Sample 34
Datafile 0408123-09
Method MS2SHC092404REV02

35) Sample 35
Datafile 0408123-10
Method MS2SHC092404REV02
36) Sample 36
Datafile 0408123-11
Method MS2SHC092404REV02
37) Sample 37
Datafile 0408123-11D
Method MS2SHC092404REV02
38) Sample 38
Datafile 0408123-11M
Method MS2SHC092404REV02
39) Sample 39
Datafile 0408123-12
Method MS2SHC092404REV02
40) Sample 40
Datafile 0408123-13
Method MS2SHC092404REV02
41) Sample 41
Datafile 0408123-14
Method MS2SHC092404REV02
42) Sample 42
Datafile 0408123-15
Method MS2SHC092404REV02
43) Sample 43
Datafile IB209240408
Method MS2SHC092404REV02

Line	Type	Vial	DataFile	Method	Sample Name
44)	Sample	44			
	Datafile		C209240404		
	Method		MS2SHC092404REV02		
45)	Sample	45			
	Datafile		IB209240409		
	Method		MS2SHC092404REV02		
46)	Sample	46			
	Datafile		SS090704B03		
	Method		MS2SHC092404REV02		
47)	Sample	47			
	Datafile		SS090704BS03		
	Method		MS2SHC092404REV02		
48)	Sample	48			
	Datafile		SS090704BSD03		
	Method		MS2SHC092404REV02		
49)	Sample	49			
	Datafile		0408124-01		
	Method		MS2SHC092404REV02		
50)	Sample	50			
	Datafile		0408124-02		
	Method		MS2SHC092404REV02		
51)	Sample	51			
	Datafile		0408124-03		
	Method		MS2SHC092404REV02		
52)	Sample	52			
	Datafile		0408124-04		
	Method		MS2SHC092404REV02		
53)	Sample	53			
	Datafile		0408124-05		
	Method		MS2SHC092404REV02		
54)	Sample	54			
	Datafile		0408124-06		
	Method		MS2SHC092404REV02		
55)	Sample	55			
	Datafile		0408124-07		
	Method		MS2SHC092404REV02		
56)	Sample	56			
	Datafile		IB209240410		
	Method		MS2SHC092404REV02		
57)	Sample	57			
	Datafile		C209240405		
	Method		MS2SHC092404REV02		
58)	Sample	58			
	Datafile		IB209240411		
	Method		MS2SHC092404REV02		
59)	Sample	59			
	Datafile		0408124-08		
	Method		MS2SHC092404REV02		
60)	Sample	60			
	Datafile		0408124-09		
	Method		MS2SHC092404REV02		
61)	Sample	61			
	Datafile		0408124-10		
	Method		MS2SHC092404REV02		
62)	Sample	62			
	Datafile		0408124-11		

```
     Method              MS2SHC092404REV02
63)  Sample         63
     Datafile            0408124-12
     Method              MS2SHC092404REV02
64)  Sample         64
     Datafile            0408124-13
     Method              MS2SHC092404REV02
65)  Sample         65
     Datafile            0408124-14
     Method              MS2SHC092404REV02
66)  Sample         66
     Datafile            0408124-14D
     Method              MS2SHC092404REV02
67)  Sample         67
     Datafile            0408124-14M
     Method              MS2SHC092404REV02
68)  Sample         68
     Datafile            0408124-15
     Method              MS2SHC092404REV02
69)  Sample         69
     Datafile            IB209240412
     Method              MS2SHC092404REV02
70)  Sample         70
     Datafile            C209240406
     Method              MS2SHC092404REV02
71)  Sample          1
     Datafile            JEFFTEST01
     Method              MS2SHC092404REV02
72)  Sample          2
     Datafile            JEFFTEST02
     Method              MS2SHC092404REV02
73)  Sample          2
     Datafile            JEFFTEST03
     Method              MS2SHC092404REV02
```

9/24/04

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TOTAL ORGANIC CARBON

Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-08-082604**
Matrix: **Sediment**
Percent Solid: **40.2**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-01**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.5**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.7**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-04-082604**
Matrix: **Sediment**
Percent Solid: **36.8**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-02**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.9**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.9**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-20-082604**
Matrix: **Sediment**
Percent Solid: **37.7**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-03**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.4**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.7**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-27-082604**
Matrix: **Sediment**
Percent Solid: **50.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-04**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.4**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-31-082604**
Matrix: **Sediment**
Percent Solid: **37.6**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-05**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.5**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-11-082604**
Matrix: **Sediment**
Percent Solid: **48.5**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-06**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.4**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.4**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-32-082604**
Matrix: **Sediment**
Percent Solid: **38.7**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-07**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.5**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-36-082604**
Matrix: **Sediment**
Percent Solid: **79.5**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-08**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.50**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.47**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CC01-082604**
Matrix: **Sediment**
Percent Solid: **80.9**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-09**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.62**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.58**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CC02-082604**
Matrix: **Sediment**
Percent Solid: **80.3**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-10**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.51**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.47**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-JPC01-082604**
Matrix: **Sediment**
Percent Solid: **80.0**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-11**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.62**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.69**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-JPC03-082604**
Matrix: **Sediment**
Percent Solid: **79.0**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-12**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.31**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.30**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-DUP03-082604**
Matrix: **Sediment**
Percent Solid: **79.9**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-13**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.30**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.39**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH01-082604**
Matrix: **Sediment**
Percent Solid: **42.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.7**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.6**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form I
Duplicate
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH01-082604**
Matrix: **Sediment**
Percent Solid: **42.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 D**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**1.6**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**1.8**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form VI
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH01-082604**
Matrix: **Sediment**
Percent Solid: **42.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 D**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Sample Result	Duplicate Result	Unit	Percent RPD	RPD Limit
Total Organic Carbon (Run 1)	**1.7**	**1.6**	%	3	25
Total Organic Carbon (Run 2)	**1.6**	**1.8**	%	12	25

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

09/13/04 13:44

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

Form I
Matrix Spike
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH01-082604**
Matrix: **Sediment**
Percent Solid: **42.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-14 M**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**2.8**	S	0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**4.2**	S	0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable
S - Spike compound.

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Form VA
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH01-082604**
Matrix: **Sediment**
Percent Solid: **42.4**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **See Below**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Lab ID:	0408124-14		0408124-14		
	Sample		Matrix Spike		% Recovery
Parameter	**Conc.**	**Unit**	**Conc.**	**% Recovery**	**Limits**
Total Organic Carbon (Run 1)	1.7	%	2.8	96	75-125
Total Organic Carbon (Run 2)	1.6	%	4.2	111	75-125

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

09/13/04 13:49

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Form I
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **DSY-SD-CH02-082604**
Matrix: **Sediment**
Percent Solid: **74.5**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **0408124-15**
Date Collected: **08/26/04**
Date Received: **08/31/04**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	**0.76**		0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	**0.75**		0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable

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Form III
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **WS091004B12**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Unit	Analytical Method	Analyst
Total Organic Carbon (Run 1)	0.01	U	0.01	1	09/10/04	%	9060	JAD
Total Organic Carbon (Run 2)	0.01	U	0.01	1	09/10/04	%	9060	JAD

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form VII
Standard Reference Material 1944
Inorganics

Client: **NewFields Environmental Forensics Practice**
Project: **Derecktor Shipyard**
Case: **N/A** SDG: **N/A**
Client ID: **SRM 1944**
Matrix: **Sediment**
Percent Solid: **100**

Lab Code: **MA00030**
ETR: **0408124**
Lab ID: **WS091004L194401**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Conc.	% Recovery	% Recovery Limits
Total Organic Carbon (Run 1)	4.6	105	75-125
Total Organic Carbon (Run 2)	4.6	105	75-125

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

09/13/04 13:49

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288, whale@whgrp.com

CHAIN OF CUSTODY RECORDS

~~040807~~ 0408124

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Page 2 of 3

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/30/04

Carrier: Fed Ex

Airbill No.: 8455 0072 7886

No. of Coolers: 1

Container Type	Container Type	Container Type	Container Type	Container Type
8 oz amber				

Analysis	Analysis	Analysis	Analysis	Analysis
Forensic TPH/PAH				

Preservative	Preservative	Preservative	Preservative	Preservative
Ice				

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Preservative
	Sed	8/26 0920	DSY-SD-29-082604			1
		1000	-05-			1
		1005	-DUP02-			1
-1		1025	-08-			1
-2		1040	-04-			1
-3		1110	-20-			1
-4		1130	-27-			1
-5		1150	-31-			1
-6		1210	-11-			1
-7		1240	-32-			1
-8		1305	-36-			1
-9	Sed	8/26 1350	DSY-SD-CC01-082604			1

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400	Fed Ex	(YES) NO	
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	
Fed Ex	8/31/04 9:30	K Bates		

Tt NUS Form 0022

365

№ 03048

0408124

TETRA TECH NUS, INC.

ANALYTICAL SERVICE
Packing List/Chain-of-Custody

Case No.

Subcontract No.

Project No. 1611-0522

Laboratory Name: Woods Hole Group Lab

Sampler Signatures: Kevin O'Neill

Date Shipped: 8/30/04

Carrier: FedEx

Airbill No.: 8455 0072 7886

No. of Coolers: 1

Sample Number	Matrix	Date/Time (2004)	Sample Location	Tag Number(s)	QC	Container Type: 8oz amber	Container Type:	Container Type: 1 Liter Amber	Container Type:	Container Type:
						Analysis: Forensic PAH/TPH	Analysis:	Analysis: Forensic PAH/TBH	Analysis:	Analysis:
						Preservative: Ice	Preservative:	Preservative: Ice	Preservative:	Preservative:
-10	Sed	8/26 1410	DSY-SD-CC02-082604			1				
-11		1440	JPC01-			1				
-12		1515	JPC03-			1				
-13		1526	DUP03			1				
-14		1540	CH01		QC	2		~~2~~ KTO		extra vol.
-15	Sed	8/26 1600	CH02-082604			1		~~1~~ KTO		
	Aq	8/25 1627	RB01-082504					1		
	Aq	8/26 1930	RB02-082604					1		
	Aq	8/26 1950	RB03 082604					1		
	Aq	8/27 1030	DSY-SD-FB01-082704					1		
			KTO 8/30/04							

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipment for Case Complete?	Remarks
Kevin O'Neill	8/30/04 1400	Fed Ex	YES NO	Use DSY-SD-09-082604 and DSY-SD-CH01-082604 for Lab QC
Relinquished By: (Signature)	**Date/Time**	**Received for Laboratory By:**	**Date/Time**	
Fed Ex	8/31/04 9:30	K Bates		

TNUS Form 0022

№ 03049

Sample Receipt Checklist

Client: NEWFE		**Receipt Date:** 8/31/04	
Project: DeRecktor Shipyard		**Log-in Date:**	
ETR #: 0408124		**Inspection by:** MG / KJB	**Login by:**

ALL SECTIONS BELOW MUST BE COMPLETED

Comments / Notes

Were samples shipped? (Yes, FedEx) / UPS / Other:_____
No, WHG Courier pick-up / Hand delivered

Is bill of lading retained? Yes, Tracking #: Attached
No, Unavailable / NA

Number of coolers received for this project delivery: 1

Indicate cooler temperature upon opening (if multiple coolers, record all temps):

Note: If all coolers are 2-6°C, use one checklist, if NOT, use separate checklists and note all samples received *above* 6°C.

Cooler 1:
Temperature(s) taken from: 6° IR Gun, 6° Temp. Blank, / NA

Were samples received on ice? Yes / No

Chain-of-Custody present? (Yes) / No
Complete? (Yes) / No

Custody seals present on Cooler? (Yes) / No
on Bottles? Yes / (No)
Intact? (Yes) / No / NA
Note: Affix custody seals to back of this page.

Were sample containers intact? Yes / (No) If No, list samples: →

Did VOA/VPH waters contain headspace (>5mm)? Yes / No / (NA) If Yes, list samples: →

Were 5035 VOA soils, or VPH soils, *covered* with MeOH? Yes / No / (NA)
If No, list samples: →

Was a sufficient amount of sample received for each test indicated on the COC?
(Yes) / No If No, list samples: →

If chemical preservation is appropriate -
Were samples field preserved? Yes / No / (NA)
☐ C=HCl ☐ M=MeOH ☐ S=H_2SO4
☐ H=NaOH ☐ N=HNO_3 ☐ Other:_____ ☐ U= Unknown

Preservation (pH) verified at lab for *EVERY* bottle? (Not: VOA / VPH / Sulfide)
YES: <2 or >12 (CN) or NO (NA)
If No, why?:

Were samples received within hold time? (Yes) / No If No, list samples: →

Discrepancy between samples rec'd & COC ? Yes / (No) If Yes, list samples: →

Was the Project Manager notified of any other problems? Yes / No / (NA)

Project Manager Acknowledgement: BMP Date: 9/1/04

Sample storage refrigerator #: C3

Sample storage freezer #:_____

Cooler 2:_____ Cooler 3:_____
Cooler 4:_____ Cooler 5:_____
Cooler 6:_____ Cooler 7:_____

More:_____

2 jars had cracked lid (1 ea each)
DSY-SD03-082604
DSY-SD 28-082504

Chemical preservation OK for ALL samples?
Yes / No / (N/A)

If No, list samples below:

Please use back for any additional notes!

Woods Hole Group Environmental Laboratories
Raynham, Massachusetts

f:\user\qa\forms\chklist\sample receipt.doc 2/4/03

This portion can be removed for recipient's records.

8/30/04 FedEx Tracking Number 845900727886

K. O Neill Phone 978 658-7899

TETRA TECH NUS INC

55 JONSPIN RD

Dept./Floor/Suite/Room

WILMINGTON State MA ZIP 01887-1020

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APPENDIX F

RESPONSE TO COMMENTS TO DRAFT REPORT (7/12/05)

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
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JUL 27 2005
TETRA TECH NUS, INC.
WILMINGTON, MA 01887-1020

IN REPLY REFER TO
5090
Code EV23/CF
July 12, 2005

Ms. Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section
USEPA Region 1
1 Congress Street, Suite 1100
Boston MA, 02114-2023

Kenneth Finkelstein, Ph.D.
National Oceanic and Atmospheric Admin.
National Ocean Service
Office of Response & Restoration
Coastal Protection and Restoration Division
c/o EPA Office of Site Remediation and Restoration (HIO)
1 Congress Street
Boston, MA 02114

Dear Ms. Keckler/ Dr. Finkelstein:

SUBJECT: RESPONSE TO COMMENTS, DRAFT WORK PLAN FOR SEDIMENT EVALUATION, FORMER ROBERT E. DERECKTOR SHIPYARD, NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND

The Navy's responses to comments from the USEPA and NOAA are provided as enclosures (1) and (2), respectively. Please note that RIDEM has not provided any comments on the draft report, which was submitted April 27, 2005. Based on the enclosed responses, we will finalize the draft report.

You will recall that this sediment evaluation was conducted to update information available for the Coddington Cove area near the former Derecktor Shipyard and possible update of the Feasibility Study for this site if appropriate.

If you have any questions, please do not hesitate to contact me at (610) 595-0567 extension 142.

Sincerely,

CURTIS A. FRYE, P.E.
Remedial Project Manager
By direction of the
Commanding Officer

5090
Code EV23/CF
July 12, 2005

Enclosures:
1. Responses to USEPA Comments, Draft Report - Marine Sediment Sampling and Analysis, Formre Derecktor Shipyard, Site 19, Naval Station Newport, RI, April 2005 (Comments Dated May 31, 2005)

2. Responses to NOAA Comments, Draft Report - Marine Sediment Sampling and Analysis, Formre Derecktor Shipyard, Site 19, Naval Station Newport, RI, April 2005 (Comments Dated June 10, 2005)

Copy to:
P. Kulpa, RIDEM
C. Mueller, NSN
J. Stump, Gannett Fleming
S. Parker, TtNUS

RESPONSES TO COMMENTS FROM THE USEPA
DRAFT REPORT – MARINE SEDIMENT SAMPLING AND ANALYSIS
FORMER DERECKTOR SHIPYARD, SITE 19, NAVSTA NEWPORT
Comments Dated May 31, 2005

General Comments:

1. *The report recognizes that three samples were not collected as proposed in the work plan. While a replacement location was selected for the reference sample DSYJPC-02, no replacement locations were selected for the other two locations. The Work Plan rationale for targeting DSY-07 was "Near stormwater outfall." The rational for DSY-102 was "end of Pier 2." The importance of these proposed locations should be reviewed to determine if the lack of a sample at the locations constitutes an important data gap.*

Response: Samples were requested for locations close to Pier 1 and 2 by RIDEM, and station 07 was thought to be of a lower priority, and was therefore moved to cover one of these positions. Some data from the wetland that discharges through the storm water outfall in Coddington Cove is now available from the soil sampling effort conducted there in 2004.

2. *A couple other samples were collected in locations that, while in the general area proposed, do not match those shown in the Work Plan. Sample DSY104 was collected northwest of DSY02, although the proposed location was southeast of DSY02. In addition, DSY103 was collected just north of Pier 1, near the shore. The proposed location was further from shore. While these apparently minor shifts in sample locations may still meet the data requirements, the changes should be discussed in the report along with an assessment of any unmet data needs.*

Response: Samples near Pier 1 were adjusted at the request of RIDEM as described above. In addition, other adjustments may have been necessary to accommodate the presence of the aircraft carriers at Pier 1.

3. *Turbidity data appear to have been collected as proposed in the Work Plan. The results suggest that ship movements disturbed sediments, particularly at Pier 2, but other factors did also, as evidenced by high turbidity readings measured during times with no ship movements. The results are accurately summarized but the report does not present information that allows a review of the quality of the data; notes on maintenance and calibration of the instruments are not evident in the report. In future documents, please provide documentation of any maintenance (cleaning and debris removal) and calibration activities during the monitoring period.*

Response: Instruments were cleaned weekly and checked for functionality as needed. This information can be added to the report.

4. *The data validation reports for inorganics include a general endorsement that the data are considered acceptable for use as qualified despite some of the problems discussed. The organics data validation reports do not include such an endorsement. Many of the organics results indicate some data quality problems. These should be further evaluated. For example, the report for SDG C1041 (page 207 of 1348 as numbered by AdobeReader) indicates that problems with Preservation and Technical Holding Times may bias results low and that low recoveries of Internal Standards may bias results low. These data quality issues should be reviewed by a data validator.*

Response: A Tier 2 validation was conducted in accordance with Region I guidelines and with the work plan. After such a validation, it is implied that the data is acceptable for use as

qualified. Data not meeting the validation criteria would be rejected, shown by values qualified with an "R".

5. *Data are presented in Appendix C for many more metals than are shown in Table 4-1. Because the data have been collected and are available, they should be reviewed and presented to ensure that no significant hits were found for some of the metals that may not be the focus of the current investigation.*

Response: Comment noted. The data will be reviewed and significant concentrations of other contaminants found will be identified.

Specific Comments:

1. p. 3-6. §3.1 *The text at the top of the page stated that "...All stations that had previous sample data were located to within three meters of the former target coordinates using the dGPS...." The GPS data in Appendix B indicate that sample locations were generally within three meters of the previous sample locations. One exception was DSY-08, which appears to be a little more than 3 meters away from the proposed location. This shift should be recognized in the text.*

Response: Comment noted. This item will be reviewed and noted in the text.

2. Appendix E *The first paragraph of Section 3.1 states that surface sediment samples were collected using a petite ponar, Smith-MacIntyre grab sampler, or equivalent sampling technique. As indicated in Section 3.1 of the main text of the report, a petite ponar was used for surficial sediments. No other methods were specified. Please correct the text in the appendix to clarify that no other methods were used.*

Response: Comment noted. This item will be noted in the text.

RESPONSES TO COMMENTS FROM NOAA
DRAFT REPORT – MARINE SEDIMENT SAMPLING AND ANALYSIS
FORMER DERECKTOR SHIPYARD, SITE 19, NAVSTA NEWPORT
Comments Dated 10 June, 2005

General Observations and Comment:

Thank you for the Marine Sediment Sampling and Analysis for the Former Derecktor Shipyard, Naval Station Newport, Rhode Island dated April 2005 and Submitted by Tetra Tech NUS, Inc. Similar to those finding by EPA (dated 31 May 2005), NOAA also noted the generally lower 2004 sediment concentrations when compared to that collected for the 1996 Ecological Risk Assessment. And where concentrations remained above the RPRG such as DSY-SD-29 (Benzo(a)pyrene) and DSY-SD-27 (PCBs), both are at concentrations that are modest when compared to most industrial areas.

The 1996 Ecological Risk Assessment made note of five intermediate risk locations: Stations 27, 28, 29, 40, and 41. Only the fore-mentioned Station 27 and 29 would still remain defined as intermediate today. Most of the biological testing completed for the ERA showed little impacts to the organisms used. Exceptions were the benthic community at Station 29 and amphipod (Ampelisca abdita) toxicity at Station 27. The sea urchin (Arbacia punctulata) toxicity test using porewater showed mixed results but indicated potential toxicity at stations closest to the shore, for example Stations 27 and 29.

Because of the delay in completing a Proposed Plan for this site, conditions have improved and considerable natural attenuation has taken place. Although this occurrence is not a solution advocated by NOAA, there is obvious natural improvement. In 1996 there were 5 stations elevated above the RPRG, several considerably higher than this target level. Currently there are 4 stations above the RPRGs, three resampled stations, and one new station. All four are very close to the shoreline and none exceed the RPRG by a factor of 3.

The data indicates that further natural attenuation will likely occur. And the generally low exceedences of the RPRGs make a cleanup only marginally worthwhile. Rather, NOAA suggests that the Navy make note of the past lost use of the estuarine habitat and put the funding that would be used to remove sediment from Stations 27 and 29 (and Stations 03 and 103?) into a natural resource restoration project. NOAA could help with such planning.

NOAA believes that the long planning process resulting in an expensive removal activity are not in the best interests of the environment or the public's well being. Please let me know if you have any questions.

Response:

The Navy concurs with NOAA's observations. The reduction in contaminant concentrations in the surface sediments will ultimately result in a reduction in toxic effects to ecological receptors present. However, we believe additional discussions with the stakeholders is necessary before reaching any conclusions about possible remedial actions. One key topic of discussion should be the disposition of the aircraft carriers currently moored at Derecktor Shipyard and the possible impact they will have on the sediments if/when they are moved.