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NSB NEW LONDON
5090.3a

MONTHLY OPERATIONS SUMMARY FOR THE NAVAL EXCHANGE (NEX) AND DOLPHIN MART AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEMS AND OT-8 PASSIVE FREE PRODUCT RECOVERY SYSTEM

NEW LONDON SUBMARINE BASE
GROTON, CONNECTICUT

Month: July 1997

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OPERATIONAL SUMMARY

DOLPHIN MART AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since June 29, 1996. As of July 31, 1997, thirteen (13) horizontal vapor extraction trenches (VET-1, VET-2, VET-3, VET-4, VET-5, VET-6, VET-7, VET-8, VET-9, VET-10, VET-11, VET-12, and VET-17) and seven (7) air sparge points (ASP-A, ASP-B, ASP-C, ASP-D, ASP-E, ASP-F, and ASP-G were operating. VET-13 through VET-16 are not operating due to flooding of the lower section of the main trunk line. Air sparge points ASP-H through ASP-Q cannot be operated without VET-13 through VET-16 operating. The SVE system is currently extracting subsurface air at a flow rate of approximately 329 scfm. The air sparge system is currently injecting air at a flow rate of approximately 15 scfm. These flow rates are based on readings collected in May 1997. The Hersey flow meters for the SVE and air sparge systems are currently inoperable pending repair/replacement. A site map has been included as **Figure 1**. The site visit forms for O&M conducted during the month of July, 1997 are included in **Attachment 1**. A weekly break-down of the monthly field activities has been included as **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected July 21, 1997, was 0.488 lbs/hour. During the period from June 10, 1997 to July 21, 1997 approximately 136.76 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of July 21, 1997, was approximately 1,403.7 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 3A, 3B and 4**. Based on the hydrocarbon mass removal rate, no exceedance of CTDEP air quality guidelines was observed.

Carbon Usage - A summary of the historical vapor phase carbon usage at the site has been included as **Attachment 4**. The last carbon change at the site occurred August 27, 1996.

Discharge Monitoring Sampling - Discharge sampling for the system was conducted July 21, 1997. The DMR for May 1997 discharge sampling was submitted July 24, 1997.

Monitoring Well Gauging - The site monitoring wells were last gauged May 21,1997 during the quarterly groundwater sampling event. Depth to groundwater at the site ranged from 2.04 feet in DM-1 to 8.20 feet in WE-3. The next well gauging event is currently scheduled during the August 1997 quarterly groundwater sampling event. Historical well gauging data has been included in **Attachment 5**.

Monitoring Well Sampling - Monitoring well sampling was last completed on May 21, 1997. The Quarterly Groundwater Sampling Report for the May sampling was completed July 22, 1997. The next quarterly sampling event is scheduled for August, 1997. The historical groundwater sampling results have been summarized in **Attachment 6**.

Additional Activities - None

Per 11/24 MTG TYPO VEB 8-VEB 15 only operating!

NEX AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since July 31, 1996. As of May 22, 1997, eight (8) vapor extraction wells (VEA-8 through VEA-15) were operating. The remainder of the vapor extraction points are not operating due to high groundwater table elevations limiting well effectiveness. The air sparge system was activated April 17, 1997. As of May 22, 1997, eleven (11) air sparge points (SPB-15 through SPB-25) were operating. The SVE system is currently extracting subsurface air at a flow rate of approximately 358 scfm (from the east system only). The air sparge system is currently injecting air at a flow rate of approximately 36 scfm. A site map has been included as **Figure 2**. The site visit forms for O&M conducted during the month of July, 1997 are included in **Attachment 1**. A weekly break-down of the monthly field activities has been included in **Attachment 2**.

Mass Removal - The total hydrocarbon mass removal rate, based on the SVE system influent sample collected July 21, 1997, was 0.013 lbs/hour. During the period from June 10, 1997 to July 21, 1997 an estimated 6.39 lbs of hydrocarbons were extracted by the remediation system. The system influent concentrations are expected to increase following the completion of planned system modifications. The total hydrocarbon mass extracted by the remediation system, as of July, 1997, is approximately 1,291 lbs. The system database has been included in **Attachment 3**. Mass removal graphs have been included as **Figures 5A, 5B and 6**. Based on the hydrocarbon mass removal rate, no exceedance of CTDEP air quality guidelines was observed.

Carbon Usage - A summary of the historical vapor phase carbon usage at the site has been included as **Attachment 4**. The carbon units at the site were taken off-line September 4, 1996.

Discharge Monitoring Sampling - Discharge monitoring sampling was completed July 21, 1997. The DMR for May 1997 discharge sampling was submitted July 24, 1997.

Monitoring Well Gauging - The site monitoring wells were last gauged on May 21, 1997. Depth to groundwater at the site ranged from 4.46 feet in ERM-19 to 8.16 feet in ERM-16. During the well gauging, light non-aqueous phase liquid (LNAPL) was detected in monitoring well ERM-12 at a thickness of 0.01 feet, in monitoring well ERM-14 at a thickness of 0.05 feet and in monitoring well OBG-9 at a thickness of 0.53 feet. The LNAPL from OBG-9 was bailed and placed in a labeled drum within the OT-8 drum storage enclosure. Historical well gauging data has been included in **Attachment 5**. The next complete round of well gauging is scheduled during the August 1997 quarterly groundwater sampling event. Following completion of the well gauging in August 1997, all wells historically containing measurable LNAPL thickness will be gauged on a monthly basis, and bailed if sufficient LNAPL is present.

Monitoring Well Sampling - Monitoring well sampling was completed on May 22, 1997. The Quarterly Groundwater Sampling Report for the May sampling event is currently being prepared. The Quarterly Groundwater Sampling Report for the May sampling was completed July 22, 1997. The next quarterly sampling event is scheduled for August, 1997. The historical groundwater sampling results have been summarized in **Attachment 6**.

Additional Activities - None

OT-8 PASSIVE FREE PRODUCT RECOVERY SYSTEM

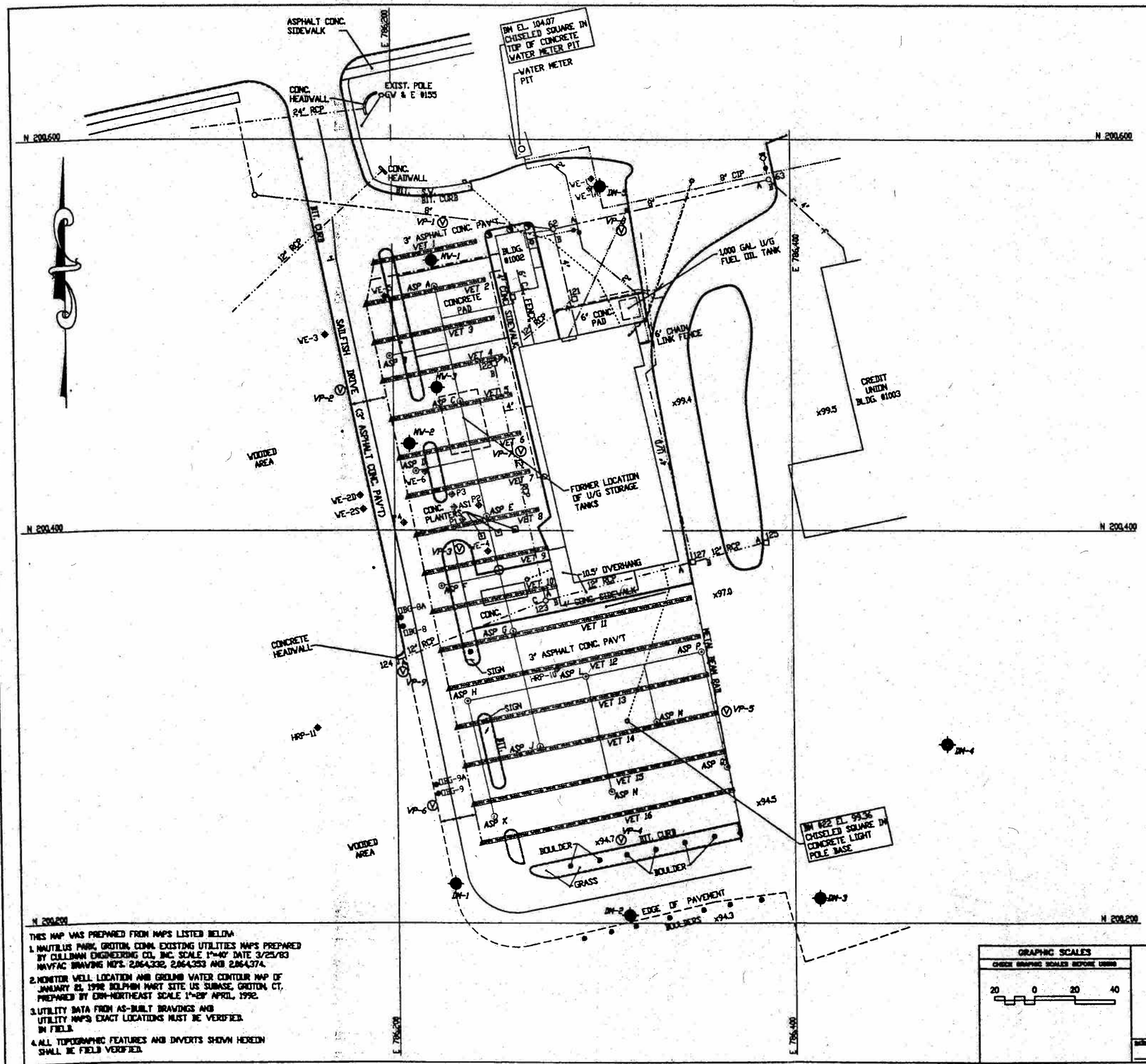
System Status - The OT-8 passive free product recovery system was activated on September 28, 1996. The system was activated during the month of July, 1997. During the July 21, 1997 site visit the system was found deactivated due to high water in the recovery tank. On July 24, 1997 the water in the recovery tank was emptied and the system was reset.

Product Recovery - As of July 31, 1997 a total of approximately 4.25 gallons of LNAPL have been recovered by the system. The fluctuating groundwater table around MW-7 may lead to smearing of the LNAPL. It is anticipated that during periods of extended lower water table elevations LNAPL recovery will resume. A copy of the well construction log for MW-7 has been included as Attachment 7. *Please note: The screen interval of MW-7 begins at five feet below grade.*

Monitoring Well Gauging - MW-7 was gauged on July 21, 1997. At that time the depth to LNAPL was 5.43 feet below grade and the depth to groundwater was 5.55. Historical gauging data for MW-7 is included in **Attachment 5**.

Additional Activities - None

FIGURES



REVISIONS				
LTR	DESCRIPTION	PREP'D BY	DATE	APPROVED

HIGHEST RECORDED GROUND WATER ELEVATIONS

WELL NO.	GROUNDWATER ELEVATION
WE-1A	96.84
WE-2S	94.25
WE-2D	94.31
WE-3	93.93
WE-4	94.11
WE-5	95.40
WE-6	95.41
DBG-8A	93.70
DBG-9A	94.80
HRP-10	93.5 (ESTIMATED)
HRP-11	92.5 (ESTIMATED)

NOTE:
GROUND WATER DATA SHOWN ON PLANS ARE APPROXIMATELY AS SHOWN FOR BIDDING PURPOSES. ACTUAL WELL ELEVATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.

SOIL VAPOR EXTRACTION TRENCH PIPE ELEVATIONS - DOLPHIN MART

TRENCH NO.	INV. ELEV. 6" VAPOR COLLECTION PIPE	INV. ELEV. 2" PIPE @ WEST END OF TRENCH	INV. ELEV. 2" PIPE @ EAST END OF TRENCH
VET 1	94.64	99.41	99.46
VET 2	94.64	98.80	98.85
VET 3	94.48	98.19	98.24
VET 4	94.32	97.50	97.62
VET 5	94.16	96.78	97.30
VET 6	94.00	96.20	97.20
VET 7	93.84	95.65	97.00
VET 8	93.68	95.13	96.80
VET 9	93.52	94.62	96.60
VET 10	93.36	93.52	96.40
VET 11	93.20	93.37	95.80
VET 12	93.04	93.23	95.22
VET 13	92.88	93.09	94.64
VET 14	92.72	92.95	94.04
VET 15	92.56	92.80	93.56
VET 16	92.40	92.66	93.08

THIS MAP WAS PREPARED FROM MAPS LISTED BELOW

1. NAUTILUS PARK, GROTON, CONN. EXISTING UTILITIES MAPS PREPARED BY CULLIMAN ENGINEERING CO., INC. SCALE 1"=40' DATE 3/23/83 NAVFAC DRAWING NO'S. 2,064,332, 2,064,353 AND 2,064,374.
2. MONITOR WELL LOCATION AND GROUND WATER CONTOUR MAP OF JANUARY 21, 1992 DOLPHIN MART SITE US SUBASE, GROTON, CT. PREPARED BY ERM-NORTHEAST SCALE 1"=20' APRIL, 1992.
3. UTILITY DATA FROM AS-BUILT DRAWINGS AND UTILITY MAPS EXACT LOCATIONS MUST BE VERIFIED IN FIELD.
4. ALL TOPOGRAPHIC FEATURES AND INVERTS SHOWN HEREIN SHALL BE FIELD VERIFIED.

NOTES:

1. SEE SHEET T2 FOR LEGEND, ABBREVIATIONS GENERAL CONSTRUCTION NOTES AND EXISTING MANHOLE AND CATCH BASIN INVERTS.

GRAPHIC SCALES

CHECK GRAPHIC SCALES BEFORE USING

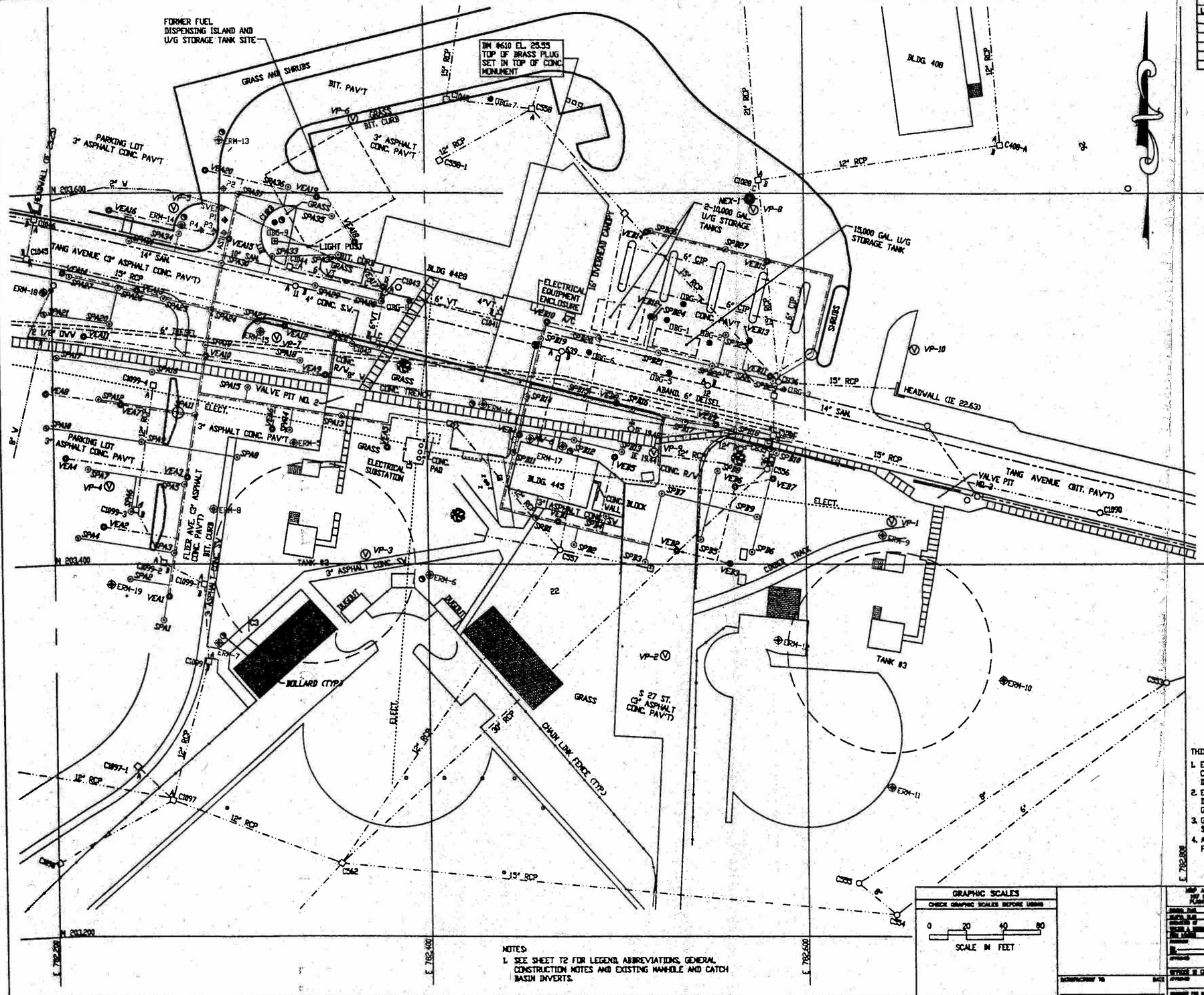
20 0 20 40

MAP ASSOCIATES, INC.
NORTHEAST DIVISION
NAVAL SUBMARINE BASE — NEW LONDON, CONNECTICUT

REMEDIATION OF CONTAMINATED SOIL/GROUND WATER

FIGURE 1 - SITE PLAN
DOLPHIN MART

CODE IDENT. NO.	NAVFAC DRAWING NO.	SHEET NO.
F 80091	2166440	C2-1



REVISIONS				
LTR	DESCRIPTION	PREP'D BY	DATE	APPROVED

HIGHEST RECORDED GROUND WATER ELEVATION

WELL NO.	GROUND WATER EL.	WELL NO.	GROUND WATER EL.
OBG-1	16.73	ERM-18	16.97
OBG-2	17.09	ERM-19	16.06
OBG-4	16.63	ERM-1	17.09
OBG-5	16.85	ERM-2	16.31
OBG-6	16.76	ERM-3	14.76
OBG-7	18.40	ERM-4	16.86
OBG-8	17.96	ERM-5	17.78
OBG-9	17.63	ERM-6	16.79
ERM-10	18.68	ERM-7	15.81
ERM-11	17.84	ERM-8	17.14
ERM-12	16.69	ERM-9	17.00
ERM-13	17.38		
ERM-14	17.46		
ERM-15	17.39		
ERM-16	17.71		
ERM-17	16.91		

NOTE:
GROUND WATER DATA SHOWN ON PLANS ARE APPROXIMATELY AS SHOWN FOR BIDDING PURPOSES. ACTUAL WELL ELEVATIONS TO BE DETERMINED IN FIELD BY CONTRACTOR.

THIS MAP WAS PREPARED FROM MAPS LISTED BELOW:

1. EXISTING TOPOGRAPHY FROM MAP BY JAMES S. HENGES & ASSOCIATES, CARLSON & SVEATT FARMINGTON, CT & NEW YORK, N.Y. DATED 31 DEC. 1974.
2. EXISTING UTILITIES FROM 48 SCALE UTILITY MAPS SUPPLIED BY THE DEPARTMENT OF PUBLIC WORKS, NAVAL SUBMARINE BASE, NEW LONDON, GROTON, CT.
3. GROUND WATER ANALYTICAL RESULTS, JANUARY, 1992 NEX STATION SITE US SUBBASE, GROTON, CT PREPARED FOR ERM-PNC.
4. ALL TOPOGRAPHIC FEATURES AND INVERTS SHOWN HEREIN SHALL BE FIELD VERIFIED.

NOTES:
1. SEE SHEET T2 FOR LEGEND, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES AND EXISTING MANHOLE AND CATCH BASIN INVERTS.

GRAPHIC SCALES
CHECK GRAPHIC SCALES BEFORE USING
0 20 40 80
SCALE IN FEET

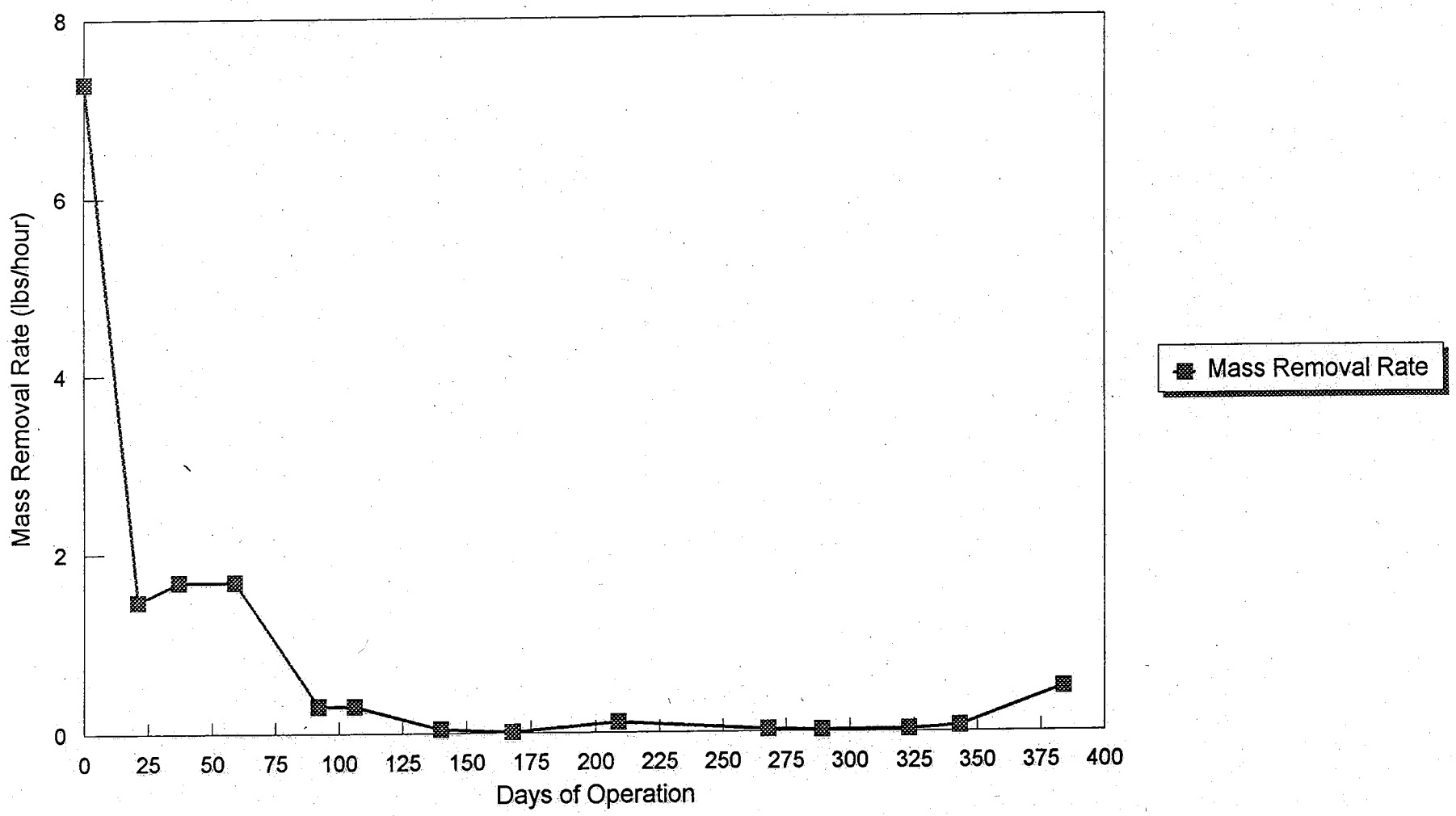
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
NORTHERN DIVISION — PENNSYLVANIA
NAVAL SUBMARINE BASE — NEW LONDON, CONNECTICUT
REMEDIATION OF CONTAMINATED SOIL/GROUND WATER
FIGURE 2 - SITE PLAN
NAVAL EXCHANGE (NEX)

SIZE	CODE IDENT. NO.	DRAWING NO.	REV. NO.
F	80091	2166439	C1-1

SCALE: NO. 24-00-0000 SHEET 4 OF 34

Figure 3A- Mass Removal Rate

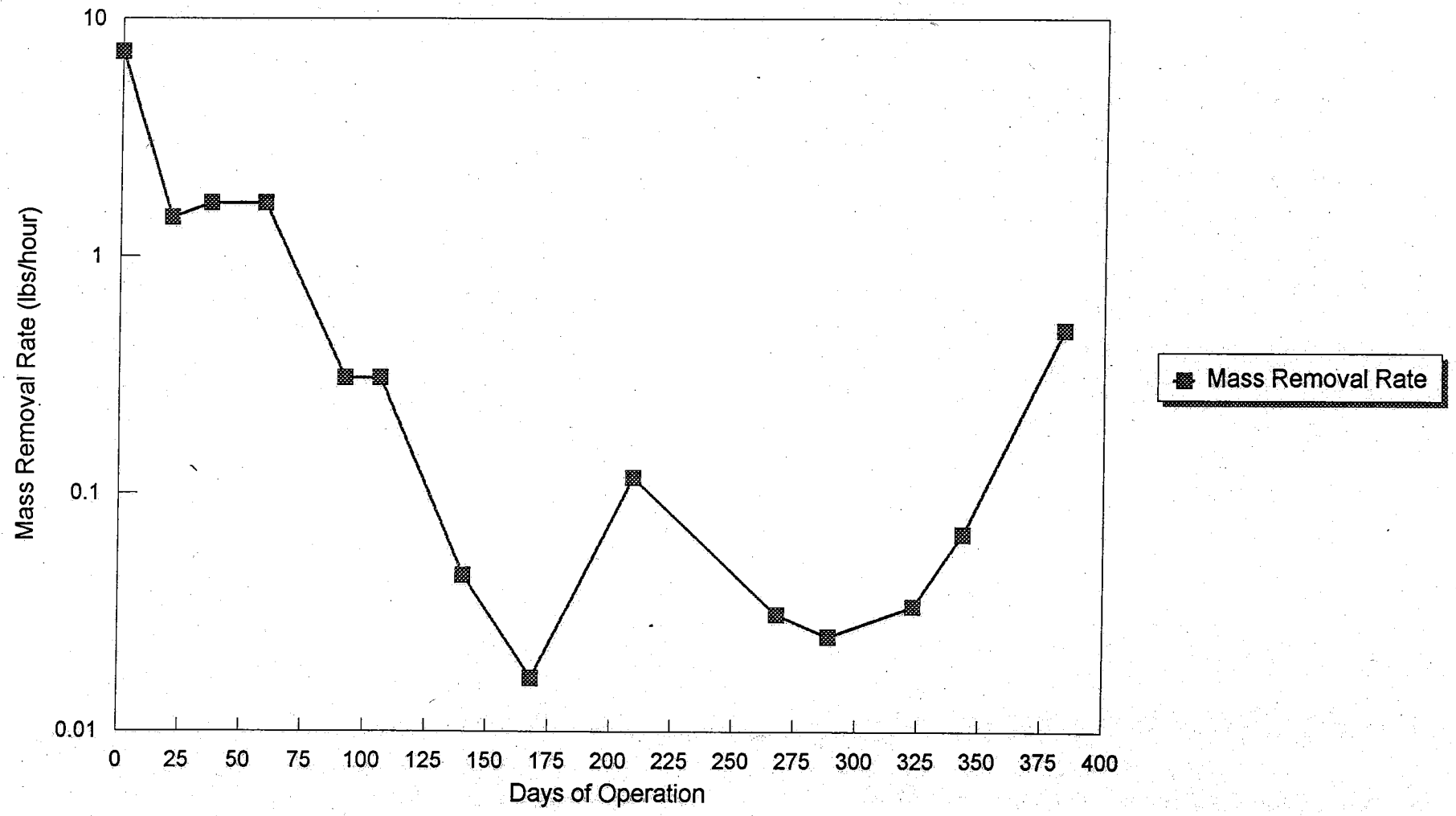
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

Figure 3B- Mass Removal Rate

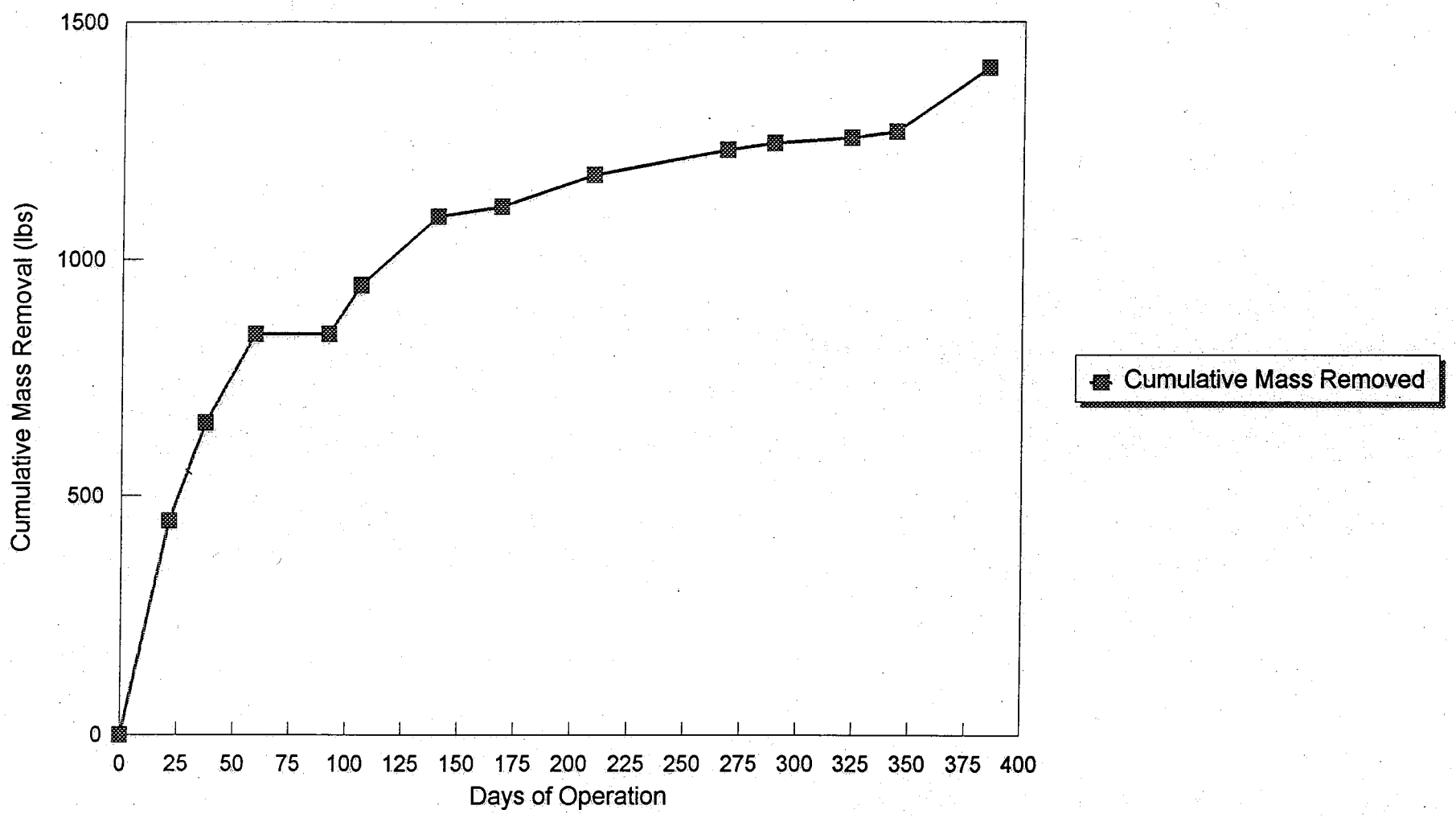
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

Figure 4 - Cumulative Mass Removed versus Time

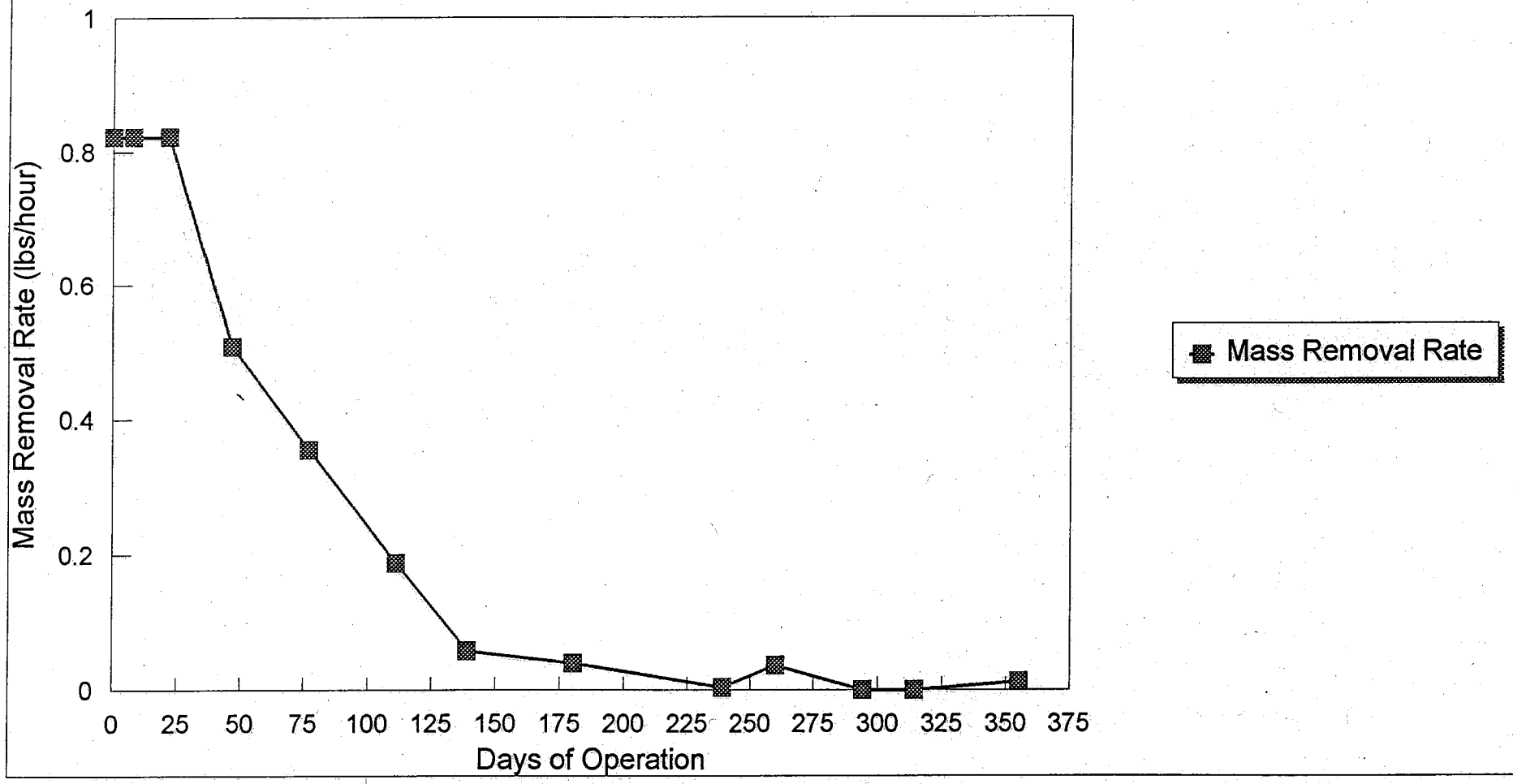
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

Figure 5A - Mass Removal Rate

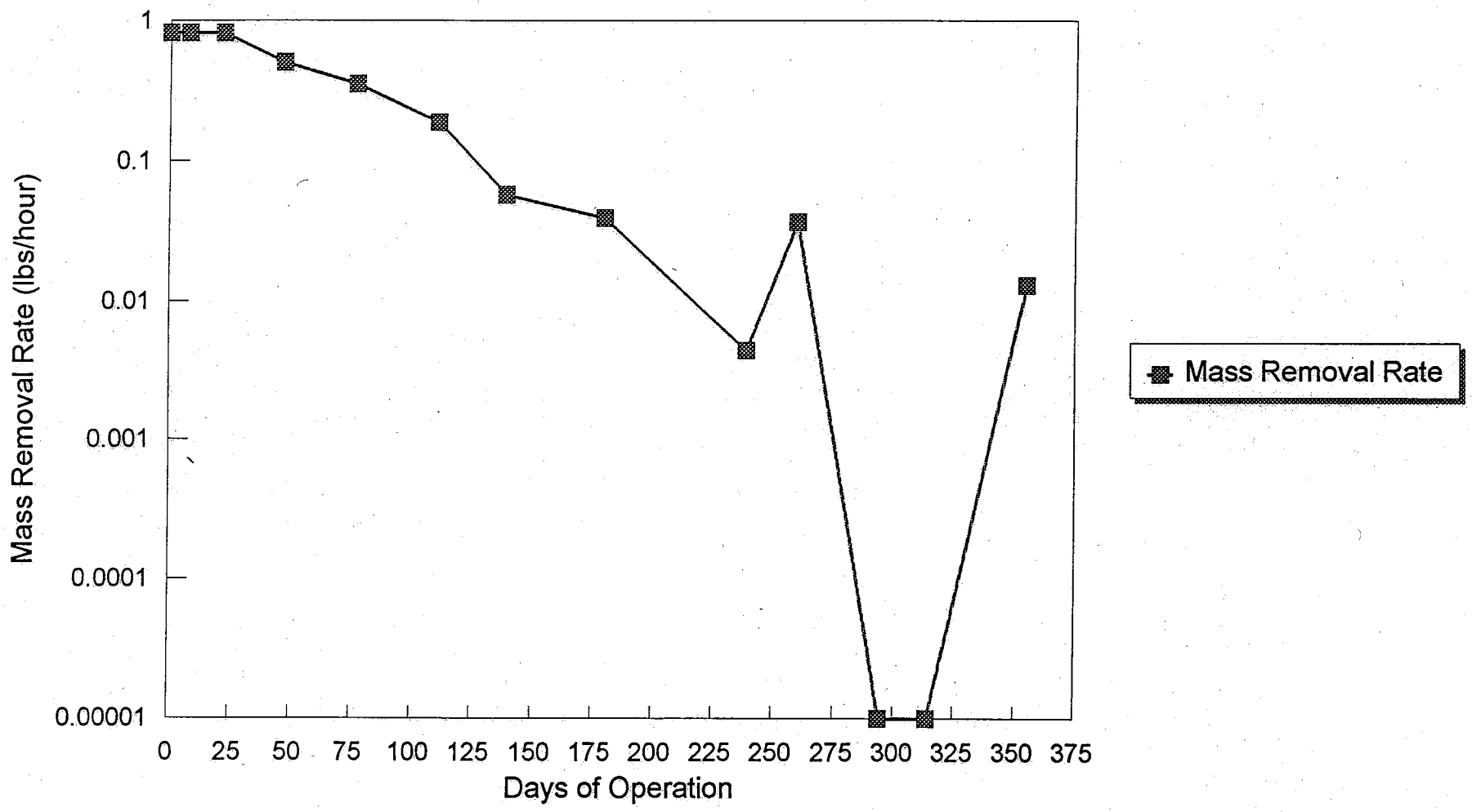
NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

Figure 5B - Mass Removal Rate

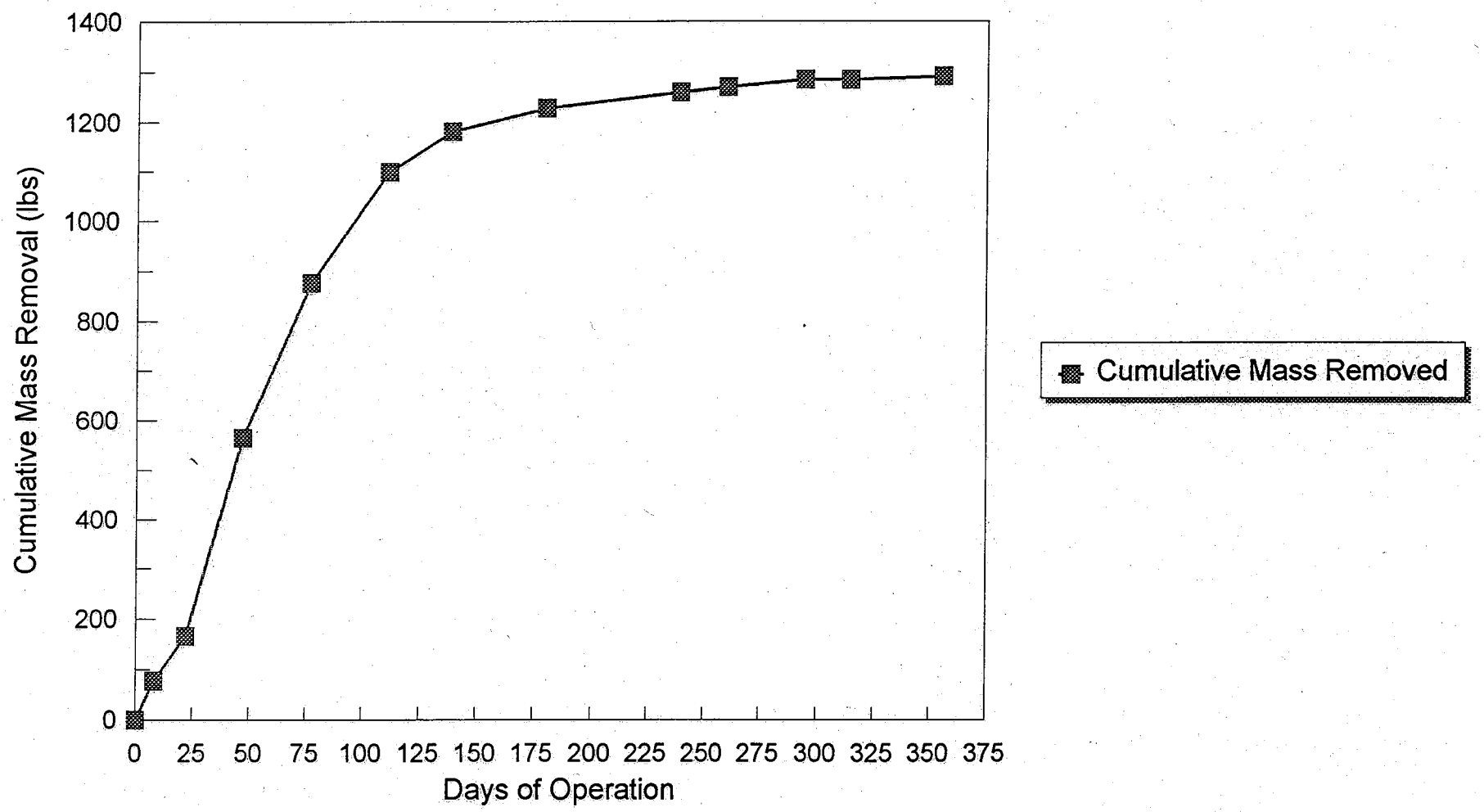
NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

Figure 6 - Cumulative Mass Removed versus Time

NEX Site, New London Naval Submarine Base, Groton, CT



MASSREM.WK4

ATTACHMENT 1

SITE VISIT FORMS

OPERATIONAL DATA FORM
Air Sparging/Soil Vapor Extraction System
Dolphin Mart
Naval Submarine Base -Groton, CT
Project #83001-9999

Date: 7/21/97
Time: 14:30
Technician: John Kowzun, Jr.

AIR COMPRESSOR SYSTEM

Flow Rate	SCFM	Total Flow	SCFM

Air Compressor C-1		Air Compressor C-2	
Pressure	10.5 psi	Pressure	psi
Temperature	184 °F	Temperature	°F
Flow Control Valve Setting	100 %	Flow Control Valve Setting	
Bleed Valve	50 %	Bleed Valve	
Radiator	(ON) / OFF	Radiator	ON / OFF

SOIL VAPOR EXTRACTION SYSTEM

Flow Rate	SCFM	Total Flow	SCFM

Vacuum Pump V-1		Vacuum Pump V-2	
Vacuum	5 "Hg	Vacuum	5 "Hg
Temperature	146 °F	Temperature	146 °F
Particulate Filter	OK	Particulate Filter	OK
Flow Control Valve Setting	100 %	Flow Control Valve Setting	100 %
Bleed Air Valve Setting	25 %	Bleed Air Valve Setting	25 %
Liquid Level	—	Liquid Level	

Vacuum Pump V-3		Vacuum Pump V-4	
Vacuum	"Hg	Vacuum	"Hg
Temperature	°F	Temperature	°F
Particulate Filter		Particulate Filter	
Flow Control Valve Setting		Flow Control Valve Setting	
Bleed Air Valve Setting		Bleed Air Valve Setting	
Liquid Level		Liquid Level	

ACTIVATED CARBON ADSORPTION SYSTEM

Carbon Adsorber A/B		Carbon Adsorber C/D	
Inf. VOC Level	ppm	Inf. VOC Level	ppm
Inf Pressure	psi	Inf Pressure	psi
Mid. VOC Level	ppm	Mid. VOC Level	ppm
Mid Pressure	psi	Mid Pressure	psi
Eff. VOC Level	ppm	Eff. VOC Level	ppm
Change out Date		Change out Date	

WATER TREATMENT

Flowmeter Reading 3025.8 Gallons

COMMENTS

OPERATIONAL DATA FORM
Air Sparging/Soil Vapor Extraction System
Naval Exchange
Naval Submarine Base -Groton, CT
Project #83001-9999

Date: 7/21/97
Time: 11:10 AM
Technician: John Kouzun, Jr.

AIR COMPRESSOR SYSTEM

Flow Rate 32265 SCFM | Total Flow 36 SCFM

Air Compressor C-1
Pressure 11.5 psi
Temperature 228 °F
Flow Control Valve Setting 100 %
Bleed Valve 50 %
Radiator (ON) OFF

Air Compressor C-2
Pressure ___ psi
Temperature ___ °F
Flow Control Valve Setting ___
Bleed Valve ___
Radiator ON / OFF

SOIL VAPOR EXTRACTION SYSTEM

Eastern Flow Rate 45600160 SCFM | Total Flow 342 to 374 SCFM

Western Flow Rate 12812955 SCFM | Total Flow 0 SCFM

Vacuum Pump V-1
Vacuum ___ "Hg
Temperature ___ °F
Particulate Filter ___
Flow Control Valve Setting ___
Bleed Air Valve Setting ___
Liquid Level ___

Vacuum Pump V-2
Vacuum 8 "Hg
Temperature 156 °F
Particulate Filter OK
Flow Control Valve Setting 100 %
Bleed Air Valve Setting 0 %
Liquid Level —

Vacuum Pump V-3
Vacuum 8 "Hg
Temperature 167 °F
Particulate Filter OK
Flow Control Valve Setting 100 %
Bleed Air Valve Setting 25 %
Liquid Level —

Vacuum Pump V-4
Vacuum ___ "Hg
Temperature ___ °F
Particulate Filter ___
Flow Control Valve Setting ___
Bleed Air Valve Setting ___
Liquid Level ___

ACTIVATED CARBON ADSORPTION SYSTEM

Carbon Adsorber A/B
Inf. VOC Level ___ ppm
Inf Pressure ___ psi
Mid. VOC Level ___ ppm
Mid Pressure ___ psi
Eff. VOC Level ___ ppm
Change out Date ___

Carbon Adsorber C/D
Inf. VOC Level ___ ppm
Inf Pressure ___ psi
Mid. VOC Level ___ ppm
Mid Pressure ___ psi
Eff. VOC Level ___ ppm
Change out Date 8/22/96

WATER TREATMENT

Flowmeter Reading 4509.15 Gallons

COMMENTS

NAVAL SUBMARINE BASE GROTON, CT. (NEX SITE)

Monitoring		
Component:	**Frequency:**	**Record Data for/By:**
Carbon Adsorbors: A/B (Inf. / Eff.) C/D (Inf. / Eff.)	Monthly	Air Sample for: EPA T03 BTEX,MTBE Misc.aromatics/aliphatics
Water Sump: (EFF)	Monthly	Flowmeter reading EPA 624+MTBE+xylenes (2-40ml. HCL) TPH EPA 418.1 (1-1 lt./H2S04 or HCL) Total Lead EPA 239.2 (1-500ml./HN03) PH (Field test) Aquatic Toxicity (Minnows+Water Fleas)
Monitoring Wells: ERM-5 - ERM-19	Quarterly	EPA 8010 (3-40ml./HCL) EPA 8020 +MTBE (" ") TPH 418.1 (2-1lt.) TPH as gasoline,CG/FID hydrocarbon screen (" ") TPH as Diesel,GC/FID hydrocarbon screen (" ")

OPERATIONAL DATA FORM OT-8\MW-7 PRODUCT RECOVERY SYSTEM Naval Submarine Base, Groton, Ct. Project # 87260014 Task #140	Date: 7/21/97 Time: 11:45 AM Technician: John Rowzan, Jr.

Check compressor, pressure should be 80 psi.
Check air dryer panel, pressure should be 60 psi.
Drain moisture trap on panel dryer.
Gauge recovery tank: Total depth: 2.80
DTW: .92
DTP: .78

Gauge MW-7: DTW: 5.55
DTP: 5.43

Is system operating upon departure? YES ☐ NO ☒

Additional comments:

ATTACHMENT 3

AIR SPARGE/SVE SYSTEM DATABASES

SYSTEM MONITORING DATA
SOIL VAPOR EXTRACTION/AIR SPARGE SYSTEM

New London Naval Submarine Base
Dolphin Mart Site
Groton, CT

Date	Day of Operation	Air Sparge Flowrate (scfm)	Extraction Flowrate (scfm)	Extraction Flowrate (cfm)	Influent Concentration BTEX (ppmv)	Removal Rate BTEX (lb/hr)	Influent Concentration MTBE (ppmv)	Removal Rate MTBE (lb/hr)	Influent Concentration Aliphatics (ppmv)	Removal Rate Aliphatics (lb/hr)	Influent Concentration Aromatics (ppmv)	Removal Rate Aromatics (lb/hr)	Influent Concentratio TVPH (mg/m3)	Influent Concentration TVPH (ppmv)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/02/96	0	25	450	512.26	24.00	0.187	33.00	0.232	1000.00	6.876	0.00	0.000	—	—	0.000	7.295	0.00	0.00	
07/23/96	21	20	449	511.12	11.40	0.091	0.00	0.000	200.00	1.375	0.00	0.000	—	—	0.000	1.467	446.86	446.86	system operated approx. 102 hrs between 7/2 and 7/23
08/08/96	37	32	454	516.81	18.00	0.142	—	0.000	210.00	1.444	12.00	0.102	—	—	0.000	1.687	209.75	656.61	system operated approx. 133 hrs between 7/23 and 8/8
08/30/96	59	0	450	512.26	18.00	0.142	—	0.000	210.00	1.444	12.00	0.102	—	—	0.000	1.687	187.31	843.92	system operated approx. 111 hrs between 8/8 and 8/30
10/02/96	92	30	448	509.98	2.30	0.019	0.00	0.000	—	0.000	—	0.000	NA	36.00	0.287	0.306	0.00	843.92	system not in operation from 8/30 to 10/2 due to flow meter problem
10/16/96	106	30	450	512.26	2.30	0.019	0.00	0.000	—	0.000	—	0.000	NA	36.00	0.287	0.306	102.81	946.74	system reactivated 10/2/96
11/19/96	140	30	450	512.26	0.38	0.003	0.00	0.000	—	0.000	—	0.000	22.00	5.29	0.042	0.045	143.33	1090.06	
12/17/96	168	30	450	512.26	0.12	0.001	0.00	0.000	—	0.000	—	0.000	8.20	1.97	0.016	0.017	20.84	1110.90	
01/27/97	209	30	450	512.26	1.35	0.011	0.00	0.000	—	0.000	—	0.000	55.00	13.23	0.106	0.117	65.56	1176.46	
03/27/97	268	30	450	512.26	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	3.90	0.031	0.031	104.53	1228.73	assume 50% up-time, blowers shutting down due to influent water
04/17/97	289	30	450	512.26	0.00	0.000	0.00	0.000	—	0.000	—	0.000	13.00	3.13	0.025	0.025	14.13	1242.86	
05/21/97	323	15	329	374.52	0.00	0.000	0.00	0.000	—	0.000	—	0.000	24.00	5.77	0.034	0.034	11.96	1254.82	assume 50% up-time, blowers shutting down due to influent water
06/10/97	343	15	329	374.52	0.25	0.002	0.00	0.000	—	0.000	—	0.000	47.00	11.31	0.066	0.067	12.14	1266.96	assume 50% up-time, blowers shutting down due to influent water
07/21/97	384	15	329	374.52	1.89	0.011	0.00	0.000	—	0.000	—	0.000	340.00	81.79	0.477	0.488	136.76	1403.71	assume 50% up-time, blowers shutting down due to influent water

Notes:
1) Aliphatics are weighted using a response factor of hexane. (MW = 86.2)
2) Aromatics are weighted using a response factor of o-xylene. (MW=106.16)
3) Analytical data for 8/30/96 is assumed based on results of sampling conducted 8/8/96. System was deactivated 8/30/96 due to flow meter failure.
4) Flow rate of 10/16/96 through 4/17/97, 6/10/97 and 7/21/97 is assumed. Air flow meter not in operation.
5) Analytical data for 10/2 is assumed based on data from 10/16/96.
6) Beginning 10/16/96 lab analysis was performed by Mitkem Laboratory. Prior to 10/16/96 air analysis performed by NEI/GTEL
7) Mitkem results report total volatile petroleum hydrocarbons, not misc. aromatics and aliphatics.
Total Volatile Petroleum Hydrocarbons are weighted to molecular weight of 100.
8) Laboratory results from 11/19/96 to present are reported in mg/m3.

SYSTEM MONITORING DATA
SOIL VAPOR EXTRACTION/AIR SPARGE SYSTEM

New London Naval Submarine Base
NEX Site
Groton, CT

Date	Day of Operation	Air Sparge Flowrate (scfm)	Extraction Flowrate (east side) (scfm)	Extraction Flowrate (west side) (scfm)	Extraction Flowrate (total) (scfm)	Extraction Flowrate (cfm)	Influent Concentration BTEX (ppmv)	Removal Rate BTEX (lb/hr)	Influent Concentration MTBE (ppmv)	Removal Rate MTBE (lb/hr)	Influent Concentration Aliphatics (ppmv)	Removal Rate Aliphatics (lb/hr)	Influent Concentration Aromatics (ppmv)	Removal Rate Aromatics (lb/hr)	Influent Concentration TVPH (ppmv)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/31/96	0	NA*	54	199	253	288.00	1.80	0.013	—	0.000	130.00	0.810	0.00	0.000	—	0.000	0.823	0.00	0.00	
08/08/96	8	NA*	85	185	270	307.35	1.80	0.013	—	0.000	130.00	0.810	0.00	0.000	—	0.000	0.823	78.21	78.21	system operated approx. 92 hrs between 7/31 and 8/8
08/22/96	22	NA*	85	185	270	307.35	1.80	0.013	—	0.000	130.00	0.810	0.00	0.000	—	0.000	0.823	88.09	166.30	24-hour per day system operation began 8/8
09/16/96	47	NA*	186	134	320	364.27	2.70	0.021	0.00	0.000	—	0.000	—	0.000	61.00	0.487	0.508	399.38	565.68	
10/16/96	77	NA*	186	134	320	364.27	2.50	0.020	0.00	0.000	—	0.000	—	0.000	42.00	0.335	0.355	310.76	876.44	
11/19/96	111	NA*	192	132	324	368.83	0.95	0.008	0.00	0.000	—	0.000	—	0.000	22.61	0.180	0.188	221.67	1098.10	
12/17/96	139	NA*	223	87	310	352.89	0.18	0.001	0.07	0.000	—	0.000	—	0.000	6.98	0.056	0.058	82.54	1180.65	
01/27/97	180	NA*	252	69	321	365.41	0.14	0.001	0.00	0.000	—	0.000	—	0.000	4.81	0.038	0.040	47.78	1228.42	
03/27/97	239	NA**	267	117	384	437.13	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.55	0.004	0.004	31.10	1259.52	
04/17/97	260	NA**	460	261	721	820.75	0.00	0.000	0.00	0.000	—	0.000	—	0.000	2.89	0.037	0.037	10.40	1269.92	
05/21/97	294	6***	360	0	360	409.81	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.000	15.06	1284.98	
06/10/97	314	2***	300	0	300	341.51	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.000	0.00	1284.99	
07/21/97	355	36***	358	0	358	407.53	0.00	0.000	0.00	0.000	—	0.000	—	0.000	2.04	0.013	0.013	6.39	1291.38	

Notes:
* Air sparge compressor not activated due to elevated SVE influent concentrations.
** Air sparge compressor not activated due to improperly sized pressure switch.
*** Air sparge compressor activated, but high water levels in the moisture separators cause frequent compressor shut-down.
1) Aliphatics are weighted using a response factor of hexane. (MW = 86.2)
2) Aromatics are weighted using a response factor of o-xylene. (MW=106.16)
3) Analytical data for 7/31/96 is assumed based on results of sampling conducted 8/8/96.
4) Analytical data for 8/22/96 is assumed based on results of sampling conducted 8/8/96.
5) Air flow rate from 10/16/96 assumed for 9/16/96, due to a broken flow meter
6) Beginning 9/16/96 lab analysis was performed by Mitkem Laboratory. Prior to 9/16/96 air analysis performed by NEI/GTEL
7) Mitkem results report total volatile petroleum hydrocarbons, not misc. aromatics and aliphatics.
Total Volatile Petroleum Hydrocarbons are weighted to molecular weight of 100.
8) Laboratory results for 11/19/96 to present are reported in mg/m3.

ATTACHMENT 2

MONTHLY FIELD ACTIVITY SUMMARY

Field Activity Summary

July 1997

New London Naval Submarine Base
Groton, Connecticut

Week Ending	Site	Period	Field Activities[1]	Comments
7/25/97	Dolphin Mart	Monthly Monitoring	Conducted monthly system monitoring and effluent off-gas sampling.	High water level in moisture separator caused SVE system and air sparge system to shut down.
	NEX		Conducted monthly system monitoring, DMR sampling and effluent off-gas sampling.	High water level in moisture separator caused one SVE blower and air sparge system to shut down.
	OT-8		Conducted routine maintenance and monitoring.	Product recovery system activated.

Note: [1] Monthly operation and maintenance tasks include well gauging and system monitoring.

ATTACHMENT 4

HISTORICAL CARBON USAGE SUMMARY

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
2	7-2-96	17:05	66	8.1	452	25		Dolphin Mart Site
	7-3-96	8:50	375	289	448	33		
							15.75	
3	7-11-96	15:10	204.8	0	449	25		Dolphin Mart Site
	7-12-96	7:30	534	268	450	37		
							16.33	
4	7-12-96	9:55	588	15	450	30		Dolphin Mart Site. System deactivated 7/12/96 15:55 for weekend.
	7-15-96	18:10	366	0.0	449	16		
	7-16-96	9:30	149	77	442	24		
							21.33	
5	7-19-96	11:30	105	0	440	16		Approx. 1 hour test-only on 7/19/96.
	7-22-96	10:30	142	0	445	15		
	7-23-96	11:20	215	75	449	20		
							25.83	
6	7/24/96	9:45	96	0	450	16		Dolphin Mart Site. System down up to 8 hrs on 7/19/96 for electrical work.
	7/25/96	17:45	84.6	0	446	17		
	7/26/96	11:45	275	192	442	21		
							40	

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
7	8/1/96	6:20	83.9	0	447.7	20		Dolphin Mart Site. Carbon loading test shut down for weekend 8/2/96.
	8/2/96	15:30	68	0	451	33		
	8/5/96	16:00	102	0	456	29		
	8/6/96	17:45	77.8	5.2	450	33		
	8/7/96	20:00	100.3	12.0	452	22		
	8/8/98	9:15	122.6	74.2	453.5	32		
							48	
8	8/1/96	6:50	6.6	4.5	116	0		NEX Site. A/B Carbon Units.
	8/2/96	15:00	33	7.2	68.5	0		
	8/5/96	15:45	0	0	166	0		
	8/6/96	17:10	3.1	4.0	137	0		
	8/7/96	17:00	2.0	3.3	158	0		
	8/8/96	9:45	2.3	3.5	135	0		
	8/12/96	14:00	65.4	47.6	262	0		
							290	

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
9	8/1/96	6:50	44	8	116	0		NEX Site. C/D Carbon Units.
	8/2/96	15:00	46.5	9.1	68.5	0		
	8/5/96	15:45	100	15.8	166	0		
	8/6/96	17:10	60	24.0	137	0		
	8/7/96	17:00	50.6	34	158	0		
	8/8/96	9:45	54.4	44	135	0		
							189	
10	8/22/96	12:00	120	0.0	448	30		Dolphin Mart Site. C/D Carbon Units
	8/24/96	12:30	141	55	445	35		
							116	

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
11	8/22/96	16:00	29	0.0	232	0		NEX Site. C/D Carbon Units. Carbon units taken off-line 9/4/96.
	8/27/96	9:20	36	12	228	0		
	8/30/96	14:40	26	24	108	0		
	9/4/96	16:00	49	NA	330	0		
	9/10/96	10:30	52.6	52.6	243	0		
	9/16/96	14:00	35	35	320	0		
	9/27/96	13:00	42.7	42.7	60	0		
	10/2/96	10:00	17	17	84	0		
	10/8/96	12:00	33.7	33.7	413	0		
	10/10/96	12:50	22.3	22.3	282	0		
	10/16/96	13:30	23.8	23.8	259	0		
	10/21/96	14:40	14.6	14.6	281	0		
	10/25/96	15:05	49.9	49.9	173	0		
	10/28/96	12:30	65.0	65.0	350	0		
	11/8/96	17:15	26.3	26.3	342	0		
	11/19/96	14:40	8.7	8.7	324	0		
	12/2/96	10:30	160	160	299	0		
	12/17/96	NA	5.0	5.0	310	0		
	1/13/97	14:20	8.2	8.2	322	0		
	1/27/97	17:10	15.0	15.0	322	0		
	2/17/97	16:30	2.2	2.2	288	0		

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
11 con'd	2/19/97	17:30	0.0	0.0	NS	NS		
	3/27/97	15:15	4.0	4.0	NS	NS		
	4/17/97	14:00	9.8/6.5[2]	9.8/6.5	721	NS		
	5/1/97	15:35	0.0	0.0	318	11.5		
	5/21/95	NA	4.9/7.9[2]	4.9/7.9[2]	360	6		
	6/10/97	NA	20.1	20.1	300	2		
	7/21/97	NS	NS	NS	358	36		
							NA	

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments
12	8/27/96	12:45	68	1.0	450	32		Dolphin Mart Site. C/D Carbon Units. Units still in service.
	10/2/96	12:50	47.5	13.7	458	30		
	10/8/96	13:10	27	6.5	467	28		
	10/16/96	13:00	18	5.4	NS	NS		
	10/25/96	16:00	23.1	27.5	NS	NS		
	10/28/96	11:30	27.3	13.3	NS	NS		
	11/8/96	11:10	10.3	5.6	NS	NS		
	11/19/96	14:10	2.5	0.0	NS	NS		
	12/2/96	14:15	4.0	9.0	NS	NS		
	12/17/96	NA	13.0	2.0	NS	NS		
	12/30/96	NA	12.0	12.0	NS	NS		
	1/13/97	13:50	5.0	5.0	NS	NS		
	1/27/97	15:00	12.0	8.0	NS	NS		
	2/13/97	NA	2.4	0.0	NS	15		
	2/19/97	13:45	2.6	1.1	NS	NS		
	3/27/97	10:40	20	1.8	NS	NS		
	4/17/97	NA	8.7	7.3	NS	NS		
	5/1/97	12:30	3.6	1.9	298	16		
	5/21/97	NA	287.2	60.8	329	15		
	6/10/97	NA	3.2	2.6	329	15		
	7/21/97	NA	NS	NS	329	15		
							NA	

Carbon Breakthrough Matrix
Dolphin Mart and NEX Site

Groton Naval Submarine Base
Groton, CT

Carbon Breakthrough (#)[1]	Sample Date	Sample Time	Influent Conc. (ppmv, PID/FID)	Effluent Conc. (ppmv, PID/FID)	SVE System Flow Rate (scfm)	Air Sparge System Flow Rate (scfm)	Estimated Breakthrough Time (hours)	Comments

Notes:
1 The initial carbon breakthrough (not included in this table) occurred during OHM's start-up activities.
2 AB/CD carbon units.
ppmv = parts per million by volume
PID = photoionization detector
FID = flame ionization detector
PGC = portable gas chromatograph
NS = not sampled

ATTACHMENT 5

HISTORICAL WELL GAUGING DATA

Well Gauging Data
Dolphin Mart Site
New London Naval Submarine Base
Groton, Connecticut

Date	Depth to Water (ft) Well ID																	
	DM-1	DM-2	DM-3	DM-4	DM-5	HRP-10	HRP-11	MW-1	MW-2	MW-3	WE-1	WE-1A	WE-2S	WE-2D	WE-3	WE-4	WE-5	WE-6
07/02/96	6.37	NG	NG	NG	NG	4.65	NG	4.65	3.55	3.12	NG	NG	6.78	6.56	8.67	4.24	4.80	3.40
07/03/96	NG	NG	NG	NG	NG	5.19	NG	4.63	2.86	0.00	NG	NG	6.58	6.35	8.69	6.38	4.33	2.30
07/12/96	NG	NG	NG	NG	NG	5.81	NG	5.01	3.82	1.95	NG	NG	6.96	6.83	8.93	6.38	4.98	3.60
07/16/96	NG	NG	NG	NG	NG	4.33	NG	4.55	2.89	0.74	NG	NG	6.47	6.24	8.5	6.27	4.08	2.76
07/17/96	NG	NG	NG	NG	NG	2.73	NG	4.94	1.63	2.79	NG	NG	6.3	5.88	8.62	6.47	3.62	1.72
07/19/96	NG	NG	NG	NG	NG	4.38	NG	5.21	0.61	0.00	NG	NG	6.18	5.53	8.45	NG	3.19	1.08
07/22/96	NG	NG	NG	NG	NG	4.54	NG	4.82	1.95	1.17	NG	NG	6.45	6.42	8.64	3.68	3.73	1.96
07/23/96	NG	NG	NG	NG	NG	4.55	NG	4.75	3.33	0.00	NG	NG	6.7	6.33	8.72	8.72	4.49	2.40
07/24/96	NG	NG	NG	NG	NG	4.33	NG	5.22	1.18	0.00	NG	NG	6.31	5.67	8.45	3.38	3.33	1.49
07/25/96	NG	NG	NG	NG	NG	4.46	NG	5.31	NG	NG	NG	NG	NG	NG	NG	NG	NG	2.12
07/26/96	NG	NG	NG	NG	NG	4.43	NG	4.79	NG	NG	NG	NG	NG	NG	NG	NG	NG	2.95
08/01/96	NG	NG	NG	NG	NG	3.93	NG	4.96	2.2	1.28	NG	NG	6.39	6.09	8.55	3.22	4.06	1.15
08/02/96	NG	NG	NG	NG	NG	4.08	NG	5.24	1.82	1.31	NG	NG	6.3	5.73	8.56	2.96	3.76	0.86
08/05/96	NG	NG	NG	NG	NG	4.35	NG	5.08	NG	1.08	NG	NG	NG	NG	NG	NG	NG	1.28
09/04/96	NG	NG	NG	NG	NG	5.43	NG	6.07	4.59	DRY	NG	NG	7.39	7.51	9.73	5.11	6.23	4.59
10/02/96	NG	NG	NG	NG	NG	3.53	NG	5.43	NG	3.86	NG	NG	6.41	5.82	8.41	3.11	3.96	1.60
10/21/96	NG	NG	NG	NG	NG	3.98	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	2.43
11/19/96	1.90	NG	2.06	2.68	5.37	4.15	NG	3.85	3.00	DRY	NG	NG	6.46	5.89	8.32	3.53	3.87	2.90
12/17/96	2.53	NG	1.60	NG	3.67	NG	NG	2.53	2.17	NG	NG	NG	6.10	NG	7.92	2.17	2.96	2.10
01/27/97	1.91	NG	1.89	NG	4.26	3.29	NG	2.98	2.13	NG	NG	NG	6.24	5.73	7.94	3.08	3.26	1.53
02/18/97	1.93	NG	1.90	2.04	NG	4.04	NG	2.91	2.56	2.28	NG	NG	6.32	5.84	7.95	3.49	3.21	2.55
03/27/97	1.89	2.27	1.86	2.41	4.6	4.04	3.21	3.48	1.86	1.27	5.03	DRY	6.21	5.45	8.08	1.66	3.51	1.15
04/17/97	NG	NG	NG	NG	NG	5.25	NG	3.14	1.94	1.39	NG	NG	NG	NG	NG	3.00	3.18	1.30
05/21/97	2.04	2.39	2.08	3.08	5.19	4.11	3.43	3.60	2.93	2.44	DRY	DRY	NG	6.11	8.20	3.73	4.07	2.84

Notes:

NG = Not Gauged
(1) Depth to Product/Depth to Water

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Well Gauging Data
NL Site
New London Naval Submarine Base
Groton, Connecticut

Date	Depth to Water/Depth to Product (ft) Well ID																								
	ERM-5	ERM-6	ERM-7	ERM-8	ERM-9	ERM-10	ERM-11	ERM-12	ERM-13	ERM-14	ERM-15	ERM-16	ERM-17	ERM-18	ERM-19	NEX-1	OBG-1	OBG-2	OBG-4	OBG-6	OBG-7	OBG-8	OBG-9	MW-4	MW-6
09/16/96	3.82	5.14	5.27	NG	NG	NG	NG	8.38	7.01	6.89	4.30	8.51	5.62	3.65	5.28	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
10/16/96	NG	4.82	4.75	NG	NG	NG	6.4	8.13	7.15	6.92	3.94	8.49	5.56	3.96	5.17	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
11/18/96	3.72	4.64	4.93	NG	NG	NG	6.36	8.09	7.13	7.10/6.91	4.03	8.43	5.53	NG	5.19	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
12/16/96	3.10	4.08	4.21	NG	NG	NG	5.02	7.83	6.55	6.35	NG	7.8	3.73	NG	4.23	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
02/17/97	3.00	4.34	4.29	NG	NG	NG	4.89	7.65	6.03	5.89	NG	7.85	4.53	NG	4.18	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
03/27/97	2.89	4.28	4.19	NG	NG	NG	5.19	7.63	5.98	5.82	NG	7.79	4.87	NG	4.06	5.81	8.12	7.95	7.75	7.95	5.61	NG	5.54	4.91	4.49
04/15/97	NG	NG	NG	NG	NG	NG	NG	NG	5.86	5.7	3.39	7.84	4.84	NG	NG	5.74	NG	7.92	7.75	NG	NG	NG	5.54	NG	NG
04/17/97	2.73	NG	NG	NG	NG	NG	NG	NG	NG	5.66	3.31	NG	4.67	NG	3.91	NG	NG	7.91	7.78	NG	NG	NG	5.58	NG	NG
04/24/97	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	7.74	NG	NG	NG	NG	NG	NG
05/21/97	NG	4.72	4.61	NG	NG	NG	6.27	7.81/7.80	6.15	6.04/5.99	NG	8.16	5.26	NG	4.46	5.80	7.98	7.81	7.64	NG	5.79	5.60	5.84/5.31	NG	4.85

Notes:

NG = Not Gauged

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MW-7 Well Gauging Data
OT-8 Site
New London Naval Submarine Base
Groton, Connecticut

Date	Depth to Product (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	LNAPL Recovered (gallons)	Cumulative LNAPL Recovered (gallons)
09/26/96	4.26	6.02	1.76	0.00	0.00
10/02/96	NS	NS	0.00	4.00	4.00
10/08/96	NS	NS	0.00	0.00	4.00
10/16/96	NS	NS	0.00	0.00	4.00
10/21/96	1.65	1.66	0.01	0.00	4.00
10/25/96	3.06	3.18	0.12	0.00	4.00
10/28/96	3.46	3.55	0.09	0.00	4.00
12/17/96	NA	0.00	0.00	0.00	4.00
01/13/97	7.76	7.86	0.10	0.00	4.00
01/27/97	NA	0.00	0.00	0.00	4.00
02/19/97	2.96	2.97	0.01	0.00	4.00
03/27/97	3.30	3.99	0.69	UNK*	4.00
04/17/97	3.12	3.34	0.22	0.00	4.00
05/21/97	4.09	5.07	0.98	0.25	4.25
06/10/97	sheen	4.64	sheen	0.00	4.25
07/21/97	5.43	5.55	0.12	0.00	4.25

Notes: Gauging on 10/02/96 and 10/16/96 was with a clear bailer, to visually confirm product thickness.
The well and vault were flooded on 12/17/96
NA = Not Applicable
NG = Not Gauged
* Product was recovered, but the volume was insufficient to fill the product piping and discharge into the recovery drum.

ATTACHMENT 6

HISTORICAL GROUNDWATER SAMPLING RESULTS

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-1	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	4.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	5	1,000	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
DM-2	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	4.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics

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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediaiton Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-3	3/95	<1.0	<1.0	<1.0	<1.0	7.90	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	7	<500	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
DM-4	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	5	600	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, D = Analyte concentration was obtained from a diluted analysis, E = Analyte concentration exceeded the calibration range
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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediaiton Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
DM-5	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	6	<500	<500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
HRP-10	3/95	**304**	35.2	257	**1140**	<50	**6,080**	NS	NS	NS
	5/96	**125**	21	54	329	<20	**1,740**	NS	NS	NS
	11/96	**9**	<1.0	65	<1.0	7	<1,000	81	600	<500
	2/97	<1.0	<1.0	<1.0	<1.0	3	<500	3	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, D = Analyte concentration was obtained from a diluted analysis, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
HRP-11	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	1.0	<1.0	<1.0	3.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
MW-1	11/96	**3**	<1.0	5	<1.0	<1.0	<1,000	11	1,000	<500
	2/97	<1.0	<1.0	4	<1.0	<1.0	<500	4	<500	600
	5/97	<1.0	<1.0	4	<1.0	<1.0	<500	6	700	760
MW-2	11/96	**4**	<1.0	14	<1.0	4	<1,000	28	1,200	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	**1,000**	1 B	1,200	1,200
	5/97	<1.0	<1.0	3	<1.0	<1.0	<500	3	500	580

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, D = Analyte concentration was obtained from a diluted analysis, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
MW-3	2/97	**36**	23	72	500	5	**2,000**	645 B	3,300	1,600
	5/97	**60**	38	69	**730D**	<1.0	**5,000**	897D	7,900	<500
OBG-8A	3/95	**72**	24.6	25.9	62.4	9.29	<473	NS	NS	NS
	5/96	**12.0**	<1.0	9.0	4.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
OBG-9A	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	3,000	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, D = Analyte concentration was obtained from a diluted analysis, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediaiton Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-2D(B)	11/96	1	<1.0	<1.0	<1.0	<1.0	<1,000	3	<500	<500
	2/97	**2**	<1.0	<1.0	<1.0	3	<500	5	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
WE-2S	3/95	**37.9**	24.2	60.3	126.4	21.3	**725**	NS	NS	NS
	5/96	**50**	22	101	144	<10	**1,570**	NS	NS	NS
	11/96	**7**	<1.0	9	4	14	<1,000	34	<500	<500
	2/97	**5**	<1.0	14	3	10	<500	32	500	600
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics

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Table 1
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Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediaiton Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-3	3/95	<1.0	<1.0	<1.0	<1.0	8.70	<473	NS	NS	NS
	5/96	**2.0**	<1.0	<1.0	<1.0	14.0	<473	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	<1.0	<1.0	<1.0	<1.0	6	<500	6	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
WE-4	3/95	**267**	29.8	392	**712**	<40	**5,180**	NS	NS	NS
	5/96	**160**	16	301	**617**	<40	**3,680**	NS	NS	NS
	11/96	**41**	1.0	100	2	19	<1,000	166	1,100	500
	2/97	**21**	<1	27	1	17	<500	66	500	700
	5/97	**13**	<1.0	13	<1.0	19	<500	45	700	540

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, **D** = Analyte concentration was obtained from a diluted analysis, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics

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Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO (by EPA Method 8100M)	GRO (by EPA Method 8015M)
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
WE-5	11/96	**240D**	410D	**720D**	**4,300E**	27	**9,000**	5,697	12,000	8,900
	2/97	**42D**	10	89D	490D	6	**2,000**	637	2,000	1,200
	5/97	**370**	190	**840**	**3,900D**	<1.0	**4,000**	5,300	11,000	16,000
WE-6	11/96	**5**	210D	71D	**630D**	<1.0	<1,000	916	2,000	1,400
	2/97	**3**	4	8	12	2	<500	29	800	700
	5/97	**3**	1.0	12	<1.0	<1.0	<500	15	1,200	1,200

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
B = Analyte detected in method blank, D = Analyte concentration was obtained from a diluted analysis, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

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Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-5	3/95	**967**	431	390	**1,340**	<100	NS	3,295.1	430	8,250
	5/96	**112**	6	34	28	<10	NS	196	159	554
	11/96	**370D**	14	33	61D	<1.0	**3,000**	480	1,100	1,600
	2/97	**1,100**	**1,100**	580	**1,600**	<50	**3,000**	4,440 B	3,900	9,100
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
ERM-6	5/96	**15**	<1.0	<1.0	<1.0	<2.0	NS	35	63	<473
	11/96	**610**	230	**770**	**2,400E**	<40	**5,000**	4,054	500	7,800
	2/97	**430D**	21	300	**1,000D**	<10	**2,000**	1,763 B	2,200	4,800
	5/97	**430D**	21	640D	**2,300D**	<1.0	**1,000**	3,391D	1,500	6,700

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-7	5/96	**5**	<1.0	<1.0	<1.0	<2.0	NS	8	38	<473
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	4	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	1	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
ERM-8	3/95	**109**	11.5	272	157	<50	NS	665.4	464	2,350
	5/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-9	5/96	<1.0	<1.0	<1.0	<1.0	2	NS	4	3,310	<473
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
ERM-11	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	3	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	2	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-12	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	1	27	<473
	5/96	1	2	7	14	<2.0	NS	61	4,300	1,390
	11/96	<1.0	2	<1.0	9	<1.0	**3,000**	16	7,300	6,700
	2/97	<1.0	1	2	9	<1.0	**15,000**	13	4,800	1,300
	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
ERM-13	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	534	50	<473
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	NS	9	<100	<473
	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	2	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-14	3/95	**292**	**4,880**	**8,190**	**6,020**	<2.0	NS	19,995	4,840	3,670
	5/96	**305**	**5,670**	**1,250**	**8,350**	<2.0	NS	22,543	7,290	3,890
	11/96	**270**	**8,300D**	**1,700D**	**11,000D**	<25	**7,000**	21,270	12,000	30,000
	2/97	**140**	**4,500D**	**980**	**7,100**	<100	**60,000**	12,840	20,000	20,000
	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
ERM-15	11/96	**280**	760	330	**1,100**	<40	**1,000**	2,517	2,300	4,500
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
ERM-16	11/96	**37**	<2.0	13	16	30	<1,000	68	4,400	2,000
	2/97	**56D**	<1.0	16	34	27	**6,000**	136	11,000	1,400
	5/97	**34**	<1.0	20	42	11	**26,000**	107	60,000	2,000

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
ERM-17	11/96	**10**	<1.0	<1.0	<1.0	9	<1,000	11	600	600
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	**1,000**	<1.0	500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	1,500	<500
ERM-19	11/96	<1.0	<1.0	<1.0	<1.0	<1.0	<1,000	1	<500	<500
	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
MW-4	2/97	**29**	1	<1.0	3	<1.0	NS	33	NS	NS
	5/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	2/97	<1.0	9	<1.0	<1.0	<1.0	NS	9	NS	NS
	5/97	**18**	<1.0	2	8	<1.0	<500	28	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1997
Naval Submarine Base, Groton, CT

(analytical results in µg/l)

Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
NEX-1	3/95	<1.0	<1.0	<1.0	<1.0	<2.0	NS	7	35	<143
	5/96	<1.0	<1.0	<1.0	<1.0	<2.0	NS	8	<122	<143
	11/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/97	**2**	11	4	34	<1.0	<500	57	<500	<500
OBG-1	5/97	**480**	**3,300D**	**1,100D**	**10,000D**	**540**	**110,000**	15,420	260,000	49,000
OBG-2	5/97	**77**	280	530	**9,800D**	**290**	**87,000**	10,977	120,000	44,000
OBG-4	2/97	<1.0	<1.0	<1.0	<1.0	<1.0	NS	<1.0	NS	NS
	5/97	<1.0	<1.0	<1.0	2	<1.0	**6,000**	2	3,100	<500
OBG-7	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
OB9-8	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, B = Analyte detected in method blank, E = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, GRO=Gasoline Range Organics

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Compound		BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		1.0	1,000	700	530	100	500	NA	NA	NA
Well	Date									
OB9-9	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP

Notes: NS = Not sampled (NS results have been shaded)
Bold numbers indicate an exceedance of State of CT Clean-up Standards
D = Analyte concentration was obtained from a diluted analysis, **B** = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
DRO=Diesel Range Organics, **GRO**=Gasoline Range Organics

ATTACHMENT 7

MW-7 WELL CONSTRUCTION LOG

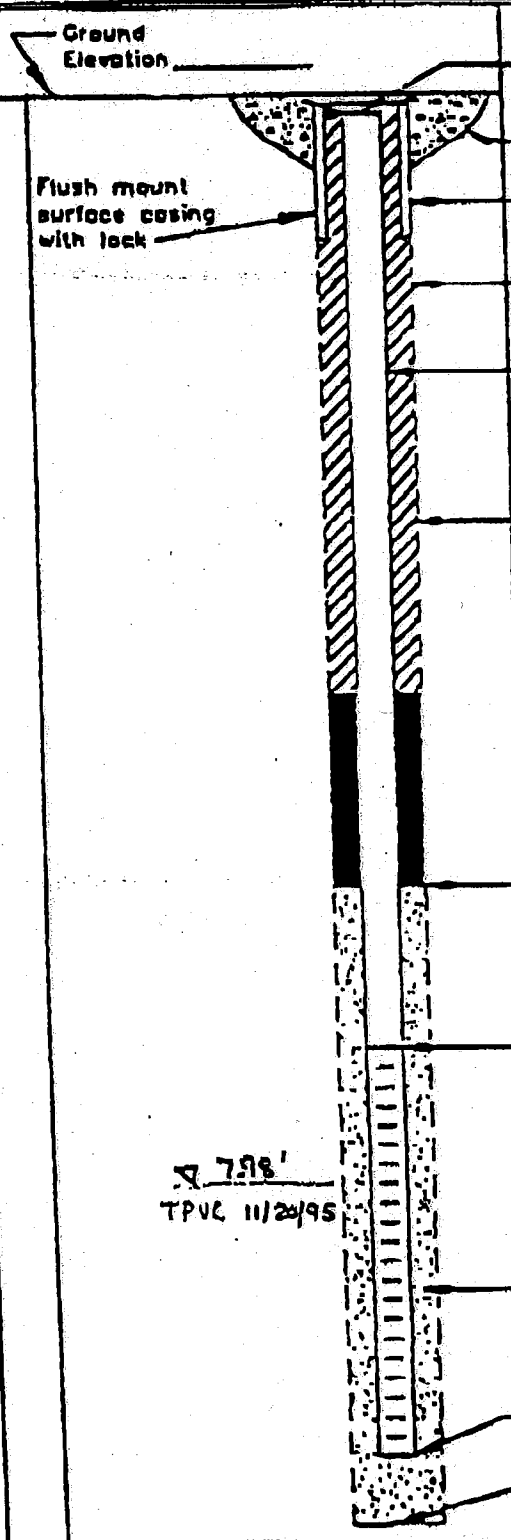
MONITORING WELL SHEET

TANK FARM WELLS

PROJECT NSB NLON
PROJECT NO. 4626
ELEVATION
FIELD GEOLOGIST CONTI

LOCATION GROTON, CT.
BORING HNUS-07
DATE 10-3-95

DRILLER SOILTEST, INC
DRILLING METHOD HSA
DEVELOPMENT METHOD PUMP



ELEVATION TOP OF RISER:

TYPE OF SURFACE SEAL: CONCRETE

TYPE OF PROTECTIVE CASING: FLUSH MOUNT

I.D. OF PROTECTIVE CASING: 4"

DIAMETER OF HOLE: 8"

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 2" ϕ

TYPE OF BACKFILL/SEAL: CEMENT GROUT

DEPTH/ELEVATION TOP OF SAND: 3'

DEPTH/ELEVATION TOP OF SCREEN: 5'

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH: 10 SL X 10

TYPE OF SAND PACK: #20-30 SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15'

DEPTH/ELEVATION BOTTOM OF SAND: 15'

DEPTH/ELEVATION BOTTOM OF HOLE: 15'

BACKFILL MATERIAL BELOW SAND: NA