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Quarterly Progress Report on Soil Vapor Extraction/ Aquifer Air Sparging Remedial System Operations for the Period 1 April through 30 June 1999 Navy Exchange Service Station (Building 538) Naval Air Station Brunswick, Maine

Contract No. N62472-92-D-1296
Contract Task Order No. 0035

U.S. NAVAL AIR STATION
BRUNSWICK, MAINE

Prepared for

Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Prepared by

EA Engineering, Science, and Technology
The Maple Building
3 Washington Center
Newburgh, New York 12550

August 1999
296.0035

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The Maple Building
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Newburgh, NY 12550
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18 August 1999

Mr. Emil Klawitter
Department of the Navy
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, Pennsylvania 19113

RE: Quarterly Progress Report on Soil Vapor Extraction/Aquifer Air Sparging
Remedial System Operations for the Period 1 April through 30 June 1999
Navy Exchange Service Station (Building 538), Naval Air Station, Brunswick, Maine
Contract D62472-92-D-1296, Contract Task Order No. 0035
EA Project No. 29600.35

Dear Mr. Klawitter:

EA Engineering, Science, and Technology is pleased to provide two copies of this quarterly progress report containing operation, field, and laboratory results in support of remedial operations and monitoring activities performed at the Navy Exchange (NEX) Service Station, Building 538, Naval Air Station, Brunswick, Maine. Figure 1 provides a site plan illustrating the current configuration of the NEX Service Station, the soil vapor extraction/aquifer air sparging (SVE/AAS) system, monitoring well network, and other site features. Figure 2 presents historical daily and cumulative total volatile hydrocarbon removal rates for the NEX treatment system. Figure 3 provides water table elevations and interpreted direction of ground-water flow based on data collected during the 25 June 1999 gauging event. Figure 4 presents the total benzene, toluene, ethylbenzene, and total xylenes; gasoline range organics (GRO); and diesel range organics (DRO) concentrations detected in ground-water samples collected during the 25 June 1999 sampling event.

Deliverables forwarded by this submission include SVE/AAS system operations data (Attachment A), water quality indicator parameter data (Attachment B), ground-water purging and sampling forms (Attachment C), and analytical results for ground-water samples collected at 6 ground-water monitoring wells (Attachment D).

Summary tables are provided for SVE/AAS system performance (Tables 1 and 2), site monitoring well gauging (Table 3), field water quality indicator parameters (Table 4), laboratory analytical results for the ground-water sampling event performed on 8, 9, and 10 June 1999 (Table 5), and historical ground-water laboratory analytical results (Table 6).

SOIL VAPOR EXTRACTION/AQUIFER AIR SPARGING OPERATIONS SUMMARY

The SVE system began operation on 15 November 1993. The AAS system was permanently activated on 18 July 1994. Several enhancements of the SVE/AAS system and the monitoring well network have been performed since the initial startup. These included extensions of SVE/AAS piping in the vicinity of Building No. 27, along and under Burbank Avenue, and in the vicinity of the NEX product dispenser islands. Also, the installation of additional service vaults and monitoring wells has accompanied these system expansions.

From 1 April through 30 June 1999, the SVE/AAS system was continuously operational with SVE trenches SVE-3 through SVE-11 and sparge wells AAS-3 through AAS-7, AAS-11, AAS-12, and AAS-14 through AAS-16 active.

Figure 2 presents daily and cumulative total volatile hydrocarbon removal rates based on historical NEX treatment system performance. Notable operational milestones, including system additions/enhancements, operational interruptions, and periods of relatively high total volatile hydrocarbon recovery, are included on the figure.

Soil Vapor Extraction System Performance

Nine SVE lateral assemblies (SVE-2, SVE-3, SVE-5 through SVE-8, and SVE-9 through SVE-11) operated continuously from 1 April through 30 June 1999. Lateral trench SVE-4 was flooded and not operational during the quarter. Quantitative estimates of total volatile hydrocarbon removal rates from individual SVE trenches were prepared based on monitoring data collected using a Foxboro TVA-1000 photoionization/flame ionization detector. SVE trenches SVE-5 through SVE-8 are connected to a common trunk line returning from the remediation zone and entering the treatment building, thus, the hydrocarbon removal rate for these trenches is provided as a composite. SVE trenches SVE-2 and SVE-9 through SVE-11 are also connected to a common trunk line returning from the remediation zone, and the hydrocarbon removal rate for these trenches is provided as a composite. These data are summarized in Table 1. For calculation of the daily total volatile hydrocarbon removal rate, it was assumed that the daily flow rate remained constant in individual SVE influent lines. SVE field data collected during system operations and maintenance visits are provided in Attachment A.

No exceedances of the Maine Department of Environmental Protection air discharge limit of 10 lb/hour, or 100 lb/day, of petroleum hydrocarbons were observed. A changeout of the granular activated carbon was not scheduled during this quarter.

Aquifer Air Sparging System Performance

Eight sparge wells (AAS-3, AAS-5 through AAS-7, AAS-12, and AAS-14 through AAS-16) operated continuously from 1 April through 30 June 1999. Sparge well AAS-4 was flooded with ground water in April and could not be operated. Sparge well AAS-11 remained off-line

during the 5 May operations and maintenance event. Similarly, sparge well AAS-13 remained inactive from April through June 1999. AAS system performance data are summarized in Table 2. AAS field data collected during the site visits are provided in Attachment A.

Well Gauging and Water Quality Indicator Parameter Measurements

Well gauging was performed and water quality measurements were recorded during routine operations and maintenance visits conducted on a bi-monthly schedule throughout the reporting period (total of 6 visits). Gauging of monitoring wells and air sparging wells confirmed the absence of measurable (i.e., <0.01 ft) light, non-aqueous phase liquid (LNAPL) in site monitoring wells during the reporting period. Sparge well AAS-9 was found to be dry for the 6 gauging events scheduled during the reporting period. Figure 3 provides interpreted water table elevations and direction of ground-water flow based on data collected during the 25 June 1999 gauging event. Well gauging data for the reporting period are summarized in Table 3.

Water quality indicator parameter measurements, including temperature, conductivity, pH, redox, and dissolved oxygen, were obtained using a YSI Model 600XL water quality meter. Water quality indicator parameter measurements were not obtainable at sparge well AAS-9 during the reporting period as this well was observed to be dry. Water quality indicator parameter measurements are summarized in Table 4. Field records of well gauging and water quality parameter measurements are provided in Attachment B.

QUARTERLY GROUND-WATER SAMPLING

Ground-water sampling was performed on 8, 9, and 10 June 1999 at 9 site monitoring wells (MW-NASB-8, MW-NASB-9, MW-NASB-10, MW-NASB-23, MW-NASB-24, MW-NASB-25, MW-NASB-26, MW-NASB-225, and MW-NASB-226). Prior to ground-water sample collection, each of the monitoring wells was gauged to determine the absence/presence of LNAPL, depth to ground water, and depth to bottom of well using a Solinst Model 121 oil/water interface probe graduated in 0.01-ft intervals. Well gauging confirmed the absence of LNAPL at the 9 monitoring well locations.

Well purging and ground-water sampling was performed using a low-flow sampling technique at an average purge rate of 0.2 L/minute or as necessary to stabilize ground-water elevation during purging. Water quality indicator parameters, including pH, conductivity, temperature, dissolved oxygen, Eh, and turbidity, were monitored during well purging. Ground-water samples were collected following stabilization of water quality indicator parameters, achieved when three consecutive measurements were within 10 percent agreement and when three consecutive measurements of turbidity were within 10 nephlometric turbidity units or less. Field records of well gauging, purging, and sampling are provided in Attachment C.

One ground-water sample was collected from each of 9 monitoring well locations. In addition, 1 duplicate sample was collected from well MW-NASB-226. One equipment rinsate blank was collected by running deionized water through the submersible pump equipment and into appropriate sample containers. To assess the potential for sample contamination during

transport, 2 trip blank samples were also analyzed. Katahdin Analytical Services, a State of Maine Department of Human Services (MDHS) approved laboratory, analyzed the samples. Ground-water samples, the duplicate sample, the equipment rinsate blank, and trip blanks were submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes and methyl tertiary-butyl ether by U.S. Environmental Protection Agency Method 602. Ground-water samples, the duplicate sample, and the equipment rinsate blank were also analyzed total petroleum hydrocarbon (TPH) as GRO by MDHS Health and Environmental Testing Laboratory (HETL) Laboratory Operating Procedure Method 4.2.17, and TPH as DRO by the MDHS-HETL Laboratory Operating Procedure Method 4.1.25. Attachment D contains the complete laboratory analytical report.

Table 5 summarizes the laboratory analytical results for ground-water samples collected on 8-10 June 1999. Table 6 summarizes historical analytical results for ground water analyzed for 21 previous ground-water sampling events at the NEX Service Station since May 1992, including the laboratory analytical results for ground-water samples collected on 8-10 June 1999. Concentrations of analytes exceeding Maine Department of Environmental Protection stringent cleanup goals for ground water are denoted in bold in Tables 5 and 6.

Based on the analytical results of the ground-water samples, remedial system operations are currently focused in the areas between MW-NASB-26 and MW-NASB-225. Overall lower dissolved-phase petroleum hydrocarbon concentrations were reported at 5 of the 9 monitoring wells sampled compared to the previous operational quarter. Monitoring wells MW-NASB-26 and MW-NASB-226 exhibited higher concentrations of TPH-GRO; MW-NASB-8 and MW-NASB-10 exhibited slightly higher concentrations of TPH-GRO. A concentration of 53 μg/L of TPH-DRO was detected in the rinse blank.

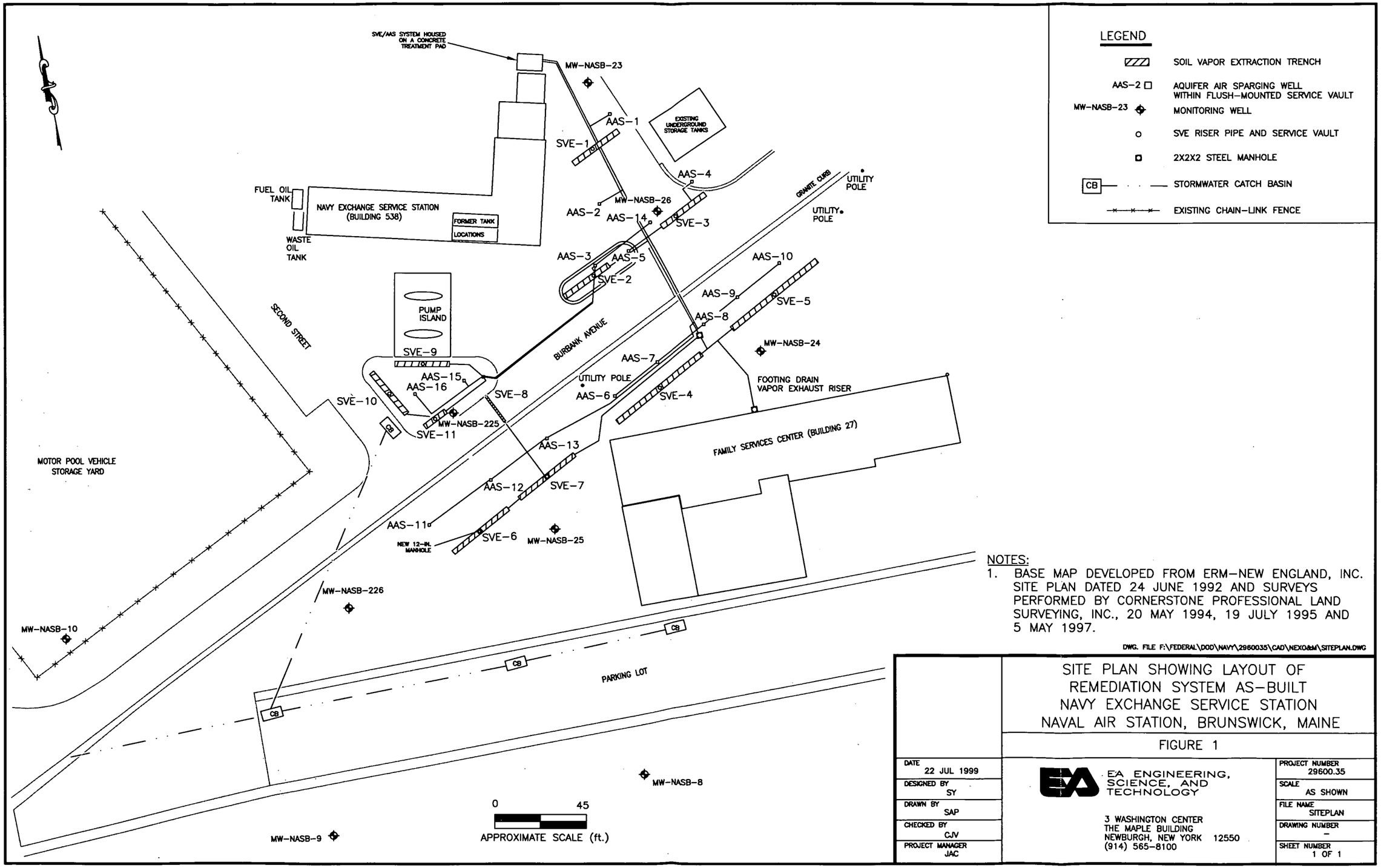
It has been our pleasure providing Northern Division these data. If there are any questions, please do not hesitate to call.

Sincerely yours,

Charles E. McLeod, Jr., P.E.
CTO Manager

CEM/caw
Attachments

cc: T. Williams (NAS Brunswick)
C. Sait (MEDEP)
C. Flynn (EA)
S. Chase (EA)



NOTES:

1. BASE MAP DEVELOPED FROM ERM-NEW ENGLAND, INC. SITE PLAN DATED 24 JUNE 1992 AND SURVEYS PERFORMED BY CORNERSTONE PROFESSIONAL LAND SURVEYING, INC., 20 MAY 1994, 19 JULY 1995 AND 5 MAY 1997.

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SITE PLAN SHOWING LAYOUT OF REMEDIATION SYSTEM AS-BUILT NAVY EXCHANGE SERVICE STATION NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 1

DATE	22 JUL 1999
DESIGNED BY	SY
DRAWN BY	SAP
CHECKED BY	CJV
PROJECT MANAGER	JAC

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THE MAPLE BUILDING
NEWBURGH, NEW YORK 12550
(914) 565-8100

PROJECT NUMBER	29600.35
SCALE	AS SHOWN
FILE NAME	SITEPLAN
DRAWING NUMBER	-
SHEET NUMBER	1 OF 1

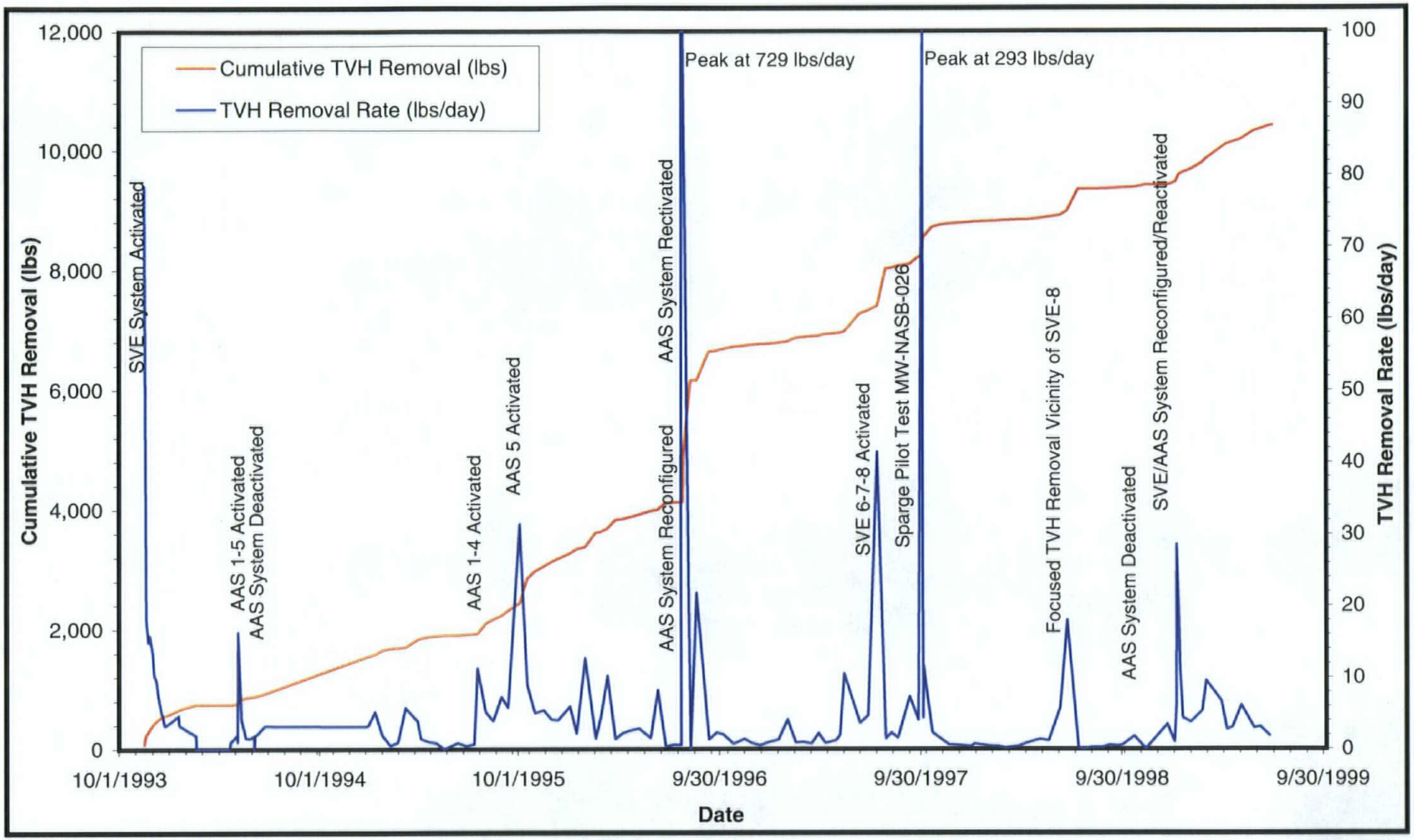
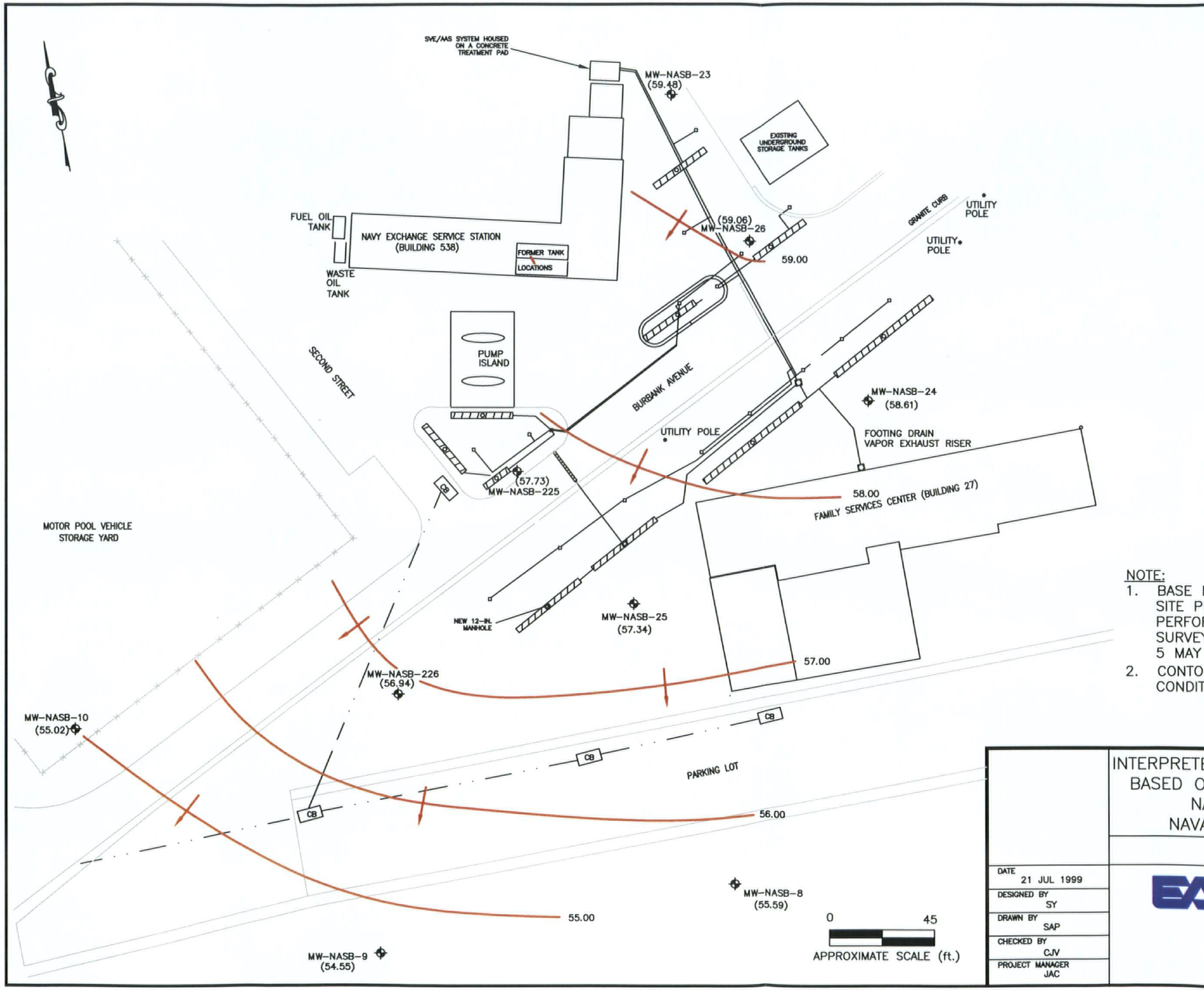


Figure 2. SVE/AAS treatment system performance showing daily and cumulative total volatile hydrocarbon (TVH) removal rates.



LEGEND

- SOIL VAPOR EXTRACTION TRENCH
- AQUIFER AIR SPARGING WELL WITHIN FLUSH-MOUNTED SERVICE VAULT
- MW-NASB-23 (59.48) — MONITORING WELL
- SVE RISER PIPE AND SERVICE VAULT
- 2X2X2 STEEL MANHOLE
- CB — STORMWATER CATCH BASIN
- EXISTING CHAIN-LINK FENCE
- 57.00 — INTERPRETED POTENTIOMETRIC SURFACE (CONTOUR INTERVAL = 1.0 FT)
- INTERPRETED DIRECTION OF GROUND-WATER FLOW

NOTE:

1. BASE MAP DEVELOPED FROM ERM-NEW ENGLAND, INC. SITE PLAN DATED 24 JUNE 1992 AND SURVEYS PERFORMED BY CORNERSTONE PROFESSIONAL LAND SURVEYING, INC., 20 MAY 1994, 19 JULY 1995 AND 5 MAY 1997.
2. CONTOURS REPRESENT INTERPRETATION OF PROBABLE CONDITIONS BASED ON A SINGLE WELL GAUGING EVENT.

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INTERPRETED POTENTIOMETRIC SURFACE ELEVATIONS BASED ON 25 JUNE 1999 WELL GAUGING DATA NAVY EXCHANGE SERVICE STATION NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 3

DATE	21 JUL 1999
DESIGNED BY	SY
DRAWN BY	SAP
CHECKED BY	CJV
PROJECT MANAGER	JAC

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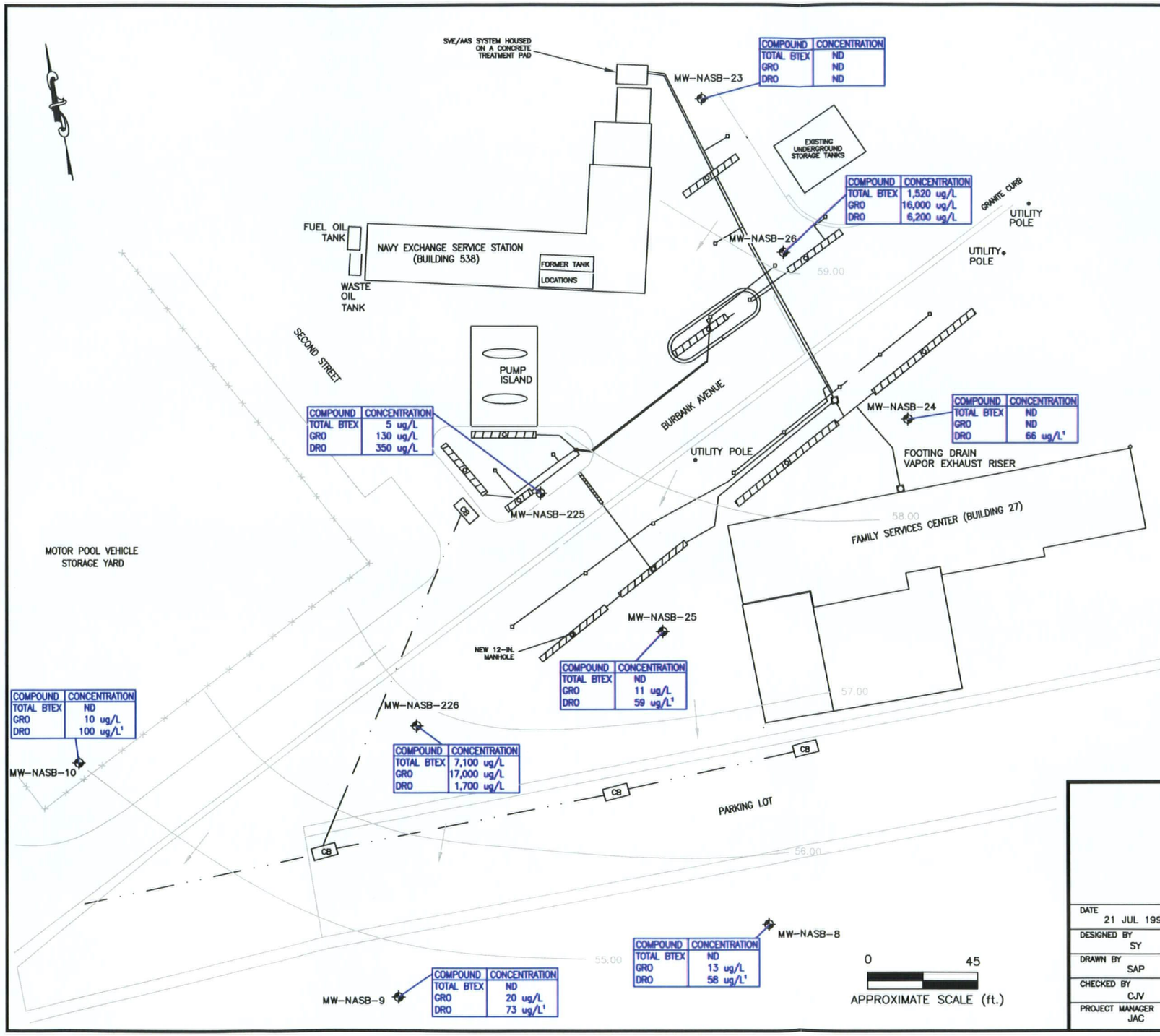
PROJECT NUMBER	29600.35
SCALE	AS SHOWN
FILE NAME	GWJUN99
DRAWING NUMBER	–
SHEET NUMBER	1 OF 1



LEGEND

- SOIL VAPOR EXTRACTION TRENCH
- AQUIFER AIR SPARGING WELL WITHIN FLUSH-MOUNTED SERVICE VAULT
- MW-NASB-23 — MONITORING WELL
- ND — NOT DETECTED
- SVE RISER PIPE AND SERVICE VAULT
- 2X2X2 STEEL MANHOLE
- CB — STORM WATER CATCH BASIN
- EXISTING CHAIN LINK-FENCE
- 57.00 — INTERPRETED POTENTIOMETRIC SURFACE (CONTOUR INTERVAL = 1.0 FT)
- INTERPRETED DIRECTION OF GROUND-WATER FLOW

NOTE:

1. DRO WAS REPORTED AT 53 ug/L IN THE RINSATE BLANK.
2. BASE MAP DEVELOPED FROM ERM-NEW ENGLAND, INC. SITE PLAN DATED 24 JUNE 1992 AND SURVEYS PERFORMED BY CORNERSTONE PROFESSIONAL LAND SURVEYING, INC., 20 MAY 1994, 19 JULY 1995 AND 5 MAY 1997.
3. CONTOURS REPRESENT EVALUATION OF PROBABLE CONDITIONS BASED ON PRESENTLY AVAILABLE DATA. SOME VARIATION FROM THESE CONDITIONS MUST BE EXPECTED.

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TOTAL BTEX, GRO, AND DRO CONCENTRATIONS DETECTED IN GROUND-WATER SAMPLES COLLECTED 25 JUNE 1999.
NAVY EXCHANGE SERVICE STATION
NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 4

DATE	21 JUL 1999
DESIGNED BY	SY
DRAWN BY	SAP
CHECKED BY	CJV
PROJECT MANAGER	JAC

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PROJECT NUMBER	29600.35
SCALE	AS SHOWN
FILE NAME	CONJUN99
DRAWING NUMBER	–
SHEET NUMBER	1 OF 1

TABLE 1 SUMMARY OF SOIL VAPOR EXTRACTION SYSTEM PERFORMANCE DATA RECORDED FROM APRIL THROUGH JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538) NAVAL AIR STATION, BRUNSWICK, MAINE

Sample Date	System Status	Total Volatile Hydrocarbons (ppm_v)[a]	Vacuum at Treatment Plant (in. H_2O)	Vacuum at Trench (in. H_2O)	Flow Rate (cfm)	Daily Total Volatile Hydrocarbon Removal Rate[b] (lb/day)
SVE-3 Intake						
09 APR 1999	SVE	35	10	5	100	1.2
19 APR 1999	SVE	19	9	5	100	0.7
05 MAY 1999	SVE	44	15	9	120	1.8
28 MAY 1999	SVE	24	15	9	120	1.0
08 JUN 1999	SVE	21	15	9	120	0.9
25 JUN 1999	SVE	5.3	15	9	120	0.2
SVE-4 Intake						
09 APR 1999	SVE		Flooded; no data			
19 APR 1999	SVE		Flooded; no data			
05 MAY 1999	SVE		Flooded; no data			
28 MAY 1999	SVE		Flooded; no data			
08 JUN 1999	SVE		Flooded; no data			
25 JUN 1999	SVE		Flooded; no data			
SVE-5, SVE-6, SVE-7, and SVE-8 Composite Intake						
09 APR 1999	SVE	37	5	2.5	60	0.8
19 APR 1999	SVE	5	6	2.5	55	0.1
05 MAY 1999	SVE	4	10	4	110	0.1
28 MAY 1999	SVE	1.5	10	3	110	<0.1
08 JUN 1999	SVE	9.9	10	2	110	0.4
25 JUN 1999	SVE	7.4	9	>1	110	0.3
SVE-2, SVE-9, SVE-10, and SVE-11 Composite Intake						
09 APR 1999	SVE	70	18	0.5	150	3.7
19 APR 1999	SVE	49	18	0.5	150	2.6
05 MAY 1999	SVE	57	12	0	150	3.0
28 MAY 1999	SVE	32	12	0	150	1.7
08 JUN 1999	SVE	14	12	0	150	0.7
25 JUN 1999	SVE	13	15	0.5	140	0.6

(a) Based on measurements taken with photoionization detector. Photoionization detector measurements considered a conservative approximation of total volatile hydrocarbon concentrations at sample location due to instrument response limitations.

(b) Loading rate calculated using formula provided by EPA (1989): $ER = Q \times C \times MW \times 1.58 \times 10^{-7} \times 24$, where: ER = Emissions rate (lb/day), Q = Flow rate (cfm), C = Total volatile hydrocarbon concentration in influent (ppm_v), and MW = Molecular weight (average) of vapor phase weathered gasoline (92.14 g/mole).

NOTE: SVE = Soil vapor extraction.
SVE composite removal (flow) rate taken as summation of flow rates of individual SVE trench lines.
SVE-1 and SVE-2 offline during reporting period.

TABLE 1 (Continued)

Sample Date	System Status	Total Volatile Hydrocarbons (ppm_v)[a]	Vacuum at Treatment Plant (in. H_20)	Vacuum at Trench (in. H_2O)	Flow Rate (cfm)	Daily Total Volatile Hydrocarbon Removal Rate[b] (lb/day)
SVE Composite Intake						
09 APR 1999	SVE	25	NA	NA	310	2.7
19 APR 1999	SVE	28	NA	NA	305	3.0
05 MAY 1999	SVE	29	NA	NA	380	6.1
28 MAY 1999	SVE	14	NA	NA	380	2.9
08 JUN 1999	SVE	15	NA	NA	380	3.1
25 JUN 1999	SVE	14	NA	NA	370	1.8
SVE Composite Emissions						
09 APR 1999	SVE	5	NA	NA	310	0.5
19 APR 1999	SVE	6	NA	NA	305	0.6
05 MAY 1999	SVE	9	NA	NA	380	1.2
28 MAY 1999	SVE	6	NA	NA	380	0.8
08 JUN 1999	SVE	18	NA	NA	380	2.4
25 JUN 1999	SVE	8.5	NA	NA	370	1.1

NOTE: NA = Not applicable.

TABLE 2 SUMMARY OF AQUIFER AIR SPARGING SYSTEM OPERATIONS DATA RECORDED FROM APRIL THROUGH JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538) NAVAL AIR STATION, BRUNSWICK, MAINE.

Monitoring Date	Sparge Air Pressure (psi)	Sparge Air Temperature (°F)	Sparge Air Injection Rate (scfm)
Sparge Well AAS-3			
09 APR 1999	5	125	25
19 APR 1999	5	144	20
05 MAY 1999	5	150	>50
28 MAY 1999	5	150	50
08 JUN 1999	4	160	0
25 JUN 1999	5	175	14
Sparge Well AAS-4			
09 APR 1999		Flooded; no data	
19 APR 1999		Flooded; no data	
05 MAY 1999	1.5	150	10
28 MAY 1999	4	150	14
08 JUN 1999	2	160	12
25 JUN 1999	2	175	12
Sparge Well AAS-5			
09 APR 1999	1	125	25
19 APR 1999	1	144	32
05 MAY 1999	1	150	32
28 MAY 1999	1	150	30
08 JUN 1999	1	160	20
25 JUN 1999	1	175	20
Sparge Well AAS-6			
09 APR 1999	2	125	10
19 APR 1999	2.5	144	10
05 MAY 1999	0	150	0
28 MAY 1999	3	150	10
08 JUN 1999	2	160	15
25 JUN 1999	2	175	15
Sparge Well AAS-7			
09 APR 1999	1	125	15
19 APR 1999	1	144	15
05 MAY 1999	1	150	10
28 MAY 1999	3.5	150	10
08 JUN 1999	1.5	160	10
25 JUN 1999	1.5	175	10
Sparge Well AAS-11			
09 APR 1999	0.5	125	12
19 APR 1999	6.5	144	20
05 MAY 1999		Off line; no data	
28 MAY 1999	0.5	150	20
08 JUN 1999	0	160	18
25 JUN 1999	0	175	20

TABLE 2 (Continued)

Monitoring Date	Sparge Air Pressure (psi)	Sparge Air Temperature (°F)	Sparge Air Injection Rate (scfm)
Sparge Well AAS-12			
09 APR 1999	2	125	12
19 APR 1999	1.5	144	20
05 MAY 1999	0	150	0
28 MAY 1999	4	150	16
08 JUN 1999	1.5	160	28
25 JUN 1999	1.5	175	25
Sparge Well AAS-13			
09 APR 1999	Off line; no data		
19 APR 1999	Off line; no data		
05 MAY 1999	Off line; no data		
28 MAY 1999	Off line; no data		
08 JUN 1999	Off line; no data		
25 JUN 1999	Off line; no data		
Sparge Well AAS-14			
09 APR 1999	2.5	125	25
19 APR 1999	2	144	25
05 MAY 1999	2	150	40
28 MAY 1999	3	150	40
08 JUN 1999	2.5	160	33
25 JUN 1999	2.5	175	30
Sparge Well AAS-15			
09 APR 1999	4.5	125	25
19 APR 1999	5	144	>50
05 MAY 1999	5	150	>50
28 MAY 1999	5	150	50
08 JUN 1999	4	160	28
25 JUN 1999	4	175	20
Sparge Well AAS-16			
09 APR 1999	3	125	25
19 APR 1999	3.5	144	35
05 MAY 1999	4	150	>50
28 MAY 1999	4	150	50
08 JUN 1999	3.5	160	28
25 JUN 1999	3	175	20
Sparge System Compressor (Composite)			
09 APR 1999	6.5	125	174
19 APR 1999	10	144	>227
05 MAY 1999	10	150	>242
28 MAY 1999	8	150	290
08 JUN 1999	7	160	192
25 JUN 1999	6.5	175	186

TABLE 3 SUMMARY OF WELL GAUGING DATA RECORDED FROM APRIL THROUGH JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538) NAVAL AIR STATION, BRUNSWICK, MAINE

Gauging Date	Well Elevation (ft MSL)	Depth to Water (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Water Table Elevation (ft MSL)
MW-NASB- 23					
09 APR 1999	67.29	7.15	---	---	60.14
19 APR 1999	67.29	7.39	---	---	59.90
05 MAY 1999	67.29	7.50	---	---	59.79
28 MAY 1999	67.29	7.57	---	---	59.72
08 JUN 1999	67.29	7.68	---	---	59.61
25 JUN 1999	67.29	7.81	---	---	59.48
MW-NASB-24					
09 APR 1999	65.31	5.42	---	---	59.89
19 APR 1999	65.31	5.91	---	---	59.40
05 MAY 1999	65.31	6.31	---	---	59.00
28 MAY 1999	65.31	6.38	---	---	58.93
08 JUN 1999	65.31	6.54	---	---	58.77
25 JUN 1999	65.31	6.70	---	---	58.61
MW-NASB-25					
09 APR 1999	64.34	6.68	---	---	57.66
19 APR 1999	64.34	6.79	---	---	57.55
05 MAY 1999	64.34	6.82	---	---	57.52
28 MAY 1999	64.34	6.79	---	---	57.55
08 JUN 1999	64.34	6.92	---	---	57.42
25 JUN 1999	64.34	7.00	---	---	57.34
MW-NASB-26					
09 APR 1999	66.61	6.86	---	---	59.75
19 APR 1999	66.61	7.14	---	---	59.47
05 MAY 1999	66.61	7.21	---	---	59.40
28 MAY 1999	66.61	7.45	---	---	59.16
08 JUN 1999	66.61	7.42	---	---	59.19
25 JUN 1999	66.61	7.55	---	---	59.06
MW-NASB-8					
09 APR 1999	59.22	2.61	---	---	56.61
19 APR 1999	59.22	3.21	---	---	56.01
05 MAY 1999	59.22	3.31	---	---	55.91
28 MAY 1999	59.22	2.95	---	---	56.27
08 JUN 1999	59.22	3.50	---	---	55.72
25 JUN 1999	59.22	3.63	---	---	55.59

NOTE: LNAPL = Light, non-aqueous phase liquid.
Dashes (---) indicate light, non-aqueous phase liquid not detected.

TABLE 3 (Continued)

Gauging Date	Well Elevation (ft MSL)	Depth to Water (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Water Table Elevation (ft MSL)
MW-NASB-9					
09 APR 1999	59.00	3.83	---	---	55.17
19 APR 1999	59.00	4.05	---	---	54.95
05 MAY 1999	59.00	4.21	---	---	54.79
28 MAY 1999	59.00	4.02	---	---	54.98
08 JUN 1999	59.00	4.35	---	---	54.65
25 JUN 1999	59.00	4.45	---	---	54.55
MW-NASB-10					
09 APR 1999	62.03	6.68	---	---	55.35
19 APR 1999	62.03	6.73	---	---	55.30
05 MAY 1999	62.03	6.78	---	---	55.25
28 MAY 1999	62.03	6.75	---	---	55.28
08 JUN 1999	62.03	6.93	---	---	55.10
25 JUN 1999	62.03	7.01	---	---	55.02
MW-NASB-225					
09 APR 1999	64.61	6.61	---	---	58.00
19 APR 1999	64.61	6.88	---	---	57.73
05 MAY 1999	64.61	6.72	---	---	57.89
28 MAY 1999	64.61	6.83	---	---	57.78
08 JUN 1999	64.61	6.77	---	---	57.84
25 JUN 1999	64.61	6.88	---	---	57.73
MW-NASB-226					
09 APR 1999	62.22	4.95	---	---	57.27
19 APR 1999	62.22	5.06	---	---	57.16
05 MAY 1999	62.22	5.11	---	---	57.11
28 MAY 1999	62.22	5.05	---	---	57.17
08 JUN 1999	62.22	5.19	---	---	57.03
25 JUN 1999	62.22	5.28	---	---	56.94
Sparge Well AAS-1					
09 APR 1999	66.89	6.85	---	---	60.04
19 APR 1999	66.89	6.58	---	---	60.31
05 MAY 1999	66.89	7.23	---	---	59.66
28 MAY 1999	66.89	7.35	---	---	59.54
08 JUN 1999	66.89	7.44	---	---	59.45
25 JUN 1999	66.89	7.35	---	---	59.54
Sparge Well AAS-2					
09 APR 1999	65.96	6.48	---	---	59.48
19 APR 1999	65.96	6.68	---	---	59.28
05 MAY 1999	65.96	6.77	---	---	59.19
28 MAY 1999	65.96	7.00	---	---	58.96
08 JUN 1999	65.96	6.88	---	---	59.08
25 JUN 1999	65.96	7.03	---	---	58.93

TABLE 3 (Continued)

Gauging Date	Well Elevation (ft MSL)	Depth to Water (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Water Table Elevation (ft MSL)
Sparge Well AAS-8					
09 APR 1999	65.65	6.47	---	---	59.18
19 APR 1999	65.65	6.73	---	---	58.92
05 MAY 1999	65.65	6.93	---	---	58.72
28 MAY 1999	65.65	6.95	---	---	58.70
08 JUN 1999	65.65	7.03	---	---	58.62
25 JUN 1999	65.65	7.19	---	---	58.46
Sparge Well AAS-9					
09 APR 1999	65.98		Dry; no data		
19 APR 1999	65.98		Dry; no data		
05 MAY 1999	65.98		Dry; no data		
28 MAY 1999	65.98		Dry; no data		
08 JUN 1999	65.98		Dry; no data		
25 JUN 1999	65.98		Dry; no data		
Sparge Well AAS-10					
09 APR 1999	66.26	5.69	---	---	60.57
19 APR 1999	66.26	6.11	---	---	60.15
05 MAY 1999	66.26	6.51	---	---	59.75
28 MAY 1999	66.26	6.80	---	---	59.46
08 JUN 1999	66.26	6.83	---	---	59.43
25 JUN 1999	66.26	6.95	---	---	59.31

TABLE 4 SUMMARY OF WATER QUALITY INDICATOR PARAMETER MEASUREMENTS COLLECTED FROM APRIL THROUGH JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538), NAVAL AIR STATION, BRUNSWICK, MAINE

Date	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
MW-NASB-23					
09 APR 1999	6.87	12.25	7.56	172	269
19 APR 1999	7.25	12.16	6.58	186	110
05 MAY 1999	7.20	12.40	5.91	156	119
28 MAY1999	7.44	15.95	9.16	129	216
08 JUN 1999	8.46	15.98	6.93	142	191
25 JUN 1999	7.01	15.15	5.86	156	223
MW-NASB-24					
09 APR 1999	6.77	7.25	8.79	65	331
19 APR 1999	7.28	7.55	7.39	67	181
05 MAY 1999	8.46	8.61	7.14	72	26
28 MAY1999	6.86	9.93	7.65	83	243
08 JUN 1999	7.12	10.66	7.83	84	218
25 JUN 1999	6.69	10.20	3.30	106	232
MW-NASB-25					
09 APR 1999	6.29	8.36	8.32	288	357
19 APR 1999	6.70	8.38	8.12	299	220
05 MAY 1999	8.07	9.53	8.44	306	44
28 MAY1999	6.55	10.31	7.00	311	265
08 JUN 1999	7.08	12.01	6.01	331	206
25 JUN 1999	6.34	11.46	5.71	358	254
MW-NASB-26					
09 APR 1999	6.72	4.62	7.89	344	321
19 APR 1999	7.48	8.04	7.68	313	165
05 MAY 1999	7.35	10.73	4.31	24	120
28 MAY1999	7.02	12.22	3.37	249	247
08 JUN 1999	7.72	13.78	8.45	345	226
25 JUN 1999	6.72	12.74	6.97	287	227
MW-NASB-225					
09 APR 1999	6.33	8.51	7.66	164	354
19 APR 1999	6.39	8.37	6.86	323	235
05 MAY 1999	6.97	9.92	10.52	213	156
28 MAY1999	6.36	12.22	3.50	223	273
08 JUN 1999	7.90	13.39	7.71	149	217
25 JUN 1999	6.32	14.34	6.98	206	230
MW-NASB-226					
09 APR 1999	6.25	8.30	5.35	212	360
19 APR 1999	6.59	8.62	5.81	233	219
05 MAY 1999	7.22	11.29	2.40	233	84
28 MAY1999	6.57	12.72	3.80	215	277
08 JUN 1999	7.53	14.43	9.47	221	233
25 JUN 1999	6.45	14.76	4.29	235	235

TABLE 4 (Continued)

Date	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
MW-NASB-8					
09 APR 1999	6.51	6.06	5.60	197	345
19 APR 1999	6.85	6.26	5.12	207	209
05 MAY 1999	7.82	8.46	2.14	224	74
28 MAY1999	6.78	12.82	3.42	282	262
08 JUN 1999	6.68	13.57	1.49	272	245
25 JUN 1999	6.52	13.28	5.62	290	239
MW-NASB-9					
09 APR 1999	6.75	5.68	9.46	71	329
19 APR 1999	7.04	6.23	8.91	90	197
05 MAY 1999	7.77	8.68	4.60	101	78
28 MAY1999	6.89	11.24	4.77	135	263
08 JUN 1999	6.89	12.51	7.14	187	243
25 JUN 1999	6.56	11.97	4.19	242	238
MW-NASB-10					
09 APR 1999	6.58	9.12	5.28	163	310
19 APR 1999	6.78	9.23	6.32	186	286
05 MAY 1999	7.04	11.04	2.12	184	103
28 MAY1999	6.43	12.74	2.10	181	275
08 JUN 1999	7.21	14.63	4.41	196	218
25 JUN 1999	7.01	14.28	3.89	231	228
Sparge Well AAS-1					
09 APR 1999	7.01	11.84	7.21	130	284
19 APR 1999	7.12	12.35	7.01	112	127
05 MAY 1999	7.09	12.21	7.09	98	146
28 MAY1999	7.43	14.67	8.39	100	219
08 JUN 1999	8.37	15.87	7.02	107	196
25 JUN 1999	6.81	14.18	7.44	130	223
Sparge Well AAS-2					
09 APR 1999	6.58	9.76	6.41	432	327
19 APR 1999	7.41	9.84	6.64	445	172
05 MAY 1999	6.64	10.92	1.80	452	171
28 MAY1999	7.03	13.37	6.50	493	247
08 JUN 1999	7.59	14.81	5.76	510	233
25 JUN 1999	6.15	14.71	6.12	572	256
Sparge Well AAS-8					
09 APR 1999	6.59	6.66	7.11	132	340
19 APR 1999	7.05	7.08	6.97	148	195
05 MAY 1999	7.10	8.73	2.43	162	146
28 MAY1999	6.77	10.06	4.09	165	241
08 JUN 1999	7.62	11.60	6.69	184	207
25 JUN 1999	Insufficient water volume; no data				

TABLE 4 (Continued)

Date	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
Sparge Well AAS-9					
09 APR 1999	Dry; no data				
19 APR 1999	Dry; no data				
05 MAY 1999	Dry; no data				
28 MAY1999	Dry; no data				
08 JUN 1999	Dry; no data				
25 JUN 1999	Dry; no data				
Sparge Well AAS-10					
09 APR 1999	6.73	6.34	5.85	148	328
19 APR 1999	7.17	6.97	5.89	161	185
05 MAY 1999	6.84	8.48	4.22	161	174
28 MAY1999	6.73	10.19	4.30	208	256
08 JUN 1999	7.05	11.76	7.20	208	237
25 JUN 1999	Insufficient water volume; no data				

TABLE 5 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES COLLECTED ON 8, 9, AND 10 JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538), NAVAL AIR STATION, BRUNSWICK, MAINE

Parameter	Sample Location/Sample Identification										
	MW-NASB -23	MW-NASB -24	MW-NASB -25	MW-NASB -26	MW-NASB -225	MW-NASB -226	MW-NASB-226 DUP	MW-NASB -8	MW-NASB -9	MW-NASB -10	Stringent Cleanup Goal[a]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 602											
Methyl tertiary-butyl ether	(<0.5U)	(<0.5U)	3.1	**68D**	(<0.5U)	(<500U)	(<500U)	11	(<0.5U)	(<0.5U)	50
Benzene	(<0.5U)	(<0.5U)	(<0.5U)	(<50U)	(<0.5U)	(<500U)	(<500U)	(<0.5U)	(<0.5U)	(<0.5U)	5
Toluene	(<1.0U)	(<1.0U)	(<1.0U)	180D	1.6	2,800D	2,800D	(<1.0U)	(<1.0U)	(<1.0U)	---
Ethylbenzene	(<1.0U)	(<1.0U)	(<1.0U)	140D	(<1.0U)	(<1,000U)	(<1,000U)	(<1.0U)	(<1.0U)	(<1.0U)	---
Total Xylenes	(<1.5U)	(<1.5U)	(<1.5U)	1,200D	3.4	4,100D	4,300D	(<1.5U)	(<1.5U)	(<1.5U)	---
Total BTEX	(<4.0U)	(<4.0U)	(<4.0U)	1,520D	5	6,900D	7,100D	(<4.0U)	(<4.0U)	(<4.0U)	---
TPH—GRO BY MDHS-HETL LOP 4.2.17											
TPH—GRO	(<10U)	(<10U)	11	**16,000D**	**130**	**17,000D**	**17,000D**	13	20	10	50
TPH—DRO BY MDHS-HETL LOP 4.1.25											
TPH—DRO	(<50U)	**66[b]**	**59[b]**	**6,200D**	**350**	**1,600**	**1,700**	**58[b]**	**73[b]**	**100[b]**	50

(a) Stringent cleanup goals taken from *Procedural Guidelines for Establishing Standards for the Remediation of Oil Contaminated Soil and Ground Water in Maine* (Maine Department of Environmental Protection 1995). Dashes (---) indicate no goal established for this compound.

(b) DRO reported at 53 µg/L in the rinsate blank.

NOTE
EPA = U.S. Environmental Protection Agency.
(<__U) = Compound not detected above reporting limit shown.
D = Compounds identified at a secondary dilution factor.
BTEX = Benzene, toluene, ethylbenzene, and total xylenes.
TPH = Total petroleum hydrocarbons.
GRO = Gasoline Range Organics.
DRO = Diesel Range Organics.
MDHS = Maine Department of Human Services.
HETL = Health and Environmental Testing Laboratory.
LOP = Laboratory Operating Procedure.
Results in bold indicate exceedance of stringent cleanup goal.
No volatile organic compounds were reported in the rinsate and trip blanks, except for GRO which was reported at 30 µg/L in the rinsate blank.
Results reported in µg/L.

TABLE 6 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES COLLECTED FROM 20 MAY 1992 TO 10 JUNE 1999 AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538) NAVAL AIR STATION, BRUNSWICK, MAINE

Date	Parameters							
	Benzene[a]	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE[b]	TPH-GRO[c]	TPH-DRO[c]
MEDEP Stringent Cleanup Standard[a]	5	---	---	---	---	35	50	50
MW-NASB-23								
20 MAY 1992	(<1.0U)	(<1.0U)	(<1.0U)	(<2.0U)	ND	(<2.0U)	(<20U)	(<10U)
13 JUL 1993	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<500U)
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<50U)
07-08 JUL 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	(<50U)
08-09 MAR 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	(<50U)
13 JUN 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	(<50U)
14 SEP 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<50U)
13 DEC 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<50U)
12 MAR 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**53**[d]
11 JUN 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**410**
19 SEP 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	(<250U)
16 DEC 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	NA
20 MAR 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**71**
04 JUN 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)[e]	**68**
16 SEP 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**74**
10 DEC 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	(<50U)
16 MAR 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**66**
10-11 JUN 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	(<50U)
15 SEP 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<12U)	(<50U)
01-02 DEC 1998	(<1.0U)	3	(<1.0U)	(<1.0U)	3	(<1.0U)	(<10U)	(<50U)
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	(<0.5U)	(<10U)	(<50U)

(a) Stringent cleanup goals taken from *Procedural Guidelines for Establishing Standards for the Remediation of Oil Contaminated Soil and Ground Water in Maine* (Maine Department of Environmental Protection [MEDEP] 1995). Dashes (---) indicate no goal established for this compound.
(b) Maine State Legislature, Office of Policy and Legal Analysis. Memo dated 3 June 1998 addressed to members of the Natural Resources Committee and Health and Human Services Committee.
(c) Refer to previous reports for interpretive discussion regarding chromatographic fingerprints for these analyses.
(d) Analytical results for duplicate sample.
(e) Reanalysis due to low surrogate recovery.

NOTE: BTEX = Benzene, toluene, ethylbenzene, and total xylenes.
MTBE = Methyl tertiary-butyl ether.
TPH = Total petroleum hydrocarbons.
GRO = Gasoline range organics.
DRO = Diesel range organics.
(<__U) = Compound not detected above method detection limit shown.
ND = Not detected.
NA = Not analyzed; sample bottles broken during shipment to laboratory or sample results outside of quality control criteria.
Concentrations in bold exceed MEDEP cleanup standard.
Results reported in µg/L.

TABLE 6 (Continued)

Date	Parameters							
	Benzene[a]	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE[b]	TPH–GRO[c]	TPH–DRO[c]
MEDEP Stringent Cleanup Standard[a]	5	---	---	---	---	35	50	50
MW-NASB-24								
20 MAY 1992	(<1.0U)	1.1	(<1.0U)	4.2	5.3	(<2.0U)	35	**460**
13 JUL 1993	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<500U)
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**99**
07-08 JUL 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**280**
08-09 MAR 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**91**
13 JUN 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	(<50U)
14 SEP 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<50U)
13 DEC 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**51**
13 MAR 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	(<50U)
11 JUN 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**86**
19 SEP 1996	(<1.0U)	(<1.0U)	(<1.0U)	2.3	2.3	(<1.0U)	(<10U)	(<250U)
16 DEC 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	NA
21 MAR 1997	(<1.0U)	2.5	(<1.0U)	2.0	4.5	(<1.0U)	(<10U)	**110[d]**
04 JUN 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**230**
16 SEP 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**82[d]**
10 DEC 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	**470**	**84**
16 MAR 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**93**
10-11 JUN 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**72**
15 SEP 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	13	(<50U)
01-02 DEC 1998	(<1.0U)	3	(<1.0U)	(<1.0U)	3	(<1.0U)	11	**82**
02-03 MAR 1999	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	22	(<50U)
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	(<0.5U)	(<10U)	**66**
MW-NASB-25								
20 MAY 1992	**14.0**	18	4.8	23	59.8	2.5	(<20U)	**61**
13 JUL 1993	2.0	(<1.0U)	(<1.0U)	(<1.0U)	2.0	2.0	(<100U)	(<500U)
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**100**
07-08 JUL 1994	2.1	3.0	(<1.0U)	2.3	7.4	3.2	**51**	**110**
08-09 MAR 1995	4.8	2.3	6.1	12	25.2	7.3	**60**	**57**
13 JUN 1995	1.2	4.3	6.7	83	95.2	33	**150**	**87**
14 SEP 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	23	**130**	**110**
14 DEC 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**63**	(<100U)	**56**
12 MAR 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**54**	(<50U)	(<50U)
11 JUN 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**49**	(<50U)	**570**
19 SEP 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**130**	**79**	(<250U)
16 DEC 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**87**	**120**	NA
21 MAR 1997	(<1.0U)	1.2	(<1.0U)	1.6	2.8	27	17	**240**
04 JUN 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	26	**54**	**99**
16 SEP 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**100**	**150**	**110**
10 DEC 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**140**	**320**	**98**
16 MAR 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**46**	(<10U)	**54**
10-11 JUN 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	**44**	(<10U)	**100**
15 SEP 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	32	15	**64**
01-02 DEC 1998	(<1.0U)	3	(<1.0U)	(<1.0U)	3	9	11	**100**
02-03 MAR 1999	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	5	**61**	(<50U)
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	3.1	11	**59**

TABLE 6 (Continued)

Date	Parameters							
	Benzene[a]	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE[b]	TPH–GRO[c]	TPH–DRO[c]
MEDEP Stringent Cleanup Standard[a]	5	---	---	---	---	35	50	50
MW-NASB-26								
20 MAY 1992	**1,000**	12,000	3,900	22,000	38,900	(<2,000U)	**210,000**	**84,000**
13 JUL 1993	**810**	5,900	110	690	7,510	(<100.0U)	**24,000**	**15,000**
12-13 APR 1994	**47**	4,200	2,000	16,700	22,947	**210**	**3,500**	**85,000**
07-08 JUL 1994	**21**	4,300	2,900	24,800	38,031	**81**	**80,000**	**13,000**
08-09 MAR 1995[b]	**5.9**	690	1,000	9,000	10,696	**120**	**30,000**	**4,300**
13 JUN 1995	(<1.0U)	170	880	8,400	9,450	**470**	**32,000**	**7,800**
14 SEP 1995	**30**	180	1,000	8,100	9,310	**50**	**32,000**	**6,900**
13 DEC 1995[b]	(<10U)	89	1,500	11,500	13,089	**400**	**15,000**	**6,100**
13 MAR 1996	(<10U)	90	1,300	9,000	10,390	**340**	**40,000**	**6,600**
11 JUN 1996	(<5U)	12	410	2,940	3,462	**92**	**14,000**	**3,100**
19 SEP 1996	(<10U)	34	1,200	7,800	9,034	(<10U)	**28,000**	**5,800**
16 DEC 1996	(<5.0U)	(<5.0U)	310	2,270	2,580	(<5.0U)	**11,000**	NA
20 MAR 1997	(<1.0U)	27	910	5,990	6,927	**49**	**16,000**	**5,400**
04 JUN 1997[b]	(<1.0U)	22	530	3,350	3,902	**560**	**23,000**	**7,200**
16 SEP 1997[b]	(<5.0U)	14	840	6,540	7,394	(<5.0U)	**18,000**	**7,500**
10 DEC 1997	**11**	22	620	3,370	4,012	(<1.0U)	**29,000**	**7,300**
16 MAR 1998	(<1.0U)	(<1.0U)	260	1,694	1,954	**550**	**10,000**	**5,300**
10-11 JUN 1998	**6**	6	320	1,710	2,042	**430**	**15,000**	**3,800**
15 SEP 1998	(<5.0U)	7	460	2,950	3,417	(<5.0U)	**1,200**	**7,800**
01-02 DEC 1998	**45**	8	390	2,351	2,794	**370**	**14,000**	**6,600**
08-10 JUN 1999	(<50U)	180	140	1,200	1,520	**68**	**16,000**	**6,200**
MW-NASB-27								
20 MAY 1992	(<1.0U)	(<1.0U)	(<1.0U)	(<2.0U)	ND	5.9	**56**	**300**
13 JUL 1993	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<500U)
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**53**
07-08 JUL 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**150**
08-09 MAR 1995	(<1.0U)	1.4	(<1.0U)	2.9	4.3	(<1.0U)	**1,600**	(<50U)
13 JUN 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**62**
14 SEP 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**65**
14 DEC 1995	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	NA
12 MAR 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	(<50U)
11 JUN 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**88**
19 SEP 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	(<250U)
16 DEC 1996	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	NA
21 MAR 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**76**
04 JUN 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**91**
16 SEP 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**150**
15 SEP 1998	Well was abandoned during construction activities at Building 27							

TABLE 6 (Continued)

Date	Parameters							
	Benzene[a]	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE[b]	TPH–GRO[c]	TPH–DRO[c]
MEDEP Stringent Cleanup Standard[a]	5	---	---	---	---	35	50	50
MW-NASB-225								
20 MAR 1997	(<1.0U)	17,000	2,400	13,600	33,000	(<1.0U)	**34,000**	**4,500**
05 JUN 1997	**35**	17,000	2,200	11,800	31,000	(<1.0U)	**64,000**	**7,000**
16 SEP 1997	(<1.0U)	5,300	1,100	6,000	12,400	(<1.0U)	**15,000**	**4,600**
10 DEC 1997[b]	(<1.0U)	9,200	1,600	8,600	19,400	(<1.0U)	**65,000**	**6,000**
16 MAR 1998	(<1.0U)	12,000	1,700	9,500	23,200	(<1.0U)	**25,000**	**6,300**
10-11 JUN 1998[b]	**9**	9,600	2,100	11,100	22,809	(<1.0U)	**30,000**	**3,100**
15 SEP 1998	(<10.0U)	13,000	2,500	13,100	28,600	(<10.0U)	**4,000**	**6,600**
01-02 DEC 1998	(<1.0U)	700	350	1,740	2,790	28	**520**	**1,000**
02-03 MAR 1999	3	72	32	1,490	1,597	(<1.0U)	**5,000**	**690**
08-10 JUN 1999	(<0.5U)	1.6	(<1.0U)	3.4	5	(<0.5U)	**130**	**350**
MW-NASB-226								
01-02 DEC 1998	**39**	9,400	1,900	11,000	22,339	(<160U)	**52,000**	**5,300**
02-03 MAR 1999	(<1.0U)	490	160	950	1,600	18	**10,000**	**8,000**
08-10 JUN 1999	(<500U)	2,800	(<1,000U)	4,100	6,900	(<500U)	**17,000**	**1,700**
MW-NASB-8								
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**91**
07-08 JUL 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	3.6	(<50U)	**100**
21 MAR 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	7.7	12	**94[d]**
10-11 JUN 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	20	(<10U)	**70**
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	11	13	**58**
MW-NASB-9								
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	**120**	**170**
07-08 JUL 1994	(<1.0U)	(<1.0U)	1.1	1.7	2.4	4.9	**78**	**110**
21 MAR 1997	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	16	10	**650**
10-11 JUN 1998	(<1.0U)	(<1.0U)	23	15	38	8	**180**	**98**
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	(<0.5U)	20	**73**
MW-NASB-10								
12-13 APR 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<100U)	**600**
07-08 JUL 1994	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<50U)	**360**
21 MAR 1997	(<1.0U)	(<1.0U)	1.1	6.8	7.9	(<1.0U)	(<10U)	**420**
10-11 JUN 1998	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	ND	(<1.0U)	(<10U)	**290**
08-10 JUN 1999	(<0.5U)	(<1.0U)	(<1.0U)	(<1.5U)	ND	(<0.5U)	10	**100**

Attachment A

Field Record of Soil Vapor Extraction and Aquifer Air Sparging System Operations

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEX		Project No.: 2960035	Date: 4/9/99
EA Personnel: MC		Building Temperature: 70	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE-3		10	100	~~100~~			35
* 4	off - full of water						
(6-7-8) 5		5	60				37
9,10,11		18	150				70
Knockout		85		60			
Vacrelief		100					
influent							25
effluent							5
SVE-3		5					
4		off					
5		0					
9		0.5					
10		0.5					
11		0.5					
6		~~25~~ off					
7		off ~~25~~ 2.5					
8		2.5					

OUTSIDE

EA 5120 0794-4

Page ____ of ____

COMMENTS: SVE-4 is off until groundwater drops

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 2960035	Date: 4/9/99
EA Personnel: MC	Building Temperature: 70	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-3		5	25		
4		OFF	—		
5		1	25		
6		2	10		
7		1	15		
11		0.5	12		
12		2	12		
14		2.5	25		
15		4.5	25		
16		3	25		
Mainline		6.5		125	

EA 5120 0794-5

COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEX		Project No.: 2960035	Date: 4/19/99
EA Personnel: BCB		Building Temperature: 74°F	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE - 3		9	100				19.
* 4	OFF	- OPEN	VALVE FULLY ; AIR FLOW RATE = 0				
(6-7-8) 5		6	55				5
9, 10, 11		18	150				49
Knockout		85					
Vacrelief		100		62			
influent							28
effluent							6
SVE 3		5					
4		OFF					
5		0					
9		0.5					
10		0.5					
11		0.5					
6		OFF					
7		2.5					
8		2.5					

EA 5120 0794-4

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COMMENTS: * SVE-4 is off until groundwater drops

END-STOP

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 2960035	Date: 4/19/99
EA Personnel: BCB	Building Temperature: 74°F	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS 3		5	20		
4		OFF	—		
5		1	32		
6		2.5	10		
7		1	15		
11		6.5	20		
12		1.5	20		
14		2	25		
15		5	>50		
16		3.5	35		
manifold		10		144	

EA 5120 0794-5

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COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEX	Project No.: 29600.35	Date: 5/5/99
EA Personnel: JG	Building Temperature: 70°F	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE - 3	1320	15	120				44
-4	OFF						
(678) -5		10	110				4
(9+011)-2		12	150				57
Knockout		68		70°F			
Vac-Relief		5					
influent							29
effluent							9
OUTSIDE SVE - 3		59	41				
4		OFF					
5		Ø					
9		Ø					
10		Ø					
11		Ø					
6		OFF					
7		4					
8		4					

EA 5120 0794-4

COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 29600.35	Date: 5/5/99
EA Personnel: JG	Building Temperature: 70°F	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS- 3		5	>50		
4		1.5	10		
5		1	32		
6		Ø	Ø		
7		1	10		
11		OFF	—		
12		Ø	Ø		
14		2	40		
15		5	>50		
16		4	>50		
Mainline		10		150	

EA 5120 0794-5

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COMMENTS:

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEX	Project No.: 2960035	Date: 5/28/99
EA Personnel: BCB	Building Temperature:	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE-3		15	120				24
4	OFF						
(6-7-8) 5		10	110				1.5
(9,10,11) 2		12	150				32
KNOCKOUT		68		70			
VAC RELIEF		10					
INFLUENT							14
EFFLUENT							6
SVE-3		9					
-4		0					
-5		0					
-9		0					
-10		0					
-11		0					
-6		1					
-7		3					
-8		3					

OUTSIDE

EA 5120 0794-4

Page ____ of ____

COMMENTS: POLLUTION CONTROL SERVICES IS EXCAVATING FUEL TANKS

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 29600-35	Date: 5/28/99
EA Personnel: BCB	Building Temperature: 80°F	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-3		5	50		
4		4	14		
5		1	30		
6		3	10		
7		3.5	10		
11	~~OFF~~	0.5	20		
12		4	16		
14		3	40		
15		5	50		
16		4	50		
MAINLINE		8		150	

EA 5120 0794-5

Page ____ of ____

COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEX		Project No.: 29600.35	Date: 6/8/99
EA Personnel: CS/JG/BB		Building Temperature: 30°C	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE-3		15	120				21
SVE 4	off						—
(678) 5		10	110				9.86
9,10,11 2		12	150				14.44
Knockout		66		88°F			
Vac Relief		88					
Influent							15
Effluent							18
		9.9					
SVE-3		~~2.5~~	~~335~~				
-4		OFF					
-5		0					
-~~10~~9		0	0				
-10		0	0				
-11		0	0				
-6		2					
-7		2					
-8		2					

Outside

EA 5120 0794-4

Page ____ of ____

COMMENTS: Potential PID Bias due to high humidity

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 29600.35	Date: 6/8/99
EA Personnel: KS/JG	Building Temperature: 88°F	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-3		4	0		
4		~~9~~ 2	12		
5		1	20		
6		2	15		
7		1.5	10		
11		0	18		
12		1.5	28		
14		2.5	33		
15		4	28		
16		~~8.5~~ 3.5	28		
MAINLINE		7	160	160	

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Page ____ of ____

COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NEY	Project No.: 29600 35	Date: 6/25
EA Personnel: SYC	Building Temperature: 86°	

Location	Time (hr/min)	Vacuum (in H_2O)	Flow Rate (scfm)	Air Temperature (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm_v)
SVE-3		15	120				5.3
4	OFF						
(6,7,8) 5		9	110				7.4
(9,10,11) 2		15	140				12.7
Knockout		66					
vac relief				90			
influent							14.1
effluent							8.5
SVE-3		9					
4		OFF					
5		<1					
9		0.5					
10		0.5					
11		0.5					
6		<1					
7		<1					
8		<1					

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COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NEX	Project No.: 2960035	Date: 6/25
EA Personnel:	Building Temperature: 86°	

Location	Time (0000 hours)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-3		5	14		
4		2	12		
5		1	20		
6		2	15		
7		1.5	10		
11		0	20		
12		1.5	25		
14		2.5	30		
15		4	20		
16		3	20		
main line		6.5		175	

EA 5120 0794-5

Page ____ of ____

COMMENTS: _____

Attachment B

Field Record of Water Quality Parameter Analysis Forms

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: 2 NEY	Project No: 2960035	Date: 4/9/99
Weather/Temperature/Barometric Pressure/Humidity:		
EA Personnel: SYC	Equipment:	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)	
23		7.15	—	6.87	12.25	7.56	172	269	
24		5.42	—	6.77	7.25	8.79	65	331	
25		6.25 ~~6.68~~	—	6.29	8.36	8.32	288	357	
26		6.86	—	6.72	4.62	7.89	344	321	
08		2.61	—	6.51	6.06	5.60	197	345	
09		3.83	—	6.75	5.68	9.46	71	329	
10		6.68	—	6.58	9.12	5.28	163	310	
225		6.61	—	6.33	8.51	7.64 ~~7.64~~	164	354	
226		4.95	—	6.25	8.30	5.35	212	360	
MAS-1		6.85	—	7.01	11.84	7.21	130	284	
2		6.48	—	6.58	9.76	6.41	432	327	Hydrocarbon odor
8		6.47	—	6.59	6.66	7.11	132	340	
9		DRY	—						
10		5.69	—	6.73	6.34	5.85	148	328	

Comments: _____

EA 5120 0794-7

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NEX	Project No: 2960035	Date: 4/19/99
Weather/Temperature/Barometric Pressure/Humidity: overcast, windy, 60°		
EA Personnel: SYC	Equipment: YSI-600XL	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
23		7.39	—	7.25	12.16	6.58	186	110
24		5.91	—	7.28	7.55	7.39	67	181
25		6.79	—	6.70	8.38	8.12	299	220
26		7.14	—	7.48	8.04	7.68	313	165
08		3.21	—	6.85	6.26	5.12	207	209
09		4.05	—	7.04	6.23	8.91	90	197
10		6.73	—	6.78	4.23	6.32	186	286
225		6.88	—	6.39	8.37	6.86	323	235
* 226		5.06	—	6.59	8.62	5.81	233	219
AHS-1		6.58	—	7.12	12.35	7.01	112	127
2		6.68	—	7.41	9.84	6.64	445	172
8		6.73		7.05	7.08	6.97	148	195
9		DRY	—					
10		6.11	—	7.17	6.97	5.89	161	185

Comments: *hydrocarbon odor

EA 5120 0794-7

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NEX	Project No: 29600 35	Date: 5/5/99
Weather/Temperature/Barometric Pressure/Humidity: Drizzle, intermittent heavy showers, 65°, Humid		
EA Personnel: JG	Equipment: YSI 600 XL	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
MW-23		7.50	-	7.20	12.40	5.91	156	119
24		6.31	/	8.46	8.61	7.14	72	26
25		6.82	—	8.07	9.53	8.44	306	44
26		7.21	/	7.35	10.73	4.31	24	120
08		3.31	—	7.82	8.46	2.14	224	74
09		4.21	—	7.77	8.68	4.60	101	78
10		6.78	/	7.04	11.04	2.12	184	103
225		6.72	—	6.97	9.92	10.52	213	156
226		5.11	—	7.22	11.29	2.40	233	84
AAS-1		7.23	—	7.09	12.21	7.09	98	146
2		6.77	—	6.64	10.92	1.80	452	171
8		6.93	—	7.10	8.73	2.43	162	146
9		DRY						
10		6.51	—	6.84	8.48	4.22	161	174

Comments: N

EA 5120 0794-7

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NEX	Project No: 29600.35	Date: 5/28/99
Weather/Temperature/Barometric Pressure/Humidity: SUNNY, 65°F		
EA Personnel: BCB	Equipment: YSI	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (µhmos)	Redox (mV)
23		7.57		7.44	15.95	9.16	129	216
24		6.38		6.86	9.93	7.65	83	243
25		6.79		6.55	10.31	7.00	311	265
26		7.45		7.02	12.22	3.37	249	247
08		2.95		6.78	12.82	3.42	282	262
09		4.02		6.89	11.24	4.77	135	263
10		6.75		6.43	12.74	2.10	181	275
AHS-1		7.35		7.43	14.67	8.39	100	219
2		7.00		7.03	13.37	6.50	493	247
8		6.95		6.77	10.06	4.09	165	241
9		DRY						
6		6.80		6.73	10.19	4.30	208	256
225		6.83		6.36	12.22	3.50	223	273
226		5.05		6.57	12.72	3.80	215	277

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COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NEX	Project No: 29600.35	Date: 6/8/99
Weather/Temperature/Barometric Pressure/Humidity: HOT, HUMID, BREEZY,		
EA Personnel: KS/JG	Equipment: YSI, Slope Indicator	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (µhmos)	Redox (mV)
23	1005	7.68	—	8.46	15.98	6.93	142	191
24	11.46	6.54	—	7.12	10.66	7.83	84	218
25	1125	6.92	—	7.08	12.01	6.01	331	206
26	1015	7.42	—	7.72	13.78	8.45	345	226
08	~~1139~~ 1151	~~7.03~~ 3.50	—	6.68	13.57	~~7.74~~ 1.49	272	245
09	~~DRY~~ 1155	4.35	—	6.89	12.51	7.14	187	243
10	1219	6.93	/	7.21	14.63	4.41	196	218
MAS-1	1008	7.44	—	8.37	15.87	7.02	107	196
2	1012	6.88	—	7.59	14.81	5.76	510	233
8	1139	7.03	—	7.62	11.60	6.69	184	207
9	DRY							
10	1143	6.83	—	7.05	11.76	7.20	208	237
225	1030	6.77	—	7.90	13.39	7.71	149	217
226	1036	5.19	—	7.53	14.43	9.47	221	233

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COMMENTS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NEX	Project No: 2960035	Date: 6/25
Weather/Temperature/Barometric Pressure/Humidity: Sunny, 80		
EA Personnel: SYC	Equipment: YSI 600XL	

Location	Time (0000 hr)	Depth To Water (ft)	Depth to Product	pH	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μhmos)	Redox (mV)
MW NASB 23		7.81		7.01	15.15	5.86	156	223
24		6.70		6.69	10.20	3.30	106	232
25		7.00		6.34	11.46	5.71	358	254
26		7.55		6.72	12.74	6.97	287	227
225		6.88		6.32	14.34	6.98	206	230
226		5.28		6.45	14.76	4.29	235	235
08		3.63		6.52	13.28	5.62	290	239
09		4.45		6.56	11.97	4.19	242	238
10		7.01		7.01	14.28	3.89	231	228
AAS-1		7.35		6.81	14.18	7.44	130	223
2		7.03		6.15	14.71	6.12	572	256
8		7.19	—	insufficient water				
9		dry						
10		6.95	—	insufficient water				

Comments:

EA 5120 0794-7

Attachment C

Field Record of Well Gauging, Purging, and Sampling Forms

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NEX	Project Number:	29600.35
Well ID:	MW NASB-023	Well Lock Status:	unlocked
Well Condition:	GOOD	Weather:	Hazy, Hot, Humid + 95

Gauge Date:	6/8/99	Gauge Time:	1459
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush mount	Well Diameter (in.):	2

Purge Date:	6/8/99	Purge Time:	1500
Purge Method:	Low flow	Field Personnel:	KS/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: 2.01 End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	7.68	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	1500	1505	1510	1515	1520	1525
Depth to Water (ft)	7.68	7.71	7.68	7.68	7.68	7.68
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1	2	3	4	5
PH	5.62	5.53	5.49	5.47	5.43	5.43
Temperature (°C)	18.29	22.40	22.60	21.67	23.60	22.32
Conductivity (μmhos/cm)	309	200	196	171	174	170
Dissolved Oxygen (mg/L)	5.34	5.00	4.72	4.86	~~4.48~~ 4.75	4.87
Turbidity (NTU)	13	14	22	Ø	1	Ø
eH (mV)	135	147	148	146	149	152

Total Quantity of Water Removed (L):	5L		
Samplers:	KS/JG	Sampling Time (Start/End):	1529 - 1615
Sampling Date:	6/8/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MW-NASB023		
Sample Parameters:	GRO, DRO, BTEX		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB-NEX	Project Number:	29600.35
Well ID:	MWNASB24	Well Lock Status:	locked
Well Condition:	Good	Weather:	Cool ± 65

Gauge Date:	6/9/99	Gauge Time:	0815
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush mount	Well Diameter (in.):	4"

Purge Date:	6/9/99	Purge Time:	0827
Purge Method:	Low Flow	Field Personnel:	KS/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: 5.8 End:

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	6.57	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	0827	0832	0837	0842	0847	0852
Depth to Water (ft)	6.57	6.74	6.74	6.85	6.97	7.01
Purge Rate (~~gpm~~) Lpm	—0.2	.2	.2	.2	.2	.2
Volume Purged (L)	—	1	2	3	4	5
PH	6.78	6.21	6.15	6.10	6.12	6.04
Temperature (°C)	12.06	11.58	11.99	13.09	13.56	13.79
Conductivity (μmhos/cm)	124	119	112	113	114	115
Dissolved Oxygen (mg/L)	5.67	2.04	1.72	1.87	1.89	1.90
Turbidity (NTU)	1.5	0	0	0	0	0
eH (mV)	167	173	174	173	173	173

Total Quantity of Water Removed (L): 5L

Samplers:	KS/JG	Sampling Time (Start/End):	
Sampling Date:	6/9/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MW-NASB		
Sample Parameters:	BTEX, DRO, GRO		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB-NEX	Project Number:	29600035
Well ID:	MWNASB025	Well Lock Status:	Good
Well Condition:	Good	Weather:	Cloudy, 60°

Gauge Date:	6/9/99	Gauge Time:	0945
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):		Well Diameter (in.):	4

Purge Date:	6/9/99	Purge Time:	0946
Purge Method:	Low Flow	Field Personnel:	KS/XG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: Ø End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	6.95	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	0946	0951	0956	1001	1006	1011
Depth to Water (ft)	6.95	7.57	7.78	7.96	8.23	8.57
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1	2	3	4	5
PH	6.37	6.45	6.48	6.48	6.48	6.47
Temperature (°C)	12.09	11.83	12.99	13.69	14.66	15.18
Conductivity (μmhos/cm)	333	331	338	345	351	355
Dissolved Oxygen (mg/L)	6.44	4.56	4.44	4.50	4.56	4.53
Turbidity (NTU)	Ø	Ø	Ø	Ø	Ø	Ø
eH (mV)	166	168	166	165	163	162

Total Quantity of Water Removed (L):	5		
Samplers:	KS/XG	Sampling Time (Start/End):	1015
Sampling Date:	6/9/99	Decontamination Fluids Used:	Isopropyl, DI
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MW-NASB-025		
Sample Parameters:	DRO, GRO, BTEX		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB-NEX	Project Number:	29600.35
Well ID:	MWNASB26	Well Lock Status:	Good
Well Condition:	Good	Weather:	Sunny + 70

Gauge Date:	6/9/99	Gauge Time:	1455
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush mount	Well Diameter (in.):	2"

Purge Date:	6/9/99	Purge Time:	1500
Purge Method:	Low Flow	Field Personnel:	RB/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: Ø End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	7.49	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	1500	1505	1510	1515	1518	1521
Depth to Water (ft)	7.49	7.53	7.80	7.80	7.80	7.86
Purge Rate (~~gpm~~) Lpm	.2	.2	.2	.2	.2	.2
Volume Purged (L)	—	1	2	3	3.6	4.2
PH	6.73	6.76	6.83	6.67	6.84	6.94
Temperature (°C)	19.29	15.20	16.17	16.93	17.30	17.98
Conductivity (μmhos/cm)	403	385	382	384	385	386
Dissolved Oxygen (mg/L)	5.83	1.10	.58	.76	.53	.54
Turbidity (NTU)	24	17	3	3	1	0
eH (mV)	23	8	-64	-79	-84	-86

Total Quantity of Water Removed (L):

Samplers:	RB/JG	Sampling Time (Start/End):	1525
Sampling Date:	6/9/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MWNASB26		
Sample Parameters:	VOC, BTEX, MTBE GRO, DRO		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB- NEX	Project Number:	29600235
Well ID:	MWNASB08	Well Lock Status:	GOOD
Well Condition:	Good	Weather:	Cloudy, 70°

Gauge Date:	6/9/99	Gauge Time:	1340
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush Mount	Well Diameter (in.):	2

Purge Date:	6/9/99	Purge Time:	1342
Purge Method:	Low Flow	Field Personnel:	KS/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: 10.01 End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	3.48	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	1342	1347	1352	1357	1402	1407
Depth to Water (ft)	3.76	3.86	4.42	4.38	4.35	4.35
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1	2	3	4	5
PH	6.46	6.38	6.32	6.29	6.27	6.23
Temperature (°C)	14.10	12.51	13.28	14.47	15.17	15.64
Conductivity (μmhos/cm)	297	284	283	286	289	293
Dissolved Oxygen (mg/L)	3.66	2.69	2.00	1.65	1.64	1.37
Turbidity (NTU)	42	41	26	25	23	16
eH (mV)	150	148	146	143	132	117

Total Quantity of Water Removed (L):

Samplers:	KS/JG	Sampling Time (Start/End):	1425
Sampling Date:	6/9/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MW-NASB-08		
Sample Parameters:	GRO, DRO, BTEX / MTBE		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB-NEX	Project Number:	29600.35
Well ID:	MWNASB225	Well Lock Status:	Good
Well Condition:	Good	Weather:	Sunny ±70

Gauge Date:	6/10/99	Gauge Time:	1102
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):		Well Diameter (in.):	2"

Purge Date:	6/10/99	Purge Time:	1107
Purge Method:	Low Flow	Field Personnel:	KS/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: Ø End: Ø

WELL VOLUME

A. Well Depth (ft):	14.31	D. Well Volume/ft (L):	
B. Depth to Water (ft):	6.85	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	1107	1112	1117	1122	1125	1128
Depth to Water (ft)	6.85	6.85	6.83	6.86	6.86	6.8
Purge Rate (~~gpm~~) Lpm	0.2	.2	.2	.2	.2	.2
Volume Purged (L)	—	1	2	3	3.6	4.2
PH	5.78	5.77	5.77	5.80	5.81	5.83
Temperature (°C)	16.32	16.53	17.10	17.93	18.01	18.74
Conductivity (μmhos/cm)	248	241	243	246	246	245
Dissolved Oxygen (mg/L)	2.37	1.78	1.57	1.73	1.74	1.74
Turbidity (NTU)	6	6	6	6	6	6
eH (mV)	157	161	164	165	167	171

Total Quantity of Water Removed (L): 4.2

Samplers:	KS/JG	Sampling Time (Start/End):	1130
Sampling Date:	6/10/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MWNASB226		
Sample Parameters:	VOC, BTEX, MTBE, DRO, GRO		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB NEX	Project Number:	29600.35
Well ID:	MWNASB226	Well Lock Status:	Good
Well Condition:	Good	Weather:	Sunny ± 70

Gauge Date:	6/10/99	Gauge Time:	0929
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush Mount	Well Diameter (in.):	2"

Purge Date:	6/10/99	Purge Time:	0931
Purge Method:	Low Flow	Field Personnel:	KS/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: 4.53 End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	5.27	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	0931	0936	0941	0946	0951	0956
Depth to Water (ft)	5.27	5.24	5.23	5.23	5.24	5.24
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1	2	3	4	5
PH	5.69	5.77	5.84	5.87	5.88	5.88
Temperature (°C)	15.22	15.74	17.19	18.02	19.01	19.92
Conductivity (μmhos/cm)	249	243	242	245	250	252
Dissolved Oxygen (mg/L)	2.18	0.90	0.25	0.43	1.00	0.90
Turbidity (NTU)	47	26	20	14	14	16
eH (mV)	141	122	116	109	103	101

Total Quantity of Water Removed (L):	7.2		
Samplers:	KS/JG	Sampling Time (Start/End):	1010
Sampling Date:	6/10/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MWNASB226, MWNASB DX1		
Sample Parameters:	VOC BTEX, MTBE, DRO, GRO		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	NASB-NEX	Project Number:	29600	Date:	6/10/99
Well ID:	MW NASB 226	Field Personnel:	KS/JG		

Parameter	6	7	8	9	10	11
Time (min.)	1001	1004	1007			
Depth to Water (ft)	5.24	5.23	5.23			
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2			
Volume Purged (L)	6	6.6	7.2			
pH	5.88	5.88	5.87			
Temperature (°C)	20.58	20.66	20.91			
Conductivity (μmhos/cm)	259	261	263			
Dissolved Oxygen (mg/L)	0.21	0.52	0.87			
Turbidity (NTU)	16	15	13			
eH (mV)	99	98	97			

Parameter	12	13	14	15	16	17
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
eH (mV)						

Comments and Observations:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	NASB - NEX	Project Number:	29600.35	Date:	6/9/99
Well ID:	MW NASB 08	Field Personnel:	KS/JG		

Parameter	6	7	8	9	10	11
Time (min.)	1412	1417	1420			
Depth to Water (ft)	4.27	4.26	4.27			
Purge Rate (~~gpm~~) Lpm	0.2	0.2	0.2			
Volume Purged (L)	6	7	8			
pH	6.22	6.22	6.23			
Temperature (°C)	15.82	16.03	16.26			
Conductivity (μmhos/cm)	294	295	296			
Dissolved Oxygen (mg/L)	1.27	1.58	1.75			
Turbidity (NTU)	12	12	11			
eH (mV)	111	105	102			

Parameter	12	13	14	15	16	17
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
eH (mV)						

Comments and Observations:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB-NEX	Project Number:	29600.35
Well ID:	MWNASB09	Well Lock Status:	Good
Well Condition:	Good	Weather:	Cloudy ± 65

Gauge Date:	6/9/99	Gauge Time:	0938
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush Mount	Well Diameter (in.):	2"

Purge Date:	6/9/99	Purge Time:	1042
Purge Method:	Low Flow	Field Personnel:	CS/JG
Ambient Air VOCs (ppm):	Start: Ø End:	Well Mouth VOCs (ppm):	Start: 5.19 End:

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	4.35	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	1	2	3	4	5
Time (min.)	1042	1047	1052	1057	1102	1107
Depth to Water (ft)	4.35	4.45	4.55	4.56	4.55	4.37
Purge Rate (~~gpm~~) Lpm	.2	.2	.2	.2	.2	.2
Volume Purged (L)	—	1	2	3	4	5
PH	6.24	6.13	6.04	6.02	6.01	6.02
Temperature (°C)	12.03	13.09	11.94	11.99	13.00	13.98
Conductivity (μmhos/cm)	233	229	234	239	244	252
Dissolved Oxygen (mg/L)	3.16	2.36	1.28	.53	.33	.30
Turbidity (NTU)	354	178	46	13	3	2
eH (mV)	162	164	157	147	137	135

Total Quantity of Water Removed (L):

Samplers:	CS/JG	Sampling Time (Start/End):	1115 - 1122
Sampling Date:	6/9/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MWNASB09		
Sample Parameters:	VOC BTEX, DRO, GRO		

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	NASB NEX	Project Number:	29600.35	Date:	6/9/99
Well ID:	MW NASB09	Field Personnel:	KS/JG		

Parameter	6	7	8	9	10	11
Time (min.)	1112					
Depth to Water (ft)	4.39					
Purge Rate (~~gpm~~) Lpm	.2					
Volume Purged (L)	6					
pH	6.02					
Temperature (°C)	14.01					
Conductivity (μmhos/cm)	256					
Dissolved Oxygen (mg/L)	.36					
Turbidity (NTU)	2					
eH (mV)	135					

Parameter	12	13	14	15	16	17
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
eH (mV)						

Comments and Observations: * Clean flow cell - increase flow for ~ 30 sec to clean line

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Site Name:	NASB - NEX	Project Number:	29600.35
Well ID:	MWNASB10	Well Lock Status:	Good
Well Condition:	Good	Weather:	Sunny ± 65

Gauge Date:	6/10/99	Gauge Time:	0820
Sounding Method:	Slope Indicator	Measurement Ref:	TOC
Stick Up/Down (ft):	Flush mount	Well Diameter (in.):	2"

Purge Date:	6/10/99	Purge Time:	0827
Purge Method:	Low Flow	Field Personnel:	CB/JG
Ambient Air VOCs (ppm):	Start: Ø End: Ø	Well Mouth VOCs (ppm):	Start: 19.24 End: Ø

WELL VOLUME

A. Well Depth (ft):		D. Well Volume/ft (L):	
B. Depth to Water (ft):	6.95	E. Well Volume (L) (C*D):	
C. Liquid Depth (ft) (A-B)		F. Three Well Volumes (L)	

Parameter	Beginning	* 1	2	3	4	5
Time (min.)	0827	0832	0837	0842	0847	0852
Depth to Water (ft)	6.95	6.98	6.90	6.97	6.98	6.98
Purge Rate ~~(gpm)~~ Lpm	.2	.2	.2	.2	.2	.2
Volume Purged (L)	—	1	2	3	4	5
PH	6.21	5.88	5.88	5.86	5.86	5.85
Temperature (°C)	13.46	13.64	15.30	16.43	16.70	16.85
Conductivity (μmhos/cm)	250	215	225	233	236	238
Dissolved Oxygen (mg/L)	2.71	1.07	1.23	1.76	1.17	1.16
Turbidity (NTU)	132	39	23	11	7	5
eH (mV)	212	211	209	203	201	200

Total Quantity of Water Removed (L):	7.2		
Samplers:	CB/JG	Sampling Time (Start/End):	0905
Sampling Date:	6/10/99	Decontamination Fluids Used:	DI, Isopropyl
Sample Type:	Grab	Sample Preservatives:	HCl
Sample Bottle IDs:	MWNASB10		
Sample Parameters:	VOC BTEX MTBE, DRO, GRO		

* Clean flow cell - increase flow for ~ 20 sec to clear tubing

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	NASB-NEX	Project Number:	29600.35	Date:	6/10/99
Well ID:	MWNASB10	Field Personnel:	KB/JG		

Parameter	6	7	8	9	10	11
Time (min.)	0857	0900	0903			
Depth to Water (ft)	6.97	6.97	6.99			
Purge Rate (~~gpm~~) Lpm	.2	.2	.2			
Volume Purged (L)	6	6.6	7.2			
pH	5.85	5.85	5.85			
Temperature (°C)	16.97	17.01	17.14			
Conductivity (μmhos/cm)	238	239	240			
Dissolved Oxygen (mg/L)	1.47	1.46	1.47			
Turbidity (NTU)	2	2	1			
eH (mV)	198	198	197			

Parameter	12	13	14	15	16	17
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
eH (mV)						

Comments and Observations:

Attachment D

Laboratory Analytical Report for Ground-Water Samples

Katahdin
ANALYTICAL SERVICES

July 12, 1999

Mr. John Carnright
EA Engineering
3 Washington Center
Newburgh, NY 12550

RE: Katahdin Lab Number: WP-2849
Project ID: NAS Brunswick NEX
Project Manager: Ms. Andrea J. Colby
Sample Receipt Date: June 10, 1999

Dear Mr. Carnright:

Please find enclosed the following information:

* Report of Analysis
* Quality Control Data Summary
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Hana Crouch
Authorized Signature

07/12/99
Date

000001

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Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2849-1
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB10	Aqueous	K.SHUTTY	06/10/99	06/10/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	100.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	84.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	10.	µg/L	1.0	10	MEDEP4.2.17	06/17/99	PR	
4-Bromofluorobenzene	98.	%	1.0		MEDEP4.2.17	06/17/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/17/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	110.	%	1.0		EPA 602	06/17/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/16/99 by DPD

07/12/99

LJO/jcbajc(dw)/djn
PF16FOW2

000002

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Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2849-2
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASBDX1	Aqueous	K.SHUTTY	06/10/99	06/10/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	1700.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	85.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								2
Gasoline Range Organics	17000.	µg/L	100	10	MEDEP4.2.17	06/17/99	PR	
4-Bromofluorobenzene	108.	%	100		MEDEP4.2.17	06/17/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<500.	µg/L	1000	0.50	EPA 602	06/17/99	JK	
Toluene	2800.	µg/L	1000	1.0	EPA 602	06/17/99	JK	
Ethylbenzene	<1000.	µg/L	1000	1.0	EPA 602	06/17/99	JK	
Xylenes	4300.	µg/L	1000	1.5	EPA 602	06/17/99	JK	
Methyltertbutyl ether	<500.	µg/L	1000	0.50	EPA 602	06/17/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	110.	%	1000		EPA 602	06/17/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

(1) Sample Preparation on 06/16/99 by DPD

(2) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

07/12/99

LJO/jcbajc(dw)/djn
PF16FOW2

000003

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2849-3
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB226	Aqueous	K.SHUTTY	06/10/99	06/10/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	1600.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	82.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								2
Gasoline Range Organics	17000.	µg/L	100	10	MEDEP4.2.17	06/17/99	PR	
4-Bromofluorobenzene	113.	%	100		MEDEP4.2.17	06/17/99	PR	
Purgeable Aromatics+MTBE								2
Benzene	<500.	µg/L	1000	0.50	EPA 602	06/17/99	JK	
Toluene	2800.	µg/L	1000	1.0	EPA 602	06/17/99	JK	
Ethylbenzene	<1000.	µg/L	1000	1.0	EPA 602	06/17/99	JK	
Xylenes	4100.	µg/L	1000	1.5	EPA 602	06/17/99	JK	
Methyltertbutyl ether	<500.	µg/L	1000	0.50	EPA 602	06/17/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	107.	%	1000		EPA 602	06/17/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/16/99 by DPD
(2) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

07/12/99

LJO/jcbajc(dw)/djn
PF16FOW2

0000004

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Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2849-4
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB225	Aqueous	K.SHUTTY	06/10/99	06/10/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	350.	µg/L	1.0	50	MEDEP4.1.25	07/01/99	JG	
o-Terphenyl	78.	%	1.0		MEDEP4.1.25	07/01/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	130.	µg/L	1.0	10	MEDEP4.2.17	06/17/99	PR	
4-Bromofluorobenzene	115.	%	1.0		MEDEP4.2.17	06/17/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
Toluene	1.6	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Xylenes	3.4	µg/L	1.0	1.5	EPA 602	06/17/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	110.	%	1.0		EPA 602	06/17/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/16/99 by DPD

07/12/99

LJO/jcbajc(dw)/djn
PF16FOW2

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Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2849-5
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
TRIP BLANK	Aqueous	K.SHUTTY	06/10/99	06/10/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/17/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/17/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/17/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	109.	%	1.0		EPA 602	06/17/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

07/12/99

LJO/jcbajc(dw)/djn

0000006

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KATAHDIN ANALYTICAL SERVICES
Maine Laboratory
Quality Control Report

Methods, Chronology of Analysis and Method Blank Results

DRO by GC Method: ME DEP 4.1.25

Water Matrix

Client: EA Engineering
SDG #: WP2849

Blank: BF632
Result File: APF3089
Date Analyzed: 06/22/99

CHRONOLOGY

KAS Sample Nos.	Date Extracted	Date Analyzed	Dilution Factor
LCF632	06/16/99	06/22/99	1.0
LCFD632	06/16/99	06/22/99	1.0
WP2849-1	06/16/99	06/30/99	1.0
WP2849-2	06/16/99	06/30/99	1.0
WP2849-3	06/16/99	06/30/99	1.0
WP2849-4	06/16/99	07/01/99	1.0

KAS Sample Nos.	Date Extracted	Date Analyzed	Dilution Factor

METHOD BLANK RESULTS*

Compound	Concentration (µg/L)

METHOD BLANK SURROGATE RECOVERY

Surrogate	% Recovery
O-Terphenyl	88%

* Blank results listed correspond to the extraction blank prepared with the above samples on date of extraction. Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

KATAHDIN ANALYTICAL SERVICES
Maine Laboratory
Quality Control Report

Client: EA Engineering
SDG #: WP2849

Laboratory Control Sample Results

DRO by GC Method: ME DEP 4.1.25

Water Matrix

LCS number: LCF632, LCFD632
Date of Extraction: 06/16/99
Date of Analysis: 06/22/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LCS Dup. Measured Conc.	LCS % Recovery	LCS Dup. % Recovery	Recovery Acceptance Range (%)	Relative Percent Difference	RPD Acceptance Range (%)
DRO Components	ug/L	500.0	456	426.2	91	85	60-140	6.7	0-20
O-terphenyl	µg/mL	20.0	18.2	17.9	91	90	51-120		

NA = Not Applicable

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2849

Methods, Chronology of Analysis and Method Blank Results

GRO by GC Method: Me. DEP 4.2.17

Water Matrix

Name: 4BGROPF16
Result File: T:\GC04\4PF20173
Date Analyzed: 6/16/99

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
4LGROPF16	6/16/99	1.0			
4LDGROPF16	6/16/99	1.0			
WP2849-1	6/17/99	1.0			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)

SURROGATE RECOVERY

Surrogate	% Recovery
4-Bromofluorobenzene	104

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

0000009

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2849

Methods, Chronology of Analysis and Method Blank Results

GRO by GC Method: Me. DEP 4.2.17

Water Matrix

Name: 4BGROPF17C
Result File: T:\GC04\4PF2199
Date Analyzed: 6/17/99

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
4LGROPF17	6/17/99	1.0			
4LDGROPF17	6/17/99	1.0			
WP2849-4	6/17/99	1.0			
WP2849-2	6/17/99	100			
WP2849-3	6/17/99	100			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)

SURROGATE RECOVERY

Surrogate	% Recovery
4-Bromofluorobenzene	105

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

000010

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2849

Laboratory Control Sample Results

GRO by GC Method : Me. DEP 4.2.17

Water Matrix

Name: 4LGROPF16/4LDGROPF16
Result File: T:\GC04\4PF2171/172
Date of Analysis: 6/16/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LSC Dup. Measured Conc.	LCS % Recovery	LSC Dup. % Recovery	Recovery Acceptance Range (%)	RPD (%)	RPD Acceptance Range (%)
GRO(Timed Range)	ug/L	100	94.8	102	95	102	60-140	8	0-20
4-Bromofluorobenzene	ug/L	20	19.6	21.5	98	107	77-144		

NA=Not Applicable

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2849

Laboratory Control Sample Results

GRO by GC Method : Me. DEP 4.2.17

Water Matrix

Name: 4LGROPF17/4LDGROPF17
Result File: T:\GC04\4PF2194/195
Date of Analysis: 6/17/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LSC Dup. Measured Conc.	LCS % Recovery	LSC Dup. % Recovery	Recovery Acceptance Range (%)	RPD (%)	RPD Acceptance Range (%)
GRO(Timed Range)	ug/L	100	106.4	107.2	106	107	60-140	1	0-20
4-Bromofluorobenzene	ug/L	20	20.6	20.9	103	105	77-144		

NA=Not Applicable

000012

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2849

Methods, Chronology of Analysis and Method Blank Results

Volatile Organics by GC Method : 8020

GC I.D.: GC01
Date Analyzed: 06/17/99 Water Matrix
Result File: T:\GC01\1PF2264
Blank I.D.: 1BVOAPF17

CHRONOLOGY

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
1LVOAPF17	06/17/99	1.0			
WP2849-5	06/17/99	1.0			
WP2849-4	06/17/99	1.0			
WP2849-1	06/17/99	1.0			
WP2849-3	06/17/99	1000			
WP2849-2	06/17/99	1000			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)
Surrogate	**% Recovery**
Bromochloromethane	n/a
1-Chloro-2-bromopropane	n/a
1,4-Dichlorobutane	n/a
a,a,a-Trifluorotoluene	109

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectivel diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

Katahdin Analytical Services
QUALITY CONTROL REPORT
Laboratory Control Sample Results

Volatile Organics by GC Method 602/ 8020

Instrument ID: GC01

Matrix: Water

Date of Analysis: 6/17/99

Standard Amount: 10.0 ppb

File Name: 1PF1263.rst

LCS ID: 1LVOAPF17

Compound	Retention Time	Retention Time Window		Recover Amount (ug/L)	% Recovery	% Recovery Window	
		FROM	TO			FROM	TO
MTBE	12.52	12.44	12.60	10.68	107	76	124
Benzene	17.6	17.52	17.68	11.58	116	87	123
Toluene	24.73	24.65	24.81	11.1	111	88	120
Chlorobenzene	30.36	30.28	30.44	11.38	114	83	121
Ethylbenzene	31.32	31.24	31.40	11.47	115	88	118
m,p-Xylenes	31.77	31.69	31.85	22.71	114	88	118
o-Xylene	32.86	32.78	32.94	11.06	111	87	118
1,3-Dichlorobenzene	37.05	36.97	37.13	11.12	111	87	123
1,4-Dichlorobenzene	37.2	37.12	37.28	11.37	114	89	127
1,2-Dichlorobenzene	37.94	37.86	38.02	11.44	114	83	125
SURROGATES							
a,a,a-Trifluorotoluene	20.23	20.15	20.31	11.12	111	80	120

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT

Tel. (207) 874-2400
Fax (207) 775-4029

LAB (WORK ORDER) # WP2849

PAGE: 1 OF 1

COOLER: 1 OF 1

COC# —
SDG# —
DATE / TIME RECEIVED: 06-10-99~1310
DELIVERED BY: CLIENT
RECEIVED BY: BKR
LIMS ENTRY BY: BKR
LIMS REVIEW BY / PM: ADC

CLIENT: EA ENGINEERING

PROJECT: NAS BRUNSWICK NEX

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	☐	☑	☐		
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	☑	☐	☐		
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	☑	☐	☐		
4. CHAIN OF CUSTODY MATCHES SAMPLES?	☑	☐	☐		
5. TEMPERATURE BLANKS PRESENT?	☑	☐	☐	TEMP BLANK TEMP (°C)= 4.7	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE / ICE PACKS PRESENT (Y) or N?	☑	☐	☐	COOLER TEMP (°C)= NA (RECORD COOLER TEMP ONLY IF TEMP BLANK IS NOT PRESENT)	
7. VOLATILES FREE OF HEADSPACE?	☑	☐	☐		
8. TRIP BLANK PRESENT IN THIS COOLER	☑	☐	☐		
9. PROPER SAMPLE CONTAINERS AND VOLUME?	☑	☐	☐		
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT?	☑	☐	☐		
11. SAMPLES PROPERLY PRESERVED(1)?	☑	☐	☐		
12. CORRECTIVE ACTION REPORT FILED?	☐	☑	N/A		

13. ANALYTICAL PROGRAMS (CIRCLE ONE) COMMERCIAL CLP HAZWRAP (NFESC) ACOE AFCEE OTHER (STATE OF ORIGIN):

LOG - IN NOTES(1):

(1) Use this space (and additional sheets if necessary) to document samples that are received broken or compromised, C-O-C discrepancies, radiation checks, residual chlorine check, results of pH check if [illegible]ed. If samples required pH adjustment, record volume and type of preservative [illegible]

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: EA Engineering
Contact: John Cairnight
Phone #: (914) 565-8100
Fax #: ( )
Address: 3 Washington Center
City: Newburgh
State: NY
Zip Code: 12550
Purchase Order #:
Proj. Name / No.: NAS Brunswick NEX 29600.35
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Kim Shutty / Kim Shutty
Copies To:

LAB USE ONLY
WORK ORDER #: WP2849-*
KATAHDIN PROJECT MANAGER:

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO:
TEMP°C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOC BTEX MTBE 602 Filt. ☐Y☐N	GRO 4.2.17 Maine Filt. ☐Y☐N	DRO 4.1.25 Maine Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N	Filt. ☐Y☐N
	MWNASB10	6/10/99/0905	H_2O	8	✓	✓	✓							
	MWNASBDX1	6/10/99/—	H_2O	8	✓	✓	✓							
	MWNASB226	6/10/99/1010	H_2O	8	✓	✓	✓							
	TRIP Blank	6/10/99/1045	H_2O	3	✓									
	MWNASB225	6/10/99/1130	H_2O	8	✓	✓	✓							
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												

COMMENTS: Temp Blank in Cooler

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	6/10/99 1310	Sherley Scott			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
					00000016

KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WP-2849

Project Manager: Andrea J. Colby
ORDER DATE: 06/11/9
PHONE: 914/565-81

REPORT TO: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

DUE: 08 JUL
FAC.ID: NAS BRUNSWICK NEX

INVOICE: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

PHONE: 914/565-8100
PO: 29600.35

SAMPLED BY: K.SHUTTY DELIVERED BY: CLIENT DISPOSE: AFTER 11 JUL

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP2849-1	MWNASB10	10 JUN 0905	10 JUN	AQ
	WP2849-2	MWNASBDX1	10 JUN		
	WP2849-3	MWNASB226	10 JUN 1010		
	WP2849-4	MWNASB225	10 JUN 1130		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Purgeable Aromatics+MTBE	EPA 602	4	65.00	260.00
Gasoline Range Organics	MEDEP4.2.1	4	65.00	260.00
Diesel Range Organics	MEDEP4.1.2	4	100.00	400.00
TOTALS		4	230.00	920.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRI
2	WP2849-5	TRIP BLANK	10 JUN 1045	10 JUN	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Purgeable Aromatics+MTBE	EPA 602	1	65.00	65.00

ORDER NOTE: QC-II+
DD(DBASE)
NAS BRUNSWICK NEX

FINAL PAGE

INVOICE: With Report

TOTAL ORDER AMOUNT $985.0
This is NOT an Invoice

AJC/BKR
06-11Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

0000017

Katahdin
ANALYTICAL SERVICES

July 12, 1999

RECEIVED
JUL 14 1999
EA Engineering, Science, & Technology, Inc.
Newburgh, NY 12550

Mr. John Carnright
EA Engineering
3 Washington Center
Newburgh, NY 12550

RE: Katahdin Lab Number: WP-2821
Project ID: NAS Brunswick NEX
Project Manager: Ms. Andrea J. Colby
Sample Receipt Date: June 9, 1999

Dear Mr. Carnright:

Please find enclosed the following information:

* Report of Analysis
* Quality Control Data Summary
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Maria Crouch
Authorized Signature

07/12/99
Date

340 County Road No. 5
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Tel: (207) 874-2400 Fax: (207) 775-4029

http://katahdinlab.com

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2821-2
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASBRB	Aqueous	K.SHUTTY	06/08/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	53.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	47.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	<10	µg/L	1.0	10	MEDEP4.2.17	06/15/99	PR	
4-Bromofluorobenzene	105.	%	1.0		MEDEP4.2.17	06/15/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/11/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	105.	%	1.0		EPA 602	06/11/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/14/99 by PMM

07/12/99

LJO/jcbajc(dw)/djn
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Katahdin
ANALYTICAL SERVICES

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

Lab Number : WP-2821-3
Report Date: 07/12/99
PO No. : 29600.35

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB09	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	73.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	88.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	20.	µg/L	1.0	10	MEDEP4.2.17	06/15/99	PR	
4-Bromofluorobenzene	112.	%	1.0		MEDEP4.2.17	06/15/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/11/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	103.	%	1.0		EPA 602	06/11/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/14/99 by PMM

07/12/99

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ANALYTICAL SERVICES

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

Lab Number : WP-2821-4
Report Date: 07/12/99
PO No. : 29600.35

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB25	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	59.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	75.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	11.	µg/L	1.0	10	MEDEP4.2.17	06/16/99	PR	
4-Bromofluorobenzene	112.	%	1.0		MEDEP4.2.17	06/16/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/12/99	JK	
Methyltertbutyl ether	3.1	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	108.	%	1.0		EPA 602	06/12/99	JK	

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(1) Sample Preparation on 06/14/99 by PMM

07/12/99

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ANALYTICAL SERVICES

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

Lab Number : WP-2821-5
Report Date: 07/12/99
PO No. : 29600.35

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB24	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	66.	µg/L	1.0	50	MEDEP4.1.25	07/01/99	JG	
o-Terphenyl	66.	%	1.0		MEDEP4.1.25	07/01/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	<10	µg/L	1.0	10	MEDEP4.2.17	06/16/99	PR	
4-Bromofluorobenzene	100.	%	1.0		MEDEP4.2.17	06/16/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/12/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	113.	%	1.0		EPA 602	06/12/99	JK	

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(1) Sample Preparation on 06/14/99 by PMM

07/12/99

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Katahdin ANALYTICAL SERVICES

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

Lab Number : WP-2821-6
Report Date: 07/12/99
PO No. : 29600.35

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MWNASB08	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	58.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	72.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	13.	µg/L	1.0	10	MEDEP4.2.17	06/16/99	PR	
4-Bromofluorobenzene	106.	%	1.0		MEDEP4.2.17	06/16/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/12/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/12/99	JK	
Methyltertbutyl ether	11.	µg/L	1.0	0.50	EPA 602	06/12/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	108.	%	1.0		EPA 602	06/12/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/14/99 by PMM

07/12/99

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Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2821-7
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MWNASB26	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1,2
Diesel Range Organics	6200.	µg/L	8.0	50	MEDEP4.1.25	07/01/99	JG	
o-Terphenyl	97.	%	8.0		MEDEP4.1.25	07/01/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	16000.	µg/L	50	10	MEDEP4.2.17	06/16/99	PR	
4-Bromofluorobenzene	112.	%	50		MEDEP4.2.17	06/16/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<50.	µg/L	100	0.50	EPA 602	06/15/99	JK	
Toluene	180.	µg/L	100	1.0	EPA 602	06/15/99	JK	
Ethylbenzene	140.	µg/L	100	1.0	EPA 602	06/15/99	JK	
Xylenes	1200.	µg/L	100	1.5	EPA 602	06/15/99	JK	
Methyltertbutyl ether	68.	µg/L	100	0.50	EPA 602	06/15/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	111.	%	100		EPA 602	06/15/99	JK	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 06/14/99 by PMM
(2) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

07/12/99

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PF14FOW0

Katahdin
ANALYTICAL SERVICES

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

Lab Number : WP-2821-8
Report Date: 07/12/99
PO No. : 29600.35

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
TRIP BLANK	Aqueous	K.SHUTTY	06/09/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/15/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/15/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/15/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/15/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/15/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	110.	%	1.0		EPA 602	06/15/99	JK	

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07/12/99

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Katahdin
ANALYTICAL SERVICES

Lab Number : WP-2821-1
Report Date: 07/12/99
PO No. : 29600.35

CLIENT: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

WIC#: NAS BRUNSWICK NEX

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MWNASB023	Aqueous	K.SHUTTY	06/08/99	06/09/99

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Diesel Range Organics								1
Diesel Range Organics	<50.	µg/L	1.0	50	MEDEP4.1.25	06/30/99	JG	
o-Terphenyl	51.	%	1.0		MEDEP4.1.25	06/30/99	JG	
Gasoline Range Organics								
Gasoline Range Organics	<10	µg/L	1.0	10	MEDEP4.2.17	06/15/99	PR	
4-Bromofluorobenzene	107.	%	1.0		MEDEP4.2.17	06/15/99	PR	
Purgeable Aromatics+MTBE								
Benzene	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
Toluene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Ethylbenzene	<1.0	µg/L	1.0	1.0	EPA 602	06/11/99	JK	
Xylenes	<1.5	µg/L	1.0	1.5	EPA 602	06/11/99	JK	
Methyltertbutyl ether	<0.50	µg/L	1.0	0.50	EPA 602	06/11/99	JK	
a,a,a-Trifluorotoluene (% Recovery)	108.	%	1.0		EPA 602	06/11/99	JK	

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(1) Sample Preparation on 06/14/99 by PMM

07/12/99

LJO/jcbajc(dw)/djn
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KATAHDIN ANALYTICAL SERVICES
Maine Laboratory
Quality Control Report

Methods, Chronology of Analysis and Method Blank Results

DRO by GC Method: ME DEP 4.1.25

Water Matrix

Client: EA Engineering
SDG #: WP2821

Blank: BF630
Result File: APG1002
Date Analyzed: 07/01/99

CHRONOLOGY

KAS Sample Nos.	Date Extracted	Date Analyzed	Dilution Factor
WP2821-1	06/14/99	06/30/99	1.0
WP2821-2	06/14/99	06/30/99	1.0
WP2821-3	06/14/99	06/30/99	1.0
WP2821-6	06/14/99	06/30/99	1.0
WP2821-1MS	06/14/99	07/01/99	2.1
WP2821-1MSD	06/14/99	07/01/99	2.1
WP2821-5	06/14/99	07/01/99	1.0
WP2821-7	06/14/99	07/01/99	8.0

KAS Sample Nos.	Date Extracted	Date Analyzed	Dilution Factor

METHOD BLANK RESULTS*

Compound	Concentration (µg/L)

METHOD BLANK SURROGATE RECOVERY

Surrogate	% Recovery
O-Terphenyl	88%

* Blank results listed correspond to the extraction blank prepared with the above samples on date of extraction. Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

KATAHDIN ANALYTICAL SERVICES
Maine Laboratory
Quality Control Report

Client: EA Engineering
SDG #: WP2821

Laboratory Control Sample Results

DRO by GC Method: ME DEP 4.1.25

Water Matrix

LCS number: LCF630
Date of Extraction: 06/14/99
Date of Analysis: 07/01/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LCS Dup. Measured Conc.	LCS % Recovery	LCS Dup. % Recovery	Recovery Acceptance Range (%)	Relative Percent Difference	RPD Acceptance Range (%)
DRO Components	ug/L	500.0	456	NA	91	NA	60-140	NA	0-20
O-terphenyl	µg/mL	20.0	18.2	NA	91	NA	51-120		

NA = Not Applicable

0000012

KATAHDIN ANALYTICAL SERVICES
Quality Control Report

Client: EA Engineering
W.O.#: WP2821

Matrix Spiked Sample Results

DRO by GC Method: ME DEP 4.1.25

Water Matrix

KAS Sample Number: WP2821-1
Date of Extraction: 06/14/99
Date of Analysis: 07/01/99

Compound	Units	MS Spike Conc.	MSD Spike Conc.	Sample Conc.	MS Measured Conc.	MS Dup. Measured Conc.	MS % Recovery	MS Dup. % Recovery	Recovery Acceptance Range (%)	Relative Percent Difference	RPD Acceptance Range (%)
DRO Components	µg/L	1053	1053	0	975	928	93	88	60-140	5	0-50
o-Terphenyl	µg/ml	20.0	20.0		17.4	16.4	87	82	51-120		

N/A = Not Applicable
N/C = Not Calculable
DL = Diluted Out

* Acceptance ranges are obtained when available from the applicable US EPA analytical method. These ranges are based upon method performance data generated from the analysis of quality control check samples and not actual environmental samples. The laboratory does not use the MS/MSD acceptance ranges as quality control acceptance criteria; the MS/MSD data are used to evaluate method performance for the environmental sample matrix. Please refer to LCS/LCSD data for assessment of quality control for this method.

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Methods, Chronology of Analysis and Method Blank Results

GRO by GC Method: Me. DEP 4.2.17

Water Matrix

Name: 4BGROPF15
Result File: T:\GC04\4PF20151
Date Analyzed: 6/15/99

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
4LGROPF15	6/15/99	1.0			
4LDGROPF15	6/15/99	1.0			
WP2821-1	6/15/99	1.0			
WP2821-1MS	6/15/99	1.0			
WP2821-1MSD	6/15/99	1.0			
WP2821-2	6/15/99	1.0			
WP2821-3	6/15/99	1.0			
WP2821-4	6/16/99	1.0			
WP2821-5	6/16/99	1.0			
WP2821-6	6/16/99	1.0			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)

SURROGATE RECOVERY

Surrogate	% Recovery
4-Bromofluorobenzene	98

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Methods, Chronology of Analysis and Method Blank Results

GRO by GC Method: Me. DEP 4.2.17

Water Matrix

Name: 4BGROPF16
Result File: T:\GC04\4PF20173
Date Analyzed: 6/16/99

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
4LGROPF16	6/16/99	1.0			
4LDGROPF16	6/16/99	1.0			
WP2821-7	6/16/99	50			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)

SURROGATE RECOVERY

Surrogate	% Recovery
4-Bromofluorobenzene	104

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectively diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Laboratory Control Sample Results

GRO by GC Method : Me. DEP 4.2.17

Water Matrix

Name: 4LGROPF15/4LDGROPF15
Result File: T:\GC04\4PF2149/150
Date of Analysis: 6/15/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LSC Dup. Measured Conc.	LCS % Recovery	LSC Dup. % Recovery	Recovery Acceptance Range (%)	RPD (%)	RPD Acceptance Range (%)
GRO(Timed Range)	ug/L	100	98.5	102	99	102	60-140	3	0-20
4-Bromofluorobenzene	ug/L	20	20.6	20.8	103	104	77-144		

NA=Not Applicable

0000016

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Laboratory Control Sample Results

GRO by GC Method : Me. DEP 4.2.17

Water Matrix

Name: 4LGROPF16/4LDGROPF16
Result File: T:\GC04\4PF2171/172
Date of Analysis: 6/16/99

Compound	Units	Spike Conc.	LCS Measured Conc.	LSC Dup. Measured Conc.	LCS % Recovery	LSC Dup. % Recovery	Recovery Acceptance Range (%)	RPD (%)	RPD Acceptance Range (%)
GRO(Timed Range)	ug/L	100	94.8	102	95	102	60-140	8	0-20
4-Bromofluorobenzene	ug/L	20	19.6	21.5	98	107	77-144		

NA=Not Applicable

Katahdin Analytical Services, Inc.
Quality Control Report

Client : EA Engineering

Work Order: WP2821

Matrix Spike/Matrix Spike Duplicate Results

GRO by GC Method : Maine DEP 4.2.17

Water Matrix

Result Files: T:\GC04\4PF2156/157
Date Analyzed: 6/15/99
Sample No. Spiked: WP2821-1

Compound	Units	Spike Conc.	Sample Conc.	MS Measured Conc.	MSD Measured Conc.	MS % Recovery	MSD % Recovery	Recovery Acceptance Range (%) *	RPD (%)	RPD Acceptance Range (%) *
Gasoline Range Organics	ug/L	100	<10	104	108	104	108	60-140	4	0-20
4-Bromofluorobenzene	ug/L	20		22.2	22.5	111	113	77-144		

* Acceptance ranges are obtained when available from the applicable US EPA analytical method. These ranges are based upon method performance data generated from the analysis of quality control check samples and not actual environmental samples. The laboratory does not use the MS/MSD acceptance ranges as quality control acceptance criteria; the MS/MSD data are used to evaluate method performance for the environmental sample matrix. Please refer to LCS/LCSD data for assessment of quality control for this method.

NA = Not applicable.

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Methods, Chronology of Analysis and Method Blank Results

Volatile Organics by GC Method : 8020

GC I.D.: GC01
Date Analyzed: 06/11/99 Water Matrix
Result File: T:\GC01\1PF2180
Blank I.D.: 1BVOAPF11

CHRONOLOGY

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
1LVOAPF11	06/11/99	1.0			
WP2821-1	06/11/99	1.0			
WP2821-2	06/11/99	1.0			
WP2821-3	06/11/99	1.0			
WP2821-4	06/11/99	1.0			
WP2821-5	06/12/99	1.0			
WP2821-6	06/12/99	1.0			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)
Surrogate	**% Recovery**
Bromochloromethane	n/a
1-Chloro-2-bromopropane	n/a
1,4-Dichlorobutane	n/a
a,a,a-Trifluorotoluene	106

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectivel diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

Katahdin Analytical Services, Inc.
Quality Control Report

Client: EA Engineering
Work Order: WP2821

Methods, Chronology of Analysis and Method Blank Results

Volatile Organics by GC Method : 8020

GC I.D.: GC01
Date Analyzed: 06/15/99 Water Matrix
Result File: T:\GC01\1PF2221
Blank I.D.: 1BVOAPF15

CHRONOLOGY

Sample Nos.	Date Analyzed	Dilution Factor~	Sample Nos.	Date Analyzed	Dilution Factor~
1LVOAPF15	06/15/99	1.0			
WP2821-7	06/15/99	100			
WP2821-8	06/15/99	1.0			

METHOD BLANK RESULTS*

Compound	Conc. (ug/L)

Surrogate	% Recovery
Bromochloromethane	n/a
1-Chloro-2-bromopropane	n/a
1,4-Dichlorobutane	n/a
a,a,a-Trifluorotoluene	107

* Only positive hits have been included. The remaining compounds were below the laboratory Practical Quantitation Levels.

~ The Dilution Factor (DF) indicates whether a sample, prepared in accordance with the analytical method protocol, was diluted prior to analysis. The Dilution Factor could also indicate that a smaller aliquot than specified in the method was utilized for sample preparation and analysis. For example, a dilution factor of 5 means that the sample was effectivel diluted by a factor of 5 prior to analysis, i.e., the sample was analyzed at 20% its reported concentration.

Katahdin Analytical Services
QUALITY CONTROL REPORT
Laboratory Control Sample Results

Volatile Organics by GC Method 602/ 8020

Instrument ID: GC01

Matrix: Water

Date of Analysis: 6/11/99

Standard Amount: 10.0 ppb

File Name: 1PF1179.rst

LCS ID: 1PF2179.rst

Compound	Retention Time	Retention Time Window		Recover Amount (ug/L)	% Recovery	% Recovery Window	
		FROM	TO			FROM	TO
MTBE	12.53	12.45	12.61	10.07	101	76	124
Benzene	17.61	17.53	17.69	10.98	110	87	123
Toluene	24.75	24.67	24.83	10.88	109	88	120
Chlorobenzene	30.37	30.29	30.45	10.81	108	83	121
Ethylbenzene	31.33	31.25	31.41	11.18	112	88	118
m,p-Xylenes	31.78	31.70	31.86	22.03	110	88	118
o-Xylene	32.87	32.79	32.95	10.91	109	87	118
1,3-Dichlorobenzene	37.05	36.97	37.13	11	110	87	123
1,4-Dichlorobenzene	37.2	37.12	37.28	10.83	108	89	127
1,2-Dichlorobenzene	37.95	37.87	38.03	11.09	111	83	125
SURROGATES							
a,a,a-Trifluorotoluene	20.24	20.16	20.32	10.75	108	80	120

Katahdin Analytical Services
QUALITY CONTROL REPORT
Laboratory Control Sample Results

Volatile Organics by GC Method 602/ 8020

Instrument ID: GC01

Matrix: Water

Date of Analysis: 6/15/99

Standard Amount: 10.0 ppb

File Name: 1PF1220.rst

LCS ID: 1LVOAPF15

Compound	Retention Time	Retention Time Window		Recover Amount (ug/L)	% Recovery	% Recovery Window	
		FROM	TO			FROM	TO
MTBE	12.48	12.40	12.56	10.22	102	76	124
Benzene	17.56	17.48	17.64	11.05	111	87	123
Toluene	24.68	24.60	24.76	11.05	111	88	120
Chlorobenzene	30.32	30.24	30.40	10.94	109	83	121
Ethylbenzene	31.29	31.21	31.37	11.41	114	88	118
m,p-Xylenes	31.73	31.65	31.81	22.78	114	88	118
o-Xylene	32.83	32.75	32.91	10.81	108	87	118
1,3-Dichlorobenzene	37.02	36.94	37.10	10.96	110	87	123
1,4-Dichlorobenzene	37.18	37.10	37.26	11.04	110	89	127
1,2-Dichlorobenzene	37.92	37.84	38.00	11.44	114	83	125
SURROGATES							
a,a,a-Trifluorotoluene	20.19	20.11	20.27	10.94	109	80	120

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT
Tel. (207) 874-2400
Fax (207) 775-4029

LAB (WORK ORDER) # WP 2821

PAGE: 1 OF 2

COOLER: 1 OF 2

CLIENT: EA

COC# —
SDG# —
DATE / TIME RECEIVED: 6/9/99 ~ 1655
DELIVERED BY: KATAHDIN
RECEIVED BY: BKR
LIMS ENTRY BY: BKR
LIMS REVIEW BY / PM: ADL

PROJECT: BNAS

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	✓				
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	✓				
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	✓				
4. CHAIN OF CUSTODY MATCHES SAMPLES?	✓				
5. TEMPERATURE BLANKS PRESENT?	✓			TEMP BLANK TEMP (°C)= 3.0	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE / ICE PACKS PRESENT Y or N?	✓			COOLER TEMP (°C)= NA (RECORD COOLER TEMP ONLY IF TEMP BLANK IS NOT PRESENT)	
7. VOLATILES FREE OF HEADSPACE?	✓				
8. TRIP BLANK PRESENT IN THIS COOLER	✓				
9. PROPER SAMPLE CONTAINERS AND VOLUME?	✓				
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT?	✓				
11. SAMPLES PROPERLY PRESERVED(1)?	✓				
12. CORRECTIVE ACTION REPORT FILED?		✓	N/A		

13. ANALYTICAL PROGRAMS (CIRCLE ONE) COMMERCIAL CLP HAZWRAP NFESC ACOE AFCEE OTHER (STATE OF ORIGIN):

LOG - IN NOTES(1):

(1) Use this space (and additional sheets if necessary) to document samples that are received broken or compromised, C-O-C discrepancies, radiation checks, residual chlorine check, results of pH check if required. If samples required pH adjustment, record volume and type of preservative added.

0000023

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT
Tel. (207) 874-2400
Fax (207) 775-4029

LAB (WORK ORDER) # WP2821

PAGE: 2 OF 2

COOLER: 2 OF 2

COC# —
SDG#
DATE / TIME RECEIVED: 6/9/99 ~ 1655
DELIVERED BY: KATAHDIN
RECEIVED BY: BKR
LIMS ENTRY BY: BKR
LIMS REVIEW BY / PM: AJC

CLIENT: EA

PROJECT: BNAS

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT / INTACT?	✓				
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER?	✓				
3. CHAIN OF CUSTODY SIGNED BY CLIENT?	✓				
4. CHAIN OF CUSTODY MATCHES SAMPLES?	✓				
5. TEMPERATURE BLANKS PRESENT?	✓			TEMP BLANK TEMP (°C)= 2.1	
6. SAMPLES RECEIVED AT 4°C +/- 2? ICE / ICE PACKS PRESENT (Y or N)?	✓			COOLER TEMP (°C)= NA (RECORD COOLER TEMP ONLY IF TEMP BLANK IS NOT PRESENT)	
7. VOLATILES FREE OF HEADSPACE?	✓				
8. TRIP BLANK PRESENT IN THIS COOLER		✓			
9. PROPER SAMPLE CONTAINERS AND VOLUME?	✓				
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT?	✓				
11. SAMPLES PROPERLY PRESERVED(1)?	✓				
12. CORRECTIVE ACTION REPORT FILED?		✓	N/A		

13. ANALYTICAL PROGRAMS (CIRCLE ONE) COMMERCIAL CLP HAZWRAP (NFESC) ACOE AFCEE OTHER (STATE OF ORIGIN):

LOG - IN NOTES(1):

(1) Use this space (and additional sheets if necessary) to document samples that are received broke mpromised, C-O-C discrepancies, radiation checks, residual chlorine check, res[redacted]oH ch ck if re[redacted] If samples required pH adjustment, record volume and typ of preservative add

6/9/99 ~ 1655

Katahdin
ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: EA Engineering
Contact: John Carnright
Phone #: (914) 565-8100
Fax #: ( )
Address: 3 Washington Center
City: Newburgh
State: NY
Zip Code: 12550
Purchase Order #:
Proj. Name / No.: NAS Brunswick NEX 29600.35
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Kim Shutty / Kim Shutty
Copies To:

LAB USE ONLY
WORK ORDER #: WR2821
KATAHDIN PROJECT MANAGER:
REMARKS:
SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO:
TEMP°C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOC BTEX MTBE 602 (Filt. ☐Y ☑N)	8270 4.2.11 maine (Filt. ☐Y ☑N)	8270 4.1.25 maine (Filt. ☐Y ☑N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	MWNASB023 MS/MSD	6/8/99/1529	H_2O	24	✓	✓	✓							
	MWNASBRB	6/8/99/1400	H_2O	8	✓	✓	✓							
	MWNASB09	6/9/99/1115	H_2O	8	✓	✓	✓							
	MWNASB05	6/9/99/1015	H_2O	8	✓	✓	✓							
	MWNASB04	6/9/99/0855	H_2O	8	✓	✓	✓							
	MWNASB08	6/9/99/1425	H_2O	8	✓	✓	✓							
	MWNASB06	6/9/99/1525	H_2O	8	✓	✓	✓							
	TRIP Blank	6/9/99/1545	H_2O	3	✓									
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												

COMMENTS: Temp Blank in Coolers

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Kim Shutty	6/9/99 1600	Bill Brooks	Bill Brooks	06/09/99 1655	[illegible]
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WP-2821

Project Manager: Andrea J. Colby
ORDER DATE: 06/10/99
PHONE: 914/565-81[illegible]

REPORT TO: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

DUE: 07 JUL
FAC.ID: NAS BRUNSWICK NEX

INVOICE: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

PHONE: 914/565-8100
PO: 29600.35

SAMPLED BY: K.SHUTTY DELIVERED BY: KATAHDIN DISPOSE: AFTER 10 JUL

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WP2821-2	MWNASBRB	08 JUN 1400	09 JUN	AQ
	WP2821-3	MWNASB09	09 JUN 1115		
	WP2821-4	MWNASB25	09 JUN 1015		
	WP2821-5	MWNASB24	09 JUN 0855		
	WP2821-6	MWNASB08	09 JUN 1425		
	WP2821-7	MWNASB26	09 JUN 1525		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Purgeable Aromatics+MTBE	EPA 602	6	65.00	390.00
Diesel Range Organics	MEDEP4.1.2	6	100.00	600.00
Gasoline Range Organics	MEDEP4.2.1	6	65.00	390.00
TOTALS		6	230.00	1380.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WP2821-8	TRIP BLANK	09 JUN 1545	09 JUN	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Purgeable Aromatics+MTBE	EPA 602	1	65.00	65.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WP2821-1	MWNASB023	08 JUN 1529	09 JUN	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Purgeable Aromatics+MTBE	EPA 602	1	65.00	65.00
Gasoline Range Organics	MEDEP4.2.1	1	65.00	65.00
Diesel Range Organics	MEDEP4.1.2	1	100.00	100.00
GC Matrix Spike Sample		1	230.00	230.00
GC MS Duplicate Sample		1	230.00	230.00
TOTALS		1	690.00	690.00

LABORATORY ORDER CONTINUED ON PAGE 2

0000025

ORDER NO WP-2821

Project Manager: Andrea J. Colby
ORDER DATE: 06/10/99
PHONE: 914/565-8100

REPORT TO: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

DUE: 07 JUL
FAC.ID: NAS BRUNSWICK NEX

INVOICE: JOHN CARNRIGHT
EA Engineering
3 Washington Center
Newburgh, NY 12550

PHONE: 914/565-8100
PO: 29600.35

SAMPLED BY: K.SHUTTY DELIVERED BY: KATAHDIN DISPOSE: AFTER 10 JUL

ORDER NOTE: QC-II+ DD(DBASE)
NAS BRUNSWICK NEX

FINAL PAGE

INVOICE: With Report

TOTAL ORDER AMOUNT $2,135.00
This is NOT an Invoice

AJC/BKR
06-10Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

0000026
AJC 10/10/99