WEEKLY PROGRESS UPDATE
FOR APRIL 17 – APRIL 21, 2000

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 April 17 to April 21, 2000.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of April 21 is summarized in Table 1.

Table 1. Drilling progress as of April 21, 2000

Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-96	Impact Area Response Well (P10)	240	104	134-144 160-170 206-216
MW-97	Impact Area Response Well (P11)	230	105	
MW-98	Impact Area Response Well (P2)	220	81	

bgs = below ground surface
bwt = below water table

Well installation was completed at MW-96 (Impact Area response well P-10). Drilling was completed on MW-97 and MW-98 (Impact Area response wells P-11 and P-2). UXO clearance continued for the ground scars, bunkers, and trenches. The development of newly installed wells continued. UXO located at Target 9, P-19, P-20, and the J-2 Range were detonated on 4/21/00.

Samples collected during the reporting period are summarized in Table 2. Groundwater sampling commenced for the third round of Gun and Mortar Position wells and the additional IRP wells in the FS-12 area. Groundwater profile samples were collected from MW-97 (P-11), and MW-98 (P-2). Deep soil samples were collected during drilling at the boring for MW-98.

The Guard, EPA, and MADEP had a meeting on April 20 to discuss technical issues, including the following:

- Ogden presented an update of the Rapid Response Action. Comments have been received from both the EPA and DEP. Subcontracts are in place with the contractors. UXO mag and flag work has started. FSP is currently being worked on and should be ready for agency review next week. J-3 wetland survey will be done this week with a map to the Guard next week for their meeting with the Conservation Commission. The Guard indicated that they have scheduled a meeting with Ogden and the subcontractors for next week.

- Ogden presented preliminary responses to EPA general comments on the draft Interim Long Term Groundwater Monitoring (LTGM) Plan, for discussion with the agencies. A draft response to comments will be provided on 4/21/00 with a request for agency review and input by early next week. The revised plan is due on 4/28/00 based on EPA's comments.
  - General Comment 1 on maps of wells. The requested maps will be provided.

- General Comment 2 on metals analysis. EPA indicated that the metals analyte list should not be reduced to the two metals that were above background. Ogden suggested that all metals will be analyzed until the agencies have had a chance to review and comment on the background report, and comments have been resolved. EPA indicated that more than three rounds of data are required before any analytes can be removed from the list. It was unclear how many rounds would be required. The Guard indicated their desire to identify contaminants of concern and focus the analyte list based on the existing data from 1997 to 1999. There was a brief discussion of the potential cost savings of reducing the number of metals analytes.
- General Comment 3 on seasonal variability and pulsing. Ogden indicated that they did not believe there was enough information to estimate the affects of pulsing at this time, but after the vadose zone model is completed the affect of pulsing might better be determined. Ogden suggested that continuing with the 3 rounds of sampling with the current schedule would be an interim approach. EPA indicated that a discussion of the phenomena and attempts to measure it should be added to the plan.
- General Comment 4 on including wells where additional investigations are underway. Ogden indicated that they believed that this program was only for wells that have been sampled 3 times and that this is a interim plan which is only part of the long term monitoring. The wells from areas like the J Ranges were excluded from the plan because further investigations were planned and wells would be added to the Interim LTGM Plan after the investigation was completed. EPA indicated that any well that has been sampled 3 times and had a detection should be included, even where investigations are planned or ongoing. This would prevent time lags between sampling events while investigations are being planned. A "mid-term" review of the plan was discussed to allow addition of wells that were sampled for the third time early in the calendar year.
- General Comment 5 on sector approach. Ogden indicated that there was insufficient time to redo the plan to use the sector approach before the deadline. Ogden agreed that if the sector approach was to be used in the future that the sectors should be redrawn to cover source areas. EPA agreed but for this deadline there was no need to change.
- General Comment 6 on trimester sampling was acceptable to Guard.
- General Comment 7 on selection of wells and analytes. Ogden agreed to expand the table in Attachment A to include different depths and show analytes for each depth. Also, all sectors should be sampled once a year for the full suite of analytes, to check for previously undetected releases.

- Jacobs presented an update of the CS-19 investigation. A 3-page handout of the technical update was distributed. There were no changes from the previous schedule. The laboratory that analyzed the surface soil VOC samples indicated that faulty septa on the vials may have caused the VOC detections. Subsurface soil sample results are in validation for dioxins/furans. The complete data package should be ready next week.

- Jacobs presented information on the MMR data warehouse and a 6-page handout was provided. Also, copies of the ERPIMS data loading handbook, ERPTools procedures, MMR TECH-045, and the IRP QPP were provided. There was a discussion of data exchange between IRP and IAGS programs. Ogden will work with Jacobs to streamline interim (pre-ERPIMS) submittals of IAGS data to the warehouse.

- There was a presentation and an 18-page handout of the surface soil risk screening COPCs. The selected COPCs for human health were hexachlorobenzene, dioxins/furans, arsenic, and lead. The selected COPCs for ecological health were dioxins/furans, 2,4-dinotrotoluene, pesticides, chromium, copper, lead, mercury, vanadium, and zinc. Several questions were raised for consideration in the draft RI including how to handle infrequent detects in groundwater (e.g., pesticides), and how/if UXO is considered in the CERCLA Risk Assessment process.

- The Guard presented an update of the Water Supply Investigation. A 7-page handout of the WS-3 site results was distributed for review. The next step in the process is the installation of the monitoring wells for the pump test. Ogden asked if there was a handout like this for the four sites. The Guard indicated that this was the first but there was a verbal that there were no explosives detections. The next handout should be available at next week's tech meeting.

- Tetra Tech presented an update of the munitions survey. The land surveyors are schedule for next week for the control for the water bodies. Geophysical survey on the water bodies and slit trench are scheduled to start May 1st. EPA asked if a decision was made to remove the surface metal from the slit trench. Tetra Tech indicated that the geophysical contractor would evaluate it when they arrive. EPA asked for the status of the J-2 Range survey plan. The Guard indicated that the Base Biologist had it to review, and the plan should be ready for next week.

- Ogden presented an update of the Groundwater Investigation. Drilling at P-21 will be scheduled after the hunting season ends in early May. Currently drilling on P-2 (MW-98) and would need to select screens next Monday. A drill rig is setting up on P-3 location. A 6-page draft boring log and 1 page profile data table were distributed for MW-97 (P-11). Screens for MW-97 were selected at 15' to 25' bwt, 60' to 70' bwt, and 110' to 120' bwt. Groundwater samples are being collected from the 10 additional IRP wells in the FS-12 area and the 3rd round of Gun and Mortar wells. Impact Area Response well groundwater sampling will start next week. UXO clearance continues for the trenches and P-18, P-19, and P-20.

- EPA requested additional time to review the PEP response to comments.

- EPA indicated that the Fate and Transport Modeling response to comments has already been discussed. Ogden will look for this information in correspondence/email, and advise if it cannot be found.

- EPA requested additional time to review the KD and U Range response to comments. EPA asked for an update of planned activities for these ranges. Ogden indicated that a well was proposed for downgradient of the firing points and that the RRA would define the depth and extent of soil contamination at the target. EPA indicated that the response to comments indicated additional wells may be placed downgradient of the KD Range based on the RRA soil sample results. EPA suggested that the Guard be prepared to discuss responses to comments 13 and 16, among others. There was a discussion of the TIC findings, and Ogden indicated that the detection frequency for KD was not significantly different from the U Range. It was suggested that a table be prepared showing number of TICs per sampling grid.

- The Guard indicated that the TOSC tour would be May 6th at 1:00 PM.

- The Guard indicated that 12 items were scheduled to be detonated on Friday. Three additional LAWs on J-2 remain to be identified at this time and are not part of this detonation. The safety submission for the CDC and the HUTA are currently under review by the Guard, DDESB, and the Army.

- The Guard distributed the IRA Plan for Demo 1. Ogden noted that the map states that the some samples are "crater" samples, but these are actually grab samples from beneath munition residuals. EPA indicated that care should be taken on removal activities because of the explosive levels in the soil.

- The EPA indicated that Jacobs presented information at JPAT that the EDB detected in Snake Pond may not be captured by the FS-12 treatment system. The EPA suggested that the explosives detected in the J Range wells may not be capture by the system also. It was suggested that the Guard request a meeting with IRP to review the FS-12 modeling results, with the agencies to attend.

2. SUMMARY OF DATA RECEIVED

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 groundwater profile samples, are conducted in this timeframe. 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 includes the following detections:

- The groundwater profile samples from MW-97 had detections nitroglycerin (1 interval) and 4-amino-2,6-dinitrotoluene (1 interval), which were not verified by PDA spectra.

- The groundwater profile samples from MW-98 had detections of 2-amino-4,6-dinitrotoluene (1 interval), 2,6-dinitrotoluene (4 intervals), 3-nitrotoluene (2 intervals), 4-nitrotoluene (2 intervals), nitroglycerin (7 intervals), PETN (7 intervals), picric acid (1 interval), tetryl (3 intervals), 2,4-diamino-6-nirtotluene (2 intervals), and 2-nitrotoluene (1 interval), which were not verified by PDA spectra.

3. DELIVERABLES SUBMITTED

Draft J-1/J-3/L Range Workplan 4/21/00

4. SCHEDULED ACTIONS

Scheduled actions for the week of April 24 include the construction of monitoring wells at MW-97 (P-11) and MW-98 (P-2); commencement of the drilling of MW-99 (P-3); the continued groundwater sampling of round 3 of the Gun and Mortar Position wells and the 10 additional IRP wells in the FS-12 area. Soil samples will be collected from the UXO detonation craters located at the target 9 drilling pad, P-19 drilling pad, P-20 drilling pad, and the J-2 Range.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

The geophysical data for Demo 1 are being processed for evaluation of anomalies. Preparation of the draft technical memorandum for the Demo 1 response actions is underway.

TABLE 2
SAMPLING PROGRESS
4/17/00-4/21/00

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
90MW0006-E	FIELDQC	04/21/2000	FIELDQC	0.00	0.00		
G97DBE	FIELDQC	04/17/2000	FIELDQC	0.00	0.00		
G97DGE	FIELDQC	04/18/2000	FIELDQC	0.00	0.00		
G98DBE	FIELDQC	04/19/2000	FIELDQC	0.00	0.00		
S98DFE	FIELDQC	04/17/2000	FIELDQC	0.00	0.00		
S98DKE	FIELDQC	04/18/2000	FIELDQC	0.00	0.00		
W68M1T	FIELDQC	04/20/2000	FIELDQC	0.00	0.00		
W68SST	FIELDQC	04/19/2000	FIELDQC	0.00	0.00		
90MW0006	90MW0006	04/21/2000	GROUNDWATER	132.00	137.00	53.85	58.85
90MW0006-D	90MW0006-D	04/21/2000	GROUNDWATER	132.00	137.00	53.85	58.85
90MW0009	90MW0009	04/21/2000	GROUNDWATER	121.00	126.00	54.33	59.33
90MW0011	90MW0011	04/21/2000	GROUNDWATER	46.00	51.00	34.80	39.80
90MW0063	90MW0063	04/21/2000	GROUNDWATER	50.00	55.00	32.50	37.50
W64M1A	MW-64	04/20/2000	GROUNDWATER	129.00	139.00	34.45	44.45
W64M2A	MW-64	04/20/2000	GROUNDWATER	100.00	105.00	5.45	10.45
W68M1A	MW-68	04/20/2000	GROUNDWATER	106.00	116.00	15.80	25.80
W68SSA	MW-68	04/19/2000	GROUNDWATER	84.00	94.00	-6.10	3.90
W68SSD	MW-68	04/19/2000	GROUNDWATER	84.00	94.00	-6.10	3.90
G97DBA	MW-97	04/17/2000	PROFILE	130.00	130.00	5.00	5.00
G97DCA	MW-97	04/17/2000	PROFILE	140.00	140.00	15.00	15.00
G97DDA	MW-97	04/17/2000	PROFILE	150.00	150.00	25.00	25.00
G97DDD	MW-97	04/17/2000	PROFILE	150.00	150.00	25.00	25.00
G97DEA	MW-97	04/17/2000	PROFILE	160.00	160.00	35.00	35.00
G97DFA	MW-97	04/17/2000	PROFILE	170.00	170.00	45.00	45.00
G97DGA	MW-97	04/18/2000	PROFILE	180.00	180.00	55.00	55.00
G97DHA	MW-97	04/18/2000	PROFILE	190.00	190.00	65.00	65.00
G97DIA	MW-97	04/18/2000	PROFILE	200.00	200.00	75.00	75.00
G97DID	MW-97	04/18/2000	PROFILE	200.00	200.00	75.00	75.00
G97DJA	MW-97	04/18/2000	PROFILE	210.00	210.00	85.00	85.00
G97DKA	MW-97	04/18/2000	PROFILE	220.00	220.00	95.00	95.00
G97DLA	MW-97	04/18/2000	PROFILE	230.00	230.00	105.00	105.00
G98DAA	MW-98	04/18/2000	PROFILE	145.00	145.00	5.95	5.95
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95
G98DDA	MW-98	04/19/2000	PROFILE	170.00	170.00	30.95	30.95
G98DDD	MW-98	04/19/2000	PROFILE	170.00	170.00	30.95	30.95
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95
G98DFA	MW-98	04/19/2000	PROFILE	190.00	190.00	50.95	50.95
G98DGA	MW-98	04/19/2000	PROFILE	200.00	200.00	60.95	60.95
G98DHA	MW-98	04/19/2000	PROFILE	210.00	210.00	70.95	70.95
G98DIA	MW-98	04/19/2000	PROFILE	220.00	220.00	80.95	80.95
S98DFA	MW-98	04/17/2000	SOIL BORING	40.00	42.00		
S98DGA	MW-98	04/17/2000	SOIL BORING	50.00	54.00		
S98DGD	MW-98	04/17/2000	SOIL BORING	50.00	54.00		

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
BWTE = Depth below water table, end depth, measured in feet

TABLE 2
SAMPLING PROGRESS
4/17/00-4/21/00

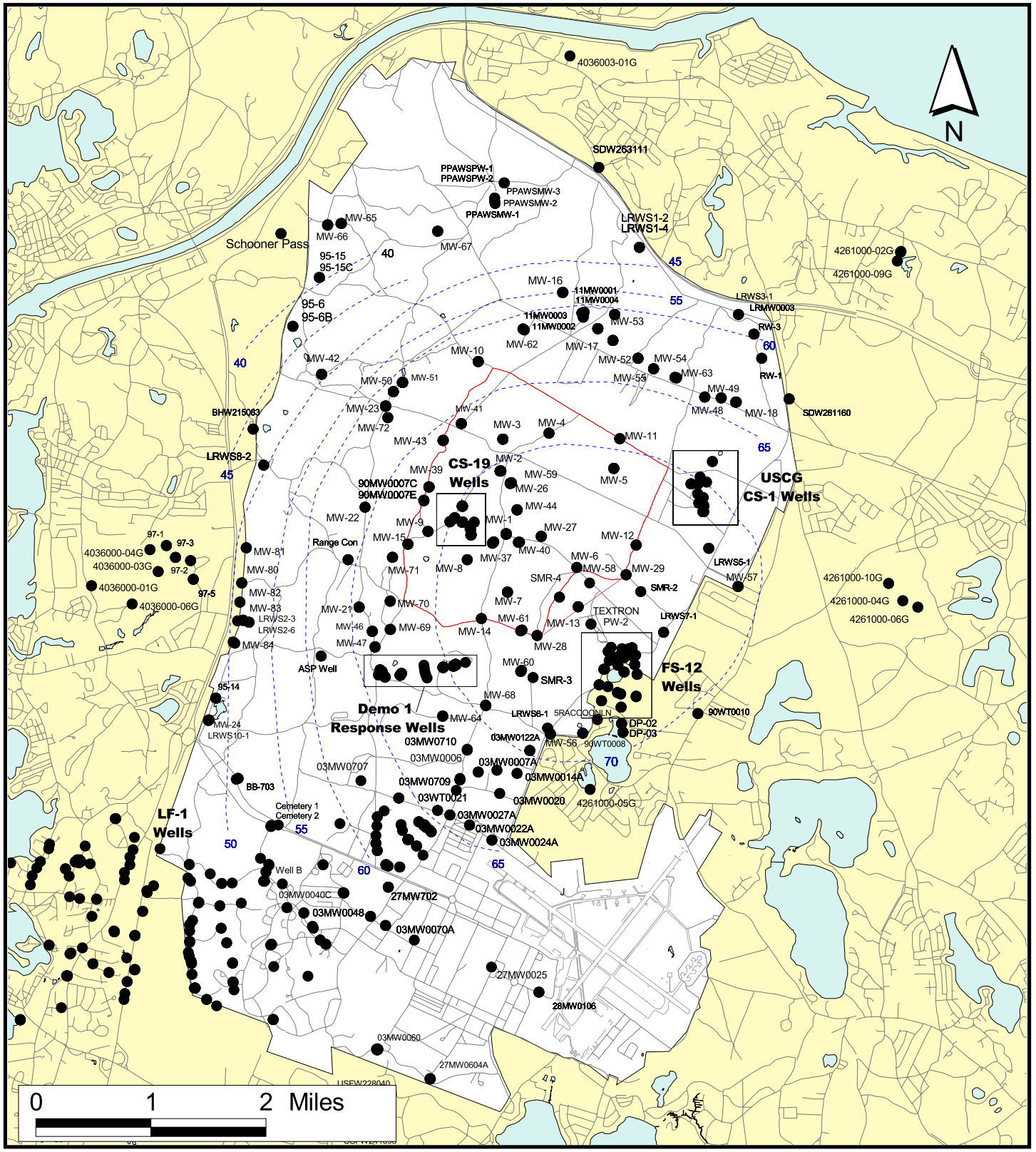
OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
S98DHA	MW-98	04/17/2000	SOIL BORING	60.00	64.00		
S98DIA	MW-98	04/17/2000	SOIL BORING	70.00	72.00		
S98DJA	MW-98	04/17/2000	SOIL BORING	80.00	82.00		
S98DKA	MW-98	04/18/2000	SOIL BORING	92.00	94.00		
S98DLA	MW-98	04/18/2000	SOIL BORING	100.00	102.00		
S98DLD	MW-98	04/18/2000	SOIL BORING	100.00	102.00		
S98DMA	MW-98	04/18/2000	SOIL BORING	110.00	112.00		
S98DNA	MW-98	04/18/2000	SOIL BORING	120.00	122.00		
S98DOA	MW-98	04/18/2000	SOIL BORING	130.00	132.00		
S98DPA	MW-98	04/18/2000	SOIL BORING	140.00	142.00		

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
BWTE = Depth below water table, end depth, measured in feet

TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 4/17/00-4/21/00

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
G97DBA	MW-97	04/17/2000	PROFILE	130.00	130.00	5.00	5.00	8330N	NITROGLYCERIN	NO
G97DDA	MW-97	04/17/2000	PROFILE	150.00	150.00	25.00	25.00	8330N	4-AMINO-2,6-DINITROTOLUENE	NO
G98DAA	MW-98	04/18/2000	PROFILE	145.00	145.00	5.95	5.95	8330N	2-AMINO-4,6-DINITROTOLUENE	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	2,6-DINITROTOLUENE	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	3-NITROTOLUENE	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	4-NITROTOLUENE	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	NITROGLYCERIN	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	PICRIC ACID	NO
G98DBA	MW-98	04/19/2000	PROFILE	150.00	150.00	10.95	10.95	8330N	TETRYL	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	2,4-DIAMINO-6-NITROTOLUENE	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	2,6-DINITROTOLUENE	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	2-NITROTOLUENE	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	3-NITROTOLUENE	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	4-NITROTOLUENE	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	NITROGLYCERIN	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DCA	MW-98	04/19/2000	PROFILE	160.00	160.00	20.95	20.95	8330N	TETRYL	NO
G98DDA	MW-98	04/19/2000	PROFILE	170.00	170.00	30.95	30.95	8330N	2,6-DINITROTOLUENE	NO
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95	8330N	2,4-DIAMINO-6-NITROTOLUENE	NO
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95	8330N	2,6-DINITROTOLUENE	NO
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95	8330N	NITROGLYCERIN	NO
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DEA	MW-98	04/19/2000	PROFILE	180.00	180.00	40.95	40.95	8330N	TETRYL	NO
G98DFA	MW-98	04/19/2000	PROFILE	190.00	190.00	50.95	50.95	8330N	NITROGLYCERIN	NO
G98DFA	MW-98	04/19/2000	PROFILE	190.00	190.00	50.95	50.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DGA	MW-98	04/19/2000	PROFILE	200.00	200.00	60.95	60.95	8330N	NITROGLYCERIN	NO
G98DGA	MW-98	04/19/2000	PROFILE	200.00	200.00	60.95	60.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DHA	MW-98	04/19/2000	PROFILE	210.00	210.00	70.95	70.95	8330N	NITROGLYCERIN	NO
G98DHA	MW-98	04/19/2000	PROFILE	210.00	210.00	70.95	70.95	8330N	PENTAERYTHRITOL TETRANITF	NO
G98DIA	MW-98	04/19/2000	PROFILE	220.00	220.00	80.95	80.95	8330N	NITROGLYCERIN	NO
G98DIA	MW-98	04/19/2000	PROFILE	220.00	220.00	80.95	80.95	8330N	PENTAERYTHRITOL TETRANITF	NO

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



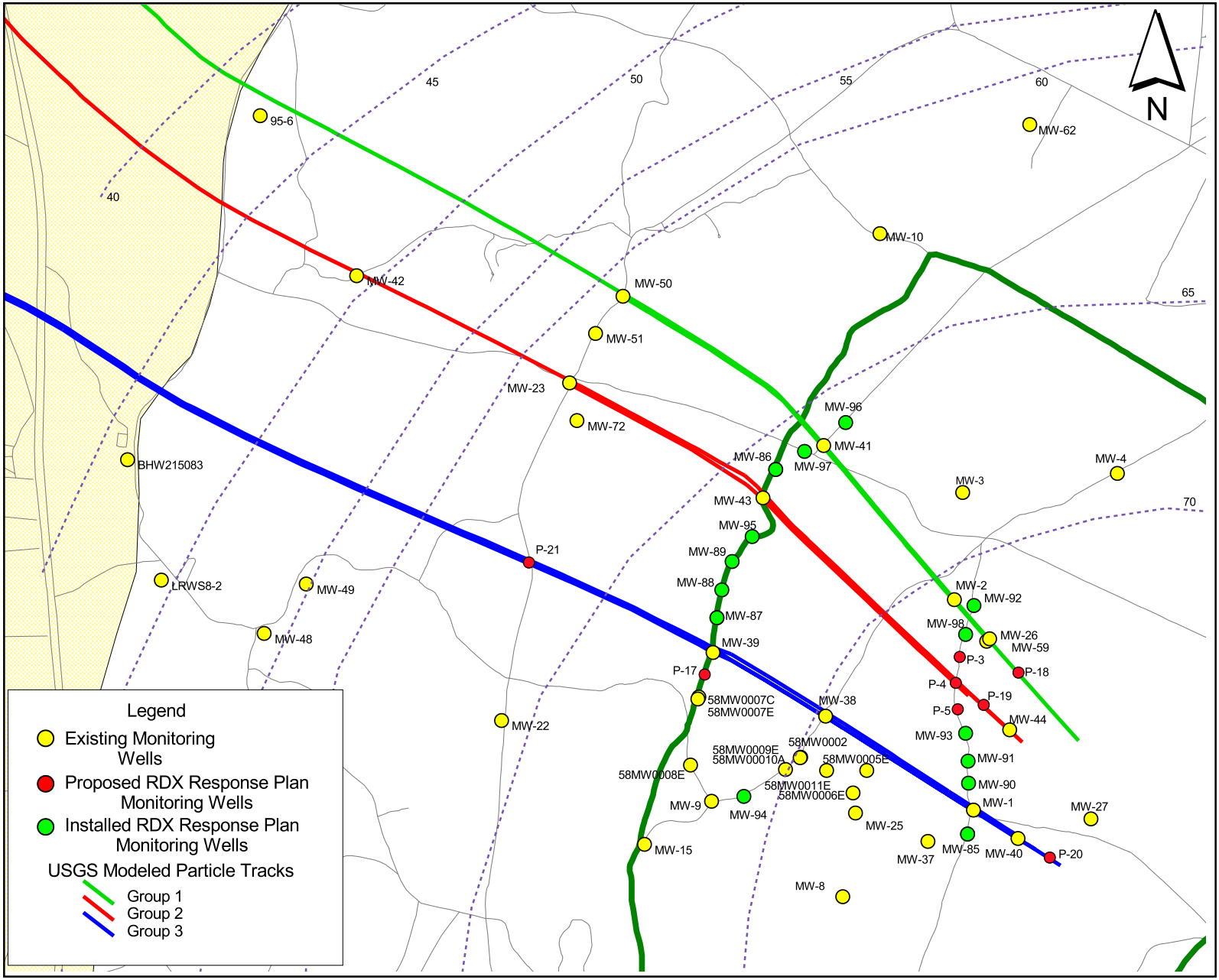
Sources & Notes

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

Location of Existing and Proposed Groundwater Monitoring Wells As Of 12/16/99

L:\MMR\GIS\december99\weekly_figs\dec1699_wells
G:\MMR\well_updates.apr December 20, 1999

December 16, 1999 DRAFT



Proposed RDX Response Plan Wells In The Impact Area

Figure A