N60478.AR.001685
NWS EARLE
5090.3a

SITE INVESTIGATION REPORT SUMMARY OF FINDINGS FOR UNDERGROUND STORAGE TANK R-1 NWS EARLE NJ

7/24/1995

ENVIRO-TECH, INC.

Item # (13)
Box 1

Closure Report for:
UST R-1 000000379

SITE INVESTIGATION REPORT
SUMMARY OF FINDINGS FOR UST R-1

UNITED STATES NAVAL WEAPONS STATION - EARLE
Colts Neck, Monmouth County, New Jersey

July 24, 1995

Prepared for:

Tom Dunn
ROICC
NWS Earle
Colts Neck, New Jersey

Prepared by:

Enviro-Tech, Inc.
364 Broad Street
Keyport, New Jersey

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UST-014
2/91

FOR STATE USE ONLY

UST # _____
Date Rec'd _____
TMS # _____
Staff _____

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J. Delane
Directo

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission _____

0151003
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

UNITED STATES NAVAL WEAPONS STATION EARLE
COLTS NECK
County MONMOUTH
Telephone No. 908-866-2048

OWNER'S NAME AND ADDRESS, if different from above

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? ___ Yes ___ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) #2 HEATING OIL

C. Have any vapor hazards been mitigated? ___ Yes ___ No X N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure Approval No. NONE ISSUED

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification, and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

   a. North arrow and scale
   b. The locations of the ground water monitoring wells
   c. Location and depth of each soil sample and boring
   d. All major surface and sub-surface structures and utilities
   e. Approximate property boundaries
   f. All existing or closed underground storage tank systems, including appurtenant piping
   g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
   h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? X Yes ___ No ___ N/A

2. Were soil borings taken at the tank system closure site as prescribed? ___ Yes ___ No ___ N A

3. Attach the analytical results in tabular form and include the following information about each sample:
   a. Customer sample number (keyed to the site map)
   b. The depth of the soil sample
   c. Soil boring logs
   d. Method detection limit of the method used
   e. QA/QC Information as required

D. Ground Water Monitoring (NOT APPLICABLE)

1. Number of ground water monitoring wells installed _____

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? ___ Yes _X_ No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. N/A ppb total BTEX, N/A ppb total non-targeted VOC
2. N/A ppb total B/N, N/A ppb total non-targeted B/N
3. 66 ppm TPHC
4. N/A ppb N/A (for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface ___ Yes ___ No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes ___ No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes ___ No

D. Was the vertical and horizontal extent of contamination determined? ___ Yes ___ No ___ N/A

E. Does soil contamination intersect ground water? ___ Yes ___ No ___ N/A

VI. GROUND WATER CONTAMINATION (NOT APPLICABLE)

A. Was ground water contamination found? ___ Yes ___ No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:

1. _____ ppb total BTEX, _____ ppb total non-targeted VOC
2. _____ ppb total B/N, _____ ppb total non-targeted B/N
3. _____ ppb total MTBE, _____ ppb total TBA
4. _____ ppb _____ (for non-petroleum substance)
5. greatest thickness of separate phase product found _____
6. separate phase product has been delineated ___ Yes ___ No ___ N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. ___ Yes ___ No ___ N/A

2. The number of these wells identified is _____ .

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is _____ feet deep and screening begins at a depth of _____ feet.

E. A plan for separate phase product recovery has been included. ___Yes ___No ___N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well. ___Yes ___No ___N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. ___Yes ___No

2. The plume is suspected to continue off the property at concentrations greater than MCLs. ___Yes ___No

3. Off property access (circle one): is being sought has been approved has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) A. LEE FANKHAUSER SIGNATURE A. Lee Fankhauser

COMPANY NAME ENVIRO-TECH, INC. DATE 7/24/95
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION STATE OF NEW JERSEY CERTIFICATION NUMBER 0010953

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Steven Piniszi SIGNATURE Steven Piniszi

COMPANY NAME Central Pump & Tank DATE 9/28/95
(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITY

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1i].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete . I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2i]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

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APPENDICIES:

ATTACHMENT:

1.0 INTRODUCTION

United States Naval Weapons Station Earle (Earle) is a United States Navy ammunition depot located in Monmouth County, New Jersey. Figure 1 is an annotated United States Geological Survey 7.5 minute series (Marlboro and Long Branch Quadrangles) map showing site location, local topography, drainage, and other features. Figure 2 is a site plan showing site layout, building location, underground storage tank (UST) location, UST designation and other site features.

In light of the New Jersey Department of Environmental Protection's (NJDEP's) deadlines regarding UST upgrades, Earle decided to close a single 1,500 gallon #2 heating oil UST (designated R-1) at their facility (UST Registration #0151003).

In April, 1995, Enviro-Tech, Inc. (ETI) of Keyport, New Jersey (NJDEP Closure/Subsurface Evaluation Certification #1300239) was retained by Central Pump & Tank (CP&T) of Freehold, New Jersey (a subcontractor of Tri-State Construction, Inc. of Fort Washington, Pennsylvania), the UST removal contractors retained by Earle, to complete the NJDEP's site investigation requirements for the closure of UST R-1. ETI's activities at Earle included the preparation and submission of the UST Closure Plan Approval Application to the NJDEP, the completion of a Site Investigation in accordance with N.J.A.C. 7:26E-3.0, and the preparation and submission of a Site Investigation Report (SIR) to the NJDEP which would satisfy the requirements of the NJDEP's *Technical Requirements for Site Remediation*.

In April, 1995, Earle submitted an UST Closure Approval Application to the NJDEP for review and June 25, 1995 Earle received the UST Closure Approval for the closure of the UST R-1. A copy of the UST Closure Approval is included in Appendix I.

2.0. SITE INVESTIGATIONS

2.1 UST Decommissioning Activities

UST decommissioning and removal activities were conducted on June 26, 1995 by CP&T. UST decommissioning activities included pumping the UST free of residual product, excavating overlying soils to expose the top of the UST, cutting holes in the UST to allow access to the tank's interior, and cleaning the interior of the UST with a biodegradable degreaser. After the UST was opened for cleaning, it was noted that no residual product or bottom sludge was within the UST. The base of the UST was dry. Therefore, no residual product or bottom sludge was pumped out of the UST prior to it's removal.

Following cleaning and removal, the UST was inspected by ETI and CP&T personnel and was found to be in very good condition with no corrosion holes or signs of pitting. The UST was then trucked from Earle to Neptune Iron & Metal Recycling Co., Inc. in Neptune, N.J. for disposal. The UST disposal manifest is presented in Appendix II.

2.2 Soil Investigation

On June 26, 1995, ETI personnel (A. Lee Fankhauser - NJDEP License No. 0010953) was on-site to observe UST removal activities, to screen soil that was removed from the UST excavation, and to collect post-excavation soil samples from along the baseline and side of the former UST location.

During the removal of UST R-1 at the Earle facility, soils removed from the UST excavations were scanned for "free product contamination" in the field using a Heath Consultants, Inc. *Detecto-Pack III* flame ionization detector (FID) and/or one or more of the following methods:

Method 1 - Soil/Water Agitation

A clear jar was partially filled with the soil/fill sample. Sufficient water was added to saturate the soil and bring the water level to about 1 cm above the soil surface. The jar was sealed, and the sample was agitated by shaking. The jar was then opened to check for the presence of a sheen on the water surface. If a sheen was present, the soils were contaminated by free product. If no sheen was present, the soils were either contaminated with dissolved product or were free of contamination. The presence of a sheen was checked under various lighting conditions and backgrounds since these factors affect the visibility of the sheen.

Method 2 - Field Sorption Method

This method was used to sorb free product from contaminated soils. A sample of the soil/fill was pressed against a brown paper bag for about 10 seconds. Soils contaminated by free product resulted in a "greasy" staining of the bag. The stain is more pronounced with fuel oils than for gasoline.

The FID was calibrated prior to use with 100 parts per million (ppm) methane gas.

Soil that resulted in FID readings less than 100 ppm was considered non-impacted soil and was set aside the UST excavation to be re-used as backfill material. A total of approximately five (5) yd^3 of potentially contaminated soil was removed from over the top and side of the UST, under the former location of a 275 gallon diesel fuel above ground storage tank that was located above UST R-1 (Figure 2).

Soils underlying the surface in the vicinity of UST R-1 consisted of the following:

0.0′ - 1.0′ Brown Loamy SAND;
1.0′ - 4.5′ Tan-white medium to fine Silty SAND;
4.5′ - 5.0′ Black-brown CLAY - high organic content.

Ground water was observed within the excavation following the removal of the single UST and potentially contaminated soil at a depth of approximately five (5) feet below grade.

Following the removal of UST R-1 and potentially contaminated soil, a total of four (4) post-excavation soil samples (PE-1 through PE-4) were collected from the sidewalls of the UST excavation, from a depth of approximately 4.5 feet below grade from approximately six (6) inches above the ground water/soil interface. Post-excavation soil samples were collected from the excavation from locations that corresponded with the former UST's ends and sides.

Post-excavation soil samples collected from UST R-1's excavation were submitted to Veritech Environmental and Analytical Services (Veritech), NJDEP Certification #14622, for analysis of total petroleum hydrocarbons (TPH), volatile organic compounds plus ten (10) unknown peaks (VO+10) and total xylene. The TPH analyses were to be completed by the laboratory first. If the TPH results indicated a TPH concentration greater than 1,000 ppm in any of the post-excavation soil samples collected from the single UST excavation, 25% of those samples would be analyzed for the additional parameters VO+10 and total xylene. If the results showed no TPH concentration greater than 1,000 ppm, no additional analyses were to be required.

Quality assurance quality control samples for this sampling event included a field blank sample. The field blank was prepared in the field, on the day of the post-excavation soil sampling event, by pouring laboratory de-ionized water over pre-cleaned soil sampling tools and into laboratory supplied sample collection bottles. The field blank sample then accompanied the post-excavation soil samples to the laboratory for analysis of VO+10 and total xylene and was to be analyzed only in the event that VO+10 and total xylene were required to be analyzed on the post-excavation soil samples.

A chain of custody accompanied post-excavation soil samples from the time of collection to the time they were received by the appointed lab for analyses.

The locations and designations of post-excavation soil samples collected from the excavation created for the removal of UST R-1 are included in Figure 3. FID measurements collected prior to the collection of post-excavation soil samples are included in Table 1.

Following the collection of post-excavation soil samples from the excavation created for the removal of UST R-1 and potentially contaminated soil, the excavation was backfilled with certified clean fill. The clean fill manifest for the material used as backfill within the UST excavation is included in Appendix II.

3.0 RESULTS

3.1 Chemical Analysis of Soil

A total of four (4) post-excavation soil samples were collected from the sidewalls of the UST excavation (post-excavation soil sample locations PE-1 through PE-4) from a depth of approximately 4.5 feet below grade (approximately 6" above the ground water/soil interface). The analytical results of the post-excavation soil samples collected from these sample locations indicated that post-excavation soil sample PE-1 contained a TPH concentration of 55 ppm, post-excavation soil sample PE-2 contained a TPH concentration of 66 ppm, post-excavation soil sample PE-3 contained a TPH concentration of 38 ppm, and post-excavation soil sample PE-4 contained a TPH concentration of 33 ppm.

Results of the post-excavation soil sampling program for UST R-1 are included in Table 2. The laboratory analytical package for the Site Investigation is included in Appendix III.

As no post-excavation soil sample resulted in a TPH concentration greater than 1,000 ppm, no additional sample parameters were required on the soil samples and the field blank sample was not run by the laboratory.

4.0 CONCLUSIONS

After reviewing the data collected during Earle's Site Investigation, the following conclusions may be made:

- A single formerly existing 1,500 gallon #2 heating oil UST at the Earle facility was removed on June 26, 1995;
- Upon inspection, the UST was noted to be in good condition with no apparent corrosion holes or pitting;
- A total of approximately five (5) yd^3 of potentially contaminated soil was removed from the UST excavation following the USTs removal;
- Ground water was observed within the UST excavation at a depth of approximately five (5) feet below grade following UST and soil removal, and post-excavation soil sample collection;
- A total of four (4) post-excavation soil samples were collected from the sidewalls of the excavation from a depth of approximately 4.5 feet below grade for analysis of TPH and, if necessary, VO+10, and total xylene;
- None of the four (4) post-excavation soil samples collected from the base of the UST excavation resulted in a TPH concentration of greater than 66 ppm;
- As no post-excavation soil sample resulted in a TPH concentration greater than 1,000 ppm, no additional analyses were required.

The Underground Storage Tank Site Assessment Summary is attached with this report.

FIGURES

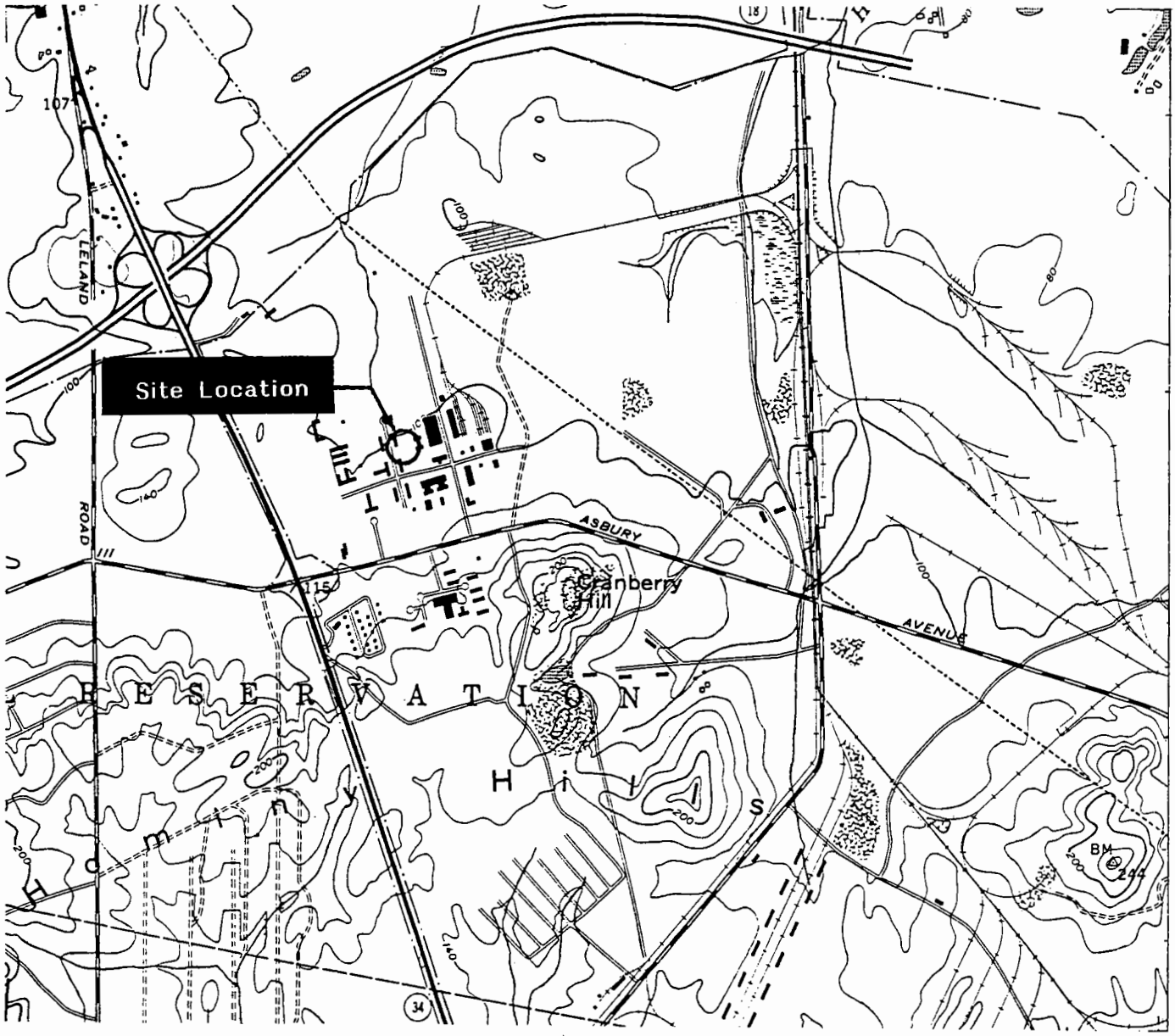

Figure 1

SITE LOCATION PLOT

United States Naval Weapons Station - Earle

Colts Neck, New Jersey

SCALE 1:24000

1 MILE

7000 FEET

MN GN

12° 213 MILS

0°27' 8 MILS

Enviro-Tech Inc.
364 Broad Street
Keyport, NJ 07735-1619

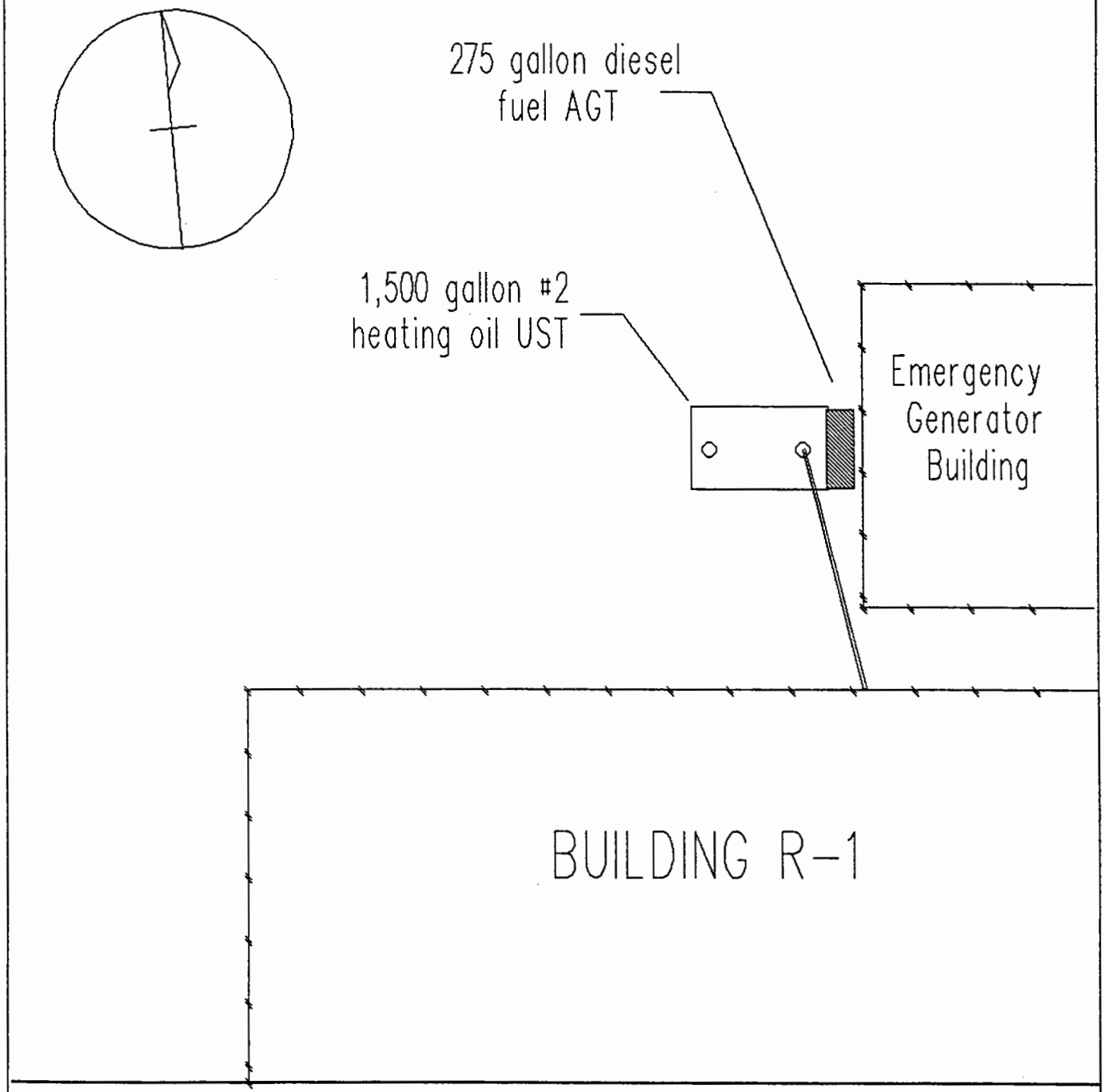

Figure 2

SITE PLAN

United States Naval Weapons Station - Earle

UST R-1

Colts Neck, Monmouth County, New Jersey

Scale: 1" = 10'

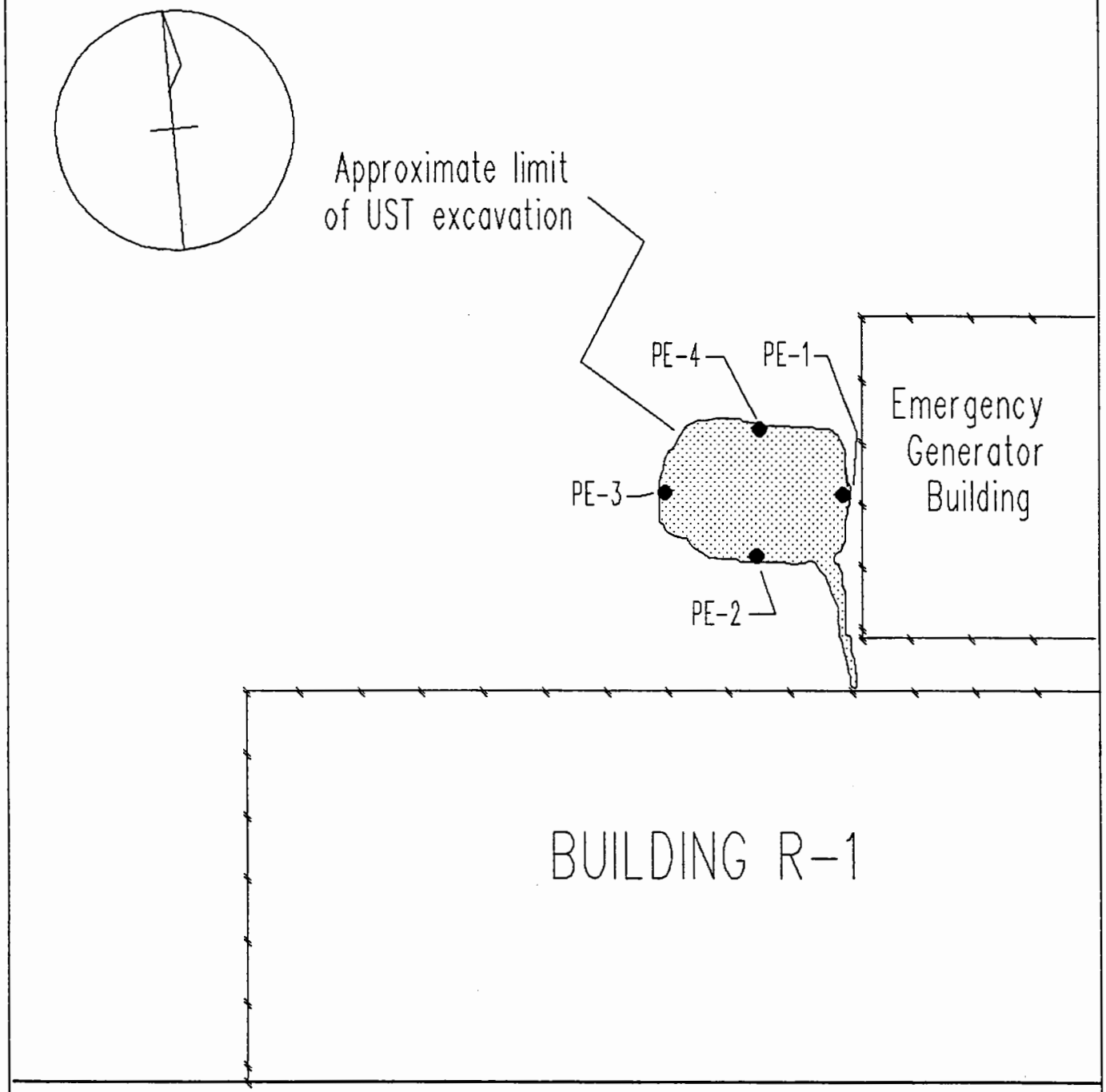

Figure 3

Post-excavation Soil Sample Location Plot
United States Naval Weapons Station - Earle

UST R-1

Colts Neck, Monmouth County, New Jersey

Scale: 1" = 10'

TABLES

TABLE 1

SUMMARY OF FID READINGS COLLECTED FROM POST-EXCAVATION SOIL SAMPLE LOCATIONS
United States Naval Weapons Station Earle
Monmouth County, New Jersey

Underground Storage Tank R-1

(June 26, 1995)

SAMPLE #	FID READING (ppm)
PE-1	53
PE-2	90
PE-3	5
PE-4	9

TABLE 2

SUMMARY OF TPH ANALYTICAL DATA FOR #2 HEATING OIL UST POST-EXCAVATION SOIL SAMPLES
United States Naval Weapons Station Earle
Monmouth County, New Jersey

Underground Storage Tank R-1

(June 26, 1995)

SAMPLE #	TPH RESULT (ppm)
PE-1	55
PE-2	66
PE-3	38
PE-4	33

APPENDIX I

UST CLOSURE APPROVAL FOR R-1

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF ** CASE MANAGEMENT
CN-028, TRENTON, NJ 08625-0028

UST # 0151003

Naval Weapons Station Earle
Monmouth County
New Jersey

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C.7:14B-1 ET SEQ.:

REMOVAL OF: One (1) 5,000 gallon, #2 heating oil Underground Storage Tank (UST), designated C-38. One (1) 1,500 gallon #2 heating oil UST, designated R-1. One (1) 2,000 gallon, #2 heating oil UST, designated R-12 and one (1) 3,000 gallon #2 heating oil UST, designated C-53. Removal shall include all associated piping and appurtenances.

SITE ASSESSMENT: Samples shall be collected every five (5) feet along the centerline of each tank and one (1) every 15 feet along the appurtenant piping. Two (2) additional samples shall be taken per tank and shall be biased to the areas of highest field screened readings. Samples will be analyzed for TPHC. Analyze 25% of the samples over 1,000 ppm TPHC for VO+10. Analysis shall be biased towards the samples with the highest THPC concentrations.

ON-SITE MANAGER:
A. Lee Fankhauser

TELEPHONE:
(908)-566-2277

EFFECTIVE DATE: 6/27/95

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.

ROMAN S. LUZECKY, SECTION CHIEF,
BUREAU OF FEDERAL CASE MANAGEMENT

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▶ 1

To LEE F.	From T.E. DUNN
Dept./Agency ENVIRO-TERR	Phone # 866 2048
Fax # ~~566-2595~~	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

888 9293

APPENDIX II

UST DISPOSAL AND CLEAN FILL MANIFESTS

Neptune Iron & Metal Recycling Co., Inc.

Ferrous & Non-Ferrous Metals • Container Service
101 MEMORIAL DRIVE at 11th Avenue
NEPTUNE, N.J. 07753
(908) 774-4100

DATE 6/27/95

SOLD TO Central Pump & Tank

ADDRESS Earle Naval PHONE

QUANTITY	DESCRIPTION	PRICE
(1)	Ambiento R-1 1500 gallon oil tank — cleaned & accepted	

REFUND POLICY: Refunds will only be given if we cannot replace wrong or defective part. Deposits not refundable. Electrical items not returnable.

MQ Millington Quarry Inc.

P.O. BOX 407 • STONEHOUSE ROAD
MILLINGTON, NEW JERSEY 07946

MATERIAL TICKET

MATERIAL ORDERS (908) 580-3...
SCALE HOUSE (908) 580-3...
BILLING INQUIRIES (908) 580-3...

CUSTOMER NO.		TRUCK NO.
301837		1148

TICKET NUMBER: [illegible]

CUSTOMER NAME
CENTRAL PUMP & TANK SERV CORP

DATE	TAX CODE			
6/26/95	N	113175	01-108	D

DIRECTIONS
... 78N ... 35S 36E TO MEMORIAL ...
... STATION ASK FOR CENTRAL PUMP ...

MATERIAL DESCRIPTION
3/8 INCH CLEAN STONE

DELIVERY ADDRESS
EARLE NAVAL WEAPONS STATION
RTE 36 BELFORD

... TONS SHIPPED THIS ORDER TODAY
... LOADS SHIPPED THIS ORDER TODAY

OFFICE USE ONLY

... CARRIER SIGNATURE

ACCOUNTING

APPENDIX III

LABORATORY ANALYTICAL RESULTS

veritech
Division of Hampton-Clarke, Inc.
environmental and analytical services

ENVIRO-TECH, INC.
NJDEP REDUCED PKG

PROJECT: EARLE AMMUNITION

LAB # AA31451-AA31455

NJDEP Cert. #14622, CT Cert. # PH0671
PADER Cert. #68-463, MA Cert. #NJ386
NYDOH Cert. # 11408

47 Carey Avenue • Butler, NJ 07405
Phone: (201) 492-8744 Fax: (201) 492-1815

TABLE OF CONTENTS

SAMPLE KEY

Enviro-Tech No.	VERITECH No.
PE-1	AA31451
PE-2	AA31452
PE-3	AA31453
PE-4	AA31454
Field Blank	AA31455

Enviro-Tech Inc.

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

SAMPLER: (Signature) _____ Date Shipped 6/27/95 Carrier _____

Phone 908-888-1300 Airbill No. _____ Cooler No. _____

SHIP TO:

VERITECH

ATTENTION: _____

SEND RESULTS TO:

Client Name _____

Company ENVIRO-TECH, INC

Address 364 BROAD ST.
KEARNY, NJ

Phone 908-888-1300

PROJECT NAME EARLE AMMUNITION **PROJECT NO.** _____ **P.O. NO.** _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Military Time
		6/26/95	14:35
Relinquished by: (Signature)	Received by: (Signature)	Date	Military Time
	A. Shamsi	6/27/95	10:10
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Military Time
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Military Time

ANALYSIS REQUEST

Sample ID Number	Sample Description	Date/Time Sampled	Analysis Requested	Sample Condition Upon Receipt
2 PE-1	SOIL	6/26/95 10:20	TPH*, VOTIO, XYLENE	COOL AA31451
2 PE-2		10:32		31452
2 PE-3		10:35		31453
2 PE-4		10:37		31454
2 FIELD BLANK	AQUEOUS	10:27	VOTIO, XYLENE**	31455
	24 HOUR	ON TPH	PLEASE	

Special Instructions/Comments:

* PLEASE ANALYZE SAMPLES FOR TPH FIRST. IF RESULTS SHOW A CONC. > THAN 1,000 PPM - CALL ETI OFFICE FOR AUTHORIZATION OF ADDITIONAL ANALYSES.

** RUN FIELD BLANK ONLY IN EVENT THAT VOA'S ARE REQUIRED FOR SOIL SAMPLES

NOTE: UNUSED PORTIONS OF NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Expected Analytical T.A.T.'s: _____ Immediate Attention (200% surcharge) X RUSH (50-100% surcharge) _____ Standard

Sample Custodians Chain of Custody

000002

veritech
Division of Hampton-Clarke, Inc.
environmental and analytical services

CONDITION UPON RECEIPT FORM

Date Received 6/27/95 Filed By A.S

Client ENVIRO Lab Sample No(s) _____

CONDITION (Check Applicable Items)

_____ (1) Not enough sample sent for analysis

_____ (2) Sample(s) received broken (Specify) _____
Sample(s) received leaking (Specify) _____

_____ (3) Illegible sample number(s) or label(s) missing from bottle(s) (Specify) _____

_____ (4) Numbers on sample(s) do not correspond to information on the chain of custody record

_____ (5) No chain of custody record submitted with the samples

_____ (6) Samples received without a cooler

_____ (7) Custody seals missing or broken (circle one)

_____ (8) Holding time(s) exceeded upon receipt (List parameters _____)

_____ (9) Samples received without proper refrigeration when deemed necessary

_____ (10) Samples received without proper preservation (see Preservation Form for actual pH readings)

✓ (11) Cooler Temperature Upon Receipt (Specify) 3 C°

_____ (12) Other (Specify) _____

47 Carey Avenue • Butler, NJ 07405
Phone: (201) 492-8744 Fax: (201) 492-1815

Veritech

INTERNAL CHAIN OF CUSTODY RECORD

PARAMETER	SAMPLE No.	REMOVED FROM: COLDBOX No.	DATE	TIME (A/P)	SIGNATURE	RETURNED TO: COLDBOX No.	DATE	TIME (A/P)	SIGNATURE
TPH-GC	31203 → 211	3	6/26/95	8:31AM	[illegible]	3	6/26/95	09:27	[illegible]
Flash point	31307 + 31308	3	6/26/95	9:35hrs	[illegible]	3	6/26/95	1100hrs	[illegible]
TCLP-VO	31304 & 31305	3	6/26/95	09:45	[illegible]	3	6/26/95	09:54	[illegible]
O+G	31291	3	6/26	10:40	[illegible]	Sample Depleted	6/26/95	10:40	[illegible]
PST/PCB	31212; 31229; 31303	3	6/26/95	11:30	[illegible]	31229 Depleted 3	6/26/95	12:01	[illegible]
GC/MS	~~3012~~ [illegible] 6/26/95								
↓	31134, 31303	3	6/26/95	12:58	[illegible]				
TD-WI	31255 → 269	3	6-26-95	14:30	G Scott	3	6-26-95	15:18	G Scott
TD-Soil Hg.	31212	3	6/26/95	15:00	S. Paramathan	3	6/26/95	15:15	S. Paramathan.
GC/MS	31126, 31130	3	〃	14:22	[illegible]				
TD-WI	31255 → 269	3	6-27-95	08:50	G. Scott	3	6-27-95	08:23	G Scott
TPH 10 Solid	3141? ——— 31433	3	6/27	9:50	[illegible]				
TCLP-VO, SEMI-VO	30869, 31307, 31308	SHELF	6/27	9:30	[illegible]	3	6/27/95	10:30	[illegible]
BNA	31288	3	6/27	9:55	[illegible]	DEPLETED	6/27	9:57	[illegible]
Conduct	31299	3	6/27/95	1130hrs	[illegible]	3	6/27	1220	[illegible]
TCLP-VO	31306, 31308	3	6/27/95	12:03	[illegible]	3	6/27/95	12:24	[illegible]
TPH 10 Solid	31394 ——— 31395	3	6/27	12:00	[illegible]	3	↓	1220	[illegible]
↓	31396, 31412, 31415	↓	↓	↓	↓	3	6/27	15:40	[illegible]
PST/PCB	31292, 31293	3	6/27	12:26	[illegible]	DEPLETED	6/27	12:28	[illegible]
TCLP	31306, (31135)	3	6/27	13:00	T. Crane	3 (3)	6/27	14:15 (14:00)	T. Crane
TCLP	31303	2	6/27	13:00	T. Crane	3	6/27	13:10	T. Crane
TD-Soil	31404 → 407	Mets. Table	6-27	14:53	G. Scott	Met. Table	6-27	15:50	G Scott
TD-Soil Hg	31212	3	6/27	14:40	S. Paramathan	3	6/27	15:00	S. Paramathan.
RCN, RS, PH, ph	30869	3	6/27	15:00	[illegible]	3	6/27	1645hrs	[illegible]
% Solids	↓	↓							
TD-WATER Hg	31290	3	6/27	15:30	S. Paramathan	3	6/27	17:00	S. Paramathan
~~% Solid~~	~~31399 → 401-402~~	~~3~~	~~6/27~~	~~15:48~~	~~[illegible]~~				
TPH 10 Solid	31440, 41, 31451, 31452, 31453, 31457 TE1, TE2, TE3, TE4	CTK 6/29 3 ↓	6/27 ↓	15:48 ↓	[illegible] ↓	3 ↓	6/27 ↓	1835 ↓	[illegible]

A:\ICOCREC.DOC (Sort)

000004

(*)

Sample I.D. AA31451
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: PE-1 SOIL

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished An
%SOLIDS	86	PERCENT	06/27/95 JK
TPH-SOIL	55	mg/kg dry wt	06/28/95 JK
TPH EXTRACTION	Completed		06/27/95 JK

End of progress report on sample: AA31451

Sample I.D. AA31453
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: PE-3 SOIL

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished	Anl
%SOLIDS	81	PERCENT	06/27/95	JK
TPH-SOIL	38	mg/kg dry wt	06/28/95	JK
TPH EXTRACTION	Completed		06/27/95	JK

End of progress report on sample: AA31453

Sample I.D. AA31454
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: PE-4 SOIL

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished	Anl
%SOLIDS	79	PERCENT	06/27/95	JK
TPH-SOIL	33	mg/kg dry wt	06/28/95	JK
TPH EXTRACTION	Completed		06/27/95	JK

End of progress report on sample: AA31454

Sample I.D. AA31455
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: FIELD BLANK

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished Anl
pH (VOA VIALS)	<2	UNITS	06/29/95

End of progress report on sample: AA31455

WET CHEMISTRY ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank:	X	
2.	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		X
3.	IR Spectra submitted for all standards, blanks, & samples		X
4.	Chromatograms submitted for all standards, blanks, & samples if GC fingerprinting was conducted		
5.	Extraction Holding Time Met		X
	If not met, list number of days exceeded for each sample:		
6.	Analysis Holding Time Met		X
	If not met, list number of days exceeded for each sample:		

Additional Comments: _____

Wetlab Supervisor: _____ Date: 6/30/95

METHOD REFERENCES

Volatile Organics (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 8240.

Volatile Organics (Waters): *Federal Register*, 40 CFR Part 136, October 26, 1984, Method 624.

TCLP Volatile Organics: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 1311 and 8240.

Volatile Organics (Drinking Waters): *Methods for the Determination of Organic Compounds in Drinking Water*, EPA/600/4-88/039, Revision 3, 1989, Method 524.2.

Semivolatile Organics (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 3550 and 8270.

Semivolatile Organics (Waters): *Federal Register*, 40 CFR Part 136, October 26, 1984, Method 625.

TCLP Semivolatile Organics: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 1311, 3510 and 8270.

Pesticides (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 3550 and 8080.

Pesticides (Waters): *Federal Register*, 40 CFR Part 136, October 26, 1984, Method 608.

TCLP Pesticides: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 1311, 3510 and 8080.

TCLP Herbicides (Waters): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 1311 and 8150.

PCB's (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 3550 and 8080.

PCB's (Waters): *Federal Register*, 40 CFR, Part 136, October 26, 1984, Method 608.

PCB's (Oils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Methods 3580 and 8080.

Total Metals (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition. Methods 3020 or 3050 are used for digestion. All ICP metals are analyzed using Method 6010. Antimony, arsenic, cadmium, molybdenum, selenium and thallium are analyzed by Methods 7041, 7060, 7131, 7481, 7740 and 7841 respectively. Mercury is analyzed using the Inorganic Statement of Work, Contract Laboratory Program, Revision 2.1.

TCLP Metals: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 1311 followed by Method 3020 for digestion, Methods 6010 and 7470 for analysis.

ICP Metals (Waters): *Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91/010, June 1991, Revision 3.3, Method 200.7.

GFAA Metals & Mercury (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983. Antimony, arsenic, cadmium, lead, molybdenum, selenium, thallium and tin are

analyzed using Methods 204.2, 206.2, 213.2, 239.2, 246.2, 270.2, 279.2 and 282.2 respectively. Mercury is analyzed using Method 245.1.

Cyanide (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9010.

Cyanide (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 335.2.

Cyanide (Free): *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, Method 4500-CN-I.

Phenols (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9065.

Phenols (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method
420.1.

TPH (Soils & Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 418.1 for waters and modified 418.1 for soils using a soxhlet extraction with freon prior to analysis.

TPH Extractables: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 3510 or 3550 and Modified Method 8015.

Hexavalent Chromium (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Second and Third Editions, Methods 3060 and 7196A.

Hexavalent Chromium (Waters): *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, Method 3500-Cr D.

pH (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9040.

pH (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 150.1.

Reactive Cyanide: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Reactive Sulfide: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Ignitability: *Test Methods for Evaluating Solid Waste*, SW-848, Third Edition, Chapter Seven, Section 7.1, Ignitability.

Flashpoint: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 1010.

Conductance (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 120.1.

Residue, Filterable (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.1.

Residue, Non-Filterable (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.2.

Residue, Total (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.3.

Chloride (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 325.3.

Chloride (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9252.

Sulfide (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 376.1.

Chemical Oxygen Demand (Waters): *Hach Chemical Company*, Method 8000.

Oil & Grease (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 413.1.

TOX (Waters & Soils): *American Society for Testing & Materials (ASTM)*, D2361-91, June 1991.

2,3,7,8 - TCDD/TCDF: *Modified Contract Laboratory Program Statement of Work*, November 1992.

Sample I.D. AA31454
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: PE-4 SOIL

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished	Anl
%SOLIDS	79	PERCENT	06/27/95	JK
TPH-SOIL	33	mg/kg dry wt	06/28/95	JK
TPH EXTRACTION	Completed		06/27/95	JK

End of progress report on sample: AA31454

Sample I.D. AA31455
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARLE
CONTAIN: 2

Date collected: 06/26/95
Date submitted: 06/28/95
Due date: 07/10/95
Specification checking: off
Descript: FIELD BLANK

COL.DATE: 6/26/95

Analysis	Result	Unit	Finished Anl
pH (VOA VIALS)	<2	UNITS	06/29/95

End of progress report on sample: AA31455

WET CHEMISTRY ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank:	X	
2. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		X
3. IR Spectra submitted for all standards, blanks, & samples		X
4. Chromatograms submitted for all standards, blanks, & samples if GC fingerprinting was conducted		
5. Extraction Holding Time Met		X
If not met, list number of days exceeded for each sample:		
6. Analysis Holding Time Met		X
If not met, list number of days exceeded for each sample:		

Additional Comments: _____

Wetlab Supervisor: _____ Date: 6/30/95

METHOD REFERENCES

Volatile Organics (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 8240.

Volatile Organics (Waters): *Federal Register*, 40 CFR Part 136, October 26, 1984, Method 624.

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Cyanide (Free): *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, Method 4500-CN-I.

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Hexavalent Chromium (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Second and Third Editions, Methods 3060 and 7196A.

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pH (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9040.

pH (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 150.1.

Reactive Cyanide: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Reactive Sulfide: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Ignitability: *Test Methods for Evaluating Solid Waste*, SW-848, Third Edition, Chapter Seven, Section 7.1, Ignitability.

Flashpoint: *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 1010.

Conductance (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 120.1.

Residue, Filterable (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.1.

Residue, Non-Filterable (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.2.

Residue, Total (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 160.3.

Chloride (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 325.3.

Chloride (Soils): *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Method 9252.

Sulfide (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 376.1.

Chemical Oxygen Demand (Waters): *Hach Chemical Company*, Method 8000.

Oil & Grease (Waters): *Methods for the Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983, Method 413.1.

TOX (Waters & Soils): *American Society for Testing & Materials (ASTM)*, D2361-91, June 1991.

2,3,7,8 - TCDD/TCDF: *Modified Contract Laboratory Program Statement of Work*, November 1992.

VERITECH

47 CAREY AVE., BUTLER, NJ 07405

CT. NO: PH-0671
MADEP NO: NJ386
PADER NO: 68-463
NJDEPE NO: 14622
NYDOH NO: 11408

REPORT OF ANALYSIS

TO: ENVIRO-TECH, INC.
364 BROAD STREET
KEYPORT, N.J. 07735
(908) 888-1300

Date Collected: 06/26/95
Date Submitted: 06/28/95
Date Reported: 07/06/95
Project: EARLE

Sample I.D.		AA31451		AA31452	
Sample Description		PE-1 SOIL		PE-2 SOIL	
Analyte	**Units**	**MDL**	**Result**	**MDL**	**Result**
%SOLIDS	PERCENT	1.0	86	1.0	81
TPH-SOIL	mg/kg dry wt	23	55	25	66

Sample I.D.		AA31453		AA31454	
Sample Description		PE-3 SOIL		PE-4 SOIL	
Analyte	**Units**	**MDL**	**Result**	**MDL**	**Result**
%SOLIDS	PERCENT	1.0	81	1.0	79
TPH-SOIL	mg/kg dry wt	25	38	25	33

Sample I.D.			
Sample Description			
Analyte	**Units**	**MDL**	**Result**
%SOLIDS			
TPH-SOIL			

This report is a true report of results obtained from our tests of this material. In lieu of a formal contract document, the total aggregate liability of Veritech to all parties shall not exceed Veritech's total fee for analytical services rendered.

Chris Heltzel

Chris Heltzel - Laboratory Manager

Or

Stanley Gilewicz - Laboratory Director

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA31451
Sample Matrix: SOIL
% Solids: 86

Date Received: 6/27/95
Date Extracted: 6/27/95

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	PE-1 soil	55	1	23	6/28/95

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA31452
Sample Matrix: SOIL
% Solids: 81

Date Received: 6/27/95
Date Extracted: 6/27/95

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	PE-2 soil	66	1	25	6/28/95

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA31453
Sample Matrix: SOIL
% Solids: 81

Date Received: 6/27/95
Date Extracted: 6/27/95

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	PE-3 soil	38	1	25	6/28/95

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA31454
Sample Matrix: SOIL
% Solids: 79

Date Received: 6/27/95
Date Extracted: 6/27/95

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	PE-4 soil	33	1	25	6/28/95

INORGANIC METHOD BLANK SUMMARY

Lab Name: Veritech
Lab Codex: 14622

Blank Matrix: Soil
Units: mg/kg

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
TPH	20	385s	ND

INORGANIC METHOD BLANK SUMMARY

Lab Name: Veritech
Lab Codex: 14622

Blank Matrix: Soil
Units: mg/kg

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
TPH	20	386s	ND

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA31418 MS

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 92

Concentration Units (mg/L or mg/kg dry weight): __mg/kg_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPH-S	75-125	666		26.1		725	88		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

FORM V (PART 1) - IN ILM02.0

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA31418 MSD

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 92

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPH-S	75-125	698		26.1		725	93		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

FORM V (PART 1) - IN ILM02.0

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA31453 MS

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 81

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPH-S	75-125	732		38.2		823	84		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA31453 MSD

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 81

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPH-S	75-125	744		38.2		823	86		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

FORM V (PART 1) - IN ILM02.0

INORGANIC DUPLICATE SUMMARY

SAMPLE NO.

AA31418 DUP

Lab Name: Veritech **Sample Matrix:** SOIL

Lab Code: 14622

% Solids for Sample: 92

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
TPH-S	+/-20%	26.1		23.4		10.9		C
Total CN	+/-20%							
Phenols	+/-20%							
Reac CN	+/-20%							
Reac HS	+/-20%							
Hex Cr	+/-20%							

FORM VI - IN ILM02.0

INORGANIC DUPLICATE SUMMARY

SAMPLE NO.

AA31453 DUP

Lab Name: Veritech **Sample Matrix:** SOIL

Lab Code: 14622

% Solids for Sample: 81

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
TPH-S	+/-20%	38.2		39.6		3.67		C
Total CN	+/-20%							
Phenols	+/-20%							
Reac CN	+/-20%							
Reac HS	+/-20%							
Hex Cr	+/-20%							

FORM VI - IN ILM02.0

analysis TPH SOILS
BATCH 385
DATE: 28-Jun-95
ANALYST: JK

Q.C. DATA

	THEORETICAL VALUE PPM	RESULT PPM	% REC.
CK STD	10	10.66	107%
MBS	666.7	716.61	107%
MS #1	724.64	666	88%
MS #2	724.64	698.01	93%
SAMPLE		26.08	RPD
SAMPLE DUP		23.38	10.92%

SAMPLE #	SOLIDS FACTOR	SAMPLE WEIGHT	MG FROM CALC. CURVE	DILUT. FACTOR	TPH (PPM)	MDL DRY WT.
10mg 6-27	1.00	1000.0	10.6623	1.0	10.66	
MBS	1.00	15.0	10.7491	1.0	716.61	20.00
DUP 31418	0.92	15.0	0.3227	1.0	23.38	21.74
MS 31418	0.92	15.0	9.1908	1.0	666.00	21.74
MSD 31418	0.92	15.0	9.6325	1.0	698.01	21.74
MB 6-28	1.00	15.0	0.1937	1.0	12.91	20.00
31418	0.92	15.0	0.3599	1.0	26.08	21.74
31419	0.93	15.0	0.1564	1.0	11.21	21.51
31420	0.95	15.0	0.3103	1.0	21.77	21.05
31421	0.96	15.0	0.0373	1.0	2.59	20.83
31422	0.95	15.0	0.2904	1.0	20.38	21.05
31423	0.95	15.0	0.0746	1.0	5.23	21.05
31424	0.94	15.0	0.2061	1.0	14.61	21.28
31425	0.95	15.0	0.0299	1.0	2.10	21.05
31426	0.94	15.0	0.4418	1.0	31.33	21.28
31427	0.94	15.0	0.2582	1.0	18.31	21.28
31428	0.92	15.0	0.0349	1.0	2.53	21.74
31429	0.89	15.0	0.0000	1.0	0.00	22.47
31430	0.94	15.0	0.9976	1.0	70.75	21.28
31431	0.89	15.0	0.1440	1.0	10.79	22.47
31432	0.78	15.0	0.0547	1.0	4.68	25.64
31433	0.76	15.0	0.1614	1.0	14.16	26.32
31440	0.84	15.0	0.7147	1.0	56.72	23.81
31441	0.82	15.0	0.8065	1.0	65.57	24.39
31451	0.86	15.0	0.7147	1.0	55.41	23.26
31452	0.81	15.0	0.8065	1.0	66.38	24.69

JK 6/28/95

Verified with 6/28/95

TPH LINEAR REGRESSION DATE 5-11-95
TPH_1S ANALYST JS

STDS (MG)	ABS.
0	0.0000
2.5	0.1122
5	0.2058
10	0.4037
15	0.5974
20	0.8177

Regression Output:

Constant	0.003495
Std Err of Y Est	0.008116
R Squared	0.999453
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	0.040301
Std Err of Coef.	0.000471

Lot # W-95-TPH-1522

****

STDS (MG)	ABS.	PPM	DIFF
0	0.0000	-0.0867	0.0867
2.5	0.1122	2.6973	-0.1973
5	0.2058	5.0198	-0.0198
10	0.4037	9.9303	0.0697
15	0.5974	14.7365	0.2635
20	0.8177	20.2028	-0.2028

****

BATCH 385

SAMPLE	ABS.	MG
10mg 6-27	0.4332	10.6623
MBS	0.4367	10.7491
DUP 31418	0.0165	0.3227
MS 31418	0.3739	9.1908
MSD 31418	0.3917	9.6325
MB 6-28	0.0113	0.1937
31418	0.0180	0.3599
31419	0.0098	0.1564
31420	0.0160	0.3103
31421	0.0050	0.0373
31422	0.0152	0.2904
31423	0.0065	0.0746
31424	0.0118	0.2061
31425	0.0047	0.0299
31426	0.0213	0.4418
31427	0.0139	0.2582
31428	0.0049	0.0349
31429	0.0031	0.0000
31430	0.0437	0.9976
31431	0.0041	0.1440
31432	0.0061	0.0547
31433	0.0093	0.1614
31440	0.0057	0.7147
31441	0.0100	0.8065
31451	0.0323	0.7147
31452	0.0360	0.8065

JK 6/28/95

000028

analysis TPH SOILS
BATCH 386
DATE: 29-Jun-95
ANALYST: JK

Q.C. DATA

	THEORETICAL VALUE PPM	RESULT PPM	% REC.
CK STD	10	10.66	107%
MBS	666.7	716.61	107%
MS #1	823.05	731.53	84%
MS #2	823.05	743.79	86%
SAMPLE		38.20	RPD
SAMPLE DUP		39.63	3.67%

SAMPLE #	SOLIDS FACTOR	SAMPLE WEIGHT	MG FROM CURVE	CALC. DILUT. FACTOR	TPH (PPM)	MDL DRY WT.
10mg 6-28	1.00	15.0	10.6623	1.0	710.82	20.00
MBS	1.00	15.0	10.7491	1.0	716.61	20.00
DUP 31453	0.81	15.0	0.4815	1.0	39.63	24.69
MS 31453	0.81	15.0	8.8881	1.0	731.53	24.69
MSD 31453	0.81	15.0	9.0370	1.0	743.79	24.69
MB 6-27	1.00	15.0	0.1937	1.0	12.91	20.00
31453	0.81	15.0	0.4641	1.0	38.20	24.69
31454	0.79	15.0	0.3872	1.0	32.68	25.32
MB 6-28	1.00	15.0	0.0373	1.0	2.49	20.00
30869	1.00	15.0	10.8558	1.0	723.72	20.00

JK
6/29/95

VDATA WMS
6/29/95 JK

TPH LINEAR REGRESSION
TPH_1S

DATE 5-11-95
ANALYST JS

STDS (MG)	ABS.
0	0.0000
2.5	0.1122
5	0.2058
10	0.4037
15	0.5974
20	0.8177

Regression Output:

Constant	0.003495
Std Err of Y Est	0.008116
R Squared	0.999453
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	0.040301
Std Err of Coef.	0.000471

Lot # W-95-TPH-1522

****

STDS (MG)	ABS.	PPM	DIFF
0	0.0000	-0.0867	0.0867
2.5	0.1122	2.6973	-0.1973
5	0.2058	5.0198	-0.0198
10	0.4037	9.9303	0.0697
15	0.5974	14.7365	0.2635
20	0.8177	20.2028	-0.2028

****

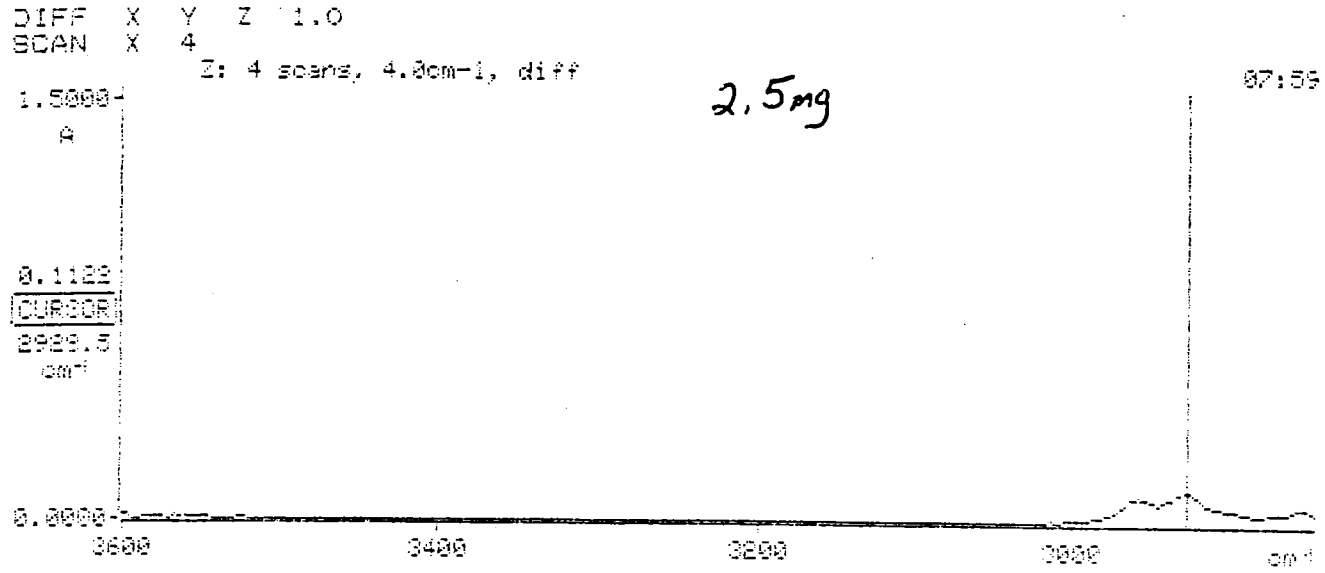
BATCH 386

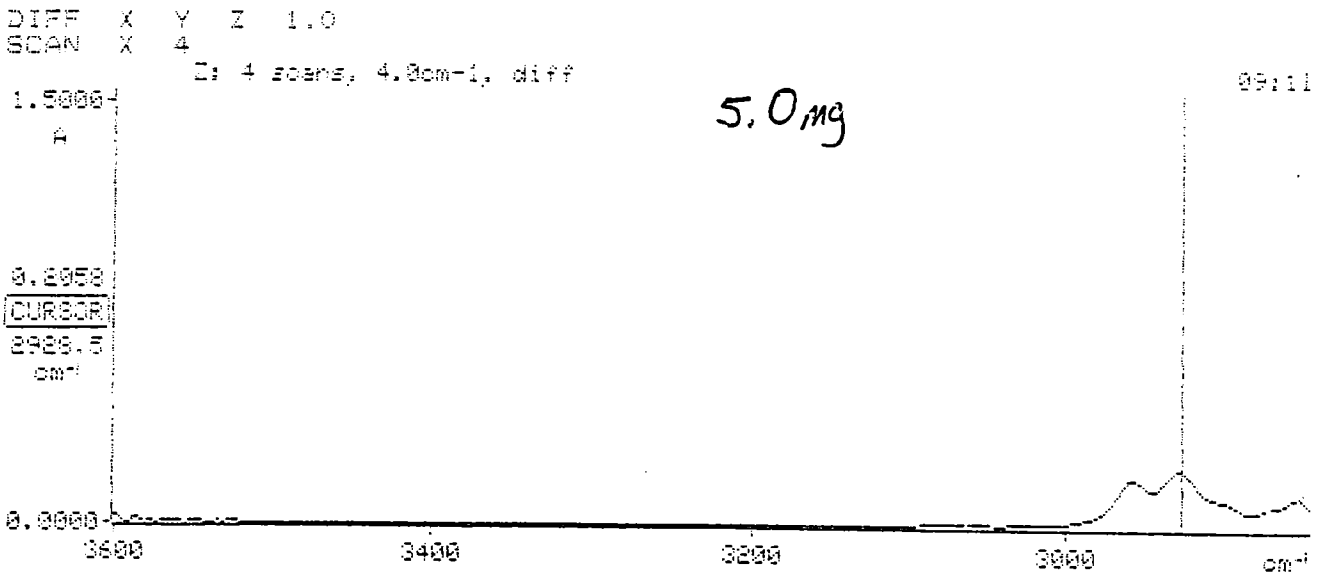
SAMPLE	ABS.	MG
10mg 6-28	0.4332	10.6623
MBS	0.4367	10.7491
DUP 31453	0.0229	0.4815
MS 31453	0.3617	8.8881
MSD 31453	0.3677	9.0370
MB 6-27	0.0113	0.1937
31453	0.0222	0.4641
31454	0.0191	0.3872
MB 6-28	0.0050	0.0373
30869	0.4410	10.8558

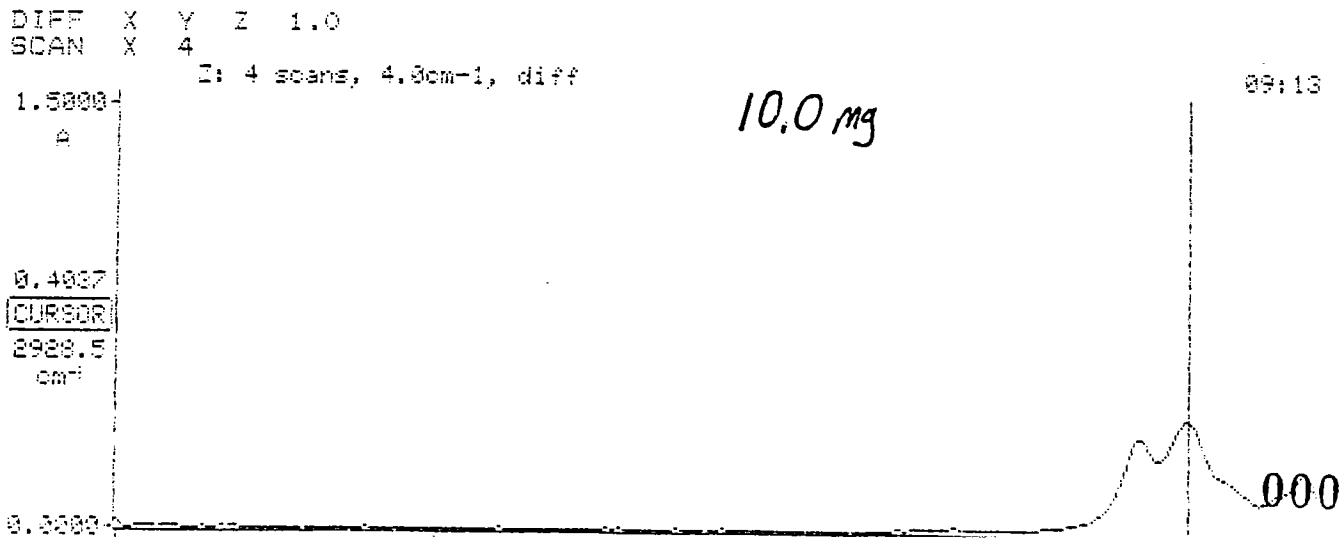
JK
6/29/95

VPHT WP6.0
6/29/95 SS

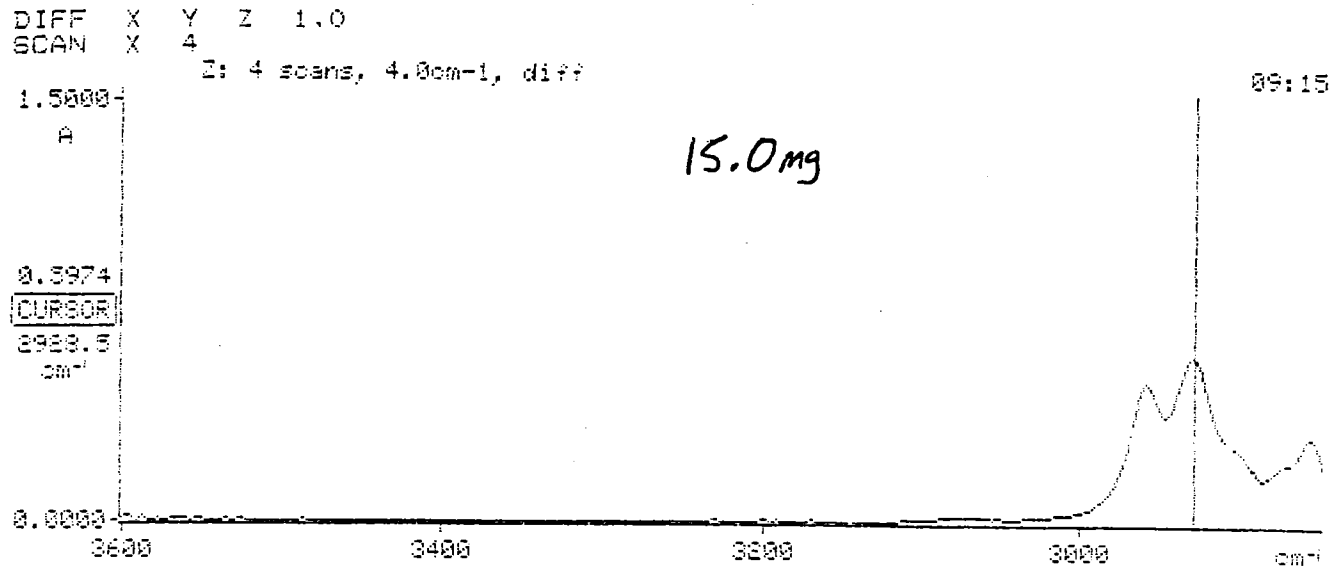
TPH CURVE
5/11/95 JS

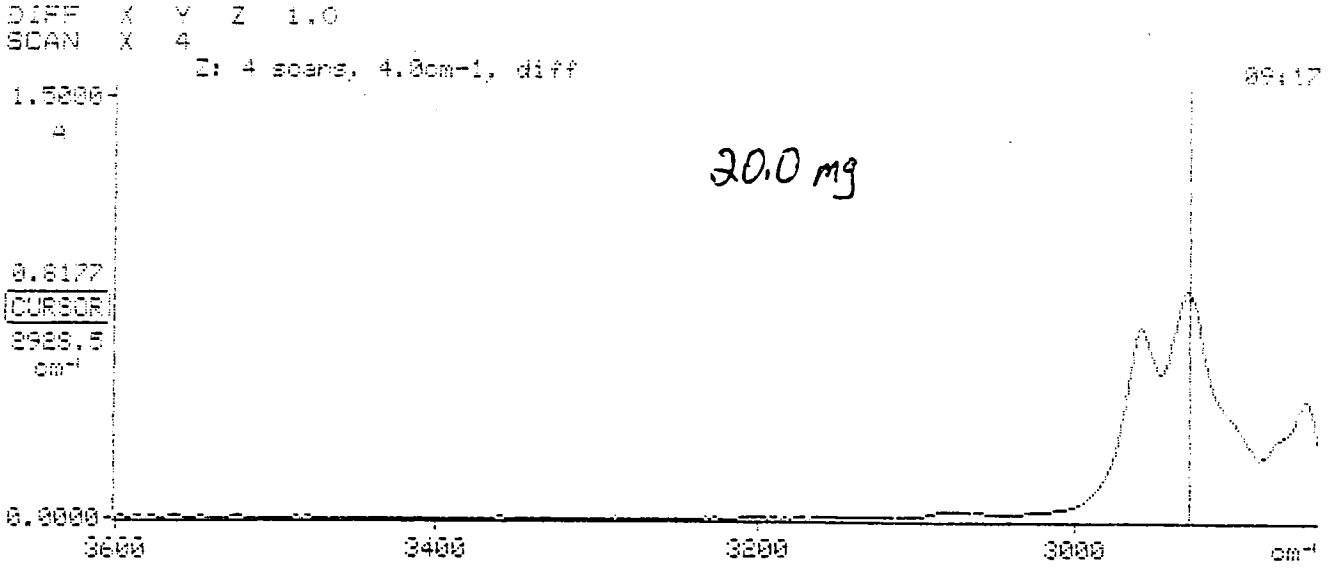


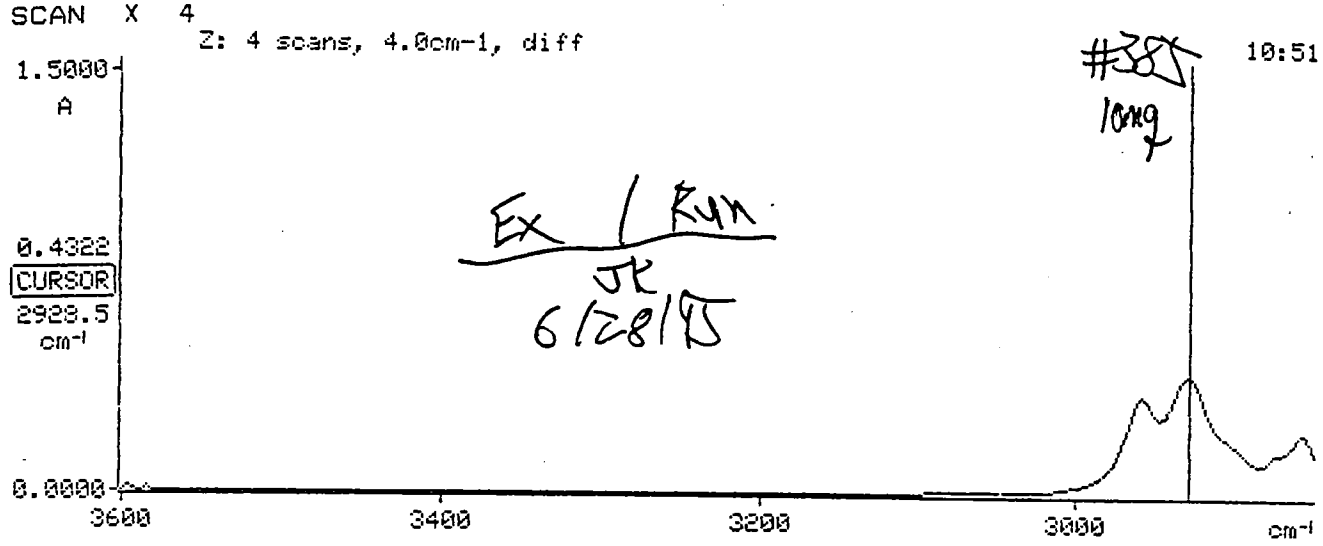




TPH CuruC
5/11/95 JS



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Z: 4 scans, 4.0cm-1, diff
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A
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CURSOR
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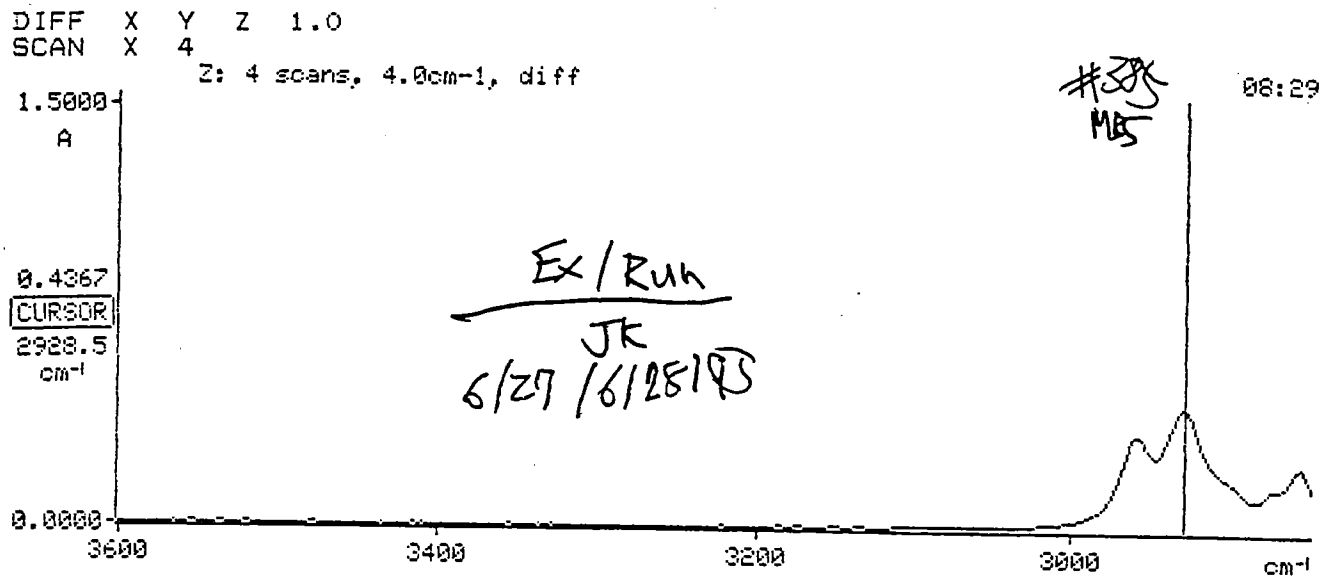
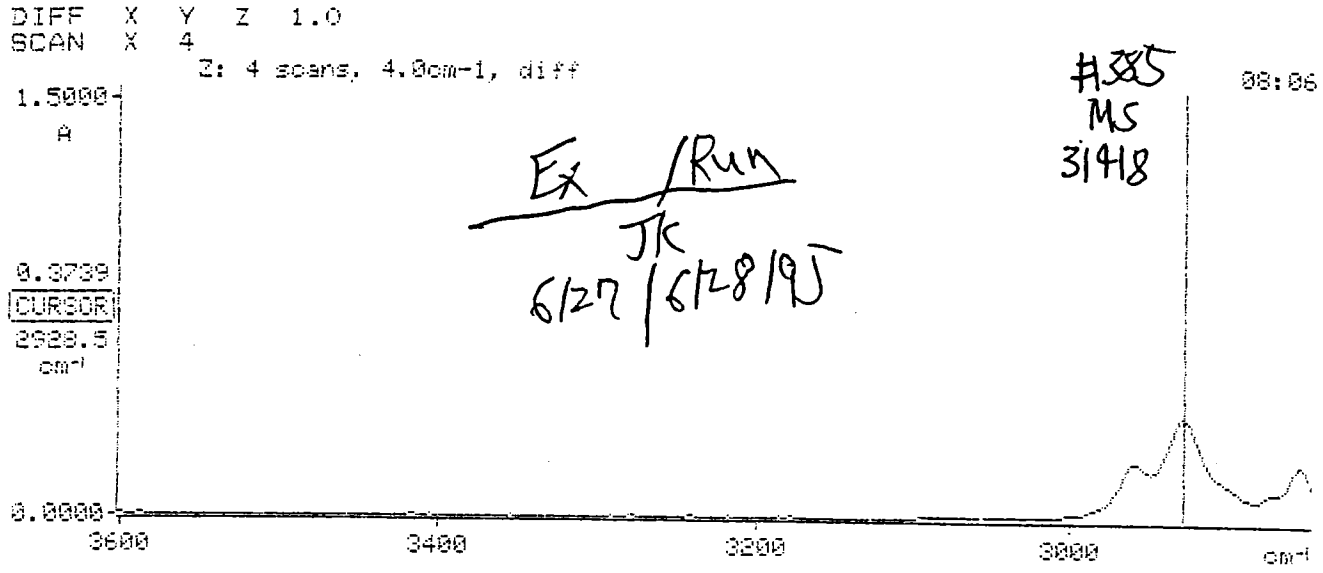
0.0000
3600
3400
3200
3000
cm-1
#387
10:51
Ex 1 Run
JK
6/28/95



Ex/Run
JK
6/27/6/28/95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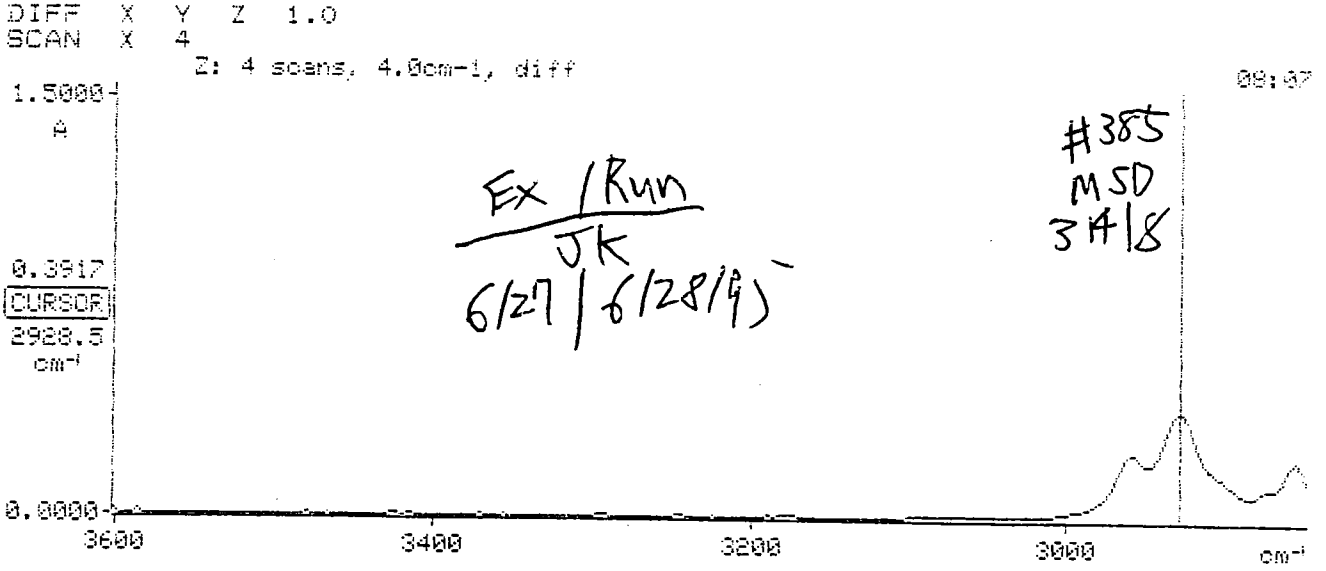
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
08:06
1.5000
A
0.3739
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
Ex /Run
JK
6/27 | 6/28/95
#385
MS
3/4/8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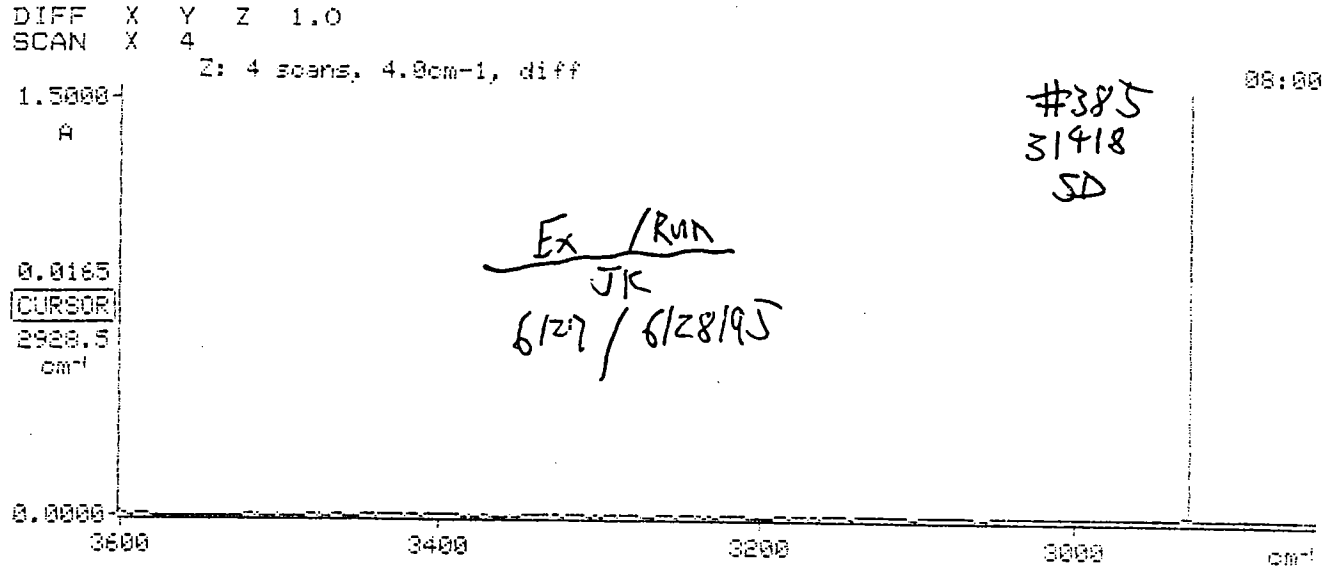
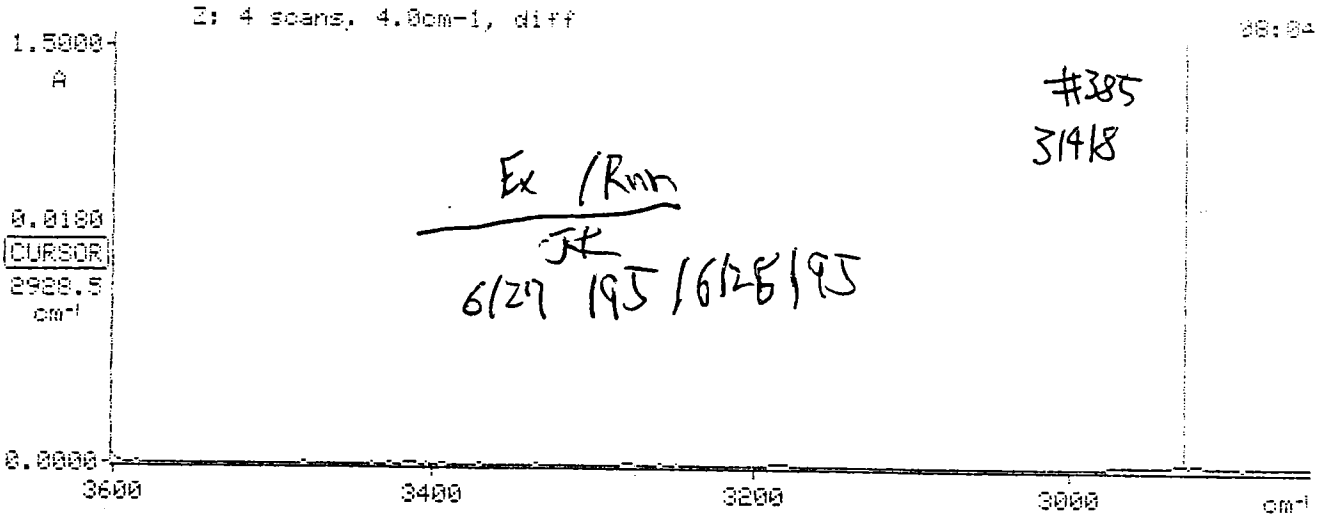
0.3917
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
Ex /Run
JK
6/27 | 6/28/95
#385
MSD
3/4/8


DIFF X Y Z 1.0
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
08:00
1.5000
A
0.0165
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
#385
31418
SD
Ex /Run
JK
6/27 / 6/28/95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Z: 4 scans, 4.0cm-1, diff
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1.5000
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0.0180
CURSOR
2928.5
cm-1
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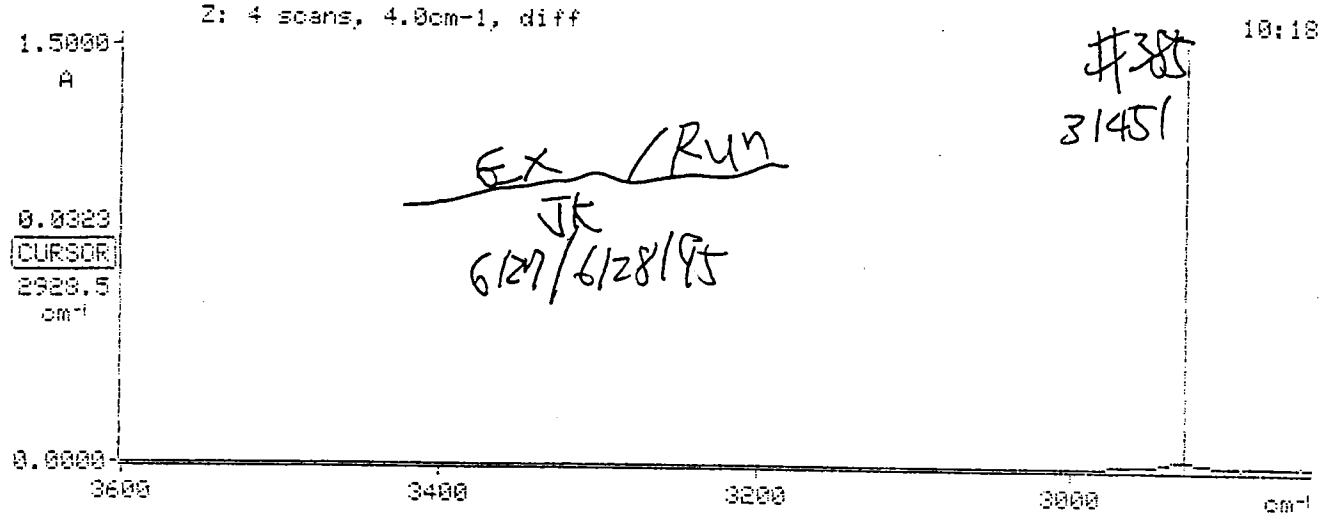
3600
3400
3200
3000
cm-1
#385
31418
Ex /Run
JK
6/27 95 / 6/28/95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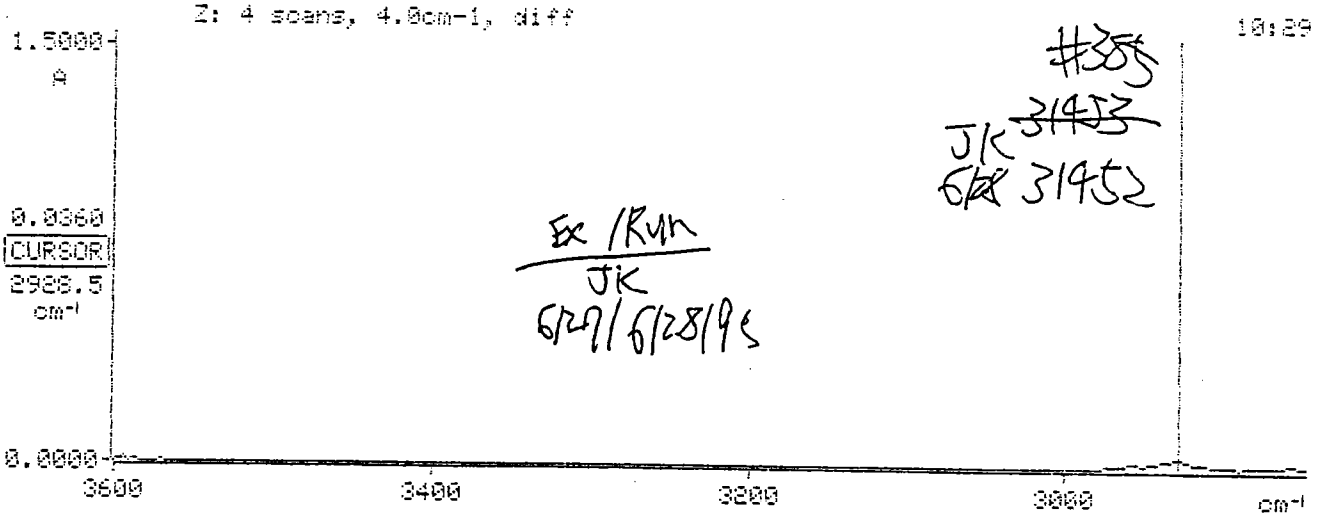
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
10:18
1.5000
A
0.0023
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
#385
31451
Ex /Run
JK
6/27/6/28/95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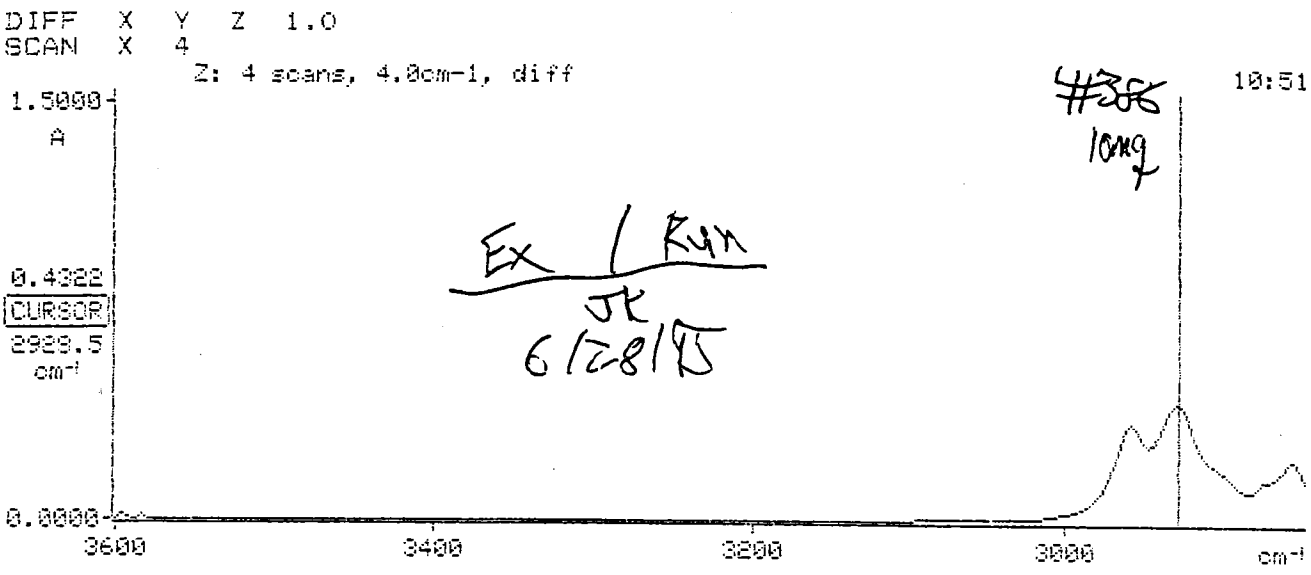
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
10:29
1.5000
A
0.0060
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
#385
31453
JK
6/27 31452
Ex /Run
JK
6/27/6/28/95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SCAN X 4
Z: 4 scans, 4.0cm-1, diff
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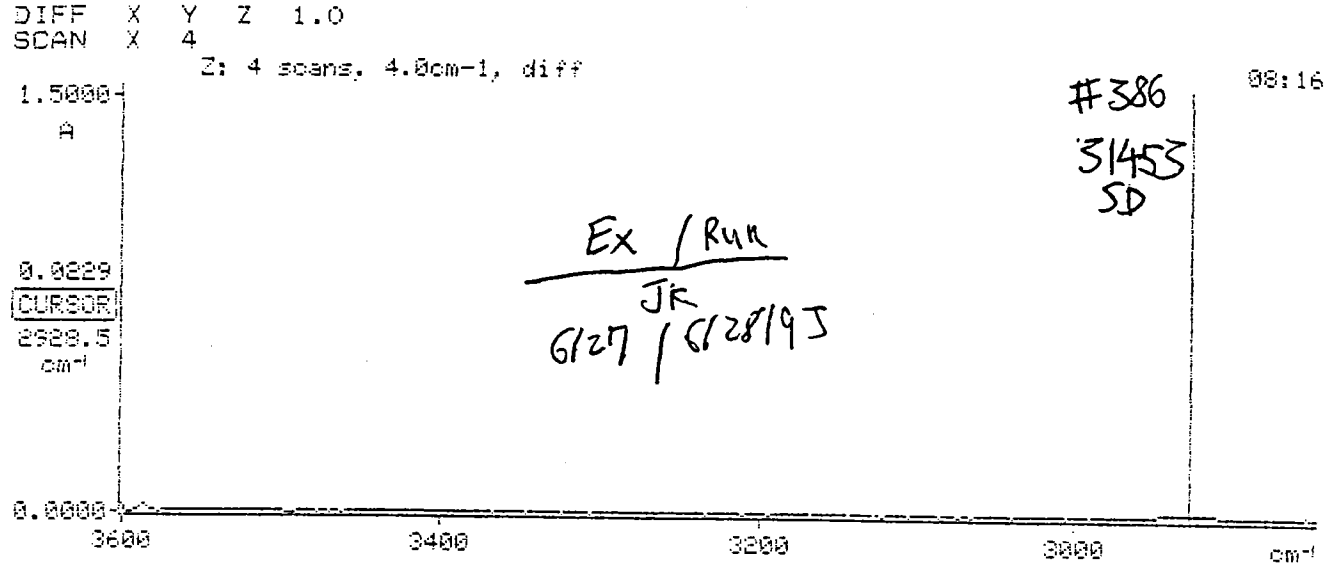
A
0.4322
CURSOR
2929.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
#306
10mg
10:51
Ex 1 Rxn
JK
6/28/15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Z: 4 scans, 4.0cm-1, diff
08:16
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0.0229
CURSOR
2928.5
cm-1
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3600
3400
3200
3000
cm-1
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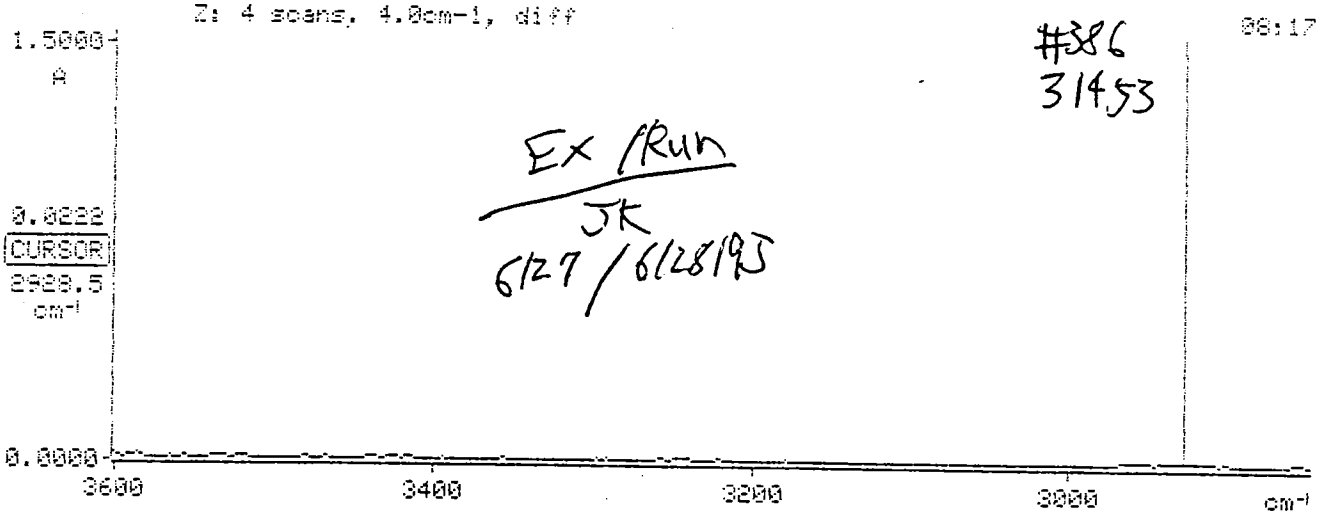
31453
SD
Ex / Run
JK
6127 / 6128195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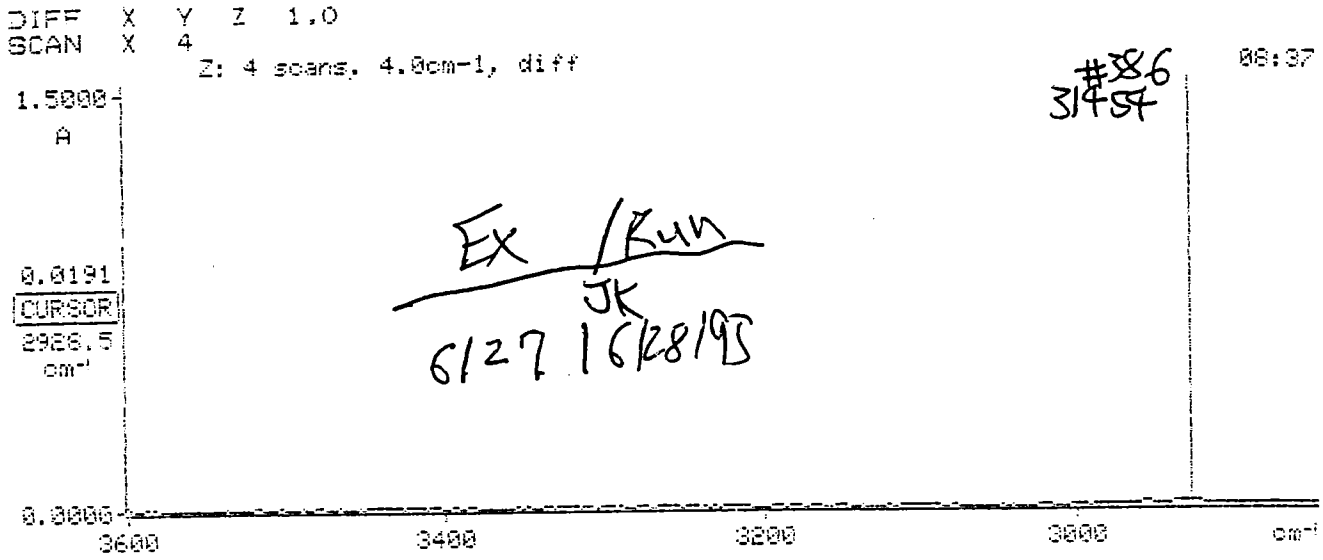
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
08:17
1.5000
A
0.0232
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
#386
31453
Ex / Run
JK
6127 / 6128195



Ex 1 Run
JK
6/27 16:28:19