MONTHLY PROGRESS REPORT
SOIL VAPOR EXTRACTION/AQUIFER AIR SPARGING
REMEDIAL SYSTEMS OPERATIONS

SITE NAME: Navy Exchange Service Station (Building 538)

SITE LOCATION: Naval Air Station, Brunswick, Maine

REPORT PERIOD: 1-31 March 1996

ACTIVITIES SUMMARY

Operations Summary—The soil vapor extraction (SVE) system has been in operation since 15 November 1993. The aquifer air sparging (AAS) system (sparge wells AAS-1 through AAS-4) was permanently activated on 18 July 1995. Sparge well AAS-5 was activated on 5 October 1995. Figure 1 provides the configuration of the treatment plant. Sometime following the 13 March 1996 monitoring visit, there was a down period due to power failure; the system was reactivated on 27 March 1996.

Soil Vapor Extraction System Performance—The five vapor extraction trenches operated simultaneously for total system flows of approximately 428, 399, and 445 cubic ft per minute (cfm) on 1, 13, and 27 March 1996, respectively. Flow rates at individual trenches ranged from 50 cfm (SVE-4) on 27 March 1996 to 127 cfm (SVE-5) on 1 March 1996. Flow rate data from the 1 March 1996 site visit (i.e., SVE-2, SVE-5, and SVE system composite) should be considered approximate due to apparent pathway obstructions in flow sensors at SVE-2 and SVE-5. Based on similarities in vacuum response observed during prior (20 February 1996) and subsequent (13 March 1996) monitoring visits, the flow rates at SVE-2 and SVE-5 were averaged based on the corresponding flow rate data. Field data collected during the site visits are provided in Attachment A.

Quantitative estimates of total volatile hydrocarbon (TVH) removal rates at individual trenches were prepared based on monitoring data collected in the field using a MicroTIP™ Model HL-2000 photoionization detector (Table 1). To quantify the daily TVH removal rate, the flow rate at each vent trench was assumed to be constant for the day.

TVH removal rates from individual trenches ranged from 0.00 lb/day (SVE-4) on 27 March 1996 to 2.22 lb/day (SVE-2) on 13 March 1996. The composite TVH removal rates on 1, 13, and 27 March were 4.58 lb/day, 10.23 lb/day, and 1.37 lb/day, respectively. The composite TVH emission rates were 4.35 lb/day, 4.54 lb/day, and 0.48 lb/day on 1, 13, and 27 March 1996, respectively. No exceedances of the State of Maine Department of Environmental Protection air discharge limit of 100 lb/day of petroleum hydrocarbons were observed.

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Soil Vapor Extraction System Performance—The five vapor extraction trenches operated simultaneously for total system flows of approximately 428, 399, and 445 cubic ft per minute (cfm) on 1, 13, and 27 March 1996, respectively. Flow rates at individual trenches ranged from 50 cfm (SVE-4) on 27 March 1996 to 127 cfm (SVE-5) on 1 March 1996. Flow rate data from the 1 March 1996 site visit (i.e., SVE-2, SVE-5, and SVE system composite) should be considered approximate due to apparent pathway obstructions in flow sensors at SVE-2 and SVE-5. Based on similarities in vacuum response observed during prior (20 February 1996) and subsequent (13 March 1996) monitoring visits, the flow rates at SVE-2 and SVE-5 were averaged based on the corresponding flow rate data. Field data collected during the site visits are provided in Attachment A.

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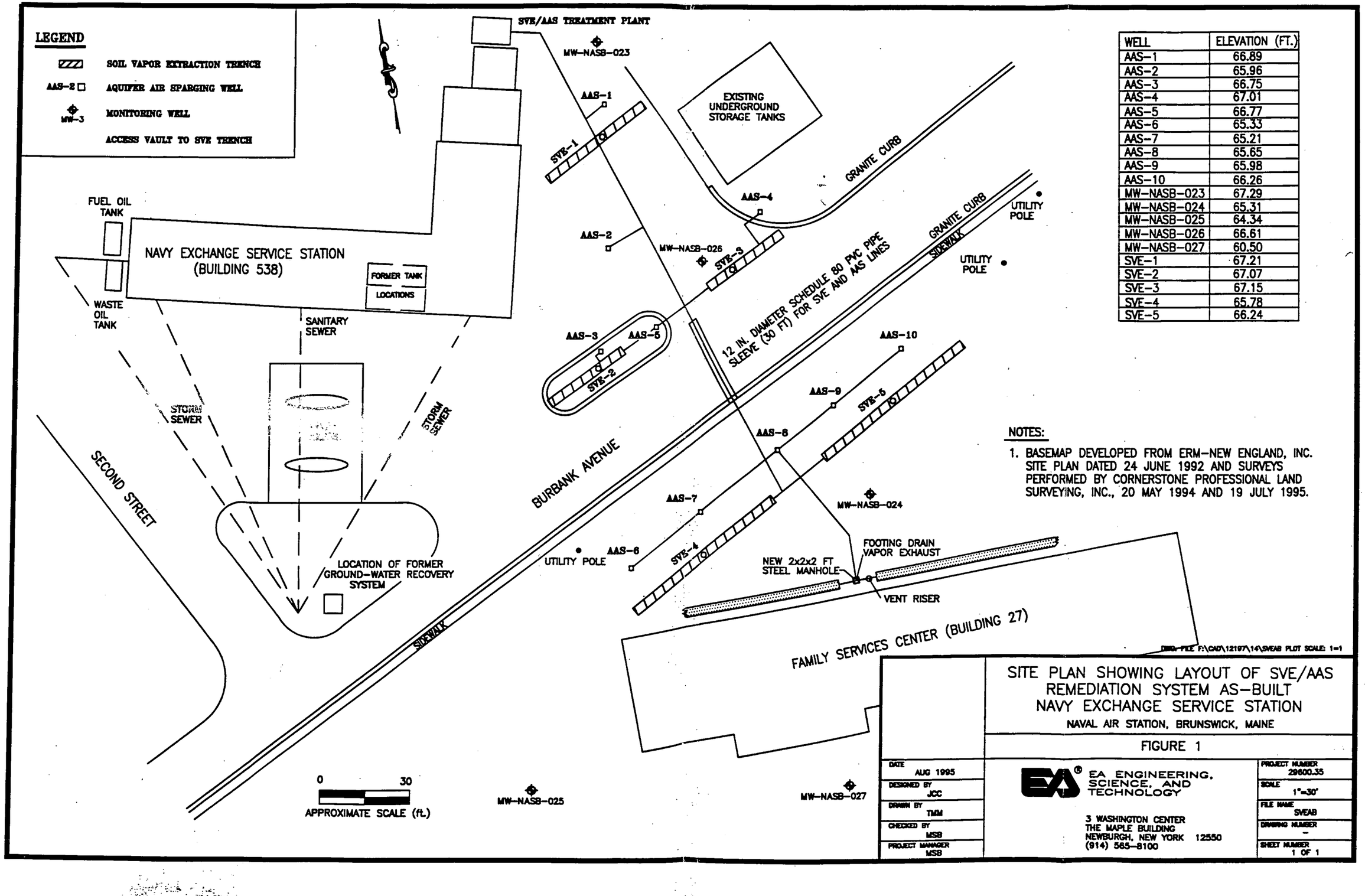
TVH removal rates from individual trenches ranged from 0.00 lb/day (SVE-4) on 27 March 1996 to 2.22 lb/day (SVE-2) on 13 March 1996. The composite TVH removal rates on 1, 13, and 27 March were 4.58 lb/day, 10.23 lb/day, and 1.37 lb/day, respectively. The composite TVH emission rates were 4.35 lb/day, 4.54 lb/day, and 0.48 lb/day on 1, 13, and 27 March 1996, respectively. No exceedances of the State of Maine Department of Environmental Protection air discharge limit of 100 lb/day of petroleum hydrocarbons were observed.

Aquifer Air Sparging System Performance—Five sparge wells (AAS-1 through AAS-5) operated simultaneously for total air sparging rates of approximately 30.0 standard cubic feet per minute (scfm) on 1 March 1996, 27.0 scfm on 13 March 1996, and 32.0 scfm on 27 March 1996. Sparge rates at individual sparge wells ranged from 3.0 scfm at AAS-1 and AAS-4 (13 March 1996) to 12.0 scfm at AAS-2 (1 and 27 March 1996). Temperature of the sparged air ranged from 113°F on 27 March 1996 to 155°F on 13 March 1996. Field data collected during the site visits are provided in Attachment A. Table 2 summarizes the AAS system operational data for March 1996.

Well Gauging and Water Quality Indicator Parameter Measurements—Gauging of monitoring wells and non-active air sparging wells confirmed the absence of measurable (≥0.01 ft) light, non-aqueous phase liquid in all of the site wells during this period (Table 3). Sparge wells AAS-1 through AAS-5 were not gauged due to active sparging at these locations. Sparge well AAS-9 was dry during the 1 and 13 March 1996 gauging periods. Monitoring well MW-NASB-026 was not gauged during the 1 March 1996 gauging visit due to inaccessibility (i.e., ice). Depth to ground water ranged from 1.79 ft (MW-NASB-027) to 8.56 ft (MW-NASB-024) during the 1 March 1996 monitoring visit. Water table elevations decreased an average of 0.62 ft at the monitoring and sparge wells gauged between the 1 and 27 March 1996 site visits, with the exception of MW-NASB-027, where the water table elevation increased 0.40 ft between the 1 and 27 March 1996 gauging events.

Table 4 provides a summary of water quality indicator parameters measured during March 1996. Water quality indicator parameters were not recorded at sparge well AAS-9 during the 1 and 13 March 1996 gauging events due to the fact that it was dry. Water quality indicator parameters, including temperature, conductivity, pH, redox, and dissolved oxygen, were measured during the 1, 13, and 27 March 1996 monitoring events using a Hydrolab Model H2O®G multi-parameter water quality meter.

Michael S. Battle, P.G., Project Manager — 17 April 1996 (Date)



WELL	ELEVATION (FT.)
AAS-1	66.89
AAS-2	65.96
AAS-3	66.75
AAS-4	67.01
AAS-5	66.77
AAS-6	65.33
AAS-7	65.21
AAS-8	65.65
AAS-9	65.98
AAS-10	66.26
MW-NASB-023	67.29
MW-NASB-024	65.31
MW-NASB-025	64.34
MW-NASB-026	66.61
MW-NASB-027	60.50
SVE-1	67.21
SVE-2	67.07
SVE-3	67.15
SVE-4	65.78
SVE-5	66.24

NOTES:

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

DWG FILE F:\CAD\12197\14\SVEAB PLOT SCALE: 1=1

SITE PLAN SHOWING LAYOUT OF SVE/AAS REMEDIATION SYSTEM AS-BUILT NAVY EXCHANGE SERVICE STATION

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 1

DATE	AUG 1995
DESIGNED BY	JCC
DRAWN BY	TMM
CHECKED BY	MSB
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
3 WASHINGTON CENTER
THE MAPLE BUILDING
NEWBURGH, NEW YORK 12550
(914) 565-8100

PROJECT NUMBER	29600.35
SCALE	1"=30'
FILE NAME	SVEAB
DRAWING NUMBER	-
SHEET NUMBER	1 OF 1

TABLE 1 SUMMARY OF SVE/AAS PERFORMANCE DATA RECORDED AT THE NAVY EXCHANGE SERVICE STATION (BUILDING 538), NAVAL AIR STATION, BRUNSWICK, MAINE MARCH 1996

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-1 INTAKE						
01 MAR 1996	SVE/AAS	24.4	20.0	17.0	75	0.64
13 MAR 1996	SVE/AAS	37.2	20.0	15.0	76	0.99
27 MAR 1996	SVE/AAS	0.4	17.0	13.0	85	0.01
SVE-2 INTAKE						
01 MAR 1996	SVE/AAS	84.2	18.0	No access	74[c]	2.18
13 MAR 1996	SVE/AAS	84.6	18.0	No access	75	2.22
27 MAR 1996	SVE/AAS	11.3	15.0	10.0	80	0.32
SVE-3 INTAKE						
01 MAR 1996	SVE/AAS	13.3	17.0	10.0	82	0.38
13 MAR 1996	SVE/AAS	14.2	18.0	17.0	68	0.34
27 MAR 1996	SVE/AAS	7.2	14.0	14.0	120	0.30
SVE-4 INTAKE						
01 MAR 1996	SVE/AAS	2.2	22.0	No data	70	0.05
13 MAR 1996	SVE/AAS	13.2	22.0	No data	70	0.32
27 MAR 1996	SVE/AAS	0.0	18.0	No data	50	0.00
SVE-5 INTAKE						
01 MAR 1996	SVE/AAS	13.7	20.0	10.0	127[c]	0.61
13 MAR 1996	SVE/AAS	8.4	20.0	8.0	110	0.32
27 MAR 1996	SVE/AAS	6.8	16.0	5.0	110	0.26
SVE COMPOSITE INTAKE						
01 MAR 1996	SVE/AAS	30.6	66.0	NA	428	4.58
13 MAR 1996	SVE/AAS	73.4	64.0	NA	399	10.23
27 MAR 1996	SVE/AAS	8.8	64.0	NA	445	1.37
SVE COMPOSITE EMISSIONS						
01 MAR 1996	SVE/AAS	29.1	NA	NA	428	4.35
13 MAR 1996	SVE/AAS	32.6	NA	NA	399	4.54
27 MAR 1996	SVE/AAS	3.1	NA	NA	445	0.48

(a) Based on measurements taken with photoionization detector (PID). PID 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), MW = Molecular weight (average) of vapor phase weathered gasoline (92.14 g/mole).

(c) Flow element obstructed; data shown represents average of 20 February and 13 March 1996 flow data based on similarities of vacuum measurements.

NOTE: cfm = Cubic feet per minute; NA = Not applicable; SVE/AAS = Soil vapor extraction/aquifer air sparging. SVE composite removal (flow) rate taken as summation of flow rates of individual SVE trench lines.

TABLE 2 SUMMARY OF AAS SYSTEM OPERATIONS DATA
NAVY EXCHANGE SERVICE STATION (BUILDING 538)
NAVAL AIR STATION, BRUNSWICK, MAINE
MARCH 1996

Monitoring Date	Sparge Air Pressure (PSI)	Sparge Air Temperature (°F)	Sparge Air Injection Rate (scfm)
Sparge Well AAS-1			
01 MAR 1996	2.0	118	4.0
13 MAR 1996	1.5	155	3.0[a]
27 MAR 1996	2.0	113	4.0
Sparge Well AAS-2			
01 MAR 1996	2.0	118	12.0
13 MAR 1996	2.0	155	10.0
27 MAR 1996	2.0	113	12.0
Sparge Well AAS-3			
01 MAR 1996	1.5	118	5.0
13 MAR 1996	1.5	155	6.0
27 MAR 1996	2.0	113	6.0
Sparge Well AAS-4			
01 MAR 1996	1.0	118	4.0
13 MAR 1996	1.0	155	3.0[a]
27 MAR 1996	1.0	113	5.0
Sparge Well AAS-5			
01 MAR 1996	1.5	118	5.0
13 MAR 1996	1.5	155	5.0
27 MAR 1996	1.5	113	5.0
Sparge System Compressor (Composite)			
01 MAR 1996	3.5	118	30.0
13 MAR 1996	1.5	155	27.0
27 MAR 1996	3.5	113	32.0

(a) Data should be considered approximate due to limited gauge response in cold weather.

NOTE: AAS = Aquifer air sparging; scfm = Standard cubic feet per minute; PSI = Pounds per square inch.
Sparge system composite air injection rate (scfm) taken as summation of air injection rates at individual sparge wells.

TABLE 3 SUMMARY OF WELL GAUGING DATA
NAVY EXCHANGE SERVICE STATION (BUILDING 538)
NAVAL AIR STATION, BRUNSWICK, MAINE
MARCH 1996

Gauging Date	Well Elevation (ft MSL)	Depth to Water (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Corrected Water Table Elevation (ft
MW-NASB-023					
01 MAR 1996	67.29	7.35	---	---	59.94
12 MAR 1996	67.29	7.46	---	---	59.83
27 MAR 1996	67.29	7.24	---	---	60.05
MW-NASB-024					
01 MAR 1996	65.31	8.56	---	---	56.75
13 MAR 1996	65.31	6.28	---	---	59.03
27 MAR 1996	65.31	5.34	---	---	59.97
MW-NASB-025					
01 MAR 1996	64.34	6.61	---	---	57.73
12 MAR 1996	64.34	6.73	---	---	57.61
27 MAR 1996	64.34	6.53	---	---	57.81
MW-NASB-026					
01 MAR 1996	66.61	No access	---	---	---
13 MAR 1996	66.61	7.20	---	---	59.41
27 MAR 1996	66.61	7.16	---	---	59.45
MW-NASB-027					
01 MAR 1996	60.50	1.79	---	---	58.71
12 MAR 1996	60.50	2.63	---	---	57.87
27 MAR 1996	60.50	2.20	---	---	58.30
Sparge Well AAS-6					
01 MAR 1996	65.33	6.94	---	---	58.39
13 MAR 1996	65.33	7.11	---	---	58.22
27 MAR 1996	65.33	6.84	---	---	58.49

NOTE: LNAPL = Light, non-aqueous phase liquid; MSL = Mean sea level.
Dashes (---) indicate LNAPL not detected in well.
Depth to water measurements recorded from marker on top of PVC well riser.
Sparge Wells AAS-1 through AAS-5 were not gauged because the AAS system was active.
Depth to water measurements in monitoring wells for the 13 March 1996 gauging event are the measurement obtained prior to purging well for sampling.

TABLE 3 (Continued)

Gauging Date	Well Elevation (ft MSL)	Depth to Water (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Corrected Water Table Elevation (ft
Sparge Well AAS-7					
01 MAR 1996	65.21	6.60	---	---	58.61
13 MAR 1996	65.21	6.81	---	---	58.40
27 MAR 1996	65.21	6.42	---	---	58.79
Sparge Well AAS-8					
01 MAR 1996	65.65	6.53	---	---	59.12
13 MAR 1996	65.65	6.78	---	---	58.87
27 MAR 1996	65.65	6.34	---	---	59.31
Sparge Well AAS-9					
01 MAR 1996	65.98	Dry	---	---	---
13 MAR 1996	65.98	Dry	---	---	---
27 MAR 1996	65.98	5.86	---	---	60.12
Sparge Well AAS-10					
01 MAR 1996	66.26	6.32	---	---	59.94
13 MAR 1996	66.26	6.61	---	---	59.65
27 MAR 1996	66.26	5.83	---	---	60.43

TABLE 4 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS
NAVY EXCHANGE SERVICE STATION (BUILDING 538)
NAVAL AIR STATION, BRUNSWICK, MAINE
MARCH 1996

Monitoring Date	pH	Temperature (°F)	Dissolved Oxygen (mg/L)	Specific Conductivity (μmhos/cm)	Redox (mV)
MW-NASB-023					
01 MAR 1996	5.10	53.9	2.72	345	399
13 MAR 1996	5.46	51.3	0.97	372	361
27 MAR 1996	5.47	52.7	3.21	407	419
MW-NASB-024					
01 MAR 1996	5.41	45.4	1.96	257	391
13 MAR 1996	6.20	44.3	0.67	248	346
27 MAR 1996	6.00	43.0	0.97	174	386
MW-NASB-025					
01 MAR 1996	5.68	47.6	1.68	238	231
13 MAR 1996	6.11	46.8	0.22	840	170
27 MAR 1996	5.98	44.5	0.70	685	384
MW-NASB-026					
01 MAR 1996	NA	NA	NA	NA	NA
13 MAR 1996	6.70	43.1	0.51	475	57
27 MAR 1996	6.21	43.1	1.27	492	364
MW-NASB-027					
01 MAR 1996	5.81	41.8	2.37	66.6	337
13 MAR 1996	6.40	43.1	0.47	71.2	214
27 MAR 1996	6.14	42.2	0.73	58.8	381

NOTE: NA = Not accessible during gauging visit due to ice or frozen well cap.

TABLE 4 (Continued)

Monitoring Date	pH	Temperature (°F)	Dissolved Oxygen (mg/L)	Specific Conductivity (μmhos/cm)	Redox (mV)
Sparge Well AAS-6					
01 MAR 1996	5.33	47.7	1.78	664	187
13 MAR 1996	5.93	46.6	0.53	642	47
27 MAR 1996	6.14	40.6	0.74	163	369
Sparge Well AAS-7					
01 MAR 1996	5.21	45.0	2.04	310	400
13 MAR 1996	5.50	45.2	0.82	675	347
27 MAR 1996	5.50	41.2	0.97	653	394
Sparge Well AAS-8					
01 MAR 1996	5.17	42.2	1.97	413	404
13 MAR 1996	6.38	43.5	0.79	561	308
27 MAR 1996	5.59	40.0	1.02	292	410
Sparge Well AAS-9					
01 MAR 1996	No data; well dry				
13 MAR 1996	No data; well dry				
27 MAR 1996	6.35	35.6	1.27	3	387
Sparge Well AAS-10					
01 MAR 1996	5.22	39.9	2.61	409	399
13 MAR 1996	7.15	49.5	0.69	424	266
27 MAR 1996	6.52	38.4	1.08	295	384

Attachment A

Supporting Data
Field Monitoring and Sampling Activities

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NAS, BRUNSWICK	Project No: 29600.BS.3523	Date: 3/1/96
EA Personnel: KI	Building Temperature: 64°F	

20°F OUTSIDE

Location	Time (hr/min)	Vacuum (in. H2O)	Flow Rate (scfm)	Air Temp. (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm-v)
SVE-1	0700	20	75				24.4
SVE-2		18	150+*				84.2
SVE-3		17	82				13.3
SVE-4		28	70				2.2
SVE-5		20	150+*				13.7
INFLUENT		—	—				30.6
EFFLUENT		—	—				29.1
KNOCK-OUT		34	—	40°F			
VAC. RELIEF		66	—				
OUTSIDE SVE-1		17					
SVE-2		FROZEN W/ ICE					
SVE-3		~~FROZEN W/ ICE~~					
SVE-4	↓	0					
SVE-5		10					

EA 5120 0794-4

* Flow element was likely obstructed, therefore, Data is not useable.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NAS BRUNSWICK	Project No: 29600.3623.35	Date: 3/13/96
EA Personnel: KI	Building Temperature: 85°F @ 13:20 62°F OUTSIDE	

Location	Time (hr/min)	Vacuum (in. H_2O)	Flow Rate (scfm)	Air Temp. (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm-v)
SVE-1	13:25	20	76				37.2
SVE-2		18	75				84.6
SVE-3		18	68				14.2
SVE-4		22	70				13.2
SVE-5		20	110				8.4
INFLUENT		—	—				73.4
EFFLUENT		—	—				32.6
KNOCK-OUT		35	—	45°F			
VAC. RELIEF		64	—				
JTSIPG SVE-1		15					
SVE-2		FROZEN SOLID					
SVE-3		17					
SVE-4		0					
SVE-5	↓	8					

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF SVE SYSTEM OPERATIONS

Project Name: NAS BRUNSWICK	Project No: 29600135	Date: 3/27/95
EA Personnel: KHF	Building Temperature: 64°F	

SYSTEM OFF UPON ARRIVAL STARTED UP @ 12:10

Location	Time (hr/min)	Vacuum (in. H_2O)	Flow Rate (scfm)	Air Temp. (°F)	O_2 (%)	CO_2 (%)	Total Volatile Hydrocarbons (ppm-v)
SVE-1	14:05	17	85				0.4
SVE-2		15	80				11.3
SVE-3		14	120				7.2
SVE-4		18	50				0
SVE-5		16	110				6.8
INFLUENT		—	—				8.8
EFFLUENT		—	—				3.1
KNOCK-OUT		32	—	45°F			
VAC-RELIEF	↓	84	—				
SVE-1	13:30	13					
SVE-2		10					
SVE-3		14					
SVE-4		0					
SVE-5	↓	5					

EA 5120 0794-4

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NAS BRUNSWICK	Project No: 2360.353623	Date: 3/1/96
EA Personnel: KT	Building Temperature: 64°F	

Location	Time (0000 hrs)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-1	0700	2	4		
AAS-2	↓	2	12		
AAS-3		1.5	5		
AAS-4		1	4		
AAS-5		1.5	5		
MAIN SVAGE	↓	3.5	—	118 °F	

EA 5120 0794-5

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NAS, BRUNSWICK	Project No: 29600.353623	Date: 3/13/96
EA Personnel: KI	Building Temperature: 86°F	

62°F OUTSIDE

Location	Time (0000 hrs)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
AAS-1	13:10	1.5	3 *		FROZEN GUAGES
AAS-2		2.0	10		
AAS-3		1.5	6		
AAS-4		1.0	3 *		FROZEN GUAGES
AAS-5		1.5	5		
MAIN GUAGE	↓	1.5	——	155 °F	

EA 5120 0794-5

* NO FLOW OF AIR COULD BE HEARD, FROZEN

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF AAS SYSTEM OPERATIONS

Project Name: NAS BRUNSWICK	Project No: 29600.35	Date: 3/27/96
EA Personnel: KHF	Building Temperature: 64°F	

0445106 34°F

Location	Time (0000 hrs)	Sparge Pressure (PSI)	Sparge Rate (scfm)	Sparge Air Temperature (°F)	Comments
* AAS-1	13:30	2	4		
* AAS-2		2	12		
* AAS-3		2	6		
* AAS-4		1	5		
* AAS-5		1.5	5		
MAIN GUAGE	↓	3.5	—	113°F	

EA 5120 0794-5

* NO FLOW COULD BE HEARD.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS BRUNSWICK	Project No: 29600.35.3623	Date: 3/1/96
Weather/Temperature/Barometric Pressure/Humidity: 20°F, PARTLY CLOUDY, WINDY		
EA Personnel: KF, BA	Equipment: INTERFACE PROBE	

Well Number	Well Elevation	Depth to Water	Depth to LNAPL	LNAPL Thickness	Corrected Water Table Elevation[a]
AAS-6		6.94	—		
AAS-7		6.60	—		
AAS-8		6.53	—		
AAS-9		DRY	—	—	—
AAS-10		6.32	—		
MW-023		7.35	—		
MW-024		8.56	—		
MW-025		6.61	—		
MW-026		FROZEN SOLID			
MW-027		1.79	—		

Notes: All measurements in feet. LNAPL = Light, non-aqueous phase liquid.
[a] Based on an assumed specific gravity of 0.80 for LNAPL.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS, BRUNSWICK	Project No: 29600.35.3623	Date: 3/13/96
Weather/Temperature/Barometric Pressure/Humidity: CLEAR, 50°F, SUNNY, BREEZE		
EA Personnel: KT	Equipment: INTERFACE PROBE	

Well Number	Well Elevation	Depth to Water	Depth to LNAPL	LNAPL Thickness	Corrected Water Table Elevation[a]
AAS-6		7.11	—		
AAS-7		6.81	—		
AAS-8		6.78	—		
AAS-9		WELL IS DRY			
AAS-10		6.61	—		
MW-023		7.43	—		
MW-024		12.56 *	—		
MW-025		6.77	—		
MW-026		9.43 *	—		
MW-027		2.66	—		
MW-023		7.46	—		
MW-024		6.28	—		
MW-025		6.73	—		
MW-026		7.20	—		
MW-027		2.63	—		
Well gauging data		collected	12-13 March	1996- prior to	Sampling

Notes: All measurements in feet. LNAPL = Light, non-aqueous phase liquid.
[a] Based on an assumed specific gravity of 0.80 for LNAPL.

EA 5120 0794-1

* WELL STILL RECOVERING FROM BEING PURGED FOR SAMPLING.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS BRUNSWICK	Project No: 29600.35	Date: 3/27/96
Weather/Temperature/Barometric Pressure/Humidity: CLEAR, WINDY, 40°F		
EA Personnel: KAF	Equipment: INTERFACE PROBE	

NO PRODUCT DETECTED.

Well Number	Well Elevation	Depth to Water	Depth to LNAPL	LNAPL Thickness	Corrected Water Table Elevation[a]
AAS-6		6.84	—		
NAS-7		6.42	—		
AAS-8		6.34	—		
AAS-9		5.86	—		
AAS-10		5.83	—		
MW-023		7.24	—		
MW-024		5.34	—		
MW-025		6.53	—		
MW-026		7.16	—		
MW-027		2.20	—		

Notes: All measurements in feet. LNAPL = Light, non-aqueous phase liquid.
[a] Based on an assumed specific gravity of 0.80 for LNAPL.

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NAS, BRUNSWICK	Project No: 20600.35.3663	Date: 3/1/96
Weather/Temperature/Barometric Pressure/Humidity: 20°F, PARTLY CLOUDY, WINDY		
EA Personnel: KI BA	Equipment: Interface Probe, Hydrolab	

Location	Time (0000 hr)	Depth To Water (ft)	pH	Temperature (°F)	Dissolved Oxygen (mg/L)	Conductivity (µhmos)	Redox (mV)	Pressure (in. H_2O)
MW-6	0700	6.94	5.33	47.7	1.78	0.664	187	
MW-7	"	6.60	5.21	45.0	2.04	0.310	400	
MW-8	"	6.53	5.17	42.2	1.97	0.413	404	
MW-9	"	DRY						
MW-10	"	6.32	5.22	39.9	2.61	0.409	399	
MW-23	"	7.35	5.10	53.9	2.72	0.345	399	
MW-24	"	8.56	5.41	45.4	1.96	0.2547	391	
MW-25	"	6.61	5.68	47.6	1.68	.238	231	
MW-26	"	FROZEN SOLID						
MW-27	"	1.79	5.81	41.8	2.37	.0666	337	

EA 5120 0794-7

Figure 6-1. Field record of water quality parameter analysis.

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NAS BRUNSWICK	Project No: 29600.353623	Date: 3/13/96
Weather/Temperature/Barometric Pressure/Humidity: CLEAR, 50°F, BREEZE		
EA Personnel: KT	Equipment: ~~INTERFACE PROBE~~, HYDROLAB, WATER QUALITY PROBE	

Location	Time (0000 hr)	Depth To Water (ft)	pH	Temperature (°F)	Dissolved Oxygen (mg/L)	mS/cm Conductivity (~~mhos~~)	Redox (mV)	Pressure (in. H_2O)
~~AAS~~-6	12:15	7.11	5.93	46.6	0.53	0.642	47	
AAS-7		6.81	5.50	45.2	0.82	0.675	347	
AAS-8		6.78	6.38	43.5	0.79	0.561	308	
AAS-9		— WELL IS DRY —						
AAS-10		6.61	7.15	49.5	~~7.37~~ 0.69	0.424	266	
MW-023		7.43	5.46	51.3	0.97	0.372	361	
MW-024		12.56*	6.20	44.3	0.67	0.248	346	
MW-025		6.77	6.11	46.8	0.22	0.840	170	
MW-026		9.43*	6.70	43.1	0.51	0.475	57	
MW-027	↓	2.66	6.40	43.1	0.47	0.0712	214	

EA 5120 0794-7

* WELL STILL RECOVERING FROM BEING PURGED FOR SAMPLING.

Figure 6-1. Field record of water quality parameter analysis.

EA Engineering, Science, and Technology

FIELD RECORD OF WATER QUALITY PARAMETER ANALYSIS

Project Name: NAS, BRUNSWICK	Project No: 22600.35	Date: 3/27/96
Weather/Temperature/Barometric Pressure/Humidity: CLEAR, WINDY, 40°F		
EA Personnel: KHI	Equipment: HYDROLAB, INTERFACE PROBE	

Location	Time (0000 hr)	Depth To Water (ft)	pH	Temperature (°F)	Dissolved Oxygen (mg/L)	mS/cm Conductivity (~~µmhos~~)	Redox (mV)	Pressure (in. H_2O)
~~AAS~~-6	12:15	6.84	6.14	40.6	0.74	0.163	369	
AAS-7		6.42	5.50	41.2	0.97	0.653	394	
AAS-8		6.34	5.59	40.6	1.02	0.292	410	
AAS-9		5.86	6.35	35.6	1.27	0.003	387	
AAS-10		5.83	6.52	38.4	1.08	0.295	384	
MW-023		7.24	5.47	52.7	3.21	0.407	419	
MW-024		5.34	6.00	43.0	0.97	0.174	386	
MW-025		6.53	5.98	44.5	0.70	0.685	384	
MW-026		7.16	6.21	43.1	1.27	0.492	364	
MW-027	↓	2.20	6.14	42.2	0.73	0.0588	381	

EA 5120 0794-7

Figure 6-1. Field record of water quality parameter analysis.