MONTHLY PROGRESS REPORT #28
FOR JULY 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 June 28 to July 30, 1999. Scheduled actions are for the six-week period ending September 10, 1999.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of July 30 is summarized in Table 1.

Table 1. Drilling progress during July 1999

Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-63a	Far Field Well upgradient of LRWS-12	385	231	153-163 182-192
MW-63b	Far Field Well upgradient of LRWS-12	385	231	214-224 244-254 375-380
MW-60	KD Range primary target	200	108	91-101
MW-61	KD Range secondary target	160	60	
MW-80	Bourne Far Field Well	145	100	

bgs = below ground surface
bwt = below water table

Soil and groundwater samples collected during the month are summarized in Table 2. Groundwater samples were collected from well MW-73S (installed in Demo Area 1 downgradient from MW-19), from six on Post water supply wells, and from a second monitoring well at the PAVE PAW Radar Station. Profile samples were collected from MW-60 (KD Range), MW-61 (KD Range), MW-63a (LRWS-12 ZOC), MW-63b (LRWS-12 ZOC), MW-80 (Bourne supply wells ZOC), and from an IRP drive point boring (DP-11) in the Raccoon Lane Investigation. Soil samples were collected from borings 60 and 61. A synoptic water level round was performed on July 12, 1999.

The Guard, EPA, and MADEP had a meeting on July 1 to discuss technical issues, including the following:

- It was noted that several corrections are underway to Tech Memo 99-1 describing explosive results for the KD and U Ranges. These changes will address some confusion regarding compass direction of the subsamples in the grid, and some detections that were not included in Table 3 of the memo. A new version of the memo will be prepared for next week's meeting.
- A handout was provided containing results for all analytes for the KD and U Range soil samples. These data are not yet validated. Ogden will prepare concentration maps for the detections that are similar to the maps provided in Volume 2 of the draft CWR. Also, a tech memo will be prepared summarizing the results in a format similar to the CWR. Ogden asked for clarification as to whether

the preliminary background concentrations that appear in the draft CWR should be used for data evaluation. EPA indicated that they would review this issue and provide guidance.

- EPA questioned some of the explosive concentrations in the non-validated data table, which did not appear to agree with results presented previously (handout at 6/3 meeting). After the meeting, Ogden determined that there were several reasons for the discrepancies. The rush explosive data received by Ogden by fax is entered into the database by hand. Then, when electronic data are received by Ogden, they are substituted for the hand-entered data. The previous results were from the hand-entered data, and the current summary was from the electronic deliverable. In one instance the preliminary data were entered incorrectly. In another instance the lab faxed data which had not been properly adjusted for a dilution. In many instances the preliminary results were rounded to two significant figures in the final deliverable, which is appropriate based on the lab reporting procedures. In all cases the table provided at the 7/1 meeting was correct and replaces the previous data.
- There was a discussion of EPA comments (dated 6/8/99) on the draft Response Plan for Demolition Area 1 (dated 6/3/99). The Guard obtained clarification regarding EPA comments on relocating soil sampling grids and modification of Figures 1 and 2. Additional grids will be located at a crater and along a roadway on the southeast side of the topographic depression. Figure 1 will show estimated particle backtracks from detections at MW-34 and -31. Figure 2 will be produced as two separate figures, one showing the profile data and one showing the monitoring well data. The well data figure will show results of all sampling rounds. Both figures will show estimated particle backtracks from detections at MW-34 and -31.
- A 6-page handout was provided summarizing preliminary results for the Demo Area 1 deep soil samples. The table indicates no detections of explosives in these samples. There was a brief discussion of how unsaturated zone modeling might be used to help evaluate the soil and groundwater results. The Guard will provide a proposal regarding the type of modeling to be performed. EPA noted that they are performing some modeling for the KD/U Range data.
- After the meeting Ogden determined that the summary of preliminary deep soil results was incorrect for several samples. The errors occurred due to incorrect data entered in the "FLAG" field during manual data entry of rush explosive results received by fax. RDX was detected in boring B-6 in three sequential samples between 30 and 36 feet bgs (621-148 ug/kg), and HMX was detected in boring B-6 at 22-24 feet bgs (3453 ug/kg). A revised table will be provided for next week's meeting.
- A handout was provided containing results for all analytes for the J-3 Wetland soil and sediment samples. These data are not yet validated. Ogden will prepare concentration maps for the detections that are similar to the maps provided in Volume 2 of the draft CWR. Also, a tech memo will be prepared summarizing the results in a format similar to the CWR. The Guard will have the Post Biologist and LTC Fitzpatrick examine the vegetation in the J-3 Wetland for signs of stress or discoloration. Ogden is working on the access issue.
- A handout was provided containing results for all analytes for the Brick-lined pit soil samples. These data are validated. Ogden will prepare a tech memo summarizing the results.
- EPA asked for an update on sampling the on-Post supply wells; these will be sampled during the week of July 5 with or without Textron wells included. Ogden is also coordinating with Sandwich for explosive splits on their next supply well sampling round. [After the meeting it was determined that this is likely during the week of July 12.] EPA also asked if the IAGS Office could obtain the list of OB/OD sites that JPO had indicated was available.
- EPA asked that the Guard review the 7/98 SOW against the information in the USACE ASR to determine what is missing, and that this be a topic for discussion next week.
- EPA asked that the Guard provide calculations or information showing how the "safety zones" for UXO were derived. The Guard will begin work on a sampling plan for UXO detonation in the event that this is necessary, in accordance with discussions at the 6/29 meeting in Washington.
- EPA provided information regarding a "Waterloo Sampler" and asked that the Guard review this information for applicability to the IAGS.

- EPA described the following agenda topics for the 7/19/99 IART meeting: Update on Textron; Update on Review Team Grants; NGB Budget; Investigation Update; Munitions Surveys; DU Survey; and review of Szostak draft.

The Guard, EPA, and MADEP had a meeting on July 8 to discuss technical issues, including the following:

- The meeting began with a brief presentation of IRP's Raccoon Lane Investigation VOC data for drive points by Rose Forbes of AFCEE. A handout was provided summarizing the status of IAGS results for the split samples analyzed for explosive. Not all explosive results are available and no PDA are available yet for detections. Ogden will fax missing results to EPA and MADEP next week when available.
- A revised version of Tech Team Memo 99-1 was provided. This memo provides a preliminary review of KD and U Range soil results for explosive. In particular the discrete and composite results for grids 44N and 44L were discussed. Ogden is preparing concentration maps for all analytes at KD and U and these are expected to be complete in draft form by about 7/19. Ogden will then prepare a memo or report documenting the unvalidated results for the KD and U Range samples, including explosives and other analytes, in a format similar to the Completion of Work Report.
- EPA asked the Guard to develop a plan for delineating RDX at the 44N location, where concentrations were highest. There was some discussion of the possible sampling approach. EPA asked the Guard to develop a plan for a groundwater investigation at a firing position, based on the nitroglycerin detections. EPA asked the Guard for a description of the types of rocket debris visible at the KD Range, either from the UXO Contractor's notes or from an evaluation by EOD. EPA asked that the soil borings for the KD Range wells include soil sampling for explosives at the same depth intervals employed in Phase I.
- A revised version of the Demo 1 Deep Soil results (5-page table) was provided. This handout summarizes all results for the nine borings in Demo 1. The change from last week was noted in that there were four detections of explosives in the deep samples from boring B-6. The Guard indicated that the revised Response Plan for Demo 1 could be provided to the agencies next week. EPA asked that the figure showing Demo 1 include the locations where C-4 was discovered during the recent site walk. The Guard indicated that the boring logs for B-1 to -9 would be examined for evidence of fill material.
- The draft boring log for the upper portion of MW-63 was provided, along with a 1-page table summarizing explosive results for the profile samples. Several compounds were detected in the first interval but none were confirmed using PDA spectra. There was insufficient water in the second interval for sampling. The 3rd, 4th, and 5th intervals had no detections. No data were available for VOCs. It was agreed to use the default screen depths of 0-10 bwt and 30-40 bwt unless there were significant VOC detections. Ogden planned to provide the VOC data later in the day.
- After the meeting it was discovered that due to an oversight no profile samples had been submitted for VOC analysis. This oversight will be corrected for the remaining samples in the boring. The upper section of the aquifer will be profiled again, to collect the VOC samples. Ogden plans to set the two shallow screens identified above in the current boring. The second boring will be used to profile the upper portion of the aquifer for VOCs, and to set the three deep screens. If the two shallow screens are not correctly positioned based on the subsequent VOC results, a third boring will be used to install additional wells.
- A handout was provided summarizing explosive detections in Phase II groundwater monitoring. This table shows PDA status and is a helpful supplement to the biweekly cumulative summary of explosive results, a much larger table that also shows nondetects but does not include PDA. Ogden pointed out that the handout contains one new detection that had not appeared in previous tables,

HMX in MW-39M2. The discrepancy from previous tables is probably due to an error in the rush database, later corrected in the electronic submittals from the lab.

- There was discussion of the next drilling location for the Sonic rig, which should be finished installing MW-63 by about 7/16. A new location is needed a few days prior to that time to allow for road building. The Group 2 far field locations that are furthest along in the planning process are the sentinels for the Bourne supply wells, which were proposed in a letter dated June 23, 1999. The proposed spacing and locations of these wells were discussed. EPA asked that Ogden provide a revised figure showing well locations spaced 1000 ft apart. EPA indicated that they would obtain information on current Sandwich sentinel wells later in the day.
- EPA indicated that they consider the schedule in the approved Phase II (a) Workplan to be enforceable dates. Therefore, if any activities are being delayed relative to this schedule, EPA requests that the Guard provide a formal request for an extension. EPA asked that the Guard provide a list of wells installed after March 31, 1999. EPA asked that the Guard provide a list of any Phase II (a) wells that remain to be completed.
- Miscellaneous: EPA asked that the Guard indicate whether they will provide comments on the recent DU survey report; the Guard indicated it is working on the sampling plan for UXO detonation; EPA requested a specific itinerary for the visit to MMR by the DoD UXO experts; EPA asked for an updated status report on documents that are currently under review or being prepared.

The Guard, EPA, and MADEP had a meeting on July 15 to discuss technical issues, including the following:

- A discussion took place on next week's DOD UXO visit. The team will start looking at sites on 7/20, continue on 7/21, and have a discussion of options on 7/22. The Guard provided a sampling plan to EPA and MADEP to review in the event the UXO is blown in place. The Guard asked for EPA's and MADEP's comments by the 7/22 technical meeting. The Guard will look into the need for civilians present during the UXO visit to sign a liability waiver form.
- A discussion took place on the elevated dieldrin levels seen in soil that exceed MCP notification guidelines. The Guard asked MADEP to look into whether notification is necessary for unvalidated data or if notification can wait until the data is validated.
- The Drive Point split sample results from AFCEE were received just prior to the meeting and handed out. The only confirmed explosive detects by PDA were in DP-8 and DP-9. Three samples exceeded the RDX HA. The EPA asked the Guard to look at the chromatograms for these samples to see if there are any interference issues. Ogden will have the USGS run forward and reverse particle tracks for these detects and take a closer look in relation to other detects in this area. The EPA wanted to know when the DP-11 results would available. Subsequent to the meeting it was determined that the DP-11 results should be available next week. EPA also wanted to know if groundwater samples at DP-9 were collected down to 95 feet. Ogden will provide an answer at the 7/22 meeting.
- EPA asked the Guard to develop a plan for delineating RDX at the 44N KD Range location, where concentrations were highest and provide this at the 7/22 Technical meeting. Also to be included in the plan is a groundwater investigation at a KD Range firing position, based on the nitroglycerin detections. Some discussion took place about shifting the well from the secondary target to the firing position. Although the Guard could propose it EPA wants an additional well. EPA asked that the soil borings for the KD Range wells include soil sampling for explosives at the same depth intervals employed in Phase I and is incorporated in this plan. Ogden will get with the Guard to incorporate this scope change. Ogden provided a handout of KD Range data missing from the previous 7/8 handout. The cause of the error was discussed at the meeting and was believed to have been the result of a data loading problem. After the meeting Ogden determined that the network disk drive became full, and the database was unable to complete storage of this incoming electronic data deliverable (EDD) and replace the existing incomplete dataset. A test was performed re-loading the

EDD into a copy of the database, and the software performed correctly. A corrective action has begun and includes freeing at least one gigabyte of disk space for the MMR project and running inventories at the end of each day where data is loaded into the MMR database. A handout was also provided of the munition debris found at the KD Range. The debris found was consistent with the range use allowed.

- A handout was provided showing the locations of 4 versus 6 wells placed in the Bourne ZOC. It was noted that the 6 well configuration results in the wells being located for the most part on the edge of the ZOC whereas the 4 well configuration results in each well being located in the center of each ZOC. Bourne has reportedly approved the placement of the 4 well configuration. One well location was found that is common to both well configurations. All agreed that after drilling at MW-63 is complete this will be the next well drilled. The EPA asked the Guard to develop a ZOC map for the Sandwich area and pick locations for far-field wells.
- EPA described the following agenda topics for the 7/19/99 IART meeting: Update on Textron; Update on Review Team Grants; NGB Budget; Investigation Update; Munitions Surveys; DU Survey; and review of Szostak draft.
- The Guard asked the EPA for the status of their reviews on the PEP and ASR reports and position on the regulatory framework under which remediation activities would take place. The EPA indicated PEP comments should be coming next week. EPA will check on when ASR comments will be available. EPA will talk internally about the regulatory framework under which remediation would occur.
- Ogden asked the EPA about modeling being conducted. EPA provided a handout of preliminary results. Ogden will follow up next week with EPA to discuss technical aspects of the model.
- A handout was provided of the biweekly update on groundwater results. Three wells 90LWA0007, 90MW0005, and 90WT0015 indicated the possible presence of explosives. However, after review of PDA spectra it was determined that no explosives are present and the detects are false positives.
- EPA inquired about the status of the Pave Paws wells to be sampled. Ogden indicated only two wells have been found. EPA asked Ogden to again talk with knowledgeable personnel about any additional wells. There has been some delay in being given access to sample the second well although the well is scheduled to be sampled next week.
- EPA asked the Guard to provide the Response Plan to evaluate RDX exceedance in the Impact Area to determine lateral extent by 7/19.

- A brief discussion took place on the planned cleanup of scrap material at the APC. This activity is planned to begin on 7/20.
- A brief discussion took place about visiting the J-3 Wetland next week to look for stressed vegetation. The Guard has arranged for an ecologist to go out to the site next week. The Guard will coordinate with EPA and MADEP on the visit to the J-3 Wetland.

The Guard, EPA, and MADEP had a meeting on July 22 to discuss technical issues, including the following:

- USGS was called at the start of the meeting to ask if they wanted to be conferenced in. In response to a question from EPA, USGS indicated that the subregional model was built and needed some minor tweaking to work out an inconsistency with the regional model. USGS also requested that 5-foot screens be used as much as possible as additional wells are installed, to allow more age dating.
- The Guard will file notifications to MADEP concerning the MCP Reportable Concentration exceedances that have been discussed. It remains to be determined if the Guard will file for an exclusion from notification for the pesticide detections, as allowed by MADEP based on use for the intended purpose.

- A 1-page handout was provided with explosive results for DP-11. Picric Acid was detected in the first interval, and PDA spectra indicate this is a false positive. A 1-page handout was provided that indicates that the filtration process for the drive point samples appeared to introduce more quantifiable peaks into the samples, possibly due to the filtration cartridges. There was a discussion of the method of reporting the drive point samples. Ogden will include these results in a Tech Memo that addresses the J-3 Wetland sampling results. Ogden or the Guard will check with IRP on how/if they are reporting results to Camp Good News, and follow a similar procedure.
- Ogden suggested that a sampling plan for the KD Range (additional soil samples and monitoring wells) be prepared after the Tech Memo describing existing sample results for the KD Range is complete. This TM and sampling plan are expected to be complete by late August. The agencies indicated that this schedule is OK. EPA asked about the progress on contracting for the new Demo 1 wells. This activity is not complete and the Guard will check on the reason for the delay.
- A 2-page handout was provided with preliminary profile results for MW-63. Based on the trace level of TCE detected in the last sample, it was agreed to screen a well at this depth, which is a few feet into bedrock. Depths of other wells will be discussed Monday 7/26 when remaining profile data are available.
- Regarding the Bourne far field wells, EPA indicated that six wells should be installed here rather than the four wells proposed by the Guard. The Guard requested that EPA formalize this position in a letter.
- There was a discussion of the far field well locations for Sandwich. It was agreed to position one far field well cluster in the location where the Sandwich supply well ZOCs converge on the MMR. The depth(s) will be determined based on the depths of the ZOCs. Other monitoring wells may be appropriate if there are potential source areas along Greenway Road, such as the P Range. The requirement for other wells will be addressed in the process of workplan approvals for the Phase II (b) ranges, or for the J Ranges (part of Phase II (a) studies).
- The Guard indicated that a letter will be provided shortly that proposes the far field location for the J Well. The location will be downgradient from the Training Ranges, at the north end of the ZOC.
- EPA discussed their preliminary comments on the Draft Sampling Plan for UXO Detonation (7/15/99), which include: address the additional rounds discovered; include discrete samples (center of each crater) for metals, VOC, and SVOC; include a recon after detonation to look for explosive fragments, and if present then additional sampling; include air sampling; request pre- and post-detonation soil sampling. EPA also had the same comments (except air sampling) on the plan for sampling the munitions debris pile.
- Ogden provided a letter to the agencies proposing an approach for modeling contaminant transport through the unsaturated zone and in groundwater. Ogden has not been successful yet in contacting the EPA modeler regarding the KD Range calculations.
- Ogden indicated that the Response Plan for the latest RDX detections in the Impact Area is still being prepared. This document was a lower priority on the schedule than some others, but it is expected to be complete in 2-3 weeks, in accordance with the schedule requirements in the Phase II (a) Workplan.
- There was a brief discussion of the CHPPM report on the Grand Oaks soil sampling. PDA spectra were not measured for these samples, and therefore are not available for confirmation of the detections. The Guard will develop a plan for confirmatory samples.

The Guard, EPA, and MADEP had a meeting on July 29 to discuss technical issues, including the following:

- A handout was provided summarizing the schedule status for documents being prepared or under review. Some changes and additions to this schedule were discussed. It was agreed to proceed with a "Interim Results Report" describing groundwater conditions based on the 2nd round of results for Phase I wells and the first round of results for Phase II wells. Likely delivery date to EPA will be late

September. EPA indicated that comments on the draft PEP report and the draft CWR were coming soon. The Lead Berm secondary separation workplan and the Textron SOW were added to the "under review" category. EPA and MADEP indicated that their comments on the latter were expected shortly.

- There was a discussion of the status of field activities. Drilling has started on MW-80 which is the first Bourne far field monitoring well. The Guard has requested a written letter from EPA regarding the remaining Bourne locations. Later there was a discussion with Dave Delaney regarding the locations of the 4 proposed wells versus the 6 proposed wells. He will review the figure showing the locations of the 6 wells with respect to the ZOCs. The second well at the KD Range (MW-61) is currently being drilled. Split samples for the Sandwich supply wells will be collected 7/30/99. Textron supply wells were sampled earlier in the week.
- The UXO detonation plan was discussed. EPA asked that the Guard add reconnaissance for munition fragments and sampling if present, after detonation. The air monitoring plan was discussed, and EPA suggested that more time would be beneficial prior to detonation to allow review of the plan. The Guard indicated that the UXO would be detonated early next week (wk of 8/2). It was mentioned that news broadcasts had already indicated that the detonation would occur. EPA asked that the Guard check into how this information was released prior to the official release.
- Ogden indicated that a letter had been faxed to EPA earlier in the day, requesting that the approved location for installation of the U Range well be reconsidered in light of the soil sampling results. The Guard is hoping for a response to the letter within a week.
- A letter dated 7/16/99 from ISOTEC to Ogden was provided. The letter indicates that ISOTEC is willing to perform a laboratory study, free of charge, to determine if their technology is effective for remediation of groundwater contaminated with RDX. Ogden believes the study could provide useful information, although the technology is only one of many that might be appropriate for certain areas of the site. Input is requested from the Guard and regulatory agencies regarding whether the study should be performed. No time limit for a response was indicated by ISOTEC. The next opportunity to collect the sample needed by ISOTEC would be in a few months, during resampling of Demo 1 wells.

2. SUMMARY OF DATA RECEIVED

Preliminary (Non-Validated) Detections

Preliminary non-validated detections of explosive compounds and Volatile Organic Compounds (VOC) are summarized in Table 3 for samples collected during the preceding five-week period. The status of the detections with respect to confirmation using Photo Diode Array (PDA) spectra is also indicated in this table. Where the PDA status is “YES” in Table 3, the detected compound has been confirmed to be present in the sample. Where the status is “NO”, the identification of an explosive has been confirmed to be a false positive. Where the status is blank, PDA has not yet been used to evaluate the detection.

Field Quality Control (QC) samples associated with the borings for MW-60 and –63, and with some of the Raccoon Lane Investigation drive point samples, had detections of explosive compounds. Where PDA data were available they indicated false positives, but data were not available for all of the detects at the time of this report. Acetone, methyl ethyl ketone (MEK), and toluene were also detected in some QC samples from the two borings for MW-63.

Several explosive compounds were detected in the groundwater sample from MW-73, installed between MW-19 and MW-31 in the Demo 1 area. PDA spectra were not available for these detections at the time of this report. The explosive detections for wells 90LWA0007 and MW-30 were presented and discussed in the previous monthly report, but also appear in Table 3 due to overlap in the time period summarized.

Explosive compounds were detected in several groundwater profile samples during drilling of the far field monitoring wells MW-63 and MW-80. At each location the detections were at the two intervals closest to the water table, and similar compounds were detected, primarily nitrotoluenes, nitrobenzenes, and nitroglycerin. None of the explosive detections in these borings were confirmed by PDA data. Profile samples from these borings contained several VOC. Chloroform was detected most frequently. Other compounds detected included trichloroethene (bottom interval of MW-63), acetone, MEK, toluene, and chloromethane. As indicated above, acetone, MEK, and toluene were also detected in some of the QC samples.

No explosive compounds were detected in the profile samples from drilling MW-60, installed downgradient from the primary target at the KD Range. VOCs detected included acetone, MEK, toluene, methylene chloride, styrene, chloroform, and xylenes.

Split samples from the Raccoon Lane Investigation drive point DP-8 had confirmed RDX and HMX in four intervals (45'-50', 55'-60', 65'-70', and 75'-80' bgs). Picric acid and nitroglycerin were also detected in one of the DP-8 samples (5-10' bgs) but these detections were determined to be false positives based on PDA spectra. Trinitrobenzene was detected in both DP-4 and DP-2 but the detections were determined to be false positives based on PDA spectra.

One sample from DP-9 (60'-65' bgs) had a confirmed detection of HMX and a second sample (70'-75' bgs) had a confirmed detection of HMX and RDX. Picric acid, nitroglycerin, and trinitrobenzene were detected in several samples from DP-9 but these detections were determined to be false positives based on PDA spectra. Picric acid detections at DP-11 were also determined to be false positives.

Validated Data

Validated data were received during July for Sample Delivery Groups (SDGs) 133, 135, 138, 140, 143-145, 151, 152, 164, 166, and 171. These SDGs contain results for 121 monitoring wells, 52 soil samples, and 16 groundwater profile samples. The validated data are provided in an attachment to this report. Results include analyses for explosive, VOC, Semivolatile Organic Compounds (SVOC), pesticides, herbicides, and inorganic parameters. Following is a brief summary of the validated data.

Explosives were identified at 8 monitoring wells and 1 profile boring in the validated data, with 2 exceedances of the lifetime drinking water HA of 2 ppb for RDX. Exceedances were measured at well MW-38M3 (2.5 ppb) and in a profile sample from DP-8 at 75-80 feet bgs (3.4 ppb). Other locations where explosive detections were validated included 27MW0017A, MW-30, MW-38M4, MW-39M2, MW-43M2, MW-50M1, and MW-59S.

Explosive detections in 4 soil samples from Demo Area 1 borings, and in 13 grid samples from the KD Range, are included in the validated data. The Demo Area 1 detections were of RDX, HMX, and 2A-DNT. The KD Range detections were of nitroglycerin. Not all soil samples from these two areas have been validated. Two of the nitroglycerin detections exceeded the Reportable Concentration (RC) limit under the Massachusetts Contingency Plan (MCP).

Metals were detected in all monitoring wells included in the validated data, with exceedances of drinking water criteria for molybdenum in 20 wells, for thallium in 13 wells, and for sodium in 3 wells. The long-term child HA of 10 ppb for molybdenum was exceeded at MW-53M1 (132 ppb), MW-52M3 (72.6 ppb), MW-54S (66.2 ppb), MW-52D (51.1 ppb), MW-46M2 (48.9 ppb), MW-47M3 (43.1 ppb), MW-46M1 (32.8 ppb), MW-55D (22.6 ppb), MW-55M2 (21.8 ppb), MW-50M2 (20.6 ppb), MW-52M2 (18.5 ppb), MW-54D (17.5 ppb), MW-46D (17.2 ppb), MW-55S (15.9 ppb), MW-54M2 (13.1 ppb), MW-17M1

(12.6 ppb), MW-55M1 (12.5 ppb), MW-50M1 (11.8 ppb), MW-54M1 (11.8 ppb), and MW-47M2 (11.0 ppb). The MCL of 2 ppb for thallium was exceeded at MW-38M2 (4.9J ppb), 90MW0038 (4.4J ppb), MW-72S (4.0 ppb), 03MW0022A (3.9 ppb), MW-52M3 (3.6J ppb), MW-47M2 (3.2J ppb), PAVE PAW MW-1 (3.1J ppb), MW-45S (3.0J ppb), MW-52D (2.8J ppb), 27MW0020Z (2.7J ppb), 03MW0006 (2.6J ppb), MW-41M2 (2.5J ppb), and 11MW0004 (2.3J ppb). The Health Advisory guidance of 20,000 ppb for sodium was exceeded at 15MW0002 (37,600 ppb), 90WT0015 (34,300 ppb), and MW-46M2 (24,400 ppb).

Metals were detected in all soil samples included in the validated data, which were from the KD Range. All 25 analytes were detected except for mercury, cadmium, and sodium. None of the detections exceeded a RC limit under the MCP.

VOCs were identified in 63 monitoring wells in the validated data, with 3 exceedances of the MCL of 5 ppb for tetrachloroethene (PCE). The PCE exceedances occurred in the IRP wells 03MW0020 (12 ppb), 03MW0014A (8 ppb), and 03MW007A (6 ppb). Chloroform was the VOC detected most frequently in groundwater samples, appearing in approximately half the samples in concentrations ranging from 0.2 to 4.0 ppb. Toluene was also detected frequently, in about one quarter of the samples in concentrations ranging from 0.2 to 68 ppb. Twelve other VOCs were detected in groundwater, in up to 5 wells each.

Acetone was the only VOC detected in the validated soil samples from the KD Range, detected in 1 of the 13 soil samples at 4.0 ppb. This detection did not exceed the RC limit of 3000 ppb under the MCP.

SVOCs were identified in 37 monitoring wells in the validated data, with exceedances of drinking water criteria for bis (2-ethylhexyl) phthalate (BEHP) and naphthalene. BEHP was detected in 37 groundwater samples, and the MCL of 6 ppb was exceeded in five wells: MW-45M1 (37 ppb), 15MW0008 (25J ppb), MW-38M3 (15 ppb), MW-21M2 (8 ppb), and MW-55D (8 ppb). Naphthalene was detected in two wells, and the concentration of 24 ppb at MW-45S exceeded the lifetime HA of 20 ppb. Two other SVOCs were detected in groundwater, in up to 3 wells each.

SVOCs were detected in 11 of the 26 soil samples from the KD Range that were validated. Di-n-butyl phthalate and n-nitrosodiphenylamine were detected most frequently and in the highest concentrations, each detected in the same 7 samples. Five other SVOCs were detected, in up to 3 samples each. None of the detections exceeded a RC limit under the MCP.

No PCBs were detected in the groundwater samples. Nineteen pesticides were detected in a groundwater sample from PAVE PAW MW-1, including dieldrin (3.0 ppb) above the longerterm child HA of 0.5 ppb. Single pesticide detections were also validated in 27MW0017A, 90MW0005, MW-52M1, and MW-50D.

Dieldrin was the only pesticide detected in the soil samples from the KD Range that were validated. Dieldrin was detected in 6 of the 13 samples, and one measurement (80 ppb) exceeded the RC limit of 30 ppb under the MCP.

Three herbicides were detected in the groundwater samples that were validated, none above drinking water criteria. 2,4,5-T was detected in 10 of the 121 samples, chloramben was detected in 2 samples, and DCPA was detected in 6 samples. No herbicides were detected in the 13 soil samples from KD Range that were validated.

3. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period include the following:

Draft Phase II (a) Field Sampling Plan for Gun and Mortar Positions	July 2, 1999
Weekly Progress Report (June 28-July 2)	July 9, 1999
Monthly Progress Report No. 27 (June 1999)	July 9, 1999
Revised Response Plan for Demo Area 1	July 15, 1999
IART Groundwater Detection Maps and Tables (July 5, 1999)	July 19, 1999
Weekly Progress Report (7/5/99 – 7/9/99)	July 23, 1999
Weekly Progress Report (7/12/99 – 7/16/99)	July 23, 1999
Draft Training Area Workplan	July 23, 1999
Final Sampling Plan for UXO Detonation	July 26, 1999
Proposed Far Field Well Location for the J Well	July 26, 1999
Draft Soil Sampling Plan for MW-26/59	July 26, 1999
Draft Tech Memo 99-2 for Demo 1 Deep Soil	July 27, 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 August and early September 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 PEP analyses for supply wells; complete round 2 sampling for Group 1 wells; begin round 1 sampling for Group 2 wells; begin round 3 sampling for Phase I wells; EPA review Demo 1 Response Plan; complete round 2 sampling for Phase II (a) wells; begin soil sampling for source areas; continue data collection for J Ranges; complete soil sampling and monitoring well installation for the steel-lined pit; EPA review draft Workplan for Training Areas; complete monitoring well installations for KD and U Range; EPA review Gun/Mortar FSP; begin soil sampling and monitoring well installations for gun and mortar positions; complete recon of trenches/excavations and review with EPA; complete reconnaissance of mortar targets and review with EPA; and begin preparation of Interim Results Report. The next meeting of the Impact Area Groundwater Study Review Team has been scheduled for September 9, 1999.

TABLE 2
SAMPLING PROGRESS
7/1-7/31

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
03MW00400CT	FIELDQC	7/21/1999	FIELDQC	0	0
03MW0040CE	FIELDQC	7/22/1999	FIELDQC	0	0
ASPWELLT	ASPWELLT	7/20/1999	FIELDQC	0	0
CEMETERY2T	FIELDQC	7/14/1999	FIELDQC	0	0
G60MKE	FIELDQC	7/23/1999	FIELDQC	0	0
G60MKT	FIELDQC	7/23/1999	FIELDQC	0	0
G63DJE	FIELDQC	7/6/1999	FIELDQC	0	0
G63DNE	FIELDQC	7/7/1999	FIELDQC	0	0
G63DNF	FIELDQC	7/8/1999	FIELDQC	0	0
G63DNT	FIELDQC	7/8/1999	FIELDQC	0	0
G63DRE	FIELDQC	7/9/1999	FIELDQC	0	0
G63DST	FIELDQC	7/9/1999	FIELDQC	0	0
G63DUT	FIELDQC	7/13/1999	FIELDQC	0	0
G63DVE	FIELDQC	7/13/1999	FIELDQC	0	0
G63DWT	FIELDQC	7/14/1999	FIELDQC	0	0
G63DXE	FIELDQC	7/14/1999	FIELDQC	0	0
G63DXT	FIELDQC	7/14/1999	FIELDQC	0	0
G63MBE	FIELDQC	7/20/1999	FIELDQC	0	0
G63MET	FIELDQC	7/20/1999	FIELDQC	0	0
G63MJE	FIELDQC	7/21/1999	FIELDQC	0	0
G63MMT	FIELDQC	7/21/1999	FIELDQC	0	0
G63MPE	FIELDQC	7/22/1999	FIELDQC	0	0
G80DBE	FIELDQC	7/29/1999	FIELDQC	0	0
G80DBT	FIELDQC	7/29/1999	FIELDQC	0	0
G80DCE	FIELDQC	7/30/1999	FIELDQC	0	0
G80DCT	FIELDQC	7/30/1999	FIELDQC	0	0
OT-Y016801	FIELDQC	7/6/1999	FIELDQC	0	0
OT-Y016801F	FIELDQC	7/6/1999	FIELDQC	0	0
PPAWSMW-2E	FIELDQC	7/22/1999	FIELDQC	0	0
PPAWSMW-2T	FIELDQC	7/22/1999	FIELDQC	0	0
S60MAE	FIELDQC	7/20/1999	FIELDQC	0	0
S60MIE	FIELDQC	7/21/1999	FIELDQC	0	0
S61MCE	FIELDQC	7/27/1999	FIELDQC	0	0
S61MCT	FIELDQC	7/27/1999	FIELDQC	0	0
S61MIE	FIELDQC	7/28/1999	FIELDQC	0	0
TEXTRONPW-1T	FIELDQC	7/27/1999	FIELDQC	0	0
TEXTRONPW-2T	FIELDQC	7/27/1999	FIELDQC	0	0
WELLBT	FIELDQC	7/15/1999	FIELDQC	0	0
03MW0040C	03MW0040C	7/21/1999	GROUNDWATER	0	10
426100-02G	426100-02G	7/30/1999	GROUNDWATER	unkn.	unkn.
426100-03G	426100-03G	7/30/1999	GROUNDWATER	unkn.	unkn.
426100-07G	426100-07G	7/30/1999	GROUNDWATER	unkn.	unkn.
426100-08G	426100-08G	7/30/1999	GROUNDWATER	unkn.	unkn.
426100-09G	426100-09G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-04G	4261000-04G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-05G	4261000-05G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-06G	4261000-06G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-10G	4261000-10G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-11G	4261000-11G	7/30/1999	GROUNDWATER	unkn.	unkn.
4261000-11GD	4261000-11G	7/30/1999	GROUNDWATER	unkn.	unkn.
ASPWELL	ASPWELL	7/20/1999	GROUNDWATER	unkn.	unkn.

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
SAMPLING PROGRESS
7/1-7/31

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
CEMETERY1	CEMETERY1	7/14/1999	GROUNDWATER	unkn.	unkn.
CEMETERY2	CEMETERY2	7/14/1999	GROUNDWATER	unkn.	unkn.
PPAWSMW-2	PPAWSMW-2	7/22/1999	GROUNDWATER	85	105
RANGECON	RANGECON	7/15/1999	GROUNDWATER	unkn.	unkn.
RANGECOND	RANGECOND	7/15/1999	GROUNDWATER	unkn.	unkn.
TEXTRONPW-1	TEXTRONPW-1	7/27/1999	GROUNDWATER	unkn.	unkn.
TEXTRONPW-2	TEXTRONPW-2	7/27/1999	GROUNDWATER	unkn.	unkn.
W73SSA	MW-73	7/9/1999	GROUNDWATER	0	10
WELLB	WELLB	7/15/1999	GROUNDWATER	unkn.	unkn.
DW6306	GAC WATER	7/6/1999	IDW	0	0
DW6307	GAC WATER	7/7/1999	IDW	0	0
DW6307A	GAC WATER	7/7/1999	IDW	0	0
DW6308	GAC WATER	7/8/1999	IDW	0	0
DW6309	GAC WATER	7/9/1999	IDW	0	0
DW6313	GAC WATER	7/13/1999	IDW	0	0
DW6313A	GAC WATER	7/13/1999	IDW	0	0
DW6314	GAC WATER	7/14/1999	IDW	0	0
DW6321	GAC WATER	7/21/1999	IDW	0	0
DW6321A	GAC WATER	7/21/1999	IDW	0	0
DW8030	GAC WATER	7/30/1999	IDW	0	0
G60MAA	MW-60	7/21/1999	PROFILE	100	100
G60MBA	MW-60	7/22/1999	PROFILE	110	110
G60MCA	MW-60	7/22/1999	PROFILE	120	120
G60MDA	MW-60	7/22/1999	PROFILE	130	130
G60MEA	MW-60	7/22/1999	PROFILE	140	140
G60MFA	MW-60	7/22/1999	PROFILE	150	150
G60MGA	MW-60	7/22/1999	PROFILE	160	160
G60MHA	MW-60	7/22/1999	PROFILE	170	170
G60MHD	MW-60	7/22/1999	PROFILE	0	0
G60MIA	MW-60	7/22/1999	PROFILE	180	180
G60MJA	MW-60	7/22/1999	PROFILE	190	190
G60MKA	MW-60	7/23/1999	PROFILE	200	200
G61MAA	MW-61	7/29/1999	PROFILE	105	105
G61MBA	MW-61	7/30/1999	PROFILE	110	110
G61MCA	MW-61	7/30/1999	PROFILE	120	120
G61MDA	MW-61	7/30/1999	PROFILE	130	130
G61MEA	MW-61	7/30/1999	PROFILE	140	140
G61MFA	MW-61	7/30/1999	PROFILE	150	150
G61MGA	MW-61	7/30/1999	PROFILE	160	160
G63DAA	MW-63	7/1/1999	PROFILE	150	155
G63DCA	MW-63	7/1/1999	PROFILE	170	175
G63DDA	MW-63	7/1/1999	PROFILE	180	185
G63DEA	MW-63	7/1/1999	PROFILE	190	195
G63DFA	MW-63	7/6/1999	PROFILE	200	205
G63DGA	MW-63	7/6/1999	PROFILE	210	215
G63DHA	MW-63	7/6/1999	PROFILE	220	225
G63DHD	MW-63	7/6/1999	PROFILE	220	225
G63DIA	MW-63	7/6/1999	PROFILE	230	235
G63DJA	MW-63	7/7/1999	PROFILE	240	245
G63DKA	MW-63	7/7/1999	PROFILE	250	255
G63DLA	MW-63	7/7/1999	PROFILE	260	265

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
SAMPLING PROGRESS
7/1-7/31

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
G63DMA	MW-63	7/7/1999	PROFILE	270	275
G63DNA	MW-63	7/7/1999	PROFILE	280	285
G63DOA	MW-63	7/8/1999	PROFILE	290	295
G63DPA	MW-63	7/8/1999	PROFILE	300	305
G63DQA	MW-63	7/8/1999	PROFILE	310	315
G63DRA	MW-63	7/9/1999	PROFILE	320	325
G63DRD	MW-63	7/9/1999	PROFILE	320	325
G63DSA	MW-63	7/9/1999	PROFILE	330	335
G63DUA	MW-63	7/13/1999	PROFILE	350	355
G63DVA	MW-63	7/13/1999	PROFILE	360	365
G63DWA	MW-63	7/14/1999	PROFILE	370	375
G63DXA	MW-63	7/14/1999	PROFILE	380	385
G63MAA	MW-63	7/20/1999	PROFILE	150	155
G63MBA	MW-63	7/20/1999	PROFILE	160	165
G63MCA	MW-63	7/20/1999	PROFILE	170	175
G63MDA	MW-63	7/20/1999	PROFILE	180	185
G63MEA	MW-63	7/20/1999	PROFILE	190	195
G63MFA	MW-63	7/20/1999	PROFILE	200	205
G63MGA	MW-63	7/20/1999	PROFILE	210	215
G63MGD	MW-63	7/20/1999	PROFILE	210	215
G63MHA	MW-63	7/21/1999	PROFILE	220	225
G63MIA	MW-63	7/21/1999	PROFILE	230	235
G63MJA	MW-63	7/21/1999	PROFILE	240	245
G63MKA	MW-63	7/21/1999	PROFILE	250	255
G63MLA	MW-63	7/21/1999	PROFILE	260	265
G63MMA	MW-63	7/21/1999	PROFILE	270	275
G63MNA	MW-63	7/21/1999	PROFILE	280	285
G63MOA	MW-63	7/22/1999	PROFILE	290	295
G63MPA	MW-63	7/22/1999	PROFILE	300	305
G80DAA	MW-80	7/29/1999	PROFILE	40	45
G80DBA	MW-80	7/29/1999	PROFILE	50	55
G80DCA	MW-80	7/30/1999	PROFILE	60	65
G80DCD	MW-80	7/30/1999	PROFILE	60	65
G80DDA	MW-80	7/30/1999	PROFILE	70	75
G80DEA	MW-80	7/30/1999	PROFILE	80	85
G80DFA	MW-80	7/30/1999	PROFILE	90	95
G80DGA	MW-80	7/30/1999	PROFILE	100	105
G80DHA	MW-80	7/30/1999	PROFILE	110	115
G80DIA	MW-80	7/30/1999	PROFILE	120	125
G80DJA	MW-80	7/30/1999	PROFILE	130	135
G80DKA	MW-80	7/30/1999	PROFILE	140	145
OT-Y016301	DP-11	7/6/1999	PROFILE	27	32
OT-Y016301F	DP-11	7/6/1999	PROFILE	27	32
OT-Y016307	DP-11	7/6/1999	PROFILE	37	42
OT-Y016307F	DP-11	7/6/1999	PROFILE	37	42
OT-Y016403	DP-11	7/6/1999	PROFILE	47	52
OT-Y016403F	DP-11	7/6/1999	PROFILE	47	52
OT-Y016407	DP-11	7/6/1999	PROFILE	57	62
OT-Y016407F	DP-11	7/6/1999	PROFILE	57	62
OT-Y016505	DP-11	7/6/1999	PROFILE	67	72
OT-Y016505F	DP-11	7/6/1999	PROFILE	67	72

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
SAMPLING PROGRESS
7/1-7/31

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED
OT-Y016601	DP-11	7/6/1999	PROFILE	77	82
OT-Y016601F	DP-11	7/6/1999	PROFILE	77	82
OT-Y016605	DP-11	7/6/1999	PROFILE	87	92
OT-Y016605F	DP-11	7/6/1999	PROFILE	87	92
S60MAA	MW-60	7/20/1999	SOIL BORING	15	19
S60MBA	MW-60	7/20/1999	SOIL BORING	20	22
S60MCA	MW-60	7/20/1999	SOIL BORING	30	32
S60MDA	MW-60	7/20/1999	SOIL BORING	40	44
S60MEA	MW-60	7/21/1999	SOIL BORING	50	52
S60MFA	MW-60	7/21/1999	SOIL BORING	60	62
S60MGA	MW-60	7/21/1999	SOIL BORING	70	72
S60MHA	MW-60	7/21/1999	SOIL BORING	80	84
S60MIA	MW-60	7/21/1999	SOIL BORING	90	92
S61MAA	MW-61	7/27/1999	SOIL BORING	10	14
S61MBA	MW-61	7/27/1999	SOIL BORING	22	24
S61MCA	MW-61	7/27/1999	SOIL BORING	30	32
S61MDA	MW-61	7/28/1999	SOIL BORING	42	44
S61MEA	MW-61	7/28/1999	SOIL BORING	50	52
S61MFA	MW-61	7/28/1999	SOIL BORING	60	62
S61MGA	MW-61	7/28/1999	SOIL BORING	70	72
S61MGD	MW-61	7/28/1999	SOIL BORING	70	72
S61MHA	MW-61	7/28/1999	SOIL BORING	80	82
S61MIA	MW-61	7/28/1999	SOIL BORING	90	92

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 3
DETECTED COMPOUNDS IN RUSH DATA
(UNVALIDATED)
SAMPLES COLLECTED 6/13/99-7/31/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
G63DRE	FIELDQC	7/9/1999	FIELDQC	0	0	OC21V	ACETONE	
G63DXE	FIELDQC	7/14/1999	FIELDQC	0	0	8330N	1,3-DINITROBENZENE	NO
G63DXE	FIELDQC	7/14/1999	FIELDQC	0	0	OC21V	ACETONE	
G63DXE	FIELDQC	7/14/1999	FIELDQC	0	0	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63DXE	FIELDQC	7/14/1999	FIELDQC	0	0	OC21V	TOLUENE	
G63MBE	FIELDQC	7/20/1999	FIELDQC	0	0	OC21V	ACETONE	
G63MBE	FIELDQC	7/20/1999	FIELDQC	0	0	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63MJE	FIELDQC	7/21/1999	FIELDQC	0	0	OC21V	ACETONE	
G63MJE	FIELDQC	7/21/1999	FIELDQC	0	0	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63MPE	FIELDQC	7/22/1999	FIELDQC	0	0	OC21V	ACETONE	
G63MPE	FIELDQC	7/22/1999	FIELDQC	0	0	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
OT-Y011009F	FIELDQC	6/24/1999	FIELDQC	0	0	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y012301	FIELDQC	6/23/1999	FIELDQC	0	0	8330N	NITROGLYCERIN	
OT-Y012301F	FIELDQC	6/23/1999	FIELDQC	0	0	8330N	1,3,5-TRINITROBENZENE	
OT-Y012301F	FIELDQC	6/23/1999	FIELDQC	0	0	8330N	NITROGLYCERIN	
OT-Y016801F	FIELDQC	7/6/1999	FIELDQC	0	0	8330N	1,3,5-TRINITROBENZENE	
OT-Y016801F	FIELDQC	7/6/1999	FIELDQC	0	0	8330N	PICRIC ACID	
S60MAE	FIELDQC	7/20/1999	FIELDQC	0	0	8330N	NITROGLYCERIN	NO
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
W73SSA	MW-73	7/9/1999	GROUNDWATER	0	10	8330N	4-AMINO-2,6-DINITROTOLUENE	
W73SSA	MW-73	7/9/1999	GROUNDWATER	0	10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	
W73SSA	MW-73	7/9/1999	GROUNDWATER	0	10	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	
G60MAA	MW-60	7/21/1999	PROFILE	100	100	OC21V	ACETONE	
G60MAA	MW-60	7/21/1999	PROFILE	100	100	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MAA	MW-60	7/21/1999	PROFILE	100	100	OC21V	TOLUENE	
G60MBA	MW-60	7/22/1999	PROFILE	110	110	OC21V	ACETONE	
G60MBA	MW-60	7/22/1999	PROFILE	110	110	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MBA	MW-60	7/22/1999	PROFILE	110	110	OC21V	METHYLENE CHLORIDE	
G60MBA	MW-60	7/22/1999	PROFILE	110	110	OC21V	STYRENE	
G60MBA	MW-60	7/22/1999	PROFILE	110	110	OC21V	TOLUENE	
G60MCA	MW-60	7/22/1999	PROFILE	120	120	OC21V	ACETONE	
G60MCA	MW-60	7/22/1999	PROFILE	120	120	OC21V	METHYLENE CHLORIDE	

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 3
DETECTED COMPOUNDS IN RUSH DATA
(UNVALIDATED)
SAMPLES COLLECTED 6/13/99-7/31/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
G60MCA	MW-60	7/22/1999	PROFILE	120	120	OC21V	TOLUENE	
G60MDA	MW-60	7/22/1999	PROFILE	130	130	OC21V	ACETONE	
G60MDA	MW-60	7/22/1999	PROFILE	130	130	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MDA	MW-60	7/22/1999	PROFILE	130	130	OC21V	TOLUENE	
G60MEA	MW-60	7/22/1999	PROFILE	140	140	OC21V	ACETONE	
G60MEA	MW-60	7/22/1999	PROFILE	140	140	OC21V	CHLOROFORM	
G60MEA	MW-60	7/22/1999	PROFILE	140	140	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MEA	MW-60	7/22/1999	PROFILE	140	140	OC21V	TOLUENE	
G60MFA	MW-60	7/22/1999	PROFILE	150	150	OC21V	ACETONE	
G60MFA	MW-60	7/22/1999	PROFILE	150	150	OC21V	CHLOROFORM	
G60MFA	MW-60	7/22/1999	PROFILE	150	150	OC21V	TOLUENE	
G60MGA	MW-60	7/22/1999	PROFILE	160	160	OC21V	ACETONE	
G60MGA	MW-60	7/22/1999	PROFILE	160	160	OC21V	CHLOROFORM	
G60MGA	MW-60	7/22/1999	PROFILE	160	160	OC21V	TOLUENE	
G60MHA	MW-60	7/22/1999	PROFILE	170	170	OC21V	ACETONE	
G60MHA	MW-60	7/22/1999	PROFILE	170	170	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MHA	MW-60	7/22/1999	PROFILE	170	170	OC21V	TOLUENE	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	ACETONE	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	CHLOROFORM	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	STYRENE	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	TOLUENE	
G60MIA	MW-60	7/22/1999	PROFILE	180	180	OC21V	XYLENES, TOTAL	
G60MJA	MW-60	7/22/1999	PROFILE	190	190	OC21V	ACETONE	
G60MJA	MW-60	7/22/1999	PROFILE	190	190	OC21V	CHLOROFORM	
G60MJA	MW-60	7/22/1999	PROFILE	190	190	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MJA	MW-60	7/22/1999	PROFILE	190	190	OC21V	TOLUENE	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	ACETONE	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	CHLOROFORM	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	STYRENE	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	TOLUENE	
G60MKA	MW-60	7/23/1999	PROFILE	200	200	OC21V	XYLENES, TOTAL	
G63DAA	MW-63	7/1/1999	PROFILE	150	155	8330N	1,3,5-TRINITROBENZENE	NO
G63DAA	MW-63	7/1/1999	PROFILE	150	155	8330N	1,3-DINITROBENZENE	NO

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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 3
DETECTED COMPOUNDS IN RUSH DATA
(UNVALIDATED)
SAMPLES COLLECTED 6/13/99-7/31/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
G63DAA	MW-63	7/1/1999	PROFILE	150	155	8330N	3-NITROTOLUENE	NO
G63DAA	MW-63	7/1/1999	PROFILE	150	155	8330N	NITROBENZENE	NO
G63DAA	MW-63	7/1/1999	PROFILE	150	155	8330N	NITROGLYCERIN	NO
G63DUA	MW-63	7/13/1999	PROFILE	350	355	OC21V	CHLOROFORM	
G63DVA	MW-63	7/13/1999	PROFILE	360	365	OC21V	CHLOROFORM	
G63DXA	MW-63	7/14/1999	PROFILE	380	385	OC21V	TRICHLOROETHYLENE (TCE)	
G63MAA	MW-63	7/20/1999	PROFILE	150	155	OC21V	ACETONE	
G63MAA	MW-63	7/20/1999	PROFILE	150	155	OC21V	CHLOROFORM	
G63MBA	MW-63	7/20/1999	PROFILE	160	165	8330N	4-NITROTOLUENE	NO
G63MBA	MW-63	7/20/1999	PROFILE	160	165	8330N	NITROGLYCERIN	NO
G63MBA	MW-63	7/20/1999	PROFILE	160	165	OC21V	ACETONE	
G63MBA	MW-63	7/20/1999	PROFILE	160	165	OC21V	CHLOROFORM	
G63MBA	MW-63	7/20/1999	PROFILE	160	165	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63MCA	MW-63	7/20/1999	PROFILE	170	175	OC21V	CHLOROFORM	
G63MDA	MW-63	7/20/1999	PROFILE	180	185	OC21V	CHLOROFORM	
G63MDA	MW-63	7/20/1999	PROFILE	180	185	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63MDA	MW-63	7/20/1999	PROFILE	180	185	OC21V	TOLUENE	
G63MEA	MW-63	7/20/1999	PROFILE	190	195	OC21V	CHLOROFORM	
G63MEA	MW-63	7/20/1999	PROFILE	190	195	OC21V	METHYL ETHYL KETONE (2-BUTANONE)	
G63MEA	MW-63	7/20/1999	PROFILE	190	195	OC21V	TOLUENE	
G63MFA	MW-63	7/20/1999	PROFILE	200	205	OC21V	CHLOROFORM	
G63MGA	MW-63	7/20/1999	PROFILE	210	215	OC21V	CHLOROFORM	
G63MGD	MW-63	7/20/1999	PROFILE	210	215	OC21V	CHLOROFORM	
G63MHA	MW-63	7/21/1999	PROFILE	220	225	OC21V	CHLOROFORM	
G63MHA	MW-63	7/21/1999	PROFILE	220	225	OC21V	CHLOROMETHANE	
G63MIA	MW-63	7/21/1999	PROFILE	230	235	OC21V	CHLOROFORM	
G63MIA	MW-63	7/21/1999	PROFILE	230	235	OC21V	CHLOROMETHANE	
G63MJA	MW-63	7/21/1999	PROFILE	240	245	OC21V	CHLOROFORM	
G63MJA	MW-63	7/21/1999	PROFILE	240	245	OC21V	CHLOROMETHANE	
G63MKA	MW-63	7/21/1999	PROFILE	250	255	OC21V	CHLOROFORM	
G63MKA	MW-63	7/21/1999	PROFILE	250	255	OC21V	CHLOROMETHANE	
G63MLA	MW-63	7/21/1999	PROFILE	260	265	OC21V	CHLOROFORM	
G63MLA	MW-63	7/21/1999	PROFILE	260	265	OC21V	CHLOROMETHANE	
G63MMA	MW-63	7/21/1999	PROFILE	270	275	OC21V	CHLOROFORM	
G63MMA	MW-63	7/21/1999	PROFILE	270	275	OC21V	CHLOROMETHANE	

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(UNVALIDATED)
SAMPLES COLLECTED 6/13/99-7/31/99

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMP_TYPE	SBD	SED	METHOD	OGDEN_ANALYTE	PDA
G63MNA	MW-63	7/21/1999	PROFILE	280	285	OC21V	CHLOROFORM	
G63MNA	MW-63	7/21/1999	PROFILE	280	285	OC21V	CHLOROMETHANE	
G63MOA	MW-63	7/22/1999	PROFILE	290	295	OC21V	CHLOROFORM	
G63MPA	MW-63	7/22/1999	PROFILE	300	305	OC21V	CHLOROFORM	
G63MPA	MW-63	7/22/1999	PROFILE	300	305	OC21V	CHLOROMETHANE	
G80DAA	MW-80	7/29/1999	PROFILE	40	45	8330N	3-NITROTOLUENE	NO
G80DAA	MW-80	7/29/1999	PROFILE	40	45	8330N	NITROGLYCERIN	NO
G80DAA	MW-80	7/29/1999	PROFILE	40	45	8330N	PICRIC ACID	NO
G80DAA	MW-80	7/29/1999	PROFILE	40	45	OC21V	ACETONE	
G80DAA	MW-80	7/29/1999	PROFILE	40	45	OC21V	CHLOROFORM	
G80DBA	MW-80	7/29/1999	PROFILE	50	55	8330N	3-NITROTOLUENE	NO
G80DBA	MW-80	7/29/1999	PROFILE	50	55	8330N	4-NITROTOLUENE	NO
G80DBA	MW-80	7/29/1999	PROFILE	50	55	8330N	NITROGLYCERIN	NO
G80DBA	MW-80	7/29/1999	PROFILE	50	55	OC21V	ACETONE	
G80DBA	MW-80	7/29/1999	PROFILE	50	55	OC21V	CHLOROFORM	
G80DCA	MW-80	7/30/1999	PROFILE	60	65	OC21V	CHLOROFORM	
G80DCD	MW-80	7/30/1999	PROFILE	60	65	OC21V	CHLOROFORM	
G80DDA	MW-80	7/30/1999	PROFILE	70	75	OC21V	CHLOROFORM	
G80DDA	MW-80	7/30/1999	PROFILE	70	75	OC21V	TOLUENE	
G80DEA	MW-80	7/30/1999	PROFILE	80	85	OC21V	CHLOROFORM	
G80DFA	MW-80	7/30/1999	PROFILE	90	95	OC21V	CHLOROFORM	
G80DGA	MW-80	7/30/1999	PROFILE	100	105	OC21V	CHLOROFORM	
G80DHA	MW-80	7/30/1999	PROFILE	110	115	OC21V	CHLOROFORM	
G80DHA	MW-80	7/30/1999	PROFILE	110	115	OC21V	TOLUENE	
G80DIA	MW-80	7/30/1999	PROFILE	120	125	OC21V	CHLOROFORM	
G80DJA	MW-80	7/30/1999	PROFILE	130	135	OC21V	CHLOROFORM	
G80DKA	MW-80	7/30/1999	PROFILE	140	145	OC21V	CHLOROFORM	
OT-Y010501	DP-8	6/23/1999	PROFILE	5	10	8330N	NITROGLYCERIN	NO
OT-Y010501	DP-8	6/23/1999	PROFILE	5	10	8330N	PICRIC ACID	NO
OT-Y010501F	DP-8	6/23/1999	PROFILE	5	10	8330N	PICRIC ACID	NO
OT-Y010705	DP-8	6/23/1999	PROFILE	45	50	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010705F	DP-8	6/23/1999	PROFILE	45	50	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010801	DP-8	6/23/1999	PROFILE	55	60	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y010801	DP-8	6/23/1999	PROFILE	55	60	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010801F	DP-8	6/23/1999	PROFILE	55	60	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES

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OT-Y010801F	DP-8	6/23/1999	PROFILE	55	60	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010805	DP-8	6/23/1999	PROFILE	65	70	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y010805	DP-8	6/23/1999	PROFILE	65	70	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010805F	DP-8	6/23/1999	PROFILE	65	70	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y010805F	DP-8	6/23/1999	PROFILE	65	70	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y010901	DP-8	6/23/1999	PROFILE	75	80	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y010901F	DP-8	6/23/1999	PROFILE	75	80	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y010905	DP-8	6/23/1999	PROFILE	85	90	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	NO
OT-Y011301F	DP-4	6/24/1999	PROFILE	85	90	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y011305F	DP-4	6/24/1999	PROFILE	95	100	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y011501	DP-9	6/25/1999	PROFILE	10	15	8330N	NITROGLYCERIN	NO
OT-Y011501	DP-9	6/25/1999	PROFILE	10	15	8330N	PICRIC ACID	NO
OT-Y011501F	DP-9	6/25/1999	PROFILE	10	15	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y011501F	DP-9	6/25/1999	PROFILE	10	15	8330N	NITROGLYCERIN	NO
OT-Y011501F	DP-9	6/25/1999	PROFILE	10	15	8330N	PICRIC ACID	NO
OT-Y011801	DP-9	6/25/1999	PROFILE	60	65	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y011801D	DP-9	6/25/1999	PROFILE	60	65	8330N	NITROGLYCERIN	NO
OT-Y011801D	DP-9	6/25/1999	PROFILE	60	65	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y011801D	DP-9	6/25/1999	PROFILE	60	65	8330N	NITROGLYCERIN	NO
OT-Y011801D	DP-9	6/25/1999	PROFILE	60	65	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y011801F	DP-9	6/25/1999	PROFILE	60	65	8330N	NITROGLYCERIN	NO
OT-Y011801F	DP-9	6/25/1999	PROFILE	60	65	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y011805	DP-9	6/25/1999	PROFILE	70	75	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y011805	DP-9	6/25/1999	PROFILE	70	75	8330N	NITROGLYCERIN	NO
OT-Y011805	DP-9	6/25/1999	PROFILE	70	75	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y011805F	DP-9	6/25/1999	PROFILE	70	75	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y011805F	DP-9	6/25/1999	PROFILE	70	75	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZI	YES
OT-Y011805F	DP-9	6/25/1999	PROFILE	70	75	8330N	NITROGLYCERIN	NO
OT-Y011805F	DP-9	6/25/1999	PROFILE	70	75	8330N	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7	YES
OT-Y013307F	DP-2	6/28/1999	PROFILE	65	70	8330N	1,3,5-TRINITROBENZENE	NO
OT-Y016301	DP-11	7/6/1999	PROFILE	27	32	8330N	PICRIC ACID	NO
OT-Y016301F	DP-11	7/6/1999	PROFILE	27	32	8330N	PICRIC ACID	NO

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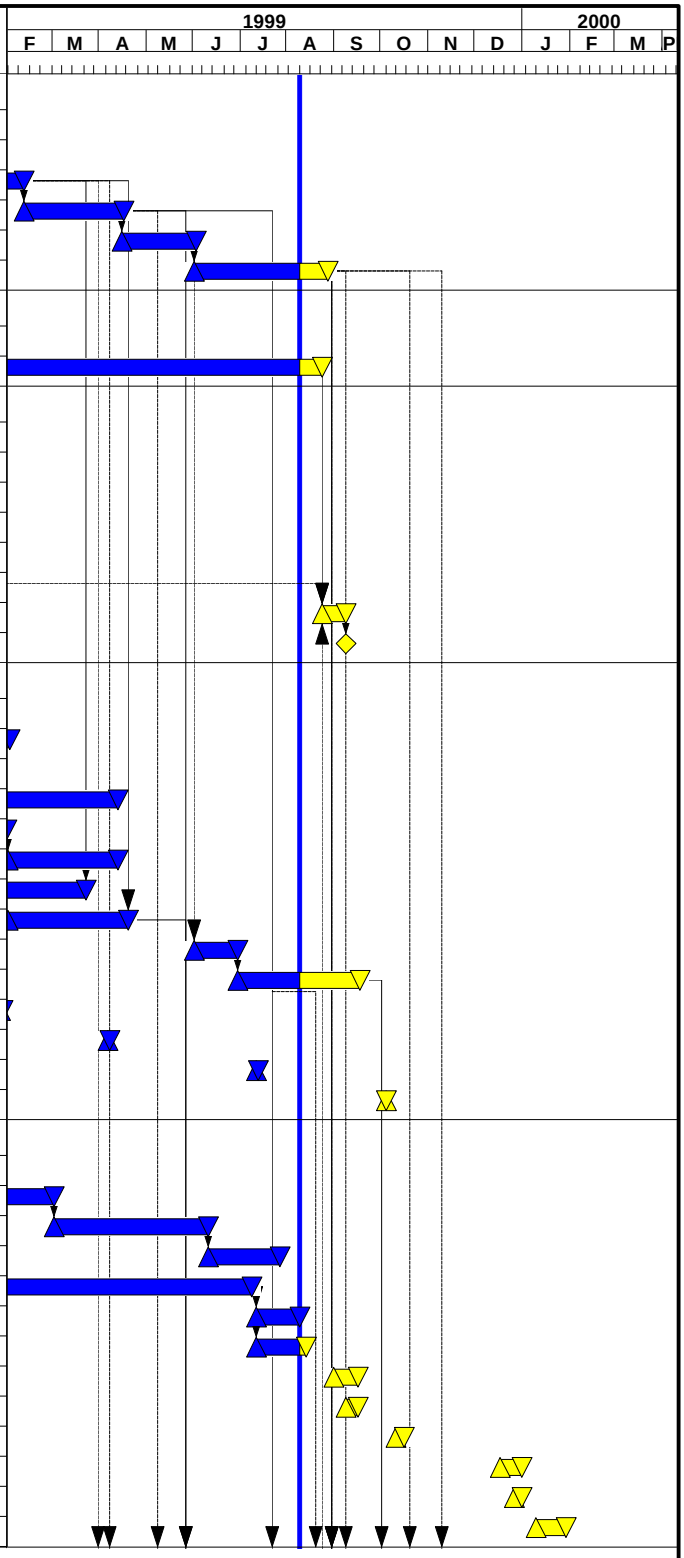
PDA/YES = Photo Diode Array, Detect Confirmed
PDA/NO = Photo Diode Array, Detect Not Confirmed

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	02JUN99A	27AUG99
2. Evaluate Analytical Methods		
Complete Draft PEP Analytical Report	05NOV98A	30NOV98A
EPA Comments/Revisions	01DEC98A	23AUG99
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	24AUG99	07SEP99
Submit Final Workplan		07SEP99
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	12JUL99A	12JUL99A
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	27JUL99A
Setup split sampling for wells	08JAN99A	09JUL99A
Sample (6b) non-MMR wells PEP 2Q99	12JUL99A	09AUG99A
Sample (6c) MMR wells PEP 2Q99	12JUL99A	13AUG99
Sample (6b) non-MMR wells PEP 3Q99	01SEP99*	15SEP99
Sample (6c) MMR wells PEP 3Q99	09SEP99*	15SEP99
Sample (6d) MMR wells DW/PEP 3Q99	11OCT99*	15OCT99
Sample (6b) non-MMR wells PEP 4Q99	17DEC99*	31DEC99
Sample (6c) MMR wells PEP 4Q99	27DEC99*	31DEC99
Sample (6b) non-MMR wells PEP 1Q00	10JAN00*	28JAN00



Project Start 14AUG98
Project Finish 26JAN01
Data Date 10AUG99
Run Date 10AUG99

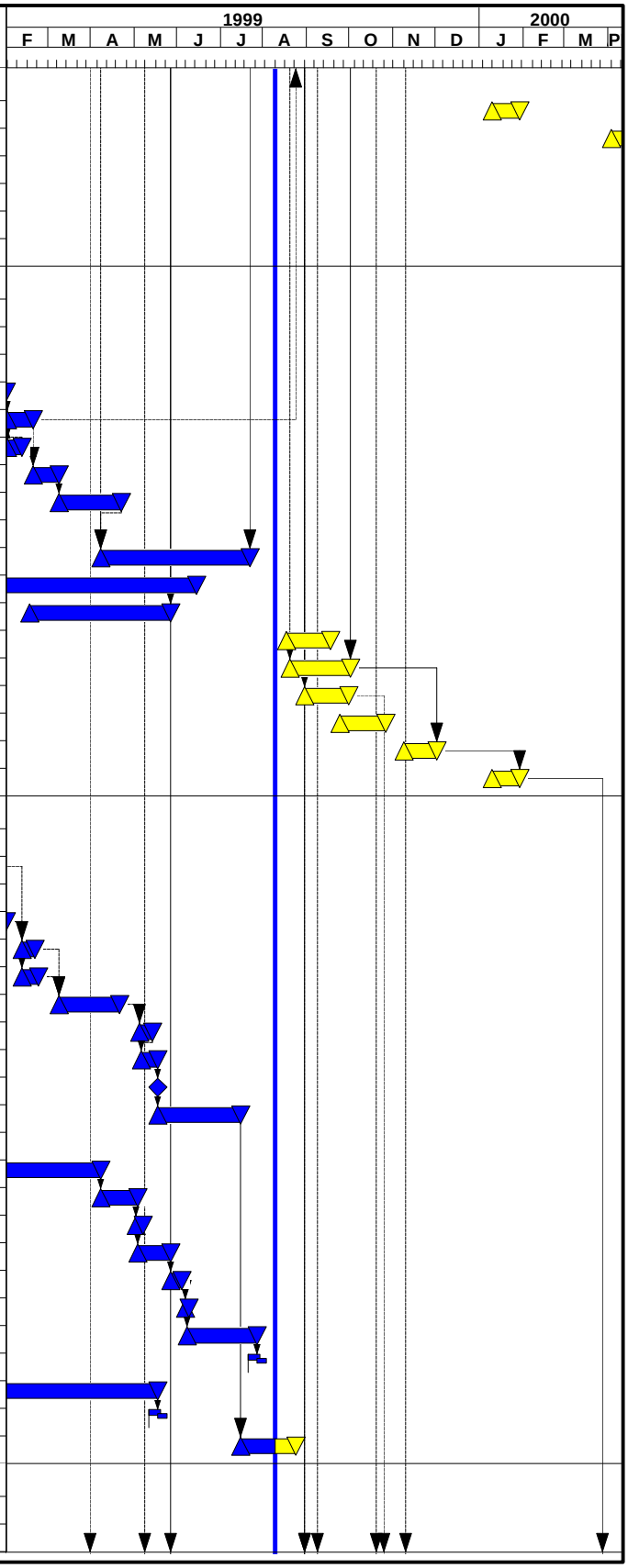
Early Bar
Progress Bar

MMR8

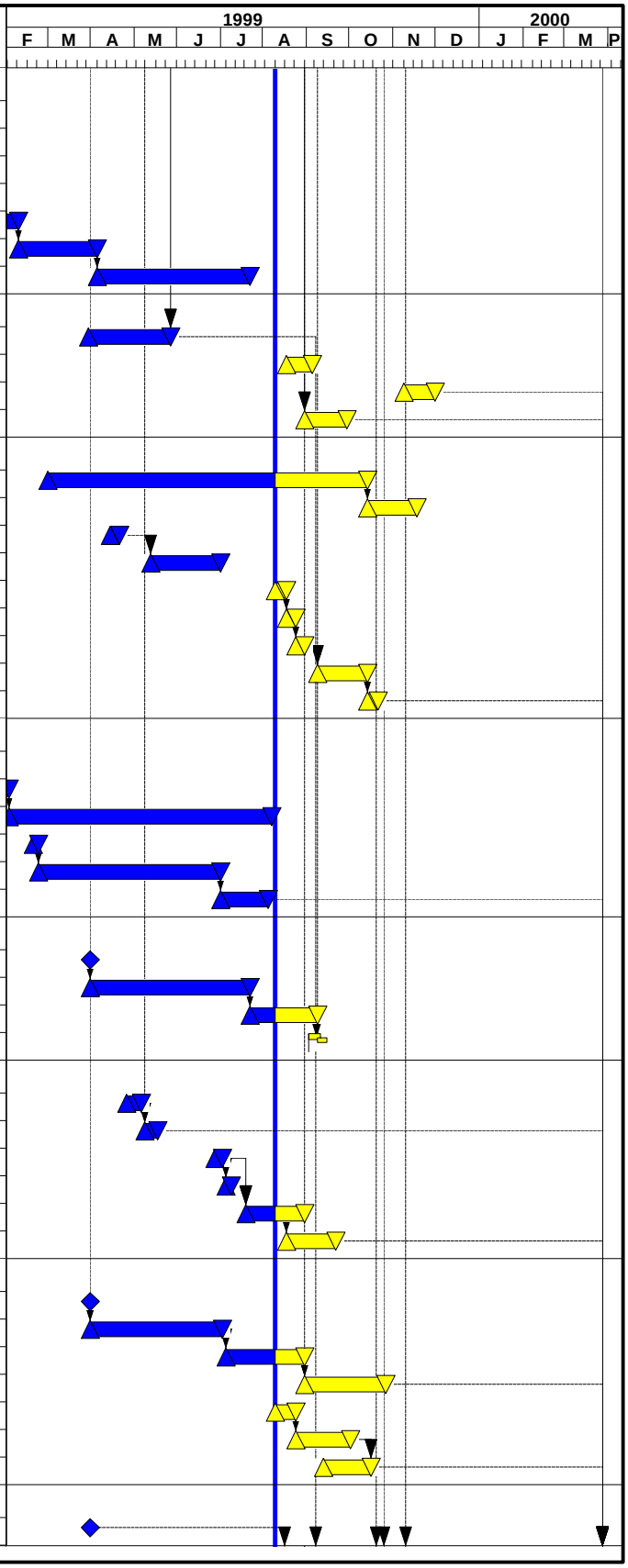
Sheet 1 of 4

Figure 1. Schedule for Completion of the Impact Area Groundwater Study as of 8/10/99

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	22JUL99A
Sample/Analyze Phase I Wells Round 2	06JAN99A	14JUN99A
Sample/Analyze G1 FF Wells Round 1	17FEB99A	27MAY99A
Sample/Analyze G1 FF Wells Round 2	18AUG99*	17SEP99
Sample/Analyze G2 FF Wells Round 1	20AUG99	01OCT99
Sample/Analyze Phase I Wells Round 3	30AUG99	29SEP99
Sample/Analyze G1 FF Wells Round 3	24SEP99*	25OCT99
Sample/Analyze G2 FF Wells Round 2	09NOV99	01DEC99
Sample/Analyze G2 FF Wells Round 3	10JAN00	28JAN00
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	15JUL99A
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	27JUL99A
Submit Soil Data to EPA		27JUL99A
Evaluate Pilot Testing & Remedies	21DEC98A	18MAY99A
Submit draft remedy evaluation to EPA		18MAY99A
EPA review/approve Response Plan	16JUL99A	23AUG99
8. Phase II (a) Workplan		
Prepare Phase II(a) Workplan	24AUG98A	11SEP98A
Submit Phase II(a) Workplan to EPA		11SEP98A



Activity Description	Early Start	Early Finish
8. Phase II (a) Workplan		
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	22JUL99A
9. Phase II Investigate Exceedances		
Sample/Analyze Ph. II(a) Wells Round 1	30MAR99A	26MAY99A
Sample/Analyze Ph. II(a) Wells Round 2	18AUG99*	03SEP99
Sample/Analyze Ph. II(a) Wells Round 3	08NOV99*	30NOV99
Soil Sampling/Analysis for Source Areas	30AUG99	28SEP99
10. Phase II Characterize J Ranges		
Data Collection for J Ranges	01MAR99A	12OCT99
Prepare J Range Workplan	13OCT99	16NOV99
Sampling/Analysis for J-3 Wetland	15APR99A	20APR99A
Review J-3 Wetland Results with EPA	13MAY99A	01JUL99A
Mobilization for Steel Pit	10AUG99	17AUG99
Soil sampling/analysis for Steel Pit	18AUG99	23AUG99
Monitoring well installation for Steel Pit	24AUG99	30AUG99
Sample/Analyze monitoring well	08SEP99	13OCT99
Review Steel Pit Results with EPA	14OCT99	20OCT99
11. Phase II Survey for Munitions Disposal		
Technology Meeting	09DEC98A	09DEC98A
Prepare Survey Work Plan	10DEC98A	01FEB99A
Review/Revise Workplan	02FEB99A	06AUG99A
Excavation/Sampling of Brick-lined Pits	19FEB99A	22FEB99A
Analysis of Brick-lined Pit Samples	23FEB99A	01JUL99A
Prepare Tech Memo for Brick-lined Pit	02JUL99A	04AUG99A
12. Phase II Characterize Training Areas		
Completion of Archives Search Report		31MAR99A
Phase II (a) Workplan for Training Areas	01APR99A	22JUL99A
EPA Review/Approve Workplan	23JUL99A	07SEP99
Begin Training Area Investigations		07SEP99
13. Phase II Characterize KD and U Ranges		
MIDAS search for analytes	27APR99A	06MAY99A
Soil Sampling/Analysis for KD and U	10MAY99A	17MAY99A
UXO Clearance for Monitoring Wells	28JUN99A	02JUL99A
Roadbuilding	06JUL99A	09JUL99A
Monitoring Well installations at KD and U	20JUL99A	30AUG99
Sample/Analyze monitoring wells	17AUG99	21SEP99
14. Phase II Characterize Gun/Mortar Positions		
Completion of Archives Search Report		31MAR99A
Develop Field Sampling Plan	01APR99A	02JUL99A
EPA Review/Approve FSP	06JUL99A	30AUG99
Soil Sampling/Analysis at Gun/Mortar	31AUG99	26OCT99
Mobilize drilling equipment	10AUG99	23AUG99
Install Monitoring Wells at Gun/Mortar	24AUG99	01OCT99
Sample/Analyze monitoring wells	13SEP99	15OCT99
15. Phase II Characterize Trenches, Excav., etc		
Completion of Archives Search Report		31MAR99A



Activity Description	Early Start	Early Finish
15. Phase II Characterize Trenches, Excav., etc		
Assessment of site features	16AUG99*	30AUG99
Review data with EPA	31AUG99	14SEP99
Phase II (a) Workplan for Trenches, etc.	15SEP99	05OCT99
EPA Review/Approve Workplan	06OCT99	19OCT99
Begin Trenches Investigations		19OCT99
16. Phase II Sampling Groundwater at SAR		
Install Monitoring Wells at SAR	09MAR99A	23APR99A
Sample/Analyze Monitoring Wells	27MAY99A	30SEP99
17. Phase II Characterize Mortar Targets		
Reconnaissance of Targets	16AUG99*	30AUG99
Discuss sampling plan with EPA	31AUG99	14SEP99
Prepare draft FSP	15SEP99	05OCT99
EPA review/comment on FSP	06OCT99	26OCT99
Prepare final FSP	27OCT99	09NOV99
Begin Mortar Targets Investigations		09NOV99
18. Reports and Meetings		
Progress Reports	10SEP98A	09JUN00
Phase II Interim Results Report	07SEP99*	01NOV99
Draft Interim Longterm Monitoring Report	25OCT99*	30NOV99
Review Draft ILM Report	01DEC99	29DEC99
Final ILM Report	30DEC99	26JAN00
Draft Phase II Compl. Work Report	17JAN00	27MAR00
Review Draft Phase II CWR	28MAR00	24APR00
Final Phase II CWR	25APR00	22MAY00