MONTHLY PROGRESS REPORT #33
FOR DECEMBER 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 December 1 to December 31, 1999. Scheduled actions are for the six-week period ending February 11, 1999.

1. SUMMARY OF ACTIONS TAKEN

No field activities occurred in the Training Range or Impact Area during the weeks of November 29 and December 13 due to the hunting seasons. This schedule and the holidays at the end of the month precluded drilling activities during the month of December, except for finishing the well installation at MW-57 (Sandwich far field well cluster). The remaining wells at MW-57 were screened at 148-158, 188-198, and 213-233 feet below ground surface.

Samples collected during the month are summarized in Table 1. Groundwater sampling continued for round 1 of the new far field wells (MW-56 and MW-57); a second round of sampling was initiated for the RDX response wells at MW-37, MW-40, and MW-44; and a sample was collected from 90MW0015 in the FS-12 area. Two groundwater profile samples were collected from MW-77 using an experimental drilling technology. Soil samples were collected from the following areas described in the Draft Phase II (a) Field Sampling Plan for Gun and Mortar Positions (7/2/99): GP-10 (Area 60), GP-11 (Area 61), GP-14 (Area 54), MP-1 (Area 70), and the Former H Range (Area 79). Soil samples were collected from Mortar Target 1 (Area 80) described in the Final Phase II (a) Field Sampling Plan for Mortar Targets (12/2/99). Soil samples were collected from Ground Scar 7 (Area 90) described in the Final Phase II (a) Field Sampling Plan for Trenches, Pits, Excavations, Bunkers, Former Buildings, and Ground Scars (12/6/99). Soil samples were collected from Demo 1 (Area 12) in accordance with the Final Response Plan for Demo Area 1 (7/15/99). Soil samples were collected from the aerial target dart (Area 48) in accordance with the Final Workplan for Phase II (a) Activities (7/21/99). Post-excavation soil samples were collected from Demo 2 where explosives were detected previously. Air monitoring and post detonation soil samples were collected from the UXO detonations at CS-19, MW-25, and the APC.

The Guard, EPA, and MADEP had a meeting on December 2 to discuss technical issues, including the following:

- Jacobs Engineering updated on the activities at CS-19. The revised resolution memo was distributed on 12/1/99. The plan is to return to the field on Monday (12/6) to finish the UXO avoidance and soil sampling. UXO detected last week were a 105-mm round and two rocket grenades. Jacobs indicated that the UXO contractor would be collecting the IRP soil samples due to the presence of the UXO.

- Ogden and Tetra Tech gave the field activity updates. Tetra Tech indicated that they were currently working on the calibration site (52 items) and that photographs of this activity have been distributed. They are currently waiting for propellant bags for the calibration area. Bids have been received from the surveyors. Field work will start as soon as the surveyor is contracted. Ogden indicated that they are finishing MW-57b. Next week, UXO avoidance and clearance, soil sampling, and development are scheduled. EPA indicated that they would like to visit the site next week. A 3-page handout of

the APC soil sampling plan was distributed. Demonstration of the Power Probe drilling has been rescheduled to the week of December 20th.

- A 1-page handout of document status was distributed for review. TM 99-5 has been moved back one week. TM 99-6 has been moved back to mid January. The PEP report responses have been broken down to show individual components. The Guard will provide a written request to EPA for an extension of the start date for the Training Areas Investigation. Comments on the Training Area Workplan have not been received, and this investigation is also dependent on resolution of the PEP comments.

- A 2-page handout of the memo of Resolution for Mortar Targets and Trenches was distributed for review by the regulatory agencies. Approvals or changes were requested by Friday 12/3.

- A 6-page handout of the Draft Milestone Schedule was distributed. Changes requested by the EPA have been made. This item will be discussed at next week's Tech Meeting.

- A 1-page handout of the 95-14 monitoring well results was distributed. DEP requested that this table be submitted to the town of Bourne.

- A 15-page handout of the Explosives detection table was distributed for review. This is an update of the latest data, including gun/mortar position wells.

- A 1-page handout of the Demo 1 response well cross section was distributed for review. Ogden indicated that the locations for the remaining two locations (MW-74 and MW-78) need to be selected next week to allow time for road building.

The Guard, EPA, and MADEP had a meeting on December 9 to discuss technical issues, including the following:

- Jacobs gave an update of CS-19 field activities. They are finished with the UXO avoidance of the soil sampling area. Two new UXO were found, one 155-mm M1HE and one 155-mm practice with fuze. A preliminary spot for the monitoring well has been located. Need to discuss the goal for the UXO clearance of the entire inner area with EPA. The Guard stated that the Alabama EOD is at MMR and will examine the rounds at CS-19.

- Update of field activities was given by Ogden and included: developing last two wells (S and M2) at MW-57 which will not be sampled and analyzed prior to the next public meeting; UXO clearance at mortar target 1, GS-7, and the APC have been completed; currently working on the UXO clearance of mortar targets 4 and 5; intrusive clearance at Demo 2 has been completed; soil samples from mortar target 1 have been collected; continue to collect soil samples from gun and mortar positions.

- A 1-page handout of the document status was distributed for review and discussion. Ogden asked EPA if they should continue with the evaluation of remedial technologies since the new Administrative Order addresses remediation. EPA stated that the Guard should continue with the evaluation. Ogden stated that the comment responses have been pushed back to the 14th. DEP requested the responses be sent to Don Muldoon. The response to comments on the Brick Lined Pit was distributed for review.

- A 12-page handout of the dye recommendations for the PEP report was distributed for review. Ogden stated that the agencies have all the deliverables necessary to determine if the Guard is on the right

track to respond to comments. Need to set up a meeting to discuss in the future. The only enforceable date related to this task is the start of the Training Areas investigation.

- The Gun and Mortar FSP changes were distributed on 11/23. Ogden asked if the plan should be finalized with the dioxin issue outstanding. EPA agreed with this.

- The RDX Response Plan change pages were distributed on 11/30. Ogden asked the EPA if the responses were acceptable. EPA stated that they would review and e-mail comments on Friday (12/10).

- A 1-page handout of the plan view of the Demo 1 response well locations was provided, showing RDX concentrations from monitoring wells and profile samples. All agreed to leave the remaining two locations (MW-74 and MW-78) where they were originally proposed.

- The Guard asked the EPA what process they use to track down whom to send the 104e request to. The EPA agreed to assist the Guard in locating PRPs and would get back to them on Friday (12/10). The Guard stated that the 104e request was given to AFCEE as the delivery agent.

- The draft milestone handout was distributed last week for discussion this week. EPA stated that this was what they were looking for. They would like to propose to add 2 new milestones to each project and they are: data collection/field work will start within 7 days of EPA approval of the MOR, and Final Tech Memo submittal within 30 days of the EPA approval of the MOR. The EPA would like to discuss this topic at the Tuesday meeting in Boston. The milestone chart will be revised for Tuesday.

- A 1-page handout of the IART action items was distributed for discussion.
  - 1. Dr. Feigenbaum requested that the state and federal regulators weigh in on issue of propellants from small arms. The Guard stated that they would have a presentation in January to discuss propellants.
  - 2. Dr. Feigenbaum requested that the weekly reports be modified to have summaries of data shown by subject area. Ogden added a section 5 to the weekly and monthly progress reports to show data by subject area.
  - 3. Mr. Zanis suggested that more wells were needed at Demo 2 to better define the ZOC. EPA thinks that an additional well down gradient may be required.
  - 4. NGB will give a presentation on propellants used in mortar rounds at the next meeting. The Guard stated that this needs to be moved to January.
  - 5. Ogden will mail out revised tables to go with maps presented at October 28, 1999 IART meeting to all team members. Ogden stated that this has been done.
  - The last two action items are for EPA, believe these are done.

- EPA requested an update on the J-3 Range Response Plan. The Guard indicated that they have requested more information from AFCEE on the wells in the area and information related to the FS-12 extraction system.

- TRC requested an update on Mr. Schlesinger's request on the potential for a resistivity survey. Ogden indicated that this method would not work with the site conditions at the training range. Info will be provided to Mr. Schlesinger.

- EPA stated that plume definition needs to be addressed for Demo 1. The Guard agreed and suggested that it be discussed at the Monday meeting.

The EPA convened a meeting of the Impact Area Review Team on December 15, 1999. Topics discussed during the meeting included: the EPA Cleanup Order; Draft KD and U Range Results Technical Memo; Draft J-3 Wetland Results Technical Memo; IAGS Investigations Update; and DOD development of future water supplies. The next IART meeting is scheduled for January 20, 2000.

The Guard, EPA, and MADEP had a meeting on December 16 to discuss technical issues, including the following:

- An update of the field activities at CS-19 was given by Jacobs Engineering. The UXO avoidance has been completed at the soil sampling and drilling locations. A 2-page handout was distributed showing the plan view of the proposed soil sampling and proposed monitoring well locations. Jacobs indicated that the work has stopped due to the existence of UXO. The Guard stated that they had received the report from their EOD unit which stated that the 155 HE and the 105 HE are blow in place (BIP) rounds, the M9A1 Grenades are safe to transport, and the 155 smoke is safe to transport if properly prepared but they suggest a blow in place due to the deteriorated state of the fuze. The Guard stated that they will have Ogden and USA dispose of the BIP rounds on December 28th which will include the air monitoring and post excavation samples. Jacobs asked if a soil sample could be collected prior to the detonation. The Guard suggested that sampling be done like the Demo 2 detonation with additional samples collected if the post-excavation sample has a detection. The EPA agreed.

- Ogden updated the ongoing field activities that included the continued sampling of MW-57 and MW-56. All other work is on hold due to hunting. Next week has soil and groundwater sampling scheduled. Verbal results of MW-57M3 were discussed. PCE was detected at 0.8 ppb, confirming the profile detection. Ogden will forward a summary of the VOC results for the first 3 wells (M3, M1, and D) when available.

- A 1-page handout of the document status was distributed for review. Ogden indicated that the dates for responses for Tech Memo 99-2 (Demo 1) and the Technology Evaluation were moved to 12/23/99.

- The changes to Tech Memo 99-3 (Brick Lined Pit) were distributed on 12/9/99. EPA and DEP approved the changes.

- A letter on the complications with the Method 5035 was distributed on 12/14/99. The letter stated that acetone was being produced by the sodium bisulfate preservation method. Ogden stated that they have been looking for an alternative method but none appear any better. The lab does not believe the acetone detections will raise the detection limits for the other VOCs, but the detections will mask any low-level acetone in the sample. Ogden proposed split samples with sodium bisulfate vs. DI water preservation to evaluate the impact of the preservative. The EPA is currently looking into this issue and agreed to continue with the sodium bisulfate preservation for now, with the DI preservation as a comparison.

- A 3-page handout of the steel lined pit soil analytical results was distributed. No explosives were detected and all other compounds detected were below reportable concentrations. The groundwater result was not available but will be distributed as soon as it is available (emailed 12/16).

- A 9-page handout of the Gun and Mortar groundwater results was distributed. No explosives were detected and thallium was the only compound detected above the MCL or health advisories. Ogden indicated that the thallium concentrations might be consistent with background groundwater

concentrations. The recent report on background (TM 99-5) indicates that molybdenum appears to be the only metal that is site related. After the background report was issued Ogden performed additional data evaluation that suggests that molybdenum could be related to the drilling process. Ogden is still investigating this affect and will provide additional evaluation of the molybdenum occurrences ASAP.

- A 2-page letter from Textron was provided on their agreement to perform a Phase I investigation. EPA asked the Guard to check on the status of the 104e request for Textron. The Guard will contact Textron to determine why the proposed schedule for the Phase I investigation is longer than what the Guard suggested.

- A 5-page letter from ISOTEC was provided showing the results of their treatment of a sample of groundwater from MW-31. The EPA requested that this letter be attached to the Remedial Technologies report.

- The Action Items from the December 15 IART meeting were discussed and are as follows:
  - A map will be added to the weekly progress report to show well locations.
  - The review team asked to have an additional well down gradient of the KD Range added to the program. EPA stated that they would keep this under consideration in their comments on TM 99-1. EPA asked if the USGS has been collecting isotope data on these wells. Ogden indicated that USGS has collected some isotope data, and Ogden will ask for an update on the status.
  - The review team asked to have the Interim Results Report (11/99) include all detects. Ogden indicated that all detects are provided at the IART meetings, and the report works better as a summary if it focuses on the significant detects.
  - The new proposed water supply well areas will be added to Ogden's maps.
  - The results from MW-78 will be highlighted in the progress reports when available.
  - A 7-page handout of the photographs of Demo 1 taken by Mr. Zanis was distributed. There was a discussion of the visual survey of Demo 1 that was proposed to occur after the munition survey. EPA requested that the sampling of the grids in Demo 1 start next week and that another site walk around Demo 1 should be scheduled for next Wednesday.
  - It was agreed to consider placement of a well at the toe of the Demo 1 plume.

- The EPA indicated that Foothills Engineering sent a letter to the SMB recommending an explosives work group.

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

- Tetra Tech gave an update on the munition survey.
  - The surface sweep of Demo-1 has been rescheduled to early January and the slit trench will be investigated after Demo 1 is completed. EPA agreed with these changes.
  - Currently working on the FSP for investigation of the steel plates in the J Ranges. They propose to begin this work in March. EPA agreed with this proposal.
  - The Guard would like to have Tetra Tech on a similar milestone schedule as Ogden. Tetra Tech does not believe that they can add more interim milestones. EPA stated that they would look at the proposed milestone schedule but believed that EPA counsel will require additional milestones. The Guard suggested that Tetra Tech continues to work on the milestone schedule and that there should be a meeting with EPA to come to an agreement.

- A 1-page Memorandum of Resolution for the draft Brick Lined Pit report was distributed.

- An update of the document status was given. Ogden indicated that the document status table has not been changed from the one that was distributed at the last Tech Meeting.

  - Comments to the Groundwater Modeling recommendations have been received from DEP. Ogden stated that they need EPA's comments in the next few weeks.

  - Final changes to the PEP report are proposed to be submitted on January 24. Ogden asked for agency comments by January 3 in order to make the deadline.

  - The Training Area Workplan is tied up in the PEP report resolution. Work is scheduled to start on January 6th. Ogden asked EPA if the Guard should prepare a request for extension because they have not received EPA comments. EPA stated that they should prepare a request for a 2-month extension for this task.

  - The Phase II (b) and supplement work plans were submitted to the agencies for comments. EPA asked if they submitted comments in the next few weeks, when would the work start. The Guard indicated that the work would start in the March-April timeframe. DEP indicated that their comments would also be submitted in the next few weeks.

  - The Guard stated that Textron had received the 104e request on 12/16/1999. EPA was working with the Guard to send the request to PRPs who used the J-2 Range.

  - EPA indicated that the schedule for Textron's Phase I investigation is too long. The Guard indicated that they informed Textron of their concern that the schedule is too long. EPA stated that the goal is to have the schedule shortened by three weeks.

  - The Guard requested data from IRP necessary to complete the J-Range Response Plan. Ogden received some data from IRP. Ogden is currently preparing a list of additional data needs for the Guard. Ogden indicated that it might be several weeks before the data is received, considering the holidays. EPA indicated that additional monitoring locations might be needed in this area.

  - The schedule and content for the Phase II CWR was discussed. It was agreed that the draft report in early summer could focus on Phase II (a) investigations performed mainly in 1999. EPA will get their comments on the Phase I response to comments in the next few months.

- EPA requested the Guard prepare a presentation on the APC at the next IART meeting. The Guard agreed.

- EPA requested the status of the UXO detonation. The Guard indicated it is still scheduled for Tuesday next week (12/28). EPA indicated that they need the notification by noon tomorrow. The Guard agreed to get the notification to the EPA by noon on 12/23.

- The EPA indicated that they spoke with Raye Lahti of Tetra Tech who performed the surface sweep of GP-10. Mr. Lahti was not aware the plan did not require the surface sweep of GP-9, which is adjacent to GP-10. Mr. Lahti indicated that some small arms munitions might be present at GP-9. The Guard will follow-up with EPA on the amount and type of munition.

- The Guard requested to move next weeks Tech meeting to Wednesday due to the holiday. It was agreed that a conference call for comment resolution on the Demo 1 report (TM 99-2) and the Remedial Technologies Evaluation would be conducted on Wednesday at 10:00 am.

Also on December 22 following the technical meeting, site walks were conducted at Demo Area 1 and at the J-3 Wetland to observe previous and potential future sampling locations.

There was no technical meeting during the week of December 27th due to holidays.

2. SUMMARY OF DATA RECEIVED

Validated Data

Validated data were received during December for Sample Delivery Groups (SDGs) 175, 176, 177, 193, 195, 218, and 221. These SDGs contain results for 30 groundwater samples including offsite residential wells, onsite water supply wells, and monitoring wells. These SDGs also contain results for 58 groundwater profile samples collected during installation of MW-62, 63, 64, 66, and 80. Finally, results are included for soil samples collected from borings during installation of MW-60 and -61.

Figures 1 through 5 depict the cumulative results of groundwater analyses for the period from the start of the IAGS (July 1997) to the present. Each figure depicts results for a different analyte class:

- Figure 1 shows the results of explosive analyses by EPA Method 8330
- Figure 2 shows the results of inorganic analyses (collectively referred to as "metals", though some analytes are not true metals) by methods 300.0, 350.2M, 353M, 365.2, CYAN, IM40/MB, and IM40HG
- Figure 3 shows the results of Volatile Organic Compound (VOC) analyses by methods OC21V, 504, and 8021W
- Figure 4 shows the results of Semi-Volatile Organic Compound (SVOC) analyses by method OC21B
- Figure 5 shows the results of Pesticide (method OL21P) and Herbicide (method 8151) analyses

The concentrations from these analyses are depicted in Figures 1-5 compared to Maximum Contaminant Levels (MCLs) or Health Advisories (HAs) published by EPA for drinking water. A red circle is used to depict a well where the concentration of one or more analytes is greater than or equal to (GTE) the lowest MCL or HA for the analyte(s). A yellow circle is used to depict a well where the concentration of all analytes is less than (LT) the lowest MCL or HA. A green circle is used to depict a well where the given analytes were not detected. An open circle is used to depict an existing well where the analytes in question (for example, Explosives in Figure 1) have not yet been measured. Table 2 summarizes the detections that exceeded a MCL or HA, sorted by analytical method and analyte, since 1997.

There are multiple labels listed for some wells in Figures 1-5, which indicate multiple well screens at different depths throughout the aquifer. The aquifer is approximately 200-300 feet thick in the study area. Well screens are positioned throughout this thickness based on various factors, including the results of groundwater profile samples, the geology, and projected locations of contaminants estimated by groundwater modeling. The screen labels are colored to indicate which of the depths had the chemical detected above MCLs/HAs. Generally, groundwater entering the top of the aquifer will move deeper into the aquifer as it moves radially outward from the top of the water table mound. Light blue dashed lines in Figures 1-5 depict water table contours. Groundwater generally moves perpendicular to these contours. The rate of vertical groundwater flow deeper into the aquifer slows as groundwater moves away from the mound.

The results presented in Figures 1-5 are cumulative, which provides a historical perspective on the data rather than a depiction of current conditions. Any detection at a well that equals or exceeds the MCL/HA results in the well having a red symbol, regardless of later detections at lower concentrations, or later non-detects. The difference between historical and current conditions varies according to the type of analytes. There are little or no differences between historical and current exceedances of drinking water criteria for Explosives, VOCs, Pesticides, and Herbicides. There are significant differences between historical and current exceedances of drinking water criteria for Metals and SVOCs, as described further below.

Figure 1: Explosives in Groundwater Compared to MCLs/HAs

Exceedances of drinking water criteria for explosive compounds are indicated in three general areas: Demo Area 1 (wells 19, 31, 34, and 73); the Impact Area and CS-19 (wells 58MW0002, 58MW0009E, 1, 2, 23, 25, and 38); and southeast of the J Ranges (wells 90MW0022, 90WT0013). CS-19 is a site located in the Impact Area, portions of which are currently under investigation by the Air Force Center for Environmental Excellence (AFCEE) under the Superfund program. A bunker and cleared area on the north side of CS-19 are under investigation under the IAGS. Studies are currently underway to delineate the extent of contaminants in the Impact Area, which may include several separate sources. Exceedances of drinking water criteria were measured for 2,4,6-trinitrotoluene (TNT) at Demo Area 1 (well 19S), and for hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) at the other locations. One of the exceedance wells, 90WT0013, has had no detectable explosives in the last two sample rounds (January and October 1999).

Figure 2: Metals in Groundwater Compared to MCLs/HAs

Exceedances of drinking water criteria for metals are scattered throughout the study area, and where two or more rounds of sampling data are available, generally have not been replicated in consecutive sampling rounds. The exceedances have been measured for antimony, lead, molybdenum, sodium, thallium and zinc. The two lead exceedances (wells 2S and ASP) were not repeated in subsequent sampling rounds. None of the 9 antimony exceedances were repeated in consecutive sampling rounds. Ten of the 29 molybdenum exceedances were repeated in consecutive sampling rounds (wells 2S, 13D, 46M2, 52D, 52M3, 53D, 53M1, 54M2, 54S, and 55D). Molybdenum concentrations declined in eight of these ten wells. Three of the 27 thallium exceedances were repeated in consecutive sampling rounds (wells 7M2, 47M2, and 52D). Two of the ten sodium exceedances were repeated in consecutive sampling rounds (wells 2S and SDW261160). Zinc exceeded the HA in six wells, all of which are constructed of galvanized (zinc-coated) steel.

The distribution and lack of repeatability of the metals exceedances is not consistent with a contaminant source, nor do the detections appear to be correlated with the presence of explosives or other organic compounds. The Guard has re-evaluated inorganic background concentrations using the expanded groundwater quality database of 1999, and has submitted a draft report describing background conditions. This draft report indicates that of the six metals exceeding drinking water criteria, only molybdenum is potentially associated with the site. The population characteristics of the remaining five metals were determined to be consistent with background.

Figure 3: VOCs in Groundwater Compared to MCLs/HAs

Exceedances of drinking water criteria for VOCs are indicated in two general areas: CS-10 (wells 03MW0007A, 03MW0014A, and 03MW0020), and LF-1 (well 27MW0017B). CS-10 and LF-1 are sites located near the southern extent of the Training Ranges that are currently under investigation by AFCEE under the Superfund program. Exceedances of drinking water criteria were measured for

tetrachloroethylene (PCE) at CS-10, and for vinyl chloride at LF-1. These compounds are believed to be associated with the sites under investigation by AFCEE.

Figure 4: SVOCs in Groundwater Compared to MCLs/HAs

Exceedances of drinking water criteria for SVOCs are scattered throughout the study area. All exceedances of drinking water criteria for SVOCs were measured for bis (2-ethylhexyl) phthalate (BEHP), except for one location (well 45S, see Inset B) which had an exceedance for naphthalene, and well 41M1 which had an estimated level of 2,6-dinitrotoluene (DNT) that is equal to the HA. BEHP is believed to be largely an artifact of the investigation methods, introduced to the samples during collection or analysis. A detailed discussion of the presence of BEHP is provided in the Draft Completion of Work Report (7/97) and subsequent responses to comments. The theory that BEHP occurs as an artifact, and is not really present in the aquifer, is supported by the results of the latest sampling round that show much lower levels of the chemical after additional precautions were taken to prevent cross-contamination. Only three locations showed BEHP exceedances in consecutive sampling rounds: 28MW0106 (located near SD-5, a site under investigation by AFCEE), 58MW0006E (located at CS-19), and 90WT0013 (located at FS-12, a site under investigation by AFCEE). The naphthalene exceedance at well 45S is also located in FS-12.

The 2,6-DNT detected at well 41M1 is interesting in that the explosive analysis of this sample by EPA Method 8330 did not detect this compound. The reporting limit under Method 8330 is much lower than the limit for the SVOC method. Well 41M1 was installed along the groundwater flow path downgradient from well 2M2, which has had RDX detected above the HA in the explosive analysis as indicated above. This was the second sampling round for this well, which did not have 2,6-DNT detected by either the SVOC method or the explosive method in the first round.

Figure 5: Herbicides and Pesticides in Groundwater Compared to MCLs/HAs

There was one exceedance of drinking water criteria for herbicides or pesticides, at well PPAWSMW-1. A contractor to the United States Air Force installed this monitoring well at the PAVE PAWS radar station in accordance with the Massachusetts Contingency Plan (MCP), in order to evaluate contamination from a fuel spill. The exceedance was for the pesticide dieldrin in a sample collected in June 1999. This well was sampled again in November 1999. The results of the November sample indicate no detectable pesticides although hydrocarbon interference was noted. It appears from the November sample that pesticides identified in the June sample were false positives. However, the June sample results cannot be changed when following the EPA functional guidelines for data validation. The text of the validation report for the June sample will be revised to include an explanation of the hydrocarbon interference and the potential for false positives.

Rush (Non-Validated) Data

Rush data are summarized in Table 3. These data are for analyses that are performed on a fast turnaround time, typically 1-5 days. Explosive analyses for monitoring wells, and explosive and VOC analyses for profile samples, are typically conducted in this timeframe. Other types of analyses may be rushed depending on the proposed use of the data. The rush data are not validated, but are provided as an indication of the most recent preliminary results. Table 3 summarizes only detects, and does not show samples with non-detects.

The status of the detections with respect to confirmation using Photo Diode Array (PDA) spectra is indicated in Table 3. PDA is a procedure that has been implemented for the explosive analysis, to reduce the likelihood of false positive identifications. Where the PDA status is “YES” in Table 3, the detected

compound is verified as properly identified. Where the status is "NO", the identification of an explosive has been determined to be a false positive. Where the status is blank, PDA has not yet been used to evaluate the detection, or PDA is not applicable because the analyte is a VOC. Most explosive detections verified by PDA are confirmed to be present upon completion of validation.

Table 3 indicates groundwater samples from MW-57 (the Sandwich far field well cluster) contained the VOCs chloroform (which appears to be naturally occurring), tetrachloroethylene (PCE), and chloromethane. These results are consistent with the profile sample results for this location. Results for two more wells installed at this location are expected shortly.

Table 3 also lists explosive and SVOC detections for several soil samples. These include RDX (verified by PDA) and benzyl butyl phthalate detected in post-excavation samples at Demo Area 2 where artillery simulators were detonated on October 2. The samples were collected following removal of soil containing explosives from one of the craters. Four soil samples from around the APC located on Turpentine Road also had explosive detections, three of them for 2-amino-4,6-dinitrotoluene and one for RDX. PDA results were not yet available for any of these four samples.

3. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period include the following:

Weekly Progress Report (November 15-19)	12/3/99
Weekly Progress Report (November 22-26)	12/6/99
Final Mortar Targets FSP	12/6/99
Final Trenches FSP	12/6/99
Monthly Progress Report #32 (November 1999)	12/10/99
Draft Tech Memo 99-5 Background Groundwater Quality	12/10/99
Weekly Progress Report (November 29 –December 3)	12/21/99
Weekly Progress Report (December 6–10)	12/23/99
Final IAGS Technical Team Memorandum 99-3, Brick Lined Pit Soil Results	12/23/99
Weekly Progress Report (December 13-17)	12/29/99
Weekly Progress Report (December 20-24)	12/30/99

4. SCHEDULED ACTIONS

Figure 6 provides a Gantt chart based on the Final Action Plan, updated to reflect progress and proposed work. Activities scheduled for January and early February include: development and sampling of newly installed wells; second round of sampling for the Group 2 far field wells and some RDX response wells (MW-37, MW-40, and MW-44); third round of sampling for the Supplemental IRP wells; continue soil sampling at mortar targets and trenches; continue soil sampling for gun/mortar positions; continue drilling Demo 1 response wells; and the commencement of the RDX response well drilling. The next meeting of the Impact Area Groundwater Study Review Team has been scheduled for January 20, 1999.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

The Guard discussed preliminary data from the downgradient response wells with the regulatory agencies, and it was agreed to install the last two response wells in the original proposed locations. Several issues pertaining to Demo 1 were discussed at the 12/15 IART meeting and the 12/16 technical meeting. At the IART meeting Mr. Zanis provided photographs of munition debris at Demo 1, and requested an explanation of why samples were not collected at these locations. At the technical meeting the Guard and agencies discussed the status of sampling and the proposed munition survey. EPA requested that the

sampling of the grids in Demo 1 start next week and that another site walk around Demo 1 should be scheduled for next Wednesday. It was agreed to consider placement of a well at the toe of the Demo 1 plume.

A demonstration of a new drilling technique was performed adjacent to MW-77. Two profile samples were collected to compare to the profile samples collected using the dual rotary drilling method. Profile sample results will be provided in a future progress report.

The munition survey of Demo Area 1 was rescheduled for January 2000. A site walk was conducted with the regulatory agencies on 12/22/99 to observe previous and potential future soil sampling locations. The locations of munition debris shown in photographs provided by Mr. Zanis at the 12/15/99 IART meeting were also inspected at this time. Several new soil sampling locations were marked for UXO clearance. On 12/28/99, Ogden's UXO contractor removed munitions debris from the locations in Demo 1 that were identified in the 12/22/99 site walk and stored them in the explosive magazine. Drill pads were completed at the downgradient drilling locations MW-74 and MW-78.

TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
ASCS19APC	ASCS19APC	12/28/1999	AIR	0.00	0.00		
ASCS19APCF	ASCS19APC	12/28/1999	AIR	0.00	0.00		
PUFBLK2	PUFBLK2	12/29/1999	AIR	0.00	0.00		
PUFLCS2	PUFLCS2	12/29/1999	AIR	0.00	0.00		
W56M1T	FIELDQC	12/14/1999	FIELDC	0.00	0.00		
W57DDT	FIELDQC	12/13/1999	FIELDC	0.00	0.00		
ASCC19APCB	FIELDQC	12/28/1999	FIELDQC	0.00	0.00		
ASCC19APCBF	FIELDQC	12/28/1999	FIELDQC	0.00	0.00		
DEMO2PE6E	FIELDQC	12/20/1999	FIELDQC	0.00	0.00		
HC12L1CAE	FIELDQC	12/21/1999	FIELDQC	0.00	0.00		
HC54C1BAE	FIELDQC	12/10/1999	FIELDQC	0.00	0.00		
HC54C1BAT	FIELDQC	12/10/1999	FIELDQC	0.00	0.00		
HC61B1AAE	FIELDQC	12/6/1999	FIELDQC	0.00	0.00		
HC61B1AAT	FIELDQC	12/6/1999	FIELDQC	0.00	0.00		
HC61B1BAE	FIELDQC	12/9/1999	FIELDQC	0.00	0.00		
HC61B1BAT	FIELDQC	12/9/1999	FIELDQC	0.00	0.00		
HC61D1BAE	FIELDQC	12/7/1999	FIELDQC	0.00	0.00		
HC61D1BAT	FIELDQC	12/7/1999	FIELDQC	0.00	0.00		
HC70A1AAE	FIELDQC	12/29/1999	FIELDQC	0.00	0.00		
HC70A1AAT	FIELDQC	12/29/1999	FIELDQC	0.00	0.00		
HC70B1AAE	FIELDQC	12/30/1999	FIELDQC	0.00	0.00		
HC79J1BAE	FIELDQC	12/28/1999	FIELDQC	0.00	0.00		
HC79O1BAE	FIELDQC	12/28/1999	FIELDQC	0.00	0.00		
HC79OBAT	FIELDQC	12/28/1999	FIELDQC	0.00	0.00		
HC80B1CAE	FIELDQC	12/8/1999	FIELDQC	0.00	0.00		
HC80B1CAT	FIELDQC	12/8/1999	FIELDQC	0.00	0.00		
HCAPC4CAE	FIELDQC	12/23/1999	FIELDQC	0.00	0.00		
HCAPC4CAT	FIELDQC	12/23/1999	FIELDQC	0.00	0.00		
HD12Q3CAE	FIELDQC	12/22/1999	FIELDQC	0.00	0.00		
W37M3F	FIELDQC	12/29/1999	FIELDQC	0.00	0.00		
W44M2T	FIELDQC	12/30/1999	FIELDQC	0.00	0.00		
W56M3T	FIELDQC	12/27/1999	FIELDQC	0.00	0.00		
W57SST	FIELDQC	12/21/1999	FIELDQC	0.00	0.00		
90MW0015	90MW0015	12/28/1999	GROUNDWATER	47.00	51.00		
APSWELL	APSWELL	12/16/1999	GROUNDWATER				
W37M1A	MW-37	12/29/1999	GROUNDWATER			60.39	70.39
W37M2A	MW-37	12/29/1999	GROUNDWATER			24.31	34.31
W37M3A	MW-37	12/29/1999	GROUNDWATER			9.51	19.51
W40M1A	MW-40	12/30/1999	GROUNDWATER			13.20	23.20
W40SSA	MW-40	12/29/1999	GROUNDWATER			-4.04	5.96
W44M1A	MW-40	12/30/1999	GROUNDWATER			53.10	63.10
W44M1D	MW-40	12/30/1999	GROUNDWATER			53.10	63.10
W44M2A	MW-40	12/30/1999	GROUNDWATER			14.10	24.10
W56DDA	MW-56	12/28/1999	GROUNDWATER			97.80	107.80
W56M1A	MW-56	12/14/1999	GROUNDWATER			85.00	95.00
W56M2A	MW-56	12/28/1999	GROUNDWATER			52.80	62.80
W56M3A	MW-56	12/27/1999	GROUNDWATER			28.00	38.00
W56SSA	MW-56	12/27/1999	GROUNDWATER			-2.02	7.98
W57DDA	MW-57	12/13/1999	GROUNDWATER			125.00	135.00

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
SED = Sample End Depth, measured in feet bgs
BWTS = Depth below water table, start depth, measured in feet
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TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
W57DDL	MW-57	12/13/1999	GROUNDWATER			125.00	135.00
W57M1A	MW-57	12/14/1999	GROUNDWATER			100.00	110.00
W57M2A	MW-57	12/21/1999	GROUNDWATER			60.00	70.00
W57M3A	MW-57	12/13/1999	GROUNDWATER			30.00	40.00
W57SSA	MW-57	12/21/1999	GROUNDWATER			0.00	10.00
W57SSD	MW-57	12/21/1999	GROUNDWATER			0.00	10.00
DW571208	GAC WATER	12/8/1999	IDW	0.00	0.00		
PP77MAA	PP77MA	12/21/1999	PROFILE	95.00	100.00	10.00	15.00
PP77MBA	PP77MB	12/21/1999	PROFILE	105.00	110.00	20.00	25.00
DEM02PE4	DEM02PE4	12/20/1999	SOIL GRID	0.00	0.25		
DEMO1SS1	DEMO1SS1	12/21/1999	SOIL GRID	0.00	0.25		
DEMO1SS2	DEMO1SS2	12/21/1999	SOIL GRID	0.00	0.25		
DEMO1SS3	DEMO1SS3	12/21/1999	SOIL GRID	0.00	0.25		
DEMO2PE5	DEMO2PE5	12/20/1999	SOIL GRID	0.00	0.25		
DEMO2PE6	DEMO2PE6	12/20/1999	SOIL GRID	0.00	0.25		
DEMO2PE6D	FIELDQC	12/20/1999	SOIL GRID	0.00	0.25		
HC12G1AAA	12G	12/20/1999	SOIL GRID	0.00	0.25		
HC12G1BAA	12G	12/20/1999	SOIL GRID	0.25	0.50		
HC12G1CAA	12G	12/20/1999	SOIL GRID	0.50	1.00		
HC12H1AAA	12H	12/20/1999	SOIL GRID	0.00	0.25		
HC12H1BAA	12H	12/20/1999	SOIL GRID	0.25	0.50		
HC12H1CAA	12H	12/20/1999	SOIL GRID	0.50	1.00		
HC12I1AAA	12I	12/21/1999	SOIL GRID	0.00	0.25		
HC12I1BAA	12I	12/21/1999	SOIL GRID	0.25	0.50		
HC12I1CAA	12I	12/21/1999	SOIL GRID	0.50	1.00		
HC12J1AAA	12J	12/21/1999	SOIL GRID	0.00	0.25		
HC12J1AAD	12J	12/21/1999	SOIL GRID	0.00	0.25		
HC12J1BAA	12J	12/21/1999	SOIL GRID	0.25	0.50		
HC12J1CAA	12J	12/21/1999	SOIL GRID	0.50	1.00		
HC12K1AAA	12K	12/21/1999	SOIL GRID	0.00	0.25		
HC12K1BAA	12K	12/21/1999	SOIL GRID	0.25	0.50		
HC12K1CAA	12K	12/21/1999	SOIL GRID	0.50	1.00		
HC12K1CAD	12K	12/21/1999	SOIL GRID	0.50	1.00		
HC12L1AAA	12L	12/21/1999	SOIL GRID	0.00	0.25		
HC12L1BAA	12L	12/21/1999	SOIL GRID	0.25	0.50		
HC12L1CAA	12L	12/21/1999	SOIL GRID	0.50	1.00		
HC12M1AAA	12M	12/22/1999	SOIL GRID	0.00	0.25		
HC12M1BAA	12M	12/22/1999	SOIL GRID	0.25	0.50		
HC12M1CAA	12M	12/22/1999	SOIL GRID	0.50	1.00		
HC12M1CAD	12M	12/22/1999	SOIL GRID	0.50	1.00		
HC12N1AAA	12N	12/22/1999	SOIL GRID	0.00	0.25		
HC12N1BAA	12N	12/22/1999	SOIL GRID	0.25	0.50		
HC12N1CAA	12N	12/22/1999	SOIL GRID	0.50	1.00		
HC12O1AAA	12O	12/22/1999	SOIL GRID	0.00	0.25		
HC12O1BAA	12O	12/22/1999	SOIL GRID	0.25	0.50		
HC12O1CAA	12O	12/22/1999	SOIL GRID	0.50	1.00		
HC12P1AAA	12P	12/22/1999	SOIL GRID	0.00	0.25		
HC12P1BAA	12P	12/22/1999	SOIL GRID	0.25	0.50		
HC12P1CAA	12P	12/22/1999	SOIL GRID	0.50	1.00		

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
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TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HC12Q1AAA	12Q	12/22/1999	SOIL GRID	0.00	0.25		
HC12Q1BAA	12Q	12/22/1999	SOIL GRID	0.25	0.50		
HC12Q1BAD	12Q	12/22/1999	SOIL GRID	0.25	0.50		
HC12Q1CAA	12Q	12/22/1999	SOIL GRID	0.50	1.00		
HC12R1AAA	12R	12/22/1999	SOIL GRID	0.00	0.25		
HC12R1BAA	12R	12/22/1999	SOIL GRID	0.25	0.50		
HC12R1CAA	12R	12/22/1999	SOIL GRID	0.50	1.00		
HC12R1CAD	12R	12/22/1999	SOIL GRID	0.50	1.00		
HC12S1AAA	12S	12/23/1999	SOIL GRID	0.00	0.25		
HC12S1AAD	12S	12/23/1999	SOIL GRID	0.00	0.25		
HC12S1BAA	12S	12/23/1999	SOIL GRID	0.25	0.50		
HC12S1CAA	12S	12/23/1999	SOIL GRID	0.50	1.00		
HC12T1AAA	12T	12/23/1999	SOIL GRID	0.00	0.25		
HC12T1BAA	12T	12/23/1999	SOIL GRID	0.25	0.50		
HC12T1CAA	12T	12/23/1999	SOIL GRID	0.50	1.00		
HC48A1AAA	48A	12/27/1999	SOIL GRID	0.00	0.25		
HC48A1BAA	48A	12/27/1999	SOIL GRID	0.25	0.50		
HC48A1CAA	48A	12/27/1999	SOIL GRID	0.50	1.00		
HC54A1AAA	54A	12/10/1999	SOIL GRID	0.00	0.50		
HC54A1BAA	54A	12/10/1999	SOIL GRID	1.50	2.00		
HC54B1AAA	54B	12/10/1999	SOIL GRID	0.00	0.50		
HC54B1BAA	54B	12/10/1999	SOIL GRID	1.50	2.00		
HC54C1AAA	54C	12/10/1999	SOIL GRID	0.00	0.50		
HC54C1BAA	54C	12/10/1999	SOIL GRID	1.50	2.00		
HC60G1AAA	60G	12/6/1999	SOIL GRID	0.00	0.50		
HC60G1BAA	60G	12/6/1999	SOIL GRID	1.50	2.00		
HC60H1AAA	60H	12/6/1999	SOIL GRID	0.00	0.50		
HC60H1BAA	60H	12/6/1999	SOIL GRID	1.50	2.00		
HC61A1AAA	61A	12/6/1999	SOIL GRID	0.00	0.50		
HC61A1AAD	61A	12/6/1999	SOIL GRID	0.00	0.50		
HC61A1BAA	61A	12/6/1999	SOIL GRID	1.50	2.00		
HC61A1BAD	61A	12/6/1999	SOIL GRID	1.50	2.00		
HC61B1AAA	61B	12/6/1999	SOIL GRID	0.00	0.50		
HC61B1AAD	61B	12/6/1999	SOIL GRID	0.00	0.50		
HC61B1BAA	61B	12/9/1999	SOIL GRID	1.50	2.00		
HC61C1AAA	61C	12/9/1999	SOIL GRID	0.00	0.50		
HC61C1BAA	61C	12/9/1999	SOIL GRID	1.50	2.00		
HC61D1AAA	61D	12/7/1999	SOIL GRID	0.00	0.50		
HC61D1BAA	61D	12/7/1999	SOIL GRID	1.50	2.00		
HC61E1AAA	61E	12/7/1999	SOIL GRID	0.00	0.50		
HC61E1BAA	61E	12/7/1999	SOIL GRID	1.50	2.00		
HC61F1AAA	61F	12/7/1999	SOIL GRID	0.00	0.50		
HC61F1BAA	61F	12/7/1999	SOIL GRID	1.50	2.00		
HC61G1AAA	61G	12/7/1999	SOIL GRID	0.00	0.50		
HC61G1BAA	61G	12/7/1999	SOIL GRID	1.50	2.00		
HC61H1AAA	61H	12/9/1999	SOIL GRID	0.00	0.50		
HC61H1BAA	61H	12/9/1999	SOIL GRID	1.50	2.00		
HC61I1AAA	61I	12/9/1999	SOIL GRID	0.00	0.50		
HC61I1BAA	61I	12/9/1999	SOIL GRID	1.50	2.00		

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
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TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HC61J1AAA	61J	12/9/1999	SOIL GRID	0.00	0.50		
HC61J1BAA	61J	12/9/1999	SOIL GRID	1.50	2.00		
HC70A1AAA	70A	12/29/1999	SOIL GRID	0.00	0.50		
HC70A1BAA	70A	12/30/1999	SOIL GRID	0.00	0.50		
HC70B1AAA	70B	12/30/1999	SOIL GRID	0.00	0.50		
HC79J1AAA	79J	12/27/1999	SOIL GRID	0.00	0.50		
HC79J1BAA	79J	12/27/1999	SOIL GRID	1.50	2.00		
HC79M1AAA	79M	12/28/1999	SOIL GRID	0.00	0.50		
HC79M1BAA	79M	12/28/1999	SOIL GRID	1.50	2.00		
HC79N1AAA	79N	12/28/1999	SOIL GRID	0.00	0.50		
HC79N1BAA	79N	12/28/1999	SOIL GRID	1.50	2.00		
HC79O1AAA	79O	12/28/1999	SOIL GRID	0.00	0.50		
HC79O1BAA	79O	12/28/1999	SOIL GRID	1.50	2.00		
HC79P1AAA	79P	12/29/1999	SOIL GRID	0.00	0.50		
HC79P1BAA	79P	12/29/1999	SOIL GRID	0.00	0.50		
HC79Q1AAA	79Q	12/29/1999	SOIL GRID	0.00	0.50		
HC79Q1AAD	79Q	12/29/1999	SOIL GRID	0.00	0.50		
HC79Q1BAA	79Q	12/29/1999	SOIL GRID	1.50	2.00		
HC80A1AAA	80A	12/8/1999	SOIL GRID	0.00	0.25		
HC80A1BAA	80A	12/8/1999	SOIL GRID	0.25	0.50		
HC80A1CAA	80A	12/8/1999	SOIL GRID	0.50	1.00		
HC80B1AAA	80B	12/8/1999	SOIL GRID	0.00	0.25		
HC80B1BAA	80B	12/8/1999	SOIL GRID	0.25	0.50		
HC80B1CAA	80B	12/8/1999	SOIL GRID	0.50	1.00		
HC90A1AAA	90A	12/20/1999	SOIL GRID	0.00	0.50		
HC90A1BAA	90A	12/20/1999	SOIL GRID	1.50	2.00		
HC90B1AAA	90B	12/20/1999	SOIL GRID	0.00	0.50		
HC90B1BAA	90B	12/20/1999	SOIL GRID	1.50	2.00		
HC90B1BAD	90B	12/20/1999	SOIL GRID	1.50	2.00		
HCAPC2AAA	APC	12/23/1999	SOIL GRID	0.00	0.25		
HCAPC2BAA	APC	12/23/1999	SOIL GRID	0.25	0.50		
HCAPC2CAA	APC	12/23/1999	SOIL GRID	0.50	1.00		
HCAPC3AAA	APC	12/23/1999	SOIL GRID	0.00	0.25		
HCAPC3AAD	APC	12/23/1999	SOIL GRID	0.00	0.25		
HCAPC3BAA	APC	12/23/1999	SOIL GRID	0.25	0.50		
HCAPC3CAA	APC	12/23/1999	SOIL GRID	0.50	1.00		
HCAPC4AAA	APC	12/23/1999	SOIL GRID	0.00	0.25		
HCAPC4BAA	APC	12/23/1999	SOIL GRID	0.25	0.50		
HCAPC4CAA	APC	12/23/1999	SOIL GRID	0.50	1.00		
HCCS19105MM	CS-19	12/30/1999	SOIL GRID	0.00	0.25		
HCCS19155MM	CS-19	12/30/1999	SOIL GRID	0.00	0.25		
HD12G3AAA	12G	12/20/1999	SOIL GRID	0.00	0.25		
HD12G3BAA	12G	12/20/1999	SOIL GRID	0.25	0.50		
HD12G3CAA	12G	12/20/1999	SOIL GRID	0.50	1.00		
HD12H3AAA	12H	12/20/1999	SOIL GRID	0.00	0.25		
HD12H3BAA	12H	12/20/1999	SOIL GRID	0.25	0.50		
HD12H3BAD	12H	12/20/1999	SOIL GRID	0.25	0.50		
HD12H3CAA	12H	12/20/1999	SOIL GRID	0.50	1.00		
HD12I3AAA	12I	12/21/1999	SOIL GRID	0.00	0.25		

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
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BWTS = Depth below water table, start depth, measured in feet
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TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HD12I3BAA	12I	12/21/1999	SOIL GRID	0.25	0.50		
HD12I3CAA	12I	12/21/1999	SOIL GRID	0.50	1.00		
HD12J3AAA	12J	12/21/1999	SOIL GRID	0.00	0.25		
HD12J3BAA	12J	12/21/1999	SOIL GRID	0.25	0.50		
HD12J3CAA	12J	12/21/1999	SOIL GRID	0.50	1.00		
HD12K3AAA	12K	12/21/1999	SOIL GRID	0.00	0.25		
HD12K3BAA	12K	12/21/1999	SOIL GRID	0.25	0.50		
HD12K3CAA	12K	12/21/1999	SOIL GRID	0.50	1.00		
HD12L3AAA	12L	12/21/1999	SOIL GRID	0.00	0.25		
HD12L3BAA	12L	12/21/1999	SOIL GRID	0.25	0.50		
HD12L3CAA	12L	12/21/1999	SOIL GRID	0.50	1.00		
HD12M3AAA	12M	12/22/1999	SOIL GRID	0.00	0.25		
HD12M3BAA	12M	12/22/1999	SOIL GRID	0.25	0.50		
HD12M3CAA	12M	12/22/1999	SOIL GRID	0.50	1.00		
HD12N3AAA	12N	12/22/1999	SOIL GRID	0.00	0.25		
HD12N3BAA	12N	12/22/1999	SOIL GRID	0.25	0.50		
HD12N3CAA	12N	12/22/1999	SOIL GRID	0.50	1.00		
HD12O3AAA	12O	12/22/1999	SOIL GRID	0.00	0.25		
HD12O3BAA	12O	12/22/1999	SOIL GRID	0.25	0.50		
HD12O3CAA	12O	12/22/1999	SOIL GRID	0.50	1.00		
HD12P3AAA	12P	12/22/1999	SOIL GRID	0.00	0.25		
HD12P3BAA	12P	12/22/1999	SOIL GRID	0.25	0.50		
HD12P3CAA	12P	12/22/1999	SOIL GRID	0.50	1.00		
HD12Q3AAA	12Q	12/22/1999	SOIL GRID	0.00	0.25		
HD12Q3BAA	12Q	12/22/1999	SOIL GRID	0.25	0.50		
HD12Q3CAA	12Q	12/22/1999	SOIL GRID	0.50	1.00		
HD12R3AAA	12R	12/22/1999	SOIL GRID	0.00	0.25		
HD12R3BAA	12R	12/22/1999	SOIL GRID	0.25	0.50		
HD12R3CAA	12R	12/22/1999	SOIL GRID	0.50	1.00		
HD12S3AAA	12S	12/23/1999	SOIL GRID	0.00	0.25		
HD12S3BAA	12S	12/23/1999	SOIL GRID	0.25	0.50		
HD12S3CAA	12S	12/23/1999	SOIL GRID	0.50	1.00		
HD12T3AAA	12T	12/23/1999	SOIL GRID	0.00	0.25		
HD12T3BAA	12T	12/23/1999	SOIL GRID	0.25	0.50		
HD12T3CAA	12T	12/23/1999	SOIL GRID	0.50	1.00		
HD80A1AAA	80A	12/8/1999	SOIL GRID	0.00	0.25		
HD80A1BAA	80A	12/8/1999	SOIL GRID	0.25	0.50		
HD80A1CAA	80A	12/8/1999	SOIL GRID	0.50	1.00		
HD80A3AAA	80A	12/8/1999	SOIL GRID	0.00	0.25		
HD80A3BAA	80A	12/8/1999	SOIL GRID	0.25	0.50		
HD80A3CAA	80A	12/8/1999	SOIL GRID	0.50	1.00		
HD80A5AAA	80A	12/8/1999	SOIL GRID	0.00	0.25		
HD80A5BAA	80A	12/8/1999	SOIL GRID	0.25	0.50		
HD80A5CAA	80A	12/8/1999	SOIL GRID	0.50	1.00		
HD80A7AAA	80A	12/8/1999	SOIL GRID	0.00	0.25		
HD80A7BAA	80A	12/8/1999	SOIL GRID	0.25	0.50		
HD80A7CAA	80A	12/8/1999	SOIL GRID	0.50	1.00		
HD80B1AAA	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B1BAA	80B	12/8/1999	SOIL GRID	0.25	0.50		

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
SED = Sample End Depth, measured in feet bgs
BWTS = Depth below water table, start depth, measured in feet
BWTE = Depth below water table, end depth, measured in feet

TABLE 1
SAMPLING PROGRESS
12/1-12/31

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HD80B1CAA	80B	12/8/1999	SOIL GRID	0.50	1.00		
HD80B3AAA	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B3BAA	80B	12/8/1999	SOIL GRID	0.25	0.50		
HD80B3CAA	80B	12/8/1999	SOIL GRID	0.50	1.00		
HD80B5AAA	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B5AAD	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B5BAA	80B	12/8/1999	SOIL GRID	0.25	0.50		
HD80B5CAA	80B	12/8/1999	SOIL GRID	0.50	1.00		
HD80B7AAA	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B7AAD	80B	12/8/1999	SOIL GRID	0.00	0.25		
HD80B7BAA	80B	12/8/1999	SOIL GRID	0.25	0.50		
HD80B7CAA	80B	12/8/1999	SOIL GRID	0.50	1.00		
HD90A1AAA	90A	12/20/1999	SOIL GRID	0.00	0.50		
HD90A1BAA	90A	12/20/1999	SOIL GRID	1.50	2.00		
HD90A3AAA	90A	12/20/1999	SOIL GRID	0.00	0.50		
HD90A3BAA	90A	12/20/1999	SOIL GRID	1.50	2.00		
HD90A5AAA	90A	12/20/1999	SOIL GRID	0.00	0.50		
HD90A5BAA	90A	12/20/1999	SOIL GRID	1.50	2.00		
HD90A7AAA	90A	12/20/1999	SOIL GRID	0.00	0.50		
HD90A7BAA	90A	12/20/1999	SOIL GRID	1.50	2.00		
HD90B1AAA	90B	12/20/1999	SOIL GRID	0.00	0.50		
HD90B1BAA	90B	12/20/1999	SOIL GRID	1.50	2.00		
HD90B3AAA	90B	12/20/1999	SOIL GRID	0.00	0.50		
HD90B3BAA	90B	12/20/1999	SOIL GRID	1.50	2.00		
HD90B5AAA	90B	12/20/1999	SOIL GRID	0.00	0.50		
HD90B5BAA	90B	12/20/1999	SOIL GRID	1.50	2.00		
HD90B7AAA	90B	12/20/1999	SOIL GRID	0.00	0.50		
HD90B7BAA	90B	12/20/1999	SOIL GRID	1.50	2.00		
HDAPC11AA	APC	12/29/1999	SOIL GRID	0.00	0.50		
HDAPC12AA	APC	12/29/1999	SOIL GRID	0.00	0.50		
HDAPC13AA	APC	12/29/1999	SOIL GRID	0.00	0.50		
HDAPC14AA	APC	12/29/1999	SOIL GRID	0.00	0.50		
HDAPC15AA	APC	12/29/1999	SOIL GRID	0.00	0.50		
HDAPC2537MM	APC	12/30/1999	SOIL GRID	0.00	0.25		
HDAPCTR6INN	APC	12/30/1999	SOIL GRID	0.00	0.25		
HDAPCTR6INS	APC	12/30/1999	SOIL GRID	0.00	0.25		
HDCS19105MM	CS-19	12/30/1999	SOIL GRID	0.00	0.25		
HDCS19155MM	CS-19	12/30/1999	SOIL GRID	0.00	0.25		
HDCS196INCH	CS-19	12/30/1999	SOIL GRID	0.00	0.25		

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
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TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

LOCID/WELL ID	OGDEN_ID	SAMPLED	METHOD	OGDEN_ANALYTE	CONC.	FLAG	UNITS	BWTS	BWTE	MCL/HA	>MCL/HA
MW-19	W19SSA	3/5/1998	8330N	2,4,6-TRINITROTOLUENE	10.00	J	UG/L	0.00	10.00	2.00	X
MW-19	W19S2A	7/20/1998	8330N	2,4,6-TRINITROTOLUENE	16.00		UG/L	0.00	10.00	2.00	X
MW-19	W19S2D	7/20/1998	8330N	2,4,6-TRINITROTOLUENE	16.00		UG/L	0.00	10.00	2.00	X
MW-19	W19SSA	2/12/1999	8330N	2,4,6-TRINITROTOLUENE	7.20	J	UG/L	0.00	10.00	2.00	X
58MW0002	WC2XXA	2/26/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	19.00		UG/L	0.00	0.00	2.00	X
58MW0002	WC2XXA	1/14/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	20.00		UG/L	25.00	30.00	2.00	X
58MW0009E	WC9EXA	10/2/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	7.70		UG/L	21.00	26.00	2.00	X
58MW0009E	WC9EXA	1/26/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	17.00		UG/L	21.00	26.00	2.00	X
90MW0022	WF22XA	1/26/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	3.80		UG/L	80.00	85.00	2.00	X
90MW0022	WF22XA	2/16/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	5.40		UG/L	80.00	85.00	2.00	X
90WT0013	WF13XA	1/16/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	5.20	J	UG/L	2.00	12.00	2.00	X
MW-1	W01SSA	9/30/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.50		UG/L	0.00	10.00	2.00	X
MW-1	W01SSD	9/30/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.40		UG/L	0.00	10.00	2.00	X
MW-1	W01SSA	2/22/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.80		UG/L	0.00	10.00	2.00	X
MW-1	W01MMA	9/29/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	4.60		UG/L	40.00	45.00	2.00	X
MW-1	W01M2A	3/1/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.20		UG/L	40.00	45.00	2.00	X
MW-19	W19SSA	3/5/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	190.00		UG/L	0.00	10.00	2.00	X
MW-19	W19S2A	7/20/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	260.00		UG/L	0.00	10.00	2.00	X
MW-19	W19S2D	7/20/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	260.00		UG/L	0.00	10.00	2.00	X
MW-19	W19SSA	2/12/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	250.00		UG/L	0.00	10.00	2.00	X
MW-2	W02M2A	1/20/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	13.00		UG/L	31.00	36.00	2.00	X
MW-2	W02M2A	2/3/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	6.80		UG/L	31.00	36.00	2.00	X
MW-23	W23M1A	11/7/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.30	J	UG/L	99.00	109.00	2.00	X
MW-23	W23M1A	3/18/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	4.40		UG/L	99.00	109.00	2.00	X
MW-23	W23M1D	3/18/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	4.70		UG/L	99.00	109.00	2.00	X
MW-25	W25SSA	10/16/1997	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.00		UG/L	0.00	10.00	2.00	X
MW-25	W25SSA	3/17/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	4.10		UG/L	0.00	10.00	2.00	X
MW-31	W31SSA	7/15/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	64.00		UG/L	14.00	19.00	2.00	X
MW-31	W31SSA	2/1/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	210.00		UG/L	14.00	19.00	2.00	X
MW-31	W31MMA	7/15/1998	8330N	HEXAHYDRO-1,3,5-TRINITRO-	280.00		UG/L	29.00	39.00	2.00	X
MW-31	W31MMA	2/2/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	370.00		UG/L	29.00	39.00	2.00	X
MW-34	W34M2A	2/19/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	6.20		UG/L	55.00	65.00	2.00	X
MW-38	W38M3A	5/6/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.50		UG/L	53.00	63.00	2.00	X
MW-38	W38M3A	8/18/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	2.60		UG/L	53.00	63.00	2.00	X
MW-73	W73SSA	7/9/1999	8330N	HEXAHYDRO-1,3,5-TRINITRO-	50.00	J	UG/L	0.00	10.00	2.00	X

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>MCL/HA = EQUALS OR EXCEEDS EITHER THE MCL OR LOWEST HEALTH ADVISORY CONCENTRATION (CHILD, ADULT, OR LIFETIME)

TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

LOCID/WELL ID	OGDEN_ID	SAMPLED	METHOD	OGDEN_ANALYTE	CONC.	FLAG	UNITS	BWTS	BWTE	MCL/HA	>MCL/HA
ASPWELL	ASPWELL	7/20/1999	E200.8	LEAD	53.00		UG/L			15.00	X
MW-3	W03DDL	3/6/1998	IM40MB	ANTIMONY	13.80	J	UG/L	218.00	223.00	6.00	X
MW-34	W34M2A	8/16/1999	IM40MB	ANTIMONY	6.60	J	UG/L	55.00	65.00	6.00	X
MW-35	W35SSA	8/19/1999	IM40MB	ANTIMONY	6.90	J	UG/L	0.00	10.00	6.00	X
MW-35	W35SSD	8/19/1999	IM40MB	ANTIMONY	13.80	J	UG/L	0.00	10.00	6.00	X
MW-36	W36SSA	8/17/1999	IM40MB	ANTIMONY	6.70	J	UG/L	0.00	10.00	6.00	X
MW-38	W38SSA	8/18/1999	IM40MB	ANTIMONY	7.40		UG/L	0.00	10.00	6.00	X
MW-38	W38M3A	8/18/1999	IM40MB	ANTIMONY	6.60	J	UG/L	53.00	63.00	6.00	X
MW-38	W38DDA	8/17/1999	IM40MB	ANTIMONY	6.90	J	UG/L	125.00	135.00	6.00	X
MW-39	W39M1A	8/18/1999	IM40MB	ANTIMONY	7.50		UG/L	87.00	97.00	6.00	X
PPAWSMW-3	PPAWSMW-3	8/12/1999	IM40MB	ANTIMONY	6.00	J	UG/L	0.00	10.00	6.00	X
MW-52	W52M3L	8/27/1999	IM40MB	CADMIUM	12.20		UG/L	26.00	36.00	5.00	X
MW-2	W02SSA	2/23/1998	IM40MB	LEAD	20.10		UG/L	0.00	10.00	15.00	X
MW-13	W13SSA	1/27/1998	IM40MB	MOLYBDENUM	11.20		UG/L	0.00	10.00	10.00	X
MW-13	W13SSL	1/27/1998	IM40MB	MOLYBDENUM	10.40	J	UG/L	0.00	10.00	10.00	X
MW-13	W13DDA	1/26/1998	IM40MB	MOLYBDENUM	26.60		UG/L	140.00	145.00	10.00	X
MW-13	W13DDL	1/26/1998	IM40MB	MOLYBDENUM	30.40		UG/L	140.00	145.00	10.00	X
MW-13	W13DDA	3/11/1999	IM40MB	MOLYBDENUM	11.00		UG/L	140.00	145.00	10.00	X
MW-13	W13DDD	3/11/1999	IM40MB	MOLYBDENUM	12.10	J	UG/L	140.00	145.00	10.00	X
MW-16	W16SSA	3/10/1999	IM40MB	MOLYBDENUM	21.00	J	UG/L	0.00	10.00	10.00	X
MW-16	W16DDA	3/9/1999	IM40MB	MOLYBDENUM	22.20		UG/L	222.00	227.00	10.00	X
MW-16	W16DDD	3/9/1999	IM40MB	MOLYBDENUM	23.20		UG/L	222.00	227.00	10.00	X
MW-17	W17M1L	5/18/1999	IM40MB	MOLYBDENUM	12.60		UG/L	97.00	107.00	10.00	X
MW-2	W02SSA	2/23/1998	IM40MB	MOLYBDENUM	72.10		UG/L	0.00	10.00	10.00	X
MW-2	W02SSL	2/23/1998	IM40MB	MOLYBDENUM	63.30		UG/L	0.00	10.00	10.00	X
MW-2	W02SSA	2/1/1999	IM40MB	MOLYBDENUM	26.10	J	UG/L	0.00	10.00	10.00	X
MW-2	W02SSL	2/1/1999	IM40MB	MOLYBDENUM	34.00		UG/L	0.00	10.00	10.00	X
MW-2	W02DDA	2/2/1999	IM40MB	MOLYBDENUM	25.60		UG/L	287.00	295.00	10.00	X
MW-2	W02DDL	2/2/1999	IM40MB	MOLYBDENUM	26.30	J	UG/L	287.00	295.00	10.00	X
MW-46	W46M2A	3/30/1999	IM40MB	MOLYBDENUM	48.90		UG/L	55.00	65.00	10.00	X
MW-46	W46M2L	3/30/1999	IM40MB	MOLYBDENUM	51.00		UG/L	55.00	65.00	10.00	X
MW-46	W46M2A	8/24/1999	IM40MB	MOLYBDENUM	17.40		UG/L	55.00	65.00	10.00	X
MW-46	W46M1A	3/29/1999	IM40MB	MOLYBDENUM	32.80		UG/L	102.00	112.00	10.00	X
MW-46	W46DDA	4/1/1999	IM40MB	MOLYBDENUM	17.20		UG/L	135.00	145.00	10.00	X
MW-47	W47M3A	3/29/1999	IM40MB	MOLYBDENUM	43.10		UG/L	21.00	31.00	10.00	X

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MCL/HA = EITHER THE MCL OR LOWEST HEALTH ADVISORY CONCENTRATION (CHILD, ADULT OR LIFETIME)
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TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

LOCID/WELL ID	OGDEN_ID	SAMPLED	METHOD	OGDEN_ANALYTE	CONC.	FLAG	UNITS	BWTS	BWTE	MCL/HA	>MCL/HA
MW-47	W47M3L	3/29/1999	IM40MB	MOLYBDENUM	40.50		UG/L	21.00	31.00	10.00	X
MW-47	W47M2A	3/26/1999	IM40MB	MOLYBDENUM	11.00		UG/L	38.00	48.00	10.00	X
MW-5	W05DDA	2/13/1998	IM40MB	MOLYBDENUM	28.30		UG/L	220.00	225.00	10.00	X
MW-5	W05DDL	2/13/1998	IM40MB	MOLYBDENUM	26.60		UG/L	220.00	225.00	10.00	X
MW-50	W50M2A	4/26/1999	IM40MB	MOLYBDENUM	20.60		UG/L	59.00	69.00	10.00	X
MW-50	W50M1A	4/27/1999	IM40MB	MOLYBDENUM	11.80		UG/L	90.00	100.00	10.00	X
MW-52	W52M3A	4/7/1999	IM40MB	MOLYBDENUM	72.60		UG/L	26.00	36.00	10.00	X
MW-52	W52M3L	4/7/1999	IM40MB	MOLYBDENUM	67.60		UG/L	26.00	36.00	10.00	X
MW-52	W52M3A	8/27/1999	IM40MB	MOLYBDENUM	23.40		UG/L	26.00	36.00	10.00	X
MW-52	W52M3L	8/27/1999	IM40MB	MOLYBDENUM	23.10		UG/L	26.00	36.00	10.00	X
MW-52	W52M2A	4/29/1999	IM40MB	MOLYBDENUM	15.30		UG/L	74.00	84.00	10.00	X
MW-52	W52M2L	4/29/1999	IM40MB	MOLYBDENUM	18.50		UG/L	74.00	84.00	10.00	X
MW-52	W52DDL	8/30/1999	IM40MB	MOLYBDENUM	26.80		UG/L	120.00	130.00	10.00	X
MW-52	W52DDA	4/2/1999	IM40MB	MOLYBDENUM	51.10		UG/L	219.00	229.00	10.00	X
MW-52	W52DDL	4/2/1999	IM40MB	MOLYBDENUM	48.90		UG/L	219.00	229.00	10.00	X
MW-52	W52DDA	8/30/1999	IM40MB	MOLYBDENUM	28.30		UG/L	219.00	229.00	10.00	X
MW-53	W53SSA	2/17/1999	IM40MB	MOLYBDENUM	24.90		UG/L	0.00	10.00	10.00	X
MW-53	W53SSL	2/17/1999	IM40MB	MOLYBDENUM	27.60		UG/L	0.00	10.00	10.00	X
MW-53	W53M1A	5/3/1999	IM40MB	MOLYBDENUM	122.00		UG/L	100.00	110.00	10.00	X
MW-53	W53M1L	5/3/1999	IM40MB	MOLYBDENUM	132.00		UG/L	100.00	110.00	10.00	X
MW-53	W53M1A	8/30/1999	IM40MB	MOLYBDENUM	55.20		UG/L	100.00	110.00	10.00	X
MW-53	W53M1L	8/30/1999	IM40MB	MOLYBDENUM	54.10		UG/L	100.00	110.00	10.00	X
MW-53	W53DDA	2/18/1999	IM40MB	MOLYBDENUM	15.90		UG/L	157.00	167.00	10.00	X
MW-53	W53DDL	2/18/1999	IM40MB	MOLYBDENUM	17.40		UG/L	157.00	167.00	10.00	X
MW-53	W53DDA	8/30/1999	IM40MB	MOLYBDENUM	11.50		UG/L	157.00	167.00	10.00	X
MW-54	W54SSA	4/30/1999	IM40MB	MOLYBDENUM	56.70		UG/L	0.00	10.00	10.00	X
MW-54	W54SSL	4/30/1999	IM40MB	MOLYBDENUM	66.20		UG/L	0.00	10.00	10.00	X
MW-54	W54SSA	8/27/1999	IM40MB	MOLYBDENUM	61.40		UG/L	0.00	10.00	10.00	X
MW-54	W54M2A	5/4/1999	IM40MB	MOLYBDENUM	11.20		UG/L	58.00	68.00	10.00	X
MW-54	W54M2L	5/4/1999	IM40MB	MOLYBDENUM	13.10		UG/L	58.00	68.00	10.00	X
MW-54	W54M2A	8/27/1999	IM40MB	MOLYBDENUM	43.70		UG/L	58.00	68.00	10.00	X
MW-54	W54M2L	8/27/1999	IM40MB	MOLYBDENUM	43.20		UG/L	58.00	68.00	10.00	X
MW-54	W54M1A	4/30/1999	IM40MB	MOLYBDENUM	11.80		UG/L	80.00	90.00	10.00	X
MW-54	W54DDA	5/5/1999	IM40MB	MOLYBDENUM	17.50		UG/L	126.00	136.00	10.00	X
MW-55	W55SSA	5/17/1999	IM40MB	MOLYBDENUM	15.90		UG/L	0.00	10.00	10.00	X

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TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

LOCID/WELL ID	OGDEN_ID	SAMPLED	METHOD	OGDEN_ANALYTE	CONC.	FLAG	UNITS	BWTS	BWTE	MCL/HA	>MCL/HA
MW-55	W55M2A	5/14/1999	IM40MB	MOLYBDENUM	21.80		UG/L	60.00	70.00	10.00	X
MW-55	W55M1A	5/13/1999	IM40MB	MOLYBDENUM	12.50		UG/L	90.00	100.00	10.00	X
MW-55	W55DDA	5/13/1999	IM40MB	MOLYBDENUM	22.60		UG/L	120.00	130.00	10.00	X
MW-55	W55DDA	8/30/1999	IM40MB	MOLYBDENUM	14.20		UG/L	120.00	130.00	10.00	X
15MW0002	15MW0002	4/8/1999	IM40MB	SODIUM	37,600.00		UG/L	0.00	10.00	20,000.00	X
90WT0015	90WT0015	4/23/1999	IM40MB	SODIUM	34,300.00		UG/L	0.00	10.00	20,000.00	X
MW-16	W16SSA	11/17/1997	IM40MB	SODIUM	20,900.00		UG/L	0.00	10.00	20,000.00	X
MW-16	W16SSL	11/17/1997	IM40MB	SODIUM	20,400.00		UG/L	0.00	10.00	20,000.00	X
MW-2	W02SSA	2/23/1998	IM40MB	SODIUM	27,200.00		UG/L	0.00	10.00	20,000.00	X
MW-2	W02SSL	2/23/1998	IM40MB	SODIUM	26,300.00		UG/L	0.00	10.00	20,000.00	X
MW-2	W02SSA	2/1/1999	IM40MB	SODIUM	20,300.00		UG/L	0.00	10.00	20,000.00	X
MW-2	W02SSL	2/1/1999	IM40MB	SODIUM	20,100.00		UG/L	0.00	10.00	20,000.00	X
MW-2	W02DDA	11/19/1997	IM40MB	SODIUM	21,500.00		UG/L	287.00	295.00	20,000.00	X
MW-2	W02DDL	11/19/1997	IM40MB	SODIUM	22,600.00		UG/L	287.00	295.00	20,000.00	X
MW-21	W21SSA	10/24/1997	IM40MB	SODIUM	24,000.00		UG/L	0.00	10.00	20,000.00	X
MW-21	W21SSL	10/24/1997	IM40MB	SODIUM	24,200.00		UG/L	0.00	10.00	20,000.00	X
MW-46	W46SSA	8/25/1999	IM40MB	SODIUM	20,600.00		UG/L	22.00	32.00	20,000.00	X
MW-46	W46M2A	3/30/1999	IM40MB	SODIUM	23,300.00		UG/L	55.00	65.00	20,000.00	X
MW-46	W46M2L	3/30/1999	IM40MB	SODIUM	24,400.00		UG/L	55.00	65.00	20,000.00	X
MW-54	W54SSA	8/27/1999	IM40MB	SODIUM	33,300.00		UG/L	0.00	10.00	20,000.00	X
SDW261160	WG160L	1/7/1998	IM40MB	SODIUM	20,600.00		UG/L	0.00	0.00	20,000.00	X
SDW261160	WG160A	1/13/1999	IM40MB	SODIUM	27,200.00		UG/L	0.00	0.00	20,000.00	X
SDW261160	WG160L	1/13/1999	IM40MB	SODIUM	28,200.00		UG/L	0.00	0.00	20,000.00	X
03MW0006	03MW0006	4/15/1999	IM40MB	THALLIUM	2.60	J	UG/L	0.00	10.00	2.00	X
03MW0022A	03MW0022A	4/16/1999	IM40MB	THALLIUM	3.90		UG/L	71.00	76.00	2.00	X
03MW0027A	03MW0027A	4/14/1999	IM40MB	THALLIUM	2.00	J	UG/L	64.00	69.00	2.00	X
11MW0004	11MW0004	4/16/1999	IM40MB	THALLIUM	2.30	J	UG/L	0.00	10.00	2.00	X
27MW0020Z	27MW0020Z	4/16/1999	IM40MB	THALLIUM	2.70	J	UG/L	98.00	103.00	2.00	X
90MW0038	90MW0038	4/21/1999	IM40MB	THALLIUM	4.40	J	UG/L	29.00	34.00	2.00	X
90WT0010	WF10XA	1/16/1998	IM40MB	THALLIUM	6.50	J	UG/L	2.00	12.00	2.00	X
LRWS1-4	WL14XA	1/7/1999	IM40MB	THALLIUM	5.20	J	UG/L	107.00	117.00	2.00	X
MW-18	W18SSA	3/12/1999	IM40MB	THALLIUM	2.30	J	UG/L	0.00	10.00	2.00	X
MW-19	W19DDL	2/11/1999	IM40MB	THALLIUM	3.10	J	UG/L	251.00	256.00	2.00	X
MW-21	W21SSA	10/24/1997	IM40MB	THALLIUM	6.90	J	UG/L	0.00	10.00	2.00	X
MW-38	W38M4A	8/18/1999	IM40MB	THALLIUM	2.80	J	UG/L	15.00	25.00	2.00	X

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TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

LOCID/WELL ID	OGDEN_ID	SAMPLED	METHOD	OGDEN_ANALYTE	CONC.	FLAG	UNITS	BWTS	BWTE	MCL/HA	>MCL/HA
MW-38	W38M2A	5/11/1999	IM40MB	THALLIUM	4.90	J	UG/L	70.00	80.00	2.00	X
MW-41	W41M2A	4/2/1999	IM40MB	THALLIUM	2.50	J	UG/L	69.00	79.00	2.00	X
MW-45	W45SSA	5/26/1999	IM40MB	THALLIUM	3.00	J	UG/L	0.00	10.00	2.00	X
MW-47	W47M3A	8/25/1999	IM40MB	THALLIUM	3.20	J	UG/L	21.00	31.00	2.00	X
MW-47	W47M2A	3/26/1999	IM40MB	THALLIUM	3.20	J	UG/L	38.00	48.00	2.00	X
MW-47	W47M2A	8/25/1999	IM40MB	THALLIUM	4.00	J	UG/L	38.00	48.00	2.00	X
MW-47	W47M1A	8/24/1999	IM40MB	THALLIUM	2.60	J	UG/L	75.00	85.00	2.00	X
MW-51	W51M3A	8/25/1999	IM40MB	THALLIUM	4.30	J	UG/L	29.00	39.00	2.00	X
MW-52	W52SSA	8/26/1999	IM40MB	THALLIUM	3.60	J	UG/L	0.00	10.00	2.00	X
MW-52	W52M3L	4/7/1999	IM40MB	THALLIUM	3.60	J	UG/L	26.00	36.00	2.00	X
MW-52	W52DDA	4/2/1999	IM40MB	THALLIUM	2.80	J	UG/L	219.00	229.00	2.00	X
MW-52	W52DDL	4/2/1999	IM40MB	THALLIUM	2.60	J	UG/L	219.00	229.00	2.00	X
MW-52	W52DDA	8/30/1999	IM40MB	THALLIUM	3.80	J	UG/L	219.00	229.00	2.00	X
MW-54	W54M1A	8/30/1999	IM40MB	THALLIUM	2.80	J	UG/L	80.00	90.00	2.00	X
MW-55	W55M1A	8/31/1999	IM40MB	THALLIUM	2.50	J	UG/L	90.00	100.00	2.00	X
MW-7	W07MMA	2/23/1999	IM40MB	THALLIUM	4.10	J	UG/L	67.00	72.00	2.00	X
MW-7	W07M2L	2/5/1998	IM40MB	THALLIUM	6.60	J	UG/L	137.00	142.00	2.00	X
MW-7	W07M2A	2/24/1999	IM40MB	THALLIUM	4.40	J	UG/L	137.00	142.00	2.00	X
MW-72	W72SSA	5/27/1999	IM40MB	THALLIUM	4.00		UG/L	0.00	10.00	2.00	X
PPAWSMW-1	PPAWSMW-1	6/22/1999	IM40MB	THALLIUM	3.10	J	UG/L	10.00	20.00	2.00	X
95-15	W9515A	10/17/1997	IM40MB	ZINC	7,210.00		UG/L	80.00	92.00	2,000.00	X
95-15	W9515L	10/17/1997	IM40MB	ZINC	4,620.00		UG/L	80.00	92.00	2,000.00	X
LRWS3-1	WL31XA	10/21/1997	IM40MB	ZINC	2,480.00		UG/L	102.00	117.00	2,000.00	X
LRWS3-1	WL31XL	10/21/1997	IM40MB	ZINC	2,410.00		UG/L	102.00	117.00	2,000.00	X
LRWS4-1	WL41XA	11/24/1997	IM40MB	ZINC	3,220.00		UG/L	66.00	91.00	2,000.00	X
LRWS4-1	WL41XL	11/24/1997	IM40MB	ZINC	3,060.00		UG/L	66.00	91.00	2,000.00	X
LRWS5-1	WL51DL	11/25/1997	IM40MB	ZINC	4,410.00		UG/L	66.00	91.00	2,000.00	X
LRWS5-1	WL51XA	11/25/1997	IM40MB	ZINC	4,510.00		UG/L	187.00	202.00	2,000.00	X
LRWS5-1	WL51XD	11/25/1997	IM40MB	ZINC	4,390.00		UG/L	187.00	202.00	2,000.00	X
LRWS5-1	WL51XL	11/25/1997	IM40MB	ZINC	3,900.00		UG/L	187.00	202.00	2,000.00	X
LRWS5-1	WL51XA	1/25/1999	IM40MB	ZINC	3,980.00		UG/L	187.00	202.00	2,000.00	X
LRWS5-1	WL51XL	1/25/1999	IM40MB	ZINC	3,770.00		UG/L	187.00	202.00	2,000.00	X
LRWS6-1	WL61XA	11/17/1997	IM40MB	ZINC	3,480.00		UG/L	184.00	199.00	2,000.00	X
LRWS6-1	WL61XL	11/17/1997	IM40MB	ZINC	2,600.00		UG/L	184.00	199.00	2,000.00	X
LRWS6-1	WL61XA	1/28/1999	IM40MB	ZINC	2,240.00		UG/L	184.00	199.00	2,000.00	X

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TABLE 2
VALIDATED DETECTS EXCEEDING MCLs OR HEALTH ADVISORY LIMITS
1997 THROUGH DECEMBER 1999

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LRWS6-1	WL61XL	1/28/1999	IM40MB	ZINC	2,200.00		UG/L	184.00	199.00	2,000.00	X
LRWS7-1	WL71XA	11/21/1997	IM40MB	ZINC	4,320.00		UG/L	186.00	201.00	2,000.00	X
LRWS7-1	WL71XL	11/21/1997	IM40MB	ZINC	3,750.00		UG/L	186.00	201.00	2,000.00	X
LRWS7-1	WL71XA	1/22/1999	IM40MB	ZINC	4,160.00		UG/L	186.00	201.00	2,000.00	X
LRWS7-1	WL71XL	1/22/1999	IM40MB	ZINC	4,100.00		UG/L	186.00	201.00	2,000.00	X
MW-41	W41M1A	8/19/1999	OC21B	2,6-DINITROTOLUENE	5.00	J	UG/L	110.00	120.00	5.00	X
11MW0003	WF143A	2/25/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	9.00		UG/L	0.00	0.00	6.00	X
15MW0004	15MW0004	4/9/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	6.00		UG/L	0.00	10.00	6.00	X
15MW0008	15MW0008D	4/12/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	25.00	J	UG/L	0.00	0.00	6.00	X
28MW0106	WL28XA	2/19/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	18.00	J	UG/L	0.00	10.00	6.00	X
28MW0106	WL28XA	3/23/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	26.00		UG/L	0.00	10.00	6.00	X
58MW0002	WC2XXA	2/26/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	36.00		UG/L	0.00	0.00	6.00	X
58MW0006E	WC6EXA	10/3/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	59.00		UG/L	0.00	10.00	6.00	X
58MW0006E	WC6EXD	10/3/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	57.00		UG/L	0.00	10.00	6.00	X
58MW0006E	WC6EXA	1/29/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	6.00		UG/L	0.00	10.00	6.00	X
90WT0005	WF05XA	1/13/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	47.00		UG/L	0.00	10.00	6.00	X
90WT0013	WF13XA	1/16/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	34.00		UG/L	2.00	12.00	6.00	X
90WT0013	WF13XA	1/14/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	16.00		UG/L	2.00	12.00	6.00	X
97-1	W9701A	11/19/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	54.00	J	UG/L	62.00	72.00	6.00	X
97-1	W9701D	11/19/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	28.00	J	UG/L	62.00	72.00	6.00	X
97-2	W9702A	11/20/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	7.00		UG/L	53.00	63.00	6.00	X
97-3	W9703A	11/21/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	73.00	J	UG/L	36.00	46.00	6.00	X
97-5	W9705A	11/20/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	15.00		UG/L	76.00	86.00	6.00	X
BHW215083	WG083A	11/26/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	13.00		UG/L	0.00	0.00	6.00	X
LRWS2-3	WL23XA	11/21/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	20.00	J	UG/L	68.00	83.00	6.00	X
LRWS2-6	WL26XA	10/20/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	21.00		UG/L	75.00	90.00	6.00	X
LRWS4-1	WL41XA	11/24/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	100.00		UG/L	66.00	91.00	6.00	X
LRWS5-1	WL51XA	11/25/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	7.00		UG/L	187.00	202.00	6.00	X
MW-11	W11SSA	11/6/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	33.00	J	UG/L	0.00	10.00	6.00	X
MW-11	W11SSD	11/6/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	23.00	J	UG/L	0.00	10.00	6.00	X
MW-12	W12SSA	11/6/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	28.00		UG/L	0.00	10.00	6.00	X
MW-14	W14SSA	11/4/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	14.00		UG/L	0.00	10.00	6.00	X
MW-16	W16SSA	11/17/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	28.00		UG/L	0.00	10.00	6.00	X
MW-16	W16DDA	11/17/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	43.00		UG/L	108.00	113.00	6.00	X
MW-17	W17SSD	11/10/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	120.00	J	UG/L	0.00	10.00	6.00	X

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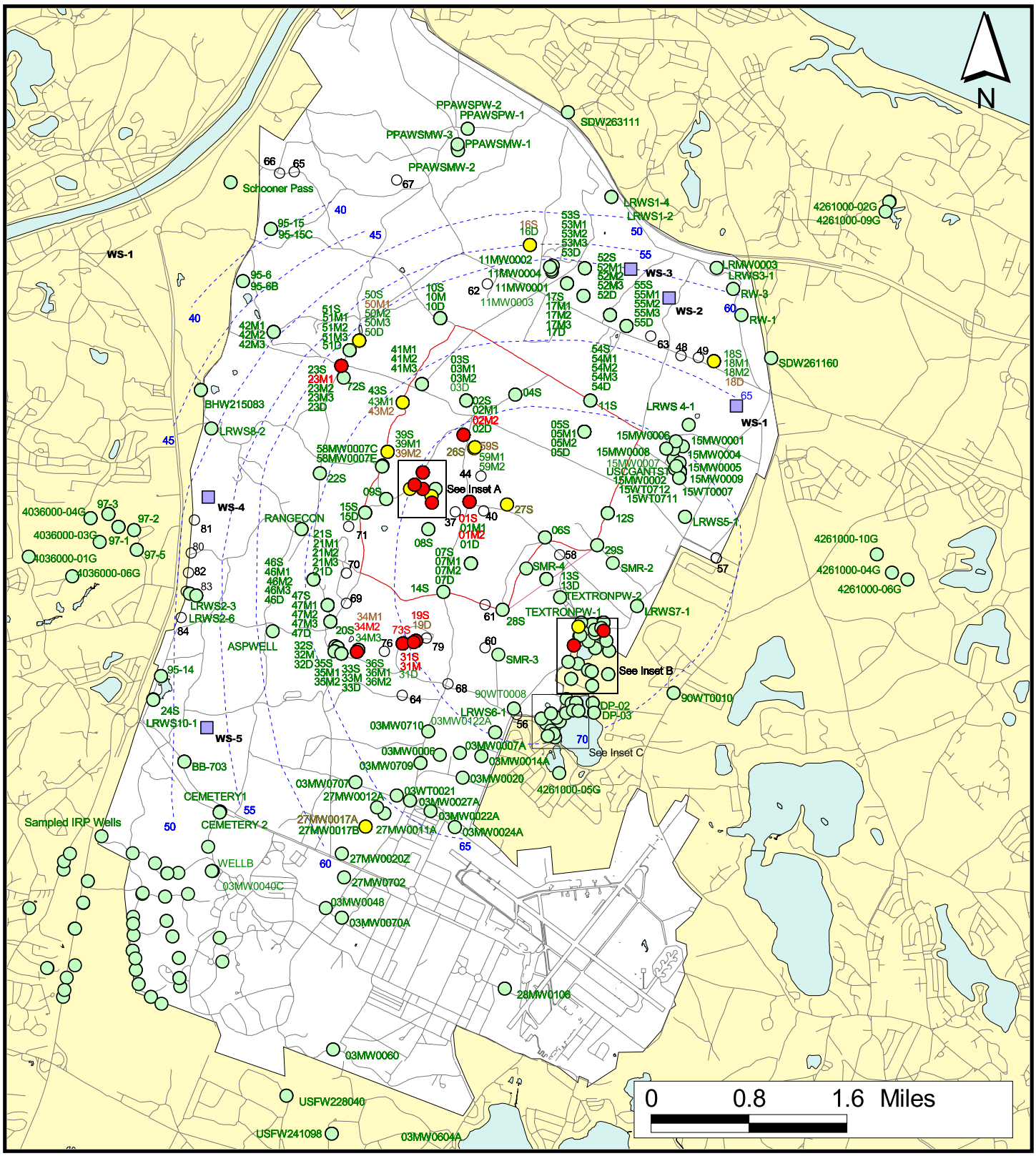
MW-17	W17DDA	11/11/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	42.00		UG/L	197.00	207.00	6.00	X
MW-18	W18SSA	10/10/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	36.00		UG/L	0.00	10.00	6.00	X
MW-19	W19DDA	3/4/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	7.00		UG/L	251.00	256.00	6.00	X
MW-2	W02M2A	1/20/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	24.00		UG/L	31.00	36.00	6.00	X
MW-2	W02M1A	1/21/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	10.00	J	UG/L	73.00	78.00	6.00	X
MW-2	W02DDA	2/2/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	9.00		UG/L	287.00	295.00	6.00	X
MW-20	W20SSA	11/7/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	280.00		UG/L	0.00	10.00	6.00	X
MW-21	W21M2A	4/1/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	8.00		UG/L	58.00	68.00	6.00	X
MW-22	W22SSA	11/24/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	96.00		UG/L	0.00	10.00	6.00	X
MW-23	W23SSA	10/27/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	24.00		UG/L	0.00	10.00	6.00	X
MW-23	W23M3A	11/13/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	10.00		UG/L	153.00	163.00	6.00	X
MW-23	W23M3D	11/13/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	13.00		UG/L	153.00	163.00	6.00	X
MW-24	W24SSA	11/14/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	8.00		UG/L	0.00	10.00	6.00	X
MW-28	W28SSA	11/3/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	11.00		UG/L	0.00	10.00	6.00	X
MW-29	W29SSA	11/3/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	16.00		UG/L	0.00	10.00	6.00	X
MW-36	W36M2A	8/17/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	8.00		UG/L	59.00	69.00	6.00	X
MW-38	W38M3A	5/6/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	15.00		UG/L	53.00	63.00	6.00	X
MW-4	W04SSA	11/4/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	30.00		UG/L	0.00	10.00	6.00	X
MW-43	W43M1A	5/26/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	6.00		UG/L	93.00	103.00	6.00	X
MW-45	W45M1A	5/24/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	37.00		UG/L	98.00	108.00	6.00	X
MW-47	W47M1A	8/24/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	14.00		UG/L	75.00	85.00	6.00	X
MW-47	W47DDA	8/24/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	16.00		UG/L	100.00	110.00	6.00	X
MW-5	W05DDA	2/13/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	9.00	J	UG/L	220.00	225.00	6.00	X
MW-52	W52M3A	8/27/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	7.00	J	UG/L	26.00	36.00	6.00	X
MW-53	W53M1A	8/30/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	31.00		UG/L	100.00	110.00	6.00	X
MW-53	W53DDA	2/18/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	18.00		UG/L	157.00	167.00	6.00	X
MW-55	W55DDA	5/13/1999	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	8.00		UG/L	120.00	130.00	6.00	X
MW-7	W07SSA	10/31/1997	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	10.00		UG/L	0.00	10.00	6.00	X
RW-1	WRW1XA	2/18/1998	OC21B	BIS(2-ETHYLHEXYL) PHTHALA	59.00		UG/L	0.00	9.00	6.00	X
MW-45	W45SSA	5/26/1999	OC21B	NAPHTHALENE	24.00		UG/L	0.00	10.00	20.00	X
03MW0007A	03MW0007A	4/13/1999	OC21V	TETRACHLOROETHYLENE(PC	6.00		UG/L	21.00	26.00	5.00	X
03MW0014A	03MW0014A	4/13/1999	OC21V	TETRACHLOROETHYLENE(PC	8.00		UG/L	38.00	43.00	5.00	X
03MW0020	03MW0020	4/14/1999	OC21V	TETRACHLOROETHYLENE(PC	12.00		UG/L	36.00	41.00	5.00	X
27MW0017B	27MW0017B	4/30/1999	OC21V	VINYL CHLORIDE	2.00		UG/L	21.00	26.00	2.00	X
PPAWSMW-1	PPAWSMW-1	6/22/1999	OL21P	DIELDRIN	3.00		UG/L	10.00	20.00	0.50	X

BWTS = DEPTH BELOW WATER TABLE, START DEPTH, MEASURED IN FEET
BWTE = DEPTH BELOW WATER TABLE, END DEPTH, MEASURED IN FEET
MCL/HA = EITHER THE MCL OR LOWEST HEALTH ADVISORY CONCENTRATION (CHILD, ADULT OR LIFETIME)
>MCL/HA = EQUALS OR EXCEEDS EITHER THE MCL OR LOWEST HEALTH ADVISORY CONCENTRATION (CHILD, ADULT, OR LIFETIME)

TABLE 3
DETECTED COMPOUNDS IN RUSH DATA
(UNVALIDATED)
SAMPLES COLLECTED 11/15/99-12/31/99

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
W57DDA	MW-57	12/13/1999	GROUNDWATER			125.00	135.00	OC21V	CHLOROFORM	
W57DDA	MW-57	12/13/1999	GROUNDWATER			125.00	135.00	OC21V	CHLOROMETHANE	
W57M1A	MW-57	12/14/1999	GROUNDWATER			100.00	110.00	OC21V	CHLOROFORM	
W57M3A	MW-57	12/13/1999	GROUNDWATER			30.00	40.00	OC21V	CHLOROFORM	
W57M3A	MW-57	12/13/1999	GROUNDWATER			30.00	40.00	OC21V	CHLOROMETHANE	
W57M3A	MW-57	12/13/1999	GROUNDWATER			30.00	40.00	OC21V	TETRACHLOROETHYLENE(PCE)	
DEM02PE4	DEM02PE4	12/20/1999	SOIL GRID	0.00	0.25			OM31B	BENZYL BUTYL PHTHALATE	
DEMO2PE5	DEMO2PE5	12/20/1999	SOIL GRID	0.00	0.25			8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
DEMO2PE5	DEMO2PE5	12/20/1999	SOIL GRID	0.00	0.25			OM31B	BENZYL BUTYL PHTHALATE	
HCAPC2AAA	APC	12/23/1999	SOIL GRID	0.00	0.25			8330N	2-AMINO-4,6-DINITROTOLUENE	
HCAPC2CAA	APC	12/23/1999	SOIL GRID	0.50	1.00			8330N	2-AMINO-4,6-DINITROTOLUENE	
HCAPC3BAA	APC	12/23/1999	SOIL GRID	0.25	0.50			8330N	2-AMINO-4,6-DINITROTOLUENE	
HCAPC3CAA	APC	12/23/1999	SOIL GRID	0.50	1.00			8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	

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



Sources & Notes

Map Coordinates: Stateplane, NAD83, Zone 4151, Meters
Source: MASSGIS

Legend

- Validated Detection GTE MCL/HA
- Validated Detection LT MCL/HA
- Validated Non-detect
- No Data Available

Figure 1
Explosives in Groundwater
Compared to MCL/HAs
Validated Data As Of 1/03/2000

Analyte Group
1

January 07, 2000 DRAFT

L:\MMR\GIS\Monthly Maps\Jan2000\Expl MCL Detects

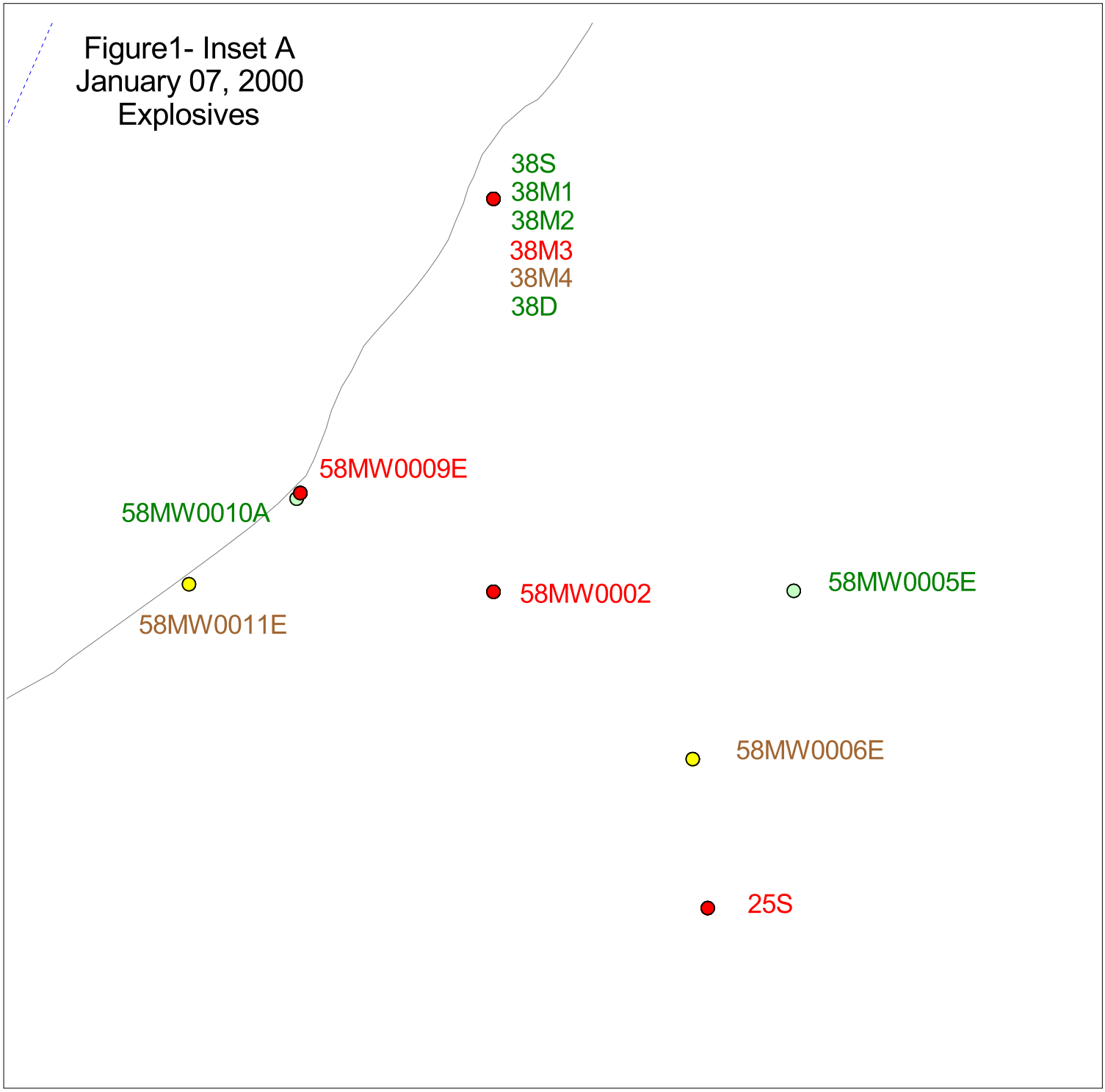


Figure1- Inset A
January 07, 2000
Explosives
38S
38M1
38M2
38M3
38M4
38D
58MW0009E
58MW0010A
58MW0011E
58MW0002
58MW0005E
58MW0006E
25S

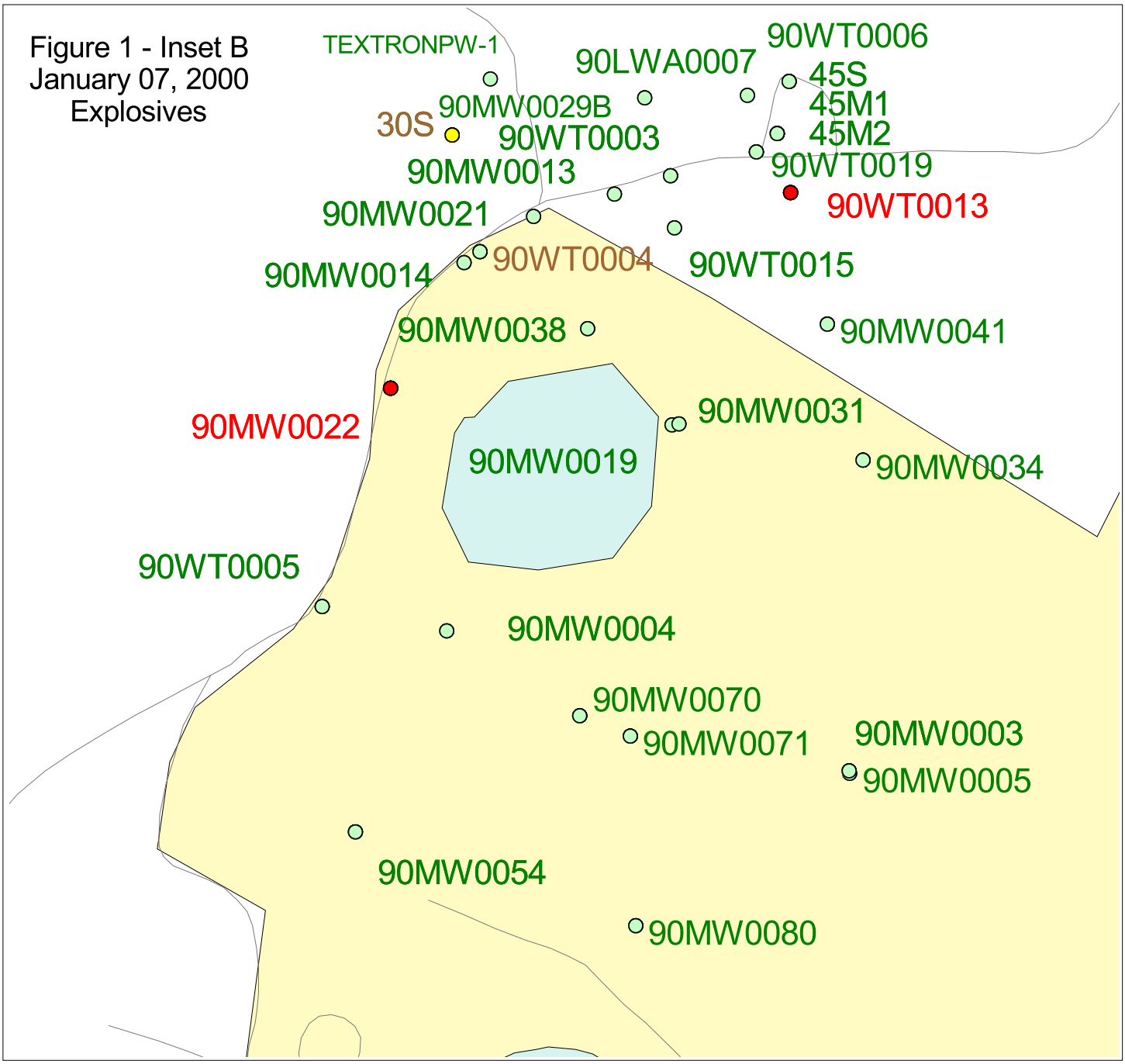


Figure 1 - Inset B
January 07, 2000
Explosives
TEXTRONPW-1
90WT0006
90LWA0007
45S
45M1
45M2
30S
90MW0029B
90WT0003
90MW0013
90WT0019
90WT0013
90MW0021
90MW0014
90WT0004
90WT0015
90MW0038
90MW0041
90MW0022
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90MW0070
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90MW0005
90MW0054
90MW0080

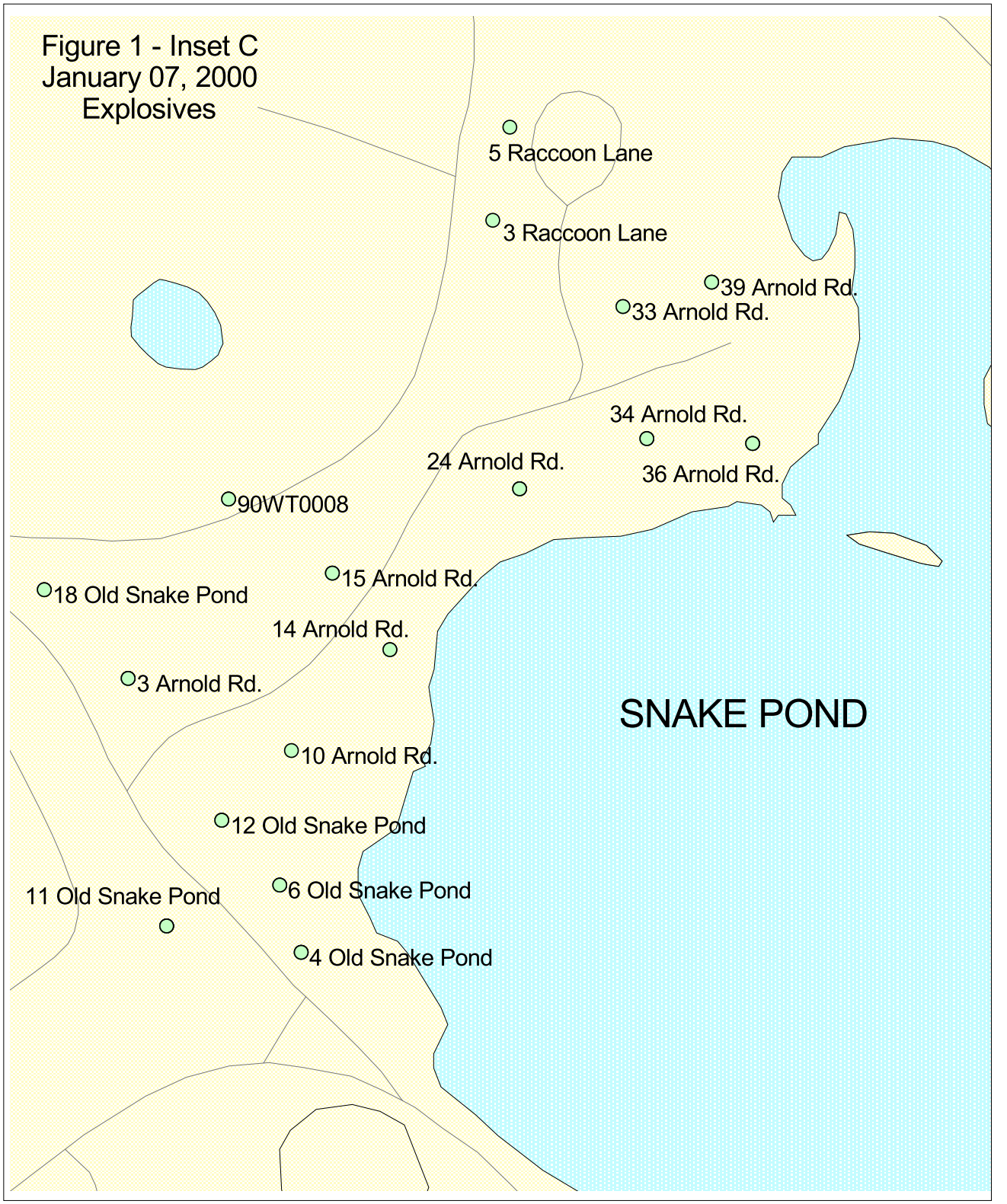
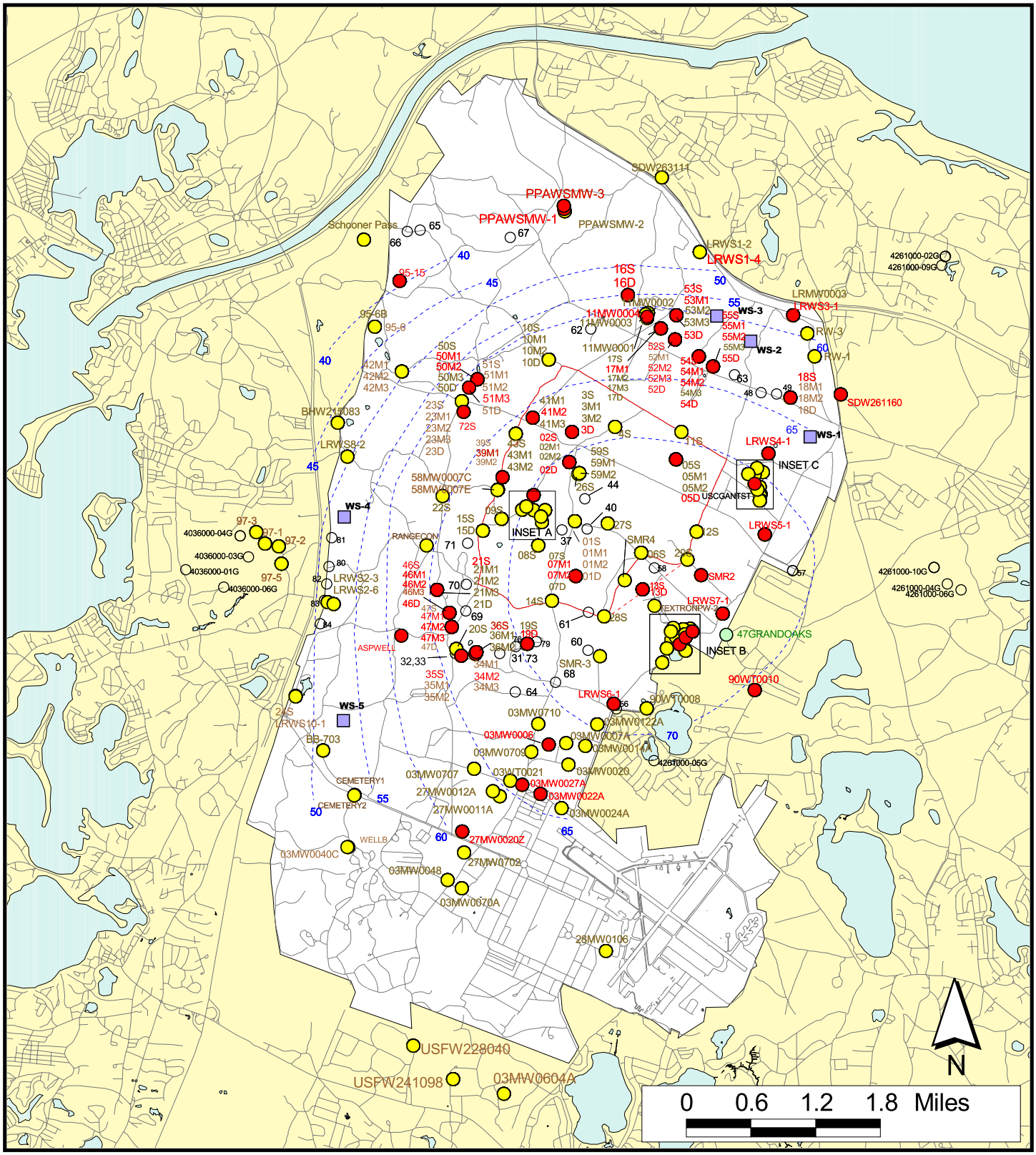


Figure 1 - Inset C
January 07, 2000
Explosives
5 Raccoon Lane
3 Raccoon Lane
39 Arnold Rd.
33 Arnold Rd.
34 Arnold Rd.
36 Arnold Rd.
24 Arnold Rd.
90WT0008
15 Arnold Rd.
18 Old Snake Pond
14 Arnold Rd.
3 Arnold Rd.
SNAKE POND
10 Arnold Rd.
12 Old Snake Pond
11 Old Snake Pond
6 Old Snake Pond
4 Old Snake Pond



Sources & Notes

Map Coordinates: Stateplane, NAD83, Zone 4151, Meters
Source: MASSGIS

Legend

- Validated Detection GTE MCL/HA
- Validated Detection LT MCL/HA
- Validated Non-detect
- No Data Available

Figure 2
Metals in Groundwater
Compared to MCL/HAs
Validated Data As Of 1/03/2000

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2

January 07, 2000 DRAFT

L:\MMR\GIS\Monthly Maps\Jan2000\Metal MCL Detects

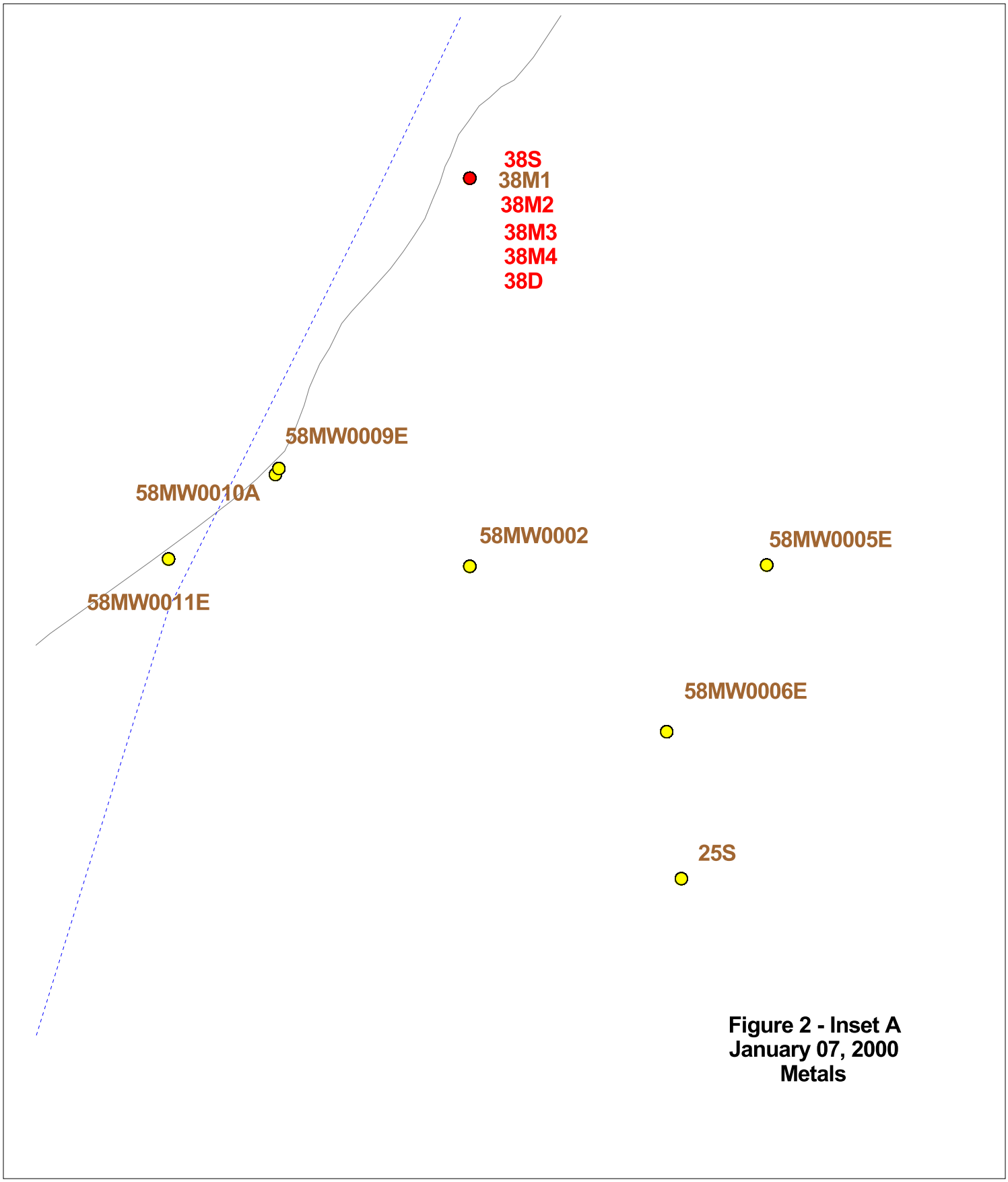


Figure 2 - Inset A
January 07, 2000
Metals

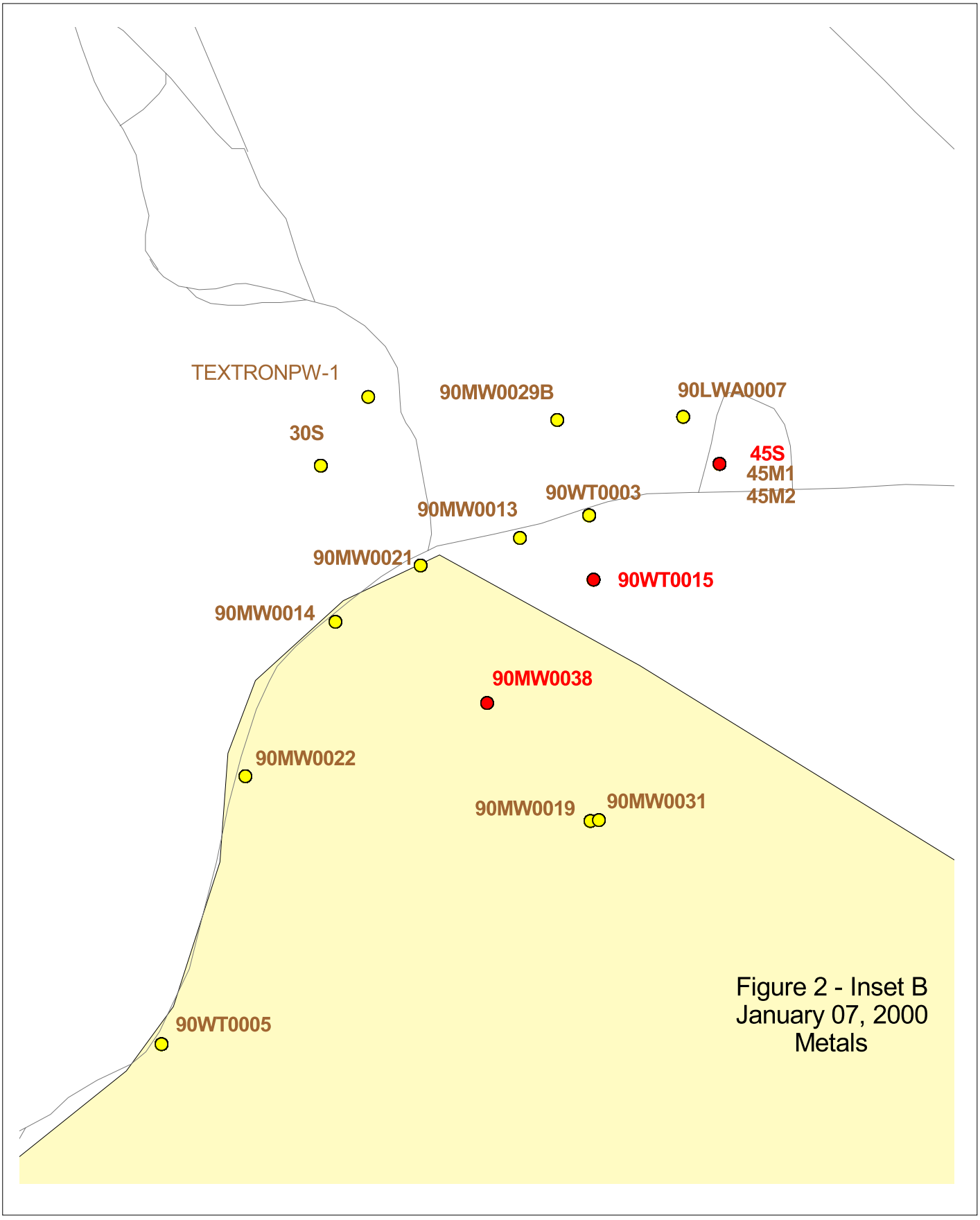


Figure 2 - Inset B
January 07, 2000
Metals

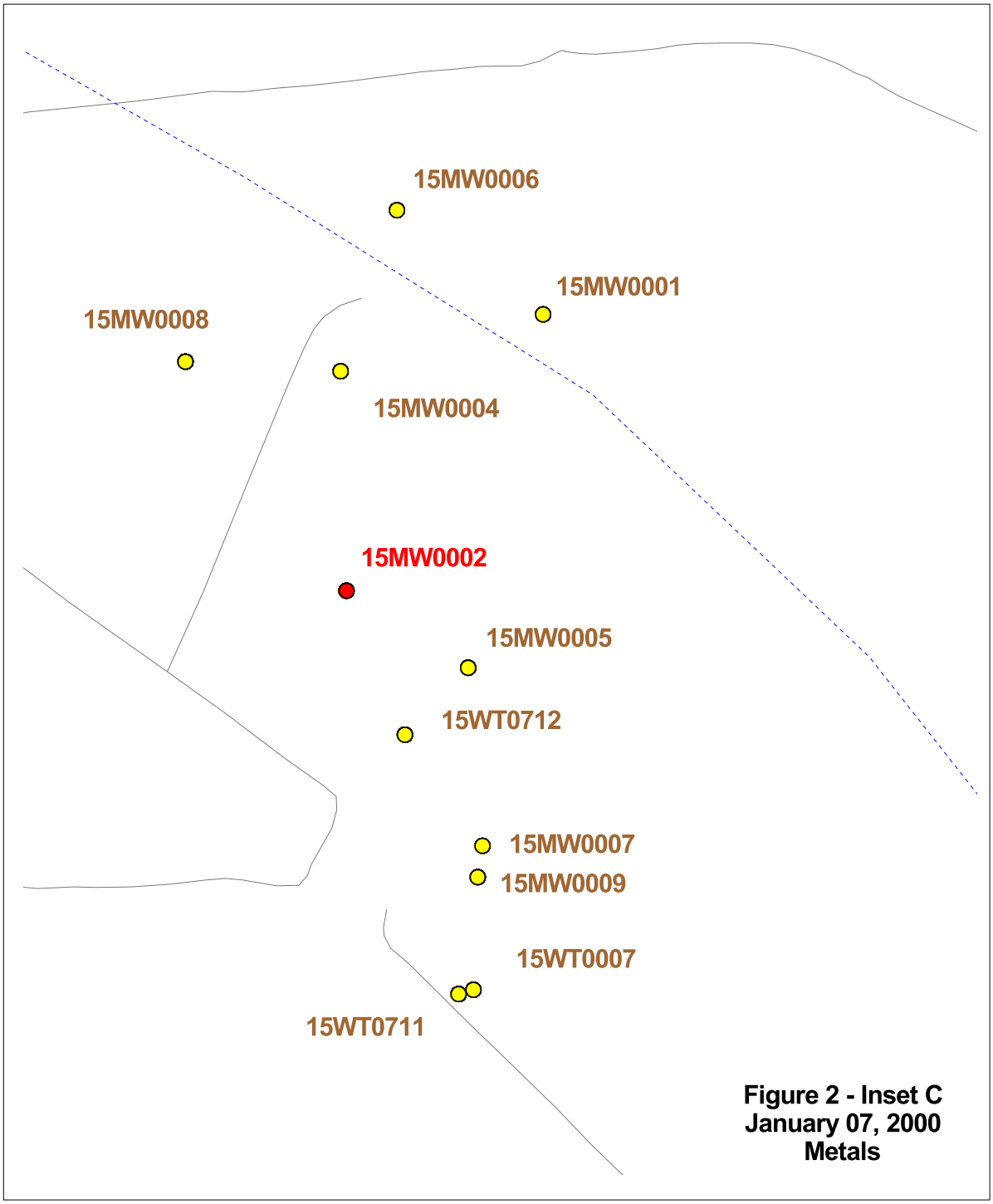
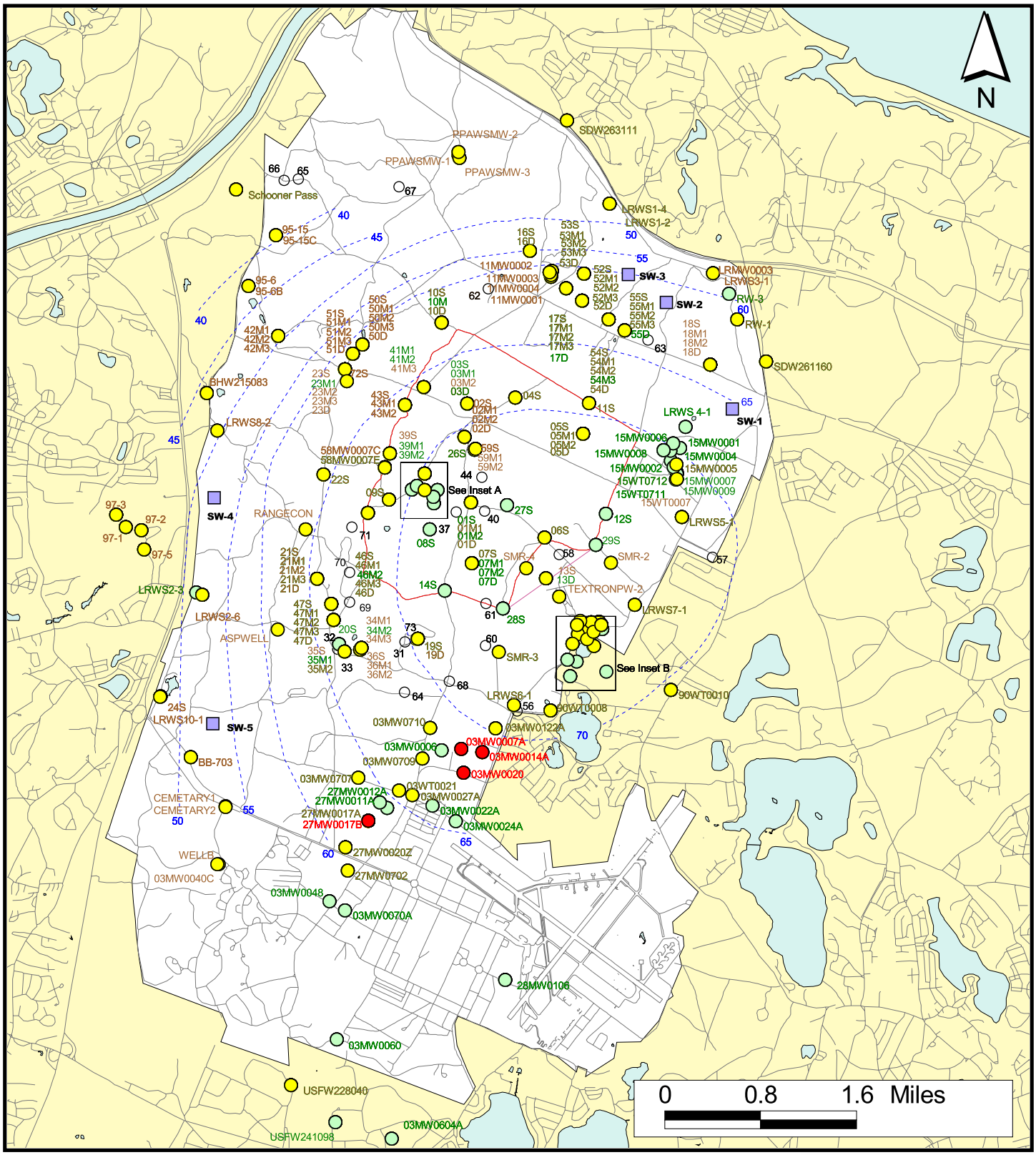


Figure 2 - Inset C
January 07, 2000
Metals



Sources & Notes

Map Coordinates: Stateplane, NAD83, Zone 4151, Meters
Source: MASSGIS

Legend

- Validated Detection GTE MCL/HA
- Validated Detection LT MCL/HA
- Validated Non-detect
- No Data Available

Figure 3
VOCs in Groundwater
Compared To MCL/HAs
Validated Data As Of 1/03/2000

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3

January 10, 2000 DRAFT

L:\MMR\GIS\Monthly Maps\January2000\VOC GTE MCL

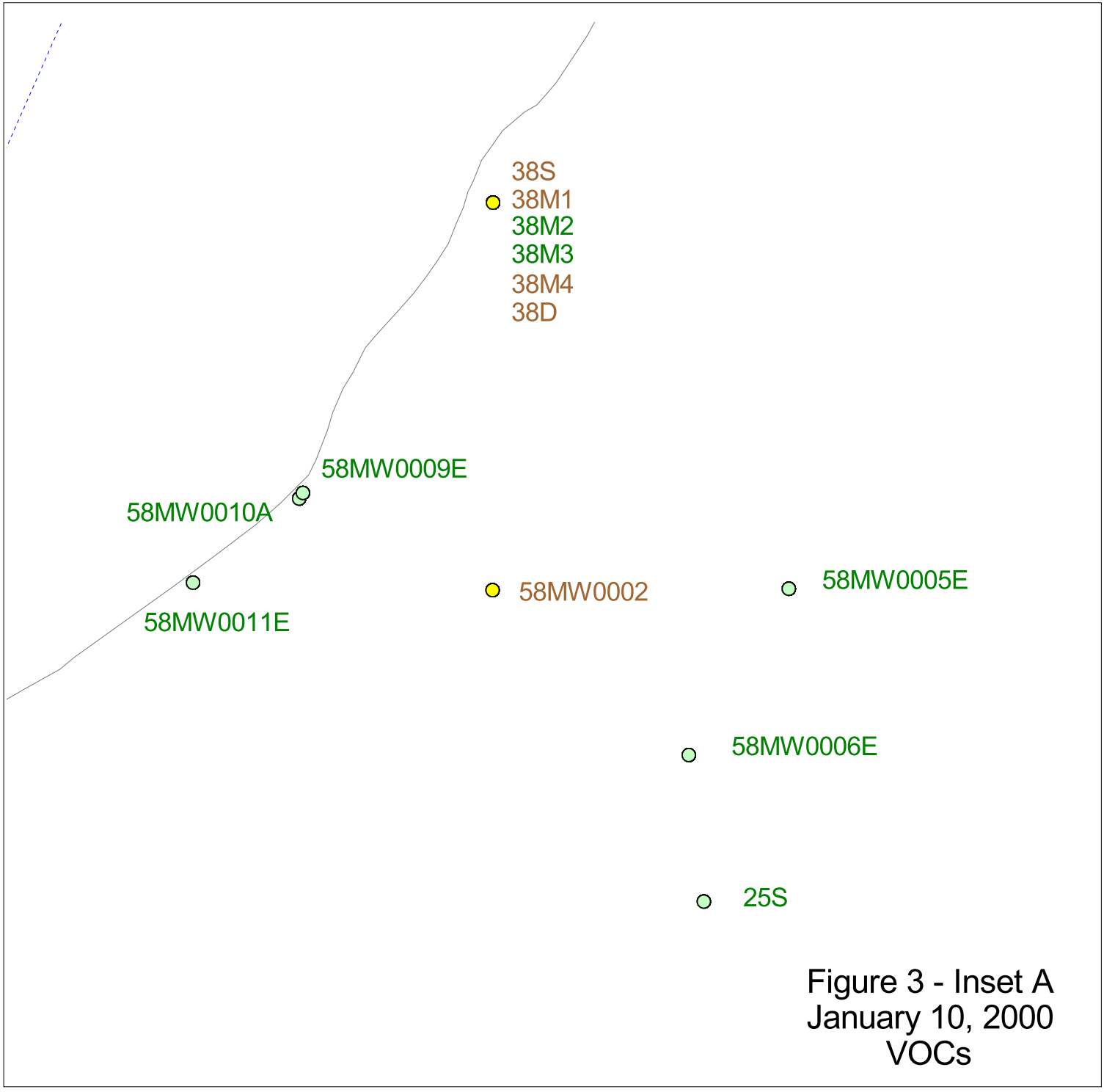
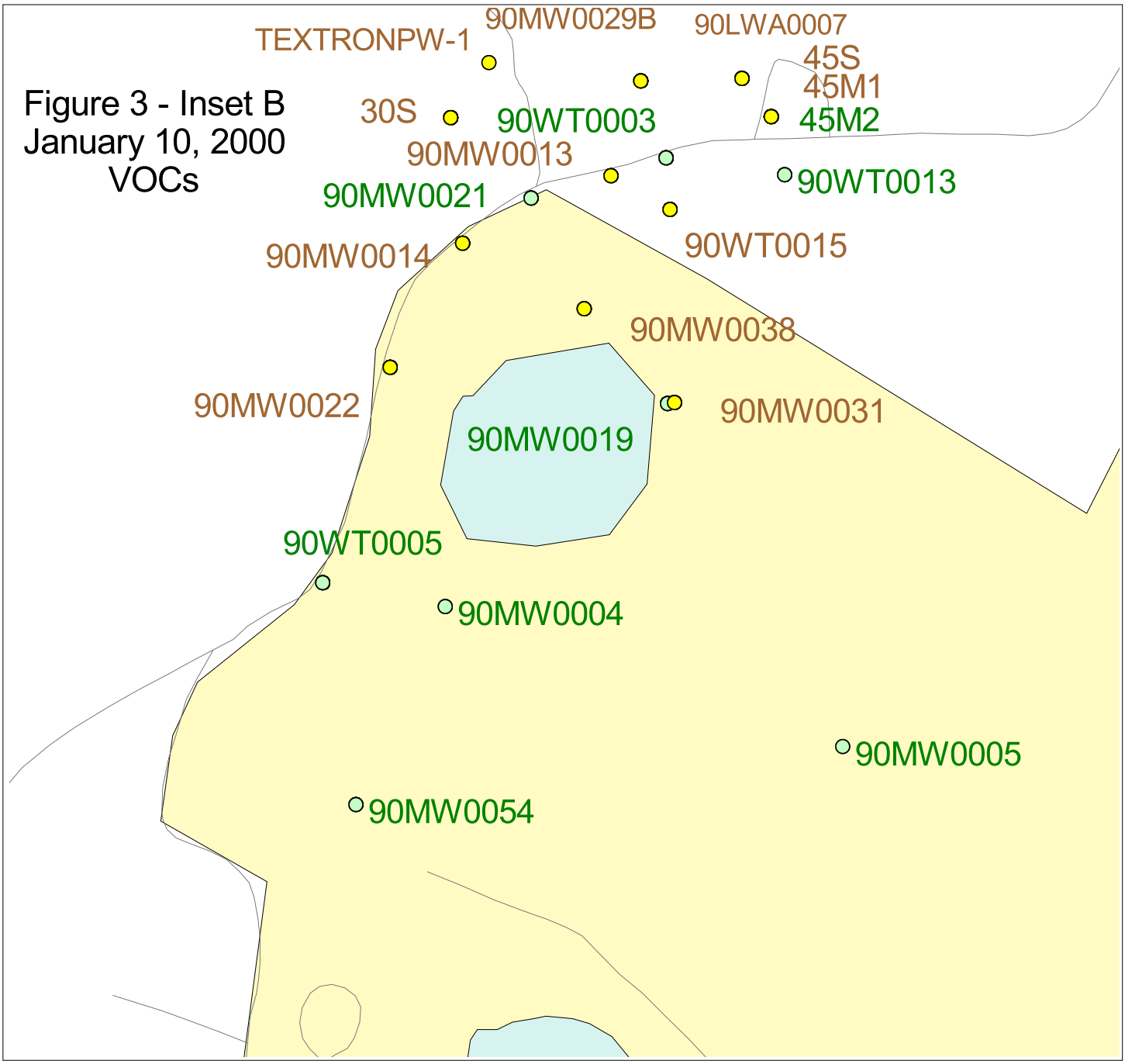
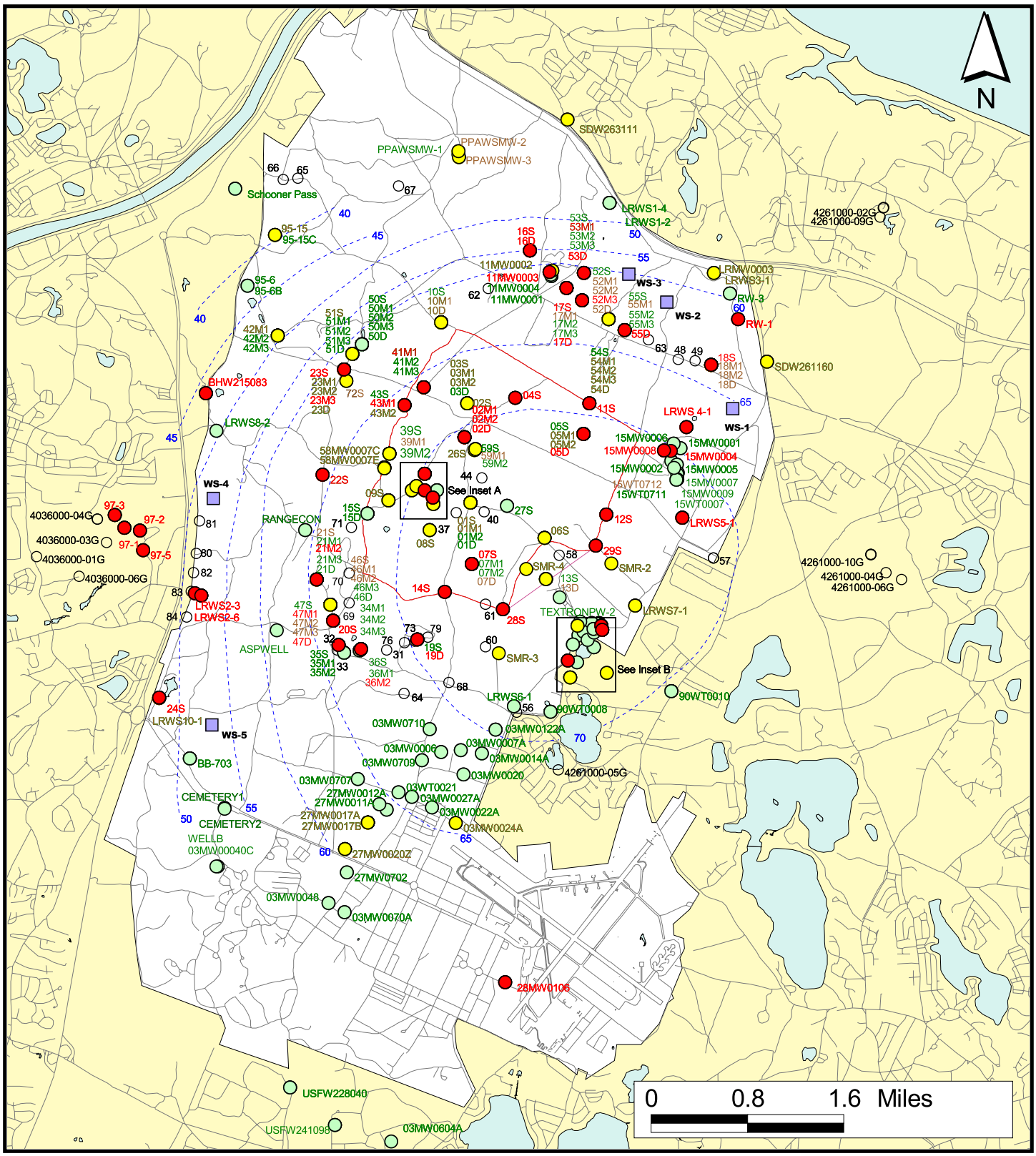


Figure 3 - Inset A
January 10, 2000
VOCs

Figure 3 - Inset B
January 10, 2000
VOCs





Sources & Notes

Map Coordinates: Stateplane, NAD83, Zone 4151, Meters
Source: MASSGIS

Legend

- Validated Detection GTE MCL/HA
- Validated Detection LT MCL/HA
- Validated Non-detect
- No Data Available

Figure 4
SVOCs in Groundwater
Compared To MCL/HAs
Validated Data As Of 1/03/2000

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4

January 10, 2000 DRAFT

L:\MMR\GIS\Monthly Maps\January2000\SVOC GTE MCL

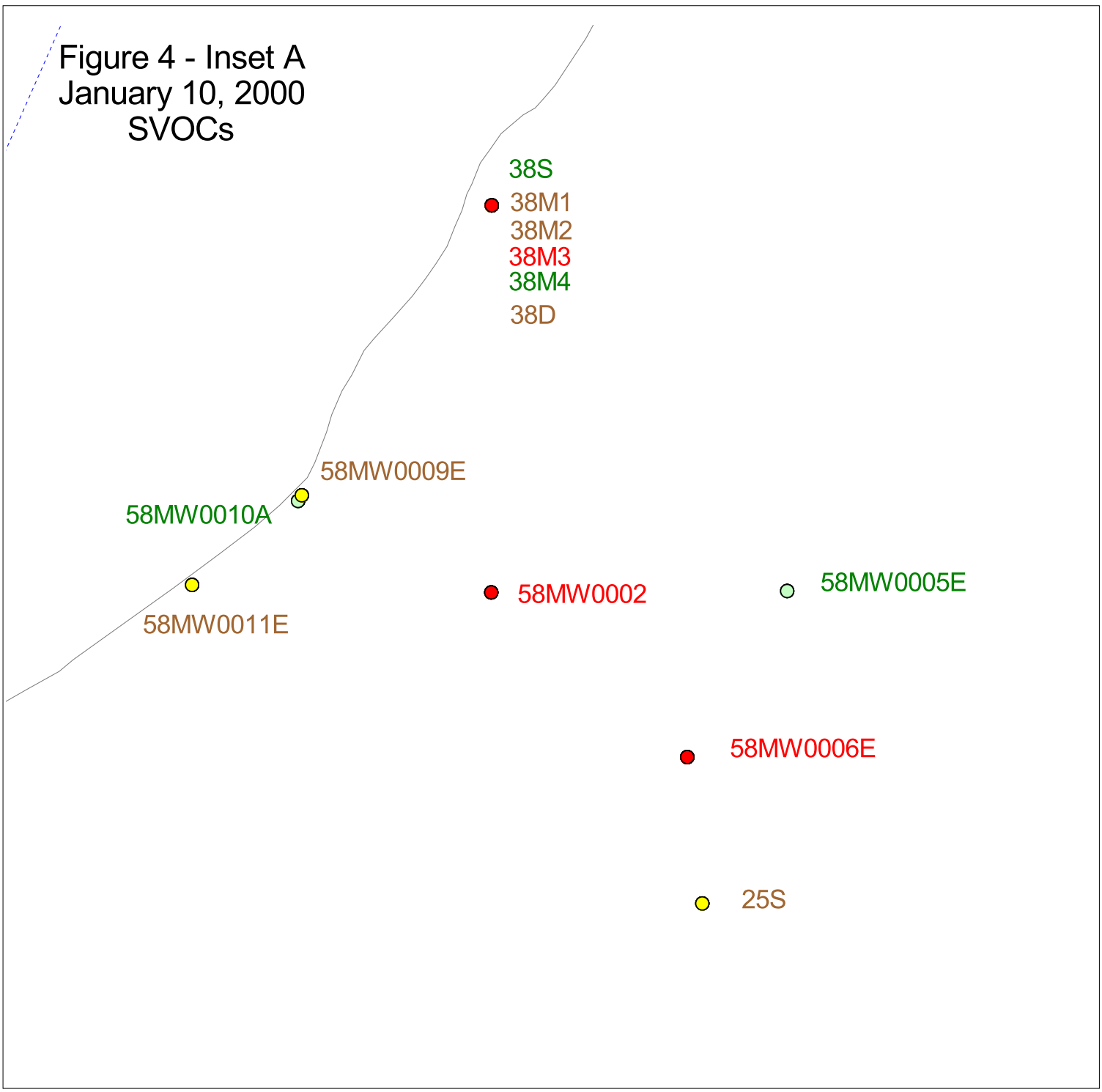
Figure 4 - Inset A
January 10, 2000
SVOCs
38S
38M1
38M2
38M3
38M4
38D
58MW0009E
58MW0010A
58MW0011E
58MW0002
58MW0005E
58MW0006E
25S

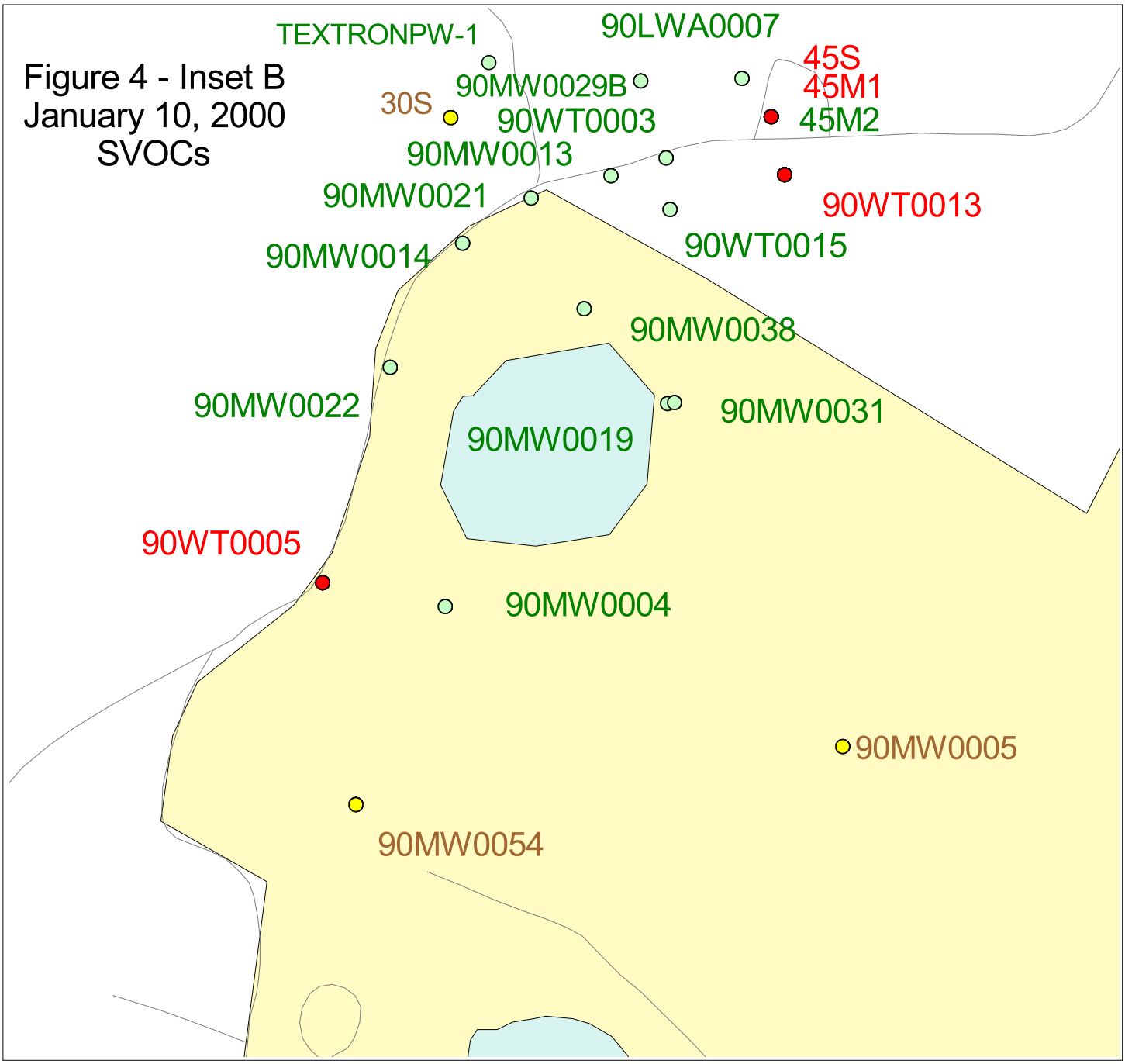
Figure 4 - Inset B
January 10, 2000
SVOCs
TEXTRONPW-1
90LWA0007
45S
45M1
45M2
30S
90MW0029B
90WT0003
90MW0013
90MW0021
90WT0013
90WT0015
90MW0014
90MW0038
90MW0022
90MW0031
90MW0019
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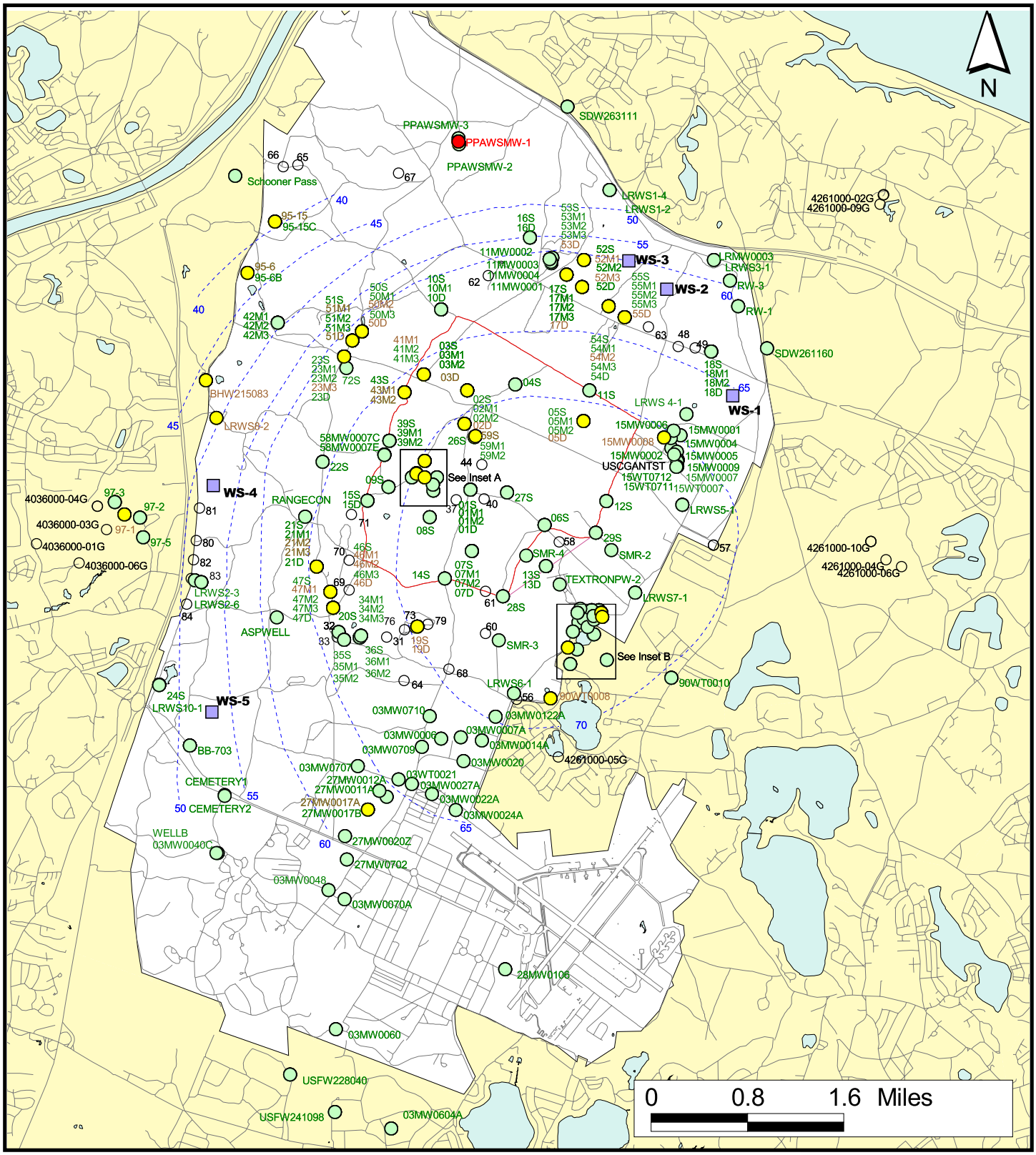
90MW0004
90MW0005
90MW0054



Sources & Notes

Map Coordinates: Stateplane, NAD83, Zone 4151, Meters
Source: MASSGIS

Legend

- Validated Detection GTE MCL/HA
- Validated Detection LT MCL/HA
- Validated Non-detect
- No Data Available

Figure 5
Herbicides and Pesticides in Groundwater
Compared to MCL/HAs
Validated Data As Of 1/03/2000

Analyte Group
5

Kanuary 10, 2000 DRAFT

L:\MMR\GIS\Monthly Maps\January 2000\HerbPest GTE MCL

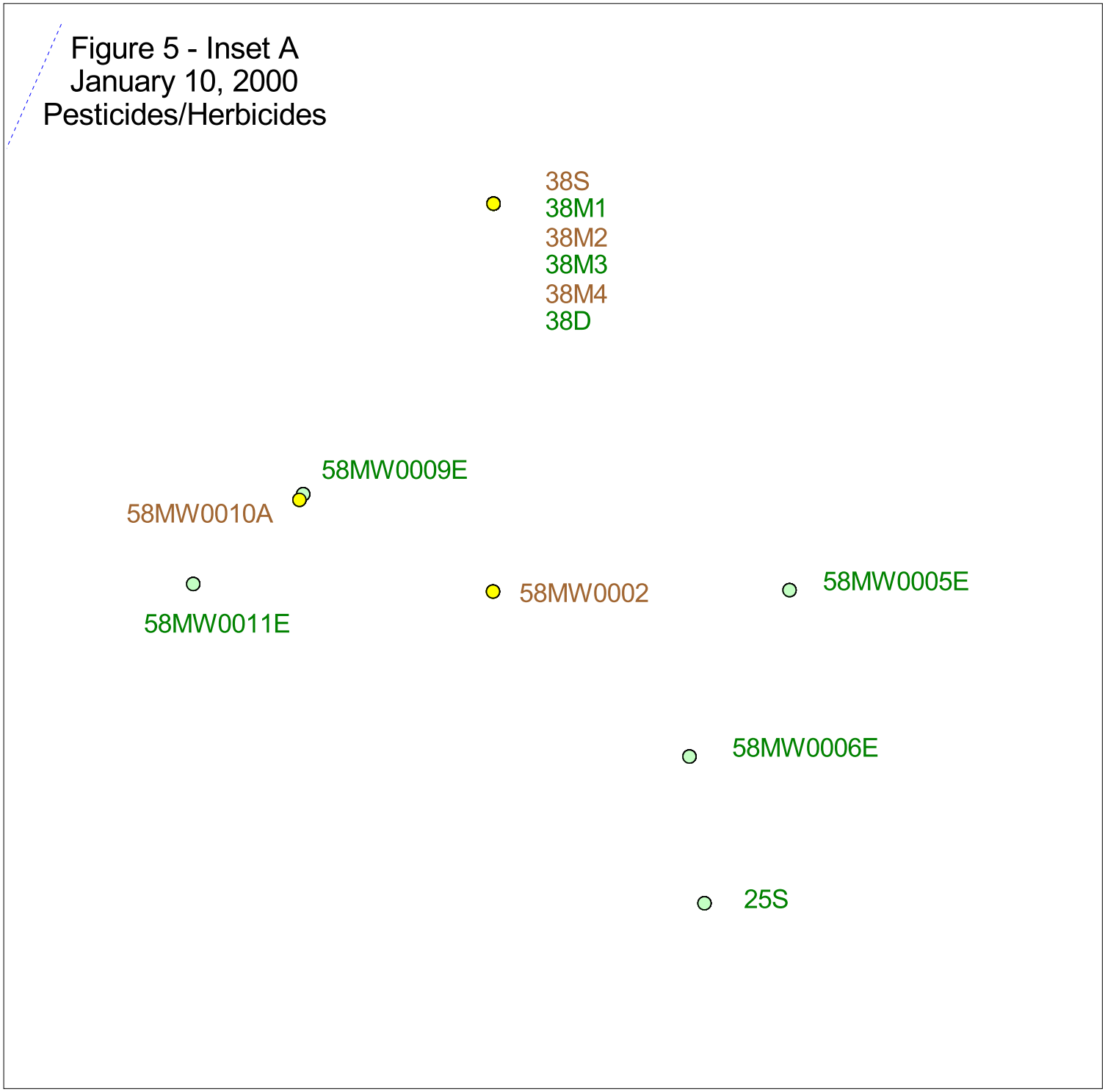


Figure 5 - Inset A
January 10, 2000
Pesticides/Herbicides
38S
38M1
38M2
38M3
38M4
38D
58MW0009E
58MW0010A
58MW0011E
58MW0002
58MW0005E
58MW0006E
25S

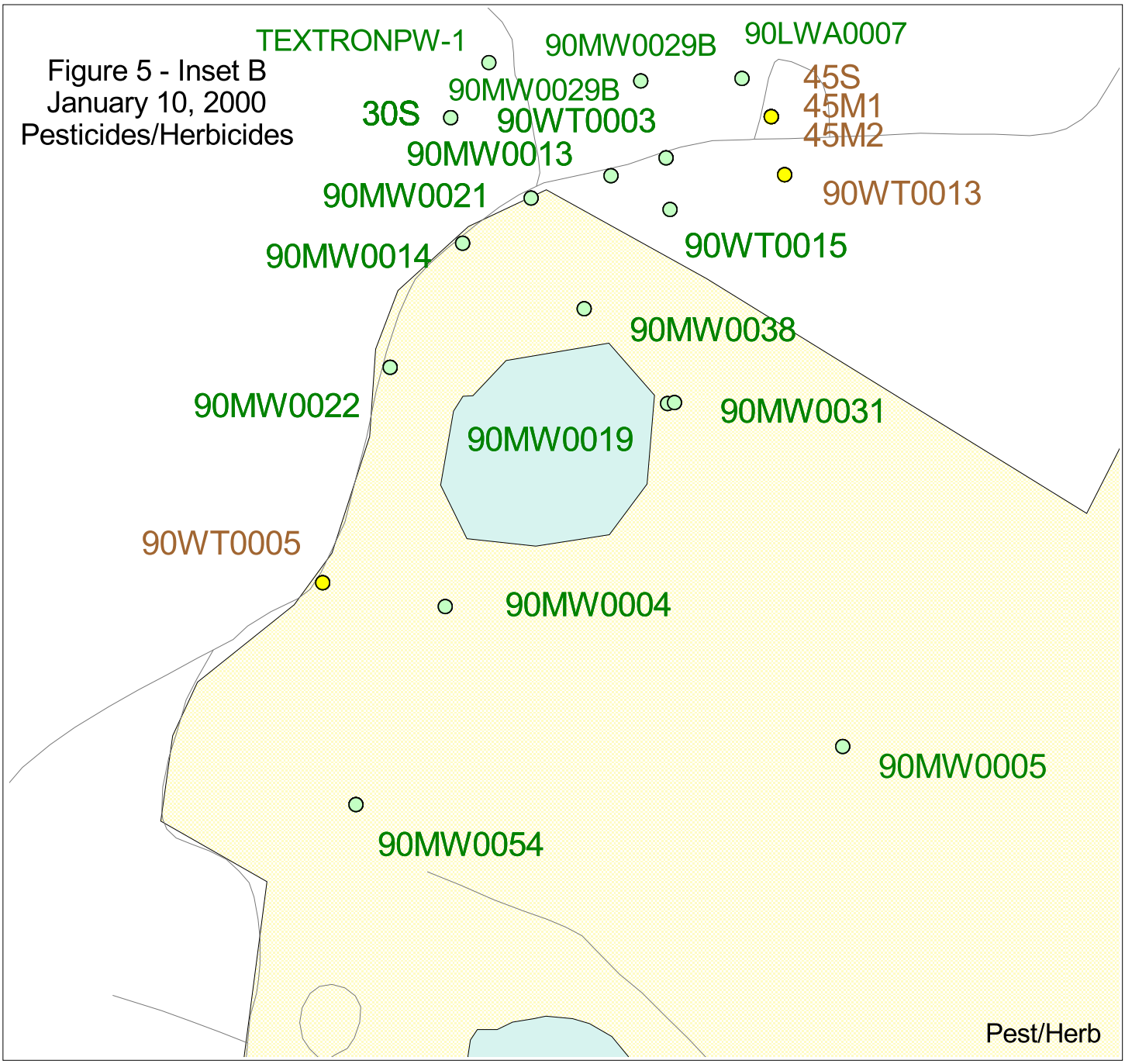
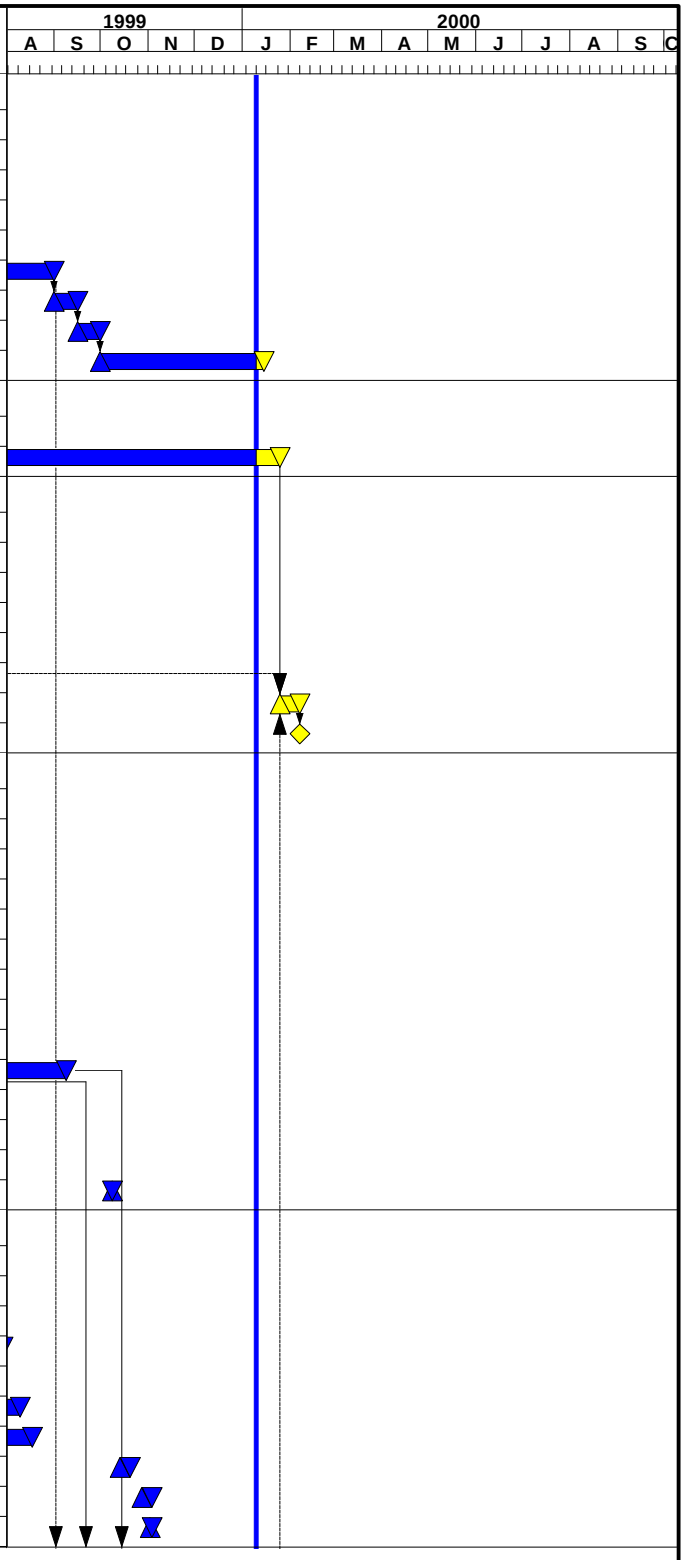


Figure 5 - Inset B
January 10, 2000
Pesticides/Herbicides
TEXTRONPW-1
90MW0029B
90LWA0007
90MW0029B
45S
45M1
45M2
30S
90WT0003
90MW0013
90MW0021
90WT0013
90WT0015
90MW0014
90MW0038
90MW0022
90MW0031
90MW0019
90WT0005
90MW0004
90MW0005
90MW0054
Pest/Herb

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 ($2.1M)	02JUN99A	31AUG99A
Procure Supplemental Funding ($2.9M)	01SEP99A	16SEP99A
Procure Supplemental Funding ($1.0M)	17SEP99A	30SEP99A
Procure Supplemental Funding	01OCT99A	14JAN00
2. Evaluate Analytical Methods		
Complete Draft PEP Analytical Report	05NOV98A	30NOV98A
EPA Comments and Revisions	01DEC98A	24JAN00
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	25JAN00	07FEB00
Submit Final Workplan		07FEB00
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	08SEP99A
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	08OCT99A	08OCT99A
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	11JUN99A	27JUL99A
Setup split sampling for wells	08JAN99A	09JUL99A
Sample (6b) non-MMR wells PEP 1st Qtr	12JUL99A	09AUG99A
Sample (6c) MMR wells PEP 1st Qtr	12JUL99A	17AUG99A
Sample (6d) MMR wells DW/PEP 1st Yr	14OCT99A	19OCT99A
Sample (6c) MMR wells PEP 2nd Qtr	28OCT99A	03NOV99A
Sample (6b) non-MMR wells PEP 2nd Qtr	02NOV99A	03NOV99A



Project Start 14AUG98
Project Finish 17MAY01
Data Date 10JAN00
Run Date 10JAN00

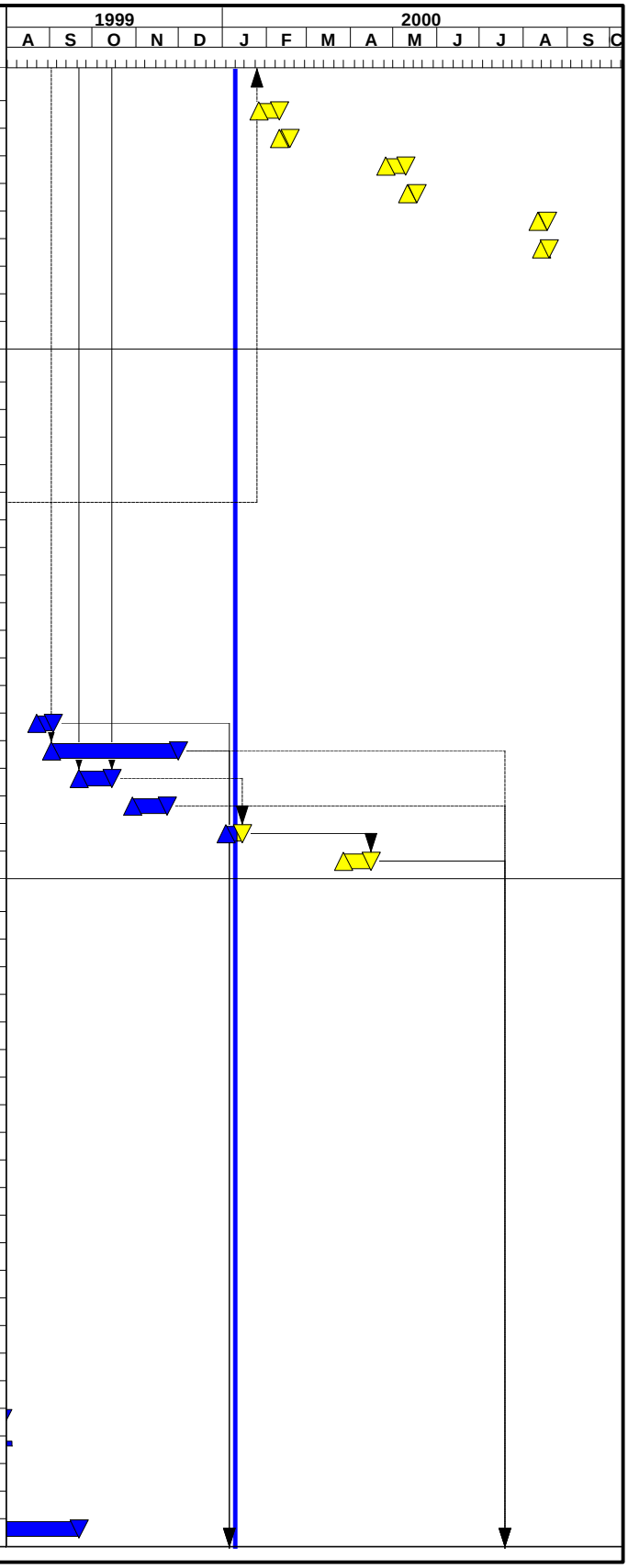
Early Bar
Progress Bar

M004

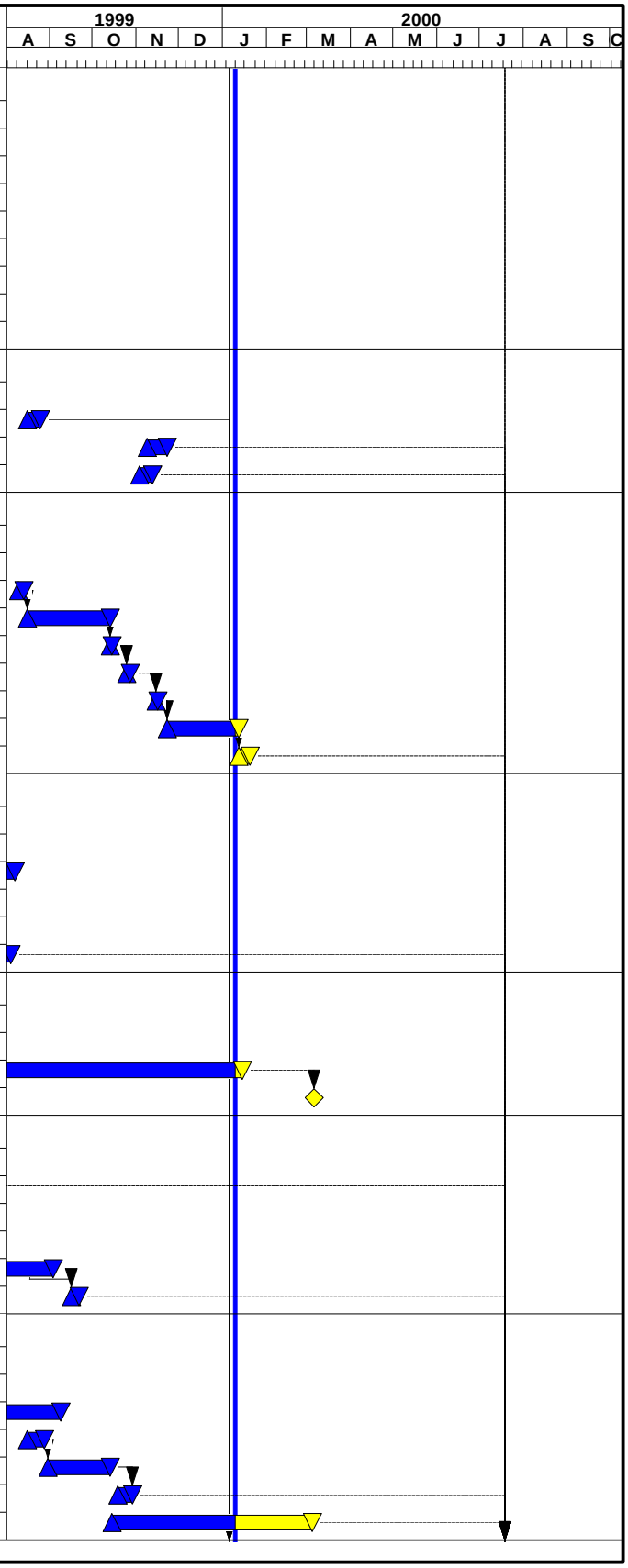
Sheet 1 of 4

Figure 6. Schedule for Completion of the Impact Area Groundwater Study as of 1/10/00

Activity Description	Early Start	Early Finish
5. Phase I Sampling of Water Supply Wells		
Sample (6b) non-MMR wells PEP 3rd Qtr	27JAN00	09FEB00*
Sample (6c) MMR wells PEP 3rd Qtr	10FEB00	17FEB00*
Sample (6b) non-MMR wells PEP 4th Qtr	26APR00	09MAY00*
Sample (6c) MMR wells PEP 4th Qtr	11MAY00	17MAY00*
Sample (6c) MMR wells PEP 5th Qtr	11AUG00	17AUG00*
Sample (6d) MMR wells DW/PEP 2nd Yr	14AUG00	18AUG00*
Sample (6c) MMR wells PEP 6th Qtr	13NOV00	17NOV00*
Sample (6c) MMR wells PEP 7th Qtr	12FEB01	16FEB01*
Sample (6c) MMR wells PEP 8th Qtr	11MAY01	17MAY01*
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	23AUG99A	02SEP99A
Sample/Analyze Phase I Wells Round 3	02SEP99A	30NOV99A
Sample/Analyze G2 FF Wells Round 1	21SEP99A	14OCT99A
Sample/Analyze G1 FF Wells Round 3	29OCT99A	22NOV99A
Sample/Analyze G2 FF Wells Round 2	04JAN00A	14JAN00
Sample/Analyze G2 FF Wells Round 3	27MAR00	14APR00
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	20SEP99A



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	22JUL99A
9. Phase II Investigate Exceedances		
Sample/Analyze Ph. II(a) Wells Round 1	30MAR99A	26MAY99A
Sample/Analyze Ph. II(a) Wells Round 2	16AUG99A	24AUG99A
Sample/Analyze Ph. II(a) Wells Round 3	09NOV99A	22NOV99A
Soil Sampling/Analysis for Source Areas	04NOV99A	12NOV99A
10. Phase II Characterize J Ranges		
Sampling/Analysis for J-3 Wetland	15APR99A	20APR99A
Review J-3 Wetland Results with EPA	13MAY99A	01JUL99A
Mobilization for Steel Pit	10AUG99A	13AUG99A
UXO Clearance for steel pit	16AUG99A	13OCT99A
Soil sampling/analysis for Steel Pit	14OCT99A	14OCT99A
Monitoring well installation for Steel Pit	26OCT99A	27OCT99A
Develop Well	15NOV99A	15NOV99A
Sample/Analyze monitoring well	23NOV99A	12JAN00
Review Steel Pit Results with EPA	13JAN00	19JAN00
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	14JAN00
Begin Training Area Investigations	06MAR00*	
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	02SEP99A
Sample/Analyze monitoring wells	17SEP99A	20SEP99A
14. Phase II Characterize Gun/Mortar Positions		
Completion of Archives Search Report		31MAR99A
Develop Field Sampling Plan	01APR99A	02JUL99A
Agencies Review FSP	06JUL99A	08SEP99A
Mobilize drilling equipment	16AUG99A	27AUG99A
Install Monitoring Wells at Gun/Mortar	30AUG99A	13OCT99A
Sample/Analyze monitoring wells	19OCT99A	28OCT99A
Soil Sampling/Analysis at Gun/Mortar	15OCT99A	03MAR00



Activity Description	Early Start	Early Finish
15. Phase II Characterize Trnch, Excvtn, Bnkr		
Completion of Archives Search Report		31MAR99A
Assessment of site features	16AUG99A	27AUG99A
Review data with EPA	19AUG99A	26AUG99A
Phase II (a) Workplan for Trenches, etc.	30AUG99A	04OCT99A
EPA Review/Approve Workplan	05OCT99A	02DEC99A
Begin Trenches Investigations	06DEC99A	
16. Phase II Sampling Groundwater at SAR		
Install Monitoring Wells at SAR	09MAR99A	23APR99A
Sample/Analyze Monitoring Wells	27MAY99A	05AUG99A
17. Phase II Characterize Mortar Targets		
Reconnaissance of Targets	16AUG99A	27AUG99A
Discuss sampling plan with EPA	19AUG99A	26AUG99A
Prepare draft FSP	30AUG99A	04OCT99A
EPA review/comment on FSP	05OCT99A	02NOV99A
Prepare final FSP	09NOV99A	02DEC99A
Begin Mortar Targets Investigations	06DEC99A	
18. Reports and Meetings		
Progress Reports	10SEP98A	10OCT00
Phase II Interim Results Report	01SEP99A	01NOV99A
Draft Interim Longterm Monitoring Report	06JAN00A	02MAR00
Review Draft ILM Report	03MAR00	30MAR00
Final ILM Report	31MAR00	27APR00
Draft Phase II Compl. Work Report	08MAY00	18JUL00
Review Draft Phase II CWR	19JUL00	15AUG00
Final Phase II CWR	16AUG00	13SEP00