

**MONTHLY PROGRESS REPORT #10  
FOR JANUARY 1998**

**EPA REGION I ADMINISTRATIVE ORDER SDWA I-97-1019  
MASSACHUSETTS MILITARY RESERVATION  
TRAINING RANGE AND IMPACT AREA**

The following summary of progress is for the period from January 1 to January 31, 1998. Scheduled actions are for the six-week period ending March 14, 1998.

**1. SUMMARY OF ACTIONS TAKEN**

UXO Survey

No UXO surveys were performed during the reporting period.

Plans and Reports

NGB completed final versions of the Area 5 FSP and the Surface Water/Sediment FSP during January. NGB, EPA, and MADEP resolved final comments on the Draft Gun and Mortar Positions FSP and the Draft Storm Water FSP during the month. These areas and the status of plans are summarized in Table 1.

Drilling

Ogden and D.L. Maher (the drilling contractor) continued work on the site in January. TRC (EPA's oversight contractor) and the US Geological Survey were present for observation of drilling activities during the month. Two intermediate depth wells were installed at MW-2, screened at 170-175 feet below ground surface (bgs) and 212-217 feet bgs based on groundwater profiling data for the deep boring at MW-2. A water table well was installed at MW-26, screened at 129-139 feet bgs. Two intermediate depth wells were installed at MW-5, screened at 170-175 feet bgs and 210-215 feet bgs based on groundwater profiling data for the deep boring at MW-5. Table 2 presents a summary of monitoring wells completed to date. Draft boring logs for these wells have been distributed to EPA, MADEP, USGS, and TRC during the weekly project review meetings.

Sampling

Soil sampling was performed on 10-foot intervals at borings for MW-3 and MW-26; at 18-24 inches bgs at these and several other soil borings; at 0-6 inches bgs at Areas 1, 4, 5, 12, 13, 16, 17, 18, and 20; and at 18-24 inches bgs at Areas 4 and 6. Surface water and sediment samples

were collected from Areas 8, 23, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, and 43. Groundwater samples were collected from background monitoring wells and from MW-1M1, MW-2M1, MW-2M2, MW-7M1, MW-13S, MW-13D, and MW-18M1.

### Analytical Results

Electronic Data Deliverables (EDDs) were received from ITS (the laboratory contractor) for Sample Delivery Groups (SDGs) 20-31 in January. Hardcopy data deliverables were received from ITS for SDGs 31-38 during the month. Results for SDGs 39-50 were being prepared as of the end of January.

### Validation

Ogden continued validation of hardcopy deliverables during January. All data contained in SDGs 1-17 and 28-30 had been validated by the end of the month, and portions of the data for SDGs 18-27 and 31-34 had been validated.

### Water Level Measurements

The next round of synoptic water level measurements around the Impact Area is scheduled for March 31, 1998.

### Meetings

A January 28 meeting of the Impact Area Groundwater Study Review Team was convened by EPA to discuss progress on the project. Weekly project review meetings continued during the month with EPA, MADEP, USGS, TRC, and JPO.

## **2. SUMMARY OF DATA RECEIVED**

The final electronic database currently contains validated data for all analytes for approximately 61 surface soil samples, 150 soil boring samples, 153 groundwater profiling samples, and 7 groundwater monitoring well samples. Additional groundwater monitoring well samples have been validated for explosives only, as presented in technical meetings and discussions with EPA and MADEP. A relatively greater percentage of soil samples have been validated compared to monitoring well samples, because the former were collected earlier in the project.

The validated results are presented in an attachment to this monthly report. Statistical summaries of these results are being prepared for inclusion in the Interim Results Report, which will summarize findings through the first six months of the project. The attached results include field samples (sample numbers end in "A", or "D" for Duplicate) as well as quality control samples

(ending in “E” for Equipment blank, “F” for Field blank, or “T” for Trip blank). The attachment includes a list of qualifier codes to explain the validation results.

**3. DELIVERABLES SUBMITTED**

Deliverables submitted during the reporting period included the following:

Monthly Progress Report for December 1997	January 9, 1998
Weekly Progress Update (December 31 - January 8)	January 9, 1998
Replacement Pages for Final Background FSP	January 9, 1998
Weekly Progress Update (January 9 - January 15)	January 16, 1998
Final Field Sampling Plan for Area 5	January 20, 1998
Weekly Progress Update (January 16 - January 22)	January 23, 1998
Final Field Sampling Plan for Surface Water and Sediment	January 28, 1998
Weekly Progress Update (January 23 - January 29)	January 30, 1998

**4. SCHEDULED ACTIONS**

Actions for the next six weeks are indicated in Figure 1. This figure provides a Gantt chart based on the Final Action Plan, updated to reflect progress and proposed work.

Field Sampling Plans will continue to be finalized during February. Drilling, monitoring well sampling, and sampling surface water and sediment will be completed in February. Soil sampling, storm water sampling, and sample analysis will continue from February into March.

A meeting of the Impact Area Groundwater Study Review Team will be convened on March 2, 1998.

<b>Table 1                      Summary of Sampling Areas and Field Sampling Plan Status                      As of January 31, 1998</b>				
Area <sup>a</sup>	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
1	3 (S/I/D)	Area of Depression w/ Ground Scar	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 10/17 final 10/28
2	2 (S/I/D), 26 (S)	Site 3/Target Area/Burn Area	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 8/1 final 10/28

<b>Table 1                      Summary of Sampling Areas and Field Sampling Plan Status                      As of January 31, 1998</b>				
Area <sup>a</sup>	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
3	1 (S/I/D)	Site 1 Target Area	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 8/1 final 10/28
4	27 (S)	Site 4 Mounds	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 10/6 final 10/28
5		Site 5	hand auger (soil)	final 1/20
6	7 (S/I/D)	Burn Area (southeast of Turpentine)	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 9/26 final 10/28
7	8(S)	Burn Areas (southwest of Turpentine)	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 9/26 final 10/28
8		Succonsette Pond	sediment/surface water hand auger (soil)	final 1/28 final 9/26
9	4 (S)	(well on Pocasset Road north of Five Corners)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18 final 9/26 final 10/28
10	5 (S/I/D)	(well north of Wood Road)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18 final 9/26 final 10/28
11	25 (S)	(well southeast of CS-19)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18 final 9/26 final 10/28
	6 (S)	(well north of Area 5)	barber rig (soil) groundwater	final 7/18 final 10/28
12	19 (S/D)	Demo Area 1	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 11/25 final 10/28
13	16 (S/D)	Demo Area 2	barber rig (soil) hand auger (soil) groundwater	final 7/18 final 11/25 final 10/28
14		(access road to MW-7)	hand auger (soil: control area)	final 9/26

<b>Table 1                      Summary of Sampling Areas and Field Sampling Plan Status                      As of January 31, 1998</b>				
Area <sup>a</sup>	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
	9 (S)	none (well southwest of CS-19)	barber rig (soil) groundwater	final 7/18 final 10/28
	10 (S/I/D)	none (well on west Jefferson Road)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	11 (S)	none (well midway along Jefferson)	barber rig (soil) groundwater	final 7/18 final 10/28
	12 (S)	none (well on Barlow south of Wood)	barber rig (soil) groundwater	final 7/18 final 10/28
	13 (S/D)	none (well near J-3 range south of Chadwick)	barber rig (soil) groundwater	final 7/18 final 10/28
	14 (S)	none (well at the corner of Wheelock and Turpentine)	barber rig (soil) groundwater	final 7/18 final 10/28
	15 (S/D)	none (well at the corner of Spruce Swamp and Sandwich)	barber rig (soil) groundwater	final 7/18 final 10/28
<b>15</b>		Site 6	hand auger (soil)	final 10/30
	28 (S)	none (well at corner of Wheelock and Chadwick)	barber rig (soil) groundwater	final 7/18 final 10/28
	29 (S)	none (well at the corner of Barlow and Chadwick)	barber rig (soil) groundwater	final 7/18 final 10/28
	17 (S/D)	none (well southeast of Demo-2)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	18 (S/I/D)	none (well on east end of Gibbs)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	20 (S)	none (well on west end of Pocasset Forestdale)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	21 (S/D)	none (well on south end of Burgoyne)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	22 (S)	none (well midway on Burgoyne)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
	23 (S/I/D)	none (well north end of Burgoyne)	rotosonic rig (soil) groundwater	final 7/18 final 10/28

<b>Table 1                      Summary of Sampling Areas and Field Sampling Plan Status                      As of January 31, 1998</b>				
Area <sup>a</sup>	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
	24 (S)	none (well near Rod & Gun Club)	rotosonic rig (soil) groundwater	final 7/18 final 10/28
16		GP-16 (High-use gun position)	hand auger (soil)	draft 9/19
17		GP-7 (Mixed-use gun position)	hand auger (soil)	draft 9/19
18		GP-18 (Low-use gun position)	hand auger (soil)	draft 9/19
19		MP-8 (High-use mortar position)	hand auger (soil)	draft 9/19
20		MP-3, -6 (Mixed-use mortar positions)	hand auger (soil)	draft 9/19
21		MP-5 (Low-use mortar position)	hand auger (soil)	draft 9/19
22		Control area near mortar positions	hand auger (soil: control)	draft 9/19
23		J-3 Wetland Area (Drainage swale)	hand auger (soil)	final 1/28
24		Drainage swale (NW of Snake P.d.)	hand auger (soil)	see Area 37
25		Rod & Gun Club pond	sediment/surface water	final 1/28
26		Deep Bottom Pond	sediment/surface water	final 1/28
27		Round Swamp	sediment/surface water	final 1/28
28		Grassy Pond	sediment/surface water	final 1/28
29		Ox Pond	sediment/surface water	final 1/28
30		Donnelly Pond	sediment/surface water	final 1/28
31		Little Halfway Pond	sediment/surface water	final 1/28
32		Raccoon Swamp	sediment/surface water (control)	final 1/28
33		Snake Pond	sediment/surface water	final 1/28
34		Bailey's Pond	sediment/surface water	final 1/28
35		Gibbs Pond	sediment/surface water	final 1/28
36		Opening Pond	sediment/surface water	final 1/28
37		Bypass Bog	sediment/surface water	final 1/28

<b>Table 1</b> <b>Summary of Sampling Areas and Field Sampling Plan Status</b> <b>As of January 31, 1998</b>				
Area <sup>a</sup>	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
38		Control area near gun positions	hand auger (soil: control)	draft 9/19
39		Great Pond	sediment/sur face water (control)	final 1/28
40		Doughnut Pond	sediment/sur face water (control)	final 1/28
41		Shawme-Crowell State Forest	hand auger (soil: control)	final 1/9
42		Four Ponds Conservation Area	hand auger (soil: control)	final 1/9
43		Upper Pond	sediment/sur face water (control)	final 1/28

Notes: (a) Boring sampling locations do not have unique area numbers

<b>Table 2</b> <b>Summary of Monitoring Wells Completed</b> <b>As of January 31, 1998</b>			
Monitoring Well	Screen Interval (feet bgs)	Location	Date Completed
MW-14S	96.0-106.0	Water Table	7/28
MW-23S	122.5-132.5	Water Table	7/29
MW-23D	272.0-282.0	Bottom of Aquifer <sup>1</sup>	7/29
MW-28S	95.2-105.2	Water Table	7/30
MW-29S	98.5-108.5	Water Table	8/1
MW-12S	96.7-106.7	Water Table	8/7
MW-10S	145.0-155.0	Water Table	8/11
MW-10D	351.5-361.5	Bottom of Aquifer <sup>2</sup>	8/11
MW-11S	122.0-132.0	Water Table	8/12
MW-4S	137.0-147.0	Water Table	8/18
MW-7S	103.0-113.0	Water Table	8/27

<b>Table 2</b> <b>Summary of Monitoring Wells Completed</b> <b>As of January 31, 1998</b>			
Monitoring Well	Screen Interval (feet bgs)	Location	Date Completed
MW-7D	332.0-342.0	Bottom of Aquifer <sup>1</sup>	8/27
MW-17S	120.0-130.0	Water Table	8/27
MW-17D	320.0-330.0	Bottom of Aquifer <sup>1</sup>	8/27
MW-18S	35.0-45.0	Water Table	9/9
MW-18D	265.0-275.0	Bottom of Aquifer <sup>1</sup>	9/9
MW-1D	290.0-300.0	Bottom of Aquifer <sup>1</sup>	9/15
MW-1M	160.0-165.0	45 feet Below Water Table	9/18
MW-1S	114.0-124.0	Water Table	9/18
MW-15S	105.0-115.0	Water Table	9/18
MW-15D	324.0-334.0	Bottom of Aquifer <sup>1</sup>	9/18
MW-21S	164.0-174.0	Water Table	9/22
MW-21D	302.0-312.0	Bottom of Aquifer <sup>1</sup>	9/22
MW-25S	108.0-118.0	Water Table	9/23
MW-22S	170.5-180.5	Water Table	9/24
MW-6S	106.0-116.0	Water Table	9/25
MW-9S	113.0-123.0	Water Table	9/25
MW-20S	92.0-102.0	Water Table	9/25
MW-23M1	225.0-235.0	100 feet Below Water Table	10/1
MW-23M2	189.0-194.0	70 feet Below Water Table	10/1
MW-23M3	156.0-161.0	30 feet Below Water Table	10/2
MW-8S	103.0-113.0	Water Table	10/2
MW-27S	117.0-127.0	Water Table	10/7



<b>Table 2                      Summary of Monitoring Wells Completed                      As of January 31, 1998</b>			
Monitoring Well	Screen Interval (feet bgs)	Location	Date Completed
MW-16S	123.0-135.0	Water Table	10/15
MW-16D	355.0-360.0	Bottom of Aquifer <sup>1</sup>	10/15
MW-10M	280.0-285.0	130 feet Below Water Table	10/16
MW-24S	6.0-16.0	Water Table	10/16
MW-2S	137.0-147.0	Water Table	10/28
MW-2D	355.0-360.0	Bottom of Aquifer <sup>1</sup>	10/28
MW-30S	26.0-36.0	Water Table	10/28
MW-13S	73.0-83.0	Water Table	11/4
MW-13D	220.0-225.0	Bottom of Aquifer <sup>1</sup>	11/4
MW-5S	119.0-129.0	Water Table	11/18
MW-5D	335.0-340.0	Bottom of Aquifer <sup>1</sup>	11/18
MW-7M1	240.0-245.0	135 feet Below Water Table	11/18
MW-7M2	170.0-175.0	65 feet Below Water Table	11/18
MW-18M1	171.0-176.0	128 feet Below Water Table	11/20
MW-18M2	107.0-112.0	64 feet Below Water Table	11/20
MW-1M1	220.0-225.0	104 feet Below Water Table	12/19
MW-2M1	212.0-217.0	73 feet Below Water Table	1/9
MW-2M2	170.0-175.0	31 feet Below Water Table	1/9
MW-26	129.0-139.0	Water Table	1/16
MW-5M1	210.0-215.0	89 feet Below Water Table	1/28
MW-5M2	170.0-175.0	49 feet Below Water Table	1/28

<b>Table 2</b> <b>Summary of Monitoring Wells Completed</b> <b>As of January 31, 1998</b>			
Monitoring Well	Screen Interval (feet bgs)	Location	Date Completed
1 =Well constructed on top of till layer overlying bedrock. 2 =Well constructed on top of bedrock.			