

February 28, 2012

Mr. Derrick Golden
Waste Management Division
U.S. Environmental Protection Agency
Region I
5 Post Office Square
Mail Code OSRR07-4
Boston, MA 02109-3912

Ms. Jennifer McWeeney
Bureau of Waste Site Cleanup
Massachusetts Department of
Environmental Protection
One Winter Street, 7th Floor
Boston, MA 02108

RE: 2011 Operable Unit Three Monitoring Report and Recommended Modifications to 2012 Annual Sampling Round, W. R. Grace Superfund Site, Acton, Massachusetts

Dear Mr. Golden and Ms. McWeeney:

Attached is the 2011 Operable Unit Three Monitoring Report (“2011 Annual Report”) for the above referenced Site. Evaluation of the 2011 monitoring data indicates that the goals of the Site-wide monitoring program continue to be met. Grace has evaluated the annual monitoring program and is proposing the changes described below. Figures 1 and 2 show all the unconsolidated deposit and bedrock locations, respectively, that are proposed to be sampled in 2012 and the parameters for which samples would be analyzed.

Validation

Grace proposes to conduct Tier I validation, rather than enhanced Tier I validation, on data collected as part of the annual sampling round starting in 2012. Grace has been performing an enhanced Tier I validation on groundwater samples collected during annual sampling rounds since 2002. The enhanced Tier I validation has included:

- Checking data for completeness;
- Reviewing the quality control sampling results;
- Qualifying the data, , as necessary, based on the criteria summarized in Tables 3-2 and 3-5 of the Quality Assurance Project Plan (QAPP) (HSI GeoTrans, 2000); and
- Qualifying the data, as necessary, based on sample holding times and preservation.

No major issues have been identified with the data collected between 2002 and 2011, and since these data are being used for long term monitoring, an enhanced Tier I validation is not necessary. Instead, Grace proposes to perform a Tier I validation, which is a completeness audit, to ensure that all laboratory data and documentation are present. The Tier I validation will ensure that the information necessary to perform a more rigorous validation is assembled so that one could be completed on the data, if necessary. More rigorous validation will likely be proposed in the future, such as for samples collected to determine compliance with cleanup goals.

VOC Sampling in the Area of OSA-13B and B-04B4

Additional VOC sampling was done in 2011 in response to VDC concentrations in samples from monitoring wells OSA-13B and B-04B4 increasing from not detected in 2009 to 120 µg/L and 36 µg/L, respectively, in 2010. More specifically, samples for VOC analysis were collected from monitoring wells B-04B3, B-04B5, AR-03B2, OSA-13A and OSA-13C. The 2011 monitoring results showed the VDC

concentration in the sample from OSA-13B decreasing to 110 µg/L and the VDC concentrations in the sample from B-04B4 returning to not detected. VDC concentrations in samples from the five monitoring well added in 2011 ranged from not detected in the samples from monitoring wells B-04B3, B-04B5 and OSA-13A to 4 µg/L in the sample from monitoring well OSA-13C. Based on these results, Grace does not believe that continued sampling of monitoring wells B-04B3, B-04B5, AR-03B2, OSA-13A and OSA-13C is necessary. Samples will continue to be collected from monitoring wells OSA-13B and B-04B4. Table 1 summarizes which wells in this area were sampled in 2011 and which wells are proposed to be sampled in 2012.

Inorganic Compounds

Grace proposes to modify the list of analytes to be reported in future sampling events to only include inorganic compounds for which there is an Interim Groundwater Cleanup Goal, namely antimony, arsenic, beryllium, chromium, iron, lead, manganese and nickel. These are the parameters that were identified in the ROD as being chemicals of concern in groundwater at the Site. The other parameters (aluminum, barium, cadmium, calcium, cobalt, copper, magnesium, mercury, potassium, selenium, silver, sodium, thallium, vanadium and zinc) were not identified as contaminants of concern in groundwater at the Site, therefore continued monitoring for them is not necessary.

1,4-Dioxane

In 2010, Grace collected samples for 1,4-dioxane analysis from 18 locations. In 2011, the number of locations sampled for 1,4 dioxane analysis was increased to 37 in order to evaluate the extent of 1,4-dioxane at concentrations above 0.3 µg/L, the new Massachusetts Office of Research and Standards Guideline for 1,4-dioxane. Going forward, Grace is proposing to sample 20 locations annually for 1,4-dioxane. Figure 1 shows the maximum 1,4-dioxane concentration detected at each location sampled in 2011. Highlighted on Figure 1 are the 20 locations that are proposed to continue to be sampled for 1,4 dioxane analyses in 2012. Table 2 summarizes the wells that were sampled for 1,4-dioxane in 2011 and the wells that are proposed to be sampled for 1,4-dioxane in 2012. A discussion of the proposed changes follows.

In the Southeast and Southwest Landfill Areas, Grace proposes to continue sampling seven locations for 1,4-dioxane analyses, including all five extraction wells and two monitoring wells. In the Southwest Area, Grace proposes to collect samples from four locations, including both public water supply wells and two monitoring wells located between the Former Lagoon Area and the Assabet well field. The two proposed monitoring wells are situated to serve as early-warning sampling locations for any 1,4-dioxane that might be moving to the southwest from the Grace property toward the Assabet well field.

Grace proposes to continue to sample nine locations in the Northeast Area for 1,4-dioxane analyses. This includes the three public water supply wells (Christofferson, Lawsbrook and Scribner) and four unconsolidated deposits monitoring wells located within the well field. Water quality data from these locations will allow monitoring of 1,4-dioxane concentrations in the Zone 2 of the well field. In the vicinity of the Northeast Area groundwater extraction/reinjection system, extraction well NE-1 and monitoring well RE-2OBS will continue to be sampled for 1,4-dioxane analyses. Groundwater from extraction well NE-1 will represent the 1,4-dioxane concentrations being extracted from the bedrock and reinjected into the unconsolidated deposits, and groundwater from monitoring well RE-2OBS will provide an indication of the water quality in the unconsolidated deposits near the reinjection system.

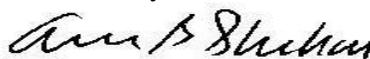
In the July 29, 2011 EPA comments (USEPA, 2011) on the 2010 Annual Groundwater Monitoring Report (GeoTrans, 2011), MassDEP requested that a monitoring well be installed at the Zone 2 boundary to serve as a sentinel well to monitor 1,4-dioxane concentrations entering the Zone 2. Grace does not believe this monitoring well is necessary. The 2011 water quality data show that 1,4-dioxane

concentrations in the unconsolidated deposits within the School Street well field Zone 2 currently exceed the Massachusetts Office of Research and Standards Guideline of 0.3 µg/L. Therefore, a monitoring well near the Zone 2 boundary is not needed to determine if groundwater in the unconsolidated deposits approaching the Zone 2 boundary is less than 0.3 µg/L. While the extraction/reinjection system is moving the 1,4-dioxane from the bedrock groundwater to the unconsolidated deposits groundwater on the Linde property, it is not changing the ultimate discharge point of groundwater that flows beneath the Linde property. Bedrock and unconsolidated deposits groundwater beneath the Linde property flows toward either Fort Pond Brook or the School Street Public Water Supply wells. Extracting groundwater from the bedrock and reinjecting into the unconsolidated deposits beneath the Linde property does not cause groundwater to discharge to a location different from either Fort Pond Brook or the School Street Public Water Supply wells. Concentrations of 1,4-dioxane in groundwater the School Street well field have historically been detected as high as 4 µg/L (AR-30D in 2007) and the extraction/reinjection system discharging approximately 2 µg/L of 1,4 dioxane into the unconsolidated deposits will not cause 1,4 dioxane concentrations in the well field groundwater to increase above what has already been detected there.

Annual Sampling Schedule

Grace plans to begin the 2012 annual sampling in August. Unless you indicate otherwise prior to June 1st, Grace will proceed with the sampling as outlined in this letter. If you have any questions regarding the proposed modifications to the annual monitoring for 2012 or the 2011 Annual Report, please call me at (978) 952-0120 or Thor Helgason at 781-642-8775.

Sincerely,



Anne Benjamin Sheehan
Project Manager

ABS/enclosures

cc: Chris Allen, Acton Water District
Jack Guswa, JG Environmental
Doug Halley, Town of Acton
Thor Helgason, demaximis, inc.
Carol Holley, ACES
Chuck Myette, Brown & Caldwell
Bob Medler, Remedium
Jim Okun, OT&O
Brent Reagor, Town of Concord Board of Health
Barbara Weir, Metcalf & Eddy
Acton Public Library

References

GeoTrans, 2011. Operable Unit Three Monitoring Program Report, 2010, January 27, 2011.

HSI GeoTrans, 2000. Quality Assurance Project Plan, March 10, 2000.

USEPA, 2011. *Letter RE: EPA and MassDEP Comments on the 2010 Annual Groundwater Monitoring Program for Operable Unit Three, dated January 2011, W. R. Grace (Acton Plant) Superfund site, Acton & Concord, Massachusetts, July 29, 2011.*

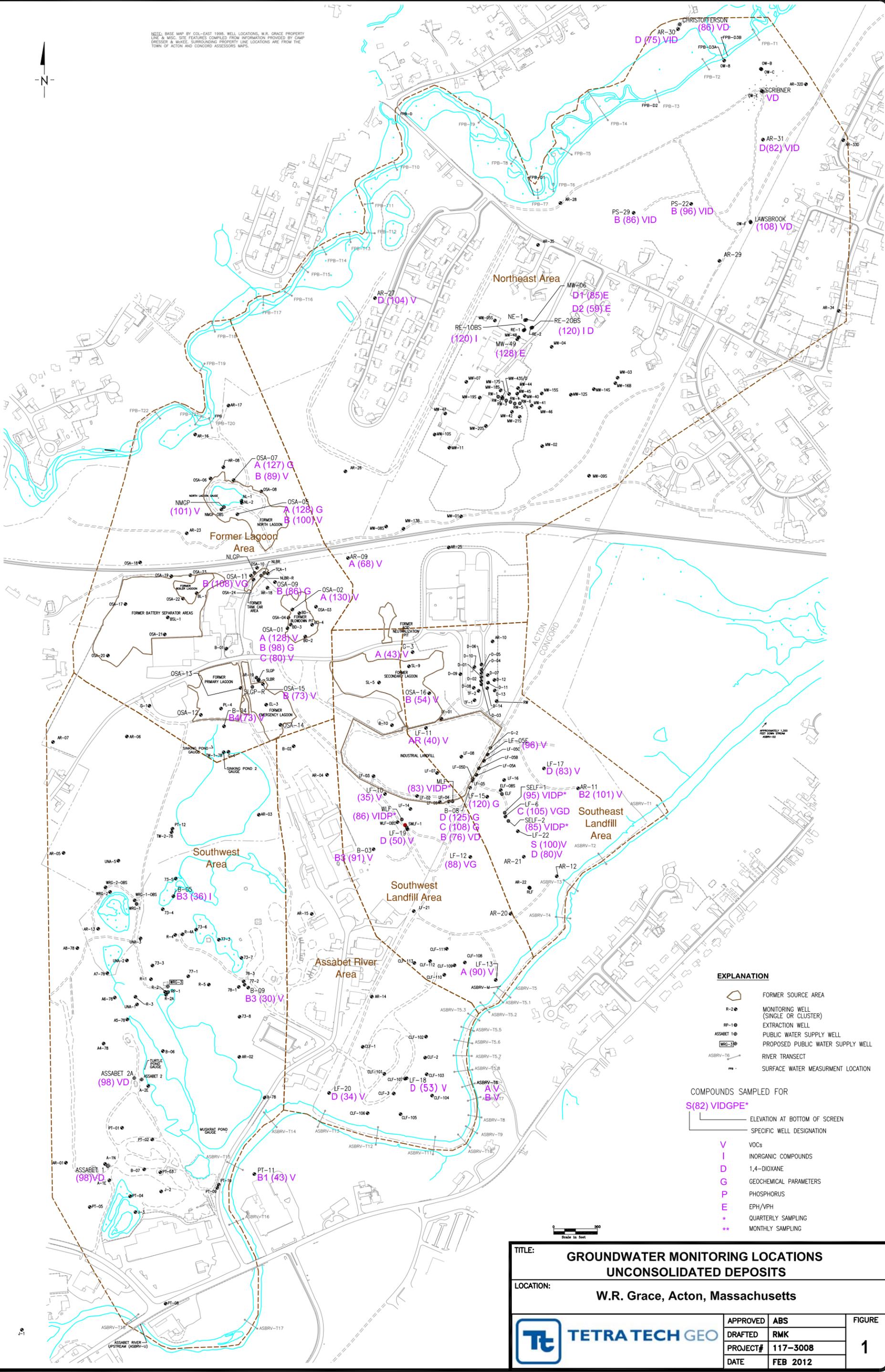
Table 1. Summary of Proposed Changes to VOC Sampling in the Area of B-04B4 and OSA-13B.

Locations Sampled in 2011	Locations Proposed to Be Sampled in 2012
B-04B3	
B-04B4	B-04B4
B-04B5	
AR-03B2	
OSA-13A	
OSA-13B	OSA-13B
OSA-13C	

Table 2. Summary of Proposed Changes to 1,4-Dioxane Monitoring.

Locations Sampled in 2011	Locations Proposed to Be Sampled in 2012
Southeast Landfill Area	
B-08B	Yes
LF-06C	Yes
SELF-1	Yes
SELF-2	Yes
Southwest Landfill Area	
MLF	Yes
SWLF-1	Yes
SWLF-2	Yes
WLF	Yes
Former Lagoon Area	
OSA-02A	No
OSA-06BR	No
OSA-13B	No
Southwest Area	
AR-03B1	No
AR-03B2	No
Assabet-1A	Yes
Assabet-2A	Yes
B-05B3	No
B-05B4	Yes
B-09B3	No
B-09B4	Yes
PT-03B1	No
Northeast Area	
<i>School Street Well Field</i>	
AR-28S	No
AR-29D	No
AR-30D	Yes
AR-30SBR	No
AR-31D	Yes
AR-31S	No
CHRISTOFFERSON	Yes
LAWSBROOK	Yes
PS-22A	No
PS-22B	Yes
PS-29A	No
PS-29B	Yes
SCRIBNER	Yes
<i>Northeast Area Extraction/Reinjection System</i>	
MW-06S	No
NE-EFF	Yes
RE-1OBS	No
RE-2OBS	Yes

NOTE: BASE MAP BY COL-EAST 1998. WELL LOCATIONS, W.R. GRACE PROPERTY LINE & MISC. SITE FEATURES COMPILED FROM INFORMATION PROVIDED BY CAMP DRESSER & MARKS. SURROUNDING PROPERTY LINE LOCATIONS ARE FROM THE TOWN OF ACTON AND CONCORD ASSESSING MAPS.



EXPLANATION

- FORMER SOURCE AREA
- R-2 MONITORING WELL (SINGLE OR CLUSTER)
- RP-1 EXTRACTION WELL
- ASSABET 1 PUBLIC WATER SUPPLY WELL
- WRG-3 PROPOSED PUBLIC WATER SUPPLY WELL
- ASBRV-16 RIVER TRANSECT
- ms SURFACE WATER MEASUREMENT LOCATION

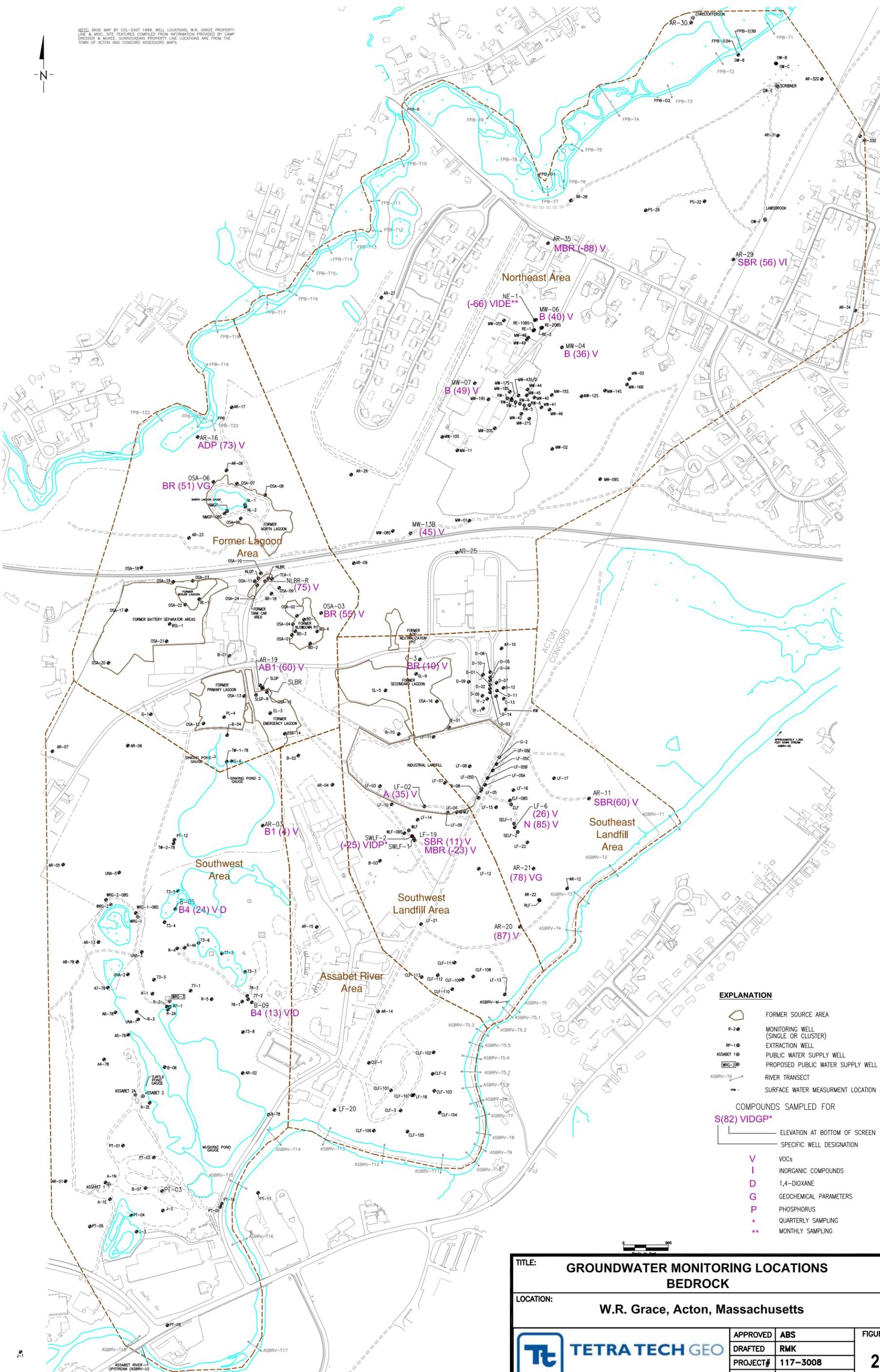
COMPOUNDS SAMPLED FOR S(82)VIDGPE*

- ELEVATION AT BOTTOM OF SCREEN
- SPECIFIC WELL DESIGNATION
- V** VOCs
- I** INORGANIC COMPOUNDS
- D** 1,4-DIOXANE
- G** GEOCHEMICAL PARAMETERS
- P** PHOSPHORUS
- E** EPH/VPH
- *** QUARTERLY SAMPLING
- **** MONTHLY SAMPLING

TITLE:		GROUNDWATER MONITORING LOCATIONS UNCONSOLIDATED DEPOSITS		FIGURE 1
LOCATION:		W.R. Grace, Acton, Massachusetts		
APPROVED	ABS	DRAFTED	RMK	
PROJECT#	117-3008	DATE	FEB 2012	



NOTE: BASE MAP BY COL-EAST 1998. WELL LOCATIONS, W.R. GRACE PROPERTY LINE & MISC. SITE FEATURES COMPILED FROM INFORMATION PROVIDED BY CAMP DRESSER & MCKEE. SURROUNDING PROPERTY LINE LOCATIONS ARE FROM THE TOWN OF ACTON AND CONCORD ASSESSORS MAPS.



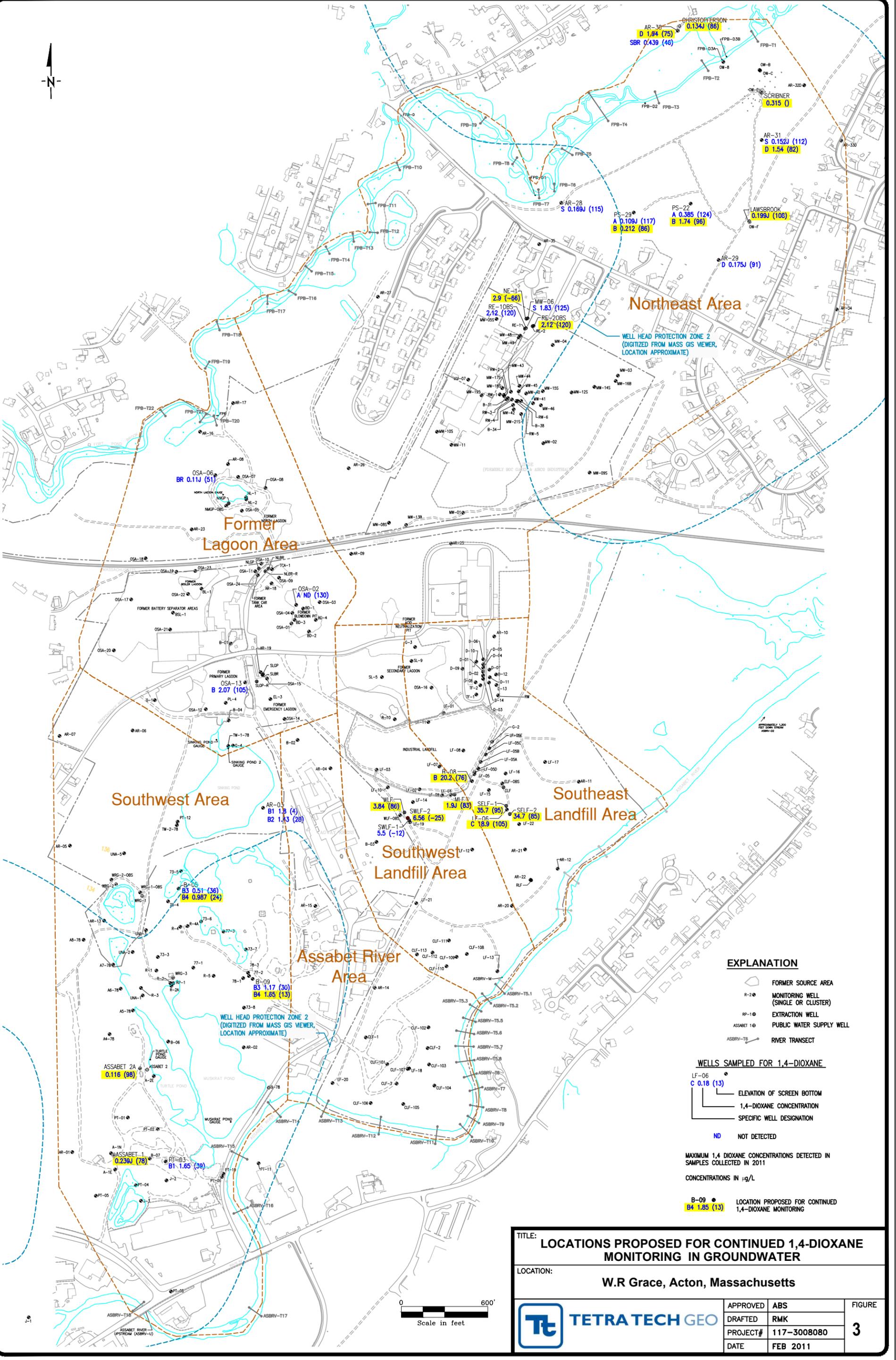
EXPLANATION

- FORMER SOURCE AREA
- MONITORING WELL (SINGLE OR CLUSTER)
- EXTRACTION WELL
- PUBLIC WATER SUPPLY WELL
- PROPOSED PUBLIC WATER SUPPLY WELL
- RIVER TRANSECT
- SURFACE WATER MEASUREMENT LOCATION

COMPOUNDS SAMPLED FOR S(82) VIDGP*

- ELEVATION AT BOTTOM OF SCREEN
- SPECIFIC WELL DESIGNATION
- VOCs
- INORGANIC COMPOUNDS
- 1,4-DIOXANE
- GEOCHEMICAL PARAMETERS
- PHOSPHORUS
- QUARTERLY SAMPLING
- MONTHLY SAMPLING

TITLE: GROUNDWATER MONITORING LOCATIONS BEDROCK		FIGURE 2
LOCATION: W.R. Grace, Acton, Massachusetts		
	APPROVED ABS	
	DRAFTED RMK	
	PROJECT# 117-3008	
DATE FEB 2012		



EXPLANATION

- FORMER SOURCE AREA
- R-2 ○ MONITORING WELL (SINGLE OR CLUSTER)
- RP-1 ○ EXTRACTION WELL
- ASABET 1B ○ PUBLIC WATER SUPPLY WELL
- ASBRV-TS ○ RIVER TRANSECT

WELLS SAMPLED FOR 1,4-DIOXANE

- LF-06 ○ ELEVATION OF SCREEN BOTTOM
- C 0.18 (13) 1,4-DIOXANE CONCENTRATION
- SPECIFIC WELL DESIGNATION
- ND NOT DETECTED

MAXIMUM 1,4 DIOXANE CONCENTRATIONS DETECTED IN SAMPLES COLLECTED IN 2011
CONCENTRATIONS IN µg/L

B-09 ○ LOCATION PROPOSED FOR CONTINUED 1,4-DIOXANE MONITORING
B4 1.85 (13)

TITLE: **LOCATIONS PROPOSED FOR CONTINUED 1,4-DIOXANE MONITORING IN GROUNDWATER**

LOCATION: **W.R. Grace, Acton, Massachusetts**

	APPROVED	ABS	FIGURE
	DRAFTED	RMK	
	PROJECT#	117-3008080	
	DATE	FEB 2011	
			3