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MCAS CHERRY POINT
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MANAGEMENT RECOMMENDATIONS REPORT UNDERGROUND STORAGE TANK
PROGRAM FIRST SEMESTER 200 JANUARY 2000 THROUGH JUNE 2000 WITH
TRANSMITTAL MCAS CHERRY POINT NC
11/28/2000
CATLIN ENGINEERS AND SCIENTISTS

MANAGEMENT RECOMMENDATIONS REPORT UNDERGROUND STORAGE TANK PROGRAM MCAS CHERRY POINT



**FIRST SEMESTER 2000
(January - June 2000)**

PREPARED FOR:

**ENVIRONMENTAL AFFAIRS DEPARTMENT
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

PREPARED BY:





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November 28, 2000

Commander
LANTNAVFACENCOM
Attn: Mr. Charles Hilton
LRA – Bldg. A, Room 1400
Code EV21CH
6500 Hampton Blvd.
Norfolk, VA 23508-1297

Re: **FIRST SEMESTER 2000 MANAGEMENT RECOMMENDATIONS REPORT
MCAS CHERRY POINT UST LONG-TERM MONITORING PLAN
CONTRACT NO. N62470-95-D-6009
DELIVERY ORDER NO. 0075
CATLIN Project No. 200-010**

Dear Mr. Hilton:

Please find enclosed the First Semester 2000 (January – June 2000) Management Recommendations Report for the MCAS Cherry Point Underground Storage Tank (UST) Long Term Monitoring Program.

If you have any questions or require any additional information, please do not hesitate to contact us. As always, CATLIN appreciates the opportunity to provide you with environmental services.

Sincerely,

Melissa Wagenseller
Melissa Wagenseller
Project Scientist

Teri Piver
Teri Piver, P.G.
Project Manager

MW/TMP/mww
Enclosure

cc: John Myers, MCAS Cherry Point EAD (w/ encl)
Christine Foskey, LANTNAVFACENCOM, (letter only)
Teri Piver, CATLIN

0010MRR2.LTR

**MANAGEMENT RECOMMENDATIONS REPORT
UNDERGROUND STORAGE TANK
LONG-TERM MONITORING PROGRAM**

**FIRST SEMESTER 2000
(JANUARY 2000 - JUNE 2000)**

**MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

November 17, 2000

**Contract No. N62470-95-D-6009
Delivery Order No. 0075
CATLIN Project No. 200-010**

Prepared by:

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Appendix A Second Semester Year 2000 Monitoring Plan

EXECUTIVE SUMMARY

A. Introduction

The purpose of this *Management Recommendations Report* is to provide recommendations to MCAS Cherry Point Environmental Affairs Department (EAD) managers responsible for making decisions regarding leaking underground storage tank (UST) incidents at MCAS Cherry Point and outlying/auxiliary landing fields. The recommendations are based on recent monitoring data collected in accordance with the *Monitoring Plan* and presented in the *Periodic Monitoring Report* and procedures outlined in the *Program Strategy* adopted for the *MCAS Cherry Point UST Long-Term Monitoring Program*.

This *Management Recommendations Report* is designed to contain recommendations only. Data, findings, and conclusions in support of the recommendations are contained in the corresponding *Periodic Monitoring Report* covering the same reporting period.

B. Major Recommendations in Brief

SITES AT CHERRY POINT

Site 130

Paragraph 1.3 recommends adding additional analyses to establish “baseline” conditions. Paragraph 1.6.1 recommends that the RAC take a series of vapor samples from the sewer line. If none are present, then reduce the temporarily assigned risk to “Intermediate”.

Site 133

Paragraph 2.3 recommends including 19 wells to the gauging schedule. Paragraph 2.6 recommends completion of secondary source abatement. Once all free product and contaminated soils are abated, prepare closure documentation.

Site 137

Paragraph 3.3 recommends including well 51GW20 into the gauging schedule. Paragraph 3.6 recommends that free product removal continue until complete.

Site 296

Paragraph 4.3 recommends wells 65GW08, 65GW07, 65GW31 and Potable Well 9 be incorporated into the gauging and sampling schedule. Paragraph 4.5 recommends that the free product and contaminated soils be removed by excavation.

Site 486

Paragraph 5.5 recommends that the free product and contaminated soils be removed by excavation. Paragraph 5.6.1 recommends reducing the risk ranking from “Intermediate” to “Low” after reduction of free product to below 1/8th – inch thickness.

Site 1083

Paragraph 6.3 recommends incorporating wells 41GW03 and 41GW36 into the gauging and sampling schedule. In addition, the laboratory method EPA 625 (Base/Neutrals and Acids by GC/MS) should be changed to EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC). Paragraph 6.6.1 recommends reducing the temporarily assigned risk ranking from “Intermediate” to “Low” upon removal of the free product from this Site.

Site 1640

Paragraph 7.3 recommends incorporating wells 59GW08 and 59GW10 into the gauging schedule. Paragraph 7.5 recommends consideration of installing a skid mounted total fluids recovery system already available aboard the Air Station as a pilot test. Paragraph 7.6.1 recommends reducing the temporarily assigned risk ranking from “Intermediate” to “Low” upon removal of free product from the Site.

Site 1672

Paragraph 8.3 recommends incorporating 53GW06 and 53GW10 into the gauging and sampling schedule and to analyze for Total Lead per Standard Method 3030C preparation. Paragraph 8.6.1 recommends that in order to reduce risk ranking from “High” to “Low”, Potable Well 12 be abandoned due to proximity of the Benzene plume.

Site 1783

Paragraph 9.3 recommends that the monitoring schedule include additional analyses to establish “baseline” conditions. It is also recommended that well 55GW15 be incorporated into the gauging and sampling schedule, and Potable Well 25 into the sampling schedule. Paragraph 9.6.1 recommends that a request be made of the Washington Regional Office to reduce the risk classification from “High” to “Low” since free product was not detected during the First and Second Quarters 2000.

Site 1786

Paragraph 10.6.1 recommends that a request be made of the Washington Regional Office to reduce the risk classification from “Intermediate” to “Low” since free product was not detected during the First and Second Quarters 2000

Site 3904

None

Site 3996

Paragraph 12.3 recommends incorporating well 74GW09 into the monitoring schedule. EPA Method 625 (Base/Neutral and Acids by GC/MS) should be replaced with EPA Method 610 (Polynuclear Aromatic Hydrocarbons). Paragraph 12.5 recommends removal of free product from the vicinity of well 74GW10. Paragraph 12.6.1 recommends reducing the temporarily assigned risk ranking from “Intermediate” to “Low” upon removal of free product.

Site 4075

Paragraph 13.3 recommends modifying the current list of wells utilized in the monitoring program and incorporating wells 72GW39 and 66GW04 into the gauging and sampling schedule. Modifications to the schedule also include additional analyses to “baseline” conditions. Paragraph 13.6.1 recommends that a check for vapors be performed immediately.

Site MTFP

Paragraph 14.6 recommends a “No Further Action” document be prepared for this site.

Site P15

Paragraph 15.3 recommends discontinuing utilizing EPA Method 625 (Base/neutral and acids by GC/MS) and use EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead. Also, it is recommended to include Potable Well 3 into the sampling schedule.

Site TFB

Paragraph 16.3 recommends incorporating wells 08GW20, 08GW22, and 08GW28 into the well gauging schedule, and 08GW40 into the well gauging and sampling schedule. Potable Well 1 should also be sampled. Modifications to the schedule also include additional analyses to establish “baseline” conditions. Paragraph 16.6 recommends to continue remediation of this site until free product is removed and the dissolved phase ground water plume contaminant concentrations are below 2L.

Site TFC

Paragraph 17.3 recommends incorporating well 14GW25 into the gauging and sampling schedule, and to include well N-1 in the sampling schedule. Well 14GW13 should continue to be gauged, but also be included in the sampling schedule. It is also recommended to utilize EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead of EPA Method 625 (Base/Neutral and Acids by GC/MS). Paragraph 17.6 recommends abandoning Industrial Supply Well N-1 in the future to be protective of the Castle Hayne Aquifer. It is also recommended that a Type II and a Type III sentinel well pair be installed up gradient of N-1. The extent of the dissolved phase contaminant plume has not been delineated down gradient of wells 14GW35 and 14GW36. Wells should be installed in these areas for downgradient delineation.

Site TFD

Paragraph 18.3 recommends incorporating well 09GW25 into the gauging and sampling schedule. Potable Well 8 should also be sampled. Paragraph 18.5 recommends that the free product and contaminated soils be removed by excavation and that system operation continue until the site risk is reduced from "High" to "Intermediate". Paragraph 18.6.1 recommends approaching the NCDENR Washington Regional Office about reducing the risk classification of the site from "High" to "Intermediate" because the contamination at this site is downgradient of Potable Well 8.

Site 7012

Paragraph 19.3 recommends incorporating well 25GW02 into the sampling schedule. Paragraph 19.5 recommends that the free product and contaminated soils be removed by excavation.

Site 8049

Paragraph 20.3 recommends incorporating well 28GW13 into the gauging schedule and that EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) should be utilized instead of EPA method 625 (Base/Neutral and Acids by GC/MS). Paragraph 20.6 recommends that removal of free product be the focus of any remedial activity at this site.

Site 8052/TAFDS

Paragraph 21.3 recommends utilizing EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead of EPA Method 625 (Base/Neutral and Acids by GC/MS). Paragraph 21.5 recommends excavation of contaminated soils and free product. It is recommended in paragraph 21.6 to continue with the quarterly sampling at this site through December 2000, then submit a request to the Washington Regional office for "No Further Action".

Site TAFDS

Paragraph 22.3 recommends incorporating well 70GW01 into the gauging and sampling schedule, and well 70GW12 into the sampling schedule. Also, EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) should be utilized instead of EPA Method 625 (Base/Neutral and Acids by GC/MS). Paragraph 22.5 recommends excavation of contaminated soils and free product. Paragraph 22.6 recommends that a decision about corrective action wait until the evaluation of excavation and natural attenuation may be complete.

C. INDEX OF SITES

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133	6443, 9739, 9741	MCAS Cherry Point	2.0
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296	9951	MCAS Cherry Point	4.0
486	9264	MCAS Cherry Point	5.0
1083	9839	MCAS Cherry Point	6.0
1640	9274	MCAS Cherry Point	7.0
1672	6905	MCAS Cherry Point	8.0
1783	9275	MCAS Cherry Point	9.0
1786	9273	MCAS Cherry Point	10.0
3904	15120	MCAS Cherry Point	11.0
3996	14774	MCAS Cherry Point	12.0
4075	6360, 9950, 9140 9276	MCAS Cherry Point	13.0
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TFB	6359	MCAS Cherry Point	16.0
TFC	6906	MCAS Cherry Point	17.0
TFD	9265	MCAS Cherry Point	18.0
7012	15275	MCOLF Atlantic	19.0
8049	8959	MCALF Bogue	20.0
8052/TAFDS	7493	MCALF Bogue	21.0
TAFDS	14989	MCALF Bogue	22.0

D. GLOSSARY OF ABBREVIATIONS

2L	North Carolina Administrative Code; Title 15A Department of Environment, Health, and Natural Resources; Division of Water Quality. Subchapter 2L, Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina; NCAC T15A: 2L.0202
AFVR	Aggressive Fluid Vapor Recovery
AS	Air Sparging
AST	Aboveground Storage Tank
BQL	Below Quantitation Limits
BS	Biosparging
BV	Bioventing
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CSA	Comprehensive Site Assessment
DPE	Dual-Phase Extraction
DWQ	Division of Water Quality
EAD	Environmental Affairs Department, Facilities Directorate, Marine Corps Air Station Cherry Point, North Carolina
EDB	Ethylene Dibromide
EDD	Electronic Data Deliverables
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
GCL	Gross Contamination Level
GC	Gas Chromatograph
Guidelines Vol. I	Groundwater Section Guidelines for the Investigation and Remediation of Soil and Ground Water; VOLUME I, Sources Other Than Petroleum Underground Storage Tanks; State of North Carolina, Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section; May, 1998.

Guidelines Vol. II	Groundwater Section Guidelines for the Investigation and Remediation of Soil and Ground Water, VOLUME II, Petroleum Underground Storage Tanks; State of North Carolina, Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section; January 2, 1998.
IPE	Isopropyl Ether
L.G.	Licensed Geologist
LANTDIV	Atlantic Division, Naval Facilities Engineering Command
MADEP	Massachusetts Department of Environmental Protection
MCALF	Marine Corps Auxiliary Landing Field
MCAS	Marine Corps Air Station
MCOLF	Marine Corps Outlying Landing Field
MDL	Method Detection Limit
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MSCC	Maximum Soil Contaminant Concentration
MTBE	Methyl Tertiary Butyl Ether
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NOV	Notice of Violation
P.E.	Professional Engineer
PAH	Polynuclear Aromatic Hydrocarbons
RAC	Remedial Action Contractor
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SW	Surface Water
TPH	Total Petroleum Hydrocarbons

ug/Kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons

SECTION 1.0

Of The

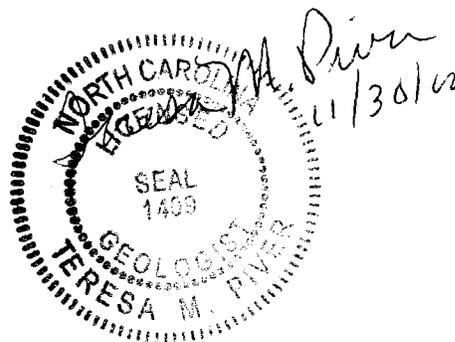
MANAGEMENT RECOMMENDATIONS REPORT

MCAS CHERRY POINT UST LONG-TERM MONITORING PROGRAM

FIRST SEMESTER 2000
(JANUARY 2000 – JUNE 2000)

SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 130



1.0 SITE 130

1.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 14774

NCDENR Site Priority Ranking: A or B

Estimated Risk Classification: High, due to Past Evidence of Vapors

Source Type(s): JP-5, Diesel Fuel, and Gasoline

Free Product: Yes

1.2 Monitoring Schedule for this Event

Well gauging and sampling completed by J.A. Jones for the First Semester 2000.

1.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be McLaren/Hart (J.A. Jones).

Modifications to the schedule include additional analyses to establish "baseline" conditions. The additional analytical methods are: EPA Method 601 (Purgeable Halocarbons by GC), EPA Method 602 + MTBE + IPE + xylenes (Purgeable Aromatics by GC), Lead with Standard Method 3030C preparation, EPA Method 504.1 (EDB). It is also recommended to change EPA Method 625 (Base/Neutrals and Acids by GC/MS) to EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC).

1.4 Site Remediation Method

Current site remediation strategy is to reduce soil and ground water contaminants with AS/SVE technology, and natural attenuation. Interim free product recovery is underway and a free product recovery system is also being installed.

1.5 Recommended Remediation Modifications

None.

1.6 Recommended Steps Toward Site Closure

1.6.1 Reduce Risk Ranking from "High" to "Intermediate"

Site 130 is temporarily ranked as a "High" risk site due to petroleum vapors that were reported in the sewer line extension to Building 130 and from a sink drain in a nearby building. This was identified in the Addendum Comprehensive Site Assessment Report, Building 130, Volume I, Section 3.2, Page 9. It is recommended that the RAC take a series of vapor samples from the sewer line. If none are present, then reduce the temporarily assigned risk to "Intermediate." Reduction of risk from "High" to "Intermediate" is very beneficial because it increases the target ground water contamination cleanup levels from 2L to the GCLs as detailed in the Guidelines, Vol. II. It is recommended that steps be taken to reduce risk classification sooner rather than later. If there is a serious threat of explosion due to accumulation of the vapors in a confined space, then that condition needs to be detected and eliminated.

1.6.2 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site. Recommend that emphasis be placed on free product removal during the remediation phase.

1.6.3 Site Closure Sampling and Analysis

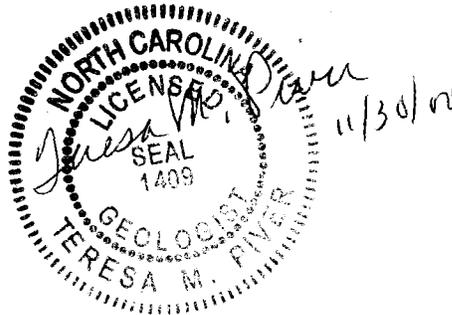
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 using industrial/commercial soil cleanup levels.

SECTION 2.0
Of The
MANAGEMENT RECOMMENDATIONS REPORT
MCAS CHERRY POINT UST LONG-TERM MONITORING PROGRAM

FIRST SEMESTER 2000
(JANUARY 2000 - JUNE 2000)

SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 133



2.0 SITE 133

2.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 6443, 9739, and 9741

NCDENR Site Priority Ranking: D/E

Estimated Risk Classification: Intermediate, due to the Presence of Free Product

Source Type(s): JP-5

Free Product: Yes

2.2 Monitoring Schedule for this Event

Well gauging completed by CATLIN/Law for the First Semester 2000.

2.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be CATLIN/Law.

It is recommended to include the following wells in the gauging schedule:

N4GW19	N2GW44	N2GW38	N2GWRW45A
N2GW35	N2GW6	N2GW20	N2GWRW45
N2GW30	N2GW8	N2GW09	N2GW18
N3GW02	N3GW03	N2GW4	N2GW29
N2GW24	N2GW39	N2GW14	

2.4 Site Remediation Method

A site assessment is being performed prior to developing a Secondary Source Abatement Plan for product removal and soil abatement.

2.5 Recommended Remediation Modifications

None.

2.6 Recommended Steps Toward Site Closure

Complete secondary source abatement. Once all free product and contaminated soils are abated, prepare closure documentation.

2.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site. A reduction in risk ranking to "Low" eliminates the requirement to remediate soils to soil-to-groundwater MSCCs. Industrial/commercial MSCCs would be applicable to this site.

2.6.2 Site Closure Sampling and Analysis

The UST Program is managing the free product and contaminated soils at this site. The dissolved-phase ground water plume at this site is being investigated and remediated under CERCLA Operable Unit 1. Recommend that once free product and soils are abated, site closure sampling be conducted in accordance with Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

SECTION 3.0
Of The
MANAGEMENT RECOMMENDATIONS REPORT
MCAS CHERRY POINT UST LONG-TERM MONITORING PROGRAM

FIRST SEMESTER 2000
(JANUARY 2000 - JUNE 2000)

SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 137



3.0 SITE 137

3.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 10686

NCDENR Site Priority Ranking: E

Estimated Risk Classification: Intermediate, due to the Presence of Free Product

Source Type(s): #2 Fuel Oil and JP-5

Free Product: Yes

3.2 Monitoring Schedule for this Event

Well gauging completed by IT Corp for the First Semester 2000.

3.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to include well 51GW20 into the gauging schedule.

3.4 Site Remediation Method

Free-phase product at the site is being recovered with a horizontal well pumping system. Site surficial ground water contamination is being assessed and remediated under CERCLA Operable Unit 1 (OU-1).

3.5 Recommended Remediation Modifications

From January 1 to July 1, 2000, approximately 3,423 gallons of free-phase product (JP-5 and #2 Fuel Oil) were recovered at Site 137 by the existing product recovery system. No system modifications are recommended.

3.6 Recommended Steps Toward Site Closure

The dissolved-phase ground water contamination at Site 137 is being investigated and remediated under CERCLA Operable Unit 1. Free product removal is being managed under the UST program. It is recommended that free product removal continue until completed.

SECTION 4.0

Of The

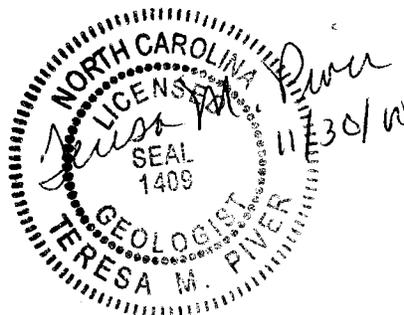
MANAGEMENT RECOMMENDATIONS REPORT

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 296



4.0 SITE 296

4.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9951

NCDENR Site Priority Ranking: E

Estimated Risk Classification: High, due to the Proximity to Potable Well 9

Source Type(s): Diesel Fuel

Free Product: Yes

4.2 Monitoring Schedule for this Event

Well gauging and sampling completed by IT Corp for the First Semester 2000.

4.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to incorporate the following wells into the gauging and sampling schedule: 65GW08, 65GW07, 65GW31, and Potable Well 9.

4.4 Site Remediation Method

Currently, only passive site remediation such as natural attenuation, biodegradation, and product skimming are in effect.

4.5 Recommended Remediation Modifications

It is recommended that the free product and contaminated soils be removed by excavation.

4.6 Recommended Steps Toward Site Closure

4.6.1 Recommendations Concerning "High" Risk Ranking

Site 296 has a temporarily assigned risk ranking of "High" because the source area is located within 1,000 feet of drinking water supply well #9. This potable well is approximately 700 feet downgradient. Reducing the risk ranking from "High" to "Intermediate" at this site would not be possible without abandoning the drinking water supply well. Given the cost of abandoning the well, and installing another to replace it, the benefits would need to be weighty to justify such a large expense. The benefit of reducing the risk from "High" is that the target cleanup goals would be less stringent. Since the most recent sampling event did not encounter ground water in excess of 2L, the benefits of going to the GCLs are small. We do not recommend abandoning the nearby drinking water supply well in order to reduce the risk ranking from "High" to "Intermediate."

4.6.2 Recommendations Concerning Free Product Recovery

Elimination of free product at this site is critical to remove it from long-term monitoring and move toward site closure. Furthermore, this appears to be an attainable goal. Recommend excavation of free product and contaminated soil. Backfill excavation with gravel to the annual high water table elevation. Then final backfill with clean soil. Install a 4-inch diameter type II recovery well in the center of the excavated area for ground water confirmation sampling and to provide for an effective AFVR "mop up" event if necessary.

4.6.3 Site Closure Sampling and Analysis

Recommend that once the risk is "Low" and ground water contamination levels are below 2L, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

SECTION 5.0

Of The

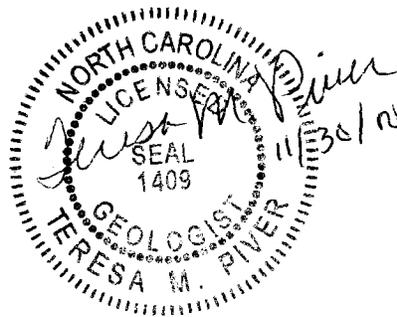
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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 486



5.0 SITE 486

5.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9264

NCDENR Site Priority Ranking: E

Estimated Risk Classification: Intermediate, due to the Presence of Free Product

Source Type(s): #2 Fuel Oil

Free Product: Yes

5.2 Monitoring Schedule for this Event

Well gauging and sampling completed by IT Corp for the First Semester 2000.

5.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

There are no recommended modifications to the gauging and sampling schedule.

5.4 Site Remediation Method

Current site remediation strategy is to periodically bail free product from monitoring well 57GW14 and passive ground water remediation through factors such as natural attenuation and biodegradation. However, no remediation contract for active remediation has been initiated.

5.5 Recommended Remediation Modifications

Recommend that the free product and contaminated soils be removed by excavation.

5.6 Recommended Steps Toward Site Closure

5.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

Removal of free product from the site to below 1/8th-inch thickness will reduce the risk ranking from "Intermediate" to "Low."

5.6.2 Recommendations Concerning Free Product Recovery

Elimination of free product at this site is critical to remove it from long-term monitoring and move toward site closure. Furthermore, this appears to be an attainable goal. Recommend excavation of free product and contaminated soil. Backfill excavation with gravel to the annual high water table elevation, then final backfill with clean soil. Install a 4-inch diameter Type II recovery well in the center of the excavated area for ground water confirmation sampling and to provide for an effective AFVR "mop up" event if necessary.

5.6.3 Site Closure Sampling and Analysis

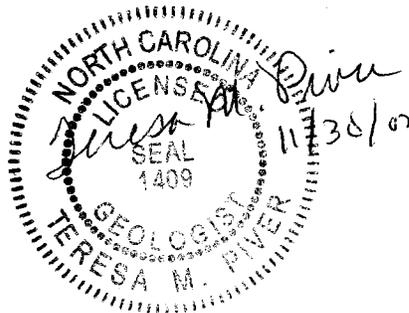
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 1083



6.0 SITE 1083

6.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9839

NCDENR Site Priority Ranking: A or B

Estimated Risk Classification: Intermediate, due to the Presence of Free Product and the Proximity to Surface Water

Source Type(s): JP-5

Free Product: Yes

6.2 Monitoring Schedule for this Event

Well gauging and sampling completed by McLaren/Hart (J.A. Jones) for the First Semester 2000.

6.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be McLaren/Hart (J.A. Jones).

It is recommended to incorporate wells 41GW03 and 41GW36 into the gauging and sampling schedule. In addition, the laboratory Method EPA 625 (Base/Neutrals and Acids by GC/MS) should be changed to EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC).

6.4 Site Remediation Method

Total Fluid Recovery, SVE and Natural Attenuation is ongoing.

6.5 Recommended Remediation Modifications

None.

6.6 Recommended Steps Toward Site Closure

6.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site.

6.6 Recommended Steps Toward Site Closure - continued

6.6.2 Site Closure Sampling and Analysis

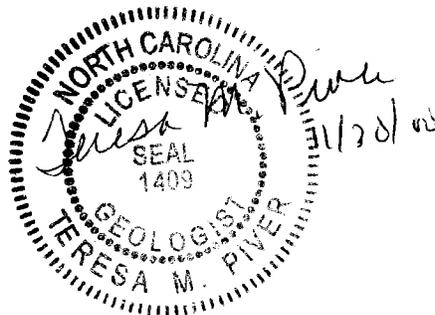
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for residential soil cleanup levels.

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FOR

SITE 1640



7.0 SITE 1640

7.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 14774

NCDENR Site Priority Ranking: A or B

Estimated Risk Classification: Intermediate due to Free Product being Present

Source Type(s): Diesel Fuel

Free Product: Yes

7.2 Monitoring Schedule for this Event

Well gauging and sampling completed by IT Corp for the First Semester 2000.

7.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to incorporate wells 59GW08 and 59GW10 into the gauging schedule.

7.4 Site Remediation Method

The site remediation strategy is currently being re-evaluated while product skimming is ongoing.

7.5 Recommended Remediation Modifications

Consider installing a skid mounted total fluids recovery system already available aboard the Air Station as a pilot test.

7.6 Recommended Steps Toward Site Closure

7.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site. Elimination of free product at this site is critical to remove it from long-term monitoring and move toward site closure. Furthermore, this appears to be an attainable goal. Recommend excavation of free product and contaminated soil. Backfill excavation with gravel to the annual high water table elevation, then final backfill with clean segregated soil from the excavation. Install a 4-inch diameter Type II recovery well in the center of the excavated area for ground water confirmation sampling and to provide for an effective AFVR "mop up" event if necessary.

7.6.2 Site Closure Sampling and Analysis

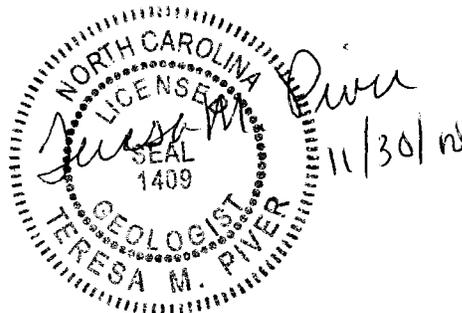
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 1672



8.0 SITE 1672

8.1 Site Information

Location:	MCAS Cherry Point, North Carolina
Incident No.:	6905
NCDENR Site Priority Ranking:	B
Estimated Risk Classification:	High, Past Evidence of Vapors and Proximity to Potable Well 12
Source Type(s):	Gasoline
Free Product:	No

8.2 Monitoring Schedule for this Event

Well gauging and sampling completed by IT Corp for the First Semester 2000.

8.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to incorporate wells 53GW06 and 53GW10 into the gauging and sampling schedule. Also, samples will be analyzed for total lead per Standard Method 3030C preparation.

8.4 Site Remediation Method

AS/SVE is ongoing.

8.5 Recommended Remediation Modifications

None.

8.6 Recommended Steps Toward Site Closure

8.6.1 Reduce Risk Ranking from "High" to "Low"

Site 1672 was ranked "High" risk because of two reasons: past evidence of vapors in Building 79 and because of the contamination sources' proximity to Potable Well 12. Past concerns about vapors in Building 79 are no longer relevant to the risk ranking because this building has been demolished.

Proximity to Potable Well 12 is the remaining reason for a "High" risk ranking. It is recommended that Potable Well 12 be abandoned due to proximity of the benzene plume.

These actions would reduce the risk ranking to "Low". Ground Water is already compliant with GCLs. Therefore, the only remaining hurdle to site closure would be confirmatory samples of soils with analysis results compared to the residential MSCCs.

8.6.2 Site Closure Sampling and Analysis

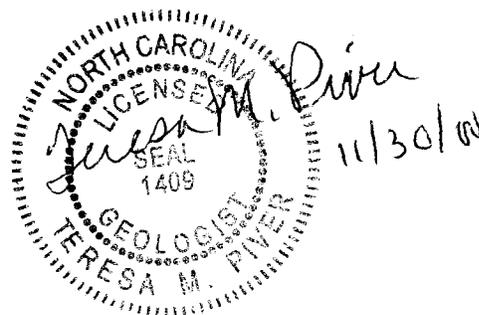
Recommend that once the risk is "Low" and since ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for residential MSCCs. Residential MSCCs are applicable due to proximity to housing units across Roosevelt Boulevard.

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FOR

SITE 1783



9.0 SITE 1783

9.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9275

NCDENR Site Priority Ranking: E

Estimated Risk Classification: High, due to the Proximity to Potable Well 25

Source Type(s): Diesel Fuel and #2 Fuel Oil

Free Product: No

9.2 Monitoring Schedule for this Event

Well gauging and sampling completed by IT Corp for the First Semester 2000.

9.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next quarterly monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

Modifications to the schedule include additional analyses to establish "baseline" conditions. The additional analytical methods are: EPA Method 504.1 (EDB), total lead with Standard Method 3030C preparations, and MADEP VPH/EPH. It is recommended to incorporate well 55GW15 into the gauging and sampling schedule, and Potable Well 25 into the sampling schedule.

9.4 Site Remediation Method

The 2,500-gallon USTs and associated distribution lines and dispenser were removed on August 15, 1994. Approximately 30 tons of contaminated soil was also excavated during the UST removal activities. Soil and ground water were abated with AS/BS/SVE technology, and natural attenuation. The system has been shut down and quarterly closure sampling began in February 2000.

9.5 Recommended Remediation Modifications

None.

9.6 Recommended Steps Toward Site Closure

9.6.1 Recommendations Concerning "High" Risk Ranking

Ground water contamination was detected above 2L during this monitoring event. EPA Method 601 detected chloroform (maximum of 13.1 ug/L) and tetrachloroethene (0.86 ug/L) at levels which exceeds their respective 2L standards of 0.19 ug/L and 0.7 ug/L. These contaminants are not constituents of petroleum and likely result from past maintenance activities. Petroleum-related constituents benzene (maximum of 9.1ug/L), 1-methylnaphthalene (maximum of 28.9 ug/L), 2-methylnaphthalene (maximum of 28.3 ug/L) and naphthalene (37.3 ug/L) all exceeded their respective 2L standard. However, free product levels, and ground water contaminant concentrations are historically decreasing. Ground water contamination levels are below current established GCLs.

There is no evidence of downward vertical migration of contaminants. The source area is in excess of 500 feet downgradient of Potable Well 25. Free product was not detected during the First and Second Quarters 2000, it is recommended to request that the Washington Regional Office reduce the risk classification from "High" to "Low."

9.6.2 Site Closure Sampling and Analysis

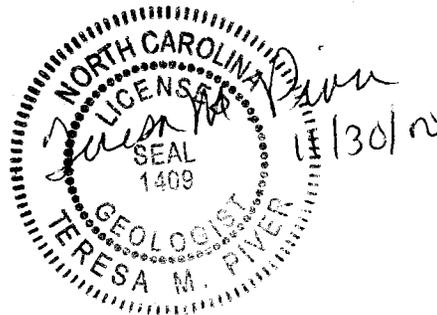
It is recommended that once the site is assigned a "Low" risk classification and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 and compare results to the industrial/commercial soil cleanup levels.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 1786



10.0 SITE 1786

10.1 Site Information

Location: MCAS Cherry Point, North Carolina
Incident No.: 9273
NCDENR Site Priority Ranking: E
Estimated Risk Classification: Intermediate
Source Type(s): Gasoline, Diesel Fuel, and # 2 Fuel Oil
Free Product: No

10.2 Monitoring Schedule for this Event

IT Corp has completed well gauging and sampling for the First Semester 2000.

10.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

10.4 Site Remediation Method

In July 1994, both 2,500-gallon USTs and associated plumbing were removed. During the UST excavation, some contaminated soils were also removed and properly disposed of.

SVE and natural attenuation were used to address remnant soil and ground water contamination. The system has been shut down and quarterly closure sampling began in February 2000.

10.5 Recommended Remediation Modifications

None.

10.6 Recommended Steps Toward Site Closure

10.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

Since free product is no longer present, It is recommended to request the Washington Regional Office to re-classify the risk of the site from "Intermediate" to "Low." The dissolved-phase ground water contamination levels are less than the current established GCLs.

10.6.2 Site Closure Sampling and Analysis

It is recommended that once the site is assigned a "Low" risk classification and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 and compare results to the industrial/commercial soil cleanup levels.

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FOR

SITE 3904



11.0 SITE 3904

11.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 15120

NCDENR Site Priority Ranking: C

Estimated Risk Classification: Intermediate due to the Presence of Free Product

Source Type(s): Diesel Fuel

Free Product: Yes

11.2 Monitoring Schedule for this Event

This site was not included in the First Semester 2000 monitoring schedule pending soil excavation site remediation project and confirmation sampling.

11.3 Recommended Monitoring Schedule Modifications

It is recommended to remove this site from the monitoring schedule pending outcome of the "No Further Action" request.

11.4 Site Remediation Method

The 1,000-gallon UST and associated plumbing was removed. In addition, contaminated soils and free product were excavated at this site.

11.5 Recommended Remediation Modifications

None. Remediation appears to be complete as a result of excavation and free product pumping.

11.6 Recommended Steps Toward Site Closure

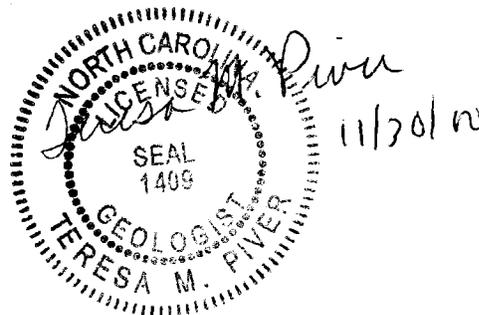
"No Further Action" status request has been completed and submitted.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 3996



12.0 SITE 3996

12.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 14774

NCDENR Site Priority Ranking: E

Estimated Risk Classification: Intermediate due to the Presence of Free Product

Source Type(s): Diesel Fuel

Free Product: Yes

12.2 Monitoring Schedule for this Event

J. A. Jones has completed well gauging and sampling for the First Semester 2000.

12.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be J. A. Jones.

It is recommended to incorporate well 74GW09 into the monitoring schedule. EPA Method 625 (Base/Neutral and Acids by GC/MS) should be replaced with EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC).

12.4 Site Remediation Method

The former aviation fuel pipeline system has been abandoned. The USTs and associated hydraulic lifts were removed in July 1995.

A single AS/SVE and free product recovery system is being installed to remediate Sites 130 and 3996.

12.5 Recommended Remediation Modifications

Site 3996 needs to have the free product removed from the vicinity of well 74GW10.

12.6 Recommended Steps Toward Site Closure

12.6.1 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site. It is recommended that emphasis be placed on free product removal during the remediation phase. It is also recommended that active ground water remediation not be performed at this site, other than free product removal.

12.6.2 Site Closure Sampling and Analysis

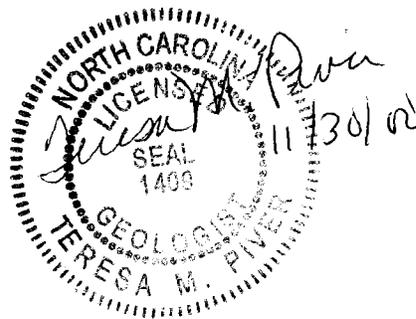
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 guidelines for industrial/commercial soil cleanup levels.

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FOR

SITE 4075



13.0 SITE 4075

13.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 6360, 9950, 9140, and 9276

NCDENR Site Priority Ranking: E

Estimated Risk Classification: High, due to Past Evidence of Vapors and Proximity to Potable Well 3

Source Type(s): JP-5, Gasoline, and Diesel fuel

Free Product: Yes

13.2 Monitoring Schedule for this Event

McLaren/Hart (J. A. Jones) has completed well gauging and sampling for the First Semester 2000.

13.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be J. A. Jones.

It is recommended to incorporate wells 72GW39 and 66GW04 into the well gauging and sampling schedule. Historically, well 13GW14 has contained measurable free product. It is recommended to locate this well (a metal detector may be necessary) and include this well in the gauging schedule.

Modifications to the current list of wells utilized in the monitoring program are as follows:

Well ID	Comment
13GW10	Gauge Only
13GW05	Gauge and Sample
13GW12	Gauge and Sample
56GW02	Gauge and Sample
56GW09	Gauge and Sample
66GW28	Gauge and Sample

13.3 Recommended Monitoring Schedule Modifications – continued

Well ID	Comment
66GW35	Gauge and Sample
66GW37	Gauge and Sample

Modifications to the schedule also include additional analyses to “baseline” conditions. The analytical parameters to be added are: EPA Method 601 (Purgeable Halocarbons by GC), Total lead per Standard Method 3030C preparation, and EPA Method 504.1 (EDB).

13.4 Site Remediation Method

Current site remediation strategy is to reduce soil and ground water contaminants with AS/SVE technology and natural attenuation. In addition, a free product recovery system is also being installed.

13.5 Recommended Remediation Modifications

None.

13.6 Recommended Steps Toward Site Closure

13.6.1 Discussion Concerning “High” Risk Ranking

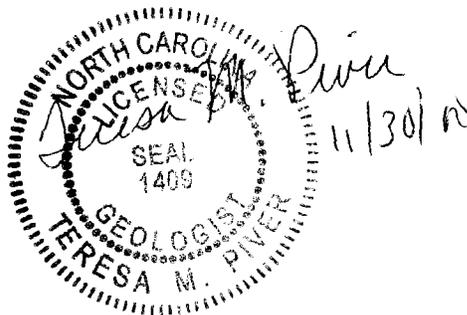
Site 4075 is temporarily ranked as a "High" risk site due to its proximity to Potable Well 3 and past evidence of vapors in sanitary sewers and storm drains in the vicinity of the site. Since dissolved phase ground water exceeds GCLs, a reduction of risk ranking from “High” to “Intermediate” would not expedite moving the site toward closure at this time. It is recommended that a check for vapors be performed immediately. If vapors from this site pose a serious threat of explosion due to their accumulation in a confined space, they need to be identified and eliminated.

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FOR

SITE MTFP



14.0 SITE MTFP

14.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9839

NCDENR Site Priority Ranking: E

Estimated Risk Classification: Intermediate, Due to the Proximity to Surface Water

Source Type(s): JP-5

Free Product: No

14.2 Monitoring Schedule for this Event

CATLIN/Law has completed well gauging and sampling for the First Semester 2000.

14.3 Recommended Monitoring Schedule Modifications

Monitoring at this site is on hold pending new soil data.

14.4 Site Remediation Method

Following May 5, 1986 and January 1993 release incidents, the pipeline was temporarily shut down and repaired. For both incidents, free-floating fuel on the surface water was contained and recovered. Approximately 350 gallons were recovered from the first incident and 300 gallons from the second incident. Petroleum-laden soil was excavated following both incidents. The volume of soil removed from the first incident was not reported. Approximately 55 cubic yards were excavated following the second incident. Current site remediation strategy is long-term monitoring to evaluate effectiveness of natural abatement factors such as attenuation and biodegradation.

14.5 Recommended Remediation Modifications

None.

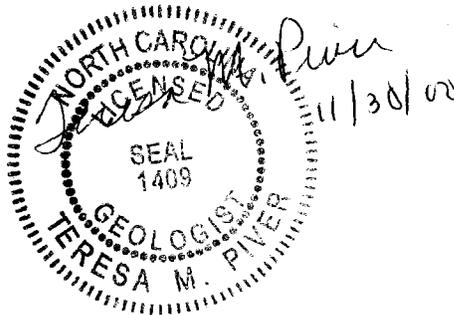
14.6 Recommended Steps Toward Site Closure

On June 26, 2000, CATLIN collected two soil samples from the “hotspot” locations. The soil samples were analyzed in accordance with risk-based methods specified in the “Guidelines for the Remediation of Soils and Groundwater, Volume II, Petroleum Underground Storage Tanks”. All of the soil data were less than the lowest of the MSCCs. Based on the data, it is recommended that a “No Further Action” request be prepared and submitted to the North Carolina Division of Solid Waste – Underground Storage Tank Section, Washington Regional Office. Given the low levels of ground water contamination at the site when compared to GCLs; the distance from the site to the surface water; and the dilution effects that occur when the ground water mixes with the surface water, a strong case could be made to close this site.

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FOR
SITE P15



15.0 SITE P15

15.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: I8715

NCDENR Site Priority Ranking: None

Estimated Risk Classification: High, Due to the proximity to Potable Wells 1 and 3 and to Surface Water

Source Type(s): JP-5

Free Product: Yes

15.2 Monitoring Schedule for this Event

McLaren/Hart (J. A. Jones) has completed well gauging and sampling for the First Semester 2000.

15.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be McLaren/Hart (J. A. Jones).

It is recommended to discontinue utilizing EPA Method 625 (Base/neutral and acids by GC/MS) and use EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead. Also, it is recommended to sample Potable Well 3 during the event.

15.4 Site Remediation Method

Current site remediation strategy is to reduce ground water contaminants with AS and natural attenuation. In addition, a free product recovery system is also in operation.

15.5 Recommended Remediation Modifications

None.

15.6 Recommended Steps Toward Site Closure

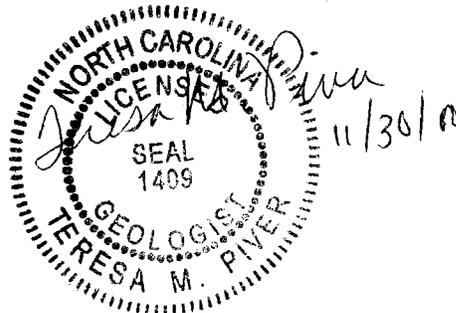
Continued operation of remedial system.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE TFB



16.0 SITE TFB

16.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 6359

NCDENR Site Priority Ranking: D

Estimated Risk Classification: High, Due to the proximity to Potable Wells 1 and 3

Source Type(s): JP-5, Gasoline, and Diesel Fuel

Free Product: Yes

16.2 Monitoring Schedule for this Event

McLaren/Hart (J. A. Jones) has completed well gauging and sampling for the First Semester 2000.

16.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be McLaren/Hart (J. A. Jones).

It is recommended to incorporate wells 08GW20, 08GW22, and 08GW28 into the well gauging schedule, and 08GW40 into the well gauging and sampling schedule. Potable Well 1 should also be sampled (it was recommended in Section 15 to sample Potable Well 3 along with the P15 schedule).

Modifications to the schedule also include additional analyses to establish "baseline" conditions. The additional analytical methods are: EPA Method 601 (Purgeable Halocarbons by GC), and EPA Method 504.1 (EDB). Analytical Method 610 (Polynuclear Aromatic Hydrocarbons by GC) should be used instead of EPA Method 615 (Base/Neutral and Acids by GC/MS).

16.4 Site Remediation Method

AS/SVE and natural attenuation is underway. A free product recovery system is also operational.

16.5 Recommended Remediation Modifications

None.

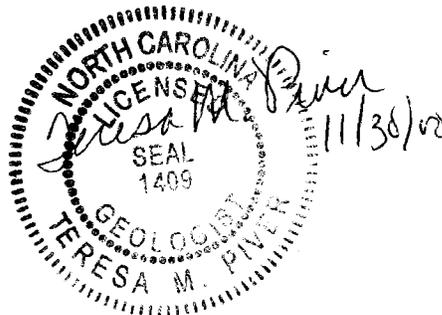
16.6 Recommended Steps Toward Site Closure

Site TFB has a "High" risk ranking due to the proximity of Potable Wells 1 and 3. Therefore, the 2L Groundwater Quality Standards are the target ground water contamination cleanup goals. It is recommended to continue remediation of this site until free product is removed and the dissolved phase ground water plume contaminant concentrations are below 2L.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR
SITE TFC



17.0 SITE TFC

17.1 Site Information

Location:	MCAS Cherry Point, North Carolina
Incident No.:	6906
NCDENR Site Priority Ranking:	E
Estimated Risk Classification:	High, due to the Proximity to Industrial Supply Well N-1
Source Type(s):	Gasoline and Diesel
Free Product:	No

17.2 Monitoring Schedule for this Event

McLaren/Hart (J. A. Jones) has completed well gauging and sampling for the First Semester 2000.

17.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be McLaren/Hart (J. A. Jones).

It is recommended to incorporate well 14GW25 into the gauging and sampling schedule, and to include Industrial Supply Well N-1 in the sampling schedule. Well 14GW13 should continue to be gauged, but also be included in the sampling schedule.

It is also recommended to utilize EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead of EPA Method 625 (Base/Neutral and Acids by GC/MS).

17.4 Site Remediation Method

Eleven of the 14 USTs have been removed from the site. During the excavation and removal of the USTs, contaminated soil was removed from the tank pits and disposed off-site. A free product recovery well was in operation at this facility for several years.

Current site remediation strategy is to continue free-phase product recovery with a horizontal free product vapor extraction system and AS/BS/SVE to address the soil and surficial ground water contamination.

17.5 Recommended Remediation Modifications

None.

17.6 Recommended Steps Toward Site Closure

The risk classification may be reduced in the future to "Intermediate" contingent on the abandonment of the Industrial Supply Well N-1 located approximately 200 feet southeast of the edge of the free product plume. A reduction in risk-classification will allow for cleanup of ground water to the less stringent GCLs in lieu of 2L. However, ground water contamination currently exceeds GCLs at this site.

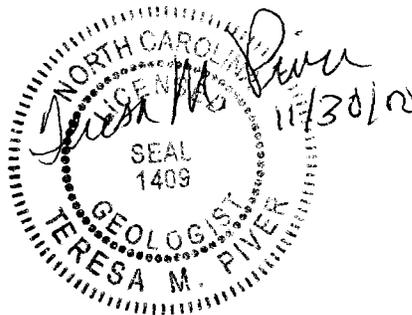
The proximity of this site to Industrial Supply Well N-1 is of significant concern. The dissolved phase plume in the surficial aquifer is moving in the direction of N-1 and there are no Type II or Type III sentinel wells between the known extent of the plume and the supply well. It is recommended to sample this well and to abandon Industrial Supply Well N-1 in the future to be protective of the Castle Hayne Aquifer.

It is recommended to install a Type II and a Type III sentinel well pair upgradient of N-1. The extent of the dissolved phase contaminant plume has not been delineated downgradient of wells 14GW35 and 14GW36. Wells should be installed in these areas for downgradient delineation.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR
SITE TFD



18.0 SITE TFD

18.1 Site Information

Location: MCAS Cherry Point, North Carolina

Incident No.: 9265

NCDENR Site Priority Ranking: B

Estimated Risk Classification: High, due to the proximity to Potable Well 8 and Surface Water

Source Type(s): Kerosene and #2 Fuel Oil

Free Product: Yes

18.2 Monitoring Schedule for this Event

IT Corp has completed well gauging and sampling for the First Semester 2000.

18.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to incorporate well 09GW25 into the gauging and sampling schedule. Potable Well 8 should also be sampled.

18.4 Site Remediation Method

All of the USTs and associated plumbing were removed in 1997 when the tank farm was demolished. BS/BV technology is being used to remediate site soil and ground water contamination.

18.5 Recommended Remediation Modifications

Recommend that the free product and contaminated soils be removed by excavation.

Recommend that system operation continue until the site risk is reduced from "High" to "Intermediate."

18.6 Recommended Steps Toward Site Closure

18.6.1 Reduce Risk Ranking from "High" to "Intermediate"

There is no evidence of downward vertical migration of contaminants. Pending a favorable outcome from the sampling of Potable Well 8, the NCDENR Washington Regional Office may be approached about reducing the risk classification of the site from "High" to "Intermediate" because the contamination at this site is downgradient of Potable Well 8.

18.6.2 Recommendations Concerning Free Product Recovery

Elimination of free product at this site is critical to remove it from long-term monitoring and move toward site closure. Furthermore, this appears to be an attainable goal. Recommend excavation of free product and contaminated soil. Backfill excavation with gravel to the annual high water table elevation. Then final backfill with clean soil. Install a 4-inch diameter type II recovery well in the center of the excavated area for ground water confirmation sampling and to provide for an effective AFVR "mop up" event if necessary.

18.6.3 Site Closure Sampling and Analysis

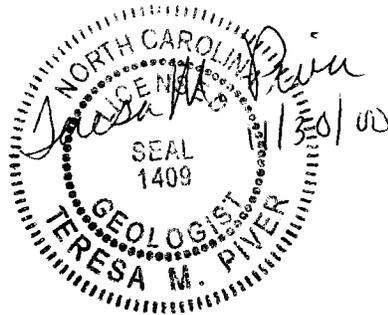
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the "Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 7012



19.0 SITE 7012

19.1 Site Information

Location: MCOLF Atlantic, North Carolina

Incident No.: 15275

NCDENR Site Priority Ranking: B

Estimated Risk Classification: Intermediate, although within 1,000 feet of potable wells at Building 7019. Contamination is downgradient of receptor. NCDENR Patricia Coughlin decision on May 6, 1999.

Source Type(s): #2 Fuel Oil

Free Product: Yes

19.2 Monitoring Schedule for this Event

IT Corp has completed well gauging and sampling for the First Semester 2000.

19.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be IT Corp.

It is recommended to incorporate well 25GW02 into the sampling schedule.

19.4 Site Remediation Method

The 7012 UST associated plumbing, and approximately 20 cubic yards of contaminated soil were removed on December 21, 1993.

19.5 Recommended Remediation Modifications

Recommend that the free product and contaminated soils be removed by excavation.

19.6 Recommended Steps Toward Site Closure

19.6.1 Reduction of Risk ranking from "High" to "Intermediate"

On May 6, 1999, Patricia Coughlin of NCDENR stated in a meeting with John Myers (EAD) and Gary McSmith (CATLIN) that she intended to reduce the risk ranking at Site 7012 from "High" to "Intermediate". This change was predicated upon the ground water flow direction being to the southeast, which is historically the ground water flow direction at this site. Flow to the southeast is away from the potable wells at Building 7019. However, ground water level measurements from this monitoring event indicated a component of flow to the northeast. Recommend that a series of monthly ground water level measurements be made at this site to determine if the ground water flow direction has shifted toward the potable wells to the north.

19.6.2 Reduce Risk Ranking from "Intermediate" to "Low"

A reduction in the temporarily assigned risk ranking from "Intermediate" to "Low" is dependent upon removal of the free product from this site. Recommend that emphasis be placed on free product removal during the remediation phase. Recommend that no ground water remediation other than free product removal occur at this site.

19.6.3 Recommendations Concerning Free Product Recovery

Elimination of free product at this site is critical to remove it from long-term monitoring and move toward site closure. Furthermore, this appears to be an attainable goal. Recommend excavation of free product and contaminated soil. Backfill excavation with gravel to the annual high water table elevation, then final backfill with clean soil. Install a 4-inch diameter Type II recovery well in the center of the excavated area for ground water confirmation sampling and to provide for an effective AFVR "mop up" event if necessary.

19.6.4 Site Closure Sampling and Analysis

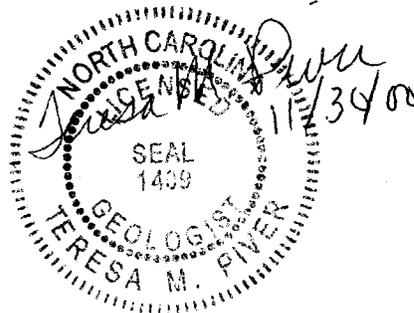
Recommend that once the risk is "Low" and ground water contamination levels are below GCLs, assess the site soil contamination hot spots per the Guidelines Vol. II, Section 7.3 for industrial/commercial soil cleanup levels.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 8049



20.0 SITE 8049

20.1 Site Information

Location:	MCALF Bogue, North Carolina
Incident No.:	8959
NCDENR Site Priority Ranking:	E
Estimated Risk Classification:	Intermediate, due to the presence of free product and the proximity to surface water
Source Type(s):	Diesel Fuel, #2 Fuel Oil, and Gasoline
Free Product:	Yes

20.2 Monitoring Schedule for this Event

CATLIN/Law has completed well gauging and sampling for the First Semester 2000.

20.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be CATLIN/Law.

It is recommended to incorporate well 28GW13 into the gauging schedule. In addition, EPA Method 610 (Polynuclear Aromatic Hydrocarbons) should be utilized instead of EPA Method 625 (Base/Neutral and Acids by GC/MS).

20.4 Site Remediation Method

USTs 8049-1, 8049-2, 8049-3 and 8049-4 were all closed and removed between 1992 and 1995. A free product recovery system was installed at the site and began operation in May, 1995. Site 8049 was the location of an unexpected chemical reaction during a pilot test of hydrogen peroxide injection technology. Due to this incident, the site was reassessed and implementation of a new remedial system is dependent on funding and the results of that reassessment.

20.5 Recommended Remediation Modifications

None.

20.6 Recommended Steps Toward Site Closure

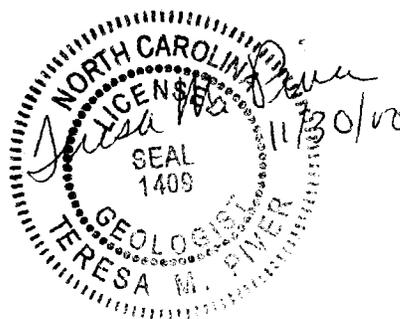
Recommend that removal of free product be the focus of any remedial activity at this site.

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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE 8052/TAFDS



21.0 SITE 8052/TAFDS

21.1 Site Information

Location: MCALF Bogue, North Carolina
Incident No.: 7493
NCDENR Site Priority Ranking: Not Applicable
Estimated Risk Classification: Not a UST Site
Source Type(s): JP-5
Free Product: No

21.2 Monitoring Schedule for this Event

CATLIN/Law has completed well gauging and sampling for the First Semester 2000.

21.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be CATLIN/Law.

It is recommended to utilize EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) instead of EPA Method 625 (Base/Neutral and Acids by GC/MS).

21.4 Site Remediation Method

Natural attenuation.

21.5 Recommended Remediation Modifications

NOV
~~Consider excavation of contaminated soils and free product.~~

21.6 Recommended Steps Toward Site Closure

The site is currently being monitored on a quarterly basis in order to obtain "No Further Action" status. Currently, well 27GW13 is the only well exhibiting contamination in excess of the 2L Groundwater Quality Standards (1-methylnaphthalene at 21 ug/L). It is recommended to continue with the quarterly sampling through December 2000, then submit a request to the Washington Regional Office for "No Further Action."

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Of The

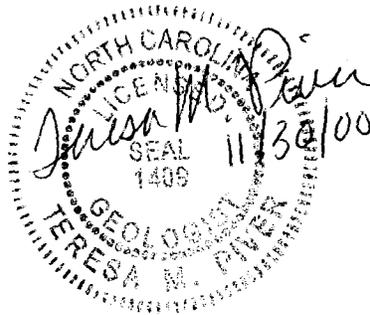
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SITE-SPECIFIC MANAGEMENT RECOMMENDATIONS REPORT
FOR

SITE TAFDS



22.0 SITE TAFDS

22.1 Site Information

Location:	MCALF Bogue, North Carolina
Incident No.:	14989
NCDENR Site Priority Ranking:	E
Estimated Risk Classification:	Not a UST Site
Source Type(s):	JP-5
Free Product:	Yes

22.2 Monitoring Schedule for this Event

CATLIN/Law has completed well gauging and sampling for the First Semester 2000.

22.3 Recommended Monitoring Schedule Modifications

The recommended monitoring schedule for the Second Semester 2000 event is provided in APPENDIX A of this document. The next monitoring event is scheduled to occur between August 1, 2000 and August 15, 2000. The monitoring contractor for the next event will be CATLIN/Law.

It is recommended to incorporate well 70GW01 into the gauging and sampling schedule, and well 70GW12 into the sampling schedule. Also, EPA Method 610 (Polynuclear Aromatic Hydrocarbons by GC) should be utilized instead of EPA Method 625 (Base/Neutral and Acids by GC/MS).

22.4 Site Remediation Method

An active site remediation plan which includes natural attenuation of ground water, a product recovery trench, and BS/BV of impacted soils has been proposed. Installation of the active remediation system has not been initiated.

22.5 Recommended Remediation Modifications

Consider excavation of contaminated soils and free product.

22.6 Recommended Steps Toward Site Closure

TAFDS is not regulated as an UST site because the release came from aboveground bladder bags. Therefore, 2L Groundwater Quality Standards apply to this site. Dissolved phase ground water contamination exceeds 2L in well 70GW05 for benzene, ethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene and naphthalene. Free product appears to be localized around well 70GW01. The advisability of excavating free product and contaminated soils with natural attenuation of the dissolved phase plume is currently being evaluated. Recommend that a decision about corrective action wait until the evaluation of excavation and natural attenuation may be completed.

APPENDIX A

SECOND SEMESTER YEAR 2000 MONITORING PLAN

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIATION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)												
					Well	Gauge	EPA 504.1	EPA 601	EPA 602 + +MTBE + IPE +Xylenes	EPA 610	Lead Std. 3030C	Sampling by:					
130/ #14774 MCAS Cherry Point	HIGH Vapors (To be checked)	YES JP-5 Diesel Fuel Gasoline	Product Skim, AS/SVE, Natural Attenuation J. A. Jones	LAW 1/97; Sample "Existing Wells" (±39 wells) 602 and 610; Quarterly 1 st year/semi- annual thereafter; gauge free product wells weekly (±10 wells) Air monitoring not required. Notify Division of Air Quality at Startup.	Well	Gauge	EPA 504.1	EPA 601	EPA 602 + +MTBE + IPE +Xylenes	EPA 610	Lead Std. 3030C	Sampling by: J. A. Jones					
					72GW01	YES	YES	YES	YES	YES	YES						
					72GW02	YES	YES	YES	YES	YES	YES						
					72GW07	YES	YES	YES	YES	YES	YES						
					72GW10	YES	YES	YES	YES	YES	YES						
					72GW14	YES	YES	YES	YES	YES	YES						
					72GW15	YES	YES	YES	YES	YES	YES						
					72GW23	YES	YES	YES	YES	YES	YES						
					74GW15	YES	YES	YES	YES	YES	YES						
					74GW23	YES	YES	YES	YES	YES	YES						
13GW23	YES	YES	YES	YES	YES	YES											
133/ #6443, #9739 & #9741 MCAS Cherry Point	INT Free Product	YES JP-5	No Remediation Contract In Place	O'Brien & Gere 11/93; CAP Not Applicable. Free product managed by UST Program. The dissolved-phase ground water plume at this site is being investigated and remediated under CERCLA Operable Unit 1 (OU-1).	Well	Gauge	Well	Gauge	Well	Gauge	Gauging by: CATLIN/Law						
					N2GW04	YES	N2GW38	YES	N4GW01	YES							
					N2GW06	YES	N2GW39	YES	N4GW02	YES							
					N2GW08	YES	N2GW44	YES	N4GW03	YES							
					N2GW09	YES	N2GWRW45	YES	N4GW04	YES							
					N2GW14	YES	N2GWRW45A	YES	N4GW08	YES							
					N2GW18	YES	N3GW02	YES	N4GW18	YES							
					N2GW20	YES	N3GW03	YES	N4GW19	YES							
					N2GW24	YES			N4GW20	YES							
					N2GW29	YES			N4GW21	YES							
					N2GW30	YES			N4GW22	YES							
					N2GW35	YES											
					137/ #10686 MCAS Cherry Point	INT Free Product	YES JP-5 #2 Fuel Oil	Horizontal Wells Free Product Removal OHM/IT Operating	O'Brien & Gere 11/93; CAP Not Applicable. Free product managed by UST Program. The dissolved-phase ground water plume at this site is being investigated and remediated under CERCLA Operable Unit 1 (OU-1).	Well		Gauge	Gauging by: IT Corp				
										51GW08		YES					
51GW12	YES																
51GW14	YES																
51GW16	YES																
51GW17	YES																
51GW20	YES																
51GW24	YES																
51GWE	YES																

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI-ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)				Sampling by: IT Corp.
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	
296/ #9951 MCAS Cherry Point	HIGH Potable Well 9	YES Diesel Fuel	Product Skim, Nat. Attn. No Remediation Contract In Place	LAW 9/95; Sample "Existing Wells" (\pm 33 Wells) 602 and 610; Quarterly for 2 years, Semi-Annually Years 3 to 14, Quarterly for Year 15 Measure "Free Product Thicknesses" monthly for 4 years Air monitoring not required.	<u>Well</u> 65GW04 65GW05 65GW06 65GW07 65GW08 65GW10 65GW15 65GW22 65GW23 65GW25 65GW26 65GW31 65GW32 65GW34 Potable Well 9	<u>Gauge</u> YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES No	<u>EPA 602 + Xylenes</u> YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES	<u>EPA 610</u> YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES	Sampling by: IT Corp.
486/ #9264 MCAS Cherry Point	INT Free Product	YES #2 Fuel Oil	Product Bail, Nat. Attn. No Remediation Contract In Place	LAW 7/95; Sample "Existing Wells" (\pm 13 Wells) 602 and 610; Quarterly for 2 years, Semi-Annually Years 3 to 14, Quarterly for Year 15. Measure "Free Product Thicknesses" weekly. Air monitoring not required.	<u>Well</u> 57GW02 57GW04 57GW08 57GW12 57GW13 57GW14	<u>Gauge</u> YES YES YES YES YES YES	<u>EPA 602 + Xylenes</u> NO YES YES YES YES NO	<u>EPA 610</u> NO YES YES YES YES NO	Sampling by: IT Corp.

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDATION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)					
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	Sampling By: McLaren/ Hart (J. A. Jones)	
1083/ #9839 MCAS Cherry Point	INT Free Product & Nearby Surface Water	YES JP-5	Total Fluid Recovery SVE, Nat. Attn. J. A. Jones Operating	LAW 11/95; Sample "Existing Wells" (\pm 33 Wells) 602 + Xylenes and 610; Quarterly for 2 years, Semi-Annually Years 3 to 24, Quarterly for Year 25 Measure "water levels and free product thicknesses" monthly with no end point defined Surface water samples (8 locations) 602 + Xylenes and 610; Quarterly for 2 years then discontinue after plume is hydraulically controlled Air monitoring not required.	<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>		
					41GW03	YES	YES	YES		
					41GW05	YES	NO	NO	NO	
					41GW06	YES	NO	NO	NO	
					41GW21	YES	NO	NO	NO	
					41GW22	YES	NO	NO	NO	
					41GW23	YES	NO	NO	NO	
					41GW24	YES	NO	NO	NO	
					41GW25	YES	NO	NO	NO	
					41GW26	YES	NO	NO	NO	
					41GW27	YES	NO	NO	NO	
					41GW28	YES	YES	YES	YES	
					41GW29	YES	NO	NO	NO	
					41GW31	YES	NO	NO	NO	
					41GW32	YES	YES	YES	YES	
					41GW33	YES	YES	YES	YES	
					41GW36	YES	YES	YES	YES	
					41GW40	YES	YES	YES	YES	
					41GW42	YES	NO	NO	NO	
					41GW48	YES	YES	YES	YES	
41GW49	YES	NO	NO	NO						
41GW50	YES	YES	YES	YES						
41GW51	YES	NO	NO	NO						
41SW03	NO	YES	YES	YES						
41SW04	NO	YES	YES	YES						
41SW05	NO	YES	YES	YES						

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIATION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI-ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)					
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	Sampling by:	
1640/ #9274 MCAS Cherry Point	INT Free Product	YES Diesel Fuel	Free Product Recovery, Nat. Attn. IT Corp	LAW 8/95; Sample "Existing Wells" (± 22 Wells) for 602 and 610; Quarterly for 2 years, Semi-Annually for Years 3 to 19, and Quarterly for Year 20 Collect dissolved oxygen, carbon dioxide, and total plate count from 10 monitoring wells semi- annually Air monitoring not required.						IT Corp.
					59GW01	YES	No	No		
					59GW02	YES	No	No		
					59GW03	YES	No	No		
					59GW05	YES	YES	YES		
					59GW06	YES	YES	YES		
					59GW08	YES	No	No		
					59GW09	YES	YES	YES		
					59GW10	YES	No	No		
					59GW11	YES	No	No		
					59GW14	YES	YES	YES		
					59GW17	YES	No	No		
					59GW22	YES	YES	YES		
1672 #6905 MCAS Cherry Point	HIGH Potable Well 12 Vapors	NO Gasoline	AS/SVE IT Corp Operating	CATLIN 8/95; Sample (53GW4, 8, 14, 16, 17, 22, 28, 29, and 30) (9 Wells) Quarterly For EPA Methods 602 and 610 Measure water/product levels monthly (±25 Wells) Air monitoring by EPA Method 18 required.			<u>EPA 602 + MTBE + Xylenes</u>	<u>EPA 610</u>	<u>Lead/Standard 3030C PREP</u>	IT Corp.
					53GW06	YES	YES	YES		
					53GW08	YES	YES	YES		
					53GW10	YES	YES	YES		
					53GW14	YES	YES	YES		
					53GW24	YES	YES	YES		
					53GW28	YES	YES	YES		
					53GW29	YES	YES	YES		
					53GW30	YES	YES	YES		
					53GW33	YES	YES	YES		
					Potable Well 12	NO	YES	YES		

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIATION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI-ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)				
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	Sampling By: J. A. Jones
3996/ #14774 MCAS Cherry Point	INT Free Product	YES Diesel Fuel	Product Recovery AS/SVE, Nat. Attn. J. A. Jones Operating	LAW 1/97; Sample "Existing Wells" (± 24 Wells" for 602 and 610; Quarterly for 1 Year and Semi-Annually thereafter	74GW01	YES	YES	YES	
				74GW05	YES	YES	YES		
				74GW06	YES	YES	YES		
				74GW07	YES	YES	YES		
				74GW08	YES	YES	YES		
				74GW09	YES	YES	YES		
				74GW10	YES	NO	NO		
				74GW11	YES	NO	NO		
				74GW16	YES	NO	NO		
				74GW17	YES	YES	YES		
				Measure water/product levels in unspecified wells weekly					
				Air monitoring not required. Notify Division of Air Quality at startup.					

SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIATION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)							Sampling by:	
					<u>Well</u>	<u>Gauge</u>	<u>EPA 504.1</u>	<u>EPA 601</u>	<u>EPA 602+MTBE + IPE + Xylenes</u>	<u>EPA 610</u>	<u>LEAD/STD. 3030C PREP</u>		
4075/ #6360, #9950, #9140, #9276, & #17971 MCAS Cherry Point	HIGH Potable Well 3, Vapors, & Free Product	YES JP-5 Diesel Fuel Gasoline	Product Recovery AS/SVE, Nat. Attn. McLaren/Hart (J. A. Jones) Operating	LAW 10/95; Sample "Existing Wells" for 602 and 610; Quarterly for 2 Years, Semi- Annually for Years 3 through 24, and Quarterly for Year 25 Monthly measurement of free product thickness for 4 years+ Air monitoring by EPA Method 18 required.	13GW01	YES	NO	NO	NO	NO	NO	NO	J. A. Jones
					13GW02	YES	NO	NO	NO	NO	NO		
					13GW04	YES	NO	NO	NO	NO	NO		
					13GW05	YES	YES	YES	YES	YES	YES		
					13GW06	YES	NO	NO	NO	NO	NO		
					13GW08	YES	YES	YES	YES	YES	YES		
					13GW10	YES	NO	NO	NO	NO	NO		
					13GW11	YES	YES	YES	YES	YES	YES		
					13GW12	YES	YES	YES	YES	YES	YES		
					13GW15	YES	YES	YES	YES	YES	YES		
					13GW17	YES	NO	NO	NO	NO	NO		
					13GW19	YES	YES	YES	YES	YES	YES		
					13GW20	YES	NO	NO	NO	NO	NO		
					13GW21	YES	YES	YES	YES	YES	YES		
					13GW26	YES	NO	NO	NO	NO	NO		
					13GW31	YES	NO	NO	NO	NO	NO		
					13GW32	YES	NO	NO	NO	NO	NO		
					13GW33	YES	NO	NO	NO	NO	NO		
					13GW34	YES	NO	NO	NO	NO	NO		
					13GW35	YES	NO	NO	NO	NO	NO		
					56GW02	YES	YES	YES	YES	YES	YES		
					56GW08	YES	YES	YES	YES	YES	YES		
					56GW09	YES	YES	YES	YES	YES	YES		
					56GW13	YES	NO	NO	NO	NO	NO		
					56GW18	YES	YES	YES	YES	YES	YES		
					56GW19	YES	NO	NO	NO	NO	NO		
					56GW24	YES	NO	NO	NO	NO	NO		
					56GW26	YES	NO	NO	NO	NO	NO		
					66GW02	YES	NO	NO	NO	NO	NO		
					66GW03	YES	NO	NO	NO	NO	NO		
					66GW05	YES	YES	YES	YES	YES	YES		
					66GW08	YES	YES	YES	YES	YES	YES		
					66GW20	YES	YES	YES	YES	YES	YES		
66GW26	YES	YES	YES	YES	YES	YES							
66GW28	YES	YES	YES	YES	YES	YES							
66GW30	YES	NO	NO	NO	NO	NO							
13GW14*	YES	NO	NO	NO	NO	NO							

* NOTE:
May need to locate using
a metal detector

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)				
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	Sampling by: McLaren/Hart (J. A. Jones)
P15/ #18715 MCAS Cherry Point	HIGH Nearby Surface Water, Free Product and Potable Wells 1 and 3	YES JP-5	Product Removal AS/ SVE, Nat. Attn. McLaren/Hart (J. A. Jones) Operating	Law 5/98; Sample "Existing Monitoring Wells" (±28 Wells) for EPA Methods 602, 625, and 239.2; Quarterly for 1 st Year, Semi-Annually for Years 2 through 19, and Quarterly for Year 20. Monthly field measurements of ground-water levels, dissolved oxygen concentrations, and pressure in appropriate monitoring wells to evaluate air sparging. Sample surface water up and downstream Quarterly for Years 1 through 4; Semi- Annually for Years 5 through 19; and Quarterly for Year 20. Notify Division of Air Quality upon system start-up.	<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	
					66GW51	YES	NO	NO	
					66GW52	YES	NO	NO	
					66GW53	YES	NO	NO	
					66GW54	YES	NO	NO	
					66GW55	YES	YES	YES	
					66GW56	YES	NO	NO	
					66GW57	YES	NO	NO	
					66GW58	YES	YES	YES	
					66GW59	YES	NO	NO	
					66GW63	YES	YES	YES	
					66GW66	YES	YES	YES	
					66GW67	YES	NO	NO	
					66GW68	YES	NO	NO	
					66GW69	YES	YES	YES	
					66GW70	YES	YES	YES	
					66SWDWN	NO	YES	YES	
66SWUP	NO	YES	YES						
Potable Well 3	NO	YES	YES						

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)						Sampling by: McLaren/ Hart (J. A. Jones)
					<u>Well</u>	<u>Gauge</u>	<u>EPA 601</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	<u>EPA 504.1</u>	
TFB/ #6359 MCAS Cherry Point	HIGH Potable Wells/ 1 and 3	YES Gasoline JP-5 Diesel Fuel	Product Skim, AS/SVE, Nat. Attn. McLaren/Hart (J. A. Jones) System Operating	LAW 7/97; Sample "Existing Wells" (±41 Wells) for 602 and 610; Quarterly for 1 Year and Semi-Annually thereafter Air monitoring not required. Notify Division of Air Quality at startup.	08GW01	YES	YES	YES	YES	YES	YES
					08GW02	YES	NO	NO	NO	NO	NO
					08GW05	YES	YES	YES	YES	YES	YES
					08GW06	YES	NO	NO	NO	NO	NO
					08GW09	YES	NO	NO	NO	NO	NO
					08GW10	YES	YES	YES	YES	YES	YES
					08GW11	YES	NO	NO	NO	NO	NO
					08GW12	YES	YES	YES	YES	YES	YES
					08GW14	YES	YES	YES	YES	YES	YES
					08GW15	YES	YES	YES	YES	YES	YES
					08GW18	YES	YES	YES	YES	YES	YES
					08GW20	YES	NO	NO	NO	NO	NO
					08GW21	YES	NO	NO	NO	NO	NO
					08GW22	YES	NO	NO	NO	NO	NO
					08GW23	YES	NO	NO	NO	NO	NO
					08GW24	YES	NO	NO	NO	NO	NO
					08GW27	YES	NO	NO	NO	NO	NO
					08GW28	YES	NO	NO	NO	NO	NO
					08GW29	YES	NO	NO	NO	NO	NO
					08GW31	YES	NO	NO	NO	NO	NO
08GW39	YES	NO	NO	NO	NO	NO					
08GW40	YES	YES	YES	YES	YES	YES					
08GW41	YES	NO	NO	NO	NO	NO					
08GW144	YES	YES	YES	YES	YES	YES					
08GW145	YES	YES	YES	YES	YES	YES					
Potable Well 1	NO	YES	YES	YES	YES	YES					

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)				
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + MTBE + Xylenes + IPE</u>	<u>EPA 610</u>	<u>EPA 504.1</u>
TFC/ #6906 MCAS Cherry Point	HIGH Industrial Well N-1	NO Gasoline, Diesel Fuel	Product Vapor Extraction, AS/SVE/BS J. A. Jones Operating	CATLIN 12/95; Sample unspecified "Selected Wells" for 601 and 602 Quarterly Gauge unspecified "Selected Wells" Monthly Air monitoring by EPA Method 18 required.	14GW03	YES	NO	NO	No
					14GW05	YES	YES	YES	YES
					14GW07	YES	NO	NO	No
					14GW09	YES	YES	YES	YES
					14GW13	YES	YES	YES	YES
					14GW17	YES	NO	NO	No
					14GW22	YES	YES	YES	YES
					14GW23	YES	NO	NO	No
					14GW25	YES	YES	YES	YES
					14GW26	YES	NO	NO	No
					14GW27	YES	NO	NO	No
					14GW34	YES	YES	YES	YES
					14GW35	YES	YES	YES	YES
					14GW36	YES	YES	YES	YES
					14GW37	YES	YES	YES	YES
					14GW39	YES	YES	YES	YES
					14GW40	YES	NO	NO	No
N-1	NO	YES	YES	YES					

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

SITE/ INCIDENT # & FACILITY	RISK (1) /REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE (2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (#)	SEMI - ANNUAL MONITORING PLAN (4), (5), (6), (7), (8)				
					<u>Well</u>	<u>Gauge</u>	<u>EPA 602 + Xylenes</u>	<u>EPA 610</u>	Sampling By:
TFD/ #9265 MCAS Cherry Point	HIGH Potable Well 8 Surface Water	YES #2 Fuel Oil Kerosene	Product Skim, BV/BS IT Corp Operating	LAW 8/14; Sample "Existing Monitoring Wells" (±31 wells) for 602 and 610 Quarterly Air monitoring by EPA Method 18 required.	09GW01 09GW02 09GW05 09GW06 09GW07 09GW10 09GW13 09GW14 09GW21 09GW24 09GW25 Potable Well 8	YES YES YES YES YES YES YES YES YES YES YES NO	NO YES YES YES YES YES YES NO NO NO YES YES	No YES YES YES YES YES No No No YES YES	IT Corp

**SECOND SEMESTER 2000, SUMMARY OF LONG-TERM MONITORING REQUIREMENTS
MCAS CHERRY POINT AND MCOLF OAK GROVE**

NOTES:

- (1) Temporarily assigned risk by MCAS. Ranking will be updated after evaluation by MCAS.
- (2) AS/SVE = Air Sparging/Soil Vapor Extraction Nat. Attn. = Natural Attenuation
BV = Bioventing GW = Ground Water
BS = Biosparging AFVR = Aggressive Fluid/Vapor Recovery
- (3) The Original CAP requirements column contains the air monitoring requirements in the CAP for information purposes only. The revised CAP Amendment request for ground water and surface water monitoring dated March 8, 1999 made no application to modify original CAP air monitoring requirements.
- (4) Low risk sites do not require long term monitoring.
- (5) Intermediate and High risk sites will be monitored semi-annually in February (seasonal high water table) and August (seasonal low water table).
- (6) Long term monitoring will not include MADEP VPH or MADEP EPH sampling as described in Table 8 of the Groundwater Section Guidelines, Volume II (UST Vol. II). MADEP sampling will only be conducted after long term monitoring establishes that contamination levels have decreased below the target levels established at each site. There are no existing CAP requirements for EPA Method 601 or lead. EPA Method 601 and lead sampling and analysis will be conducted only after long term monitoring establishes that concentrations of EPA Method 602 and 610 constituents have decreased below target levels established at each site.
- (7) Sampling from sites with medium/high boiling point fuel contamination will generally be analyzed by EPA Method 602+Xylenes and EPA Method 610. EPA Method 610 is used in lieu of EPA Method 625 because previous studies have already identified contaminants of concern by GC/MS methods and EPA Method 610 is less expensive than EPA Method 625. EPA Method 625 can be used instead of EPA method 610.
Samples from sites with low boiling point fuel contamination will generally be analyzed by EPA Method 602 + MTBE, and Xylenes and EPA Method 610 where there is a history of these contaminants at the site.
Samples from sites with used or waste oil will have metals analysis run at selected locations, depending on the historical results of studies at these sites. There are no sites with contamination that is only from used or waste oil, so the other analyses at these sites will be selected for low, medium or high boiling point fuels as appropriate.
- (8) Effects of natural attenuation will be observed by reduction of contaminant levels in ground water. No special "Natural Attenuation" monitoring will be routinely conducted during long term monitoring.
- (9) If free product is present in well, do not collect ground water sample.

**SECOND SEMESTER 2000 SUMMARY OF LONG -TERM MONITORING REQUIREMENTS
MCOLE ATLANTIC AND MCALF BOGUE**

SITE/ INCIDENT # & FACILITY	RISK (1)/ REASON	FREE PRODUCT/ CONTAMINANTS	REMEDIAION TYPE(2)/ CONTRACTOR/ STATUS	ORIGINAL CAP REQUIREMENTS (3)	SEMI - ANNUAL MONITORING PLAN* (4), (5), (6), (7), (8)				
					Well	Gauge	EPA 602 + Xylenes	EPA 610	Sampling by:
7012/ #15275 MCOLE Atlantic	INT Potable Wells at Building 7019	YES #2 Fuel Oil	Product Skim, Nat. Attn.	LAW 8/95; Sample 25GW01 through 25GW13 for 602 and 625; Quarterly for 2 Years, Semi-Annually for Years 3 through 19, and Quarterly for Year 20. Air monitoring not required.	25GW01 25GW02 25GW04 25GW06 25GW08 25GW12 25GW13	YES YES YES YES YES YES YES	NO YES NO NO NO YES NO	NO YES NO NO NO YES NO	IT Corp.
8049/ #8959 MCALF Bogue	INT Free Product & Nearby Surface Water	YES Gasoline, Diesel Fuel, and #2 Fuel Oil	The Remediation Strategy is being Reassessed IT Corp.	LAW 11/95; Sample "Existing Monitoring Wells" (±23 wells) for 602 + Xylenes and 610; Quarterly for 2 Years, Semi-Annually for Years 3 through 9, and Quarterly for Year 10. Air monitoring not required.	28GW04 28GW05 28GW06 28GW07 28GW08 28GW11 28GW12 28GW13 28GW17 28GW20	YES YES YES YES YES YES YES YES YES	NO NO YES YES YES YES NO YES YES	NO NO YES YES YES YES No YES YES	CATLIN/Law
8052/TAFDS* #7493 MCALF Bogue	AST Ground Water Section Site	NO JP-5	Nat. Attn. No Contractor Inactive	LAW 12/95; Amend 4/97, Sample "Existing Wells" (22 wells) 602 + Xylenes and 610 Air monitoring not required.	27GW09 27GW10 27GW13 27GW14 27GW17 27GW18 27GW22	YES YES YES YES YES YES YES	YES YES YES YES YES YES YES	YES YES YES YES YES YES YES	CATLIN/Law
TAFDS/** #14989 MCALF Bogue	AST Ground Water Section Site	YES JP-5	Product Recovery Trench, BV/BS, Nat. Attn., Excavation of Soils Not Yet Contracted Being Re-evaluated	CATLIN 4/96; Sample 70GW01, 70GW05,70GW06, 70GW08, 70GW12, 70GW14, and 70GW15 for 601, 602, and 625; Quarterly for Year 1 and Annually thereafter. Gauge all monitoring wells (±21 wells) Quarterly for Year 1 and Annually thereafter. Surface water sampling upstream and downstream is recommended. Air monitoring not required.	70GW01 70GW02 70GW03 70GW05 70GW12 70GW13 70GW14 70GW15 70GW18 70SW-DWN 70SW-UP	YES YES YES YES YES YES YES YES YES NO NO	YES YES NO YES YES YES YES YES YES YES YES	YES YES No YES YES YES YES YES YES YES YES	CATLIN/Law

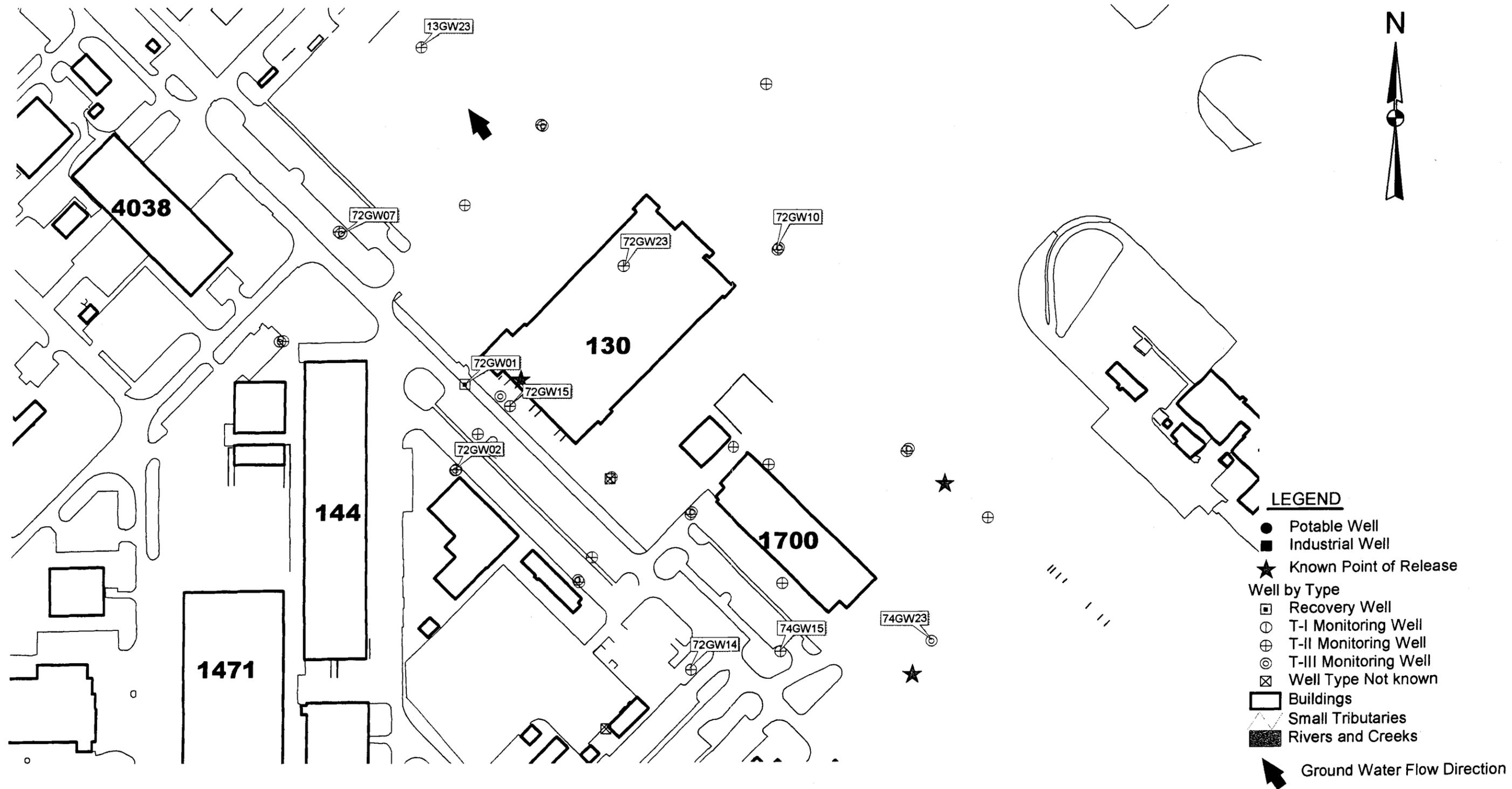
* Sampling and Gauging events are to be performed quarterly for site 8052/TAFDS.

**Any well removed/abandoned during soil excavation process will not be gauged or sampled.

**SECOND SEMESTER 2000 SUMMARY OF LONG -TERM MONITORING REQUIREMENTS
MCOLE ATLANTIC AND MCALF BOGUE**

NOTES:

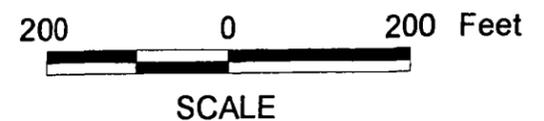
- (1) Temporarily assigned risk by MCAS. Ranking will be updated after evaluation by MCAS.
- (2) AS/SVE = Air Sparging/Soil Vapor Extraction Nat. Attn. = Natural Attenuation
BV = Bioventing GW = Ground Water
BS = Biosparging AFVR = Aggressive Fluid/Vapor Recovery
- (3) The CAP Amendment column contains the air monitoring requirements in the CAP for information purposes only. This CAP Amendment request for ground water and surface water monitoring makes no application to modify existing CAP air monitoring requirements.
- (4) Low risk sites do not require long term monitoring.
- (5) Intermediate and High risk sites will be monitored semi-annually in February (seasonal high water table) and August (seasonal low water table).
- (6) Long term monitoring will not include MADEP VPH or MADEP EPH sampling as described in Table 8 of the Groundwater Section Guidelines, Volume II (UST Vol. II). MADEP sampling will only be conducted after long term monitoring establishes that contamination levels have decreased below the target levels established at each site. There are no existing CAP requirements for EPA Method 601 or lead. EPA Method 601 and lead sampling and analysis will be conducted only after long term monitoring establishes that concentrations of EPA Method 602 and 610 constituents have decreased below target levels established at each site.
- (7) Sampling from sites with medium/high boiling point fuel contamination will generally be analyzed by EPA Method 602+Xylenes and EPA Method 610. EPA Method 610 is used in lieu of EPA Method 625 because previous studies have already identified contaminants of concern by GC/MS methods and EPA Method 610 is less expensive than EPA Method 625.
Samples from sites with low boiling point fuel contamination will generally be analyzed by EPA Method 602 + IPE, MTBE, EDB, and Xylenes and EPA Method 610 where there is a history of these contaminants at the site.
Samples from sites with used or waste oil will have metals analysis run at selected locations, depending on the historical results of studies at these sites. There are no sites with contamination that is only from used or waste oil, so the other analyses at these sites will be selected for low, medium or high boiling point fuels as appropriate.
- (8) Effects of natural attenuation will be observed by reduction of contaminant levels in ground water. No special "Natural Attenuation" monitoring will be routinely conducted during long term monitoring.



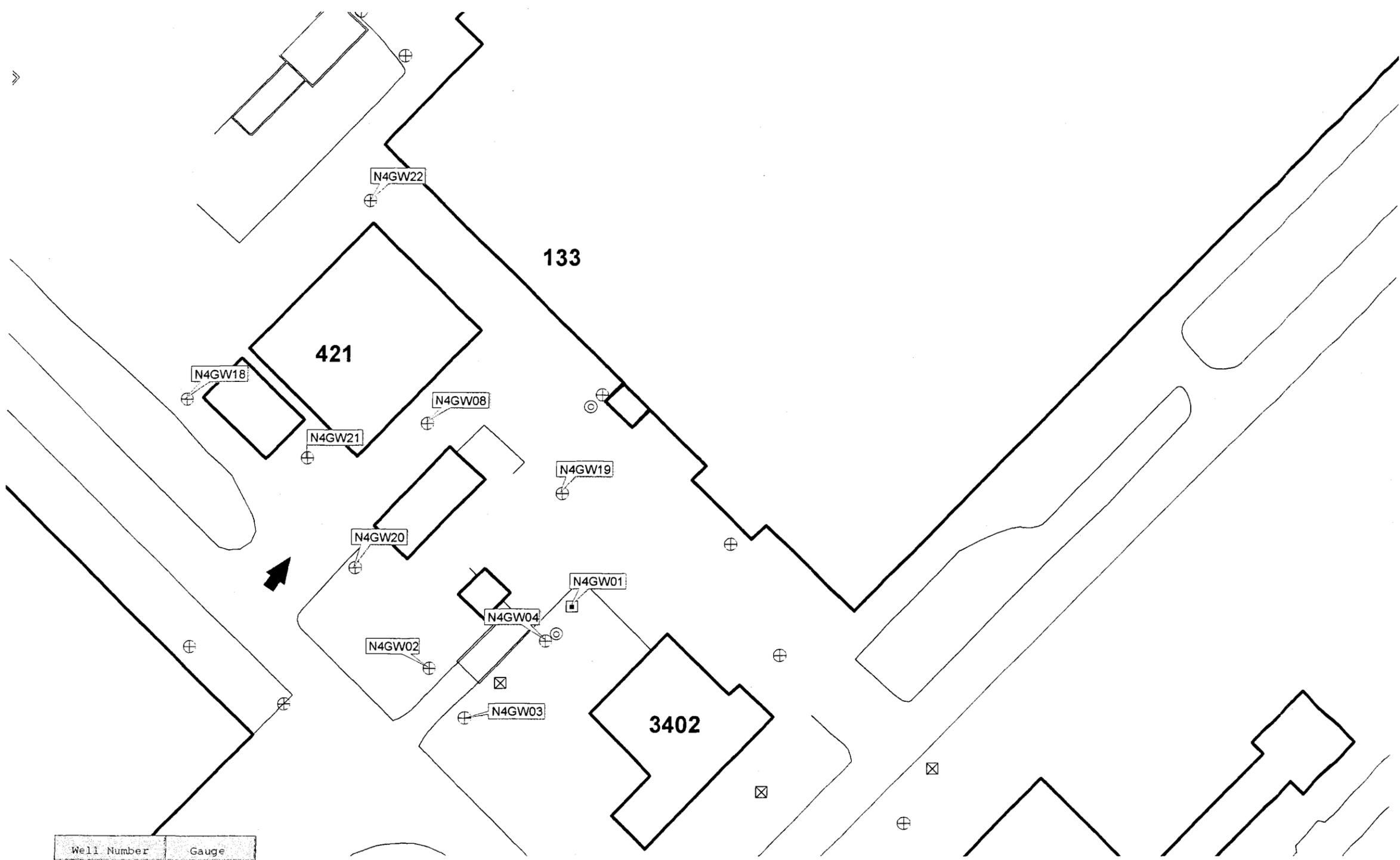
SAMPLING TO BE PERFORMED BY J.A. JONES.

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN BY SEPTEMBER 15, 2000.

Well Number	Gauge	EPA 602 - Xylenes - MTBE - IPE	EPA 610	EPA 601	EPA 504.1	Lead/Std. 3030C Prep
72GW01	YES	YES	YES	YES	YES	YES
72GW02	YES	YES	YES	YES	YES	YES
72GW14	YES	YES	YES	YES	YES	YES
13GW23	YES	YES	YES	YES	YES	YES
72GW07	YES	YES	YES	YES	YES	YES
72GW23	YES	YES	YES	YES	YES	YES
72GW15	YES	YES	YES	YES	YES	YES
74GW15	YES	YES	YES	YES	YES	YES
74GW23	YES	YES	YES	YES	YES	YES
72GW10	YES	YES	YES	YES	YES	YES



	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE 130 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000	FIGURE 1
	JOB NO.: 200-010 DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW CHECKED BY: TMP



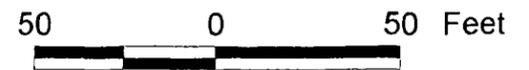
LEGEND

- Potable Well
- Industrial Well
- ☆ Known Point of Release
- Well by Type
 - Recovery Well
 - T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊙ T-III Monitoring Well
 - ⊗ Well Type Not known
- ▭ Buildings
- Small Tributaries
- ▨ Rivers and Creeks
- ➔ Ground Water Flow Direction

Well Number	Gauge
N4GW01	YES
N4GW02	YES
N4GW03	YES
N4GW04	YES
N4GW08	YES
N4GW18	YES
N4GW19	YES
N4GW20	YES
N4GW21	YES
N4GW22	YES

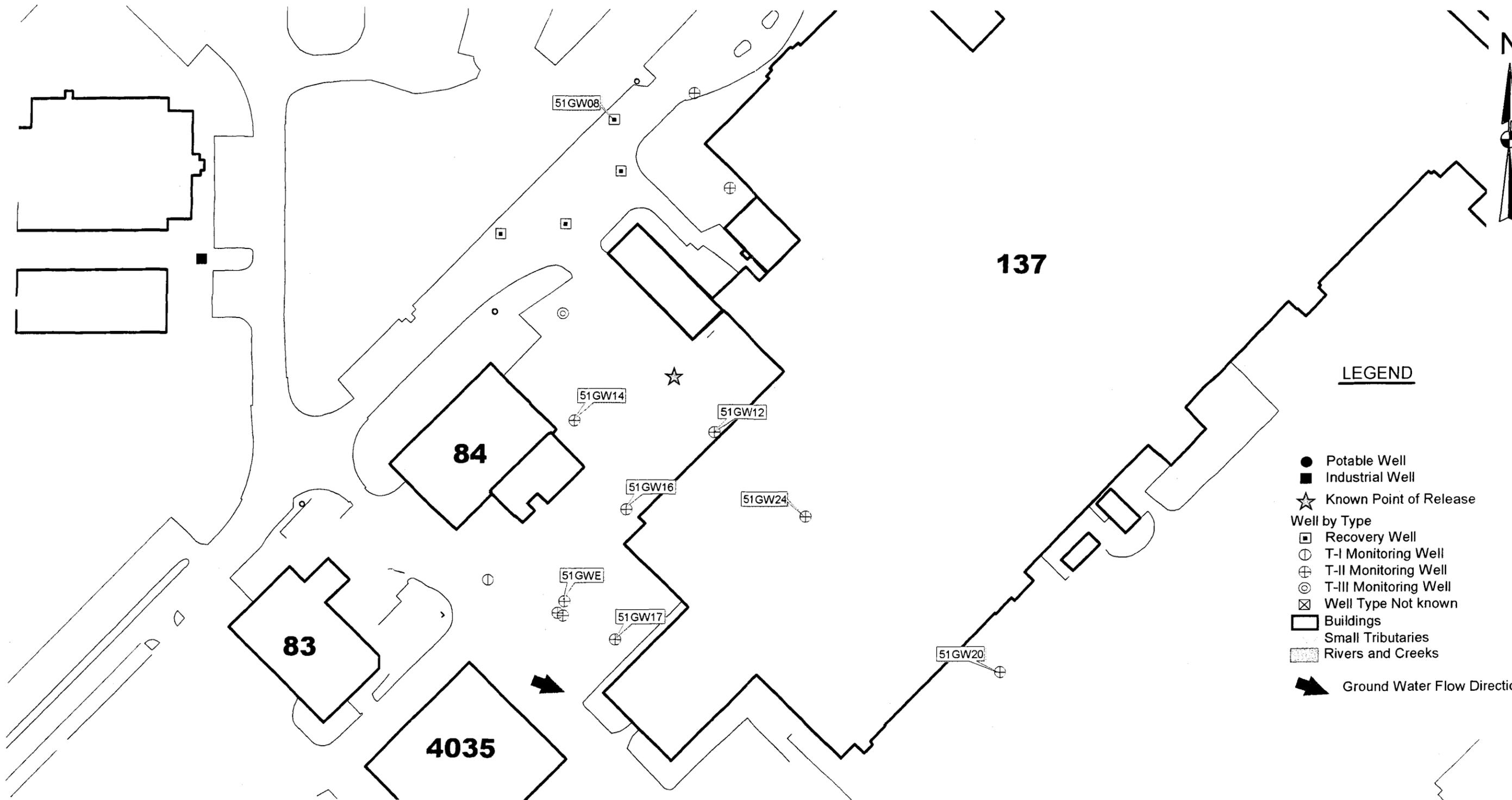
SAMPLING TO BE PERFORMED BY CATLIN/LAW.

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FROMAT BY SEPTEMBER 15, 2000**



SCALE

	PROJECT	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM		TITLE	SITE 133 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000		FIGURE	2	
	JOB NO.:	200-010	DATE:	MAY 2000	SCALE:	AS SHOWN	DRAWN BY:		MWW



LEGEND

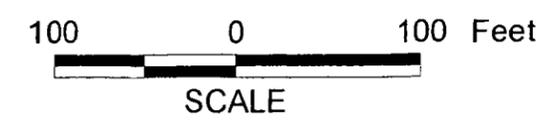
- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - ▣ Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊕ T-III Monitoring Well
 - ⊗ Well Type Not known
- ▭ Buildings
- ▭ Small Tributaries
- ▭ Rivers and Creeks
- ➔ Ground Water Flow Direction

Well Number	Gauge
51GW12	YES
51GW14	YES
51GW16	YES
51GW24	YES
51GW17	YES
51GW08	YES
51GW20	YES
51GWE	YES

SAMPLING TO BE PERFORMED BY OHM (IT).

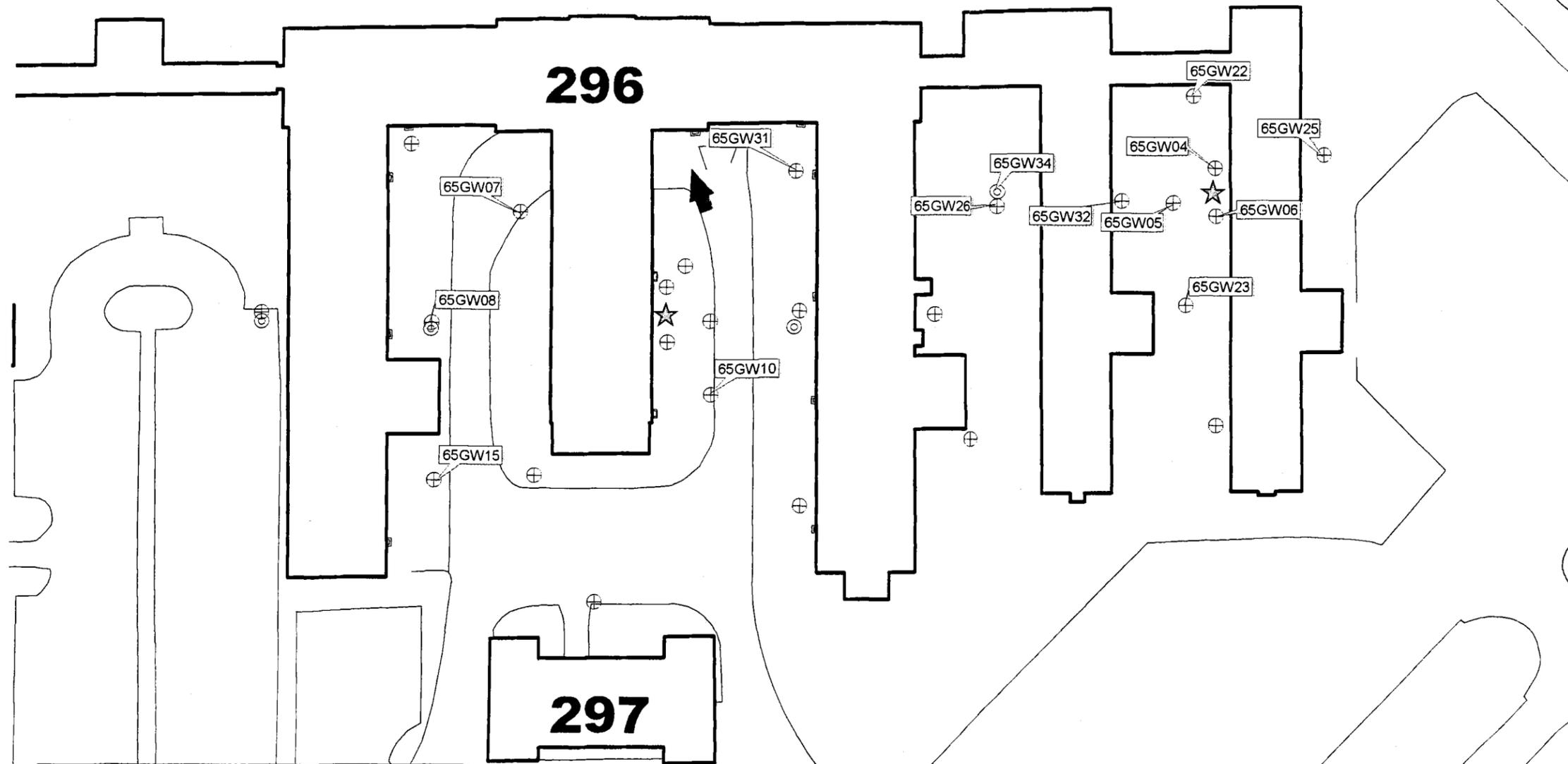
SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.

RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.



	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE 137 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000	FIGURE 3
	JOB NO.: 200-010 DATE: MAY 2000	SCALE: AS SHOWN	DRAWN BY: MWW CHECKED BY: GM

Potable Well 9 is located approximately 710 feet west-northwest from the Known Point of Release.



LEGEND

- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊙ T-III Monitoring Well
 - ⊗ Well Type Not known
- ▭ Buildings
- Small Tributaries
- ▨ Rivers and Creeks

▲ Ground Water Flow Direction

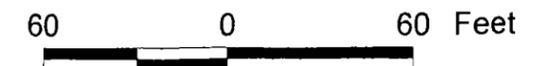
Well Number	Gauge	EPA 602 + Xylenes	EPA 610
65GW04	YES	YES	YES
65GW05	YES	YES	YES
65GW06	YES	YES	YES
65GW07	YES	YES	YES
65GW08	YES	YES	YES
65GW10	YES	YES	YES
65GW15	YES	YES	YES
65GW22	YES	YES	YES
65GW23	YES	YES	YES
65GW25	YES	YES	YES
65GW26	YES	YES	YES
65GW31	YES	YES	YES
65GW32	YES	YES	YES
65GW34	YES	YES	YES
Potable Well 9	NO	YES	YES

SAMPLING TO BE PERFORMED BY OHM (IT)

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000**

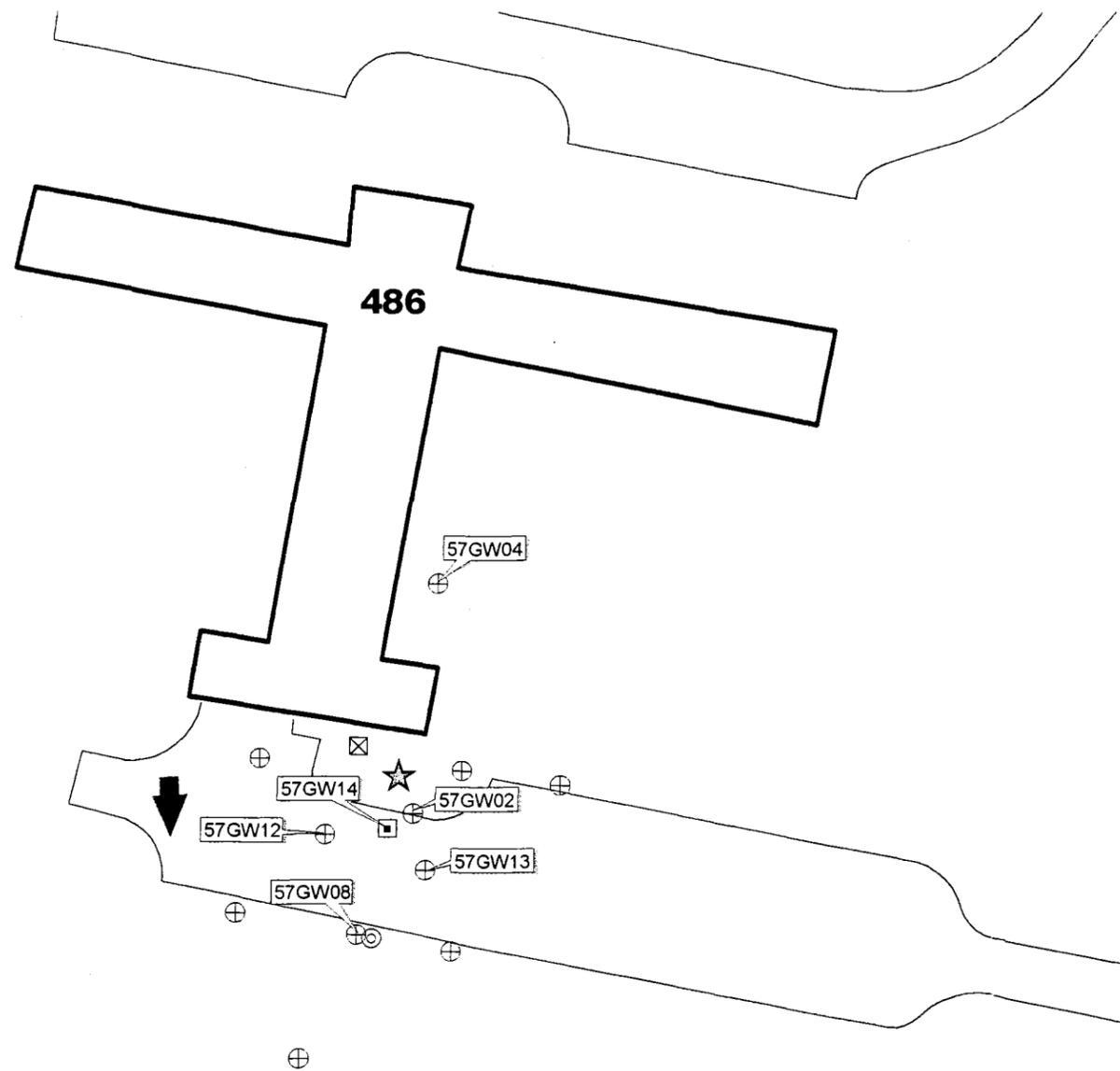
Notes: 1. The "Date" field in the table should be interpreted as "YYYYMMDD". For example 20000115 represents January 15, 2000.

2. Buildings 296 and 297 have been demolished.



SCALE

	PROJECT	TITLE		FIGURE
	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	SITE 296 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000		4
JOB NO.: 200-010	DATE: MAY 2000	SCALE: AS SHOWN	DRAWN BY: MWW	CHECKED BY: GM



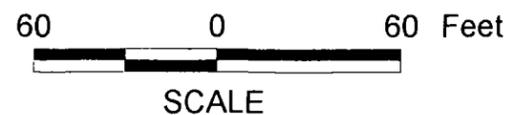
LEGEND

- Industrial Well
- Potable Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊕ T-III Monitoring Well
 - ⊗ Well Type Not known
- Small Tributaries
- ▭ Buildings
- ▭ Rivers and Creeks
- ↓ Ground Water Flow Direction

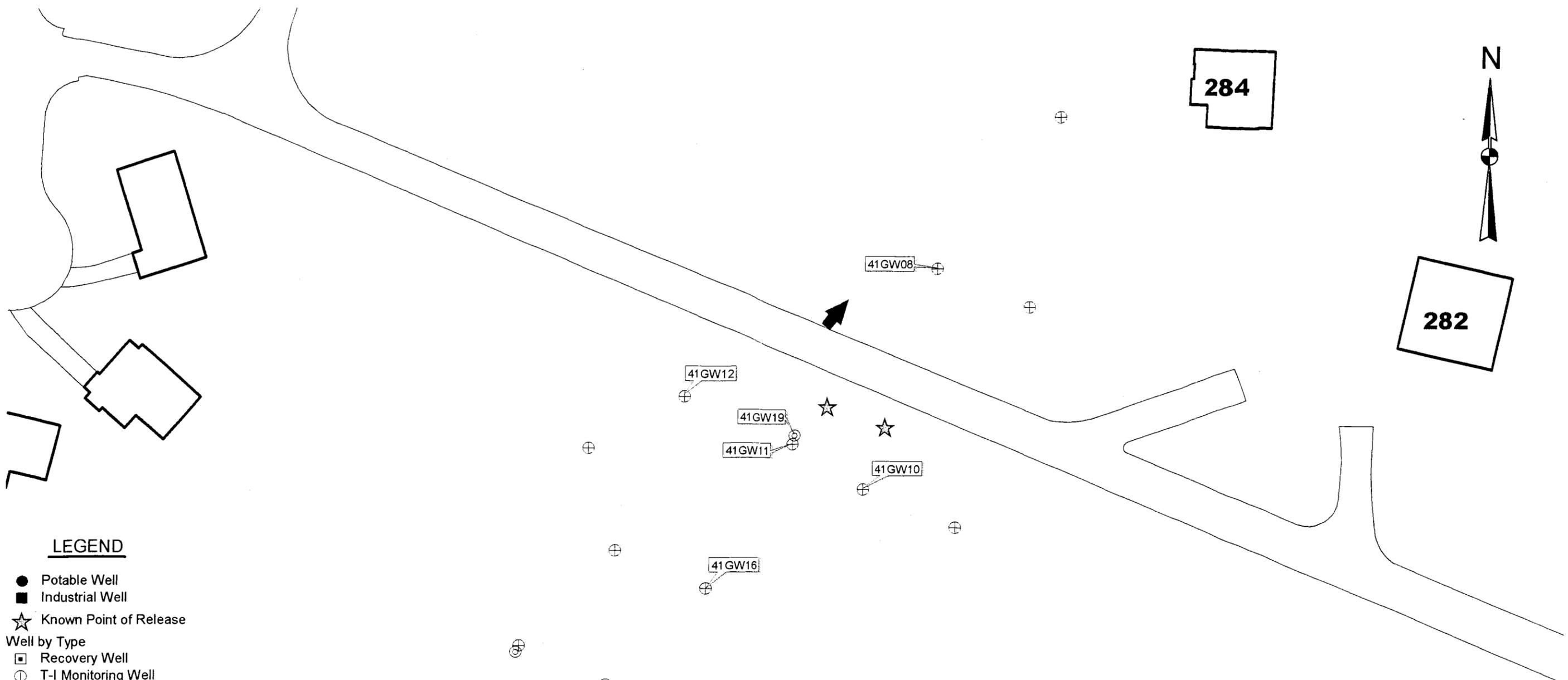
Well Number	Gauge	EPA 602 + Xylenes	EPA 610
57GW04	YES	YES	YES
57GW12	YES	YES	YES
57GW02	YES	NO	NO
57GW14	YES	NO	NO
57GW13	YES	YES	YES
57GW08	YES	YES	YES

SAMPLING TO BE PERFORMED BY OHM (IT).

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000**



 ENGINEERS and SCIENTISTS	PROJECT	TITLE		FIGURE
	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	SITE 486 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000		5
JOB NO.: 200-010	DATE: MAY 2000	SCALE: AS SHOWN	DRAWN BY: MWW	CHECKED BY: GM



LEGEND

- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - ⊙ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊗ T-III Monitoring Well
 - ⊠ Well Type Not known
- ▭ Buildings
- ▬ Small Tributaries
- ▨ Rivers and Creeks

▲ Ground Water Flow Direction

Well Number	Gauge	EPA 602 + Xylenes	EPA 610
41GW08	NO	NO	NO
41GW10	NO	NO	NO
41GW12	NO	NO	NO
41GW16	NO	NO	NO
41GW11	NO	NO	NO
41GW19	NO	NO	NO

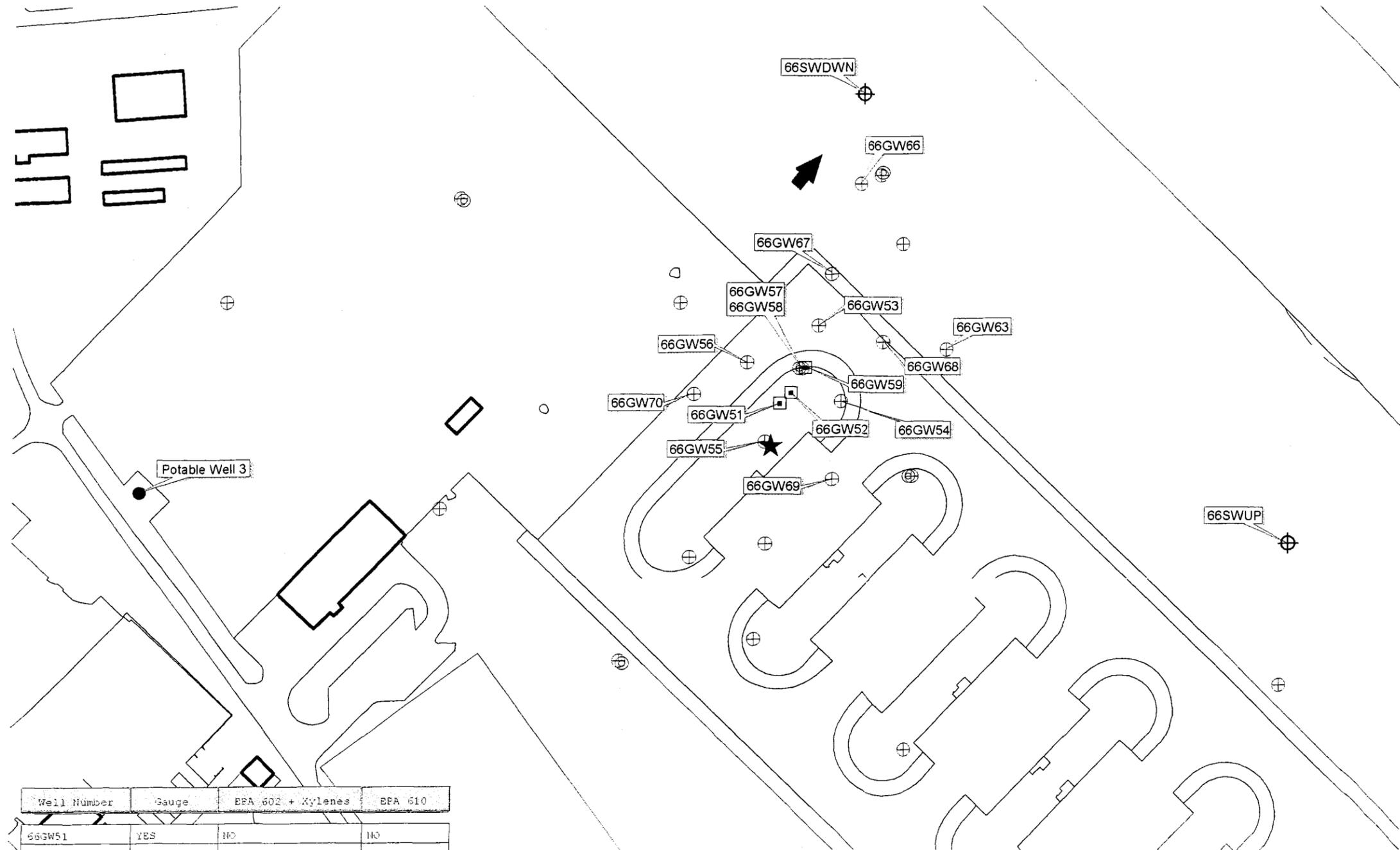
SAMPLING TO BE PERFORMED BY CATLIN/LAW.

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000. RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.

MONITORING ON HOLD PENDING NEW SOIL DATA



 ENGINEERS and SCIENTISTS	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE MTFP MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000		FIGURE 13
	JOB NO.: 200-010	DATE: APRIL 2000	SCALE: AS SHOWN	DRAWN BY: WJW



LEGEND

- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
- Recovery Well
- ⊙ T-I Monitoring Well
- ⊕ T-II Monitoring Well
- ⊗ T-III Monitoring Well
- ⊠ Well Type Not known
- ⊕ Surface Water Sample
- ▭ Buildings
- ▬ Small Tributaries
- ▬ Rivers and Creeks
- ➔ Ground Water Flow Direction

Well Number	Gauge	EPA 602 + Xylenes	EPA 610
66GW51	YES	NO	NO
66GW52	YES	NO	NO
66GW53	YES	NO	NO
66GW54	YES	NO	NO
66GW55	YES	YES	YES
66GW56	YES	NO	NO
66GW57	YES	NO	NO
66GW58	YES	YES	YES
66GW59	YES	NO	NO
66GW63	YES	YES	YES
66GW66	YES	YES	YES
66GW67	YES	NO	NO
66GW68	YES	NO	NO
66GW69	YES	YES	YES
66GW70	YES	YES	YES
66SWUP	NO	YES	YES
66SVDWN	NO	YES	YES
Potable Well 3	NO	YES	YES

SAMPLING TO BE PERFORMED BY MCLAREN/HART (J.A. JONES).

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000. RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.



	PROJECT	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM		TITLE	SITE P15 MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000	FIGURE	14		
	JOB NO.:	200-010	DATE:	MAY 2000	SCALE:	AS SHOWN	DRAWN BY:	WJW	CHECKED BY:

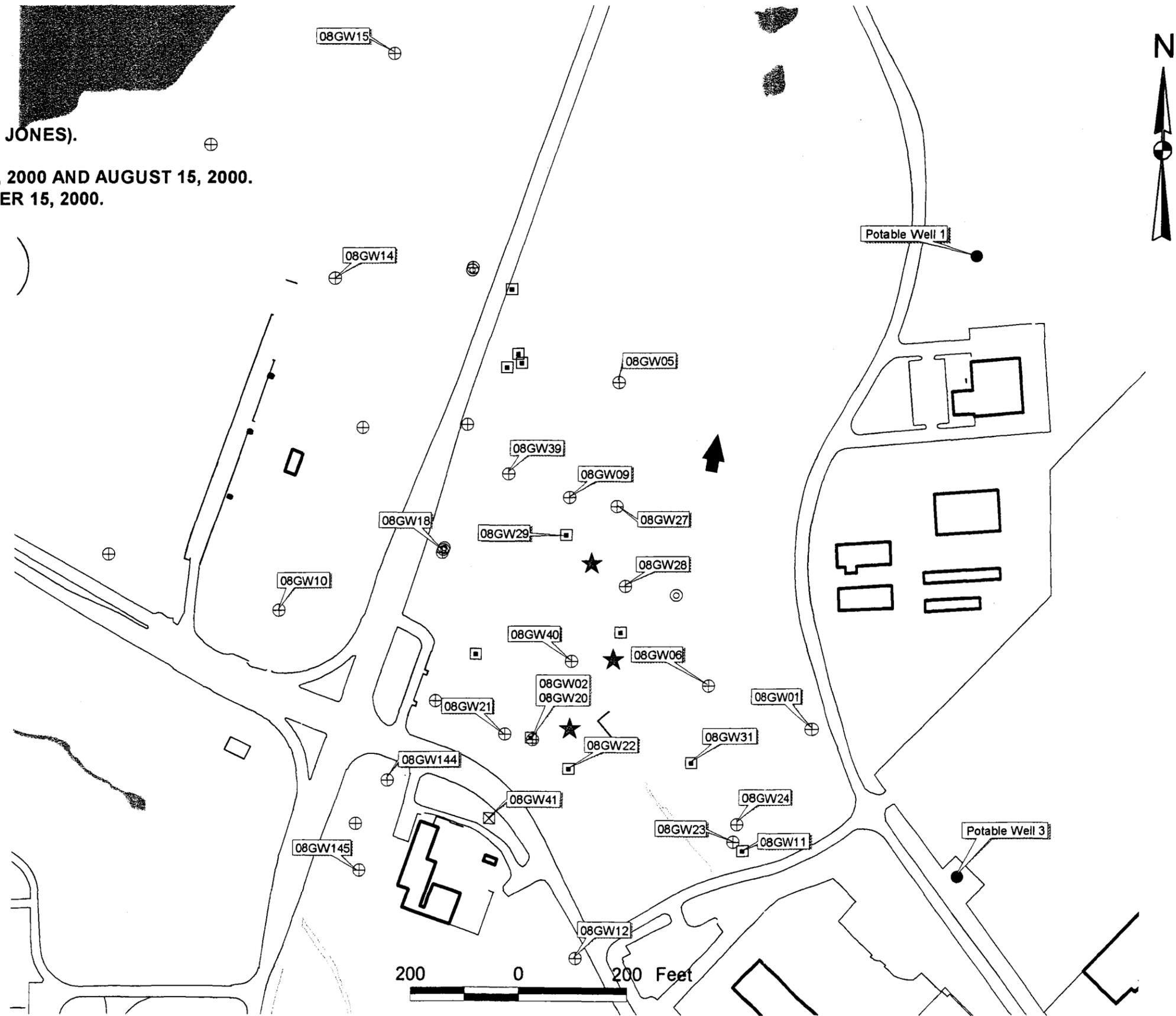
SAMPLING TO BE PERFORMED BY MCLAREN/HART (J.A. JONES).

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.

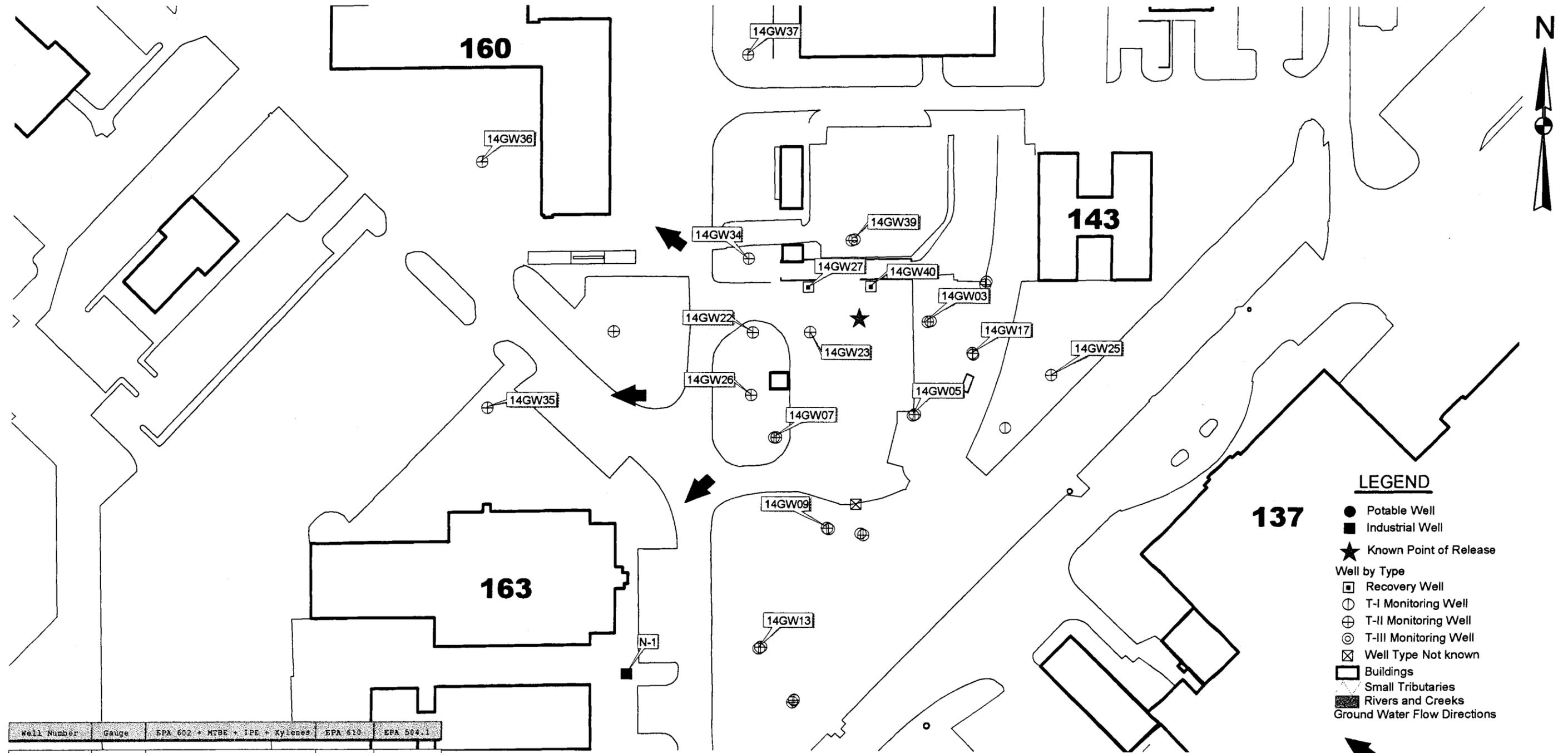
LEGEND

- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊕ T-III Monitoring Well
 - ⊗ Well Type Not known
- ▭ Buildings
- ▭ Small Tributaries
- ▭ Rivers and Creeks
- ↑ Ground Water Flow Direction

Well Number	Gauge	EPA 502 - Xylenes	EPA 610	EPA 601	EPA 504.1
08GW01	YES	YES	YES	YES	YES
08GW02	YES	NO	NO	NO	NO
08GW05	YES	YES	YES	YES	YES
08GW06	YES	NO	NO	NO	NO
08GW09	YES	NO	NO	NO	NO
08GW10	YES	YES	YES	YES	YES
08GW11	YES	NO	NO	NO	NO
08GW12	YES	YES	YES	YES	YES
08GW14	YES	YES	YES	YES	YES
08GW144	YES	YES	YES	YES	YES
08GW145	YES	YES	YES	YES	YES
08GW15	YES	YES	YES	YES	YES
08GW18	YES	YES	YES	YES	YES
08GW20	YES	NO	NO	NO	NO
08GW21	YES	NO	NO	NO	NO
08GW22	YES	NO	NO	NO	NO
08GW23	YES	NO	NO	NO	NO
08GW24	YES	NO	NO	NO	NO
08GW27	YES	NO	NO	NO	NO
08GW28	YES	NO	NO	NO	NO
08GW29	YES	NO	NO	NO	NO
08GW31	YES	NO	NO	NO	NO
08GW39	YES	NO	NO	NO	NO
08GW40	YES	YES	YES	YES	YES
08GW41	YES	NO	NO	NO	NO
Potable Well 1	NO	YES	YES	YES	YES



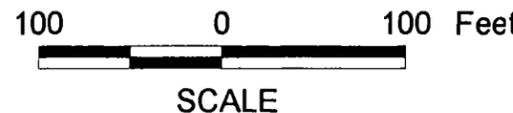
<p>CATLIN ENGINEERS and SCIENTISTS</p>	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE	SITE TFB MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000	FIGURE
	JOB NO.: 200-010	DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW



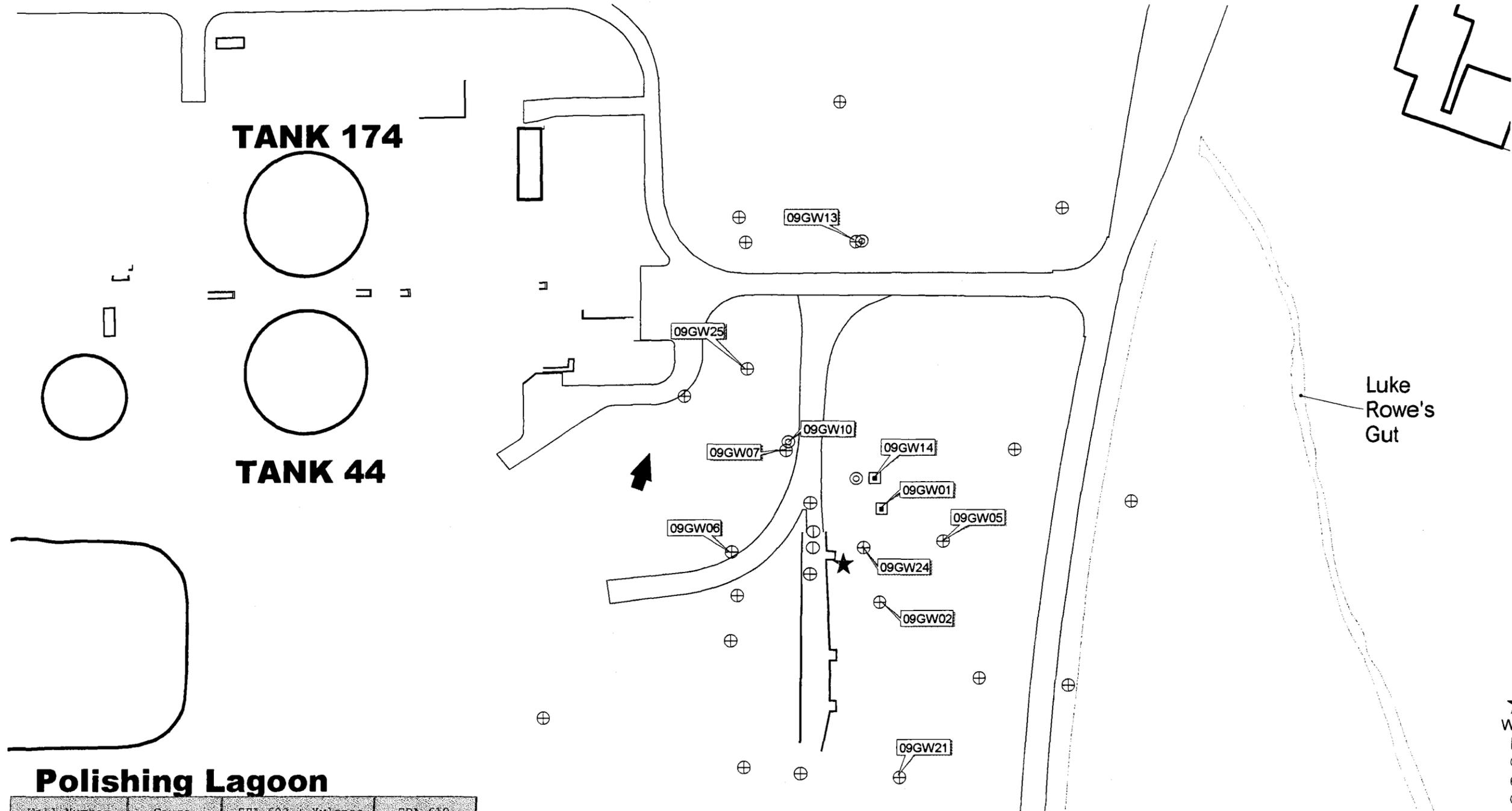
Well Number	Gauge	EPA 602 + MTBE + IPE + Xylenes	EPA 610	EPA 504.1
14GW03	YES	NO	NO	NO
14GW05	YES	YES	YES	YES
14GW07	YES	NO	NO	NO
14GW09	YES	YES	YES	YES
14GW13	YES	YES	YES	YES
14GW17	YES	NO	NO	NO
14GW22	YES	YES	YES	YES
14GW23	YES	NO	NO	NO
14GW25	YES	YES	YES	YES
14GW26	YES	NO	NO	NO
14GW27	YES	NO	NO	NO
14GW34	YES	YES	YES	YES
14GW35	YES	YES	YES	YES
14GW36	YES	YES	YES	YES
14GW37	YES	YES	YES	YES
14GW39	YES	YES	YES	YES
14GW40	YES	NO	NO	NO
N-1	NO	YES	YES	YES

SAMPLING TO BE PERFORMED BY MCLAREN/HART (J.A. JONES).

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.**



	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE TFC MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000	FIGURE 16
	JOB NO.: 200-010 DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW CHECKED BY: TMP



LEGEND

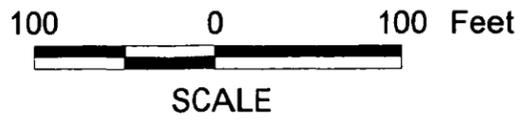
- Potable Well
 - Industrial Well
 - ★ Known Point of Release
 - Well by Type
 - Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊙ T-III Monitoring Well
 - ⊗ Well Type Not known
 - ▭ Buildings
 - △ Small Tributaries
 - ▨ Rivers and Creeks
- ▲ Ground Water Flow Direction

Polishing Lagoon

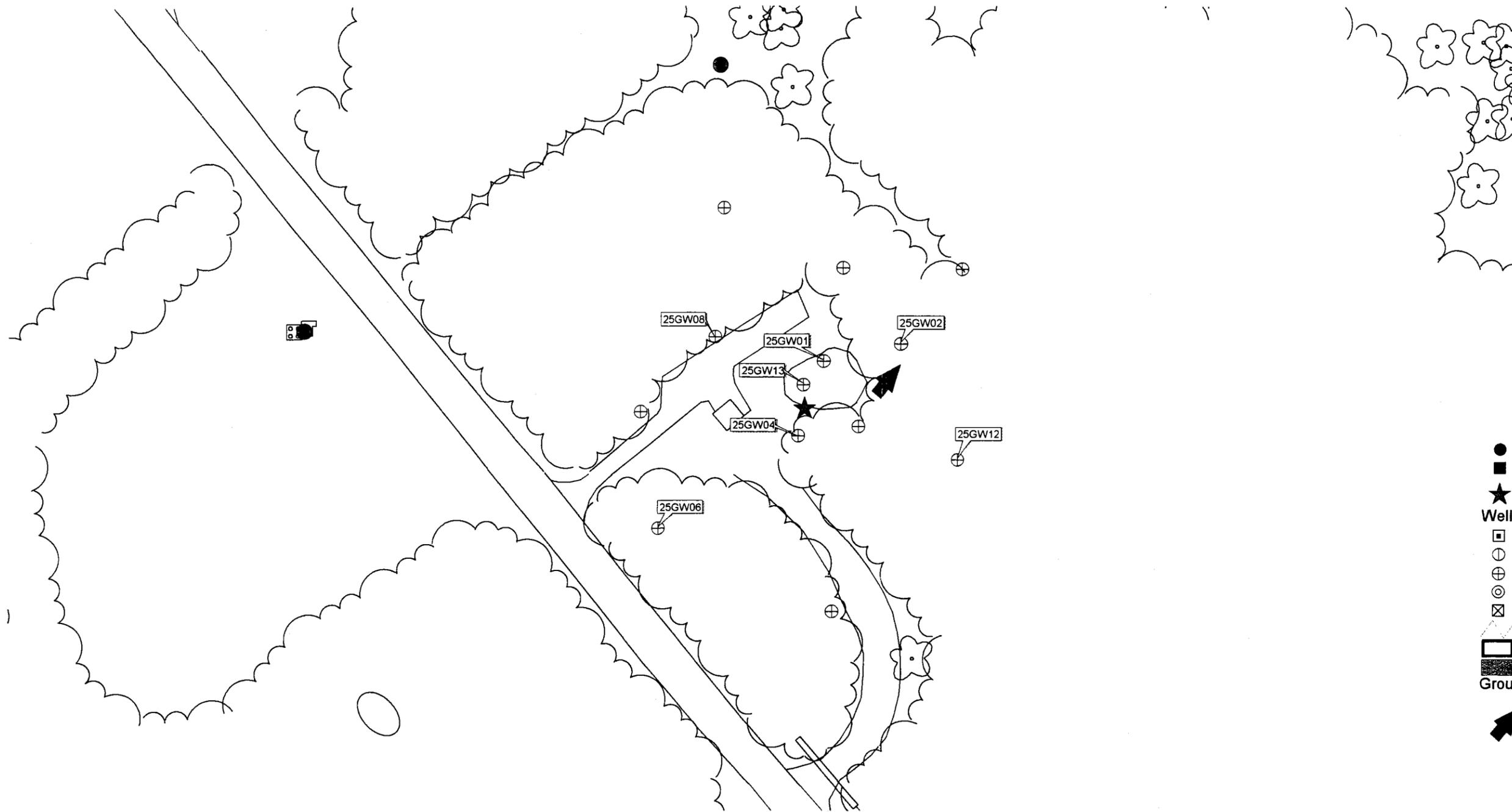
Well Number	Gauge	EPA 602 + Xylenes	EPA 610
09GW01	YES	NO	NO
09GW02	YES	YES	YES
09GW05	YES	YES	YES
09GW06	YES	YES	YES
09GW07	YES	YES	YES
09GW10	YES	YES	YES
09GW13	YES	YES	YES
09GW14	YES	NO	NO
09GW21	YES	NO	NO
09GW24	YES	NO	NO
09GW25	YES	YES	YES
Potable Well 8	NO	YES	YES

SAMPLING TO BE PERFORMED BY OHM (IT).

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.



 ENGINEERS and SCIENTISTS	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE TFD MCAS CHERRY POINT MONITORING PLAN SECOND SEMESTER 2000			FIGURE 17
	JOB NO.: 200-010	DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW	CHECKED BY: TMP



LEGEND

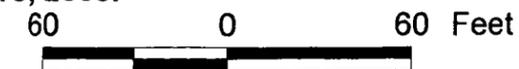
- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - ⊖ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊗ T-III Monitoring Well
 - ⊠ Well Type Not known
- Small Tributaries
- ▭ Buildings
- ▨ Rivers and Creeks
- Ground Water Flow Direction

Well Number	Gauge	EPA 602 + Xylenes	EPA 610
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25GW01	YES	NO	NO
25GW02	YES	YES	YES
25GW12	YES	YES	YES
25GW04	YES	NO	NO
25GW06	YES	NO	NO
25GW08	YES	NO	NO
25GW13	YES	NO	NO

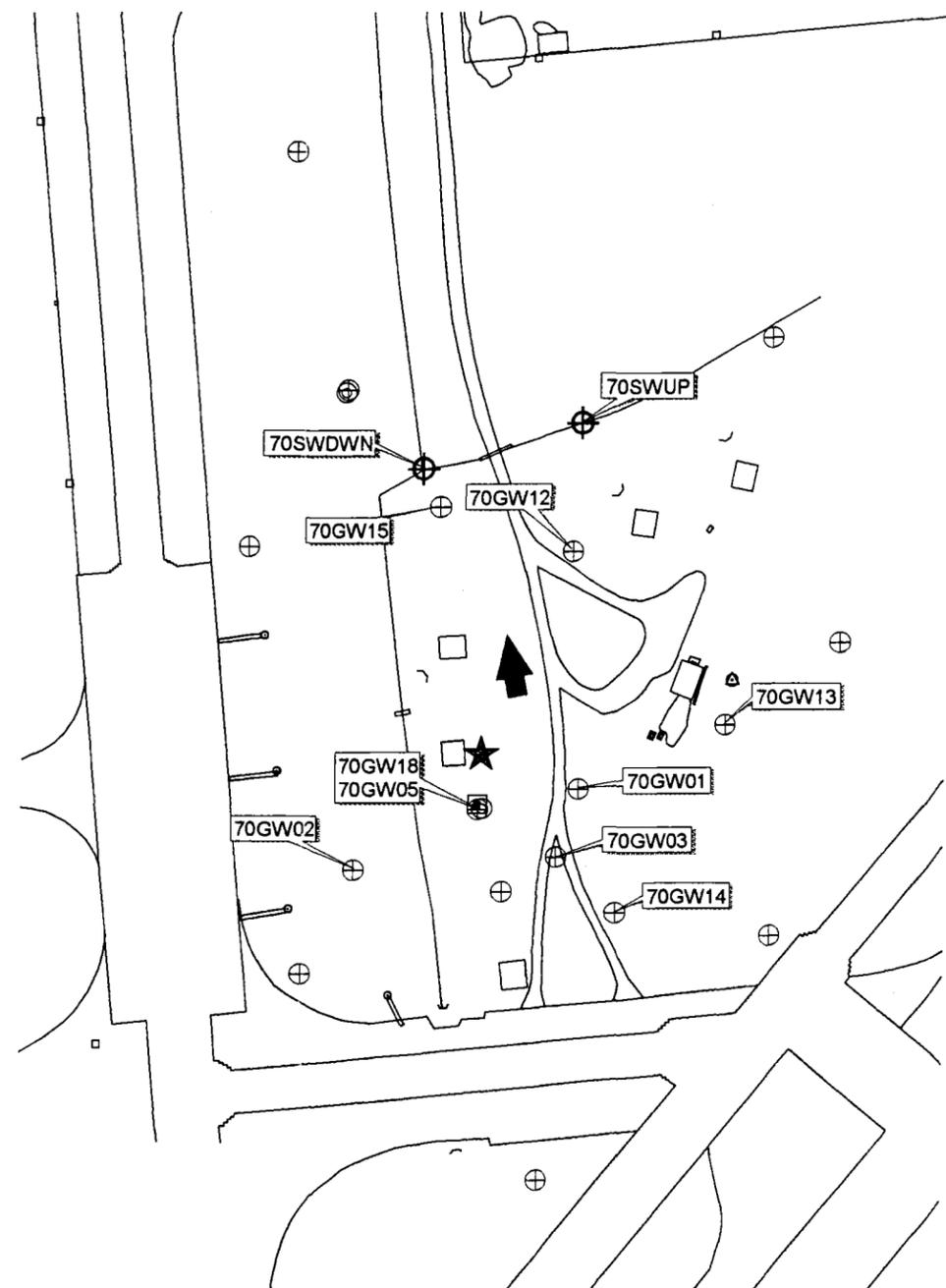
SAMPLING TO BE PERFORMED BY OHM (IT).

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.**



SCALE

 ENGINEERS and SCIENTISTS	PROJECT	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM		TITLE	SITE 7012 MCOF ATLANTIC MONITORING PLAN SECOND SEMESTER 2000		FIGURE	18	
	JOB NO.:	200-010	DATE:	JUL 2000	SCALE:	AS SHOWN	DRAWN BY:		WJW



LEGEND

- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊕ T-III Monitoring Well
 - ⊗ Well Type Not known
 - ⊕ Surface Water Sample
- ▭ Buildings
- ⋯ Small Tributaries
- ▨ Rivers and Creeks
- ➔ Ground Water Flow Direction

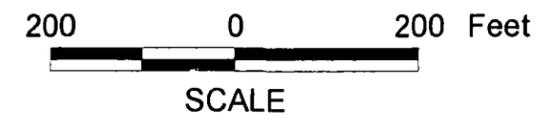
Well Number	Gauge	EPA 602 + Xylenes	EPA 610
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70GW01	YES	YES	YES
70GW03	YES	NO	NO
70GW05	YES	YES	YES
70GW02	YES	YES	YES
70GW13	YES	YES	YES
70GW14	YES	YES	YES
70GW15	YES	YES	YES
70GW18	YES	YES	YES
70SWUP	NO	YES	YES
70SWDWN	NO	YES	YES
70GW12	YES	YES	YES

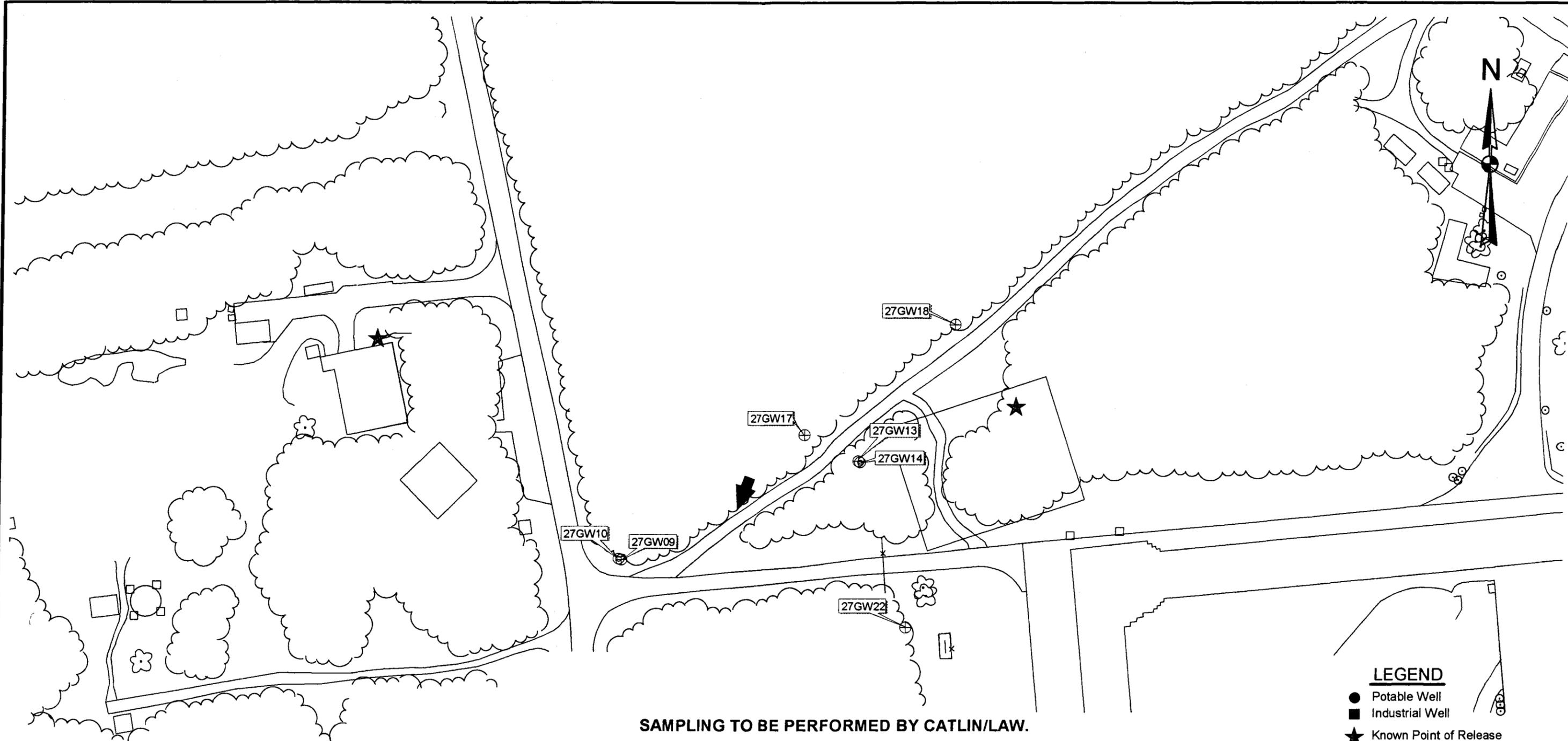
ANY WELL REMOVED DURING EXCAVATION PROCESS WILL NOT BE GAUGED OR SAMPLED

SAMPLING TO BE PERFORMED BY CATLIN/LAW.

SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000. RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.



	PROJECT	TITLE		FIGURE
	MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	SITE TAFDS MCALF BOGUE MONITORING PLAN SECOND SEMESTER 2000		
JOB NO.: 200-010	DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW	CHECKED BY: TMP

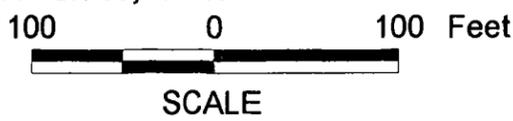


- LEGEND**
- Potable Well
 - Industrial Well
 - ★ Known Point of Release
- Well by Type
- Recovery Well
 - ⊕ T-I Monitoring Well
 - ⊗ T-II Monitoring Well
 - ⊙ T-III Monitoring Well
 - ⊠ Well Type Not known
- ▭ Buildings
 - ~ Small Tributaries
 - ▨ Rivers and Creeks
- ➔ Ground Water Flow Direction

SAMPLING TO BE PERFORMED BY CATLIN/LAW.

SAMPLES FOR THE THIRD QUARTER 2000 ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000. RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.

SAMPLES FOR THE FOURTH QUARTER 2000 ARE TO BE COLLECTED BETWEEN NOVEMBER 1, 2000 AND NOVEMBER 15, 2000. RESULTS DUE TO CATLIN IN EDD FORMAT BY DECEMBER 15, 2000.



Well Number	Gauge	EPA 602 + Xylenes	EPA 610
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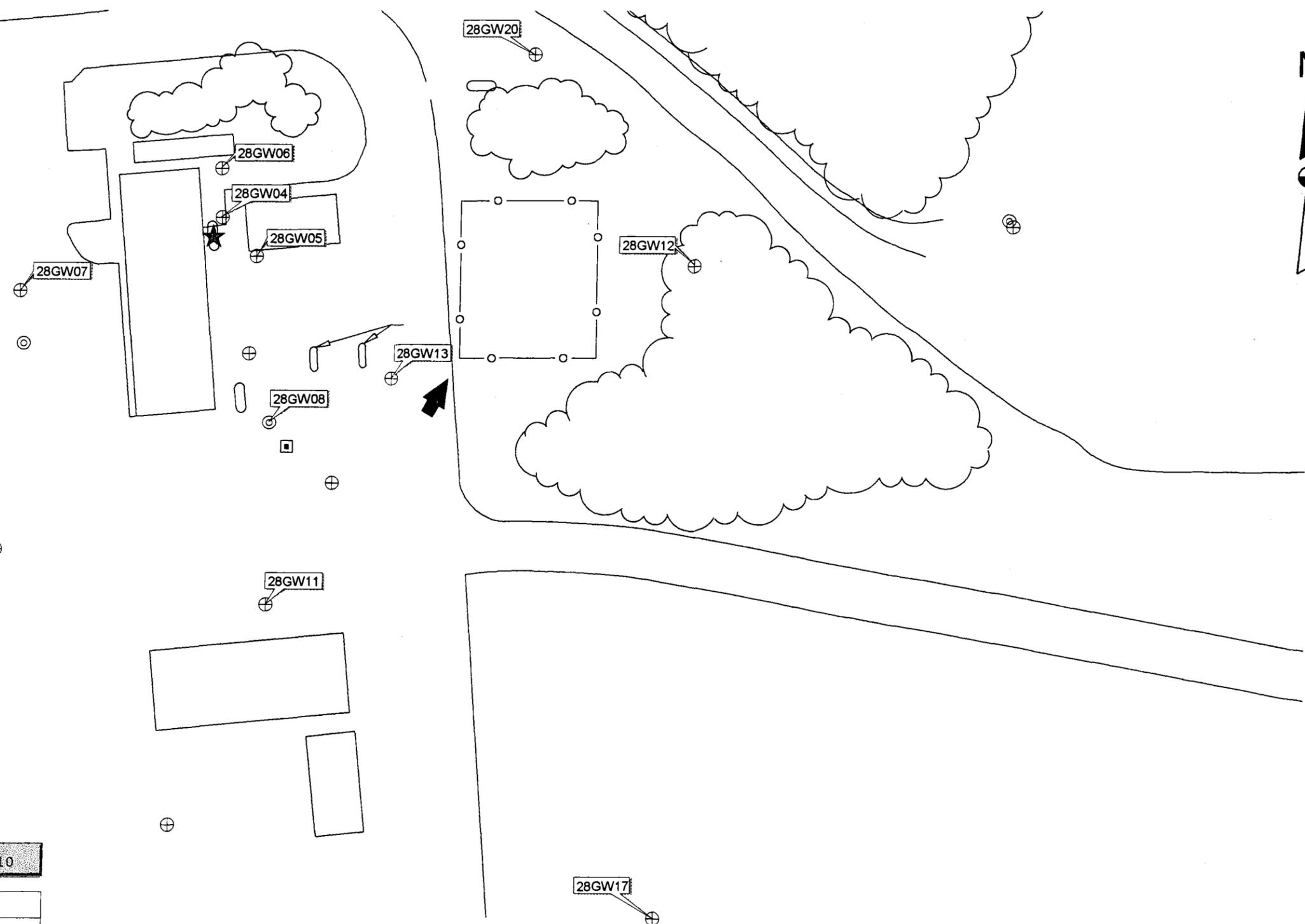
27GW09	YES	YES	YES
27GW10	YES	YES	YES
27GW13	YES	YES	YES
27GW14	YES	YES	YES
27GW17	YES	YES	YES
27GW18	YES	YES	YES
27GW22	YES	YES	YES

	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE 8052/TAFDS MCALF BOGUE MONITORING PLAN SECOND SEMESTER 2000	FIGURE 20
	JOB NO.: 200-010 DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW CHECKED BY: TMP



LEGEND

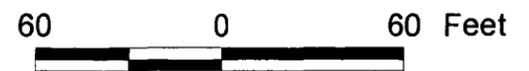
- Potable Well
- Industrial Well
- ★ Known Point of Release
- Well by Type
 - Recovery Well
 - T-I Monitoring Well
 - ⊕ T-II Monitoring Well
 - ⊙ T-III Monitoring Well
 - ⊠ Well Type Not known
- Small Tributaries
- Buildings
- Rivers and Creeks
- Ground Water Flow Direction



Well Number	Gauge	EPA 602 + Xylenes	EPA 610
28GW12	YES	YES	YES
28GW20	YES	YES	YES
28GW04	YES	NO	NO
28GW05	YES	NO	NO
28GW08	YES	YES	YES
28GW11	YES	YES	YES
28GW17	YES	YES	YES
28GW06	YES	YES	YES
28GW07	YES	YES	YES
28GW13	YES	NO	NO

SAMPLING TO BE PERFORMED BY CATLIN/LAW.

**SAMPLES ARE TO BE COLLECTED BETWEEN AUGUST 1, 2000 AND AUGUST 15, 2000.
RESULTS DUE TO CATLIN IN EDD FORMAT BY SEPTEMBER 15, 2000.**



SCALE

	PROJECT MCAS CHERRY POINT UST LONG TERM MONITORING PROGRAM	TITLE SITE 8049 MCALF BOGUE MONITORING PLAN SECOND SEMESTER 2000	FIGURE 21
	JOB NO.: 200-010 DATE: JUL 2000	SCALE: AS SHOWN	DRAWN BY: WJW CHECKED BY: TMP