MONTHLY PROGRESS REPORT #27
FOR JUNE 1999

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 May 31 to June 25, 1999. Scheduled actions are for the six-week period ending August 13, 1999.

1. SUMMARY OF ACTIONS TAKEN

Monitoring well MW-73 was installed in soil boring B-9 in Demo Area 1, downgradient of MW-19. MW-73 is screened at 0-10 feet below water table (38.5-48.5 ft below ground surface).

Soil and groundwater samples collected during the month are summarized in Table 1. Subsurface soil samples were collected from the Demo Area 1 soil borings. Groundwater samples were collected from the three IRP wells that had obstructions by using a small diameter pump and from two other IRP wells and one Guard well. This concludes the first round of sampling for the Supplemental IRP wells and the second round of sampling for the "Phase I" wells. Groundwater samples were collected from three wells located at the PAVE PAWS station, including one monitoring and two water supply wells. Profile samples were collected from three IRP drive point borings (DP-4, DP-8, and DP-9) in the Raccoon Lane Investigation.

The Guard, EPA, and MADEP had a meeting on June 3 to discuss technical issues, including the following:

- Ogden provided a handout summarizing results of an internal QA/QC audit of field activities in early April 1999.
- Ogden provided a handout for the Revised Draft Response Plan for Demo Area 1. This version of the plan includes additional soil sampling to evaluate the extent of surface soil contamination, and site reconnaissance to look for evidence of bulk explosive wastes. EPA indicated it hoped to have comments on the plan by 6/8. The Guard/Ogden will attempt to arrange the initial reconnaissance of Demo Area 1 for the week of June 14th. Ogden will provide draft specifications for the drilling technology demonstration to the technical team for review. Portions of this demonstration may also be scheduled for the week of June 14th, depending on the drillers' schedules. Remobilization to collect deeper soil samples at Demo Area 1 is still scheduled for 6/7.
- The validation report for the RDX detection at MW-38M3 was provided. EPA asked for an update on the status of other samples from MW-38 and -39. The latest cumulative summary of results was provided by email on 6/4/99. MW-39 was sampled on 5/21/99 and results are not yet available.
- The 10-page Summary of IAGS Results was discussed. The Guard and EPA will discuss how to expand the 2-page EPA Fact Sheet on June 8. Also, the IART's requests for various maps of groundwater detections were discussed. It was agreed to produce a map showing all detections and all analyte groups on one map, as requested by one IART member.
- A table summarizing explosives results for the KD and U Range soil samples was provided. This table shows the detections as provided in the last weekly report, and also shows the nondetects and the samples with no data reported yet. There was a brief discussion of the compounds detected and the locations of detections. Ogden will evaluate the data and compare with munitions ingredients for

these rocket ranges when results are available for the remaining soil samples in these areas, and when PDA confirmation is available for all detections.

- Updates of discussions with the water districts on far field wells were provided. EPA's discussions with Sandwich indicate no interest in participating in locating the Sandwich far field well(s). Ogden is still developing a map and cross-section of the Bourne ZOCs and Zone IIs based on USGS model information. The travel time from Route 28 to the farthest Bourne pumping well was estimated by USGS as 5.7 years; this info will be provided to Bourne. Discussions with the 102nd FW are expected to resume during the week of 6/7 with Bob Burt back from vacation.
- AFCEE drilling in the area upgradient from Raccoon Lane was discussed. Several drive points in this investigation may be useful for characterizing portions of the Training Ranges. Ogden will ask USGS to provide particle tracks from the drive point locations to determine which profile samples should be split for explosives analysis.
- JPO has developed a list of OB/OD sites for which groundwater study information might be available. JPO will work with AEC to determine which of these sites has been studied and provide information to the technical team.
- EPA asked that the Guard develop study plans for recent detections (aside from Demo 1) for when additional funding is available. These would include RDX detections in groundwater in the Phase I and IIa wells, and NG detection in the J-3 Wetland.
- EPA asked for an update on sampling of the supplemental IRP wells, for the wells which could not be accessed using the conventional pump arrangement. The Guard will follow-up on the previous inquiry to AFCEE.
- EPA asked the Guard to consider whether the "exclusion" zones for currently identified UXO could be accessed by UXO technicians for the purpose of completing IAGS requirements. MW-37, -40, and -44 are currently located in these zones and are awaiting development and sampling.
- EPA asked that the investigations described in the draft Phase IIb Workplan be added to the schedule in the next monthly report. EPA also asked that the reconnaissance of Training Area BA-1 mentioned in the draft Phase IIb Workplan be expedited.
- The draft agenda for the 6/14 IART meeting was discussed. Topics will include: draft fact sheet for State legislature hearing; Textron lease update; grant options for IART funding; IAGS investigation update; and Oak Ridge DU study findings.

The Guard, EPA, and MADEP had a meeting on June 10 to discuss technical issues, including the following:

- The technical team met with Bob Burt of the 102nd FW prior to the technical meeting. Maps of J-well time series particle tracks, and aerial photos of the J-well ZOC, were examined for suitable far field monitoring well locations. Aerial photos showed evidence of the paving plant located north of J well that was described by Mr. Burt, about the time that the Otis runways were built. Mr. Burt provided a map of the area showing locations of monitoring wells 12MW0101 and 12MW0102 relative to the J well, a map of the 540,000 gpd ZOC estimated by USGS in 7/98, and a surveyed map showing J well and the nearby property boundary. Ogden will prepare a map(s) showing ZOCs, time series particle tracks, monitoring well locations, property boundary, and aerial photo(s).
- The first agenda item for the technical meeting was a summary of groundwater explosive results for "new" wells (MW-34 to -59), provided in a 3-page handout. The new RDX detections at MW-38M3, -38M4, and -43M2 were mentioned. Sampling of MW-37, -40, and -44 is on hold pending resolution of UXO issues. Ogden is working with the Guard to determine if USACE Technical Document HNC-ED-CS-S-98-2 ("Method for Calculating Range to No More Than One Hazardous Fragment per 600 Square Feet") is applicable for determining UXO safety distances for IAGS activities.

- The scheduled site reconnaissance for Demo Area 1 was discussed. The technical team will meet Paul Zanis at Range Control on Tuesday 6/15 at 0730 hours. Ogden provided an update on the demonstrations of drilling technologies.
- A 3-page handout was faxed earlier showing time series particle tracks for the Bourne supply wells. This information will be added to a map showing the ZOCs and Zone IIs, using an aerial photo backdrop showing development along Route 28. A figure was provided showing the deepest Bourne pumping well particle track in cross-section view, to illustrate the vertical extent of the ZOC. Ogden and the Guard will prepare a map and section view showing proposed far field locations and profiling depths, for transmittal to Bourne and their consultant.
- A handout was provided showing USGS particle tracks from 5 Raccoon Lane and from several of the drive points proposed by AFCEE for the Raccoon Lane Investigation. Locations of the drive points were discussed, and it was agreed to obtain split samples for explosive analysis from several drive points that may characterize groundwater originating in the eastern portion of MMR.
- A revised detection map was provided showing all analyte groups, as requested at the last IART meeting. Ogden will add ZOCs and unsampled wells to this map, and produce two similar versions of the map. One version will have all detections > HA/MCL. The other version will have all explosive detections > HA/MCL.
- There was a brief discussion of funding issues for upcoming well installations.
- EPA indicated that the QA/QC plan change pages submitted last week were acceptable. EPA requested an update on the explosive analyses for the Raccoon Lane - Arnold Road split samples. EPA requested an update on the status of sampling the supplemental IRP wells.

The Guard, EPA, and MADEP had a meeting on June 17 to discuss technical issues, including the following:

- A table was provided summarizing the explosives results for 15 residential wells in the Raccoon Lane/ Arnold Road/ Old Snake Pond Road neighborhood. There were no detections of explosives in these samples. Ogden will check on whether any additional sample results remain to be reported for this area. [After the meeting it was determined that AFCEE is waiting for two summer residents to return to the area, before sampling is complete. AFCEE will split samples with the Guard for these residents when available.]
- A table was provided summarizing the sampling status for the 47 Supplemental IRP wells. Two wells in the USCG CS-1 area have bent risers and Ogden is attempting to sample these with a small diameter pump. One of these wells was sampled 6/16. [After the meeting it was determined that the second bent well was sampled 6/17.] One well in the FS-12 area was found to be destroyed, another could not be located, and a third is obstructed. [After the meeting it was determined that the obstructed well was sampled with the small diameter pump.] Ogden will check on whether a split sample was obtained from AFCEE for SMR-1. [After the meeting it was determined that AFCEE is waiting to sample this well until an access issue can be addressed. AFCEE will split the sample with the Guard when available.] Samples have been collected and analyzed for the three other wells installed by Sandwich on Post.
- AFCEE's Raccoon Lane Investigation was discussed regarding drive point locations where split samples for explosive analysis will be collected. It was agreed that if drive point #5 is relocated as proposed by EPA, then the Guard will obtain split samples from this location rather than drive point #4. Ogden will contact AFCEE for an update on this activity. [After the meeting it was determined that drive point #5 will not be relocated. Therefore, the Guard will request a split sample from drive point #4 instead.]
- A handout (IAGS Tech Memo 99-1) was provided summarizing preliminary explosive results for soil samples from the KD and U Ranges. Concentrations were discussed in terms of variations with location and depth, sample variability, and comparison of composite and discrete sample results. The

memo includes recommendations regarding monitoring well placement and additional soil sampling. Results for other analytical parameters for the KD and U Range soil samples are expected to be available within a few weeks. Complete explosive results for these samples were provided to the technical team in a table dated 6/2/99, that was provided at the 6/3/99 technical team meeting.

- It was also mentioned that several nitroglycerin results for the KD Range exceed the reportable concentrations under the Massachusetts Contingency Plan (MCP). MADEP will review this issue and determine if the site is "adequately regulated" under the SDWA Order. Also, the Guard will review this issue with respect to the Range Rule.
- Funding priorities for monitoring well installations were discussed. It was agreed to continue far field well installations with MW-63. The Guard will mobilize to begin installation of this cluster ASAP, hopefully within one week if equipment is available. Locations of the Bourne far field wells will be finalized so that these well installations can continue after MW-63 is complete. Monitoring wells at KD Range will be started concurrent with the far field wells, as soon as UXO clearance and road building can be completed (approximately three weeks). Scoping of Demo 1 wells will be expedited so that these can be installed after the KD Range wells. One or more wells at the gun and mortar positions may also be installed in this mobilization. EPA expressed concern with the funding available, which is currently insufficient for all planned groundwater investigations. EPA will follow-up with NGB on this issue.
- Locations of Bourne water supply wells and sentinel wells were discussed. It was agreed to shift quarterly explosive monitoring from sentinel wells 97-2 and 97-3 to supply wells PS-6 and PS-4, because the sentinel wells are not well positioned in the supply well ZOCs. Ogden will contact Bourne to arrange the sampling.
- EPA requested that the Guard provide an update on the schedule for removal of munitions debris at the pile on Turpentine Road north of Tank Alley. EPA asked that time be set aside to discuss plume delineation at the next weekly technical meeting. EPA suggested that the Guard address the need for a monitoring well upgradient from 90MW0022 in the Guard's comments on Textron's workplan for closure of the J-3 Range.

The Guard, EPA, and MADEP had a meeting on June 24 to discuss technical issues, including the following:

- A letter from Ogden to EPA and MADEP was provided that proposes locations of far field monitoring wells for the Bourne water supply wells. Also, a letter from the Guard to EPA was provided that describes the current schedule for identification and installation of far field monitoring wells.
- A memo received from Dave Hill regarding LF-1 explosive data was handed out and discussed. The memo indicates that RDX was confirmed in well 27MW0108A. EPA will follow up with AFCEE.
- There was a discussion of the Phase IIa results and future investigations of RDX detections in groundwater. Ogden provided a map of the Phase I detections and particle tracks, with the Phase IIa detections sketched on in cross-section view. It was agreed that delineation of the widths of the source areas may provide the most cost-effective initial approach, since this involves drilling at shallower depths. Once the source areas have been delineated, deeper wells can be installed downgradient with a greater chance for successful delineation of extent. A major factor will be whether the faster and cheaper direct push drilling technologies can achieve the required depths of investigation in the source areas. This may not be known for several more weeks, as demonstrations by drilling vendors are completed.
- Ogden will prepare an outline of the investigation approach for the source areas of MW-26/59, MW-1/38, and MW-23/43 by 7/19/99. This will include maps with Phase IIa results (similar to the handout) and proposed locations of wells. For the MW-26/59 area the outline will include proposed soil sampling. The outline will also include a schedule that takes into account available funding.

- A handout was provided summarizing schedule and funding status for major activities in a horizontal bar chart, updated from April. Current funding is at $8.0M and no additional funding is expected to be available before the end of the fiscal year (9/30). Current funded activities include Far Field Group 2 wells (five clusters), ongoing meetings, KD Range groundwater sampling, and Demo Area 1 groundwater investigation (partially funded). Activities scheduled to be funded and start in FY 99/00 include additional rounds of groundwater sampling, gun/mortar position soil and groundwater sampling, artillery and mortar targets soil sampling, completion of Demo Area 1 groundwater investigation, additional Far Field Group 2 wells, fate and transport modeling, and investigations of new areas (Phase IIa and IIb).
- The format for presentation of validated data from Round 2 of groundwater sampling was discussed. Ogden will begin preparing concentration box maps similar to Phase I but using the "areas" identified in February, and if possible showing both rounds of detections.
- The schedule for drilling was discussed: MW-63 will begin the week of 6/28, and MW-60 (KD Range) will begin the week of 7/12.
- Additional investigation of the NG detections in the J-3 Wetland was discussed. Ogden will check with Camp Good News regarding access to the wetland area for additional sediment samples. An expert for evaluation of wetland plant condition will be identified for approval by EPA.
- An update was provided on the Raccoon Lane investigation. Ogden has received split samples for drive point 8 and is working with AFCEE to obtain the remaining splits.
- The schedule for results for non-explosive analytes in KD/U Range soil samples was discussed. Ogden expects to have these for next week's (7/1/99) technical meeting. It was agreed to use the non-validated results for any decisions regarding well locations.
- The schedule for sampling on-site water supply wells was discussed. Ogden will determine if the Textron supply wells can be sampled in the next two weeks. If so, all supply wells will be sampled together. If not, all but the Textron wells will be sampled together and the Textron wells will be sampled ASAP.
- The Guard asked for EPA comments on the draft PEP Analytical Report. EPA indicated these are underway.

2. SUMMARY OF DATA RECEIVED

Preliminary (Non-Validated) Detections

Preliminary non-validated detections of explosives are summarized in Table 2 for samples collected during June and late May. The status of the detections with respect to confirmation using Photo Diode Array (PDA) spectra is also indicated in Table 2. Where PDA status is “YES”, the detected compound has been confirmed to be present in the sample. Where the PDA status is “NO”, the identification of an explosive has been confirmed to be a false positive (there is no explosive present).

Several explosive compounds were identified in groundwater at 90LWA0007, which is located in the FS-12 area. However, the PDA spectra indicated that these detections are false positives. HMX was confirmed present in groundwater at MW-30 located at the J-3 Range, where this compound had been detected in Phase I. HMX was also detected in Phase II (a) investigation well MW39M2, which is located downgradient of MW-1. Neither of these new detections exceed the lifetime drinking water Health Advisory (HA). The explosive detections for wells MW-43, -45, -51, and –59 were presented and discussed in the previous monthly report, but also appear in Table 2 due to overlap in the time period summarized.

RDX was detected in several deep soil samples from Demo Area 1, at boring location B-6. The sample depths included 22-24 ft below ground surface (bgs), and 30-36 ft bgs. The explosive detections in soil

grids at the KD Range (Area 44) were presented and discussed in the previous monthly report, but also appear in Table 2 due to overlap in the time period summarized.

Validated Data

Validated data were received during June for Sample Delivery Groups (SDGs) 107, 109, 110, 112-117, 119, 121, 123, 127, and 130. These SDGs contain results for 81 monitoring wells, 7 soil samples, and 92 profile samples from nine borings. The validated data are provided in an attachment to this report. Results include analyses for explosives, VOCs, SVOCs, pesticides, herbicides, and inorganic parameters. Following is a brief summary of the validated data.

Explosives were identified at 12 monitoring wells and 5 profile borings in the validated data, with 11 exceedances of the lifetime drinking water HA of 2 ppb for RDX. Exceedances were measured at wells MW-31S (210 ppb), MW-31M (370 ppb), MW-23M1 (4.7 ppb), MW-1S (2.80), MW-1M2 (2.2 ppb), MW-19S (250 ppb), MW34M2 (6.2 ppb), MW-25S (4.1 ppb), and 90MW0022 (5.4 ppb); and in profile samples G50DIA (2.8 ppb), G50DJA (4.8 ppb), and G50DKA (3.9 ppb). The lifetime drinking water HA of 2 ppb for TNT was exceeded at MW-19S (7.2 ppb) and in profile samples G59MAA (47 ppb), G59MBD (2.9 ppb), and G59MCA (19 ppb).

Explosives were not detected in the six soil samples included in the validated data.

Metals were detected in all 79 monitoring wells included in the validated data, with exceedances of drinking water criteria for thallium or molybdenum in seven wells. The MCL of 2 ppb for thallium was exceeded at MW-7M2 (4.4J ppb), MW-7M1 (4.1J ppb), MW-18S (2.3J ppb), and MW-19D (3.1J ppb). The long-term child HA of 10 ppb for molybdenum was exceeded at MW-13D (12.10J ppb), MW-16S (21.0J ppb), and MW-16D (23.2 ppb).

Metals were detected in all six soil samples included in the validated data. All 25 analytes were detected except for mercury, antimony, cadmium, selenium, silver, sodium, and boron. None of the detections exceeded a Reportable Concentration (RC) under the Massachusetts Contingency Plan (MCP).

VOCs were identified in 30 monitoring wells and all nine profile borings in the validated data, with exceedances of drinking water criteria for 1,2-dibromo-3-chloropropane or chloromethane in three profile samples. The MCL of 0.20 ppb for 1,2-dibromo-3-chloropropane was exceeded at G41MDA (0.30J ppb). The lifetime HA of 3 ppb for chloromethane was exceeded at G42MGA (4.0 ppb) and G42MHA (4.0J ppb). Chloroform was the VOC detected most frequently in groundwater samples, appearing in approximately half the samples in concentrations ranging from 0.3 to 4.0 ppb. Other VOCs detected in groundwater include 1,2,4-trichlorobenzene (0.8J ppb) in MW-18M2, acetone in five wells (2.0-3.0 ppb), carbon disulfide in three wells (1.0-2.0 ppb), chloroethane in 28MW0106 (1.0 ppb), tetrachloroethene (PCE) in MW-19S (0.3 ppb), trichloroethene (TCE) in MW-18M1 (4.0 ppb) and LRWS-3 (2.0 ppb), toluene in MW-5D (0.4J ppb) and MW-16D (0.3J ppb), and MTBE in MW-16D (1.6J ppb). Acetone was the VOC detected most frequently in profile samples, appearing in over half of the samples in concentrations ranging from 5.0 to 56 ppb. Chloroform (0.5J-2.0 ppb) and methyl ethyl ketone (3.0J-15 ppb) were each detected in about one-third of the profile samples.

Acetone was the only VOC detected in the soil samples. Acetone was detected in six of the seven soil samples including S45SBA (86J ppb), B47FAA (14J ppb), B47EAA (10J ppb), B47AAA (5J ppb), B47CAA (5J ppb), and B47DAA (5J ppb).

Bis (2-ethylhexyl) phthalate was the only SVOC detected in groundwater. It was detected in 11 groundwater samples with one exceedance of the MCL of 6 ppb in well 28MW0106 (26 ppb). Bis (2-

ethylhexyl) phthalate was also the only SVOC detected in the validated soil samples, in B47AAA at a concentration of 2,600 ppb.

No pesticides or PCBs were detected in the groundwater samples. Two herbicides were detected in groundwater: chloramben (0.12NJ ppb) in MW-17D, and DCPA (0.18 ppb) in MW-5D. Neither detection exceeds a drinking water criterion. No pesticides/PCBs or herbicides were detected in the soil samples.

3. DELIVERABLES SUBMITTED

Weekly Progress Report (May 24 – May 28)	June 2, 1999
Weekly Progress Report (May 31 – June 4)	June 8, 1999
Monthly Progress Report No. 26 (May 1999)	June 10, 1999
IART Groundwater Detection Maps and Tables (June 14, 1999)	June 16, 1999
IAGS Technical Team Memorandum 99-1	June 17, 1999
Weekly Progress Report (June 7 – June 11)	June 17, 1999
Weekly Progress Report (June 14 – June 18)	June 22, 1999

4. SCHEDULED ACTIONS

Figure 1 provides a Gantt chart based on the Final Action Plan, updated to reflected progress and proposed work. Activities scheduled for July and early August include: continue efforts to secure supplemental funding; EPA provide comments on Draft PEP Analytical Report; prepare final Phase I Completion Workplan; continue installation of Far Field Group 2 wells; complete first round of drinking water analyses for MMR wells; complete first round of PEP analyses for supply wells; complete analyses for Supplemental IRP wells; complete analyses for Group 1 wells; begin analyses for Group 2 wells; complete Demo 1 Response Plan and scoping; complete Demo 1 soil sampling evaluation; prepare final Phase II (a) Workplan; complete analyses for Phase II (a) wells; complete data collection for J Ranges; complete analyses for J-3 Wetland samples and prepare Tech Memo; complete Munitions Survey workplan; complete Tech Memo for brick-lined pit; complete draft Workplan for Training Areas; complete analyses for KD and U Range soil samples; complete KD Range well installations; EPA review Gun/Mortar FSP; complete scoping/mobilization for recon of trenches, excavations, etc.; complete analyses for SAR monitoring wells; complete scoping/mobilization for reconnaissance of mortar targets; and begin preparation of Interim Results Report. The next meeting of the Impact Area Groundwater Study Review Team has been scheduled for July 19, 1999.

TABLE 1
SAMPLING PROGRESS
6/1-6/30

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
03MW0707E	FIELDQC	6/14/1999	FIELDQC	0	0
03MW0707T	FIELDQC	6/14/1999	FIELDQC	0	0
15MW0001E	FIELDQC	6/17/1999	FIELDQC	0	0
15MW0001T	FIELDQC	6/17/1999	FIELDQC	0	0
15MW0007T	FIELDQC	6/16/1999	FIELDQC	0	0
27MW702E	FIELDQC	6/15/1999	FIELDQC	0	0
27MW702T	FIELDQC	6/15/1999	FIELDQC	0	0
90LWA0007T	FIELDQC	6/18/1999	FIELDQC	0	0
ABB003ABE	FIELDQC	6/9/1999	FIELDQC	0	0
ABB006XAE	FIELDQC	6/7/1999	FIELDQC	0	0
ABB009DBE	FIELDQC	6/9/1999	FIELDQC	0	0
OT-Y011009	FIELDQC	6/25/1999	FIELDQC	0	0
OT-Y012301	FIELDQC	6/23/1999	FIELDQC	0	0
OT-Y012301F	FIELDQC	6/24/1999	FIELDQC	0	0
OT-Y012901	FIELDQC	6/25/1999	FIELDQC	0	0
OT-Y012901F	FIELDQC	6/25/1999	FIELDQC	0	0
OT-Y013701	FIELDQC	6/28/1999	FIELDQC	0	0
PPAWSMW-1E	FIELDQC	6/22/1999	FIELDQC	0	0
PPAWSMW-1T	FIELDQC	6/22/1999	FIELDQC	0	0
03MW0707	03MW0707	6/14/1999	GROUNDWATER	4	14
15MW0001	15MW0001	6/17/1999	GROUNDWATER	0	10
15MW0007	15MW0007	6/16/1999	GROUNDWATER	43	53
27MW702	27MW702	6/15/1999	GROUNDWATER	0	10
90LWA0007	90LWA0007	6/18/1999	GROUNDWATER	0	10
PPAWSMW-1	PPAWSMW-1	6/22/1999	GROUNDWATER	10	20
PPAWSPW-1	PPAWSPW-1	6/22/1999	GROUNDWATER	158	178
PPAWSPW-2	PPAWSPW-2	6/22/1999	GROUNDWATER	85	105
W30SSA	MW-30	6/14/1999	GROUNDWATER	0	10
OT-Y010501	DP-8	6/23/1999	PROFILE	5	10
OT-Y010501F	DP-8	6/24/1999	PROFILE	5	10
OT-Y010507	DP-8	6/23/1999	PROFILE	15	20
OT-Y010507F	DP-8	6/23/1999	PROFILE	15	20
OT-Y010603	DP-8	6/23/1999	PROFILE	25	30
OT-Y010603F	DP-8	6/23/1999	PROFILE	25	30
OT-Y010607	DP-8	6/23/1999	PROFILE	35	40
OT-Y010607F	DP-8	6/23/1999	PROFILE	35	40
OT-Y010705	DP-8	6/23/1999	PROFILE	45	50
OT-Y010705F	DP-8	6/23/1999	PROFILE	45	50
OT-Y010801	DP-8	6/23/1999	PROFILE	55	60
OT-Y010801F	DP-8	6/23/1999	PROFILE	55	60
OT-Y010805	DP-8	6/23/1999	PROFILE	65	70
OT-Y010805F	DP-8	6/23/1999	PROFILE	65	70
OT-Y010901	DP-8	6/23/1999	PROFILE	75	80
OT-Y010905	DP-8	6/23/1999	PROFILE	85	90
OT-Y010909	DP-8	6/23/1999	PROFILE	95	100
OT-Y011001	DP-4	6/25/1999	PROFILE	35	40
OT-Y011007	DP-4	6/25/1999	PROFILE	45	50
OT-Y011103	DP-4	6/25/1999	PROFILE	55	60
OT-Y011107	DP-4	6/25/1999	PROFILE	65	70
OT-Y011205	DP-4	6/25/1999	PROFILE	75	80
OT-Y011205F	DP-4	6/25/1999	PROFILE	75	80

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
SBD = Sample Begin Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater
SED = Sample End Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater

TABLE 1
SAMPLING PROGRESS
6/1-6/30

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
OT-Y011301	DP-4	6/25/1999	PROFILE	85	90
OT-Y011301D	DP-4	6/25/1999	PROFILE	85	90
OT-Y011301DF	DP-4	6/25/1999	PROFILE	85	90
OT-Y011301F	DP-4	6/25/1999	PROFILE	85	90
OT-Y011305	DP-4	6/25/1999	PROFILE	95	100
OT-Y011305F	DP-4	6/25/1999	PROFILE	95	100
OT-Y011501	DP-9	6/25/1999	PROFILE	10	15
OT-Y011501F	DP-9	6/25/1999	PROFILE	10	15
OT-Y011507	DP-9	6/25/1999	PROFILE	20	25
OT-Y011507F	DP-9	6/25/1999	PROFILE	20	25
OT-Y011603	DP-9	6/25/1999	PROFILE	30	35
OT-Y011603F	DP-9	6/25/1999	PROFILE	30	35
OT-Y011607	DP-9	6/25/1999	PROFILE	40	45
OT-Y011607F	DP-9	6/25/1999	PROFILE	40	45
OT-Y011705	DP-9	6/25/1999	PROFILE	50	55
OT-Y011705F	DP-9	6/25/1999	PROFILE	50	55
OT-Y011801	DP-9	6/25/1999	PROFILE	60	65
OT-Y011801D	DP-9	6/25/1999	PROFILE	60	65
OT-Y011801DF	DP-9	6/25/1999	PROFILE	60	65
OT-Y011801F	DP-9	6/25/1999	PROFILE	60	65
OT-Y011805	DP-9	6/25/1999	PROFILE	70	75
OT-Y011805F	DP-9	6/25/1999	PROFILE	70	75
OT-Y011901	DP-9	6/25/1999	PROFILE	80	85
OT-Y011905	DP-9	6/25/1999	PROFILE	90	95
OT-Y013201	DP-2	6/28/1999	PROFILE	35	40
OT-Y013207	DP-2	6/28/1999	PROFILE	45	50
OT-Y013303	DP-2	6/28/1999	PROFILE	55	60
OT-Y013307	DP-2	6/28/1999	PROFILE	65	70
OT-Y013307D	DP-2	6/28/1999	PROFILE	75	80
OT-Y013403	DP-2	6/28/1999	PROFILE	75	80
OT-Y013501	DP-2	6/28/1999	PROFILE	85	90
ABB003ABA	B-3	6/8/1999	SOIL BORING	42	44
ABB003NAA	B-3	6/8/1999	SOIL BORING	16	18
ABB003OAA	B-3	6/8/1999	SOIL BORING	16	20
ABB003PAA	B-3	6/8/1999	SOIL BORING	20	22
ABB003PAD	B-3	6/8/1999	SOIL BORING	20	22
ABB003QAA	B-3	6/8/1999	SOIL BORING	22	24
ABB003RAA	B-3	6/8/1999	SOIL BORING	24	26
ABB003SAA	B-3	6/8/1999	SOIL BORING	26	28
ABB003TAA	B-3	6/8/1999	SOIL BORING	28	30
ABB003UAA	B-3	6/8/1999	SOIL BORING	30	32
ABB003VAA	B-3	6/8/1999	SOIL BORING	32	34
ABB003WAA	B-3	6/8/1999	SOIL BORING	34	36
ABB003WAD	B-3	6/8/1999	SOIL BORING	34	36
ABB003XAA	B-3	6/8/1999	SOIL BORING	36	38
ABB003YAA	B-3	6/8/1999	SOIL BORING	38	40
ABB003ZAA	B-3	6/8/1999	SOIL BORING	40	42
ABB004NAA	B-4	6/9/1999	SOIL BORING	16	18
ABB004OAA	B-4	6/9/1999	SOIL BORING	18	20
ABB004PAA	B-4	6/9/1999	SOIL BORING	20	22
ABB004QAA	B-4	6/9/1999	SOIL BORING	22	24

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
SBD = Sample Begin Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater
SED = Sample End Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater

TABLE 1
SAMPLING PROGRESS
6/1-6/30

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
ABB004RAA	B-4	6/9/1999	SOIL BORING	24	26
ABB004SAA	B-4	6/9/1999	SOIL BORING	26	28
ABB004TAA	B-4	6/9/1999	SOIL BORING	28	30
ABB004TAD	B-4	6/9/1999	SOIL BORING	28	30
ABB004UAA	B-4	6/9/1999	SOIL BORING	30	32
ABB004VAA	B-4	6/9/1999	SOIL BORING	32	34
ABB004WAA	B-4	6/9/1999	SOIL BORING	34	36
ABB004XAA	B-4	6/9/1999	SOIL BORING	36	38
ABB004YAA	B-4	6/9/1999	SOIL BORING	38	40
ABB004ZAA	B-4	6/9/1999	SOIL BORING	40	42
ABB006ABA	B-6	6/8/1999	SOIL BORING	42	44
ABB006NAA	B-6	6/7/1999	SOIL BORING	16	18
ABB006OAA	B-6	6/7/1999	SOIL BORING	16	20
ABB006PAA	B-6	6/7/1999	SOIL BORING	20	22
ABB006QAA	B-6	6/7/1999	SOIL BORING	22	24
ABB006RAA	B-6	6/7/1999	SOIL BORING	24	26
ABB006SAA	B-6	6/7/1999	SOIL BORING	26	28
ABB006UAA	B-6	6/7/1999	SOIL BORING	30	32
ABB006VAA	B-6	6/7/1999	SOIL BORING	32	34
ABB006WAA	B-6	6/7/1999	SOIL BORING	34	36
ABB006XAA	B-6	6/7/1999	SOIL BORING	36	38
ABB006XAD	B-6	6/7/1999	SOIL BORING	36	38
ABB006YAA	B-6	6/7/1999	SOIL BORING	38	40
ABB006ZAA	B-6	6/8/1999	SOIL BORING	40	42
ABB009ABA	B-9	6/9/1999	SOIL BORING	42	44
ABB009BBA	B-9	6/9/1999	SOIL BORING	44	46
ABB009CBA	B-9	6/9/1999	SOIL BORING	46	48
ABB009DBA	B-9	6/9/1999	SOIL BORING	48	50
ABB009NAA	B-9	6/9/1999	SOIL BORING	16	18
ABB009OAA	B-9	6/9/1999	SOIL BORING	18	20
ABB009OAD	B-9	6/9/1999	SOIL BORING	18	20
ABB009PAA	B-9	6/9/1999	SOIL BORING	20	22
ABB009QAA	B-9	6/9/1999	SOIL BORING	22	24
ABB009RAA	B-9	6/9/1999	SOIL BORING	24	26
ABB009SAA	B-9	6/9/1999	SOIL BORING	26	28
ABB009TAA	B-9	6/9/1999	SOIL BORING	28	30
ABB009UAA	B-9	6/9/1999	SOIL BORING	30	32
ABB009VAA	B-9	6/9/1999	SOIL BORING	32	34
ABB009WAA	B-9	6/9/1999	SOIL BORING	34	36
ABB009XAA	B-9	6/9/1999	SOIL BORING	36	38
ABB009XAD	B-9	6/9/1999	SOIL BORING	36	38
ABB009YAA	B-9	6/9/1999	SOIL BORING	38	40
ABB009ZAA	B-9	6/9/1999	SOIL BORING	40	42

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
SBD = Sample Begin Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater
SED = Sample End Depth, measured in feet bgs for soil and profile, and feet below water table for groundwater

TABLE 2
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 5/10/99-6/30/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
90LWA0007	90LWA0007	6/18/1999	GROUNDWATER	0	10	8330N	3-NITROTOLUENE	NO
90LWA0007	90LWA0007	6/18/1999	GROUNDWATER	0	10	8330N	4-NITROTOLUENE	NO
90LWA0007	90LWA0007	6/18/1999	GROUNDWATER	0	10	8330N	PICRIC ACID	NO
W30SSA	MW-30	6/14/1999	GROUNDWATER	0	10	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
W39M2A	MW-39	5/20/1999	GROUNDWATER	42	52	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
W43M2A	MW-43	5/26/1999	GROUNDWATER	70	80	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	1,3-DINITROBENZENE	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	2,6-DINITROTOLUENE	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	2-AMINO-4,6-DINITROTOLUENE	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	3-NITROTOLUENE	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	4-NITROTOLUENE	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	NITROGLYCERIN	NO
W45SSA	MW-45	5/26/1999	GROUNDWATER	0	10	8330N	PICRIC ACID	NO
W51SSA	MW-51	5/27/1999	GROUNDWATER	0	10	8330N	PICRIC ACID	NO
W59SSA	MW-59	5/10/1999	GROUNDWATER	0	10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
W59SSA	MW-59	5/10/1999	GROUNDWATER	0	10	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
ABB006QAA	B-6	6/7/1999	SOIL BORING	22	24	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
ABB006UAA	B-6	6/7/1999	SOIL BORING	30	32	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
ABB006VAA	B-6	6/7/1999	SOIL BORING	32	34	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
ABB006WAA	B-6	6/7/1999	SOIL BORING	34	36	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
HC44B1AAA	44B	5/10/1999	SOIL GRID COMP(	0	0.25	8330N	NITROGLYCERIN	YES
HC44C1AAA	44C	5/10/1999	SOIL GRID COMP(	0	0.25	8330N	NITROGLYCERIN	YES
HC44D1AAA	44D	5/10/1999	SOIL GRID COMP(	0	.25	8330N	NITROGLYCERIN	YES
HC44E1AAA	44E	5/10/1999	SOIL GRID COMP(	0	0.25	8330N	NITROGLYCERIN	YES
HC44E1AAD	44E	5/10/1999	SOIL GRID COMP(	0	0.25	8330N	NITROGLYCERIN	YES
HC44E1CAA	44E	5/10/1999	SOIL GRID COMP(	0.5	1	8330N	NITROGLYCERIN	YES
HC44F1AAA	44F	5/11/1999	SOIL GRID COMP(	0	.25	8330N	NITROGLYCERIN	YES
HC44G1AAA	44G	5/11/1999	SOIL GRID COMP(	0	.25	8330N	NITROGLYCERIN	YES
HC44L1AAD	44L	5/12/1999	SOIL GRID COMP(	0	.25	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
HC44M1AAA	44M	5/12/1999	SOIL GRID COMP(	0	.25	8330N	NITROGLYCERIN	YES
HC44N1AAA	44N	5/12/1999	SOIL GRID COMP(	0	.25	8330N	2,4,6-TRINITROTOLUENE	YES
HC44N1AAA	44N	5/12/1999	SOIL GRID COMP(	0	.25	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
HC44N1AAA	44N	5/12/1999	SOIL GRID COMP(	0	.25	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HC44N1BAA	44N	5/12/1999	SOIL GRID COMP(	.25	.5	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
HC44T1AAA	44T	5/11/1999	SOIL GRID COMP(	0	.25	8330N	NITROGLYCERIN	YES

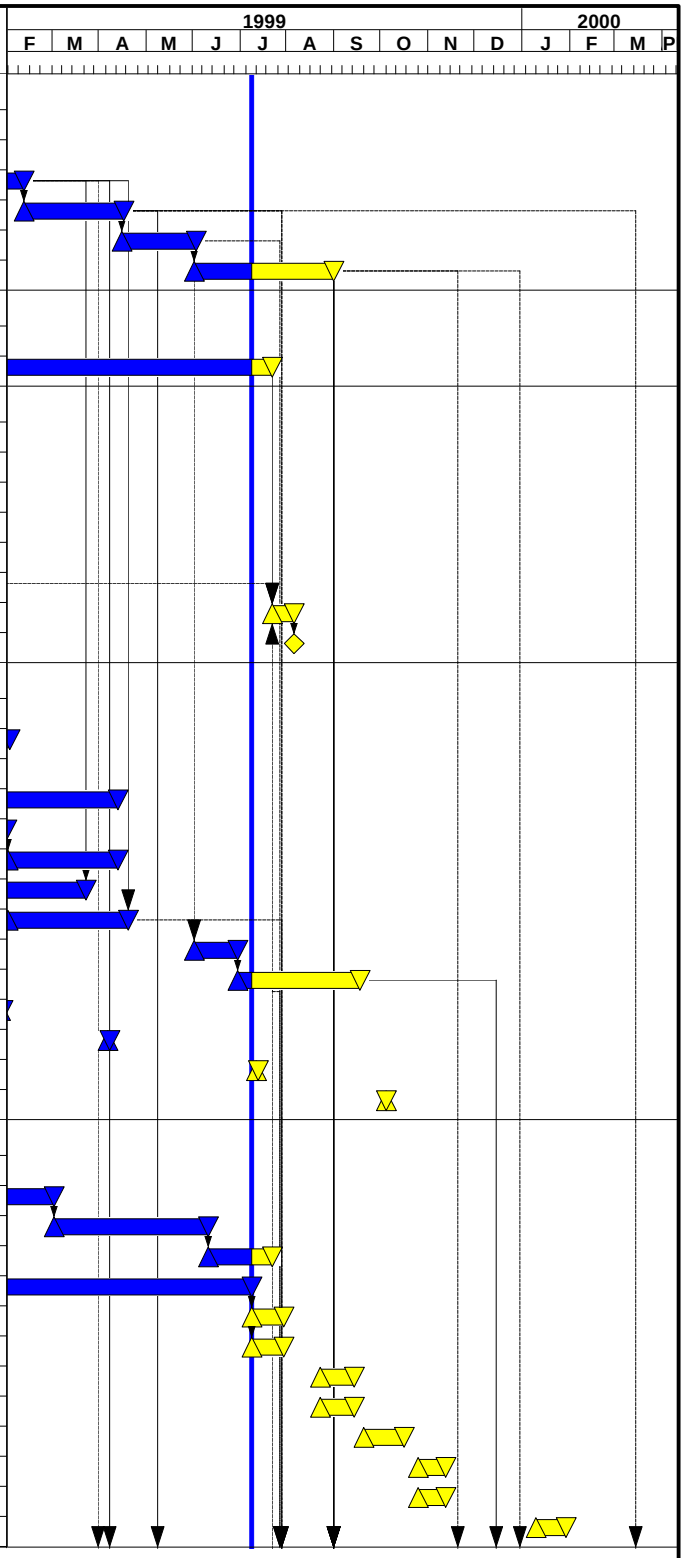
DATA REPORTED REFLECT CURRENT DATABASE FOR SAMPLES COLLECTED IN SPECIFIED TIMEFRAME. NOT ALL RESULTS ARE COMPLETE.
SBD = SAMPLE COLLECTION BEGIN DEPTH (FEET BGS FOR SOILS AND PROFILE, FEET BELOW WATER TABLE FOR GROUNDWATER)
SED = SAMPLE COLLECTION END DEPTH (FEET BGS FOR SOILS AND PROFILE, FEET BELOW WATER TABLE FOR GROUNDWATER)
PDA/YES = Photo Diode Array, Detect Confirmed
PDA/NO = Photo Diode Array, Detect Not Confirmed

TABLE 2
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 5/10/99-6/30/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
HC44U1BAA	44U	5/11/1999	SOIL GRID COMP(	.25	.5	8330N	NITROGLYCERIN	YES
HD44B3AAA	44B	5/10/1999	SOIL GRID DISCR	0	0.25	8330N	NITROGLYCERIN	YES
HD44C3AAA	44C	5/10/1999	SOIL GRID DISCR	0	0.25	8330N	NITROGLYCERIN	YES
HD44C3BAA	44C	5/10/1999	SOIL GRID DISCR	0.25	0.5	8330N	NITROGLYCERIN	YES
HD44C3CAA	44C	5/10/1999	SOIL GRID DISCR	0.5	1	8330N	NITROGLYCERIN	YES
HD44D3AAA	44D	5/10/1999	SOIL GRID DISCR	0	.25	8330N	NITROGLYCERIN	YES
HD44D3BAA	44D	5/10/1999	SOIL GRID DISCR	.25	.5	8330N	NITROGLYCERIN	YES
HD44E3AAA	44E	5/10/1999	SOIL GRID DISCR	0	0.25	8330N	NITROGLYCERIN	YES
HD44E3AAD	44E	5/10/1999	SOIL GRID DISCR	0	0.25	8330N	NITROGLYCERIN	YES
HD44E3BAA	44E	5/10/1999	SOIL GRID DISCR	0.25	0.5	8330N	NITROGLYCERIN	YES
HD44G3AAA	44G	5/11/1999	SOIL GRID DISCR	0	.25	8330N	NITROGLYCERIN	YES
HD44L1AAA	44L	5/12/1999	SOIL GRID DISCR	0	.25	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HD44L1AAD	44L	5/12/1999	SOIL GRID DISCR	0	.25	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HD44L1BAA	44L	5/12/1999	SOIL GRID DISCR	.25	.5	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HD44L1CAA	44L	5/12/1999	SOIL GRID DISCR	.5	1	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HD44L5BAA	44L	5/12/1999	SOIL GRID DISCR	.25	.5	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
HD44N4BAA	44N	5/12/1999	SOIL GRID DISCR	.25	.5	8330N	2-AMINO-4,6-DINITROTOLUENE	YES
HD44N4CAA	44N	5/12/1999	SOIL GRID DISCR	.5	1	8330N	2-AMINO-4,6-DINITROTOLUENE	YES
HD44N4CAA	44N	5/12/1999	SOIL GRID DISCR	.5	1	8330N	4-AMINO-2,6-DINITROTOLUENE	YES
HD44N4CAA	44N	5/12/1999	SOIL GRID DISCR	.5	1	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
HD44N4CAA	44N	5/12/1999	SOIL GRID DISCR	.5	1	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES

DATA REPORTED REFLECT CURRENT DATABASE FOR SAMPLES COLLECTED IN SPECIFIED TIMEFRAME. NOT ALL RESULTS ARE COMPLETE.
SBD = SAMPLE COLLECTION BEGIN DEPTH (FEET BGS FOR SOILS AND PROFILE, FEET BELOW WATER TABLE FOR GROUNDWATER)
SED = SAMPLE COLLECTION END DEPTH (FEET BGS FOR SOILS AND PROFILE, FEET BELOW WATER TABLE FOR GROUNDWATER)
PDA/YES = Photo Diode Array, Detect Confirmed
PDA/NO = Photo Diode Array, Detect Not Confirmed

Activity Description	Early Start	Early Finish
1. Receive Funding		
Appropriation of money for NGB budget	26OCT98A	
NGB Contracting ($4M)	26OCT98A	18DEC98A
Procure Supplemental Funding ($1.4M)	21DEC98A	10FEB99A
Procure Supplemental Funding ($1.0M)	11FEB99A	16APR99A
Procure Supplemental Funding ($1.6M)	16APR99A	02JUN99A
Procure Supplemental Funding ($3.0M)	02JUN99A	31AUG99
2. Evaluate Analytical Methods		
Complete Draft PEP Analytical Report	05NOV98A	30NOV98A
EPA Comments/Revisions	01DEC98A	22JUL99
3. Phase I Completion Workplan		
Prepare Phase I+ Workplan	13AUG98A	21AUG98A
Phase I+ Workplan due to EPA		21AUG98A
EPA Comments/Workplan Revisions	24AUG98A	06OCT98A
Submit Revised Workplan		06OCT98A
EPA Comments/Workplan Revisions	07OCT98A	29OCT98A
Submit Change Document		30OCT98A
Prepare Final Workplan	23JUL99	05AUG99
Submit Final Workplan		05AUG99
4. Phase I/II Installation of Wells		
Mobilization	21DEC98A	04JAN99A
USGS Modeling Well Screens	07JAN99A	01FEB99A
Prepare FSP for Far Field Wells	21DEC98A	12JAN99A
Review/Revise FSP for FF Wells	13JAN99A	12APR99A
Prepare FSP for Phase IIa Wells	21JAN99A	29JAN99A
Review/Revise FSP for Phase IIa Wells	01FEB99A	12APR99A
Install Group 1 FF Wells	06JAN99A	23MAR99A
Install Phase IIa Wells	01FEB99A	19APR99A
Mobilize for Group 2 FF Wells	02JUN99A	29JUN99A
Install Group 2 FF Wells	30JUN99A	17SEP99
Synoptic water levels round 1	26JAN99A	26JAN99A
Synoptic water levels round 2	07APR99A	07APR99A
Synoptic water levels round 3	12JUL99*	12JUL99
Synoptic water levels round 4	04OCT99*	04OCT99
5. Phase I Sampling of Water Supply Wells		
Procure lab for SDWA parameters	21DEC98A	06JAN99A
Prepare QA/QC plan addendum	07JAN99A	02MAR99A
EPA review/comment	03MAR99A	10JUN99A
Sample (6a) MMR Wells DW/PEP 2Q99	11JUN99A	22JUL99
Setup split sampling for wells	08JAN99A	09JUL99A
Sample (6b) non-MMR wells PEP 2Q99	09JUL99	29JUL99
Sample (6c) MMR wells PEP 2Q99	09JUL99	29JUL99
Sample (6b) non-MMR wells PEP 3Q99	23AUG99*	13SEP99
Sample (6c) MMR wells PEP 3Q99	23AUG99*	13SEP99
Sample (6d) MMR wells DW/PEP 3Q99	20SEP99*	15OCT99
Sample (6b) non-MMR wells PEP 4Q99	25OCT99*	12NOV99
Sample (6c) MMR wells PEP 4Q99	25OCT99*	12NOV99
Sample (6b) non-MMR wells PEP 1Q00	10JAN00*	28JAN00



Project Start 14AUG98
Project Finish 26JAN01
Data Date 09JUL99
Run Date 09JUL99

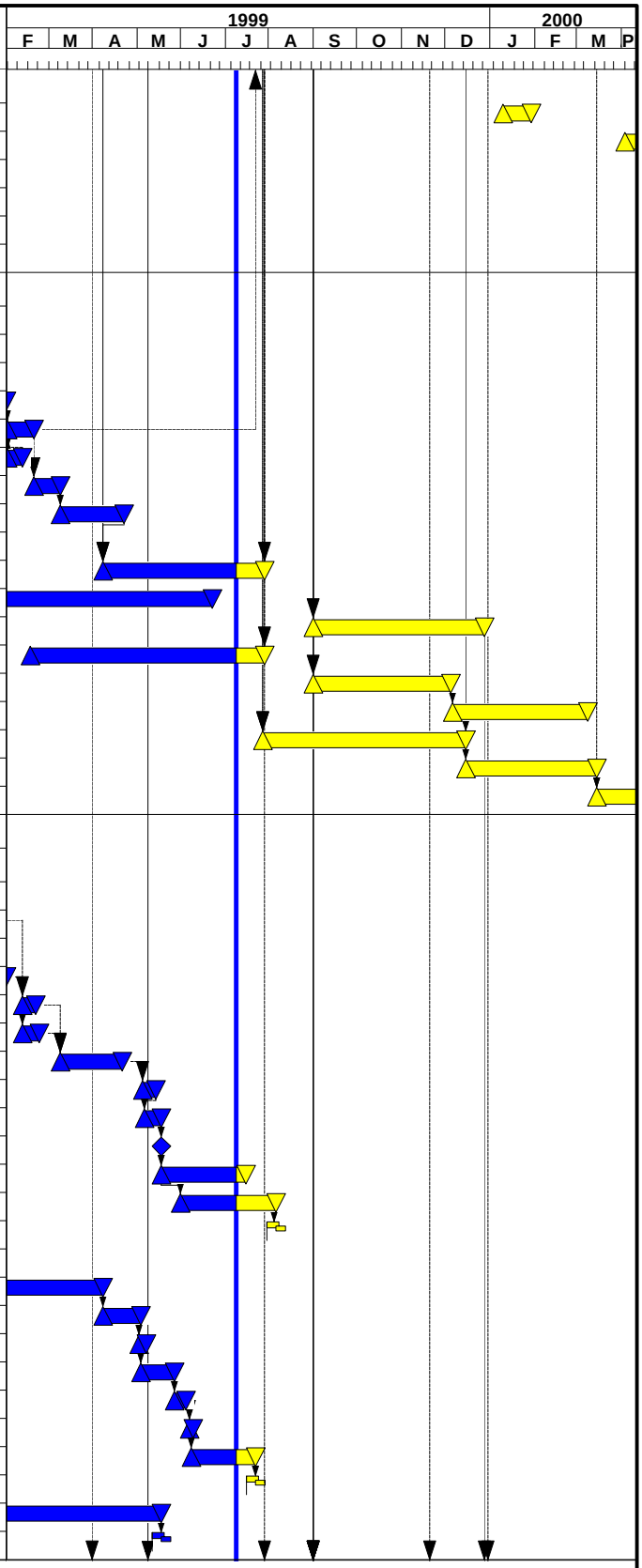
Early Bar
Progress Bar

MMR7

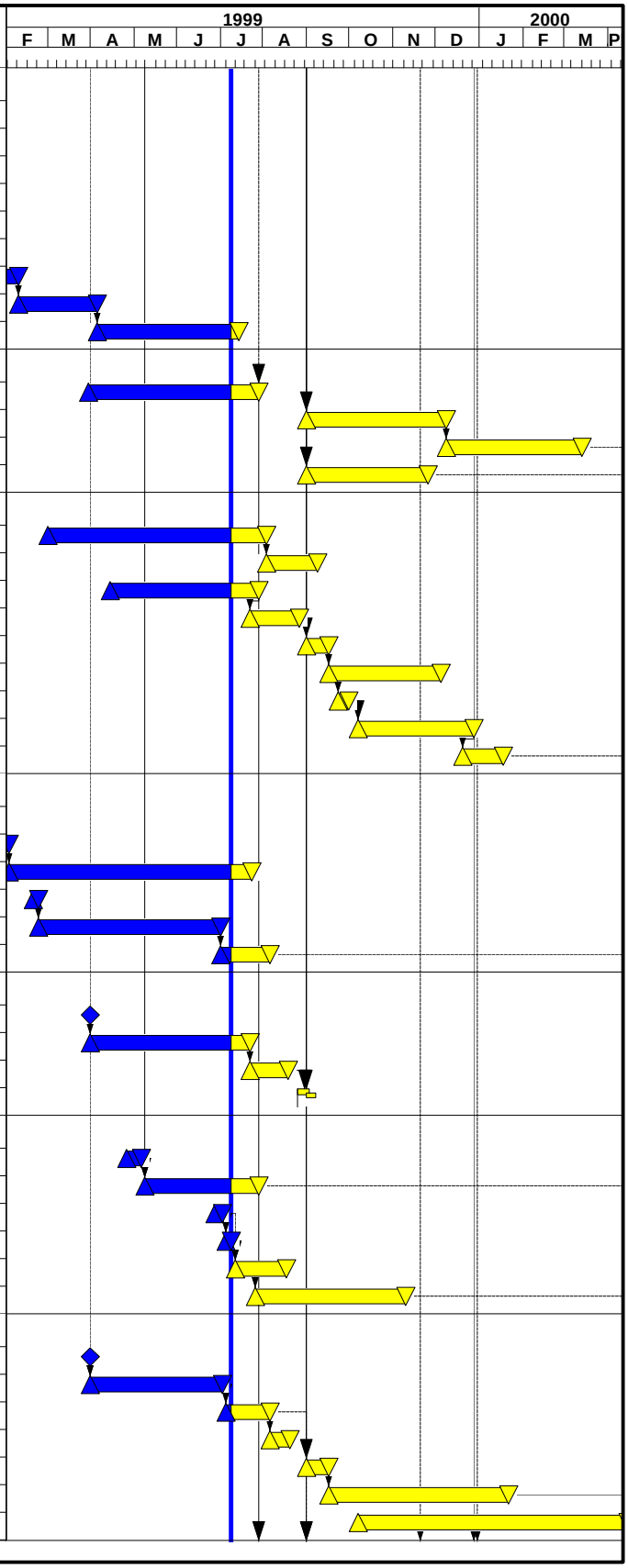
Sheet 1 of 4

Figure 1. Schedule for Completion of the Impact Area Groundwater Study as of 7/9/99

Activity Description	Early Start	Early Finish
5. Phase I Sampling of Water Supply Wells		
Sample (6c) MMR wells PEP 1Q00	10JAN00*	28JAN00
Sample (6c) MMR wells PEP 2Q00	03APR00*	21APR00
Sample (6c) MMR wells PEP 3Q00	10JUL00*	28JUL00
Sample (6d) MMR wells DW/PEP 3Q00	10JUL00*	18AUG00
Sample (6c) MMR wells PEP 4Q00	09OCT00*	27OCT00
Sample (6c) MMR wells PEP 1Q01	08JAN01*	26JAN01
6. Phase I Sampling of Monitoring Wells		
Review Selection of IRP wells	05NOV98A	30NOV98A
Submit IRP well selection/rationale	30NOV98A	
EPA comments on IRP Wells	01DEC98A	19JAN99A
Change document for IRP Wells	20JAN99A	29JAN99A
EPA cond. approve IRP well changes	01FEB99A	18FEB99A
USGS model selected IRP wells	01FEB99A	11FEB99A
Changes to address MADEP comments	19FEB99A	09MAR99A
Prepare FSP for Supplemental IRP Wells	10MAR99A	22APR99A
Mobilization for Phase I Wells	21DEC98A	05JAN99A
Sample/Analyze Supplemental IRP Wells	08APR99A	28JUL99
Sample/Analyze Phase I Wells Round 2	06JAN99A	21JUN99A
Sample/Analyze Phase I Wells Round 3	01SEP99	27DEC99
Sample/Analyze G1 FF Wells Round 1	17FEB99A	28JUL99
Sample/Analyze G1 FF Wells Round 2	01SEP99	03DEC99
Sample/Analyze G1 FF Wells Round 3	06DEC99*	07MAR00
Sample/Analyze G2 FF Wells Round 1	27JUL99	14DEC99
Sample/Analyze G2 FF Wells Round 2	15DEC99	14MAR00
Sample/Analyze G2 FF Wells Round 3	15MAR00	12JUN00
6. Phase I Sampling of Monitoring Wells		
7. Phase I Response Actions for Demo Area 1		
Roadbuilding for MW34	28DEC98A	04JAN99A
Install/Profile MW34	06JAN99A	18JAN99A
Roadbuilding for MW35	18JAN99A	18JAN99A
Install/Profile MW35	19JAN99A	29JAN99A
Develop/Sample/Analyze MW34	11FEB99A	19FEB99A
Develop/Sample/Analyze MW35	11FEB99A	22FEB99A
Install/Profile/Develop MW36	09MAR99A	20APR99A
Sample/Analyze MW36	05MAY99A	14MAY99A
Evaluate Groundwater Data	07MAY99A	17MAY99A
Submit GW Data/Response Plan to EPA		17MAY99A
Review/Revise Response Plan	18MAY99A	15JUL99
Scoping response activities	01JUN99A	05AUG99
Begin Demo 1 Response Activities		05AUG99
UXO Clearance Demo 1	28DEC98A	13JAN99A
Standby for Demo 1 to dry up	14JAN99A	07APR99A
Mobilize ATV drill rig	08APR99A	03MAY99A
Demo 1 Soil Sampling to 15 ft	03MAY99A	07MAY99A
Soil Sample Analysis/Evaluation	04MAY99A	27MAY99A
Mobilize ATV drill rig	28MAY99A	04JUN99A
Demo 1 Soil Sampling to 40 ft	07JUN99A	09JUN99A
Soil Sample Analysis/Evaluation	08JUN99A	22JUL99
Submit Soil Data/Response Plan to EPA		22JUL99
Evaluate Pilot Testing & Remedies	21DEC98A	18MAY99A
Submit draft remedy evaluation to EPA		18MAY99A



Activity Description	Early Start	Early Finish
8. Phase II (a) Workplan		
Prepare Phase II(a) Workplan	24AUG98A	11SEP98A
Submit Phase II(a) Workplan to EPA		11SEP98A
EPA Review Phase II(a) Workplan	14SEP98A	28OCT98A
Meeting to discuss Phase II(a)	04NOV98A	04NOV98A
Revise Phase II(a) workplan	05NOV98A	12NOV98A
EPA review/comment	13NOV98A	22DEC98A
Prepare change document	28DEC98A	08FEB99A
EPA approve change document	09FEB99A	05APR99A
Final Phase II(a) Workplan	06APR99A	14JUL99
9. Phase II Investigate Exceedances		
Sample/Analyze Ph. II(a) Wells Round 1	30MAR99A	28JUL99
Sample/Analyze Ph. II(a) Wells Round 2	01SEP99	07DEC99
Sample/Analyze Ph. II(a) Wells Round 3	08DEC99	13MAR00
Soil Sampling/Analysis for Source Areas	01SEP99	24NOV99
10. Phase II Characterize J Ranges		
Data Collection for J Ranges	01MAR99A	02AUG99
Prepare J Range Workplan	03AUG99	07SEP99
Sampling/Analysis for J-3 Wetland	15APR99A	28JUL99
Prepare Tech Memo for J-3 Wetland	22JUL99	25AUG99
Mobilization for Steel Pit	01SEP99	15SEP99
Soil sampling/analysis for Steel Pit	16SEP99	03DEC99
Monitoring well installation for Steel Pit	23SEP99	29SEP99
Sample/Analyze monitoring well	07OCT99	27DEC99
Prepare Tech Memo for Steel Pit	20DEC99	17JAN00
11. Phase II Survey for Munitions Disposal		
Technology Meeting	09DEC98A	09DEC98A
Prepare Survey Work Plan	10DEC98A	01FEB99A
Review/Revise Workplan	02FEB99A	23JUL99
Excavation/Sampling of Brick-lined Pits	19FEB99A	22FEB99A
Analysis of Brick-lined Pit Samples	23FEB99A	01JUL99A
Prepare Tech Memo for Brick-lined Pit	02JUL99A	05AUG99
12. Phase II Characterize Training Areas		
Completion of Archives Search Report		31MAR99A
Phase II (a) Workplan for Training Areas	01APR99A	21JUL99
EPA Review/Approve Workplan	22JUL99	18AUG99
Begin Training Area Investigations		31AUG99
13. Phase II Characterize KD and U Ranges		
MIDAS search for analytes	27APR99A	06MAY99A
Soil Sampling/Analysis for KD and U	10MAY99A	28JUL99
UXO Clearance for Monitoring Wells	28JUN99A	02JUL99A
Roadbuilding	06JUL99A	09JUL99A
Monitoring Well installations at KD	12JUL99	17AUG99
Sample/Analyze monitoring wells	26JUL99	09NOV99
14. Phase II Characterize Gun/Mortar Positions		
Completion of Archives Search Report		31MAR99A
Develop Field Sampling Plan	01APR99A	02JUL99A
EPA Review/Approve FSP	06JUL99A	05AUG99
Soil Sampling/Analysis at GP-16	06AUG99	19AUG99
Mobilize drilling equipment	01SEP99	15SEP99
Install Monitoring Wells at Gun/Mortar	16SEP99	20JAN00
Sample/Analyze monitoring wells	07OCT99	14APR00



Activity Description	Early Start	Early Finish
14. Phase II Characterize Gun/Mortar Positions		
Soil Sampling/Analysis at Gun/Mortar	01SEP99	21MAR00
15. Phase II Characterize Trenches, Excav., etc		
Completion of Archives Search Report		31MAR99A
Scoping for UXO Contractor	02JUN99A	05AUG99
Mobilize UXO Contractor	06AUG99	19AUG99
Assessment of site features	20AUG99	17SEP99
Review data with EPA	20SEP99	01OCT99
Phase II (a) Workplan for Trenches, etc.	04OCT99	30NOV99
EPA Review/Approve Workplan	01DEC99	29DEC99
Begin Trenches Investigations		29DEC99
16. Phase II Sampling Groundwater at SAR		
Install Monitoring Wells at SAR	09MAR99A	23APR99A
Sample/Analyze Monitoring Wells	27MAY99A	19AUG99
17. Phase II Characterize Mortar Targets		
Scoping for UXO Contractor	02JUN99A	05AUG99
Mobilize UXO Contractor	06AUG99	19AUG99
Reconnaissance of Targets	20AUG99	02SEP99
Discuss sampling plan with EPA	03SEP99	10SEP99
Prepare draft FSP	13SEP99	15OCT99
EPA review/comment on FSP	18OCT99	05NOV99
Prepare final FSP	08NOV99	19NOV99
Begin Mortar Targets Investigations		19NOV99
18. Reports and Meetings		
Progress Reports	10SEP98A	08SEP00
Phase II Interim Results Report	29JUL99	23SEP99
Draft Interim Longterm Monitoring Report	28DEC99	31JAN00
Review Draft ILM Report	01FEB00	29FEB00
Final ILM Report	01MAR00	28MAR00
Draft Phase II Compl. Work Report	20MAR00	26MAY00
Review Draft Phase II CWR	30MAY00	25JUL00
Final Phase II CWR	26JUL00	22AUG00