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NSB NEW LONDON

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**MONTHLY OPERATIONS SUMMARY
FOR THE NAVAL EXCHANGE (NEX) AND DOLPHIN MART
AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEMS**

**NEW LONDON NAVAL SUBMARINE BASE
GROTON, CONNECTICUT**

Month: June 1998

Prepared by:

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Prepared by:



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Reviewed by:



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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. Throughout June, 1998, 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 and air sparge points ASP-H through ASP-Q are currently not operating due to high groundwater conditions and low dissolved volatile organic compound (VOC) concentrations in their vicinity. The soil vapor extraction (SVE) system is currently operating at a flow rate of approximately 290 standard cubic feet per minute (scfm). The air sparge system is currently injecting air at a flow rate of approximately 26 scfm. A site map has been included as **Figure 1**. A weekly break-down of the month's field activities has been included as **Attachment 1**.

Mass Removal - No air influent sample was collected from the SVE system during June, 1998. The total hydrocarbon mass removal rate, based on the most recent sample, collected on April 27, 1998, was 0.02 lbs/hour. During the period from March 27, 1998 to April 27, 1998, approximately 18 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of April 27, 1998, was approximately 1,999 pounds (lbs). The system database has been included in **Attachment 2**. Mass removal graphs have been included as **Figures 3A, 3B and 4**. Based on the hydrocarbon mass removal rate, no exceedance of Connecticut Department of Environmental Protection (CTDEP) air quality guidelines was observed.

Carbon Usage - No carbon change-out occurred during the month of June, 1998. The last vapor phase carbon change-out at the site occurred August 27, 1997. No liquid phase carbon change-out has occurred to date.

Discharge Monitoring Sampling - Discharge sampling for the system was not conducted in June, 1998, since no discharge occurred during the month. The last discharge sampling event for the Dolphin Mart site was on April 27, 1998.

Monitoring Well Gauging - The site monitoring wells were gauged on May 11, 1998 during the quarterly groundwater sampling event. Depth to groundwater at the site ranged from 0.31 feet in OBG-8A to 7.91 feet in WE-3. Historical well gauging data has been included in **Attachment 3**.

Monitoring Well Sampling - Monitoring well sampling was conducted on May 11, 1998. The May Quarterly Groundwater Sampling Report was issued on June 19, 1998. The historical groundwater sampling results have been summarized in **Attachment 4**.

Additional Activities - On June 17, 1998, a water sample was collected from monitoring well OBG-8A for analysis via United States Environmental Protection Agency (EPA) Method 8270 for polynuclear aromatic hydrocarbons (PAHs).

NEX AIR SPARGE/SVE SYSTEM

System Status - The remediation system at the site has been operating since July 31, 1997. The system did not operate during the month of June 1998 pending a change-out of the liquid-phase carbon units.

A weekly break-down of the monthly field activities has been included in **Attachment 1**.

Mass Removal - No air influent sample was collected from the SVE system during June, 1998. The total hydrocarbon mass removal rate, based on the most recent SVE system influent sample collected April 27, 1998, was 0.07 lbs/hour. During the period from March 24, 1998 to April 27, 1998, an estimated 37 lbs of hydrocarbons were extracted by the remediation system. The total hydrocarbon mass extracted by the remediation system, as of April 27, 1998, is approximately 1,551 lbs. The system database has been included in **Attachment 2**. 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 - No carbon change-out occurred during the month of June, 1998. The last vapor phase carbon change-out occurred August 8, 1997. A liquid phase carbon change-out is scheduled for July, 1998.

Discharge Monitoring Sampling - Discharge sampling for the system was not conducted in June, 1998. The last discharge sampling event for the Dolphin Mart site was on April 27, 1998.

Monitoring Well Gauging - The site monitoring wells were last gauged on May 12, 1998 during the quarterly groundwater sampling event. Depth to groundwater at the site ranged from 2.09 feet in ERM-5 to 7.90 feet in ERM-12. During the well gauging, light non-aqueous phase liquid (LNAPL) was detected at OBG-1 at a thickness of 0.01 feet and at OBG-9 at a thickness of 0.02 feet. Historical well gauging data is included in **Attachment 3**.

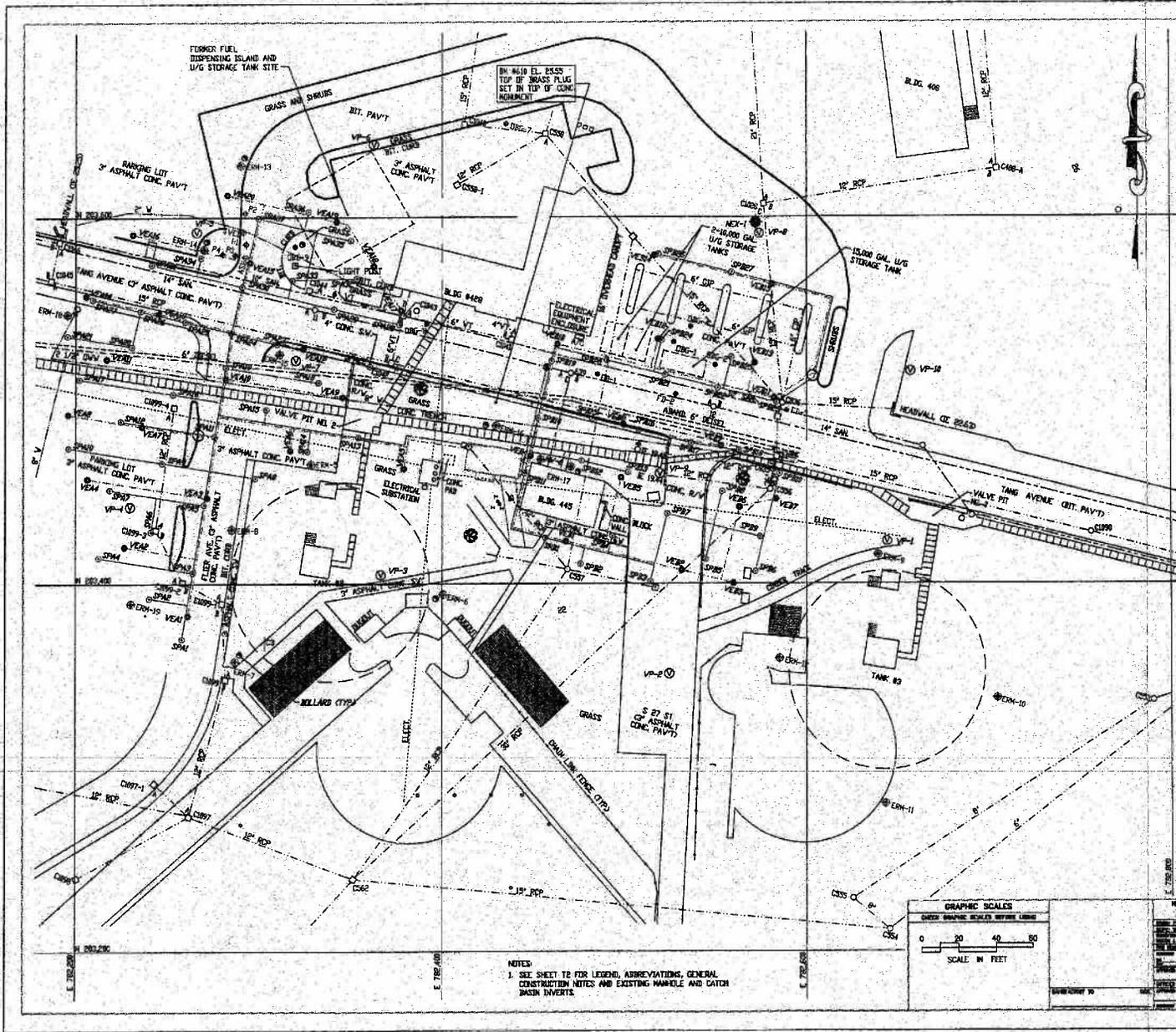
Monitoring Well Sampling - Monitoring well sampling was last conducted on May 12, 1998. The May Quarterly Groundwater Sampling Report was issued on June 19, 1998. The historical groundwater sampling results have been summarized in **Attachment 4**.

Additional Activities - On June 3, 1998, angle iron was welded to the covers of the remaining vaults.

OT-8 PASSIVE FREE PRODUCT RECOVERY SYSTEM

System Status - The OT-8 system has been decommissioned and removed. MW-7 was destroyed during excavation activities at the OT-8 area. The petroleum hydrocarbon impact has been addressed by soil excavation activities conducted by Foster Wheeler Environmental Corporation Inc.

FIGURES



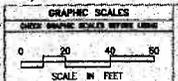
REVISIONS				
NO.	DESCRIPTION	PREP'D BY	DATE	APPROVED

HIGHEST RECORDED GROUND WATER ELEVATION			
WELL NO.	GROUND WATER EL.	WELL NO.	GROUND WATER EL.
DBG-1	16.73	ERW-16	16.97
DBG-2	17.09	ERW-19	16.06
DBG-4	16.63	ERW-1	17.09
DBG-5	16.85	ERW-6	16.31
DBG-6	16.78	ERW-3	14.76
DBG-7	18.40	ERW-4	16.86
DBG-8	17.96	ERW-5	17.78
DBG-9	17.63	ERW-6	16.79
ERW-10	18.69	ERW-7	15.81
ERW-11	17.66	ERW-8	17.14
ERW-12	16.69	ERW-9	17.00
ERW-13	17.59		
ERW-14	17.45		
ERW-15	17.59		
ERW-16	17.71		
ERW-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:
- EXISTING TOPOGRAPHY FROM MAP BY JAMES S. WINGES & ASSOCIATES, CARLSON & SWICART FARMINGTON, CT & NEW YORK, NY, DATED 31 DEC. 1974.
 - EXISTING UTILITIES FROM 40 SCALE UTILITY MAPS SUPPLIED BY THE DEPARTMENT OF PUBLIC WORKS, NAVAL SUBMARINE BASE, NEW LONDON, GROTON, CT.
 - GROUND WATER ANALYTICAL RESULTS, JANUARY, 1996 NEX STATION SITE US SUBBASE, GROTON, CT PREPARED FOR ERW-PWS.
 - ALL TOPOGRAPHIC FEATURES AND INVERTS SHOWN HEREIN SHALL BE FIELD VERIFIED.

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



HSP ASSOCIATES, INC. 1000 W. 10th St. Groton, CT 06340 TEL: 860-339-1111 FAX: 860-339-1112	DEPARTMENT OF THE NAVY NAVAL SUBMARINE BASE GROTON, CT 06340 TEL: 860-339-1111 FAX: 860-339-1112	SMALL FACILITIES ENGINEERING DIVISION NORTHWOOD DIVISION NEW LONDON, CONNECTICUT REMEDIATION OF CONTAMINATED SOIL/GROUND WATER PROJECT NO. 2166430 SHEET NO. C1-1 DATE: 10/15/96
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Figure 3A- Mass Removal Rate
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT

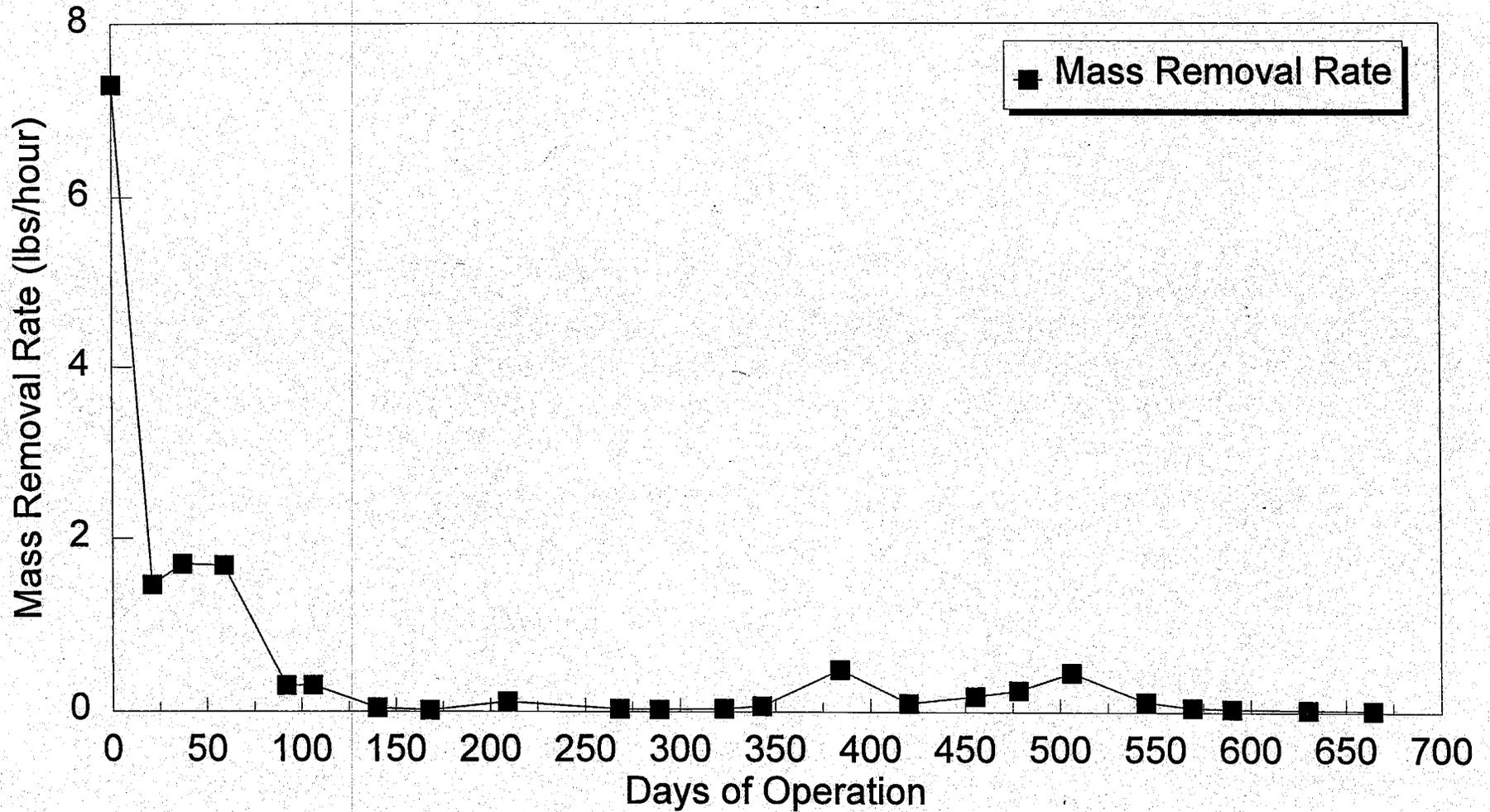


Figure 3B- Mass Removal Rate
Dolphin Mart Site, New London Naval Submarine Base, Groton, CT

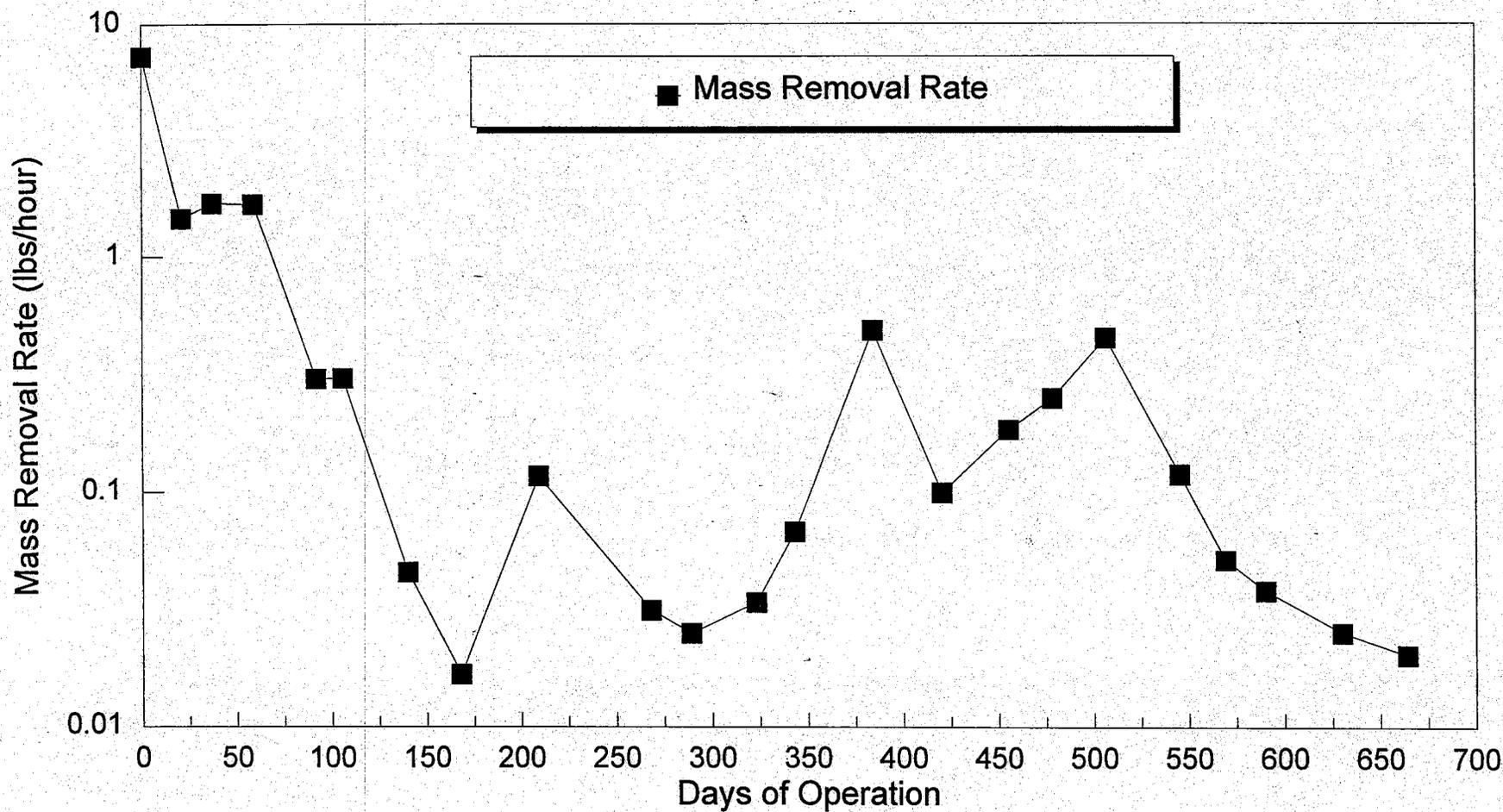


Figure 4 - Cumulative Mass Removed versus Time

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

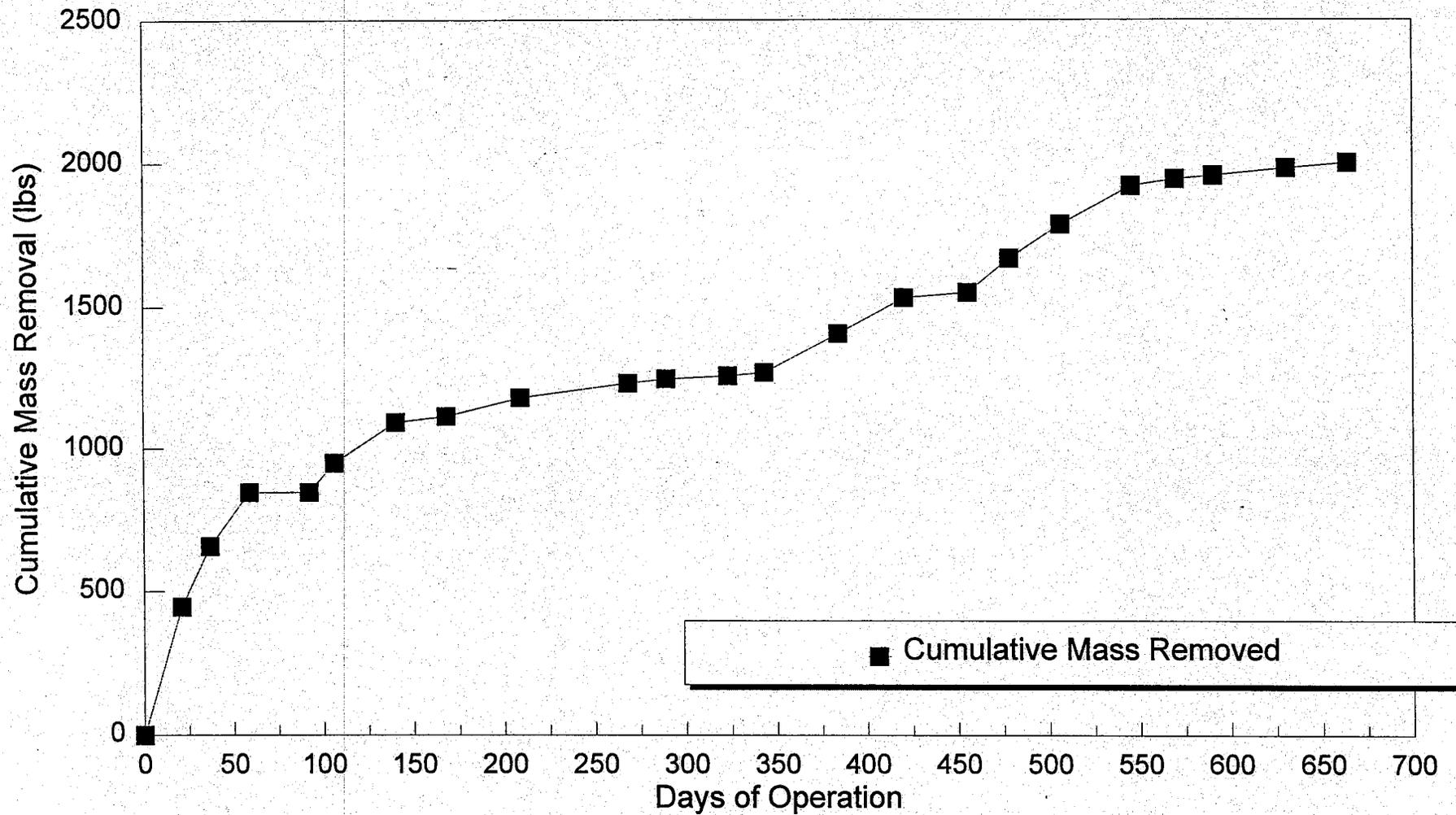


Figure 5A - Mass Removal Rate

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

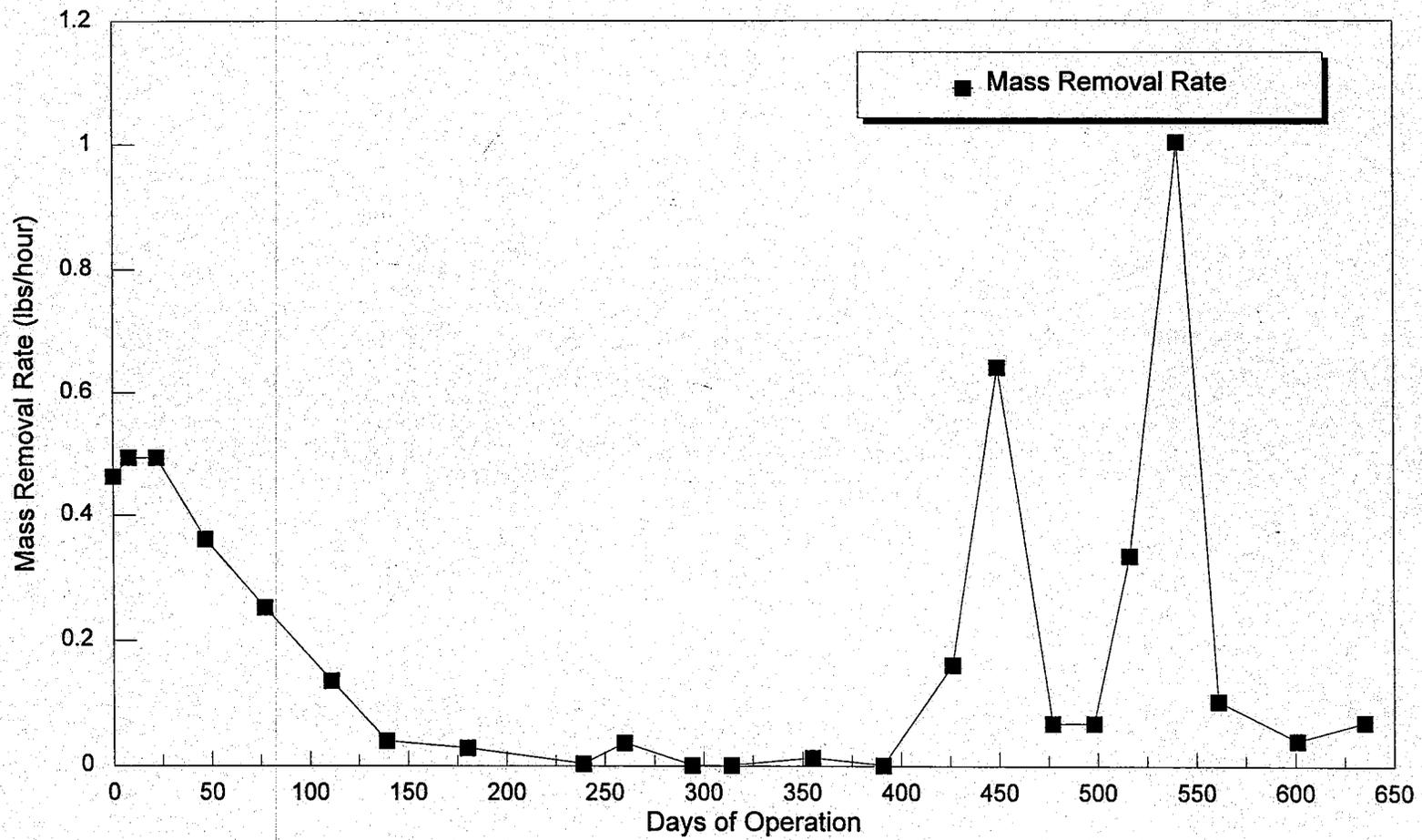


Figure 5B - Mass Removal Rate
NEX Site, New London Naval Submarine Base, Groton, CT

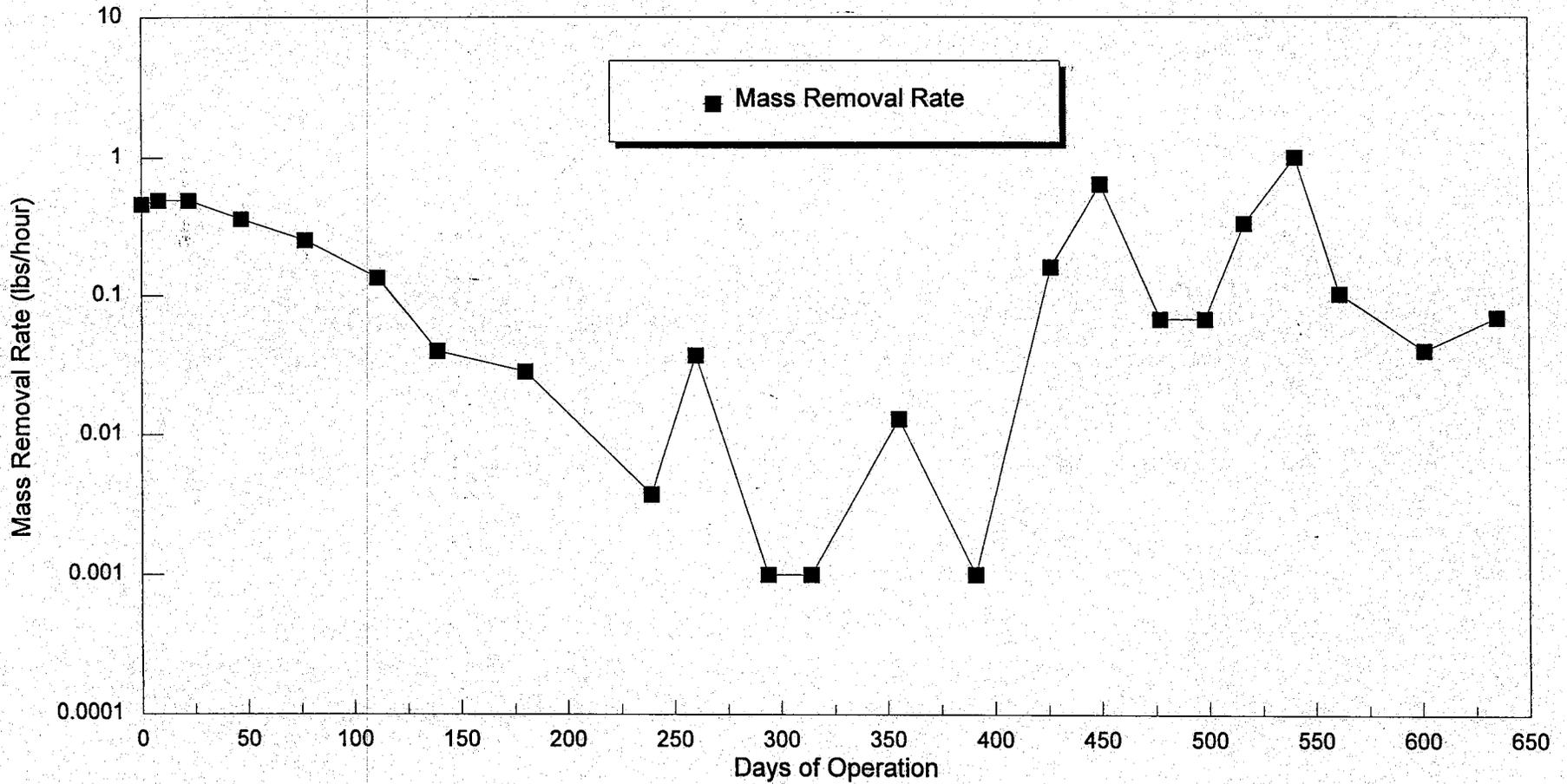
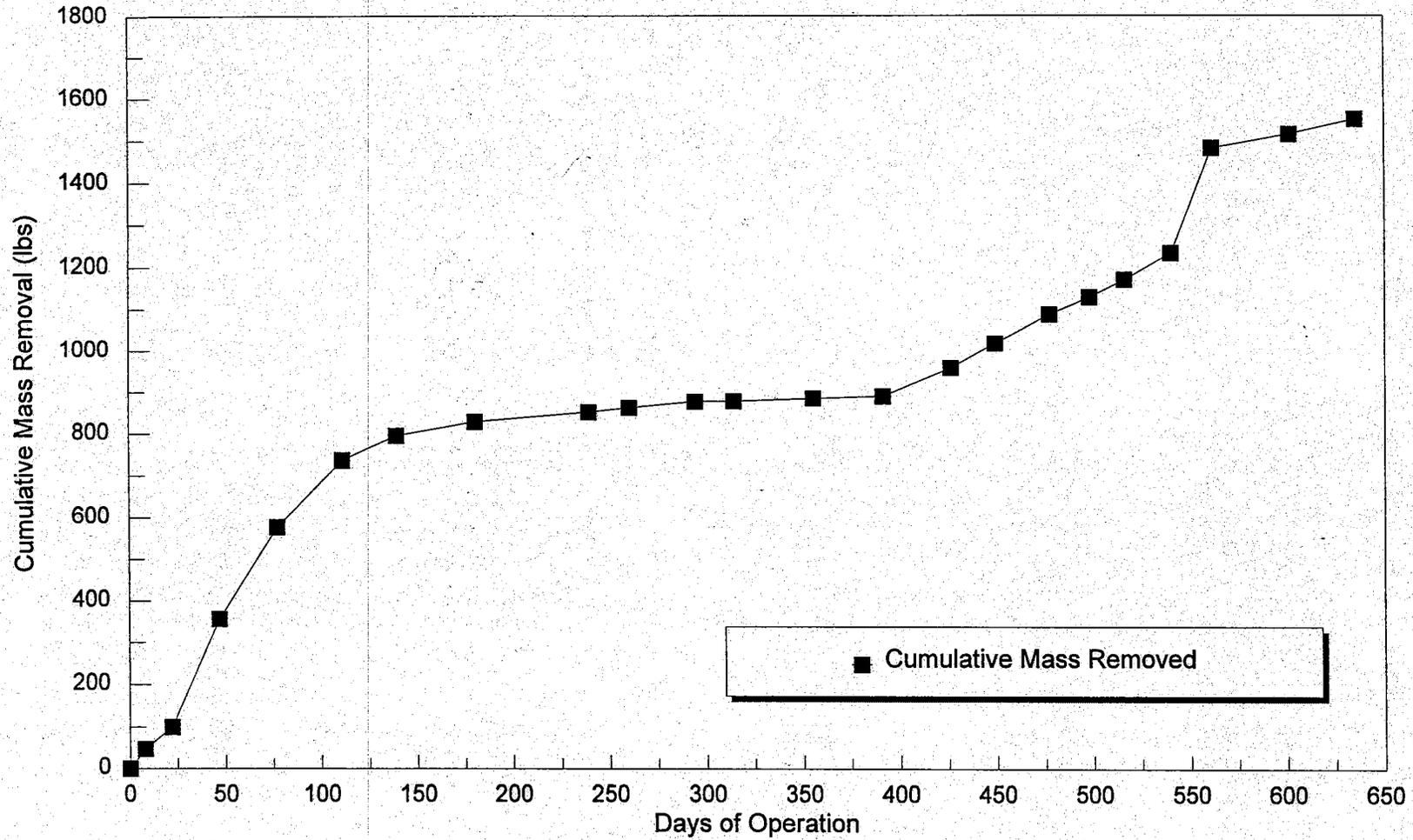


Figure 6 - Cumulative Mass Removed versus Time

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



ATTACHMENT 1

MONTHLY FIELD ACTIVITY SUMMARY

**Field Activity Summary
June 1998**

**New London Naval Submarine Base
Groton, Connecticut**

Week Ending	Site	Period	Field Activities	Comments
6/5/98	Dolphin Mart	Monthly Monitoring	Conducted system check.	System operating normally.
	NEX		Conducted system check. Welded angle iron to covers of remaining vaults.	
6/19/98	Dolphin Mart	Monthly Monitoring	Collected PAH sample from OBG-8A. Conducted system check.	Blower V-2 and compressor C-1 down upon arrival.

ATTACHMENT 2

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	Air Sparge Flowrate (scfm)	Extraction Flowrate (scfm)	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 (mg/m3)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/02/96	25	450	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	20	449	11.40	0.091	0.00	0.000	200.00	1.372	0.00	0.000	—	0.000	1.463	446.70	446.70	system operated approx. 102 hrs between 7/2 and 7/23
08/08/96	32	454	18.00	0.143	—	0.000	210.00	1.457	12.00	0.103	—	0.000	1.702	210.53	657.23	system operated approx. 133 hrs between 7/23 and 8/8
08/30/96	0	450	18.00	0.142	—	0.000	210.00	1.444	12.00	0.102	—	0.000	1.687	188.14	845.37	system operated approx. 111 hrs between 8/8 and 8/30
10/02/96	30	448	2.30	0.019	0.00	0.000	—	0.000	—	0.000	NA	0.286	0.305	0.00	845.37	system not in operation from 8/30 to 10/2 due to flow meter problem
10/16/96	30	450	2.30	0.019	0.00	0.000	—	0.000	—	0.000	NA	0.287	0.306	102.58	947.95	system reactivated 10/2/96
11/19/96	30	450	0.38	0.003	0.00	0.000	—	0.000	—	0.000	22.00	0.042	0.045	143.33	1091.28	
12/17/96	30	450	0.12	0.001	0.00	0.000	—	0.000	—	0.000	8.20	0.016	0.017	20.84	1112.12	
01/27/97	30	450	1.35	0.011	0.00	0.000	—	0.000	—	0.000	55.00	0.106	0.117	65.56	1177.68	
03/27/97	30	450	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.031	0.031	104.53	1229.95	assume 50% up-time, blowers shutting down due to influent water
04/17/97	30	450	0.00	0.000	0.00	0.000	—	0.000	—	0.000	13.00	0.025	0.025	14.13	1244.08	
05/21/97	15	329	0.00	0.000	0.00	0.000	—	0.000	—	0.000	24.00	0.034	0.034	11.96	1256.03	assume 50% up-time, blowers shutting down due to influent water
06/10/97	15	329	0.25	0.002	0.00	0.000	—	0.000	—	0.000	47.00	0.066	0.067	12.14	1268.17	assume 50% up-time, blowers shutting down due to influent water
07/21/97	15	329	1.89	0.011	0.00	0.000	—	0.000	—	0.000	340.00	0.477	0.488	136.76	1404.83	assume 50% up-time, blowers shutting down due to influent water
08/26/97	15	482	0.73	0.007	0.00	0.000	—	0.000	—	0.000	45.00	0.092	0.099	126.91	1531.85	assume 50% up-time, blowers shutting down due to influent water
09/30/97	15	482	0.34	0.003	0.00	0.000	—	0.000	—	0.000	88.00	0.181	0.184	17.84	1549.68	assume ~15% up-time, blowers shutting down due to influent water
10/23/97	14	589	0.00	0.000	0.00	0.000	—	0.000	—	0.000	100.00	0.251	0.251	120.10	1669.78	
11/20/97	32	590	0.00	0.000	5.45	0.050	—	0.000	—	0.000	160.00	0.403	0.453	118.28	1788.06	assume 50% up-time, blowers shutting down due to influent water
12/29/97	28	590	0.45	0.005	0.00	0.000	—	0.000	—	0.000	45.00	0.113	0.118	133.65	1921.71	assume 50% up-time, blowers shutting down due to influent water
01/22/98	27	471	0.32	0.003	0.00	0.000	—	0.000	—	0.000	24.00	0.048	0.051	24.38	1946.09	assume 50% up-time, blowers shutting down due to influent water
02/12/98	23	295	0.23	0.001	0.00	0.000	—	0.000	—	0.000	29.00	0.036	0.038	11.19	1957.28	assume 50% up-time, blowers shutting down due to influent water
03/24/98	30	245	0.45	0.002	0.00	0.000	—	0.000	—	0.000	22.00	0.023	0.025	24.89	1982.16	system down for approximately one week due to influent water
04/27/98	30	215	0.00	0.000	0.00	0.000	—	0.000	—	0.000	22.00	0.020	0.020	18.47	2000.63	

- 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	Air Sparge Flowrate (scfm)	Extraction Flowrate (total) (scfm)	Influent Concentration BTEX (ppmv)	Removal Rate BTEX (lb/hr)	Influent Concentration MTBE (mg/m3)	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 (mg/m3)	Removal Rate TVPH (lb/hr)	Total Mass Removal Rate (lbs/hr)	Period Mass Removed (lbs)	Cumulative Mass Removed (lbs)	Comments
07/31/96	NA*	253	1.80	0.007	NA	0.000	130.00	0.455	0.00	0.000	—	0.000	0.463	0.00	0.00	
08/08/96	NA*	270	1.80	0.008	NA	0.000	130.00	0.486	0.00	0.000	—	0.000	0.494	46.93	46.93	system operated approx. 82 hrs between 7/31 and 8/8
08/22/96	NA*	270	1.80	0.008	NA	0.000	130.00	0.486	0.00	0.000	—	0.000	0.494	52.85	99.78	24-hour per day system operation began 8/8
09/16/96	NA*	320	2.70	0.015	NA	0.000	—	0.000	—	0.000	—	0.346	0.361	256.56	356.34	
10/16/96	NA*	320	2.50	0.014	NA	0.000	—	0.000	—	0.000	—	0.238	0.253	220.98	577.32	
11/19/96	NA*	324	0.95	0.006	0.00	0.000	—	0.000	—	0.000	94.00	0.130	0.135	158.31	735.63	
12/17/96	NA*	310	0.18	0.001	0.24	0.000	—	0.000	—	0.000	29.00	0.038	0.040	58.83	794.47	
01/27/97	NA*	321	0.14	0.001	0.00	0.000	—	0.000	—	0.000	20.00	0.027	0.028	33.39	827.85	
03/27/97	NA**	384	0.00	0.000	NA	0.000	—	0.000	—	0.000	—	0.004	0.004	22.62	850.47	
04/17/97	NA**	721	0.00	0.000	0.00	0.000	—	0.000	—	0.000	12.00	0.037	0.037	10.24	860.71	
05/21/97	6***	360	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	15.46	876.17	
06/10/97	2***	300	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	0.48	876.65	
07/21/97	36***	358	0.00	0.000	0.00	0.000	—	0.000	—	0.000	8.50	0.013	0.013	6.88	883.53	
08/26/97	28***	223	0.00	0.000	0.00	0.000	—	0.000	—	0.000	0.00	0.000	0.00	6.04	889.57	One blower down due to high water level in moisture trap.
09/30/97	27***	221	2.37	0.009	22.00	0.021	—	0.000	—	0.000	140.00	0.132	0.161	68.15	957.72	One blower down due to high water level in moisture trap.
10/23/97	47***	322	2.47	0.013	62.50	0.088	—	0.000	—	0.000	395.00	0.542	0.641	60.12	1017.84	Two blowers down due to high water level in moisture trap.
11/20/97	47***	213	0.50	0.002	4.10	0.004	—	0.000	—	0.000	68.00	0.062	0.067	69.68	1087.51	One blower down due to high water level in moisture trap.
12/11/97	47	213	0.50	0.002	4.10	0.004	—	0.000	—	0.000	68.00	0.062	0.067	40.27	1127.78	
12/29/97	47	520	0.78	0.007	8.00	0.018	—	0.000	—	0.000	140.00	0.310	0.335	42.29	1170.07	
01/22/98	53	479	2.46	0.020	16.50	0.034	—	0.000	—	0.000	465.00	0.949	1.003	63.09	1233.15	
02/12/98	NA****	324	0.77	0.004	3.85	0.005	—	0.000	—	0.000	67.50	0.093	0.103	248.54	1481.70	
03/24/98	53	249	0.44	0.002	3.00	0.003	—	0.000	—	0.000	33.00	0.035	0.040	32.99	1514.68	
04/27/98	53	170	0.57	0.002	30.50	0.022	—	0.000	—	0.000	76.50	0.055	0.069	36.71	1551.39	

- 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.
 - **** Air sparge compressor deactivated on 1/28/98 due to lack of vapor recovery from western portion of site.
 - 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 Milkem Laboratory. Prior to 9/16/96 air analysis performed by NEV/GTEL
 - 7) Milkem results report total volatile petroleum hydrocarbons, not misc. aromatics and aliphatics.
Total Volatile Petroleum Hydrocarbons are weighted to molecular weight of 100.
 - 8) System modifications to allow continuous dewatering were conducted on December 11, 1997.
The data for this date was assumed to be the same as November that for November 20, 1997.
Flow rates for this date have been interpolated from 11/20/97 and 12/29/97 data.
 - 9) 4/27/98 TVPH results reported as C5-C12 Aliphatics and C9-C10 Aromatics. Ppmv equivalents have been estimated.

ATTACHMENT 3

HISTORICAL WELL GAUGING DATA

Well Gauging Data
Dolphin Mart Site
Groton 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	OBG8A	OBG9A	WE-1	WE-1A	WE-2D	WE-2S	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	0.82	DRY	DRY	6.56	6.78	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	0.89	NG	NG	6.35	6.58	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	1.85	NG	NG	6.83	6.96	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	0.69	NG	NG	6.24	6.47	8.50	6.27	4.08	2.76
07/17/96	NG	NG	NG	NG	NG	2.73	NG	4.94	1.63	2.79	NG	0.00	NG	NG	5.88	6.30	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	0.00	NG	NG	5.53	6.18	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	0.00	NG	NG	6.42	6.45	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	0.20	NG	NG	6.33	6.70	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	0.00	NG	NG	5.67	6.31	8.45	3.38	3.33	1.49
07/25/96	NG	NG	NG	NG	NG	4.46	NG	5.31	NG	NG	NG	0.16	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	0.00	NG	NG	NG	NG	NG	NG	NG	2.95
08/01/96	NG	NG	NG	NG	NG	3.93	NG	4.96	2.20	1.28	NG	NG	NG	NG	6.09	6.39	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	0.00	NG	NG	5.73	6.30	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	0.00	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	NG	NG	7.51	7.39	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	NG	NG	5.82	6.41	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	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	NG	NG	5.89	6.46	8.32	3.53	3.87	2.90
12/17/96	2.53	NG	1.60	NG	3.67	NG	NG	3.85	2.17	NG	NG	NG	NG	NG	NG	6.10	7.92	2.17	2.96	2.10
01/27/97	1.91	NG	1.89	NG	4.26	3.29	NG	2.53	2.13	NG	NG	NG	NG	NG	5.73	6.24	7.94	3.08	3.26	1.53
02/18/97	1.93	NG	1.90	2.04	NG	4.04	NG	2.98	2.56	2.28	NG	NG	NG	NG	5.84	6.32	7.95	3.49	3.21	2.55
03/27/97	1.89	2.27	1.86	2.41	4.60	4.04	3.21	2.91	1.86	1.27	NG	NG	5.03	DRY	5.45	6.21	8.08	1.66	3.51	1.15
04/17/97	NG	NG	NG	NG	NG	5.25	NG	3.48	1.94	1.39	NG	NG	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	3.14	2.93	2.44	NG	NG	DRY	DRY	6.11	NG	8.20	3.73	4.07	2.84
08/27/97	NG	NG	NG	NG	NG	5.01	4.10	3.60	4.28	DRY	NG	2.46	NG	NG	7.03	NG	9.54	4.69	5.77	4.07
11/21/97	2.26	3.20	2.56	3.33	6.83	4.43	3.77	5.33	3.84	3.06	2.26	0.95	DRY	DRY	6.66	6.97	8.86	7.53	5.29	3.56
02/11/98	1.79	2.63	1.61	1.84	3.87	3.64	3.08	3.23	1.34	1.88	1.47	1.31	NG	NG	5.49	6.29	8.33	2.14	2.87	1.35
05/11/98	1.80	1.85	1.50	2.34	2.41	3.65	3.16	1.81	1.99	4.08	0.31	0.98	NG	NG	5.16	6.18	7.91	7.51	2.50	2.02

Notes: WE-2D, WE-2S, and WE-3 are covered by stand pipes.
NG = Not Gauged

Well Logging Data
 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
08/28/97	NG	5.29	6.49	NG	NG	NG	7.65	NG	7.24	7.24/7.01	NG	sheer/8.63	5.77	NG	5.41	6.15	8.22	8.03	7.9	NG	6.49	NG	6.56/6.45	NG	5.34
11/20/97	4.35	5.24	5.35	NG	NG	NG	6.89	8.23	7.84	7.63	4.46	8.77	5.77	NG	5.79	6.45	8.43	8.23	8.07	NG	7.09	NG	7.06	NG	5.33
02/12/98	3.59	4.68	4.71	NG	NG	NG	5.04	7.99	6.71	6.59	3.54	8.18	5.14	NG	4.44	5.28	8.19	8.01	7.84	NG	5.84	NG	NG	NG	4.92
05/12/98	2.09	2.69	3.32	NG	NG	NG	4.39	7.90	5.23	5.09	2.63	7.32	2.98	NG	3.43	5.20	7.88/7.87	7.71	7.51	NG	4.56	NG	4.60/4.58	4.16	3.74

Notes: NG = Not Gauged

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ATTACHMENT 4

HISTORICAL GROUNDWATER SAMPLING RESULTS

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 1 of 16

Compound	BTEX				MTBE	TPH (By EPA Method 418.1) 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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	3	<1.0	3	<1.0	<500	6	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 2 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	8	<500	8	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	5	<500	5	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	2	1,500	2	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 3 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 4 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	2	<1.0	<1.0	<1.0	3	<500	5	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	800	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	700	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 5 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	700	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,200	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 6 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	<1.0	<1.0	<1.0	<1.0	3.0	800	3.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	700	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 7 of 16

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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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

[†] = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 8 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	<1.0	<1.0	16	2B	<1.0	1,000	18	800	600
	11/97	2	<1.0	9	<1.0	<1.0	<500	11	NS	NS
	2/98	<1.0	1	4	<1.0	<1.0	800	5	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 9 of 16

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	2	<1.0	3	1	3	<500	9	NS	NS
	2/98	2	1	6	<1.0	<1.0	700	9	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	3	500	3	NS	NS
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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	2	3	56	<1.0	<500	61	NS	NS
	2/98	<1.0	<1.0	<1.0	1.0	<1.0	21,000	1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound	BTEX				MTBE	TPH (By EPA Method 418.1) 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									
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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	3	25	5	5	<1.0	<500	38	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	9,300	<1.0	NS	NS
	5/98	<1.0	2	<1.0	2	<1.0	3,800	4	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

¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound	BTEX				MTBE	TPH (By EPA Method 418.1) 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									
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
	8/97	<1.0	<1.0	<1.0	<1.0	3.0	11,000	3.0	2,200	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	3,100	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	2,100	<1.0	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

¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	<1.0	<1.0	<1.0	<1.0	4.0	11,000	4.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,000	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	3	1,500	3	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
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound	BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	4	<1.0	<1.0	15	7	<500	26	NS	NS
	5/98	2	<1.0	10	<1.0	7	1,200	19	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

¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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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-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
	8/97	<1.0	<1.0	<1.0	<1.0	220	3,000	220	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	38	<500	38	NS	NS
	2/98	2	<1.0	<1.0	<1.0	160D	<500	162	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	2	<500	2	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
[†] = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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-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
	8/97	7.0	<1.0	19	3B	3B	700	44	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,300	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	600	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 1
Historical Groundwater Sampling Results
Dolphin Mart - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) 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
	8/97	210D	<1.0	210D	470DB	63D	5,000	953	3,900	2,500
	11/97	11	<1.0	2	6	27	1,100	46	NS	NS
	2/98	11	<1.0	10	14	3	1,800	38	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,400	<1.0	NS	NS
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
	8/97	<1.0	1.0	<1.0	28	<1.0	1,000	29	<500	<500
	11/97	2	<1.0	3	2	4	<500	11	NS	NS
	2/98	2	<1.0	5	3	4	500	14	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,000	<1.0	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
¹ = TPH on 5/98 was analyzed using EPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 1 of 18

Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		245	23,500	21,300	50,000	50,000	NA	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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	730	250	870	620	<10	2,300	2,470	NS	NS
	2/98	310	460	300	710	<10	5,400	1,780	NS	NS
	5/98	790	280	1,200	4,900	<100	9,200	7,170	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
L P = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
page 2 of 18

Compound	BTEX				MTBE	TPH (By EPA Method 418.1)	Total Volatiles (by EPA Method 8010/5020)	DRO	GRO	
	Benzene	Toluene	Ethylbenzene	Xylenes						
Remediation Standard	215	23,500	21,300	50,000	50,000	NA	NA	NA	NA	
Well	Date									
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
	8/97	470	90	650	2,000	<1.0	2,000	3,210	3,500	6,200
	11/97	250D	23	260D	530D	<1.0	<500	1,063	NS	NS
	2/98	97D	13	110D	240D	<1.0	<500	460	NS	NS
	5/98	21	4	28	78	<1.0	<500	131	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
L P = Liquid-phase petroleum present; well could not be sampled
† = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound	BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO	
	Benzene	Toluene	Ethylbenzene	Xylenes						
Remediation Standard	215	23,500	21,300	50,000	50,000	NA	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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
L P = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
ERM-8 (destroyed)	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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	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
LP = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound	BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO	
	Benzene	Toluene	Ethylbenzene	Xylenes						
Remediation Standard	215	23,500	21,300	50,000	50,000	NA	NA	NA	NA	
Well	Date									
ERM-9 (destroyed)	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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	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
L P = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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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		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
B = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
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
L P = Liquid-phase petroleum present; well could not be sampled
[†] = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	<1.0	<1.0	<1.0	4	<1.0	7,100	4	NS	NS
	2/98	<1.0	<1.0	<1.0	1	<1.0	23,000	1	NS	NS
	5/98	<1.0	<1.0	2	2	<1.0	5,400	4	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
LP = Liquid-phase petroleum present; well could not be sampled
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Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
LP = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	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
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	40	2,300D	700D	2,500D	<1.0	4,600	5,540	NS	NS
	2/98	<1.0	930	210	2,800	<1.0	28,000	3,940	NS	NS
	5/98	80	2,200	690	5,400	<1.0	11,000	8,370	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
B = Analyte detected in method blank, **E** = Analyte concentration exceeded the calibration range
D = Analyte concentration was obtained from a diluted analysis, **DRO**=Diesel Range Organics, **GRO**=Gasoline Range Organics
LP = Liquid-phase petroleum present; well could not be sampled
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Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	210	630	240	120	<10	<500	1,200	NS	NS
	2/98	8	9	4	25	<1.0	600	46	NS	NS
	5/98	1,100	2,700	810	3,200	<50	11,000	7,810	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
L P = Liquid-phase petroleum present; well could not be sampled
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Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (By EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	5	<1.0	7	30	<1.0	15,000	42	NS	NS
	2/98	8	<1.0	3	15	6	25,000	32	NS	NS
	5/98	25	<1.0	9	18	13	4,800	65	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
LP = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ^f	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	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
	8/97	12	<1.0	<1.0	<1.0	<1.0	1,000	12	1,000	500
	11/97	2	<1.0	<1.0	<1.0	<1.0	<500	2	NS	NS
	2/98	3	<1.0	<1.0	<1.0	<1.0	<500	3	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	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
L P = Liquid-phase petroleum present; well could not be sampled
^f = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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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	215	23,500	21,300	50,000	50,000	NA	NA	NA	NA	
Well	Date									
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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
FD-1	5/98	210	3	140	29	66	48,000	448	NS	NS
FD-2	5/98	63	<1.0	<1.0	3	31	14,000	97	NS	NS
FD-3	5/98	<1.0	<1.0	<1.0	<1.0	9	<500	9	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
B = 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
L P = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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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		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	15	2	<1.0	<1.0	<1.0	1,000	17	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	8.0	<1.0	<500	28	<500	<500
	8/97	35D	1.0	<1.0	8.0	<1.0	<500	46	<500	<500
	11/97	6	<1.0	<1.0	3	<1.0	<500	9	NS	NS
	2/98	8	<1.0	<1.0	3	<1.0	<500	11	NS	NS
	5/98	1	<1.0	<1.0	<1.0	<1.0	<500	1	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
B = 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
L P = Liquid-phase petroleum present; well could not be sampled
† = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	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
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	3.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS

Notes: NS = Not sampled (NS results have been shaded)
B = 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
L P = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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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		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-1	5/97	480	3,300D	1,100D	10,000D	540	110,000	15,420	260,000	49,000
	8/97	1,600	6,200	1,700	12,000	810	220,000	22,310	580,000	56,000
	11/97	1,600	8,800	2,300	16,000	38,000	21,000	66,700	NS	NS
	2/98	1,400	7,100D	2,200	15,000D	24,000D	160,000	49,700	NS	NS
	5/98	LP	LP	LP	LP	LP	LP	LP	LP	LP
OBG-2	5/97	77	280	530	9,800D	290	87,000	10,977	120,000	44,000
	8/97	470	410	1,100	11,000	830	180,000	13,990	99,000	75,000
	11/97	370	380	960	9,200	40,000	23,000	50,910	NS	NS
	2/98	410	340	680	7,900	26,000D	120,000	35,330	NS	NS
	5/98	570	<1.0	650	6,300	15,000	33,000	22,520	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
LP = Liquid-phase petroleum present; well could not be sampled
[†] = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 418.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
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
	8/97	<1.0	<1.0	<1.0	<1.0	4.0	1,000	4.0	3,500	<500
	11/97	<1.0	3	<1.0	7	8	NS	18	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	5	4,100	5	NS	NS
OBG-7	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	11/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	2/98	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	NS	NS
	5/98	<1.0	<1.0	<1.0	<1.0	<1.0	900	<1.0	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
LP = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M

Table 2
Historical Groundwater Sampling Results
NEX - March 1995 - May 1998
Naval Submarine Base, Groton, CT

(analytical results in µg/l)
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Compound		BTEX				MTBE	TPH (By EPA Method 410.1) ¹	Total Volatiles (by EPA Method 8010/8020)	DRO	GRO
		Benzene	Toluene	Ethylbenzene	Xylenes					
Remediation Standard		215	23,500	21,300	50,000	50,000	NA	NA	NA	NA
Well	Date									
OBG-8 (destroyed)	5/97	<1.0	<1.0	<1.0	<1.0	<1.0	<500	<1.0	<500	<500
	8/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
OBG-9	5/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	8/97	LP	LP	LP	LP	LP	LP	LP	LP	LP
	11/97	490	4,800	2,100	16,000	<200	24,000	23,390	NS	NS
	2/98	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/98	LP	LP	LP	LP	LP	LP	LP	LP	LP

Notes: NS = Not sampled (NS results have been shaded)
B = Analyte concentration exceeded the 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
LP = Liquid-phase petroleum present; well could not be sampled
¹ = TPH on 5/98 was analyzed using GPA Method 8100M