

**WEEKLY PROGRESS UPDATE
FOR JULY 18-24, 1997**

**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 July 18 to July 24, 1997.

1. SUMMARY OF ACTIONS TAKEN

UXO Survey

Ogden and CMS Environmental (the UXO contractor) continued UXO Survey work on the site during the week of July 14. A safety separation distance of 1200 feet is being used between CMS personnel engaged in UXO investigation/removal and other personnel in the Impact Area. The following areas have been cleared by UXO removal to date:

- Wheelock Road, from the entrance to the Impact Area east to Chadwick Road.
- A drilling decontamination pad at the corner of Wheelock and Turpentine.
- Turpentine Road, from Wheelock Road to Area 3 ("Site 1 Target Area")
- Drilling location for MW-1 with a vehicle turnaround at Area 3.
- Chadwick Road, from Wheelock Road north to Barlow Road.
- the east end of Tank Alley, from Chadwick to Area 4 ("Mounds").
- Barlow Road, from Chadwick Road north to Wood Road.
- Wood Road, from Barlow Road west to Area 1 ("Valley").
- Spruce Swamp Road, from Wheelock Road to Pocasset-Sandwich Road.
- Pocasset-Sandwich Road, from Spruce Swamp Road north to Five Corners.
- Knot Hollow Road, from Five Corners north to Jefferson Road.
- portions of Jefferson Road, east and west from Knot Hollow Road.
- Gravel staging area at Five Corners.
- Turpentine Road, from Five Corners south to Area 2 ("Site 3/Target Area").

Surface clearance activities have also been completed at thirteen drilling locations in the Impact Area, including MW-4, MW-5, MW-6, MW-7, MW-9, MW-11, MW-12, MW-14, MW-15, MW-25, MW-26, MW-27, MW-28, and MW-29. Downhole UXO clearance has been completed at MW-4, MW-7, MW-11, MW-12, MW-14, MW-28, and MW-29, by advancing 10-foot deep boreholes at each drilling location. UXO recovered during clearance activities are summarized in Table 1. In addition, the following areas were flagged for UXO avoidance without clearing (prior to June 25):

- Drilling location for MW-3 at Area 1.
- Access road from Wood Road to MW-3 drilling location.
- Area 8 (Succonsette Pond).
- Access path from Spruce Swamp Road to Area 8.
- Tank Alley from Turpentine Road to near Area 4 ("Mounds")
- Part of Demo Area 1

Some flags have been removed or have fallen over around Succonsette Pond. Many fresh deer tracks are visible around the pond. Portions of this area may have to be reflagged or cleared prior to sampling.

The following areas have been closed to drilling or road building equipment due to the presence of UXO in roadways or at the edge of a cleared area:

Spruce Swamp Road from Wheelock to Sandwich Road
Pocasset-Sandwich Road from Spruce Swamp Road to Five Corners
Drilling locations MW-1, MW-6, and MW-27

Demolition of UXO hampering access to these areas was scheduled for Friday, July 18, but could not be conducted due to dry weather conditions posing a fire hazard. Demolition has been rescheduled for Friday, July 25.

Drilling

Ogden, D.L. Maher (the drilling subcontractor), and Valeri Construction (Maher's road building subcontractor) continued drilling and road building work on the site. TRC (EPA's oversight contractor) and US Geological Survey were present for oversight of drilling activities. The decontamination pad was completed. A Barber drill rig set up on MW-14 to drill the shallow boring at this location, because MW-1 was not accessible due to the presence of UXO. Drilling at MW-14 had reached the water table near 100 feet by July 23, and this shallow well was under construction as of July 24. A Rotasonic drill rig set up on MW-23 to drill the deep boring at this location. The boring had reached 270 feet as of July 24.

Sampling and Analysis

MW-14:

Soil sampling at MW-14 began on July 21. Sampling was initiated at 10 feet with the Barber rig. The sample at 10 feet was submitted for analysis of explosives (1 day turnaround time, or TAT), inorganics (14 day TAT), and "other" analytes (28 day TAT) including VOC, SVOC, pesticide/PCB, herbicide, EDB, and MTBE. The sample at 20 feet was submitted for analysis of explosives and inorganics. The deeper samples were submitted for analysis of inorganics, with explosives analysis on hold pending results of the upper two samples. No FID hits were obtained that would require submittal of samples for analysis of "other" analytes. Shallow soil samples will be collected at MW-14 using a hand auger next week.

The laboratory inadvertently analyzed all soil samples from MW-14 for explosives, even though the lower intervals were marked as on hold. No explosive compounds were detected. Analysis of inorganics and "other" analytes is continuing.

MW-23:

Soil sampling at MW-23 began on July 21. Sampling was initiated at 0 feet with the rotasonic rig. FID hits were recorded at 40 and 70 feet, and soil samples from these depths were submitted for

analysis of "other" analytes (28 day TAT) including VOC, SVOC, pesticide/PCB, herbicide, EDB, and MTBE. No other FID hits were observed in the unsaturated zone. The water table was encountered near 120 feet, and groundwater sampling at 10-foot intervals was initiated. Groundwater samples were submitted for analysis of explosives (1 day TAT) and VOCs (5 day TAT if an FID hit was obtained for saturated soil, otherwise 28 day TAT). FID hits were recorded at 225, 250, and 260 feet in saturated soil.

Laboratory analyses for explosives are complete for the first eight groundwater samples (120-200 feet). No explosive compounds were detected. Analyses for explosives in deeper samples and for VOCs in all samples are continuing.

Plans and Reports

NGB submitted Final Field Sampling Plans for Barber Rig and Rotosonic Rig drilling investigations on July 18, 1997. NGB is preparing Field Sampling Plans for the remaining areas identified in the Action Plan. These areas and the status of plans are summarized in Table 2.

2. SUMMARY OF DATA RECEIVED

Daily reports of UXO survey results were received by Ogden during the week and are summarized in section 1 above. Table 1 provides a summary of potential UXO discovered to date.

Laboratory results for soil and groundwater samples were received during the week and are summarized in Section 1 above. These data will be presented in tabular form after the results for all samples in a sample data group are available and have been validated.

3. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period included the following:

Weekly Progress Update (July 11-17)	July 18, 1997
Final Field Sampling Plan for Rotosonic Drilling Investigation	July 18, 1997
Final Field Sampling Plan for Barber Rig Drilling Investigation	July 18, 1997
QA/QC Plan Addendum with Laboratory SOPs/MDLs	July 24, 1997

4. SCHEDULED ACTIONS

EOD is scheduled to demolish UXO on Spruce Swamp Road, Pocasset-Sandwich Road, and drilling locations MW-1, MW-6, and MW-27 on July 25, 1997 in order to allow access for road building and drilling equipment. UXO Surveys will continue with UXO removal from drilling locations, and removal or flagging at soil sampling locations. Road building will continue in areas requiring drill rig access.

After completing construction of the shallow well at MW-14, the first Barber drill rig will set up for drilling the deep boring at MW-7. The sonic drill rig will continue drilling at MW-23. A second Barber drill rig will mobilize to the site and set up for drilling the shallow boring at MW-28.

**Table 1
Potential Explosive Ordnance Discovery
Through July 24, 1997**

Location	Object Found	Depth (inches)	Disposition
Succonsette Pond, Area 8	2.36" rocket HEAT	surface	left in place
Turpentine Road	81mm mortar HE	4	relocated
	60mm mortar HE	6	relocated
	60mm mortar HE	5	relocated
	81mm mortar HE	18	relocated
MW-1 (Area 3)	105mm projectile HE	12	relocated
	105mm projectile HE	14	relocated
Spruce Swamp Road	2" HE mortar	0.5	relocated
	2" HE mortar	1.5	relocated
	2" HE mortar	2	relocated
	2" HE mortar	8	left in place
Sandwich Road	105mm projectile WP	6	left in place
MW-26 (Area 2, east side)	105mm projectile HE		relocated
	155mm projectile HE		relocated
Demo Area 1 (surface only; no intrusive clearance to date)	30mm projectile HE	surface	left in place
	30mm projectile HE	surface	left in place
	30mm projectile HE	surface	left in place
	3.5" rocket HEAT	surface	left in place
MW-27	105mm projectile HEAT	20	left in place
	105mm projectile HEAT	3	left in place
	105mm projectile HEAT	surface	left in place
MW-6	105mm projectile HEAT	6	left in place
	105mm projectile HEAT	3	left in place
	105mm projectile HE	4	relocated
	81mm mortar HE	8	relocated
	105mm projectile HEAT	3	left in place
	105mm projectile HEAT	surface	left in place
	60mm mortar HE	24	relocated
	60mm mortar HE	24	relocated
MW-29	60mm mortar HE		relocated

Table 2
Summary of Sampling Areas and Field Sampling Plan Status
As of July 24, 1997

Area^a	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
2	2 (S/I/D), 26 (S)	Site 3/Target Area/Burn Area	barber rig (soil) hand auger (soil) groundwater	final 7/18 draft 7/10
3	1(S/I/D)	Site 1 Target Area	barber rig (soil) hand auger (soil) groundwater	final 7/18 draft 7/10
4	27 (S)	Site 4 Mounds	barber rig (soil) hand auger (soil) groundwater	final 7/18
5		Site 5	hand auger (soil)	
6	7 (S/I/D)	Burn Area (southeast of Turpentine)	barber rig (soil) hand auger (soil) groundwater	final 7/18
7	8(S)	Burn Areas (southwest of Turpentine)	barber rig (soil) hand auger (soil) groundwater	final 7/18
8		Suconsette Pond	sediment/surface water	
9	4 (S)	(well on Pocasset Road north of Five Corners)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18
10	5 (S/I/D)	(well north of Wood Road)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18
11	25 (S)	(well southeast of CS-19)	barber rig (soil) hand auger (soil: control area) groundwater	final 7/18
	6 (S)	(well north of Area 5)	barber rig (soil) groundwater	final 7/18
12	19 (S/D)	Demo Area 1	barber rig (soil) hand auger (soil) groundwater	final 7/18

Table 2
Summary of Sampling Areas and Field Sampling Plan Status
As of July 24, 1997

Area^a	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
13	16 (S/D)	Demo Area 2	barber rig (soil) hand auger (soil) groundwater	final 7/18
14		(access road to MW-7)	hand auger (soil: control area)	
	9 (S/I/D)	none (well southwest of CS-19)	barber rig (soil) groundwater	final 7/18
	10 (S)	none (well on west Jefferson Road)	rotosonic rig (soil) groundwater	final 7/18
	11 (S)	none (well midway along Jefferson)	barber rig (soil) groundwater	final 7/18
	12 (S)	none (well on Barlow south of Wood)	barber rig (soil) groundwater	final 7/18
	13 (S/D)	none (well near J-3 range south of Chadwick)	barber rig (soil) groundwater	final 7/18
	14 (S)	none (well at the corner of Wheelock and Turpentine)	barber rig (soil) groundwater	final 7/18
	15 (S/D)	none (well at the corner of Spruce Swamp and Sandwich)	barber rig (soil) groundwater	final 7/18
15		Site 6	hand auger (soil)	
	28 (S)	none (well at corner of Wheelock and Chadwick)	barber rig (soil) groundwater	final 7/18
	29 (S)	none (well at the corner of Barlow and Chadwick)	barber rig (soil) groundwater	final 7/18
	17 (S/D)	none (well southeast of Demo-2)	rotosonic rig (soil) groundwater	final 7/18
	18 (S/I/D)	none (well on east end of Gibbs)	rotosonic rig (soil) groundwater	final 7/18
	20 (S)	none (well on west end of Pocasset Forestdale)	rotosonic rig (soil) groundwater	final 7/18
	21 (S/D)	none (well on south end of Burgoyne)	rotosonic rig (soil) groundwater	final 7/18
	22 (S)	none (well midway on Burgoyne)	rotosonic rig (soil) groundwater	final 7/18

Table 2
Summary of Sampling Areas and Field Sampling Plan Status
As of July 24, 1997

Area ^a	Well No. (depth)	Location name/Description in Action Plan	Sample methods/media	FSP status
	23 (S/I/D)	none (well north end of Burgoyne)	rotosonic rig (soil) groundwater	final 7/18
	24 (S)	none (well near Rod & Gun Club)	rotosonic rig (soil) groundwater	final 7/18
16		GP-9 (High-use gun position)	hand auger (soil)	
17		Mixed-use gun position	hand auger (soil)	
18		Low-use gun position	hand auger (soil)	
19		High-use mortar position	hand auger (soil)	
20		Mixed-use mortar position	hand auger (soil)	
21		Low-use mortar position	hand auger (soil)	
22		Control area near mortar positions	hand auger (soil: control)	
23		Drainage swale (N of Snake Pd.)	hand auger (soil)	
24		Drainage swale (NW of Snake Pd.)	hand auger (soil)	
25		Rod & Gun Club pond	sediment/surface water	
26		Deep Bottom Pond	sediment/surface water	
27		Round Swamp	sediment/surface water	
28		Grassy Pond	sediment/surface water	
29		Ox Pond	sediment/surface water	
30		Donnelly Pond	sediment/surface water	
31		Little Halfway Pond	sediment/surface water	
32		Raccoon Swamp	sediment/surface water (control)	
33		Donnelly Pond	sediment/surface water	
34		Bailey's Pond	sediment/surface water	
35		Gibbs Pond	sediment/surface water	
36		Opening Pond	sediment/surface water	
37		Bypass Bog	sediment/surface water	
38		Control area near gun positions	hand auger (soil: control)	

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

