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DEC 13 2010

107A-6569-JWH
December 9, 2010

Christine Kump-Mitchell, P.E.
Environmental Engineer, Permits Section
Missouri Department of Natural Resources
Hazardous Waste Program
7545 S. Lindbergh, Suite 210
St. Louis, MO 63125

BOEING

Re: Mis-identification of Two Monitoring Wells Data

Encl: (1) Replacement Pages

Dear Ms. Kump-Mitchell:

During the missing well search performed during October 2010, it was noted that the following two wells had been mis-identified:

MW-A16 should have been identified as MW-A6. This occurred because (i) no coordinates were available in the RFI, (ii) historical maps show differing well layouts in Sub-area 2A, and (iii) the storage of several airline luggage carts and other equipment in this area made it difficult to verify the locations of the two wells. To correct this error, data identified as MW-A16 in Sub-area 2A should be identified as MW-A6.

Similarly, the well identified as RC14 in Sub-area 6B, should have been identified as RC15. This occurred due to mis-identification in the field during gauging and sampling. To correct this error, data labeled as RC14 needs to be changed to RC15.

These changes affected data presented in the November 2008 Ground Water Sampling Data Compilation Report dated January 2009 and three subsequent associated memorandums dated May 8, 2009, June 4, 2009, and February 26, 2010. Also affected was the *Ground Water Gauging and Sampling – Spring 2010* report dated June 2010.

Enclosed are the replacement pages for each of the two sampling reports and associated memorandums previously submitted to you. The replacement pages are identified with "(revised)" in the footer after the date. Please replace these pages in your documents.

Please note these errors do not affect the interpretation of the data or the conclusions reached to date as they relate to ground water impacts. We have made the changes in the groundwater database.

Please contact me if you have any questions.

Sincerely,

Joe Haake

Joseph W. Haake
Environmental Scientist
(314) 777-9181

cc: Mr. Atul M. Salhotra, Ph.D.,RAM
Ms. Amber Whisnant, U.S. EPA Region VII

RCRA
516867

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REPLACEMENT PAGES TO JANUARY 2009 REPORT TEXT, TABLES, AND FIGURES

wastewater treatment facility. Disposables (gloves, tubing, paper towels, etc.) were placed in plastic garbage bags and later disposed in an onsite dumpster.

A copy of the well development form used is provided in Appendix C.

2.6 LOW-FLOW PURGING AND SAMPLING

Low-flow purging and sampling was performed on November 17-21, 2008 by Dave Straccia, Jack Lupo, and Kendall Pickett of GF. Joe Haake and Elmer Dwyer participated in this task. An effort was made to gauge and sample wells from the presumed least contaminated to the most contaminated in each area and from area to area, depending on the timing of access and based on previous analytical results. A total of 57 wells were purged and sampled. The well locations are shown on Figure 2-1.

During the first three days, all wells were gently gauged by one crew for groundwater depth and free product thickness, if present. These measurements were made in a manner to minimize disturbance of the water column using a slope indicator for wells less than 1-inch diameter or interface probe for wells 1-inch diameter or greater and depending on the potential for sheen or PSH based on the well development results.

All wells were purged and sampled using low-flow methods in a manner to minimize drawdown and maintain a stabilized flow in accordance with the USEPA Region I *Low Stress (low flow) Purging and Sampling Procedure for the collection of Ground Water Samples from Monitoring Wells*, Revision 2, dated July 30, 1996.

A Proactive Monsoon stainless steel pump was used to sample 2-inch and 4-inch diameter wells, unless an obstruction such as bent tubing prevented the pump from entering the well to the desired depth. A QED Bladder pump was used to purge and sample 1-inch and ¾-inch diameter wells if accessible to the desired depth. The bladder pump was also used for MW-A12 due to restricted access below a depth of 5 feet. A Masterflex E/S peristaltic pump was used to purge and sample 0.5-inch diameter wells. The peristaltic pump was also used in B41MW-5 due to kinked casing that would not allow use of the submersible pump.

The peristaltic pump was used to sample ground water in all wells with measureable free product or sheen to avoid potential cross-contamination associated with inadequately decontaminated submersible pumps. The ground water was sampled from the interval below the free product or sheen in the following wells:

- MW-A6 in Risk Area 2A
- MW-9S in Risk Area 2B
- MW-10S in Risk Area 2B
- TP-3 in Risk Area 2B
- TP-4 in Risk Area 2B
- TP-6 in Risk Area 2B
- MW-A13 in Risk Area 2C

Table 3-1
Monitoring Wells to be Sampled
Boeing Tract 1, St. Louis, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft)	Measured Well Depth (ft btoc)	Date Well Depth Measured	Depth to GW (ft btoc)**	Date GW Depth Measured**	Installation Date	Free Product Observed Since 1992	GPS Location	Analytical Methods	Risk Exceedence in GW	Pump Intake Depth (ft bgs)	Comments
Area 2: Demolished Area (16 wells)															
2A	MW-A8	2	2.5-12.5	15	12.67	11/10/2008	4.35	11/10/2008	7/17/1989	no	38/45/29 N 90/22/23 W	arsenic & cadmium (6010), TPH(8015mod)*	TPH-GRO, TPH-DRO	7.5	Developed 11-10-08
2A	MW-A6	2	2.5-12.5	13	12.35	11/10/2008	4.1	11/10/2008	8/3/1989	no	38/45/29 N -90/22/23 W	arsenic & cadmium (6010), TPH(8015mod)*	TPH-GRO, TPH-DRO	7.5	MDNR requested, developed 11-10-08
2B	MW-5I	2	32.0-42.0	45	42.0	11/11/2008	6.39	11/11/2008	4/21/1998	no	38/45.51 N -90/22.30 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	37	Developed 11-11-08
2B	MW-6S	2	5.0-15.0	15	15.02	11/11/2008	4.35	11/11/2008	4/20/1998	no	38/45.51 N -90/22.30 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	10	Developed 11-11-08
2B	MW-11D	2	64.0-74.0	75.25	74.08	11/10/2008	24.6	11/10/2008	12/18/2000	no	38/45/31N -90/22/15W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	69	will sample if located, Developed 11-10-08
2B	MW-11I	2	32.0-40.0	40	39.97	11/10/2008	9.47	11/10/2008	12/13/2000	no	38/45/31N -90/22/15W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	36	will sample if located, Developed 11-10-08
2B	MW-11S	2	6.5-16.5	16.5	16.4	11/11/2008	5.0	11/11/2008	12/12/2000	no	38/45.52 N -90/22.26 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	11.5	Developed 11-11-08
2B	MW-8I	2	32.0-40.0	40	40.3	11/11/2008	8.45	11/11/2008	12/18/2000	no	38/45/30 N -90/22/20 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	36	Developed 11-11-08 (purged dry)

Table 3-1
Monitoring Wells to be Sampled
Boeing Tract 1, St. Louis, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft)	Measured Well Depth (ft btoc)	Date Well Depth Measured	Depth to GW (ft btoc)**	Date GW Depth Measured**	Installation Date	Free Product Observed Since 1992	GPS Location	Analytical Methods	Risk Exceedence in GW	Pump Intake Depth (ft bgs)	Comments
6B south	RC8D	0.5	19-24	24	24.7	11/3/2008	8.0	11/5/2008	9/18/2000		38/45/41N -90/22/04W	TPH (8015mod)*, VOC (8260), SVOC (8270), PCB (8082), arsenic, barium, cadmium, chromium, & manganese (6010), mercury (7470)	Aliphatics (C16-21), benzo(a)anthracene EPA - 1,1-DCE, TCE, VC, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, arsenic, see 6B footnote	21.5	will sample if located, developed 11-3-08 (purged dry)
6B south	RC15	0.5	3-13	13	12.7	11/3/2008	4.65	11/3/2008	7/5/2005		38/45/41N -90/22/03	TPH (8015mod)*, VOC (8260), SVOC (8270), PCB (8082), arsenic, barium, cadmium, chromium, & manganese (6010), mercury (7470)	Aliphatics (C16-21), benzo(a)anthracene EPA - 1,1-DCE, TCE, VC, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, arsenic, see 6B footnote	8	installed post interim action developed 11-3-08 (purged dry)
6C	B25MW1	2	10.7-15.7	15.7	15.18	11/11/2008	9.2	11/5/2008	8/1/1988		38/45/36W -90/21/54N	TPH (8015mod)*, VOC (8260), arsenic, barium, cadmium, & chromium (6010), mercury (7470), hexavalent chromium (7196A)	Aliphatics (C16-21, C21-35)	13.2	Replaced B25MW4, developed 11-5-08 (bailer), re-developed 11/11/08 (pump)

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008	11/18/2008	11/19/2008	11/20/2008
Sample	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1
Area ID	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	Hush House	Hush House	2A	2A	2B
Analyte												
Metals (6010)												
Chromium, Hexavalent	Not Analyzed							Not Analyzed				
Arsenic								89	23 J	28.7	41.6	< 25
Barium								Not Analyzed				
Cadmium										< 2	< 2	< 2
Chromium	Not Analyzed							Not Analyzed				
Copper												
Manganese												
Mercury (7470)												
PCBs (8082)												
Aroclor 1016	Not Analyzed											
Aroclor 1221												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
SVOCs (8270)												
1,2,4-Trichlorobenzene	Not Analyzed											
1,2-Dichlorobenzene												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene												
2,4,5-Trichlorophenol												
2,4,6-Trichlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol												
2,4-Dinitrophenol												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
2-Chloronaphthalene												
2-Chlorophenol												
2-Methoxy-4-methylphenol												
2-Methylnaphthalene												
2-Nitroaniline												
2-Nitrophenol												
3,3'-Dichlorobenzidine												
3-Nitroaniline												
4,6-Dinitro-2-methylphenol												
4-Bromophenyl phenyl ether												
4-Chloro-3-methylphenol												
4-Chloroaniline												
4-Chlorophenyl phenyl ether												
4-Nitroaniline												
4-Nitrophenol												
Acenaphthene												
Acenaphthylene												
Aniline												

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/19/2008			11/19/2008			11/18/2008			11/19/2008			11/20/2008		
Sample	MW-A15			MW-A22			MW-A23			MW-A25			MW-A26			MW-A27			MW-A29			MW-A1			MW-A3			MW-A8			MW-A6			B48N1		
Area ID	S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			Hush House			Hush House			2A			2A			2B		
Analyte																																				
Anthracene	Not Analyzed																																			
Azobenzene																																				
Benzidine																																				
Benzo(a)anthracene																																				
Benzo(a)pyrene																																				
Benzo(b)fluoranthene																																				
Benzo(g,h,i)perylene																																				
Benzo(k)fluoranthene																																				
Benzoic acid																																				
Benzyl alcohol																																				
Bis(2-chloroethoxy)methane																																				
Bis(2-chloroethyl)ether																																				
Bis(2-chloroisopropyl)ether																																				
Bis(2-ethylhexyl)phthalate																																				
Butyl benzyl phthalate																																				
Carbazole																																				
Chrysene																																				
Dibenzo(a,h)anthracene																																				
Dibenzofuran																																				
Diethyl phthalate																																				
Dimethyl phthalate																																				
Di-n-butyl phthalate																																				
Di-n-octyl phthalate																																				
Fluoranthene																																				
Fluorene																																				
Hexachlorobenzene																																				
Hexachlorobutadiene																																				
Hexachlorocyclopentadiene																																				
Hexachloroethane																																				
Indeno(1,2,3-cd)pyrene																																				
Isophorone																																				
m,p-Cresol																																				
Naphthalene																																				
Nitrobenzene																																				
N-Nitrosodimethylamine																																				
N-Nitroso-di-n-propylamine																																				
N-Nitrosodiphenylamine																																				
o-Cresol																																				
Pentachlorophenol																																				
Phenanthrene																																				
Phenol																																				
Pyrene																																				
Pyridine																																				
Quinoline																																				
Total Organic																																				
TPH - GRO (C6 - C10) (8260)	<	500		<	500			2550		<	500		<	500		<	500		<	500			230	J	<	500			798		<	500			180	J
TPH-DRO (C10 - C21)		403			230	J		1040			220	J		684			220	J		210	J		2780			2790			200	J		230	J		230	J
TPH-ORO (C21 - C35)	<	300		<	300			290	J	<	300			270	J	<	300		<	300			556			493		<	300		<	300		<	300	

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008	11/18/2008	11/19/2008	11/20/2008
Sample	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1
Area ID	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	Hush House	Hush House	2A	2A	2B
Analyte												
[illegible]												
1,1,1,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,2-Trichloro-1,2,2-trifluoroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	1 J	< 5	< 5	< 5	< 5			< 5
1,1-Dichloro-2-propanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
1,1-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6.42	< 5			< 5
1,2,4-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,4-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dibromo-3-chloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dibromoethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichloroethene, Total	< 5	< 5	< 5	< 5	1.4 J	< 5	< 5	< 5	< 5			28.2
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3,5-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichloropropene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,4-Dichloro-2-butene, Total	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		< 10
1,4-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1-Chlorobutane	< 5	< 5	49	< 5	1.8 J	< 5	< 5	< 5	< 5			< 5
2,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
2-Butanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
2-Chloroethyl vinyl ether	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
2-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
2-Hexanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
2-Nitropropane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
4-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
4-Methyl-2-pentanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
Acetone	< 25	< 25	9.9 J	< 25	< 25	< 25	< 25	104	16 J			< 25
Acetonitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
Acrolein	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			< 100
Acrylonitrile	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Allyl chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Benzene	1.1 J	< 2	< 2	< 2	1.4 J	< 2	< 2	< 2	< 2			< 2
Bromobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromomethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Butyl acetate	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
Carbon disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	2 J	< 5			< 5

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008	11/18/2008	11/19/2008	11/20/2008
Sample	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1
Area ID	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	Hush House	Hush House	2A	2A	2B
Analyte												
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	Not Analyzed		< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Chloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Chloroform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Chloromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Chloroprene	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
cis-1,2-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			28.2
cis-1,3-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
cis-1,4-Dichloro-2-butene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Cyclohexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Dibromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Dichlorodifluoromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Diisopropyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 2
Ethyl acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Ethyl ether	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Ethyl methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Ethyl-tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 2
Heptane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
Hexachlorobutadiene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Hexachloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Iodomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Isopropylbenzene	1.9 J	< 5	9.83	< 5	< 5	< 5	< 5	4.5 J	3.3 J			< 5
m,p-Xylenes	1.3 J	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Methacrylonitrile	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Methyl Methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Methyl tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 2
Methylacrylate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Methylene chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Naphthalene	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
n-Butylbenzene	< 5	< 5	3.7 J	< 5	< 5	< 5	< 5	3 J	1.2 J			< 5
n-Hexane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
Nitrobenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
n-Propylbenzene	< 5	< 5	7.11	< 5	< 5	< 5	< 5	4.9 J	3.7 J			< 5
o-Xylene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Pentachloroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
p-Isopropyltoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Propionitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
sec-Butylbenzene	< 5	< 5	2.8 J	< 5	< 5	< 5	< 5	4.1 J	2.1 J			< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
tert-Amyl methyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 2
tert-Butyl alcohol	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
tert-Butylbenzene	< 5	< 5	1.2 J	< 5	< 5	< 5	< 5	1 J	1 J			< 5

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/18/2008		11/19/2008		11/19/2008		11/18/2008		11/19/2008		11/20/2008	
Sample	**MW-A15**		**MW-A22**		**MW-A23**		**MW-A25**		**MW-A26**		**MW-A27**		**MW-A29**		**MW-A1**		**MW-A3**		**MW-A8**		**MW-A6**		**B48N1**	
Area ID	**S. BLD 45**		**S. BLD 45**		**S. BLD 45**		**S. BLD 45**		**S. BLD 45**		**S. BLD 45**		**S. BLD 45**		**Hush House**		**Hush House**		**2A**		**2A**		**2B**	
Analyte																								
Tetrachloroethene	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						4.1	J
Tetrahydrofuran	< 20		< 20		< 20		< 20		< 20		< 20		< 20		< 20		< 20						< 20	
Toluene	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						< 5	
trans-1,2-Dichloroethene	< 5		< 5		< 5		< 5		1.4	J	< 5		< 5		< 5		< 5						< 5	
trans-1,3-Dichloropropene	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						< 5	
trans-1,4-Dichloro-2-butene	< 10		< 10		< 10		< 10		< 10		< 10		< 10		< 10		< 10		Not Analyzed				< 10	
Trichloroethene	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						< 5	
Trichlorofluoromethane	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						< 5	
Vinyl acetate	< 10		< 10		< 10		< 10		< 10		< 10		< 10		< 10		< 10						< 10	
Vinyl chloride	< 2		< 2		< 2		< 2		< 2		< 2		< 2		< 2		< 2						< 2	
Xylenes, Total	1.3	J	< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5						< 5	

Lab Qualifiers:

J: analyte detected below reporting limit

S: spike recovery outside accepted recovery limits

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Metals (6010)													
Chromium, Hexavalent	Not Analyzed										< 5 S	4 J	5
Arsenic	15 J	12 J	26.8	35.3	24 J	< 25	22 J	26.8	< 25	30.7	< 25	18 J	16 J
Barium		184	415	1140	431	163	714	1070	541	613	333	624	334
Cadmium		< 2	0.3 J	< 2	< 2	0.6 J	0.5 J	0.3 J	1.8 J	0.7 J	0.3 J	3.6	0.7 J
Chromium		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Copper	Not Analyzed												
Manganese	127		1630	1620	662	275	2390	3140 S	4600	7290	Not Analyzed		
Mercury (7470)	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.27	0.22
PCBs (8082)													
Aroclor 1016	Not Analyzed			< 2.08	< 1	< 1	< 1	< 1	Not Analyzed	< 1	Not Analyzed		
Aroclor 1221				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1232				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1242				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1248				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1254				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1260				< 2.08	< 1	< 1	< 1	< 1		< 1			
SVOCs (8270)													
1,2,4-Trichlorobenzene	Not Analyzed		< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		
1,2-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
1,3-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
1,4-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4,5-Trichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4,6-Trichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dimethylphenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dinitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
2,4-Dinitrotoluene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,6-Dinitrotoluene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Chloronaphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Chlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Methoxy-4-methylphenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Methylnaphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Nitroaniline			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
2-Nitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
3,3'-Dichlorobenzidine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
3-Nitroaniline			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
4,6-Dinitro-2-methylphenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Bromophenyl phenyl ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
4-Chloro-3-methylphenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Chloroaniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Chlorophenyl phenyl ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
4-Nitroaniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Nitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Acenaphthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Acenaphthylene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Aniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Anthracene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Azobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzidine			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
Benzo(a)anthracene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(a)pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(b)fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(g,h,i)perylene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(k)fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzoic acid			< 83	< 50	< 50	< 50	< 50	< 50	< 50	< 50			
Benzyl alcohol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Bis(2-chloroethoxy)methane			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-chloroethyl)ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-chloroisopropyl)ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-ethylhexyl)phthalate			< 10	< 10	< 6	< 6	< 6	< 6	< 6	18			
Butyl benzyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Carbazole			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Chrysene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dibenzo(a,h)anthracene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dibenzofuran			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Diethyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dimethyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Di-n-butyl phthalate	Not Analyzed		< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		
Di-n-octyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Fluorene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorobutadiene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorocyclopentadiene			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Hexachloroethane			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Indeno(1,2,3-cd)pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Isophorone			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
m,p-Cresol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Naphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Nitrobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
N-Nitrosodimethylamine			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
N-Nitroso-di-n-propylamine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
N-Nitrosodiphenylamine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
o-Cresol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Pentachlorophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Phenanthrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Phenol			< 8	< 10	< 5	< 5	< 5	< 5	< 5	< 5			
Pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Pyridine			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Quinoline			< 8	< 10	< 5	< 5	< 5	< 5	< 5	< 5			
[illegible]													
TPH - GRO (C6 - C10) (8260)	< 500	< 500	623	< 500	519	< 500	7130	< 500	< 500	< 1000	< 500	< 500	< 500
TPH-DRO (C10 - C21)	< 300	< 300	460 J	260 J	304	200 J	< 300	< 300	220 J	11200	< 300	230 J	200 J
TPH-ORO (C21 - C35)	< 300	< 300	< 500	< 300	< 300	< 300	< 300	< 300	< 300	9330	< 300	< 300	< 300

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
VOC (ug/L)													
1,1,1,2-Tetrachloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,1-Trichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,2-Trichloro-1,2,2-trifluoroethane		< 20	< 20	< 20	12600	< 20	21.6	< 20	< 20	< 40	< 20	< 20	< 20
1,1,2-Trichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1-Dichloro-2-propanone		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
1,1-Dichloroethane		< 5	< 5	1.5 J	< 5	< 5	< 5	< 5	< 5	15.8	< 5	< 5	< 5
1,1-Dichloroethene		< 5	< 5	< 5	< 5	< 5	25.1	< 5	< 5	< 10	< 5	< 5	< 5
1,1-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trimethylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,4-Trichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,4-Trimethylbenzene		< 5	< 5	< 5	3.6 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dibromoethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichloroethene, Total		< 5	584	< 5	239	< 5	16800	< 5	30.8	214	< 5	< 5	< 5
1,2-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3,5-Trimethylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichloropropene, Total		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,4-Dichloro-2-butene, Total	Not Analyzed	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
1,4-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1-Chlorobutane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2,2-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2-Butanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
2-Chloroethyl vinyl ether		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
2-Chlorotoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2-Hexanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
2-Nitropropane		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
4-Chlorotoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
4-Methyl-2-pentanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
Acetone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	11 J	< 25	< 25	5.3 J
Acetonitrile		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
Acrolein		< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 200	< 100	< 100	< 100
Acrylonitrile		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Allyl chloride		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Benzene		< 2	< 2	< 2	109	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Bromobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromochloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromodichloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromoform		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromomethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Butyl acetate		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
Carbon disulfide		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Carbon tetrachloride		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chloroethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Chloroform		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chloromethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Chloroprene		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
cis-1,2-Dichloroethene		< 5	488	< 5	53.6	< 5	16600	< 5	29.3	210	< 5	< 5	< 5
cis-1,3-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
cis-1,4-Dichloro-2-butene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Cyclohexanone		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
Dibromochloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Dibromomethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Dichlorodifluoromethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Diisopropyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Ethyl acetate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Ethyl ether		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethyl methacrylate		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethylbenzene		< 5	< 5	< 5	6.44	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethyl-tert-butyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Heptane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Hexachlorobutadiene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Hexachloroethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Iodomethane	Not Analyzed	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Isopropylbenzene		< 5	< 5	< 5	3.2 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
m,p-Xylenes		< 5	< 5	< 5	10.9	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Methacrylonitrile		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Methyl Methacrylate		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Methyl tert-butyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Methylacrylate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Methylene chloride		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Naphthalene		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
n-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
n-Hexane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Nitrobenzene		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
n-Propylbenzene		< 5	< 5	< 5	1.8 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
o-Xylene		< 5	< 5	< 5	8.61	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Pentachloroethane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
p-Isopropyltoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Propionitrile		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
sec-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Styrene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
tert-Amyl methyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
tert-Butyl alcohol		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	24 J	< 25	< 25	< 25
tert-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

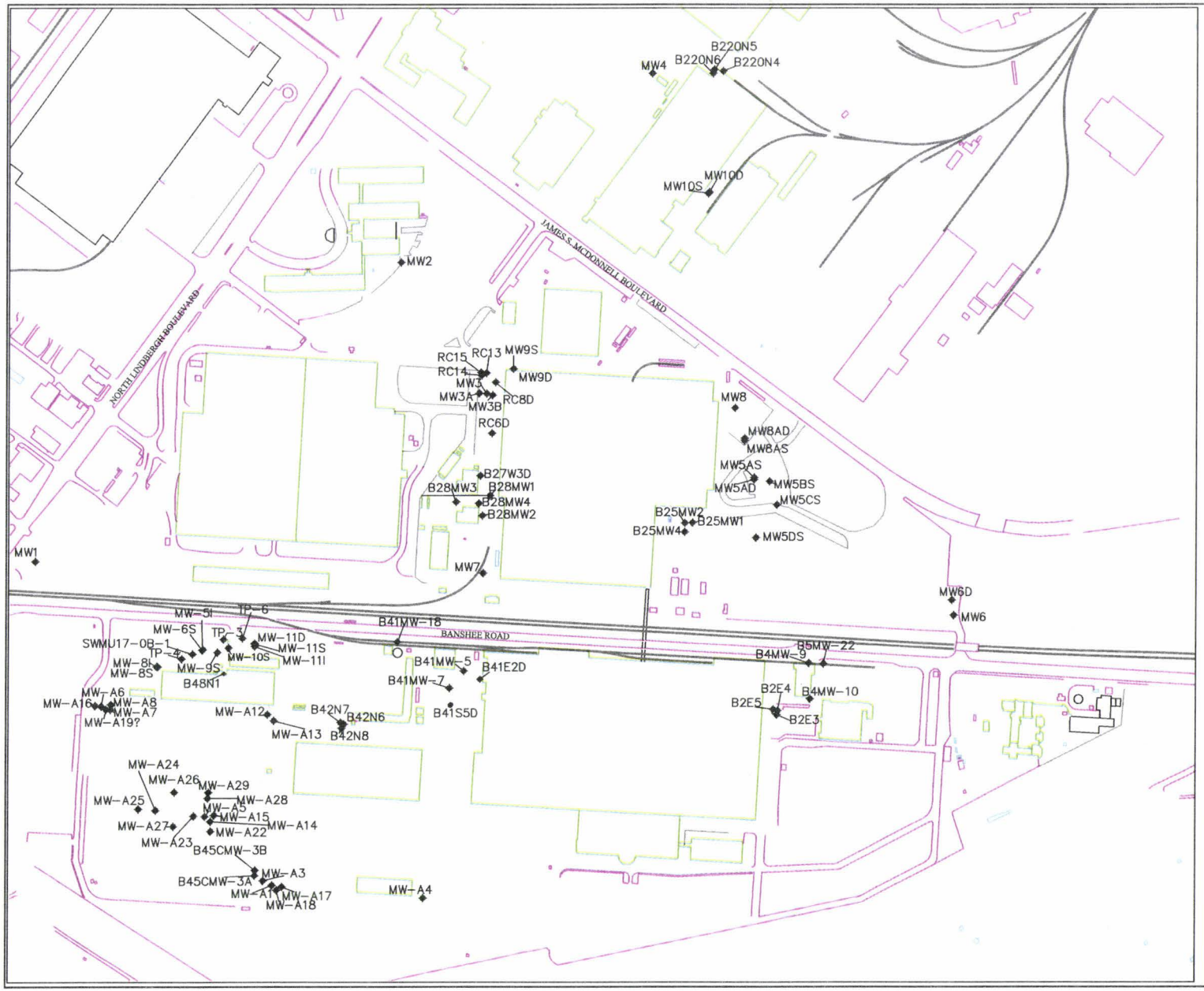
Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	**B4MW-10**	**MW1**	**B27W3D**	**B28MW3**	**B28MW4**	**MW7**	**MW3**	**MW9S**	**RC8D**	**RC15**	**B25MW1**	**MW5CS**	**MW5DS**
Area ID	**3H**	**6A**	**6BN**	**6BN**	**6BN**	**6BN**	**6BS**	**6BS**	**6BS**	**6BS**	**6C**	**6C**	**6C**
Analyte													
Tetrachloroethene	Not Analyzed	< 5	< 5	< 5	7.41	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Tetrahydrofuran		< 20	< 20	< 20	6.3 J	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Toluene		< 5	1.4 J	< 5	29.8	< 5	1.1 J	< 5	< 5	< 10	< 5	< 5	< 5
trans-1,2-Dichloroethene		< 5	96.6	< 5	186	< 5	190 J	< 5	1.6 J	3.9 J	< 5	< 5	< 5
trans-1,3-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
trans-1,4-Dichloro-2-butene		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Trichloroethene		54.5	< 5	< 5	1.5 J	< 5	13.8	< 5	11.3	3 J	< 5	< 5	< 5
Trichlorofluoromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Vinyl acetate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Vinyl chloride		< 2	527	< 2	19.1	< 2	789	< 2	< 2	198	< 2	< 2	< 2
Xylenes, Total		< 5	< 5	< 5	19.5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

Lab Qualifiers:

J: analyte detected below reporting limi

S: spike recovery outside accepted reco



RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX

Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JANUARY 2009 REPORT APPENDIX E

calibrate PID

PID readings
1 well 0.0 ppm
Ambient 0.0 ppm
Back ground 0.0 ppm

Pump use peristaltic

LOW FLOW SUMMARY SHEET

PROJECT NAME: MW-A6

DATE: 11-19-08

TESTER'S INITIAL

WELL NO: ~~A~~ ~~MW-A16~~

LOCATION:

DTB 12.60
Initial WL 3.71
final WL 4.96
flow rate 100 ml/min

PURGE STARTED: 0752

SAMPLED: DAS / 0825

IN-SITU TESTING	4.20 0755	4.27 0800	4.32 0805	4.46 0810	4.56 0815	4.61 0820				
Tolerance	1	2	3	4	5	6	7	8	9	10
Well Volume Purged(gal)										
Turbidity +/- 10%	148	41.1	25.7	23.4	15.5	10.9				
Odor										
Dissolved O_2 (mg/L) +/- 10%	28.7	2.14	1.99	1.89	1.82	1.79				
PH (units) +/- .1 units	7.68	7.61	7.62	7.63	7.63	7.62				
Conductivity +/- 3%	1.216	1.212	1.207	1.205	1.203	1.203				
Water Temperature (°C) +/- 3%	15.09	15.66	15.34	14.63	14.71	14.75				
Redox (mV) +/- 10 units	-35.8	-43.0	-42.4	-40.7	-40.7	-40.4				

NOTES: 1 ft. Length of 4" = 0.087 ft³ or 0.65 gal 1 ft. length of 2" = 0.022 ft³ or 0.16 gal.
Turbidity Choices Clear, turbid, opaque

OBSERVATIONS: (COLOR, CONDITON, DEVELOPED)

1 nitric
2 WC's
1 Amber

A13
A3
A1

LOW FLOW SUMMARY SHEET

PROJECT NAME:

DATE: 11-31-03

TESTER'S INITIAL JK

WELL NO: ~~RC14~~ RC15

LOCATION: Bonny

PURGE STARTED: 1640

SAMPLED: 1657

100 ml/min

IN-SITU TESTING 1650 1653 1656

Tolerance	1	2	3	4	5	6	7	8	9	10
Well Volume Purged(gal)										
Turbidity +/- 10%	552	464	533							
Odor	Slight	Slight	Slight							
Dissolved O_2 (mg/L) +/- 10%	1.32	1.56	1.25							
PH (units) +/- .1 units	6.77	6.75	6.72							
Conductivity +/- 3%	2.046	2.045	2.036							
Water Temperature (°C) +/- 3%	12.34	12.62	12.93							
Redox (mV) +/- 10 units	-66.9	-70.3	-73.2							

NOTES 1 ft. Length of 4" 0.087 ft³ or 0.65 gal 1 ft. length of 2" = 0.022 ft³ or 0.16 gal.
Turbidity Choices Clear, turbid, opaque

OBSERVATIONS: (COLOR, CONDITION, DEVELOPED) ~~[illegible]~~ 4.45 DTW Initial /

REPLACEMENT PAGES TO JANUARY 2009 REPORT APPENDIX F

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110681
Lab ID: 08110681-005
Report Date: 26-Nov-08

Client Project: Boeing 049992
Client Sample ID: ~~MWA16~~ MW-A6
Collection Date: 11/19/2008 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**0.0416**	mg/L	1	11/24/2008 11:07:21 AM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	11/24/2008 3:35:43 AM	LAL
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)		0.300	J	**0.23**	mg/L	1	11/21/2008 1:02:00 AM	MAN
TPH-ORO (C21 - C35)		0.300		**ND**	mg/L	1	11/21/2008 1:02:00 AM	MAN
Surr: 2-Fluorobiphenyl		42.5-117		**80.7**	%REC	1	11/21/2008 1:02:00 AM	MAN
Surr: Nitrobenzene-d5		42-106		**80.3**	%REC	1	11/21/2008 1:02:00 AM	MAN
Surr: p-Terphenyl-d14		8.43-125		**74.0**	%REC	1	11/21/2008 1:02:00 AM	MAN
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH - GRO (C6 - C10)		500		**ND**	µg/L	1	11/26/2008 3:56:00 AM	JSA
Surr: 1,2-Dichloroethane-d4		61-128		**91.6**	%REC	1	11/26/2008 3:56:00 AM	JSA
Surr: 4-Bromofluorobenzene		78.2-117		**102.5**	%REC	1	11/26/2008 3:56:00 AM	JSA
Surr: Toluene-d8		80.1-122		**106.7**	%REC	1	11/26/2008 3:56:00 AM	JSA

Sample Narrative

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 08110681

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing
Address:
City / State / Zip:
Contact: Kendall Pickett Phone: 713 784-5151
E-Mail: KPickett@Gfnet.com Fax: 713 784-6105

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 4.6 °C
Preserved in: ☐ Lab ☒ Field MLDF 11/20/08
FOR LAB USE ONLY
Lab Notes: Headspace OK

Comments: MRBCA

Teklab, Inc.
Courier Pick Up

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

Project Name / Number: Boeing / 049992
Sample Collector's Name: DAS / JP

Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other TSP	Water	Drinking Water	Soil	Sludge	Sp. Waste	TPH Gro	TPH Dro Ddo	VOCs	Arsenic Cadium	Arsenic
08110681-001	MWAB	11-18-08 / 1625	1	1						2						X	X	[illegible]	X	
-002	MW11D	11-18-08 / 1657	1	1						2						X	X	X	X	
-003	Equipment Blank	11-18-08 / 1830								2								X		
-004	~~MW~~ B2-E5	11-18-08 / 1735	1							2						X	X	X		
-005	~~MWA16~~ MW-A6	11-19-08 / 0825	1	1						2						X	X		X	
-006	MWA13	11-19-08 / 0925	1	1						2						X	X	X		
-007	MWA3	11-19-08 / 1025	1	1						2						X	X	X		X
-008	MWA1	11-19-08 / 1135	1	1						2						X	X	X		X
-009	TP3	11-19-08 / 1340	1	1						2						X	X	X	X	
-010	TP4	11-19-08 / 1440	1	1						2						X	X	X	X	[illegible]

Relinquished By	Date / Time	Received By	Date / Time
[signature]	11/19/08 / 1700	[signature]	11/19/08
[signature]	11/19/08 1755	Elizabeth A. Hurley	11/19/08 1755

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

After Page 97 of 97

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RG14~~ RC 15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**0.0307**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Barium	NELAP	0.0050		**0.613**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Cadmium	NELAP	0.0020	J	**0.0007**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Chromium	NELAP	0.0100		**< 0.0100**	mg/L	1	12/1/2008 12:57:53 PM	JMW
Manganese	NELAP	0.0050		**7.29**	mg/L	1	12/1/2008 12:57:53 PM	JMW
SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1221	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1232	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1242	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1248	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1254	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1260	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Surr: Decachlorobiphenyl		9.05-139		**65.2**	%REC	1	11/26/2008 11:11:00 PM	HE
Surr: Tetrachloro-meta-xylene		15.4-101		**50.1**	%REC	1	11/26/2008 11:11:00 PM	HE
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,2-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,3-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,4-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4,5-Trichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4,6-Trichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dimethylphenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dinitrophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dinitrotoluene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,6-Dinitrotoluene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Chloronaphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Chlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Methoxy-4-methylphenol		0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Methylnaphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Nitroaniline	NELAP	0.040		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Nitrophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
3,3'-Dichlorobenzidine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
3-Nitroaniline	NELAP	0.040		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4,6-Dinitro-2-methylphenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Bromophenyl phenyl ether	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Chloro-3-methylphenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chloroaniline	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Chlorophenyl phenyl ether	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Nitroaniline	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Nitrophenol	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Acenaphthene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Acenaphthylene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Aniline	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Anthracene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Azobenzene		0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzidine	NELAP	0.040		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(a)anthracene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(a)pyrene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(b)fluoranthene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(g,h,i)perylene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(k)fluoranthene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzoic acid	NELAP	0.050		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzyl alcohol	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroethoxy)methane	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroethyl)ether	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroisopropyl)ether	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-ethylhexyl)phthalate	NELAP	0.006		0.018	mg/L	1	11/26/2008 5:59:00 PM	TDN
Butyl benzyl phthalate	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Carbazole	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Chrysene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dibenzo(a,h)anthracene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dibenzofuran	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Diethyl phthalate	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dimethyl phthalate	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Di-n-butyl phthalate	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Di-n-octyl phthalate	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Fluoranthene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Fluorene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorobenzene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorobutadiene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorocyclopentadiene	NELAP	0.020		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachloroethane	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Indeno(1,2,3-cd)pyrene	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN
Isophorone	NELAP	0.010		ND	mg/L	1	11/26/2008 5:59:00 PM	TDN

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LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
m,p-Cresol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Naphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Nitrobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitrosodimethylamine	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitroso-di-n-propylamine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitrosodiphenylamine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
o-Cresol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pentachlorophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Phenanthrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Phenol	NELAP	0.005		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pyrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pyridine	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Quinoline		0.005		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
TPH-DRO (C10 - C21)		3.00		**11.2**	mg/L	10	11/30/2008 12:41:00 AM	MAM
TPH-ORO (C21 - C35)		3.00		**9.33**	mg/L	10	11/30/2008 12:41:00 AM	MAM
Surr: 2,4,6-Tribromophenol		27.7-149		**88.4**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: 2-Fluorobiphenyl		42.5-117		**62.8**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: 2-Fluorobiphenyl		44.9-116		**74.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: 2-Fluorophenol		10.6-78.7		**43.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: Nitrobenzene-d5		41.4-104		**66.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: Nitrobenzene-d5		42-106		**61.1**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: Phenol-d5		9.04-52.9		**33.6**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: p-Terphenyl-d14		8.43-125		**82.8**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: p-Terphenyl-d14		23.5-114		**73.2**	%REC	1	11/26/2008 5:59:00 PM	TDN
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,1-Trichloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2,2-Tetrachloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2-Trichloro-1,2,2-trifluoroethane		40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2-Trichloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloro-2-propanone	NELAP	100		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloroethane	NELAP	10.0		**15.8**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloroethene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloropropene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trichlorobenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trichloropropane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trimethylbenzene		10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,4-Trichlorobenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK

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LABORATORY RESULTS

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Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC 15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trimethylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dibromo-3-chloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dibromoethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloroethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloroethene, Total		10.0		214	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3,5-Trimethylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichloropropene, Total		10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,4-Dichloro-2-butene, Total		20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,4-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1-Chlorobutane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2,2-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Butanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Chloroethyl vinyl ether	NELAP	40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Chlorotoluene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Hexanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Nitropropane	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
4-Chlorotoluene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
4-Methyl-2-pentanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acetone	NELAP	50.0	J	11	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acetonitrile	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acrolein	NELAP	200		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acrylonitrile	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Allyl chloride	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Benzene	NELAP	4.00		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromochloromethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromodichloromethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromoform	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromomethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Butyl acetate		50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Carbon disulfide	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Carbon tetrachloride	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloroethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK

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LABORATORY RESULTS

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Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroform	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloromethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloroprene	NELAP	40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,2-Dichloroethene	NELAP	10.0		210	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,3-Dichloropropene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,4-Dichloro-2-butene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Cyclohexanone		100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dibromochloromethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dibromomethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dichlorodifluoromethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Diisopropyl ether		4.00		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl acetate	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl ether	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl methacrylate	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl-tert-butyl ether		4.00		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Heptane		40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Hexachlorobutadiene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Hexachloroethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Iodomethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Isopropylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
m,p-Xylenes	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methacrylonitrile	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methyl Methacrylate	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methyl tert-butyl ether	NELAP	4.00		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methylacrylate		20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methylene chloride	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Naphthalene	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Butylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Hexane		40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Nitrobenzene	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Propylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
o-Xylene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Pentachloroethane	NELAP	40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
p-Isopropyltoluene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Propionitrile	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
sec-Butylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Styrene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK

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Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
tert-Amyl methyl ether		4.00		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
tert-Butyl alcohol		50.0	J	**24**	µg/L	2	11/28/2008 4:47:00 PM	GEK
tert-Butylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Tetrachloroethene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Tetrahydrofuran	NELAP	40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Toluene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
TPH - GRO (C6 - C10)		1000		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,2-Dichloroethene	NELAP	10.0	J	**3.9**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,3-Dichloropropene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,4-Dichloro-2-butene	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Trichloroethene	NELAP	10.0	J	**3.0**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Trichlorofluoromethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Vinyl acetate	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Vinyl chloride	NELAP	4.00		**198**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Xylenes, Total	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Surr: 1,2-Dichloroethane-d4		61-128		**95.2**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: 4-Bromofluorobenzene		78.2-117		**97.9**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: Dibromofluoromethane		66.6-130		**101.8**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: Toluene-d8		80.1-122		**98.8**	%REC	2	11/28/2008 4:47:00 PM	GEK
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	11/25/2008	MEK

Sample Narrative

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

Elevated reporting limit due to high levels of target and/or non-target analytes.

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 08110790

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing
Address:
City / State / Zip:
Contact: Kendall Pickett Phone: 713-784-5151
E-Mail: kpickett@gfnet.com Fax: 713-784-6105

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 0.4 °C
Preserved in: ☐ Lab ☒ Field 11/24/08 FOR LAB USE ONLY
Lab Notes: 0 headspace *cancel PCBs limited sample per Kendall Pickett 8/21 11/24/08
Comments: MRBCA Sample X with 1,2,3 is order of priority with limited sample volume.

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

Project Name / Number: Boeing/049992
Sample Collector's Name: Dave Straccia/Jack Lupo
Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other TP	Water	Drinking Water	Soil	Sludge	Sp. Waste	TPH-GRO	TPH-DRO/ORO	VOCs	As, Cr	SVOC	PCB	As, Ba, Cd, Cr, Mn, Hg	Teklab, Inc Courier Pick Up
08110790-001	Trip Blank #3	11/12/08/1145								1	X							X					
-002	MW7	11/21/08/1240	3	1						2	X					X	X	X		X	X	X	
-003	MW9S	1415	3	1						2	X					X	X	X		X	X	X	
-004	B27 W3D *	1520	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-005	B220N6	1325	1	1						2	X					X	X		X				
-006	RC8D *	1555	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-007	B28 MW4	1540	3	1						2	X					X	X	X		X	X	X	
-008	MW3	1645	3	1						2	X					X	X	X		X	X	X	
-009	~~RC14~~ RC15	1657	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-010	Equip Blank #4	1645								2	X							X					

Relinquished By	Date / Time	Received By	Date / Time
[signature]	11/21/08 1645	[signature]	11/21/08 1745
[signature]	11/21/08 1822	Elizabeth A. Hurley	11/21/08 1822

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

After Page 107 of 107

REPLACEMENT PAGE TO MAY 8, 2009 MEMORANDUM TABLE 3

Table 3
Chemicals of Concern Risk Exceedence in Groundwater
Boeing Tract 1, St. Louis, Missouri

Area/ Sub-area	Wells Sampled in Nov/Dec '08	Analytes	Group/Agency	COCs that Exceeded Risk
Area 1 (South of Bldg. 45)	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	TPH and VOC	EPA	
			RAM	None
Area 1 (Hush House)	MW-A1 and MW-A3	TPH, VOC, and arsenic	EPA	
			RAM	None
Sub-area 2A	MW-A8 and MW-A6	arsenic, cadmium, and TPH	EPA	
			RAM	TPH-GRO and TPH-DRO
Sub-area 2B	MW-5I, MW-6S, MW-11D, MW-11I, MW-11S, MW-8I, MW-8S, B48N1, SWMU17-OB-1, TP-3, TP-4, TP-6, MW-9S, and MW-10S	TPH, VOC, arsenic, and cadmium	EPA	
			RAM	Aliphatics (C12-16, C16-21, and C21-35) and Tetrachloroethylene
Sub-area 2C	MW-A12 and MW-A13,	TPH and VOC	EPA	benzene and TPH-GRO
			RAM	None
Sub-area 3A	B41MW-18 and B42N6,	TPH, VOC, and arsenic	EPA	
			RAM	TPH-DRO
Sub-area 3C	MW-A4	TPH and VOC	EPA	
			RAM	TPH-DRO, TPH-ORO, and Total TPH
Sub-area 3D	B41MW-5 and B41S5D	TPH, VOC, arsenic, barium, cadmium, copper, and manganese	EPA	
			RAM	None
Sub-area 3E	B2E3, and B2E5	TPH and VOC	EPA	
			RAM	Aliphatics (C16-21)
Sub-area 3G	None	None	EPA	
			RAM	Aliphatics (C21-35)
Sub-area 3H	B4MW-10 and B4MW9	TPH, arsenic, manganese, and mercury	EPA	Mercury and TPH-DRO
			RAM	None
Sub-area 6A	MW1	TPH, VOC, arsenic, barium, cadmium, and chromium	EPA	
			RAM	None
Sub-area 6B	B27W3D, B28MW3, B28MW4, MW7, MW9D, MW9S, MW3, RC8D, and RC15	TPH, VOC, SVOC, PCB, arsenic, barium, cadmium, chromium, manganese, and mercury	EPA	1,1-DCE, TCE, vinyl chloride, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, and arsenic
			RAM	Aliphatics (C16-21) and benzo(a)anthracene
Sub-area 6C	B25MW1, MW5CS, MW5DS, MW8AD, and MW8AS	TPH, VOC, arsenic, barium, cadmium, chromium, mercury, and hexavalent chromium	EPA	
			RAM	Aliphatics (C16-21 and C21-35)
Sub-area 6D	MW6 and MW6D	VOC, arsenic, and chromium	EPA	
			RAM	None
Sub-area 8A	MW10D and MW10S	VOC, arsenic, barium, chromium, and manganese	EPA	
			RAM	None
Sub-area 8B	B220N4, B220N6, and MW4	TPH, arsenic, and chromium	EPA	
			RAM	Aliphatics (C16-21 and C21-35)

REPLACEMENT PAGE TO JUNE 4, 2009 MEMORANDUM TABLE 1

Table 1
Groundwater Gauging Data
November 17-19, 2008
Boeing Tract 1, St. Louis, Missouri

DRAFT

Well ID	Area / Sub-Area	Screened Interval (ft bgs)	Date	TOC Elevation (ft msl)	Depth to Water (ft btoc)	Depth to Free Product (ft btoc)	Free Product Thickness (ft)	Groundwater Elevation (ft msl)	Comments
Backfill Wells (screened intervals from 0 to 10 ft bgs)									
SWMW17-OB-I	2B	0-10	11/17/2008	--	4.85			NA	
Shallow Zone Wells (screened intervals from 2 to 26 ft bgs)									
B220N4	8B	3-13	11/17/2008	--	7.38			NA	Pressure released
B220N6	8B	3-13	11/17/2008	--	5.01			NA	Pressure released
B25MW1	6C	10.7-15.7	11/17/2008	537.42	9.26			528.16	
B27W3D	6B	21-26	11/19/2008	535.86	3.60			532.26	Pressure released
B28MW3	6B	2-12	11/18/2008	538.38	4.07			534.31	
B28MW4	6B	5.5-20.5	11/18/2008	538.17	4.92			533.25	Pressure released
B2E3	3E	5-15	11/17/2008	--	9.61			NA	
B2E5	3E	3-13	11/17/2008	--	6.11			NA	
B41MW-18	3A	2-12	11/17/2008	541.62	4.31			537.31	
B41MW-5	3D	2-12	11/17/2008	534.55	2.86			531.69	
B42N6	3A	5-15	11/17/2008	--	2.03			NA	Pressure released
B48N1	2B	2.0-12.5	11/19/2008	539.92	6.44			533.48	
B4MW-10	3H	2-12	11/17/2008	--	8.97			NA	
B4MW-9	3H	10-19.8	11/17/2008	531.66	8.81			522.85	
MW1	6A	10-20	11/18/2008	558.73	7.80			550.93	Pressure released
MW10S	8A	8.0-18.0	11/18/2008	536.81	3.86			532.95	Pressure released
MW-10S	2B	5.0-15.0	11/18/2008	547.77	6.40	6.35	0.05	541.37	
MW-11S	2B	6.5-16.5	11/17/2008	547.21	6.99			540.22	Pressure released
MW3	6B	10-19.7	11/18/2008	535.89	5.02			530.87	Pressure released
MW4	8B	10-19.5	11/17/2008	540.79	5.13			535.66	Pressure released
MW5CS	6C	8-17.64	11/17/2008	529.15	9.42			519.73	
MW5DS	6C	7-17.08	11/17/2008	530.92	7.40			523.52	
MW6	6D	8.0-23.0	11/17/2008	519.47	8.02			511.45	
MW-6S	2B	5.0-15.0	11/17/2008	547.84	3.89			543.95	
MW7	6B	7-11.9	11/18/2008	538.41	3.42			534.99	Pressure released
MW8AS	6C	6-16.5	11/17/2008	533.86	11.01			522.85	
MW-8S	2B	8.0-16.0	11/17/2008	547.85	8.24			539.61	
MW9S	6B	8.0-18.0	11/18/2008	536.17	6.05			530.12	Pressure released
MW-9S	2B	6.0-16.0	11/18/2008	547.11	6.47	6.46	0.01	540.64	
MW-A1	1	5-15	11/18/2008	537.04	4.84	4.83	0.01	532.20	
MW-A12	2C	4.5-14.5	11/17/2008	538.92	4.37			534.55	Pressure released
MW-A13	2C	4.5-14.5	11/18/2008	538.79	4.83	4.83	0.00	533.96	
MW-A15	1	4.5-14.5	11/17/2008	539.36	4.68			534.68	Broken TOC
MW-A6	2A	2.5-12.5	11/18/2008	--	3.95			NA	
MW-A22	1	4.5-14.5	11/17/2008	539.64	4.23			535.41	Pressure released
MW-A23	1	2.7-12.7	11/17/2008	540.17	5.05			535.12	
MW-A25	1	3-13	11/17/2008	539.70	3.79			535.91	Pressure released
MW-A26	1	4-14	11/17/2008	539.49	5.45			534.04	
MW-A27	1	3.7-13.7	11/17/2008	539.89	3.73			536.16	Pressure released
MW-A29	1	4.5-14.5	11/17/2008	539.56	2.89			536.67	
MW-A3	1	5-15	11/18/2008	537.14	3.87	3.86	0.01	533.27	
MW-A4	3C	2-12	11/17/2008	534.40	9.38			525.02	
MW-A8	2A	2.5-12.5	11/17/2008	--	4.39			NA	
RC15	6B	3-13	11/19/2008	--	4.45			NA	
RC8D	6B	19-24	11/19/2008	536.42	3.65			532.77	
TP-3	2B	6.0-12.5	11/18/2008	548.52	5.47	5.46	0.01	543.06	
TP-4	2B	9.0-14.6	11/18/2008	547.07	3.88	3.87	0.01	543.19	
TP-6	2B	6.0-16.0	11/18/2008	548.70	5.34			543.36	
Intermediate Zone Wells (screened intervals from 32 to 42 ft bgs)									
MW-11I	2B	32.0-40.0	11/17/2008	547.04	6.54			540.50	Pressure released
MW-5I	2B	32.0-42.0	11/17/2008	547.73	6.90			540.83	
MW-8I	2B	32.0-40.0	11/17/2008	547.84	8.35			539.49	
Deep Zone Wells (screened intervals from 56 to 80.5 ft bgs)									
B41S5D	3D	56-66.29	11/17/2008	534.27	18.29			515.98	
MW10D	8A	70-79.5	11/17/2008	536.70	4.91			531.79	Pressure released
MW-11D	2B	64.0-74.0	11/17/2008	547.08	23.81			523.27	Pressure released
MW6D	6D	68.0-78.0	11/17/2008	520.32	7.78			512.54	
MW8AD	6C	70-80.5	11/17/2008	534.05	9.58			524.47	
MW9D	6B	62-72.5	11/18/2008	539.75	--			NA	Artesian

Notes:
ft bgs: feet below ground surface
ft btoc: feet below top of casing
ft msl: feet above mean sea level
ft: feet
NA: not applicable

REPLACEMENT PAGE TO FEBRUARY 26, 2010 MEMORANDUM TEXT, TABLES, AND FIGURE

- There is some evidence of chromium source at Sub-area 6C.
- ***Based on these, chromium (hexavalent) in Sub-area 6C will be further evaluated for plume stability.***

- **Manganese**

  - All the 14 samples analyzed had detected concentrations. Of these samples, 10 samples exceeded the screening value of 880 ug/L.
  - The detected concentrations ranged from 127 ug/L to 7,290 ug/L with the following distribution:
    - Below 880 ug/L 4 samples
    - > 880 ug/L – 2,500 ug/L 7 samples
    - > 2,500 ug/L – 5,000 ug/L 2 samples
    - > 5,000 ug/L 1 sample
  - Due to the wide range of concentration distribution, concentrations observed may not be background concentration.
  - ***Therefore, manganese in groundwater will be further evaluated for plume stability in Sub-areas 3D, 3H, 6B, and 8A.*** However, the source of manganese has not been identified and presumably manganese may have been analyzed for a natural attenuation parameter.

- **Bis(2-ethylhexyl)phthalate**

  - Total of eight samples were collected. Of these, only one sample (RC15 in Sub-area 6B) showed detected concentration of 18 ug/L which is greater than the screening value of 4.8 ug/L.
  - Half the detection limit (5 ug/L) for two not-detected samples exceeded the screening value slightly.
  - It is known that this is a common laboratory contaminant.
  - Based on these, bis(2-ethylhexyl)phthalate is not of concern.

- **1,1,2-Trichloroethane**

  - Total of 50 samples were collected. Of these, two samples showed detected concentrations. Only one sample (MW-5I in Sub-area 2B) showed detected concentration of 140 ug/L greater than the screening value of 5 ug/L.
  - Half the detection limits of all the not-detected samples were below the screening value. Therefore, the detection limits were appropriate.
  - ***Based on these, 1,1,2-trichloroethane in Sub-area 2B will be further evaluated for plume stability.***

- **1,1-Dichloroethane**

  - Total of 50 samples were collected. Of these, five samples showed detected concentrations.
  - Three samples below had detected concentrations greater than the screening

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value of 2.4 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
3D	B41MW-5	13.8	104
6B	RC15	15.8	<1.0*
8A	MW10S	3.5	13.7

*: Concentration in April 2006

- The concentrations in B41MW-5 and MW-10S are lower than the concentrations during the previous sampling event in June 2003 as shown above. It is expected that these concentrations will continue to decrease.
- The concentration in RC15 increased from the previous concentration collected in April 2006. For the not detected concentrations, half the detection limit of 45 samples exceeded the screening value. However, all of the half the detection limits except for one sample (MW-5I) were 2.5 ug/L which is very close to the screening value. Therefore, these exceedences are not of concern. Half the detection limit in MW-5I was 0.5 ug/L during the previous sampling event in June 2003. Therefore, half the detection in MW-5I is not of concern.
- ***Based on these, 1,1-dichloroethane in Sub-area 6B will be further evaluated for plume stability.***

- **<u>1,1-Dichloroethylene</u>**

  - Total of 50 samples were collected. Of these, two samples showed detected concentrations.
  - One sample (MW3 in Sub-area 6B) had detected concentration of 25.1 ug/L greater than the screening value of 7 ug/L.
  - During the previous sampling event in June 2003, 1,1-dichloroethylene in MW3 was detected at 12 ug/L greater than the screening level of 7 ug/L.
  - Only one of not-detected samples (MW-5I in Sub-area 2B) had half the detection limits greater than the screening level.
  - During the previous sampling event in June 2003, 1,1-dichloroethylene in MW-5I was detected at 33 ug/L greater than the screening level of 7 ug/L.
  - 1,1-Dichloroethylene is a daughter product of TCE biodegradation.
  - ***Based on these, 1,1-dichloroethylene in Sub-area 2B and 6B will be further evaluated for plume stability.***

- **<u>Benzene</u>**

  - Total of 50 samples were collected. Of these, six samples showed detected concentrations and only one sample (B28MW4 in Sub-area 6B) of 109 ug/L which is greater than the screening value of 5 ug/L.
  - Half the detection limit (50 ug/L) of one sample (MW-5I) in Sub-area 2B exceeded the screening value. However, benzene in MW-5I was not-detected at the detection limit of 1 ug/L during the previous sampling event in June 2003. Therefore, benzene in MW-5I is not of concern.
  - ***Based on these, benzene in Sub-area 6B will be further evaluated for plume***

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stability.

- **cis-1,2-Dichloroethylene**

  - Total of 50 samples were collected. Of these, 14 samples showed detected concentrations.
  - Five samples below had detected concentrations greater than the screening value of 70 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	4,430	3,500
	TP-4	77.5	190
6B	B27W3D	448	950
	MW3	16,600	4,100
	RC15	210	6.5*

*: Concentration in April 2006

  - During the previous sampling event in June 2003, concentrations in above wells exceeded the screening value, except in RC15 in April 2006.
  - These wells are located in the trichloroethylene (TCE) source areas.
  - Half the detection limit (125 ug/L) of only one sample (MW-5I) in Sub-area 2B exceeded the screening value.
  - cis-1,2-Dichloroethylene is a daughter product of TCE biodegradation.
  - ***Based on these, cis-1,2-dichloroethylene in Sub-areas 2B and 6B will be further evaluated for plume stability.***

- **Naphthalene**

  - Total of 50 samples were collected. Of these, only one sample (TP-4 in Sub-area 2B) showed detected concentrations of 2.4 ug/L which is greater than the screening value of 0.14 ug/L.
  - All of the not-detected samples (49 samples) had half the detection limit (5 ug/L in 48 samples and 125 ug/L in one sample (MW-5I in Sub-area 2B)) exceeding the screening value. The detection limit of 10 ug/L could be practical quantitation limit due to analytical limitations.
  - Sub-area 2B was impacted with mainly chlorinated solvents.
  - Based on these, naphthalene is not of concern.

- **Tetrachloroethylene (PCE)**

  - Total of 50 samples were collected. Of these, six samples showed detected concentrations.
  - Three samples below had detected concentrations greater than the screening value of 5 ug/L.

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Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	89,000	120,000
	MW-10S	21.9	<1
	MW-11S	294	<1
	TP-4	16.3	160
6A	MW1	54.5	<1
6B	MW3	13.8	7.3
	RC8D	11.3	13
8A	MW10S	57.4	<1
	MW10D	15	<1

- During the previous sampling event in June 2003, concentrations in four of the above wells exceeded the screening value. Concentrations in some wells were below the detection limit of 1 ug/L.
- Half the detection limits of all the not-detected samples were below the screening value.
- ***Based on these, TCE in Sub-areas 2B, 6A, 6B, and 8A will be further evaluated for plume stability.***

- **Vinyl chloride**

  - Total of 50 samples were collected. Of these, eight samples showed detected concentrations.
  - Seven samples below had detected concentrations greater than the screening value of 2 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	181	180
	TP-4	3.87	5.3
3A	B42N6	7.75	47*
6B	B27W3D	527	120
	B28MW4	19.1	45
	MW3	789	1,000
	RC15	198	<1.0*

*: Concentrations in April 2006

  - During the previous sampling events, concentrations in above wells exceeded the screening value, except in RC15 in April 2006.
  - Half the detection limits of all the not-detected samples were below the screening value. Therefore, the detection limits were appropriate.
  - ***Based on these, vinyl chloride in Sub-areas 2B, 3A, and 6B will be further evaluated for plume stability.***

- **TPHs**

  - Total of 53 samples were collected for each of three TPH groups (TPH-GRO, TPH-DRO, and TPH-ORO).

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- Of these, only one sample for each TPH group showed detected concentration greater than the screening values of 18,100 ug/L for TPH-GRO, 34,300 ug/L for TPH-DRO, and 31,800 ug/L for TPH-ORO as below:

TPH Group	Sub-area	Sample ID	Concentration (ug/L)
			November 2008
TPH-GRO	2B	MW-5I	93,600
TPH-DRO	2B	MW-9S	800,000
TPH-ORO	2B	MW-9S	60,000

- Half the detection limits of all the not-detected samples were below the screening value.
- ***Based on these, TPHs in Sub-area 2B will be further evaluated for plume stability.***

- **n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, 2-chlorotoluene, 1,2,4-Trimethylbenzene, MTBE, tert-Butyl alchol, and Tetrahydrofuran**

  - Total of 50 samples were collected for each of these chemicals.
  - All the chemicals had few detected concentrations; but none of detected concentrations exceeded screening values.
  - Only one of not-detected samples (MW-5I in Sub-area 2B) had half the detection limits greater than the screening levels for most of the chemicals.
  - During the previous sampling event in June 2003, all the chemicals except for 1,1-dichloroethylene and 1,2,4-trimethylbenzene were not-detected at detection limits below the screening values.
  - During the previous sampling event in June 2003, 1,2,4-Trimethylbenzene in MW-5I was detected at 21 ug/L which is slightly greater than the screening value of 15 ug/L.
  - Based on these, all the chemicals are not of concern.

- **Methylene Chloride**

  - Total of 50 samples were collected. Only one sample had detected concentration below the screening value of 4.8 ug/L.
  - Only two of not-detected samples (MW-5I in Sub-area 2B and RC15 in Sub-area 6B) had half the detection limits of 50 ug/L in MW-5I and 5 ug/L in RC15 greater than the screening value.
  - During the previous sampling event in June 2003, MW-5I had half the detection limit of 2.5 ug/L. During the previous sampling event in April 2006, RC15 had half the detection limit of 2.5 ug/L.
  - Methylene chloride is known as a common laboratory contaminant.
  - Based on these, methylene chloride is not of concern.

Based on above, the following are the conclusions:

- The following 14 chemicals exceeded the screening values and may be site

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Table 1
Comparison of Groundwater Data Collected in 2008 with Screening Values (ug/L)
Beoing Tract 1, St. Louis, Missouri

COCs in Groundwater	MCLs	Regional Screening Levels	MRBCA DTLs	Screening Values	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1	MW-5I
					S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	Hush House	Hush House	2A	2A	2B	2B
Metals																	
Arsenic	10	0.045	10	**10**	na	na	na	na	na	na	na	**89**	**23**	**28.7**	**41.6**	<25	**37**
Barium	2,000	7,300	2,000	**2,000**	na	na	na	na	na	na	na	na	na	na	na	na	na
Cadmium	5	18	5	**5**	na	na	na	na	na	na	na	na	na	<2	<2	<2	<2
Chromium	100	-	100	**100**	na	na	na	na	na	na	na	na	na	na	na	na	na
Chromium (Hexavalent)	-	0.043	0.00337	**0.043**	na	na	na	na	na	na	na	na	na	na	na	na	na
Copper	1,300	1,500	624	**1,300**	na	na	na	na	na	na	na	na	na	na	na	na	na
Manganese	-	880	2,190	**880**	na	na	na	na	na	na	na	na	na	na	na	na	na
Mercury	2	0.57	50.7	**2**	na	na	na	na	na	na	na	na	na	na	na	na	na
SVOCs																	
Bis(2-ethylhexyl)phthalate	-	4.8	6	**4.8**	na	na	na	na	na	na	na	na	na	na	na	na	na
VOCs																	
1,1,2-Trichloro-1,2,2-trifluroethane	-	59,000	-	**59,000**	<20	<20	<20	<20	<20	<20	<20	<20	<20	na	na	<20	<1000
1,1,2-Trichloroethane	5	0.24	5	**5**	<5	<5	<5	<5	**1**	<5	<5	<5	<5	na	na	<5	**140**
1,1-Dichloroethane	-	2.4	24.9	**2.4**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,1-Dichloroethylene	7	340	7	**7**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,2,3-Trimethylbenzene	-	-	-	**-**	<5	<5	<5	<5	<5	<5	<5	**6.42**	<5	na	na	<5	<250
1,2,4-Trimethylbenzene	-	15	7.06	**15**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,2-Dichloroethene, Total	-	-	-	**-**	<5	<5	<5	<5	**1.4**	<5	<5	<5	<5	na	na	**28.2**	**4430**
1-Chlorobutane	-	1500	-	**1,500**	<5	<5	**49**	<5	**1.8**	<5	<5	<5	<5	na	na	<5	<250
2-Chlorotoluene	-	730	61.9	**730**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Acetone	-	22,000	2,970	**22,000**	<25	<25	**9.9**	<25	<25	<25	<25	**104**	**16**	na	na	<25	<1250
Benzene	5	0.41	5	**5**	**1.1**	<2	<2	<2	**1.4**	<2	<2	<2	<2	na	na	<2	<100
Carbon disulfide	-	1000	527	**1,000**	<5	<5	<5	<5	<5	<5	<5	**2**	<5	na	na	<5	<250
cis-1,2-Dichloroethylene	70	370	70	**70**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	**28.2**	**4,430**
Ehtylbenzene	700	1.5	700	**700**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Isopropylbenzene	-	680	330	**680**	**1.9**	<5	**9.83**	<5	<5	<5	<5	**4.5**	**3.3**	na	na	<5	<250
m,p-Xylenes	-	1,200	-	**1,200**	**1.3**	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Methyl tert-butyl ether	-	12	128	**12**	<2	<2	<2	<2	<2	<2	<2	<2	<2	na	na	<2	<100
Methylene chloride	-	4.8	5	**4.8**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<100
Naphthalene	-	0.14	1.09	**0.14**	<10	<10	<10	<10	<10	<10	<10	<10	<10	na	na	<10	<500
n-Butylbenzene	-	-	98.9	**98.9**	<5	<5	**3.7**	<5	<5	<5	<5	**3**	**1.2**	na	na	<5	<250
n-Propylbenzene	-	1,300	115	**1,300**	<5	<5	**7.11**	<5	<5	<5	<5	**4.9**	**3.7**	na	na	<5	<250
o-Xylene	-	1,200	-	**1,200**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
sec-Butylbenzene	-	-	106	**106**	<5	<5	**2.8**	<5	<5	<5	<5	**4.1**	**2.1**	na	na	<5	<250
tert-Butyl alcohol	-	-	286	**286**	<25	<25	<25	<25	<25	<25	<25	<25	<25	na	na	<25	<1250
tert-Butylbenzene	-	-	103	**103**	<5	<5	**1.2**	<5	<5	<5	<5	**1**	**1**	na	na	<5	<250
Tetrachloroethylene	5	2	5	**5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	**4.1**	<250
Tetrahydrofuran	-	-	20.3	**20.3**	<20	<20	<20	<20	<20	<20	<20	<20	<20	na	na	<20	<1000
Toluene	1,000	2,300	1,000	**1,000**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
trans-1,2-Dichloroethylene	100	110	100	**100**	<5	<5	<5	<5	**1.4**	<5	<5	<5	<5	na	na	<5	<250
Trichloroethylene	5	2	5	**5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	**89,000**
Vinyl chloride	2	0.016	2	**2**	<2	<2	<2	<2	<2	<2	<2	<2	<2	na	na	<2	**181**
Xylenes	10,000	200	10,000	**10,000**	**1.3**	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
TPH																	
TPH-GRO	-	-	18,100	**18,100**	<500	<500	**2,550**	<500	<500	<500	<500	**230**	<500	**798**	<500	**180**	**93,600**
TPH-DRO	-	-	34,300	**34,300**	**403**	**230**	**1,040**	**220**	**684**	**220**	**210**	**2,780**	**2,790**	**200**	**230**	**230**	**230**
TPH-ORO	-	-	31,800	**31,800**	<300	<300	**290**	<300	**270**	<300	<300	**556**	**493**	<300	<300	<300	<300

Notes:
All concentrations in ug/L
DTL: Default target level
MCL: Maximum contaminant level
MRBCA: Missouri risk-based corrective action
na: Not analyzed
Highlighted and bold: Detected concentration exceeds screening value.
Highlighted: Half the detection limit exceeds screening value.

Table 1
Comparison of Groundwater Data Collected in 2008 with Screening Values (ug/L)
Beoing Tract 1, St. Louis, Missouri

COCs in Groundwater	MCLs	Regional Screening Levels	MRBCA DTLs	Screening Values	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS	MW8AS	MW8AD	MW6	MW6D
					6BN	6BS	6BS	6BS	6BS	6BS	6C	6C	6C	6C	6C	6C	6C
Metals																	
Arsenic	10	0.045	10	**10**	**24**	<25	**22**	**26.8**	<25	**30.7**	<25	**18**	**16**	**24**	<25	<25	**18**
Barium	2,000	7,300	2,000	**2,000**	**431**	**163**	**714**	**1,070**	**541**	**613**	**333**	**624**	**334**	**393**	**257**	na	na
Cadmium	5	18	5	**5**	<2	**0.6**	**0.5**	**0.3**	**1.8**	**0.7**	**0.3**	**3.6**	**0.7**	**1**	**0.7**	na	na
Chromium	100	-	100	**100**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**4.6**	**55.1**
Chromium (Hexavalent)	-	0.043	0.00337	**0.043**	na	na	na	na	na	na	<5	**4**	**5**	**7**	<5	na	na
Copper	1,300	1,500	624	**1,300**	na	na	na	na	na	na	na	na	Na	na	na	na	na
Manganese	-	880	2,190	**880**	**662**	**275**	**2,390**	**3,140**	**4,600**	**7,290**	na	na	na	na	na	na	na
Mercury	2	0.57	50.7	**2**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.27**	**0.22**	**0.08**	<0.2	na	na
SVOCs																	
Bis(2-ethylhexyl)phthalate	-	4.8	6	**4.8**	<6	<6	<6	<6	<6	**18**	na	na	na	na	na	na	na
VOCs																	
1,1,2-Trichloro-1,2,2-trifluroethane	-	59,000	-	**59,000**	**12,600**	<20	**21.6**	<20	<20	<40	<20	<20	<20	<20	<20	<20	<20
1,1,2-Trichloroethane	5	0.24	5	**5**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	-	2.4	24.9	**2.4**	<5	<5	<5	<5	<5	**15.8**	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethylene	7	340	7	**7**	<5	<5	**25.1**	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trimethylbenzene	-	-	-	**-**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	-	15	7.06	**15**	**3.6**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene, Total	-	-	-	**-**	**239**	<5	**16,800**	<5	**30.8**	**214**	<5	<5	<5	<5	<5	na	na
1-Chlorobutane	-	1500	-	**1,500**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
2-Chlorotoluene	-	730	61.9	**730**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Acetone	-	22,000	2,970	**22,000**	<25	<25	<25	<25	<25	**11**	<25	<25	**5.3**	<25	<25	<25	<25
Benzene	5	0.41	5	**5**	**109**	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2
Carbon disulfide	-	1000	527	**1,000**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	70	370	70	**70**	**53.6**	<5	**16,600**	<5	**29.3**	**210**	<5	<5	<5	<5	<5	<5	<5
Ehtylbenzene	700	1.5	700	**700**	**6.44**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	-	680	330	**680**	**3.2**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
m,p-Xylenes	-	1,200	-	**1,200**	**10.9**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Methyl tert-butyl ether	-	12	128	**12**	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2
Methylene chloride	-	4.8	5	**4.8**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Naphthalene	-	0.14	1.09	**0.14**	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10
n-Butylbenzene	-	-	98.9	**98.9**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	-	1,300	115	**1,300**	**1.8**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
o-Xylene	-	1,200	-	**1,200**	**8.65**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	-	-	106	**106**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
tert-Butyl alcohol	-	-	286	**286**	<25	<25	<25	<25	<25	**24**	<25	<25	<25	<25	<25	na	na
tert-Butylbenzene	-	-	103	**103**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	5	2	5	**5**	**7.41**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	**6.2**	<5
Tetrahydrofuran	-	-	20.3	**20.3**	**6.3**	<20	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20	<20
Toluene	1,000	2,300	1,000	**1,000**	**29.8**	<5	**1.1**	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethylene	100	110	100	**100**	**186**	<5	**190**	<5	**1.6**	**3.9**	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	5	2	5	**5**	**1.5**	<5	**13.8**	<5	**11.3**	**3**	<5	<5	<5	**2**	<5	**2**	<5
Vinyl chloride	2	0.016	2	**2**	**19.1**	<2	**789**	<2	<2	**198**	<2	<2	<2	<2	<2	<2	<2
Xylenes	10,000	200	10,000	**10,000**	**19.5**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	na	na
TPH																	
TPH-GRO	-	-	18,100	**18,100**	**519**	<500	**7,130**	<500	<500	<1000	<500	<500	<500	<500	<500	na	na
TPH-DRO	-	-	34,300	**34,300**	**304**	**200**	<300	<300	**220**	**11,200**	<300	**230**	**200**	**220**	<300	na	na
TPH-ORO	-	-	31,800	**31,800**	<300	<300	<300	<300	<300	**9,330**	<300	<300	<300	<300	<300	na	na

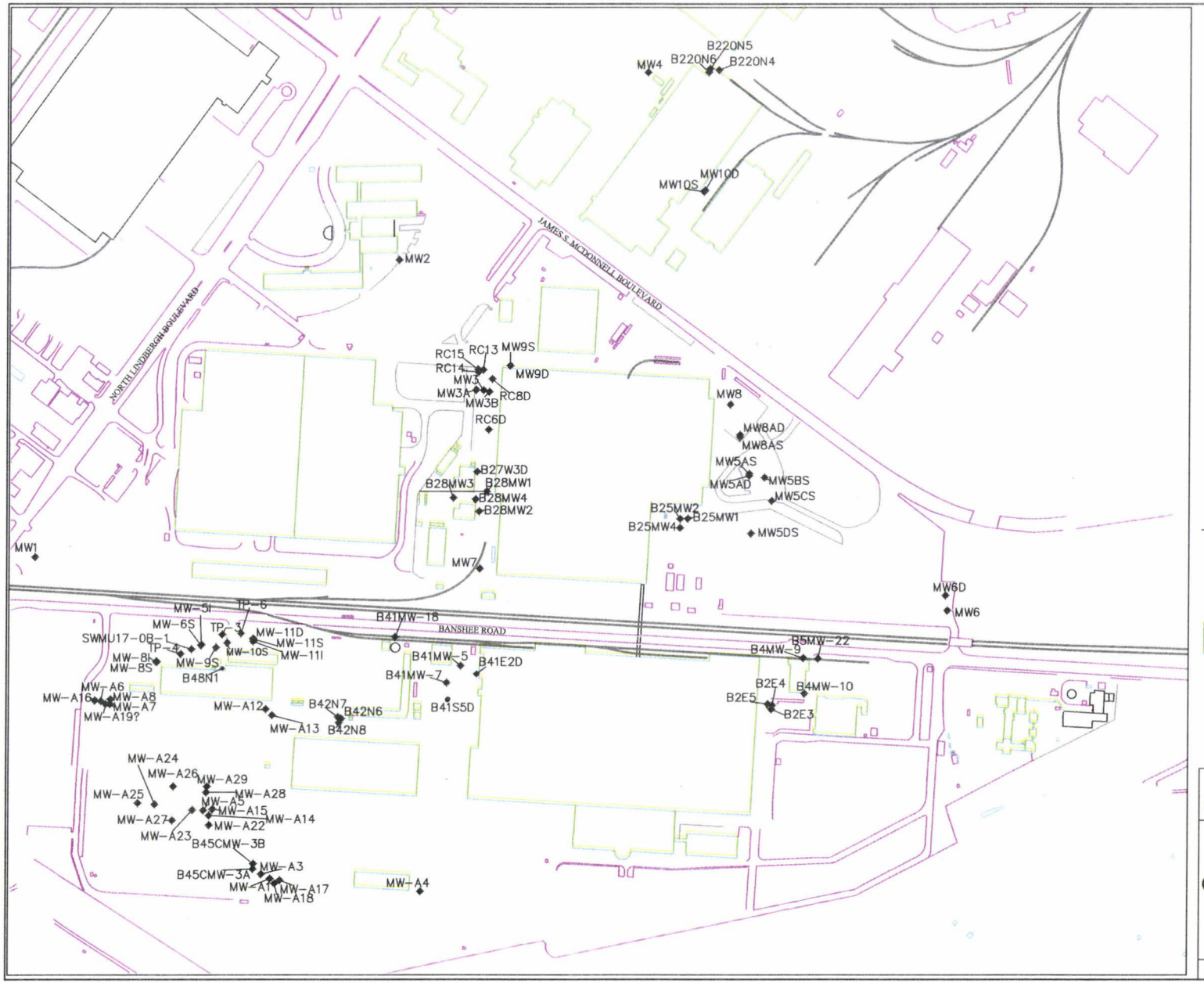
Notes:
All concentrations in ug/L
DTL: Default target level
MCL: Maximum contaminant level
MRBCA: Missouri risk-based corrective action
na: Not analyzed
Highlighted and bold: Detected concentration exceeds screening value.
Highlighted: Half the detection limit exceeds screening value.

Table 2(a)
Summary of Detected Chemicals in Groundwater Exceeding Screening Values
Boeing Tract 1, St. Louis, Missouri

Chemical	No. of Samples	No. of Detects	Detected Sample Exceedences												
			No. of Sample	Hush House	2A	2B	3A	3D	3H	6A	6BN	6BS	6C	8A	8B
Metals															
Arsenic	44	31	31	MW-A1 and MW-A3	MW-A8 and MW-A6	MW-5I, MW-6S, MW-8I, MW-9S, MW-10S, MW-11S, SWMU17-0B-1, TP-3, TP-4, and TP-6	--	--	B4MW-10	MW-1	B27W3D, B28MW3, and B28MW4	MW3, MW9S, and RC15	MW5CS, MW5DS, MW8AS, and MW6D	MW10S and MW10D	B220N4, B220N6, and MW4
Chromium (Hexavalent)	5	3	3	--	--	--	--	--	--	--	--	--	MW5CS, MW5DS, and MW8AS	--	--
Manganese	14	14	10	--	--	--	--	B41S5D	B4MW-9	--	B27W3D and B28MW3	MW3, MW9S, RC8D, and RC15	--	MW10S and MW10D	--
SVOCs															
Bis(2-ethylhexyl)phthalate	8	1	1	--	--	--	--	--	--	--	--	RC15	--	--	--
VOCs															
1,1,2-Trichloroethane	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	50	5	3	--	--	--	--	B41MW-5	--	--	--	RC15	--	MW10S	--
1,1-Dichloroethylene	50	2	1	--	--	--	--	--	--	--	MW3	--	--	--	--
Benzene	50	6	1	--	--	--	--	--	--	--	B28MW4	--	--	--	--
cis-1,2-Dichloroethylene	50	14	5	--	--	MW-5I and TP-4	--	--	--	--	B27W3D	MW3 and RC15	--	--	--
Naphthalene	50	1	1	--	--	TP-4	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	50	6	3	--	--	TP-4	--	--	--	--	B28MW4	--	MW6	--	--
trans-1,2-Dichloroethylene	50	7	2	--	--	--	--	--	--	--	B28MW4	MW3	--	--	--
Trichloroethylene	50	13	9	--	--	MW-5I, MW-10S, MW-11S, and TP-4	--	--	--	MW1	--	MW3 and RC8D	--	MW10S and MW10D	--
Vinyl chloride	50	8	7	--	--	MW-5I and TP-4	B42N6	--	--	--	B27W3D and B28MW4	MW3 and RC15	--	--	--
TPHs															
TPH-GRO	53	12	1	--	--	MW-5I	--	--	--	--	--	--	--		--
TPH-DRO	53	43	1	--	--	MW-9S	--	--	--	--	--	--	--		--
TPH-ORO	53	18	1	--	--	MW-9S	--	--	--	--	--	--	--		--

Table 2(b)
Summary of Not Detected Chemicals in Groundwater Exceeding Screening Values
Boeing Tract 1, St. Louis, Missouri

Chemical	No. of Samples	No. of Detects	Half the Detection Limit Exceedences														
			No. of Sample	Hush House	S. Bldg 45	2B	2C	3A	3C	3D	3E	3H	6A	6BN	6BS	6C	8A
Metals																	
Arsenic	44	31	13	--	--	B48N1, MW-8S, MW-11I, and MW-11D	--	B41MW-18	--	B41MW-5 and B41S5D	--	B4MW-9	--	--	MW7 and RC8D	MW8AD, MW6, and B25MW1	--
Chromium (Hexavalent)	5	3	2	--	--	--	--	--	--	--	--	--	--	--	--	B25MW1 and MW8AD	--
SVOCs																	
Bis(2-ethylhexyl)phthalate	8	1	2	--	--	--	--	--	--	--	--	--	--	B27MW3D and B28MW3	--	--	--
VOCs																	
1,1-Dichloroethane	50	5	45	MW-A1 and MW-A3	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	B48N1, MW-5I, MW-6S, MW-8S, MW-8I, MW-9S, MW-10S, MW-11S, MW-11I, MW-11D, SWMU17-0B-1, TP-3, TP-4, and TP-6	MW-A12 and MW-A13	B41MW-18 and B42N6	--	B41S5D	B2E3 and B2E5	--	MW1	B27MW3D and B28MW4	MW-3, MW-7, MW-9S, and RC8D	B25MW1, MW5CS, MW5DS, MW8AS, MW8AD, MW6 and MW6D	MW10D
1,1-Dichloroethylene	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Benzene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	50	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	50	1	2	--	--	MW-5I	--	--	--	--	--	--	--	--	RC15	--	--
Naphthalene	50	1	49	MW-A1 and MW-A3	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	B48N1, MW-5I, MW-6S, MW-8S, MW-8I, MW-9S, MW-10S, MW-11S, MW-11I, MW-11D, SWMU17-0B-1, TP-3, and TP-6	MW-A12 and MW-A13	B41MW-18 and B42N6	MW-A4	B41MW-5 and B41S5D	B2E3 and B2E5	--	MW1	B27MW3D, B28MW3, and B28MW4	MW-3, MW-7, MW-9S, RC8D, and RC15	B25MW1, MW5CS, MW5DS, MW8AS, MW8AD, MW6 and MW6D	MW10S and MW10D
n-Butylbenzene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	50	5	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
tert-Butyl alcohol	46	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	50	3	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Tetrahydrofuran	50	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethylene	50	7	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--



LEGEND

- Groundwater Monitoring Well
- Railroad
- Roadway
- Building Outline

RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX

Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JUNE 2010 REPORT TEXT, TABLES, AND FIGURES

Gauging was performed on 57 of the 59 wells on Figure 2-1 using a Heron Interface meter for wells 0.75-inch diameter or greater. A Heron Skinny Water Level meter was used to gauge the 0.5-inch diameter wells and any wells that had obstructions that prevented access with the interface meter. Gauging data is presented on Table 2-1. Two wells could not be gauged as the manway covers could not be accessed (RC15 in Sub-area 6B and MW-11D in Sub-area 2B). The gauged wells included one additional well, MW-A28 in Area 1 (South of Bldg. 45). This well was added for deployment of a Snap Sampler® system, since the MW-A15 manway was too small to accept the Snap Sampler® system as planned. MW-A28 is located about 70 feet North of MW-A15.

Eight wells had either sheen or measurable free product as shown on Table 2-1.

2.3 GROUNDWATER SAMPLING

Groundwater sampling was performed on April 26 – May 3, 2010 by Mihika Baruah, Bhoom Korpol, Marty Hughes, and Kendall Pickett of RAM Group. Joe Haake and Elmer Dwyer participated in this task.

Each well was gently gauged for groundwater depth and presence of LNAPL prior to sampling using a Solinst Interface meter for wells 0.75-inch diameter or greater. A Heron Skinny Water Level meter was used to gauge the 0.5-inch diameter well and any wells that had obstructions that prevented access with the interface meter. Well depths were not gauged to avoid disturbance of the water column prior to sampling. No wells had measureable LNAPL. MW-A1 and MW-A3 had sheen; thus, they were not sampled. Therefore, 42 wells were sampled using low-flow methods and nine wells were sampled using passive sampling methods.

All field equipment requiring calibration was calibrated in accordance with the manufacturer specifications periodically during the sampling (Appendix A).

2.3.1 Low-Flow Purging and Sampling

Thirty-seven 2-inch diameter, one 0.5-inch diameter, one 0.75-inch diameter, one 1-inch diameter, and two 4-inch diameter wells were sampled using low-flow methods (refer to Table 2-2). A CO_2 operated QED Sample Pro 1.75-inch bladder pump or small diameter Geotech SS18 0.67-inch bladder pump were used in all wells except the 0.5-inch diameter well, which was sampled using a Pegasus Athena Peristaltic pump. This well, B27W3D, was not purged prior to sampling based on previous experience that indicated the well would go dry before collection of all samples. This well went dry after collecting two 40ml VOA vials for VOCs and TPH-GRO and about ½-liter for TPH-DRO/ORO. Therefore, no samples were collected for total and dissolved metals (As, Ba, Cd, Cr, Mn, and Hg) as planned. However, there are other nearby wells that were sampled for metals (B28MW3 (totals only) and B28MW4 (totals and dissolved).

sampling.

The wells sampled using Snap Samplers® are presented in Table 2-3 and included wells of varying diameters (2-inch and 4-inch), varying depths (shallow, intermediate, and deep), and varying screened intervals between 10 to 15 feet of screen for comparison with the low-flow sampling results. Table 2-3 presents the Snap Sampler® deployment elevations in each well.

In wells MW8AS, MW10S, and MW10D sampled on the first day using Snap Samplers®, the sample containers contained air bubbles or were only partially filled or leaking when brought to surface. After contacting ProHydro, it was found that if the Snap Sampler® bottle caps were securely pushed closed upon reaching the surface, most sample containers would contain no headspace. In cases where a 40ml glass vial was partially filled or had an air bubble, the 40ml vial was immediately topped off with water from one of the 125ml plastic bottles. After the first day of sampling, this was not a problem.

2.4 MAINTENANCE AND REPAIR OF MONITORING WELLS

Some repairs and maintenance were performed on RC15 and B4MW-9 by Environmental Management Alternatives (EMA) during the period between the groundwater gauging and groundwater sampling. Additional recommended repairs will be presented in a separate document.

2.5 DECONTAMINATION PROCEDURES

All field sampling and gauging equipment that was re-used from well to well was decontaminated prior to use at each well using appropriate methods. The oil/water interface meters and small diameter water level meter were cleaned prior to use at each well using an Alconox wash and distilled water rinse. For wells with evidence of sheen or free product, an alcohol wash was added prior to the Alconox wash. Plastic sheeting was used at each well site to minimize cross contamination.

New disposable equipment and dedicated tubing used with the bladder pumps did not require decontamination. The peristaltic pump tubing was new and disposed after use in a single well. The Snap Sampler® systems are dedicated to each well and do not require decontamination, and the sample bottles are single-use and replaced with new bottles after sample collection.

The pumps (disassembled) and 4-way valves were cleaned prior to use in each well using an Alconox wash and distilled water rinse. Grab plates and O-rings were replaced with new ones as needed in the pumps.

- #10041218 dated May 10, 2010
- #10050079 dated May 11, 2010
- #10041181 dated May 13, 2010
- #10050500 dated May 18, 2010

Laboratory analytical methods and the analytes selected for analysis are presented in Table 4-1. The number of times each well has been sampled and analyzed is also presented in this table. Some dissolved metals analysis was dropped from specific wells with MDNR approval (RAM Group, 2010d). The comments section of Table 4-1 describes deviations for specific wells from the Revised Groundwater Gauging and Sampling Plan for 2010 (RAM, March 5, 2010).

Table 4-2 presents the comprehensive groundwater analytical results. Table 4-2(a) presents the detected concentrations, Table 4-2(b) presents the maximum detection limits for each chemical, Table 4-2(c) presents a summary of the detected concentrations and compares the maximum concentration for each detected chemical to the screening value, and Table 4-2(d) presents the wells with detected chemicals that exceeded screening values.

4.3 EVALUATION OF ANALYTICAL RESULTS

4.3.1 Detected Chemicals

The detected chemicals concentrations are presented on Table 4-2(a) and the maximum detected concentrations are compared to the very conservative screening values on Table 4-2(c). Twenty-eight chemicals were detected at least once consisting of the following:

- 6 metals (totals and dissolved)
- 1 SVOC
- TPH-GRO
- TPH-DRO
- TPH-ORO
- 18 VOCs

Of the 28 chemicals detected, the maximum concentration exceeded the groundwater screening levels for nine chemicals (2 metals, 1 SVOC, and 6 VOCs). The SVOC (bis(2-ethylhexyl)phthalate) is not a chemical of concern and was detected in only one well, MW9S. It was also detected in one well, RC15, at about the same concentration during the previous sampling event. Note that heptane, does not have a screening level for comparison; however, it is not a chemical of concern at the site and was detected in only two wells (MW-A23 and MW-A28) and not during the previous sampling event. Table 4-2(d) presents the wells in which the chemicals exceeded the screening levels.

Table 2-1
Field Gauging Data
Boeing Tract 1, Hazelwood, Missouri

Staff Initials: KLP / BRK

Subarea	Monitoring Well	Dia. (in.)	Well Depth (ft bgs)	Date	Time	PID (ppm)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	Comments (needed repairs, well bottom condition, etc)
Area 1: Runway Protection Zone (1 well)										
South of Bldg. 45	MW-A15	2	15	4/13/2010	1017	0	NA	3.69	11.44	Manway too small for Snap Sampler, deployed in MW-A28 instead. Soft
	MW-A22	2	15	4/13/2010	1012	5.6	NA	4.13	12.82	Hard
	MW-A23	2	15	4/13/2010	1004	150	NA	4.78	12.68	Hard
	MW-A25	2	15	4/13/2010	945	2.8	NA	3.95	12.76	Hard
	MW-A26	2	15	4/13/2010	950	0.3	NA	5.27	13.78	Hard
	MW-A27	2	15	4/13/2010	957	4.1	3.62	3.625	13.76	Hard
	MW-A28	2	15	4/13/2010	1023	23.1	NA	3.94	14.22	Deployed snap sampler setup planned for MW A15. Hard
	MW-A29	4	15	4/12/2010	1437	0	NA	3.91	14.5	OK for Snap Samplers, but need 4-inch dia dock. Hard
Hush House	MW-A1	2	15	4/13/2010	1222	105	Sheen	4.88	13.22	Hard
	MW-A3	2	15	4/13/2010	1212	10	4.05	4.06	14.77	Well cap sits too high to allow manway cover to lie flat. Hard
Area 2: Demolished Area (2 wells)										
2A	MW-A8	2	15	4/13/2010	1047					Could not locate.
	MW-A6	2	13	4/13/2010	1210	0	Sheen	4.83	12.9	Under front of luggage trailer. Soft
2B	B48N1	0.5	12.5	4/13/2010	1434	0	NA	6.4	11.79	Hard
	MW-5I	2	45	4/13/2010	1610	372	6.84	6.84	42.7	Broken bolt receptacle. Soft
	MW-6S	2	15	4/13/2010	1603	0.2	NA	4.19	14.99	Broken bolt receptacle. Hard
	MW-8S	2	16	4/13/2010	1629	1	NA	6.96	16.03	Hard
	MW-8I	2	40	4/13/2010	1625	0	NA	7.8	40.49	Missing 1 bolt. Soft
	MW-9S	2	16	4/13/2010	1443	22	4.04	4.05	16.36	Hard
	MW-10S	2	16	4/13/2010	1417	14	6.1	6.11	14.7	Hard
	MW-11S	2	16.5	4/12/2010	1533	0	NA	5.79	16.37	Hard

Table 2-1
Field Gauging Data
Boeing Tract 1, Hazelwood, Missouri

Staff Initials: KLP / BRK

Subarea	Monitoring Well	Dia. (in.)	Well Depth (ft bgs)	Date	Time	PID (ppm)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	Comments (needed repairs, well bottom condition, etc)
Area 6: GKN Facility (10 wells)										
6A	MW1	2	20	4/13/2010	853	0.8	NA	7.8	19.75	1 bolt & receptacle missing, other bolt broken in receptacle. Hard
6B	B27W3D	0.5	26	4/13/2010	744	0.2	NA	3.23	23.77	Manway too small for Snap Sampler. No manway bolts. TOC cut at steep angle. Hard
	B28MW3	2	12	4/13/2010	752	6.2	NA	4.39	11.56	No manway bolts. Hard
	B28MW4	2	15.6	4/13/2010	758	102	NA	5.29	20.3	Hard
	MW3	2	19.7	4/12/2010	1300	0	NA	5.18	19.23	Reduced Snap Sampler by one 125ml bottle since don't need Cr+6. Deployed 2 Snap Sampler strings in this well. No manway bolts or receptacles. Silty
	MW7	2	14.4	4/13/2010	735	0	NA	3.13	11.67	Hard
	MW9S	2	19	4/13/2010	810	1.8	NA	6.54	17.82	1 bolt missing. Hard
	MW9D	2	72.5	4/13/2010	805	NA	NA			Artesian NA
	RC8D	0.5	24	4/13/2010	820	2.2	NA	4.9	24.57	No manway bolts. Well top does not fit on TOC. Hard
	RC15	0.5	13	4/13/2010	835					Could not open manway cover.
6C	B25MW1	2	15.7	4/13/2010	1705	0	NA	9.22	15.17	Hard
	MW5CS	2	18.1	4/13/2010	1647	0	NA	8.99	20.02	N38 45.628, W-90 21.819 Hard
	MW5DS	2	17.5	4/13/2010	1657	0.2	NA	7.36	17.13	N38 45.608, W-90 21.836 No manway bolts. Hard
	MW8AS	2	16.5	4/12/2010	1005	0	NA	10.55	16.27	Reduced Snap Sampler by one 125ml bottle, due to approval onsite by MDNR to drop dissolved metals. Hard

Table 2-2
Low-Flow Field Sampling Data
Boeing Tract 1, Hazelwood, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft bgs)	Measured Depth to GW (ft btoc)	GPS Location	Dedicated Tubing Length (ft)	Pump Intake Target Depth (ft bgs)	Pump Intake Actual Depth (ft bgs)	Sampled After	Date / Time Sampled	Personnel Sampled	Can Accept Snap Samplers? (yes/no)	Comments
Hush House	MW-A3	2	5-15	15	3.61	38/45/22N -90/22/15W	16	10	NA	did not sample	5/3-4/10	MB/BRK	no, manway dia too small	began purging on 5/3/10, but had to quit due to escort schedule, sheen present on 5/4/10, did not sample, well casing too high for well cap and manway cover - need to change well cap or modify to allow manway to fit flush over cap
Area 2: Demolished Area (11 wells)														
2A	MW-A8	2	2.5-12.5	12.5	5.53	38/45/29N 90/22/23W	13	7.5	9	1 hour	4/30/2010 1218	EMH/KLP	yes, but tight fit	found well since gauging on 4/13/10
	MW-A6	2	2.5-12.5	12.5	4.59	38/45/29N -90/22/23W	13	7.5	8.5	1 hour	4/30/2010 1000	EMH/KLP	yes	found well under front of luggage cart, needs cap that will seal TOC
2B	MW-5I	2	32.0-42.0	42	6.89	38/45.51N -90/22.30W	42	37	37	1 hour	4/29/2010 1910	EMH/KLP	yes	
	MW-6S	2	5.0-15.0	15	3.95	38/45.51N -90/22.30W	15	10	10	1 hour	4/29/2010 1715	EMH/KLP	yes	
	MW-8S	2	8.0-16.0	16	6.46	38/45/30N -90/22/20W	17	12	11	1 hour	4/29/2010 1950	MB/BRK	yes	
	MW-8I	2	32.0-40.0	40	7.79	38/45/30N -90/22/20W	40	36	36	1 hour	4/29/2010 1445	EMH/KLP	yes	
	MW-11S	2	6.5-16.5	16.5	5.25	38/45.52N -90/22.26W	17.5	11.5	11.5	1 hour	4/29/2010 1705	MB/BRK	converted	
	MW-11I	2	32.0-40.0	40	7.62	38/45.516N -90/22.266W	41	36	36	1 hour	4/28/2010 2000	BRK/EMH	converted	

Table 3-1
Groundwater Gauging Data April 12-13, 2010
Boeing Tract 1, St. Louis, Missouri

Well ID	Area / Sub-Area	Screened Interval (ft bgs)	Date	TOC Elevation (ft msl)	Depth to Water (ft btoc)	Depth to Free Product (ft btoc)	Free Product Thickness (ft)	Ground water Elevation (ft msl)	Comments
Backfill Wells (screened intervals from 0 to 10 ft bgs)									
SWMW17-OB-I	2B	0-10	4/12/2010	--	4.91	NA		NA	Hard
Shallow Zone Wells (screened intervals from 2 to 26 ft bgs)									
MW-A1	1	5-15	4/13/2010	537.04	4.88	Sheen	Sheen	532.16	Hard
MW-A3	1	5-15	4/13/2010	537.14	4.06	4.05	0.010	533.08	Well cap sits too high to allow manway cover to lie flat. Hard
MW-A15	1	4.5-14.5	4/13/2010	539.36	3.69	NA		535.67	Soft
MW-A22	1	4.5-14.5	4/13/2010	539.64	4.13	NA		535.51	Hard
MW-A23	1	2.7-12.7	4/13/2010	540.17	4.78	NA		535.39	Hard
MW-A25	1	3-13	4/13/2010	539.70	3.95	NA		535.75	Hard
MW-A26	1	4-14	4/13/2010	539.49	5.27	NA		534.22	Hard
MW-A27	1	3.7-13.7	4/13/2010	539.89	3.63	3.62	0.005	536.27	Hard
MW-A28	1	4.5-14.5	4/13/2010	539.09	3.94	NA		535.15	Hard
MW-A29	1	4.5-14.5	4/12/2010	539.56	3.91	NA		535.65	OK for Snap Samplers, but need 4-inch dia dock. Hard
MW-A6	2A	2.5-12.5	4/13/2010	--	4.83	Sheen	Sheen	NA	Under front of luggage trailer. Soft
MW-A8*	2A	2.5-12.5	4/30/2010	--	5.53			NA	Could not located on 4/13/10; therefore, used GW depth prior to sampling on 4/30/10.
B48N1	2B	2.0-12.5	4/13/2010	539.92	6.40	NA		533.52	Hard
MW-6S	2B	5.0-15.0	4/13/2010	547.84	4.19	NA		543.65	Broken bolt receptacle. Hard
MW-8S	2B	8.0-16.0	4/13/2010	547.85	6.96	NA		540.89	Hard
MW-9S	2B	6.0-16.0	4/13/2010	547.11	4.05	4.04	0.010	543.06	Hard
MW-10S	2B	5.0-15.0	4/13/2010	547.77	6.11	6.10	0.010	541.66	Hard
MW-11S	2B	6.5-16.5	4/12/2010	547.21	5.79	NA		541.42	Hard
TP-3	2B	6.0-12.5	4/13/2010	548.52	5.04	NA		543.48	Hard
TP-4	2B	9.0-14.6	4/13/2010	547.07	3.90	NA		543.17	Missing manway bolts. Hard
TP-6	2B	6.0-16.0	4/13/2010	548.70	4.85	Sheen	Sheen	543.85	Hard
MW-A12	2C	4.5-14.5	4/13/2010	538.92	4.42	NA		534.50	Soft
MW-A13	2C	4.5-14.5	4/13/2010	538.79	5.18	NA		533.61	Lost PID filter in well. Silty
B41MW-18	3A	2-12	4/13/2010	541.62	4.43	NA		537.19	Hard
B42N6	3A	5-15	4/13/2010	--	2.28	NA		NA	Missing bolt, TOC cut crooked. Hard
MW-A4	3C	2-12	4/13/2010	534.40	9.40	9.40	Sheen	525.00	Well cap broken. Hard
B41MW-5	3D	2-12	4/13/2010	534.55	3.23	NA		531.32	No manway bolts. Hard
B2E3	3E	5-15	4/13/2010	--	6.96	NA		NA	Hard
B2E5	3E	3-13	4/13/2010	--	6.74	NA		NA	Hard
B4MW-9	3H	10-19.8	4/12/2010	531.66	9.06	NA		522.60	Cannot deploy Snap Sampler, TOC too close to manway, manway damaged, missing cover. Soft
B4MW-10	3H	2-12	4/12/2010	527.52	9.07	NA		518.45	Manway too small for Snap Sampler. Hard
MW1	6A	10-20	4/13/2010	558.73	7.80	NA		550.93	1 bolt & receptacle missing, other bolt broken in receptacle. Hard
B27W3D	6B	21-26	4/13/2010	535.86	3.23	NA		532.63	Manway too small for Snap Sampler. No manway bolts. TOC cut at steep angle. Hard
B28MW3	6B	2-12	4/13/2010	538.38	4.39	NA		533.99	No manway bolts. Hard
B28MW4	6B	5.5-20.5	4/13/2010	538.17	5.29	NA		532.88	Hard
MW3	6B	10-19.7	4/12/2010	535.89	5.18	NA		530.71	No manway bolts or receptacles. Silty
MW7	6B	7-11.9	4/13/2010	538.41	3.13	NA		535.28	Hard
MW9S	6B	8.0-18.0	4/13/2010	536.17	6.54	NA		529.63	1 bolt missing. Hard
RC15	6B	3-13	4/13/2010	--				NA	Could not open manway cover.
RC8D	6B	19-24	4/13/2010	536.42	4.90	NA		531.52	No manway bolts. Well top does not fit on TOC. Hard
B25MW1	6C	10.7-15.7	4/13/2010	537.42	9.22	NA		528.20	Hard
MW5CS	6C	8-17.64	4/13/2010	529.15	8.99	NA		520.16	Hard
MW5DS	6C	7-17.08	4/13/2010	530.92	7.36	NA		523.56	No manway bolts. Hard
MW8AS	6C	6-16.5	4/12/2010	533.86	10.55	NA		523.31	Hard
MW6	6D	8.0-23.0	4/12/2010	519.47	8.19	NA		511.28	Hard
MW10S	8A	8.0-18.0	4/12/2010	536.81	4.20	NA		532.61	Soft
B220N4	8B	3-13	4/12/2010	--	3.85	NA		NA	Hard

Table 4-1
Groundwater Analytical Methods
Boeing Tract 1, Hazelwood, Missouri

Location/ Sub-area	Monitoring Well	No. of Times Sampled	Analytical Methods*																			Comments
			VOC	SVOC	PCB	TPH-GRO	TPH-DRO/ ORO	As		Ba		Cd		Cr		Mn		Hg		Cr+6		
								Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
Area 1: Runway Protection Zone (9 wells)																						
South of Bldg. 45	MW-A22	4	X			X	X															
	MW-A23	4	X			X	X															
	MW-A25	2	X			X	X															
	MW-A26	2	X			X	X															
	MW-A27	4	X			X	X															Also Dup #3.
	MW-A28	1	X			X	X															
	MW-A29	2	X			X	X															
Hush House	MW-A1	4	X			X	X	X	X													Sheen present on 5/4/10, did not sample.
	MW-A3	2	X			X	X	X														Sheen present on 5/4/10, did not sample.
Area 2: Demolished Area (8 wells)																						
2A	MW-A8	4						X				X										
	MW-A6	2						X	X			X	X									
2B	MW-6S	11	X			X	X	X	X			X	X									
	MW-8I	12	X			X	X	X	X			X	X									
	MW-11S	12	X			X	X	X	X			X	X									
	MW-5I	14	X			X	X	X				X										
	MW-8S	12	X			X	X	X				X										
	MW-11I	12	X			X	X	X				X										
	MW-11D	12	X			X	X	X				X										
	SWMU17-OB-1	2	X			X	X	X				X										Also Dup #2.
2C	MW-A12	2	X			X	X															
Area 3: Retained Area (6 wells)																						
3A	B41MW-18	3	X			X	X	X														
	B42N6	3	X			X	X															Well went dry before samples for TPH-DRO/ORO could be collected.
3C	MW-A4	3	X			X	X															
3D	B41MW-5	4	X			X	X	X		X		X				X						Due to error on COC, did not run VOC.
	B41S5D	2	X			X	X	X	X	X	X	X	X			X	X					
3H	B4MW-9	2				X	X	X	X							X	X	X	X			Did not deploy Snap Sampler® due to well damage. Due to addition on 4/26/10 table, Low-flow sample was also analyzed for total & dissolved Hg.
	B4MW-10	2				X	X	X								X						Due to error on COC, sample was also run for total Hg.
Area 6: GKN Facility (8 wells)																						
6A	MW1	11	X			X	X	X		X		X		X								
6B	B28MW3	10	X			X	X	X		X		X		X		X		X				
	MW7	13	X			X	X	X		X		X		X		X		X				
	B27W3D	7	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			Well went dry before any metals samples could be collected.
	B28MW4	4	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	MW3	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	MW9S	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
6C	B25MW1	10	X			X	X	X		X		X		X				X		X		Sample did not meet hold time for Cr+6.
	MW5CS	13	X			X	X	X		X		X		X				X		X		Sample did not meet hold time for Cr+6.
	MW5DS	13	X			X	X	X		X		X		X				X		X		
	MW8AS	13	X			X	X	X	X	X	X	X	X	X	X			X	X	X	X	Did not run dissolved metals on Snap Sampler® per MDNR approval in field to reduce # of sample bottles. Due to addition on 4/26/10 table, Snap Sampler was also run for total Mn and Low-flow sample was also run for total & dissolved Mn. Due to error on COC, Snap Sampler® was not run for total Cr+6 or TPH-GRO, and Low-Flow sample was not run for TPH-GRO.

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-51	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Metals (6010)													
Chromium, Hexavalent													
Arsenic										35.5	16 J	110	< 25
Barium													
Cadmium										< 2	< 2	< 2	0.6 J
Chromium													
Manganese													
Mercury (7470)													
Arsenic, Dissolved											12 J		< 25
Barium, Dissolved													
Cadmium, Dissolved											< 2		< 2
Chromium, Dissolved													
Manganese, Dissolved													
Mercury, Dissolved													
PCBs (8082)													
Aroclor 1254													
SVOCs (8270)													
1,2,4-Trichlorobenzene													
1,2-Dichlorobenzene													
1,3-Dichlorobenzene													
1,4-Dichlorobenzene													
2,4,5-Trichlorophenol													
2,4,6-Trichlorophenol													
2,4-Dichlorophenol													
2,4-Dimethylphenol													
2,4-Dinitrophenol													
2,4-Dinitrotoluene													
2,6-Dinitrotoluene													
2-Chloronaphthalene													
2-Chlorophenol													
2-Methoxy-4-methylphenol													
2-Methylnaphthalene													
2-Nitroaniline													
2-Nitrophenol													
3,3'-Dichlorobenzidine													
3-Nitroaniline													
4,6-Dinitro-2-methylphenol													
4-Bromophenyl phenyl ether													
4-Chloro-3-methylphenol													
4-Chloroaniline													
4-Chlorophenyl phenyl ether													
4-Nitroaniline													
4-Nitrophenol													

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Acenaphthene													
Acenaphthylene													
Aniline													
Anthracene													
Azobenzene													
Benzidine													
Benzo(a)anthracene													
Benzo(a)pyrene													
Benzo(b)fluoranthene													
Benzo(g,h,i)perylene													
Benzo(k)fluoranthene													
Benzoic acid													
Benzyl alcohol													
Bis(2-chloroethoxy)methane													
Bis(2-chloroethyl)ether													
Bis(2-chloroisopropyl)ether													
Bis(2-ethylhexyl)phthalate													
Butyl benzyl phthalate													
Carbazole													
Chrysene													
Dibenzo(a,h)anthracene													
Dibenzofuran													
Diethyl phthalate													
Dimethyl phthalate													
Di-n-butyl phthalate													
Di-n-octyl phthalate													
Fluoranthene													
Fluorene													
Hexachlorobenzene													
Hexachlorobutadiene													
Hexachlorocyclopentadiene													
Hexachloroethane													
Indeno(1,2,3-cd)pyrene													
Isophorone													
m,p-Cresol													
Naphthalene													
Nitrobenzene													
N-Nitrosodimethylamine													
N-Nitroso-di-n-propylamine													
N-Nitrosodiphenylamine													
o-Cresol													
Pentachlorophenol													
Phenanthrene													
Phenol													
Pyrene													
Pyridine													
Quinoline													
Petroleum													
TPH - GRO (C6 - C10) (8260)	< 500	**1600**	< 500	**360** J	< 500	**210** J	**3200**	**3510**	< 500			< 1000000	< 500
TPH-DRO (C10 - C21)	**200** J	**868**	< 300	**384**	**240** J	**270** J	**1820**	**1530**	< 300			< 300	**280** J
TPH-ORO (C21 - C35)	< 300	**220** J	< 300	< 300	< 300	< 300	**500** J	**270** J	< 300			< 300	< 300

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
VOCs (8260)													
1,1,1,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,2-Trichloro-1,2,2-trifluoroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloro-2-propanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
1,1-Dichloroethane	< 5	< 5	< 5	**1.2** J	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,4-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,4-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dibromo-3-chloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dibromoethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichloroethene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**9600** J	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3,5-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichloropropene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,4-Dichloro-2-butene, Total	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
1,4-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1-Chlorobutane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2-Butanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
2-Chloroethyl vinyl ether	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
2-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2-Hexanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
2-Nitropropane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
4-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
4-Methyl-2-pentanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
Acetone	< 25	**7.3** J	< 25	< 25	< 25	< 25	**13** J	**18** J	< 25			< 50000	< 25
Acetonitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
Acrolein	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			< 200000	< 100
Acrylonitrile	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Allyl chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Benzene	< 2	< 2	< 2	**1.6** J	< 2	< 2	< 2	**1.6** J	< 2			< 4000	< 2
Bromobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromomethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Butyl acetate	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
Carbon disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Chloroform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chloromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Chloroprene	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
cis-1,2-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**9600** J	< 5
cis-1,3-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
cis-1,4-Dichloro-2-butene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Cyclohexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Dibromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Dichlorodifluoromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Diisopropyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Ethyl acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Ethyl ether	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethyl methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethyl-tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Heptane	< 20	**48.7**	< 20	< 20	< 20	< 20	**83.4**	< 20	< 20			< 40000	< 20
Hexachlorobutadiene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Hexachloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Iodomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Isopropylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**11.3**	< 5			< 10000	< 5
m,p-Xylenes	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Methacrylonitrile													
Methyl acetate													
Methyl Methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Methyl tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Methylacrylate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Methylene chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Naphthalene	< 10	< 10	< 10	< 10	< 10	< 10	**2** J	**4.8** J	< 10			< 20000	< 10
n-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**4.9** J	< 5			< 10000	< 5
n-Hexane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
Nitrobenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
n-Propylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**7.16**	< 5			< 10000	< 5
o-Xylene													
Pentachloroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
p-Isopropyltoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Propionitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
sec-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**3.1** J	< 5			< 10000	< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
tert-Amyl methyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
tert-Butyl alcohol	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
tert-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	**1.3** J	**1.6** J	< 5			< 10000	< 5

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Tetrachloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Tetrahydrofuran	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,2-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,3-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,4-Dichloro-2-butene	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Trichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**223000**	< 5
Trichlorofluoromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Vinyl acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Vinyl chloride	< 2	< 2	< 2	**1.8** J	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Xylenes, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**1.5** J	< 5			< 10000	< 5

Lab Qualifiers:

Values in bold font are detected values except the values with "J" qualifier

J: analyte detected below reporting limit and estimated value shown

S: spike recovery outside accepted recovery limits

Table 4-2(a)
Detected Concentrations in Ground Water (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010	4/29/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A8	MW-A6	MW-5I	MW-6S	MW-8S	MW8I	MW-11S-SS
Area ID	South of Bldg. 45							2A		2B				
Metals (6010)														
Arsenic								35.5	16 J	110			113	
Barium														
Cadmium											0.6 J			0.5 J
Chromium														
Manganese														
Mercury (7470)														
Arsenic, Dissolved									12 J				126	
Barium, Dissolved														
Cadmium, Dissolved													0.4 J	0.6 J
Chromium, Dissolved														
Manganese, Dissolved														
Mercury, Dissolved														
SVOCs (8270)														
Bis(2-ethylhexyl)phthalate														
TPH (8270)														
TPH - GRO (C6 - C10) (8260)		1,600	360 J		210 J	3,200	3,510							
TPH-DRO (C10 - C21)	200 J	868	384	240 J	270 J	1,820	1,530				280 J	200 J		
TPH-ORO (C21 - C35)		220 J				500 J	270 J							
VOCs (8260)														
1,1-Dichloroethane			1.2 J											
1,2-Dichloroethene, Total										9,600 J				
Acetone		7.3 J				13 J	18 J							
Benzene			1.6 J				1.6 J							
cis-1,2-Dichloroethene										9,600 J				
Heptane		48.7				83.4								
Isopropylbenzene							11.3							
Naphthalene						2 J	4.8 J							
n-Butylbenzene							4.9 J							
n-Propylbenzene							7.16							
sec-Butylbenzene							3.1 J							
tert-Butylbenzene						1.3 J	1.6 J							
Tetrachloroethene												2 J		
trans-1,2-Dichloroethene														
Trichloroethene										223,000				4.5 J
Trichlorofluoromethane												1 J		
Vinyl chloride			1.8 J											
Xylenes, Total							1.5 J							

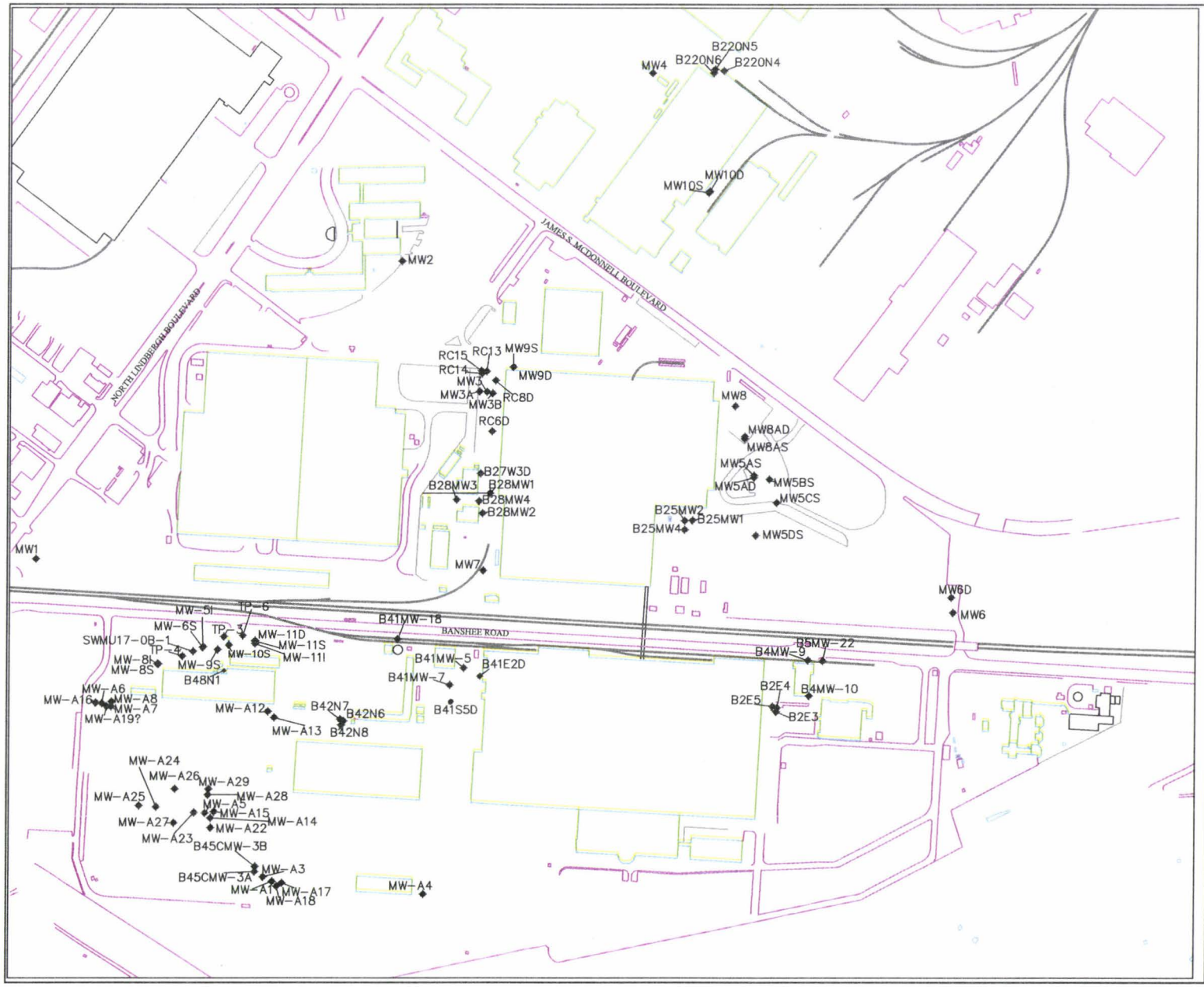
Lab Qualifiers:

J: analyte detected below reporting limit

Table 4-2(d)
Wells with Detected Concentrations Exceeding Screening Levels (April - May 2010)
Boeing Tract 1, St. Louis, Missouri

Analyte	South of Bldg. 45	2A	2B	3D	3H	6B	6C	8A
Metals								
Arsenic		MW-A8 and MW-A6	MW-5I and MW8I			B28MW3, B28MW4, MW3, and MW9S		MW10S
Manganese				B41MW-5 and B41S5D	B4MW-9	B28MW3, MW3, and MW9S	MW-8AS and MW8AD	MW10S and MW10D
Arsenic, Dissolved		MW-A6	MW8I			B28MW4, MW3, and MW9S		
Manganese, Dissolved					B4MW-9	B28MW3, MW3, and MW9S		
SVOCs								
Bis(2-ethylhexyl)phthalate						MW9S		
VOCs								
1,1-Dichloroethane				B41S5D				
cis-1,2-Dichloroethene	MW-A28		MW-5I			MW3		
Naphthalene	MW-A28							
trans-1,2-Dichloroethene						MW3		
Trichloroethene			MW-5I					
Vinyl chloride			SWMU17-OB-1			MW3		

Notes:
Hush House: 2 wells had sheen hence not sampled
Areas 3A, 6A, and 8B have no exceedances in any wells.



N

LEGEND

- Groundwater Monitoring Well
- Railroad
- Roadway
- Building Outline

0 400
APPROX. SCALE (FEET)

RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX

Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JUNE 2010 REPORT APPENDIX B

In-Situ Inc.

Troll 9000
4/30/2010

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Mihika Baruah	Pump Model/Type	QED
Company Name	RAM Group of Gannett Fleming	Tubing Type	LDPE W/Teflon
Project Name	BOEING	Tubing Diameter	0.17 [in]
Site Name	49992	Tubing Length	13 [ft]
		Pump placement from TOC	8.5 [ft]

Well Information:		**Pumping Information:**	
Well ID	MW-~~A16~~ A6	Final pumping rate	130 [mL/min]
Well diameter	2 [in]	Flowcell volume	658.02 [mL]
Well total depth	12.5 [ft]	Calculated Sample Rate	304 [sec]
Depth to top of screen	2.5 [ft]	Sample rate	304 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	4.59 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-3 %	+/-10 %	+/-0.3	+/-10
Last 5 Readings	9:35:42	59.08	6.81	533.29	6.60	0.19	-83.00
	9:40:57	59.21	6.81	542.60	5.10	0.15	-86.00
	9:46:13	59.37	6.82	552.60	6.70	0.12	-88.00
	9:51:28	59.42	6.83	561.32	3.80	0.09	-90.00
	9:56:43	59.62	6.83	569.17	3.40	0.07	-92.00
Variance in last 3 readings	9:46:13	0.16	0.01	10.00	1.60	-0.03	-2.00
	9:51:28	0.05	0.01	8.72	-2.90	-0.03	-2.00
	9:56:43	0.20	0.00	7.85	-0.40	-0.02	-2.00

Notes:
Sample Time:1000
Purged water volume:2.75 gal
Water quality parameters did not stabilize

Table A
Low Flow Purging Data at MW-~~A16~~ A6
Boeing Tract 1, Hazelwood, Missouri

Date	Time	ET	Temperature	Pressure	Barometric	Turbidity	Battery	ORP	pH	Rugged DO	Rugged DO Sat	Conductivity
		Sec	Fahrenheit	Feet H2O	Inches Hg	NTU	Volts	millivolts	pH	mg/L	%Saturation	microSiemens/cm
4/30/2010	8:53:41 AM	0	59.04	0	29.055	68.7	3.264	-78	6.73	-0.04	-0.4372	544.08
4/30/2010	8:58:57 AM	316	58.7	-2.869	29.056	65.6	3.264	-71	6.74	0.05	0.5317	471.83
4/30/2010	9:04:11 AM	630	58.56	-2.874	29.054	43.7	3.264	-68	6.75	0.24	2.4874	450.86
4/30/2010	9:09:26 AM	945	58.44	-0.308	29.05	26	3.235	-69	6.76	0.36	3.6534	459.27
4/30/2010	9:14:41 AM	1260	58.57	-0.822	29.049	18.4	3.264	-71	6.77	0.37	3.745	478.16
4/30/2010	9:19:58 AM	1577	58.75	-0.556	29.048	13.2	3.235	-74	6.78	0.33	3.3591	494.84
4/30/2010	9:25:12 AM	1891	58.92	0.216	29.047	9.3	3.294	-78	6.79	0.28	2.8514	511.12
4/30/2010	9:30:27 AM	2206	59.05	-2.834	29.041	9.1	3.294	-81	6.8	0.23	2.3319	522.29
4/30/2010	9:35:42 AM	2521	59.08	-0.944	29.037	6.6	3.235	-83	6.81	0.19	1.9114	533.29
4/30/2010	9:40:57 AM	2836	59.21	-0.476	29.037	5.1	3.294	-86	6.81	0.15	1.4922	542.6
4/30/2010	9:46:13 AM	3152	59.37	-0.643	29.035	6.7	3.264	-88	6.82	0.12	1.2017	552.6
4/30/2010	9:51:28 AM	3467	59.42	-0.021	29.034	3.8	3.264	-90	6.83	0.09	0.9085	561.32
4/30/2010	9:56:43 AM	3782	59.62	0.004	29.03	3.4	3.264	-92	6.83	0.07	0.7636	569.17

Monitor Well Low Flow Data

SITE NAME: Boeing
DATE: 4/30/10
WELL NO.: MW-~~A16~~ A6
PERSONNEL INITIALS: EMH/KLP

WELL DEPTH: 12.5ft
PRE-PURGE GW DEPTH w/o pump: 4.59
PRE-PURGE GW DEPTH w/ pump: 4.48
SCREENED INTERVAL: 2.5-12.5 ft
PUMP INTAKE DEPTH: 8.5 ft

PUMP TYPE: QED Bladder 2"
TUBING TYPE/SIZE: LDPE w/Teflon bonded/0.17"
PURGE START TIME: 0843
SAMPLE START TIME: 10:00
SAMPLE END TIME:

TIME	PH (units) (+/- 0.1 units)	Conductivity (uS/cm) (+/- 3%)	Redox (ORP) (mV) (+/- 10 units)	Dissolved Oxygen (mg/L) (+/- 10%)	Turbidity (NTU) (+/- 10%)	Water Temperature (°~~Celsius~~ F) (+/- 3%)	Purge Rate (ml/min)	Water Depth (ft btoc)
0853	6.73	544.1	-78	-0.04	68.70	59.04	130	5.15
0859	6.74	471.8	-71	+0.05	65.63	58.70	140	5.27
0904.	6.75	450.9	-68	0.24	43.71	58.56	135	5.45
0909	6.76	459.3	-69	0.36	26.01	58.44	135	5.58
0915	6.77	478.2	-71	0.37	18.42	58.57	120	5.68
0920	6.78	494.8	-74	0.33	13.18	58.75	120	5.77
0926	6.79	511.1	-78	0.28	9.30	58.92	120	5.89
0930	6.80	522.3	-81	0.23	9.140	59.05	120	5.99
0936	6.81	533.3	-83	0.19	6.629	59.08	120	6.09
0941	6.81	542.6	-86	0.15	5.076	59.21	120	6.16
0946	6.82	552.6	-88	0.12	6.659	59.37	120	6.24
0951	6.83	561.3	-90	0.09	3.751	59.41	120	6.32
0956	6.83	569.2	-92	0.07	3.413	59.62	115	6.38

Observations
(color, condition, etc.):
cut 13 ft of dedicated tubing
can be converted to snap sampler
PID = 0.1
Purge vol = 2.75 gallons

[illegible] - Boeing - GW Gauging
0700 Bhoom Kurpal > RAM
Kendall Pickett
Elmer Dwyer - Boeing
weather: Clear
Calm
mid 80's predicted
Safety Meeting
Calibrated PID

0730 Setup on MW7 at GKN
0740 B27W3D
TOC cut at steep angle
~~no cap on casing~~
manway - no bolts
0750 B28MW3
manway - no bolts
0755 B28MW4
0805 MW9D - artesian
0807 MW9S
- one bolt missing
0820 RC8D
Bolts missing
Cap off
0823 ~~RC14~~ RC15 special tool - manway
* Need long pipe wrench
Could not open manway cover

[illegible]0 - MW1
- missing one bolt
(bolt broken off in receptacle)
- other receptacle missing
0910 - B41MW-5
- no bolts
0925 - B41 MW-18

0945 - MW-A-25

0950 - MW-A26

0955 - MW-A27
(*) 0.005ft FSH
1003 - MW-A23

1011 - MW-A22

1015 - MW-A15

1045 - MW-A8 & ~~A16~~ A6
MW-A8 depth was way too shallow at 9.58 for a 15' well that was measured at 12.6' 7/08
MW-A16 - poss. covered with trailers. Measured at 6" dia well in general area

11:40 - 12:00 Lunch
12:05 MW-~~A16~~ A6 found, + photo on iphone under * luggage cart
* sheen when put probe in cup of water
1220 MW-A12
1230 MW-A13
- lost PID filter in well
1245 - ~~B~~ B42N6
missing one bolt
TOC crooked cut
1258 - MW-A4
Cap is broken
1310 - MW-A3 Hush house
well cap too high - keeper
man way cover elevated
above ground
1320 - MW-A1

1415 MW-1DS
1430 B48N6
1440 MW-9S
1455 ~~B45N~~ B41S5D
1515 B2E3 & B2E5
1535 TP-6
1545 MW-11D
could not access well
cover
1555 TP-3
1600 MW-6S & 5I
↳ broken bolt receptor
1618 TP-4
↳ No bolts for manway
1623 MW-8I & 8S
↳ missing bolt

Location _____ Date _____

Project / Client _____

815 Setting up on MW-~~A16~~A6
PID = 0.1 ppm
* Cannot seal well cap
(needs to be replaced)
Wtr. depth = 4.59 ft

10:30 Setting up on MW-A8
PID = 1.1 ppm
Wtr depth = 5.53
Can accept snapsamplers
but tight fit.

12:45 - 1:00 Lunch
13:00 - 1:15 Fix Pump
~~13~~:15 Set up on MW-A25
3.25 wtr depth
PID = 0.8 ppm
14:45 accidently disconnected
pump after purging
re-connected and allowed
3 purge cycles before
sampling

Location _____ Date _____

Project / Client _____

1600 Left site

REPLACEMENT PAGES TO JUNE 2010 REPORT APPENDIX C

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Risk Assessment & Management of Gannett
WorkOrder: 10041217
Lab ID: 10041217-003
Report Date: 10-May-10

Client Project: Boeing/049992
Client Sample ID: MW-~~A16~~ A6
Collection Date: 4/30/2010 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)								
Arsenic	NELAP	0.0250	J	**0.012**	mg/L	1	5/4/2010 5:52:33 PM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	5/4/2010 5:52:33 PM	LAL
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250	J	**0.016**	mg/L	1	5/4/2010 9:58:43 PM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	5/4/2010 9:58:43 PM	LAL

Sample Narrative

CHAIN OF CUSTODY

pg. 1 of ___ Work Order # 1004121 7

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing c/o RAM Group
Address: 5433 Westheimer Rd., Ste. 725
City / State / Zip: Houston, TX 77056
Contact: Kendall Pickett Phone: 713-784-5151
E-Mail: kpickett@ramgp.com Fax: 713-784-6105

Samples on: ☑ Ice ☐ Blue Ice ☐ No Ice 1.6 °C
Preserved in: ☐ Lab ☑ Field DB 4/30/10
FOR LAB USE ONLY
Lab Notes: ØHeadspace
Comments: Trip Blank info per container DB 4/30/10

Teklab, Inc.
Courier Pick Up

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☑ No
- Are these samples known to be hazardous? ☐ Yes ☑ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☑ Yes ☐ No

Project Name / Number: Boeing/049992
Sample Collector's Name: Kendall Pickett
Results Requested: ☑ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions: Boeing

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other TSP	MATRIX: Water	Drinking Water	Soil	Sludge	Sp. Waste	INDICATE ANALYSIS REQUESTED: VOC/TPH-GRO 8260	TPH-DRO/ORO 8270	As, Cd Total	As, Cd Dissolved
001	MW-6S	4/29/10 1715	1	1						2	4					2	1	1	1
002	MW-5I	4/29/10 1910	1	1						2	4					2	1	1	
003	MW-~~A16~~A6	4/30/10 1000		2							2							1	1
004	MW-A8	4/30/10 1218		1							1							1	
005	MW-A25	4/30/10 1453	1							2	3					2	1		
006	Trip Blank	4/27/10 1130																	

Relinquished By	Date / Time	Received By	Date / Time
[signature]	4/30/10 16:20	[signature]	4/30/10 1620
[signature]	4/30/10 1655	[signature]	4/30/10 1655

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

After Page 58 of 58

RCAP RECEIVED
DEC 13 2010

REPLACEMENT PAGES TO JANUARY 2009 REPORT TEXT, TABLES, AND FIGURES

wastewater treatment facility. Disposables (gloves, tubing, paper towels, etc.) were placed in plastic garbage bags and later disposed in an onsite dumpster.

A copy of the well development form used is provided in Appendix C.

2.6 LOW-FLOW PURGING AND SAMPLING

Low-flow purging and sampling was performed on November 17-21, 2008 by Dave Straccia, Jack Lupo, and Kendall Pickett of GF. Joe Haake and Elmer Dwyer participated in this task. An effort was made to gauge and sample wells from the presumed least contaminated to the most contaminated in each area and from area to area, depending on the timing of access and based on previous analytical results. A total of 57 wells were purged and sampled. The well locations are shown on Figure 2-1.

During the first three days, all wells were gently gauged by one crew for groundwater depth and free product thickness, if present. These measurements were made in a manner to minimize disturbance of the water column using a slope indicator for wells less than 1-inch diameter or interface probe for wells 1-inch diameter or greater and depending on the potential for sheen or PSH based on the well development results.

All wells were purged and sampled using low-flow methods in a manner to minimize drawdown and maintain a stabilized flow in accordance with the USEPA Region I *Low Stress (low flow) Purging and Sampling Procedure for the collection of Ground Water Samples from Monitoring Wells*, Revision 2, dated July 30, 1996.

A Proactive Monsoon stainless steel pump was used to sample 2-inch and 4-inch diameter wells, unless an obstruction such as bent tubing prevented the pump from entering the well to the desired depth. A QED Bladder pump was used to purge and sample 1-inch and ¾-inch diameter wells if accessible to the desired depth. The bladder pump was also used for MW-A12 due to restricted access below a depth of 5 feet. A Masterflex E/S peristaltic pump was used to purge and sample 0.5-inch diameter wells. The peristaltic pump was also used in B41MW-5 due to kinked casing that would not allow use of the submersible pump.

The peristaltic pump was used to sample ground water in all wells with measureable free product or sheen to avoid potential cross-contamination associated with inadequately decontaminated submersible pumps. The ground water was sampled from the interval below the free product or sheen in the following wells:

- MW-A6 in Risk Area 2A
- MW-9S in Risk Area 2B
- MW-10S in Risk Area 2B
- TP-3 in Risk Area 2B
- TP-4 in Risk Area 2B
- TP-6 in Risk Area 2B
- MW-A13 in Risk Area 2C

Table 3-1
Monitoring Wells to be Sampled
Boeing Tract 1, St. Louis, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft)	Measured Well Depth (ft btoc)	Date Well Depth Measured	Depth to GW (ft btoc)**	Date GW Depth Measured**	Installation Date	Free Product Observed Since 1992	GPS Location	Analytical Methods	Risk Exceedence in GW	Pump Intake Depth (ft bgs)	Comments
Area 2: Demolished Area (16 wells)															
2A	MW-A8	2	2.5-12.5	15	12.67	11/10/2008	4.35	11/10/2008	7/17/1989	no	38/45/29 N 90/22/23 W	arsenic & cadmium (6010), TPH(8015mod)*	TPH-GRO, TPH-DRO	7.5	Developed 11-10-08
2A	MW-A6	2	2.5-12.5	13	12.35	11/10/2008	4.1	11/10/2008	8/3/1989	no	38/45/29 N -90/22/23 W	arsenic & cadmium (6010), TPH(8015mod)*	TPH-GRO, TPH-DRO	7.5	MDNR requested, developed 11-10-08
2B	MW-5I	2	32.0-42.0	45	42.0	11/11/2008	6.39	11/11/2008	4/21/1998	no	38/45.51 N -90/22.30 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	37	Developed 11-11-08
2B	MW-6S	2	5.0-15.0	15	15.02	11/11/2008	4.35	11/11/2008	4/20/1998	no	38/45.51 N -90/22.30 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	10	Developed 11-11-08
2B	MW-11D	2	64.0-74.0	75.25	74.08	11/10/2008	24.6	11/10/2008	12/18/2000	no	38/45/31N -90/22/15W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	69	will sample if located, Developed 11-10-08
2B	MW-11I	2	32.0-40.0	40	39.97	11/10/2008	9.47	11/10/2008	12/13/2000	no	38/45/31N -90/22/15W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	36	will sample if located, Developed 11-10-08
2B	MW-11S	2	6.5-16.5	16.5	16.4	11/11/2008	5.0	11/11/2008	12/12/2000	no	38/45.52 N -90/22.26 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	11.5	Developed 11-11-08
2B	MW-8I	2	32.0-40.0	40	40.3	11/11/2008	8.45	11/11/2008	12/18/2000	no	38/45/30 N -90/22/20 W	TPH (8015mod)*, VOC (8260), arsenic & cadmium (6010)	Aliphatics (C12-16, C16-21, C21-35), Tetrachoroethene	36	Developed 11-11-08 (purged dry)

Table 3-1
Monitoring Wells to be Sampled
Boeing Tract 1, St. Louis, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft)	Measured Well Depth (ft btoc)	Date Well Depth Measured	Depth to GW (ft btoc)**	Date GW Depth Measured**	Installation Date	Free Product Observed Since 1992	GPS Location	Analytical Methods	Risk Exceedence in GW	Pump Intake Depth (ft bgs)	Comments
6B south	RC8D	0.5	19-24	24	24.7	11/3/2008	8.0	11/5/2008	9/18/2000		38/45/41N -90/22/04W	TPH (8015mod)*, VOC (8260), SVOC (8270), PCB (8082), arsenic, barium, cadmium, chromium, & manganese (6010), mercury (7470)	Aliphatics (C16-21), benzo(a)anthracene EPA - 1,1-DCE, TCE, VC, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, arsenic, see 6B footnote	21.5	will sample if located, developed 11-3-08 (purged dry)
6B south	RC15	0.5	3-13	13	12.7	11/3/2008	4.65	11/3/2008	7/5/2005		38/45/41N -90/22/03	TPH (8015mod)*, VOC (8260), SVOC (8270), PCB (8082), arsenic, barium, cadmium, chromium, & manganese (6010), mercury (7470)	Aliphatics (C16-21), benzo(a)anthracene EPA - 1,1-DCE, TCE, VC, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, arsenic, see 6B footnote	8	installed post interim action developed 11-3-08 (purged dry)
6C	B25MW1	2	10.7-15.7	15.7	15.18	11/11/2008	9.2	11/5/2008	8/1/1988		38/45/36W -90/21/54N	TPH (8015mod)*, VOC (8260), arsenic, barium, cadmium, & chromium (6010), mercury (7470), hexavalent chromium (7196A)	Aliphatics (C16-21, C21-35)	13.2	Replaced B25MW4, developed 11-5-08 (bailer), re-developed 11/11/08 (pump)

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008	11/18/2008	11/19/2008	11/20/2008
Sample	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1
Area ID	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	Hush House	Hush House	2A	2A	2B
Analyte												
Metals (6010)												
Chromium, Hexavalent	Not Analyzed							Not Analyzed				
Arsenic								89	23 J	28.7	41.6	< 25
Barium								Not Analyzed				
Cadmium	Not Analyzed									< 2	< 2	< 2
Chromium								Not Analyzed				
Copper												
Manganese												
Mercury (7470)												
PCBs (8082)												
Aroclor 1016	Not Analyzed											
Aroclor 1221												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
SVOCs (8270)												
1,2,4-Trichlorobenzene	Not Analyzed											
1,2-Dichlorobenzene												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene												
2,4,5-Trichlorophenol												
2,4,6-Trichlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol												
2,4-Dinitrophenol												
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
2-Chloronaphthalene												
2-Chlorophenol												
2-Methoxy-4-methylphenol												
2-Methylnaphthalene												
2-Nitroaniline												
2-Nitrophenol												
3,3'-Dichlorobenzidine												
3-Nitroaniline												
4,6-Dinitro-2-methylphenol												
4-Bromophenyl phenyl ether												
4-Chloro-3-methylphenol												
4-Chloroaniline												
4-Chlorophenyl phenyl ether												
4-Nitroaniline												
4-Nitrophenol												
Acenaphthene												
Acenaphthylene												
Aniline												

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/19/2008			11/19/2008			11/18/2008			11/19/2008			11/20/2008		
Sample	MW-A15			MW-A22			MW-A23			MW-A25			MW-A26			MW-A27			MW-A29			MW-A1			MW-A3			MW-A8			MW-A6			B48N1		
Area ID	S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			Hush House			Hush House			2A			2A			2B		
Analyte																																				
Anthracene	Not Analyzed																																			
Azobenzene																																				
Benzidine																																				
Benzo(a)anthracene																																				
Benzo(a)pyrene																																				
Benzo(b)fluoranthene																																				
Benzo(g,h,i)perylene																																				
Benzo(k)fluoranthene																																				
Benzoic acid																																				
Benzyl alcohol																																				
Bis(2-chloroethoxy)methane																																				
Bis(2-chloroethyl)ether																																				
Bis(2-chloroisopropyl)ether																																				
Bis(2-ethylhexyl)phthalate																																				
Butyl benzyl phthalate																																				
Carbazole																																				
Chrysene																																				
Dibenzo(a,h)anthracene																																				
Dibenzofuran																																				
Diethyl phthalate																																				
Dimethyl phthalate																																				
Di-n-butyl phthalate																																				
Di-n-octyl phthalate																																				
Fluoranthene																																				
Fluorene																																				
Hexachlorobenzene																																				
Hexachlorobutadiene																																				
Hexachlorocyclopentadiene																																				
Hexachloroethane																																				
Indeno(1,2,3-cd)pyrene																																				
Isophorone																																				
m,p-Cresol																																				
Naphthalene																																				
Nitrobenzene																																				
N-Nitrosodimethylamine																																				
N-Nitroso-di-n-propylamine																																				
N-Nitrosodiphenylamine																																				
o-Cresol																																				
Pentachlorophenol																																				
Phenanthrene																																				
Phenol																																				
Pyrene																																				
Pyridine																																				
Quinoline																																				
TPH (8270)																																				
TPH - GRO (C6 - C10) (8260)	<	500		<	500			2550		<	500		<	500		<	500		<	500			230	J	<	500			798		<	500			180	J
TPH-DRO (C10 - C21)		403			230	J		1040			220	J		684			220	J		210	J		2780			2790			200	J		230	J		230	J
TPH-ORO (C21 - C35)	<	300		<	300			290	J	<	300			270	J	<	300		<	300			556			493		<	300		<	300		<	300	

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/18/2008	11/19/2008	11/19/2008	11/18/2008	11/19/2008	11/20/2008
Sample	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1
Area ID	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	S. BLD 45	Hush House	Hush House	2A	2A	2B
Analyte												
VOCs (8260)												
1,1,1,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1,2-Trichloro-1,2,2-trifluoroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	1 J	< 5	< 5	< 5	< 5			< 5
1,1-Dichloro-2-propanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
1,1-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,1-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,3-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6.42	< 5			< 5
1,2,4-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2,4-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dibromo-3-chloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dibromoethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,2-Dichloroethene, Total	< 5	< 5	< 5	< 5	1.4 J	< 5	< 5	< 5	< 5			28.2
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3,5-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,3-Dichloropropene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1,4-Dichloro-2-butene, Total	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		< 10
1,4-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
1-Chlorobutane	< 5	< 5	49	< 5	1.8 J	< 5	< 5	< 5	< 5			< 5
2,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
2-Butanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
2-Chloroethyl vinyl ether	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20
2-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
2-Hexanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
2-Nitropropane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
4-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
4-Methyl-2-pentanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
Acetone	< 25	< 25	9.9 J	< 25	< 25	< 25	< 25	104	16 J			< 25
Acetonitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 50
Acrolein	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			< 100
Acrylonitrile	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Allyl chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Benzene	1.1 J	< 2	< 2	< 2	1.4 J	< 2	< 2	< 2	< 2			< 2
Bromobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 5
Bromomethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 10
Butyl acetate	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 25
Carbon disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	2 J	< 5			< 5

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/19/2008			11/19/2008			11/18/2008			11/19/2008			11/20/2008		
Sample	MW-A15			MW-A22			MW-A23			MW-A25			MW-A26			MW-A27			MW-A29			MW-A1			MW-A3			MW-A8			MW-A6			B48N1		
Area ID	S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			Hush House			Hush House			2A			2A			2B		
Analyte																																				
Carbon tetrachloride	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Chlorobenzene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Chloroethane	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Chloroform	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Chloromethane	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Chloroprene	<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20								<	20	
cis-1,2-Dichloroethene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5									28.2	
cis-1,3-Dichloropropene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
cis-1,4-Dichloro-2-butene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Cyclohexanone	<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50								<	50	
Dibromochloromethane	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Dibromomethane	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Dichlorodifluoromethane	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Diisopropyl ether	<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2								<	2	
Ethyl acetate	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Ethyl ether	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Ethyl methacrylate	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Ethylbenzene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Ethyl-tert-butyl ether	<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2								<	2	
Heptane	<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20								<	20	
Hexachlorobutadiene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Hexachloroethane	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10			Not Analyzed					<	10	
Iodomethane	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Isopropylbenzene		1.9	J	<	5			9.83		<	5		<	5		<	5		<	5			4.5	J		3.3	J							<	5	
m,p-Xylenes		1.3	J	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Methacrylonitrile	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Methyl Methacrylate	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Methyl tert-butyl ether	<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2								<	2	
Methylacrylate	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Methylene chloride	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Naphthalene	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
n-Butylbenzene	<	5		<	5			3.7	J	<	5		<	5		<	5		<	5			3	J		1.2	J							<	5	
n-Hexane	<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20								<	20	
Nitrobenzene	<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50								<	50	
n-Propylbenzene	<	5		<	5			7.11		<	5		<	5		<	5		<	5			4.9	J		3.7	J							<	5	
o-Xylene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Pentachloroethane	<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20								<	20	
p-Isopropyltoluene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Propionitrile	<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50		<	50								<	50	
sec-Butylbenzene	<	5		<	5			2.8	J	<	5		<	5		<	5		<	5			4.1	J		2.1	J							<	5	
Styrene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
tert-Amyl methyl ether	<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2								<	2	
tert-Butyl alcohol	<	25		<	25		<	25		<	25		<	25		<	25		<	25		<	25		<	25								<	25	
tert-Butylbenzene	<	5		<	5			1.2	J	<	5		<	5		<	5		<	5			1	J		1	J							<	5	

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/18/2008			11/19/2008			11/19/2008			11/18/2008			11/19/2008			11/20/2008		
Sample	MW-A15			MW-A22			MW-A23			MW-A25			MW-A26			MW-A27			MW-A29			MW-A1			MW-A3			MW-A8			MW-A6			B48N1		
Area ID	S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			S. BLD 45			Hush House			Hush House			2A			2A			2B		
Analyte																																				
Tetrachloroethene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5									4.1	J
Tetrahydrofuran	<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20		<	20								<	20	
Toluene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
trans-1,2-Dichloroethene	<	5		<	5		<	5		<	5			1.4	J	<	5		<	5		<	5		<	5								<	5	
trans-1,3-Dichloropropene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
trans-1,4-Dichloro-2-butene	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10			Not Analyzed					<	10	
Trichloroethene	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Trichlorofluoromethane	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	
Vinyl acetate	<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10		<	10								<	10	
Vinyl chloride	<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2		<	2								<	2	
Xylenes, Total		1.3	J	<	5		<	5		<	5		<	5		<	5		<	5		<	5		<	5								<	5	

Lab Qualifiers:

J: analyte detected below reporting limit

S: spike recovery outside accepted recovery limits

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Metals (6010)													
Chromium, Hexavalent	Not Analyzed										< 5 S	4 J	5
Arsenic	15 J	12 J	26.8	35.3	24 J	< 25	22 J	26.8	< 25	30.7	< 25	18 J	16 J
Barium		184	415	1140	431	163	714	1070	541	613	333	624	334
Cadmium		< 2	0.3 J	< 2	< 2	0.6 J	0.5 J	0.3 J	1.8 J	0.7 J	0.3 J	3.6	0.7 J
Chromium		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Copper	Not Analyzed												
Manganese	127		1630	1620	662	275	2390	3140 S	4600	7290	Not Analyzed		
Mercury (7470)	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.27	0.22
PCBs (8082)													
Aroclor 1016	Not Analyzed			< 2.08	< 1	< 1	< 1	< 1	Not Analyzed	< 1	Not Analyzed		
Aroclor 1221				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1232				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1242				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1248				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1254				< 2.08	< 1	< 1	< 1	< 1		< 1			
Aroclor 1260				< 2.08	< 1	< 1	< 1	< 1		< 1			
SVOCs (8270)													
1,2,4-Trichlorobenzene	Not Analyzed		< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		
1,2-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
1,3-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
1,4-Dichlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4,5-Trichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4,6-Trichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dichlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dimethylphenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,4-Dinitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
2,4-Dinitrotoluene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2,6-Dinitrotoluene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Chloronaphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Chlorophenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Methoxy-4-methylphenol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Methylnaphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
2-Nitroaniline			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
2-Nitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
3,3'-Dichlorobenzidine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
3-Nitroaniline			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
4,6-Dinitro-2-methylphenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Bromophenyl phenyl ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
4-Chloro-3-methylphenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Chloroaniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Chlorophenyl phenyl ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
4-Nitroaniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
4-Nitrophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Acenaphthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Acenaphthylene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Aniline			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Anthracene	Not Analyzed		< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Not Analyzed		
Azobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzidine			< 67	< 40	< 40	< 40	< 40	< 40	< 40	< 40			
Benzo(a)anthracene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(a)pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(b)fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(g,h,i)perylene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzo(k)fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Benzoic acid			< 83	< 50	< 50	< 50	< 50	< 50	< 50	< 50			
Benzyl alcohol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Bis(2-chloroethoxy)methane			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-chloroethyl)ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-chloroisopropyl)ether			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Bis(2-ethylhexyl)phthalate			< 10	< 10	< 6	< 6	< 6	< 6	< 6	18			
Butyl benzyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Carbazole			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Chrysene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dibenzo(a,h)anthracene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dibenzofuran			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Diethyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Dimethyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Di-n-butyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Di-n-octyl phthalate			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Fluoranthene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Fluorene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorobutadiene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Hexachlorocyclopentadiene			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Hexachloroethane			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Indeno(1,2,3-cd)pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Isophorone			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
m,p-Cresol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Naphthalene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Nitrobenzene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
N-Nitrosodimethylamine			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
N-Nitroso-di-n-propylamine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
N-Nitrosodiphenylamine			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
o-Cresol			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Pentachlorophenol			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Phenanthrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Phenol			< 8	< 10	< 5	< 5	< 5	< 5	< 5	< 5			
Pyrene			< 17	< 10	< 10	< 10	< 10	< 10	< 10	< 10			
Pyridine			< 33	< 20	< 20	< 20	< 20	< 20	< 20	< 20			
Quinoline			< 8	< 10	< 5	< 5	< 5	< 5	< 5	< 5			
TPH (8270)													
TPH - GRO (C6 - C10) (8260)	< 500	< 500	623	< 500	519	< 500	7130	< 500	< 500	< 1000	< 500	< 500	< 500
TPH-DRO (C10 - C21)	< 300	< 300	460 J	260 J	304	200 J	< 300	< 300	220 J	11200	< 300	230 J	200 J
TPH-ORO (C21 - C35)	< 300	< 300	< 500	< 300	< 300	< 300	< 300	< 300	< 300	9330	< 300	< 300	< 300

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
VOCs (8260)													
1,1,1,2-Tetrachloroethane	Not Analyzed	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,1-Trichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1,2-Trichloro-1,2,2-trifluoroethane		< 20	< 20	< 20	12600	< 20	21.6	< 20	< 20	< 40	< 20	< 20	< 20
1,1,2-Trichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,1-Dichloro-2-propanone		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
1,1-Dichloroethane		< 5	< 5	1.5 J	< 5	< 5	< 5	< 5	< 5	15.8	< 5	< 5	< 5
1,1-Dichloroethene		< 5	< 5	< 5	< 5	< 5	25.1	< 5	< 5	< 10	< 5	< 5	< 5
1,1-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,3-Trimethylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,4-Trichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2,4-Trimethylbenzene		< 5	< 5	< 5	3.6 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dibromo-3-chloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dibromoethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichloroethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,2-Dichloroethene, Total		< 5	584	< 5	239	< 5	16800	< 5	30.8	214	< 5	< 5	< 5
1,2-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3,5-Trimethylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,3-Dichloropropene, Total		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1,4-Dichloro-2-butene, Total		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
1,4-Dichlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
1-Chlorobutane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2,2-Dichloropropane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2-Butanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
2-Chloroethyl vinyl ether		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
2-Chlorotoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
2-Hexanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
2-Nitropropane		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
4-Chlorotoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
4-Methyl-2-pentanone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
Acetone		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	11 J	< 25	< 25	5.3 J
Acetonitrile		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
Acrolein		< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 200	< 100	< 100	< 100
Acrylonitrile		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Allyl chloride		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Benzene		< 2	< 2	< 2	109	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Bromobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromochloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromodichloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromoform		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Bromomethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Butyl acetate		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 50	< 25	< 25	< 25
Carbon disulfide		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Carbon tetrachloride	Not Analyzed	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chlorobenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chloroethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Chloroform		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Chloromethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Chloroprene		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
cis-1,2-Dichloroethene		< 5	488	< 5	53.6	< 5	16600	< 5	29.3	210	< 5	< 5	< 5
cis-1,3-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
cis-1,4-Dichloro-2-butene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Cyclohexanone		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
Dibromochloromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Dibromomethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Dichlorodifluoromethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Diisopropyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Ethyl acetate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Ethyl ether		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethyl methacrylate		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethylbenzene		< 5	< 5	< 5	6.44	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Ethyl-tert-butyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Heptane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Hexachlorobutadiene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Hexachloroethane		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Iodomethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Isopropylbenzene		< 5	< 5	< 5	3.2 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
m,p-Xylenes		< 5	< 5	< 5	10.9	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Methacrylonitrile		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Methyl Methacrylate		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Methyl tert-butyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
Methylacrylate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Methylene chloride		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Naphthalene		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
n-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
n-Hexane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Nitrobenzene		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
n-Propylbenzene		< 5	< 5	< 5	1.8 J	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
o-Xylene		< 5	< 5	< 5	8.61	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Pentachloroethane		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
p-Isopropyltoluene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Propionitrile		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 100	< 50	< 50	< 50
sec-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Styrene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
tert-Amyl methyl ether		< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 4	< 2	< 2	< 2
tert-Butyl alcohol		< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	24 J	< 25	< 25	< 25
tert-Butylbenzene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

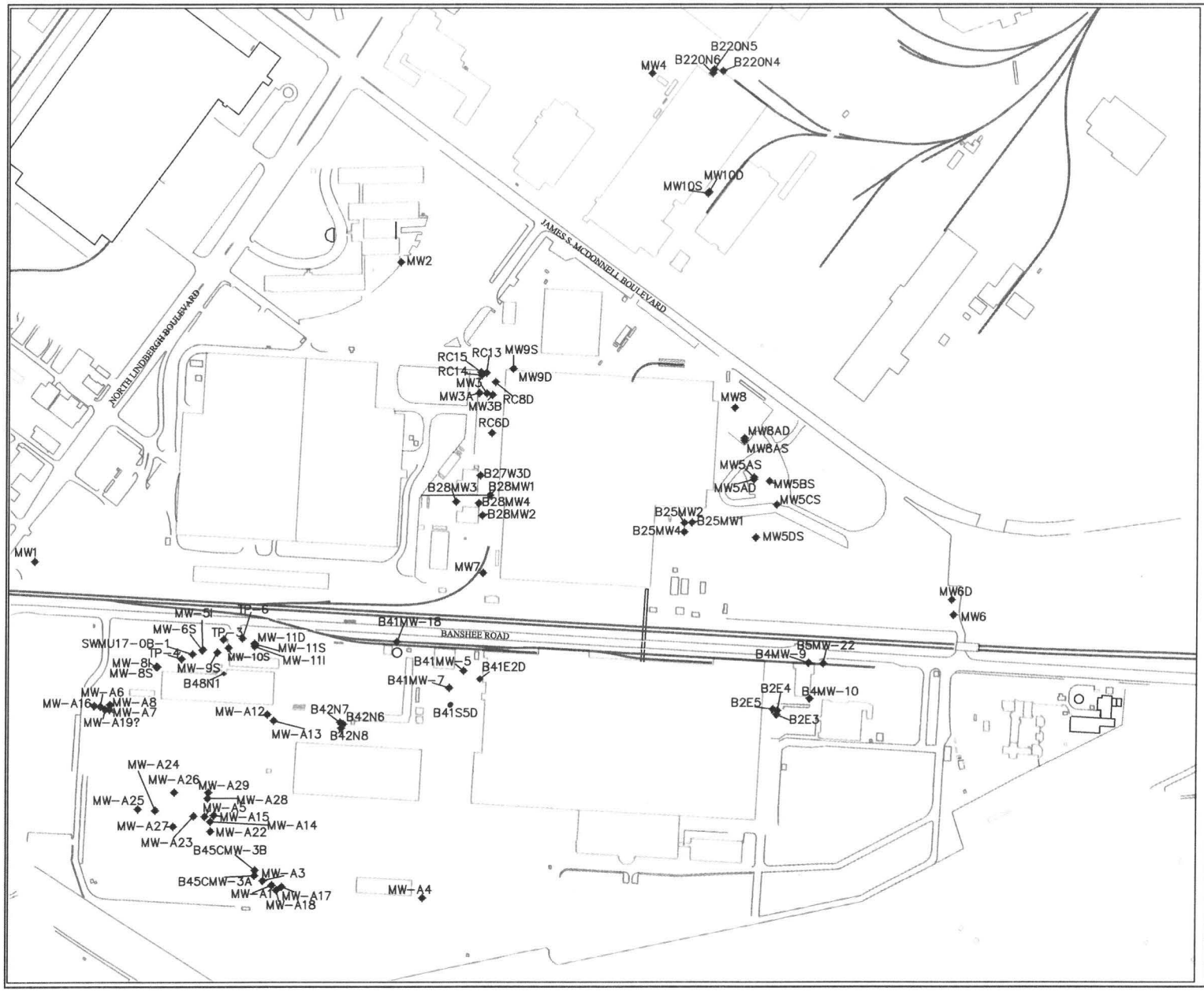
Table 3-2
Ground Water Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	11/17/2008	11/20/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/21/2008	11/20/2008	11/20/2008
Sample	B4MW-10	MW1	B27W3D	B28MW3	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS
Area ID	3H	6A	6BN	6BN	6BN	6BN	6BS	6BS	6BS	6BS	6C	6C	6C
Analyte													
Tetrachloroethene		< 5	< 5	< 5	7.41	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Tetrahydrofuran		< 20	< 20	< 20	6.3 J	< 20	< 20	< 20	< 20	< 40	< 20	< 20	< 20
Toluene		< 5	1.4 J	< 5	29.8	< 5	1.1 J	< 5	< 5	< 10	< 5	< 5	< 5
trans-1,2-Dichloroethene		< 5	96.6	< 5	186	< 5	190 J	< 5	1.6 J	3.9 J	< 5	< 5	< 5
trans-1,3-Dichloropropene		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
trans-1,4-Dichloro-2-butene	Not Analyzed	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Trichloroethene		54.5	< 5	< 5	1.5 J	< 5	13.8	< 5	11.3	3 J	< 5	< 5	< 5
Trichlorofluoromethane		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5
Vinyl acetate		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 10	< 10
Vinyl chloride		< 2	527	< 2	19.1	< 2	789	< 2	< 2	198	< 2	< 2	< 2
Xylenes, Total		< 5	< 5	< 5	19.5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5

Lab Qualifiers:

J: analyte detected below reporting limi

S: spike recovery outside accepted reco



N

LEGEND

- Groundwater Monitoring Well
- Railroad
- Roadway
- Building Outline

0 400
APPROX. SCALE (FEET)

RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX

Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JANUARY 2009 REPORT APPENDIX E

calibrate PID

PID readings
1 well 0.0 ppm
Ambient 0.0 ppm
Back ground 0.0 ppm

Pump use peristaltic

LOW FLOW SUMMARY SHEET

PROJECT NAME: MW-A6

DATE: 11-19-08

TESTER'S INITIAL

WELL NO: ~~A~~ ~~M1 A16~~

LOCATION:

DTB 12.60
Initial wl 3.71
final wl 4.96
flow rate 100 ml/min

PURGE STARTED: 0752

SAMPLED: DAS / 0825

IN-SITU TESTING	4.20 0755	4.27 0800	4.32 0805	4.46 0810	4.56 0815	4.61 0820				
Tolerance	1	2	3	4	5	6	7	8	9	10
Well Volume Purged(gal)										
Turbidity +/- 10%	148	41.1	25.7	23.4	15.5	10.9				
Odor										
Dissolved O_2 (mg/L) +/- 10%	28.7	2.14	1.99	1.89	1.82	1.79				
PH (units) +/- .1 units	7.68	7.61	7.62	7.63	7.63	7.62				
Conductivity +/- 3%	1.216	1.212	1.207	1.205	1.203	1.203				
Water Temperature (°C) +/- 3%	15.09	15.66	15.34	14.63	14.71	14.75				
Redox (mV) +/- 10 units	-35.8	-43.0	-42.4	-40.7	-40.7	-40.4				

NOTES: 1 ft. Length of 4" = 0.087 ft³ or 0.65 gal; 1 ft. length of 2" = 0.022 ft³ or 0.16 gal
Turbidity Choices: Clear, turbid, opaque

OBSERVATIONS: (COLOR, CONDITON, DEVELOPED)

1 nitric
2 WC's
1 Amber

A13
A3
A1

LOW FLOW SUMMARY SHEET

PROJECT NAME:

DATE: 11-31-03

TESTER'S INITIAL JC

WELL NO: ~~RC14~~ RC15

LOCATION: Bonny

PURGE STARTED: 1640

SAMPLED: 1657

100 ml/min

IN-SITU TESTING 1650 1653 1656

Tolerance	1	2	3	4	5	6	7	8	9	10
Well Volume Purged(gal)										
Turbidity +/- 10%	552	464	393							
Odor	Slight	slight	slight							
Dissolved O_2 (mg/L) +/- 10%	1.32	1.56	1.25							
PH (units) +/- .1 units	6.77	6.75	6.72							
Conductivity +/- 3%	2.046	2.045	2.036							
Water Temperature (°C) +/- 3%	12.34	12.62	12.98							
Redox (mV) +/- 10 units	-66.9	-70.3	-73.2							

NOTES 1 ft length of 4" 0.087 ft³ or 0.65 gal 1 ft length of 2" = 0.022 ft³ or 0.16 gal.

Turbidity Choices Clear, turbid, opaque

OBSERVATIONS: (COLOR, CONDITION, DEVELOPED) ~~[illegible]~~ 4.45 DTW Initial /

REPLACEMENT PAGES TO JANUARY 2009 REPORT APPENDIX F

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110681
Lab ID: 08110681-005
Report Date: 26-Nov-08

Client Project: Boeing 049992
Client Sample ID: ~~MWA16~~ MW-A6
Collection Date: 11/19/2008 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**0.0416**	mg/L	1	11/24/2008 11:07:21 AM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	11/24/2008 3:35:43 AM	LAL
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)		0.300	J	**0.23**	mg/L	1	11/21/2008 1:02:00 AM	MAM
TPH-ORO (C21 - C35)		0.300		**ND**	mg/L	1	11/21/2008 1:02:00 AM	MAM
Surr: 2-Fluorobiphenyl		42.5-117		**80.7**	%REC	1	11/21/2008 1:02:00 AM	MAM
Surr: Nitrobenzene-d5		42-106		**80.3**	%REC	1	11/21/2008 1:02:00 AM	MAM
Surr: p-Terphenyl-d14		8.43-125		**74.0**	%REC	1	11/21/2008 1:02:00 AM	MAM
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH - GRO (C6 - C10)		500		**ND**	µg/L	1	11/26/2008 3:56:00 AM	JSA
Surr: 1,2-Dichloroethane-d4		61-128		**91.6**	%REC	1	11/26/2008 3:56:00 AM	JSA
Surr: 4-Bromofluorobenzene		78.2-117		**102.5**	%REC	1	11/26/2008 3:56:00 AM	JSA
Surr: Toluene-d8		80.1-122		**106.7**	%REC	1	11/26/2008 3:56:00 AM	JSA

Sample Narrative

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 08110681

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing
Address:
City / State / Zip:
Contact: Kendall Pickett Phone: 713 784-5151
E-Mail: KPickett@Gfnet.com Fax: 713 784-6105

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 4.6 °C
Preserved in: ☐ Lab ☒ Field MLD 11/20/08 FOR LAB USE ONLY
Lab Notes: Headspace 0/5

Comments: MRBCA

Teklab, Inc.
Courier Pick Up

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

Project Name / Number: Boeing / 049992
Sample Collector's Name: DAS / JP

Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other TSP	Water	Drinking Water	Soil	Sludge	Sp. Waste	TPH Gro	TPH Dro 1000	VOCs	Arsenic Cadium	Arsenic
08110681-001	MWAB	11-18-08 / 1625	1	1						2						X	X	[illegible]	X	
-002	MW11D	11-18-08 / 1657	1	1						2						X	X	X	X	
-003	Equipment Blank	11-18-08 / 1830								2								X		
-004	~~MW~~ B2-E5	11-18-08 / 1735	1							2						X	X	X		
-005	~~MWA16~~ MW-A6	11-19-08 / 0825	1	1						2						X	X		X	
-006	MWA13	11-19-08 / 0925	1	1						2						X	X	X		
-007	MWA3	11-19-08 / 1025	1	1						2						X	X	X		X
-008	MWA1	11-19-08 / 1135	1	1						2						X	X	X		X
-009	TP3	11-19-08 / 1340	1	1						2						X	X	X	X	
-010	TP4	11-19-08 / 1440	1	1						2						X	X	X	X	[illegible]

Relinquished By	Date / Time	Received By	Date / Time
[signature]	11/19/08 / 1700	[signature]	11/19/08
[signature]	11/19/08 1755	Elizabeth A. Hurley	11/19/08 1755

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

After Page 97 of 97

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RG14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**0.0307**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Barium	NELAP	0.0050		**0.613**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Cadmium	NELAP	0.0020	J	**0.0007**	mg/L	1	11/25/2008 9:51:16 PM	LAL
Chromium	NELAP	0.0100		**< 0.0100**	mg/L	1	12/1/2008 12:57:53 PM	JMW
Manganese	NELAP	0.0050		**7.29**	mg/L	1	12/1/2008 12:57:53 PM	JMW
SW-846 3510C, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1221	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1232	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1242	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1248	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1254	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Aroclor 1260	NELAP	1.00		**ND**	µg/L	1	11/26/2008 11:11:00 PM	HE
Surr: Decachlorobiphenyl		9.05-139		**65.2**	%REC	1	11/26/2008 11:11:00 PM	HE
Surr: Tetrachloro-meta-xylene		15.4-101		**50.1**	%REC	1	11/26/2008 11:11:00 PM	HE
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,2-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,3-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
1,4-Dichlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4,5-Trichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4,6-Trichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dichlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dimethylphenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dinitrophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,4-Dinitrotoluene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2,6-Dinitrotoluene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Chloronaphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Chlorophenol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Methoxy-4-methylphenol		0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Methylnaphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Nitroaniline	NELAP	0.040		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
2-Nitrophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
3,3'-Dichlorobenzidine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
3-Nitroaniline	NELAP	0.040		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4,6-Dinitro-2-methylphenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Bromophenyl phenyl ether	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Chloro-3-methylphenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN

TEKLAB, INC.

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COLLINSVILLE. ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC 15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
4-Chloroaniline	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Chlorophenyl phenyl ether	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Nitroaniline	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
4-Nitrophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Acenaphthene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Acenaphthylene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Aniline	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Anthracene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Azobenzene		0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzidine	NELAP	0.040		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(a)anthracene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(a)pyrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(b)fluoranthene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(g,h,i)perylene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzo(k)fluoranthene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzoic acid	NELAP	0.050		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Benzyl alcohol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroethoxy)methane	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroethyl)ether	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-chloroisopropyl)ether	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Bis(2-ethylhexyl)phthalate	NELAP	0.006		**0.018**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Butyl benzyl phthalate	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Carbazole	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Chrysene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dibenzo(a,h)anthracene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dibenzofuran	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Diethyl phthalate	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Dimethyl phthalate	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Di-n-butyl phthalate	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Di-n-octyl phthalate	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Fluoranthene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Fluorene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorobutadiene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachlorocyclopentadiene	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Hexachloroethane	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Indeno(1,2,3-cd)pyrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Isophorone	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN

TEKLAB, INC.

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COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

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LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
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Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3510C, 8270C, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
m,p-Cresol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Naphthalene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Nitrobenzene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitrosodimethylamine	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitroso-di-n-propylamine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
N-Nitrosodiphenylamine	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
o-Cresol	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pentachlorophenol	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Phenanthrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Phenol	NELAP	0.005		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pyrene	NELAP	0.010		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Pyridine	NELAP	0.020		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
Quinoline		0.005		**ND**	mg/L	1	11/26/2008 5:59:00 PM	TDN
TPH-DRO (C10 - C21)		3.00		**11.2**	mg/L	10	11/30/2008 12:41:00 AM	MAM
TPH-ORO (C21 - C35)		3.00		**9.33**	mg/L	10	11/30/2008 12:41:00 AM	MAM
Surr: 2,4,6-Tribromophenol		27.7-149		**88.4**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: 2-Fluorobiphenyl		42.5-117		**62.8**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: 2-Fluorobiphenyl		44.9-116		**74.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: 2-Fluorophenol		10.6-78.7		**43.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: Nitrobenzene-d5		41.4-104		**66.7**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: Nitrobenzene-d5		42-106		**61.1**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: Phenol-d5		9.04-52.9		**33.6**	%REC	1	11/26/2008 5:59:00 PM	TDN
Surr: p-Terphenyl-d14		8.43-125		**82.8**	%REC	1	11/29/2008 1:33:00 AM	MAM
Surr: p-Terphenyl-d14		23.5-114		**73.2**	%REC	1	11/26/2008 5:59:00 PM	TDN
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,1,1,2-Tetrachloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,1-Trichloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2,2-Tetrachloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2-Trichloro-1,2,2-trifluoroethane		40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1,2-Trichloroethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloro-2-propanone	NELAP	100		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloroethane	NELAP	10.0		**15.8**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloroethene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,1-Dichloropropene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trichlorobenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trichloropropane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,3-Trimethylbenzene		10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2,4-Trichlorobenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK

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ENVIRONMENTAL TESTING LABORATORY

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LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~BC14~~ RC 15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
1,2,4-Trimethylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dibromo-3-chloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dibromoethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloroethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloroethene, Total		10.0		214	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,2-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3,5-Trimethylbenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,3-Dichloropropene, Total		10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,4-Dichloro-2-butene, Total		20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1,4-Dichlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
1-Chlorobutane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2,2-Dichloropropane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Butanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Chloroethyl vinyl ether	NELAP	40.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Chlorotoluene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Hexanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
2-Nitropropane	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
4-Chlorotoluene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
4-Methyl-2-pentanone	NELAP	50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acetone	NELAP	50.0	J	11	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acetonitrile	NELAP	100		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acrolein	NELAP	200		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Acrylonitrile	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Allyl chloride	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Benzene	NELAP	4.00		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromochloromethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromodichloromethane	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromoform	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Bromomethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Butyl acetate		50.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Carbon disulfide	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Carbon tetrachloride	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chlorobenzene	NELAP	10.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloroethane	NELAP	20.0		ND	µg/L	2	11/28/2008 4:47:00 PM	GEK

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LABORATORY RESULTS

Client: The Boeing Company
WorkOrder: 08110790
Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RC14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Chloroform	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloromethane	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Chloroprene	NELAP	40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,2-Dichloroethene	NELAP	10.0		**210**	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,3-Dichloropropene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
cis-1,4-Dichloro-2-butene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Cyclohexanone		100		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dibromochloromethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dibromomethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Dichlorodifluoromethane	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Diisopropyl ether		4.00		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl acetate	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl ether	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl methacrylate	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Ethyl-tert-butyl ether		4.00		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Heptane		40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Hexachlorobutadiene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Hexachloroethane	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Iodomethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Isopropylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
m,p-Xylenes	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methacrylonitrile	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methyl Methacrylate	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methyl tert-butyl ether	NELAP	4.00		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methylacrylate		20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Methylene chloride	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Naphthalene	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Butylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Hexane		40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Nitrobenzene	NELAP	100		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
n-Propylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
o-Xylene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Pentachloroethane	NELAP	40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
p-Isopropyltoluene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Propionitrile	NELAP	100		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
sec-Butylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Styrene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK

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LABORATORY RESULTS

Client: The Boeing Company
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Lab ID: 08110790-009
Report Date: 03-Dec-08

Client Project: Boeing 049992
Client Sample ID: ~~RG14~~ RC15
Collection Date: 11/21/2008 4:57:00 PM
Matrix: AQUEOUS

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
tert-Amyl methyl ether		4.00		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
tert-Butyl alcohol		50.0	J	**24**	µg/L	2	11/28/2008 4:47:00 PM	GEK
tert-Butylbenzene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Tetrachloroethene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Tetrahydrofuran	NELAP	40.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Toluene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
TPH - GRO (C6 - C10)		1000		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,2-Dichloroethene	NELAP	10.0	J	**3.9**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,3-Dichloropropene	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
trans-1,4-Dichloro-2-butene	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Trichloroethene	NELAP	10.0	J	**3.0**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Trichlorofluoromethane	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Vinyl acetate	NELAP	20.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Vinyl chloride	NELAP	4.00		**198**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Xylenes, Total	NELAP	10.0		**ND**	µg/L	2	11/28/2008 4:47:00 PM	GEK
Surr: 1,2-Dichloroethane-d4		61-128		**95.2**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: 4-Bromofluorobenzene		78.2-117		**97.9**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: Dibromofluoromethane		66.6-130		**101.8**	%REC	2	11/28/2008 4:47:00 PM	GEK
Surr: Toluene-d8		80.1-122		**98.8**	%REC	2	11/28/2008 4:47:00 PM	GEK
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	11/25/2008	MEK

Sample Narrative

SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS

Elevated reporting limit due to high levels of target and/or non-target analytes.

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # 08110790

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing
Address:
City / State / Zip:
Contact: Kendall Pickett Phone: 713-784-5151
E-Mail: Kpickett@gfnet.com Fax: 713-784-6105

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 0.4 °C
Preserved in: ☐ Lab ☒ Field 11/24/08 FOR LAB USE ONLY
Lab Notes: Ø headspace *cancel PCBs limited sample per Kendall Pickett 11/24/08
Comments: MRBCA Sample X with 1,2,3 is order of priority with limited sample volume.

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

Project Name / Number: Boeing/049992
Sample Collector's Name: Dave Straccia/Jack Lupo
Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other TSP	Water	Drinking Water	Soil	Sludge	Sp. Waste	TPH-GRO	TPH-DRO/ORO	VOCs	As, Cr	SVOC	PCB	As, Ba, Cd, Cr, Mn, Hg	Teklab, Inc Courier Pick Up
08110790-001	Trip Blank #3	11/12/08/1145								1	X							X					
-002	MW7	11/21/08/1240	3	1						2	X					X	X	X		X	X	X	
-003	MW9S	1415	3	1						2	X					X	X	X		X	X	X	
-004	B27 W3D *	1520	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-005	B220N6	1325	1	1						2	X					X	X		X				
-006	RC8D *	1555	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-007	B28 MW4	1540	3	1						2	X					X	X	X		X	X	X	
-008	MW3	1645	3	1						2	X					X	X	X		X	X	X	
-009	~~RC14~~ RC15	1657	1	1						2	X					X	X[2]	X		X[1]	X[3]	X	
-010	Equip Blank #4	1645								2	X							X					

Relinquished By	Date / Time	Received By	Date / Time
[signature]	11/21/08 1645	[signature]	11/21/08 1745
[signature]	11/21/08 1822	Elizabeth A. Hurley	11/21/08 1822

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

After Page 107 of 107

REPLACEMENT PAGE TO MAY 8, 2009 MEMORANDUM TABLE 3

Table 3
Chemicals of Concern Risk Exceedence in Groundwater
Boeing Tract 1, St. Louis, Missouri

Area/ Sub-area	Wells Sampled in Nov/Dec '08	Analytes	Group/Agency	COCs that Exceeded Risk
Area 1 (South of Bldg. 45)	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	TPH and VOC	EPA	
			RAM	None
Area 1 (Hush House)	MW-A1 and MW-A3	TPH, VOC, and arsenic	EPA	
			RAM	None
Sub-area 2A	MW-A8 and MW-A6	arsenic, cadmium, and TPH	EPA	
			RAM	TPH-GRO and TPH-DRO
Sub-area 2B	MW-5I, MW-6S, MW-11D, MW-11I, MW-11S, MW-8I, MW-8S, B48N1, SWMU17-OB-1, TP-3, TP-4, TP-6, MW-9S, and MW-10S	TPH, VOC, arsenic, and cadmium	EPA	
			RAM	Aliphatics (C12-16, C16-21, and C21-35) and Tetrachloroethylene
Sub-area 2C	MW-A12 and MW-A13,	TPH and VOC	EPA	benzene and TPH-GRO
			RAM	None
Sub-area 3A	B41MW-18 and B42N6,	TPH, VOC, and arsenic	EPA	
			RAM	TPH-DRO
Sub-area 3C	MW-A4	TPH and VOC	EPA	
			RAM	TPH-DRO, TPH-ORO, and Total TPH
Sub-area 3D	B41MW-5 and B41S5D	TPH, VOC, arsenic, barium, cadmium, copper, and manganese	EPA	
			RAM	None
Sub-area 3E	B2E3, and B2E5	TPH and VOC	EPA	
			RAM	Aliphatics (C16-21)
Sub-area 3G	None	None	EPA	
			RAM	Aliphatics (C21-35)
Sub-area 3H	B4MW-10 and B4MW9	TPH, arsenic, manganese, and mercury	EPA	Mercury and TPH-DRO
			RAM	None
Sub-area 6A	MW1	TPH, VOC, arsenic, barium, cadmium, and chromium	EPA	
			RAM	None
Sub-area 6B	B27W3D, B28MW3, B28MW4, MW7, MW9D, MW9S, MW3, RC8D, and RC15	TPH, VOC, SVOC, PCB, arsenic, barium, cadmium, chromium, manganese, and mercury	EPA	1,1-DCE, TCE, vinyl chloride, Aroclor 1254, benzo(a)anthracene, 1,2-DCE(total), benzene, mercury, TPH-GRO, TPH-DRO, and arsenic
			RAM	Aliphatics (C16-21) and benzo(a)anthracene
Sub-area 6C	B25MW1, MW5CS, MW5DS, MW8AD, and MW8AS	TPH, VOC, arsenic, barium, cadmium, chromium, mercury, and hexavalent chromium	EPA	
			RAM	Aliphatics (C16-21 and C21-35)
Sub-area 6D	MW6 and MW6D	VOC, arsenic, and chromium	EPA	
			RAM	None
Sub-area 8A	MW10D and MW10S	VOC, arsenic, barium, chromium, and manganese	EPA	
			RAM	None
Sub-area 8B	B220N4, B220N6, and MW4	TPH, arsenic, and chromium	EPA	
			RAM	Aliphatics (C16-21 and C21-35)

REPLACEMENT PAGE TO JUNE 4, 2009 MEMORANDUM TABLE 1

Table 1
Groundwater Gauging Data
November 17-19, 2008
Boeing Tract 1, St. Louis, Missouri

Well ID	Area / Sub-Area	Screened Interval (ft bgs)	Date	TOC Elevation (ft msl)	Depth to Water (ft btoc)	Depth to Free Product (ft btoc)	Free Product Thickness (ft)	Groundwater Elevation (ft msl)	Comments
Backfill Wells (screened intervals from 0 to 10 ft bgs)									
SWMW17-OB-I	2B	0-10	11/17/2008	--	4.85			NA	
Shallow Zone Wells (screened intervals from 2 to 26 ft bgs)									
B220N4	8B	3-13	11/17/2008	--	7.38			NA	Pressure released
B220N6	8B	3-13	11/17/2008	--	5.01			NA	Pressure released
B25MW1	6C	10.7-15.7	11/17/2008	537.42	9.26			528.16	
B27W3D	6B	21-26	11/19/2008	535.86	3.60			532.26	Pressure released
B28MW3	6B	2-12	11/18/2008	538.38	4.07			534.31	
B28MW4	6B	5.5-20.5	11/18/2008	538.17	4.92			533.25	Pressure released
B2E3	3E	5-15	11/17/2008	--	9.61			NA	
B2E5	3E	3-13	11/17/2008	--	6.11			NA	
B41MW-18	3A	2-12	11/17/2008	541.62	4.31			537.31	
B41MW-5	3D	2-12	11/17/2008	534.55	2.86			531.69	
B42N6	3A	5-15	11/17/2008	--	2.03			NA	Pressure released
B48N1	2B	2.0-12.5	11/19/2008	539.92	6.44			533.48	
B4MW-10	3H	2-12	11/17/2008	--	8.97			NA	
B4MW-9	3H	10-19.8	11/17/2008	531.66	8.81			522.85	
MW1	6A	10-20	11/18/2008	558.73	7.80			550.93	Pressure released
MW10S	8A	8.0-18.0	11/18/2008	536.81	3.86			532.95	Pressure released
MW-10S	2B	5.0-15.0	11/18/2008	547.77	6.40	6.35	0.05	541.37	
MW-11S	2B	6.5-16.5	11/17/2008	547.21	6.99			540.22	Pressure released
MW3	6B	10-19.7	11/18/2008	535.89	5.02			530.87	Pressure released
MW4	8B	10-19.5	11/17/2008	540.79	5.13			535.66	Pressure released
MW5CS	6C	8-17.64	11/17/2008	529.15	9.42			519.73	
MW5DS	6C	7-17.08	11/17/2008	530.92	7.40			523.52	
MW6	6D	8.0-23.0	11/17/2008	519.47	8.02			511.45	
MW-6S	2B	5.0-15.0	11/17/2008	547.84	3.89			543.95	
MW7	6B	7-11.9	11/18/2008	538.41	3.42			534.99	Pressure released
MW8AS	6C	6-16.5	11/17/2008	533.86	11.01			522.85	
MW-8S	2B	8.0-16.0	11/17/2008	547.85	8.24			539.61	
MW9S	6B	8.0-18.0	11/18/2008	536.17	6.05			530.12	Pressure released
MW-9S	2B	6.0-16.0	11/18/2008	547.11	6.47	6.46	0.01	540.64	
MW-A1	1	5-15	11/18/2008	537.04	4.84	4.83	0.01	532.20	
MW-A12	2C	4.5-14.5	11/17/2008	538.92	4.37			534.55	Pressure released
MW-A13	2C	4.5-14.5	11/18/2008	538.79	4.83	4.83	0.00	533.96	
MW-A15	1	4.5-14.5	11/17/2008	539.36	4.68			534.68	Broken TOC
MW-A6	2A	2.5-12.5	11/18/2008	--	3.95			NA	
MW-A22	1	4.5-14.5	11/17/2008	539.64	4.23			535.41	Pressure released
MW-A23	1	2.7-12.7	11/17/2008	540.17	5.05			535.12	
MW-A25	1	3-13	11/17/2008	539.70	3.79			535.91	Pressure released
MW-A26	1	4-14	11/17/2008	539.49	5.45			534.04	
MW-A27	1	3.7-13.7	11/17/2008	539.89	3.73			536.16	Pressure released
MW-A29	1	4.5-14.5	11/17/2008	539.56	2.89			536.67	
MW-A3	1	5-15	11/18/2008	537.14	3.87	3.86	0.01	533.27	
MW-A4	3C	2-12	11/17/2008	534.40	9.38			525.02	
MW-A8	2A	2.5-12.5	11/17/2008	--	4.39			NA	
RC15	6B	3-13	11/19/2008	--	4.45			NA	
RC8D	6B	19-24	11/19/2008	536.42	3.65			532.77	
TP-3	2B	6.0-12.5	11/18/2008	548.52	5.47	5.46	0.01	543.06	
TP-4	2B	9.0-14.6	11/18/2008	547.07	3.88	3.87	0.01	543.19	
TP-6	2B	6.0-16.0	11/18/2008	548.70	5.34			543.36	
Intermediate Zone Wells (screened intervals from 32 to 42 ft bgs)									
MW-11I	2B	32.0-40.0	11/17/2008	547.04	6.54			540.50	Pressure released
MW-5I	2B	32.0-42.0	11/17/2008	547.73	6.90			540.83	
MW-8I	2B	32.0-40.0	11/17/2008	547.84	8.35			539.49	
Deep Zone Wells (screened intervals from 56 to 80.5 ft bgs)									
B41S5D	3D	56-66.29	11/17/2008	534.27	18.29			515.98	
MW10D	8A	70-79.5	11/17/2008	536.70	4.91			531.79	Pressure released
MW-11D	2B	64.0-74.0	11/17/2008	547.08	23.81			523.27	Pressure released
MW6D	6D	68.0-78.0	11/17/2008	520.32	7.78			512.54	
MW8AD	6C	70-80.5	11/17/2008	534.05	9.58			524.47	
MW9D	6B	62-72.5	11/18/2008	539.75	--			NA	Artesian

Notes:
ft bgs: feet below ground surface
ft btoc: feet below top of casing
ft msl: feet above mean sea level
ft: feet
NA: not applicable

REPLACEMENT PAGE TO FEBRUARY 26, 2010 MEMORANDUM TEXT, TABLES, AND FIGURE

- There is some evidence of chromium source at Sub-area 6C.
- ***Based on these, chromium (hexavalent) in Sub-area 6C will be further evaluated for plume stability.***

- **Manganese**

  - All the 14 samples analyzed had detected concentrations. Of these samples, 10 samples exceeded the screening value of 880 ug/L.
  - The detected concentrations ranged from 127 ug/L to 7,290 ug/L with the following distribution:
    - Below 880 ug/L 4 samples
    - > 880 ug/L – 2,500 ug/L 7 samples
    - > 2,500 ug/L – 5,000 ug/L 2 samples
    - > 5,000 ug/L 1 sample
  - Due to the wide range of concentration distribution, concentrations observed may not be background concentration.
  - ***Therefore, manganese in groundwater will be further evaluated for plume stability in Sub-areas 3D, 3H, 6B, and 8A.*** However, the source of manganese has not been identified and presumably manganese may have been analyzed for a natural attenuation parameter.

- **Bis(2-ethylhexyl)phthalate**

  - Total of eight samples were collected. Of these, only one sample (RC15 in Sub-area 6B) showed detected concentration of 18 ug/L which is greater than the screening value of 4.8 ug/L.
  - Half the detection limit (5 ug/L) for two not-detected samples exceeded the screening value slightly.
  - It is known that this is a common laboratory contaminant.
  - Based on these, bis(2-ethylhexyl)phthalate is not of concern.

- **1,1,2-Trichloroethane**

  - Total of 50 samples were collected. Of these, two samples showed detected concentrations. Only one sample (MW-5I in Sub-area 2B) showed detected concentration of 140 ug/L greater than the screening value of 5 ug/L.
  - Half the detection limits of all the not-detected samples were below the screening value. Therefore, the detection limits were appropriate.
  - ***Based on these, 1,1,2-trichloroethane in Sub-area 2B will be further evaluated for plume stability.***

- **1,1-Dichloroethane**

  - Total of 50 samples were collected. Of these, five samples showed detected concentrations.
  - Three samples below had detected concentrations greater than the screening

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value of 2.4 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
3D	B41MW-5	13.8	104
6B	RC15	15.8	<1.0*
8A	MW10S	3.5	13.7

*: Concentration in April 2006

- The concentrations in B41MW-5 and MW-10S are lower than the concentrations during the previous sampling event in June 2003 as shown above. It is expected that these concentrations will continue to decrease.
- The concentration in RC15 increased from the previous concentration collected in April 2006. For the not detected concentrations, half the detection limit of 45 samples exceeded the screening value. However, all of the half the detection limits except for one sample (MW-5I) were 2.5 ug/L which is very close to the screening value. Therefore, these exceedences are not of concern. Half the detection limit in MW-5I was 0.5 ug/L during the previous sampling event in June 2003. Therefore, half the detection in MW-5I is not of concern.
- ***Based on these, 1,1-dichloroethane in Sub-area 6B will be further evaluated for plume stability.***

- **<u>1,1-Dichloroethylene</u>**

  - Total of 50 samples were collected. Of these, two samples showed detected concentrations.
  - One sample (MW3 in Sub-area 6B) had detected concentration of 25.1 ug/L greater than the screening value of 7 ug/L.
  - During the previous sampling event in June 2003, 1,1-dichloroethylene in MW3 was detected at 12 ug/L greater than the screening level of 7 ug/L.
  - Only one of not-detected samples (MW-5I in Sub-area 2B) had half the detection limits greater than the screening level.
  - During the previous sampling event in June 2003, 1,1-dichloroethylene in MW-5I was detected at 33 ug/L greater than the screening level of 7 ug/L.
  - 1,1-Dichloroethylene is a daughter product of TCE biodegradation.
  - ***Based on these, 1,1-dichloroethylene in Sub-area 2B and 6B will be further evaluated for plume stability.***

- **<u>Benzene</u>**

  - Total of 50 samples were collected. Of these, six samples showed detected concentrations and only one sample (B28MW4 in Sub-area 6B) of 109 ug/L which is greater than the screening value of 5 ug/L.
  - Half the detection limit (50 ug/L) of one sample (MW-5I) in Sub-area 2B exceeded the screening value. However, benzene in MW-5I was not-detected at the detection limit of 1 ug/L during the previous sampling event in June 2003. Therefore, benzene in MW-5I is not of concern.
  - ***Based on these, benzene in Sub-area 6B will be further evaluated for plume***

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stability.

- **cis-1,2-Dichloroethylene**

  - Total of 50 samples were collected. Of these, 14 samples showed detected concentrations.
  - Five samples below had detected concentrations greater than the screening value of 70 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	4,430	3,500
	TP-4	77.5	190
6B	B27W3D	448	950
	MW3	16,600	4,100
	RC15	210	6.5*

*: Concentration in April 2006

  - During the previous sampling event in June 2003, concentrations in above wells exceeded the screening value, except in RC15 in April 2006.
  - These wells are located in the trichloroethylene (TCE) source areas.
  - Half the detection limit (125 ug/L) of only one sample (MW-5I) in Sub-area 2B exceeded the screening value.
  - cis-1,2-Dichloroethylene is a daughter product of TCE biodegradation.
  - ***Based on these, cis-1,2-dichloroethylene in Sub-areas 2B and 6B will be further evaluated for plume stability.***

- **Naphthalene**

  - Total of 50 samples were collected. Of these, only one sample (TP-4 in Sub-area 2B) showed detected concentrations of 2.4 ug/L which is greater than the screening value of 0.14 ug/L.
  - All of the not-detected samples (49 samples) had half the detection limit (5 ug/L in 48 samples and 125 ug/L in one sample (MW-5I in Sub-area 2B)) exceeding the screening value. The detection limit of 10 ug/L could be practical quantitation limit due to analytical limitations.
  - Sub-area 2B was impacted with mainly chlorinated solvents.
  - Based on these, naphthalene is not of concern.

- **Tetrachloroethylene (PCE)**

  - Total of 50 samples were collected. Of these, six samples showed detected concentrations.
  - Three samples below had detected concentrations greater than the screening value of 5 ug/L.

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Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	89,000	120,000
	MW-10S	21.9	<1
	MW-11S	294	<1
	TP-4	16.3	160
6A	MW1	54.5	<1
6B	MW3	13.8	7.3
	RC8D	11.3	13
8A	MW10S	57.4	<1
	MW10D	15	<1

- During the previous sampling event in June 2003, concentrations in four of the above wells exceeded the screening value. Concentrations in some wells were below the detection limit of 1 ug/L.
- Half the detection limits of all the not-detected samples were below the screening value.
- ***Based on these, TCE in Sub-areas 2B, 6A, 6B, and 8A will be further evaluated for plume stability.***

- **Vinyl chloride**

  - Total of 50 samples were collected. Of these, eight samples showed detected concentrations.
  - Seven samples below had detected concentrations greater than the screening value of 2 ug/L.

Sub-area	Sample ID	Concentration (ug/L)	
		November 2008	June 2003
2B	MW-5I	181	180
	TP-4	3.87	5.3
3A	B42N6	7.75	47*
6B	B27W3D	527	120
	B28MW4	19.1	45
	MW3	789	1,000
	RC15	198	<1.0*

*: Concentrations in April 2006

  - During the previous sampling events, concentrations in above wells exceeded the screening value, except in RC15 in April 2006.
  - Half the detection limits of all the not-detected samples were below the screening value. Therefore, the detection limits were appropriate.
  - ***Based on these, vinyl chloride in Sub-areas 2B, 3A, and 6B will be further evaluated for plume stability.***

- **TPHs**

  - Total of 53 samples were collected for each of three TPH groups (TPH-GRO, TPH-DRO, and TPH-ORO).

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- Of these, only one sample for each TPH group showed detected concentration greater than the screening values of 18,100 ug/L for TPH-GRO, 34,300 ug/L for TPH-DRO, and 31,800 ug/L for TPH-ORO as below:

TPH Group	Sub-area	Sample ID	Concentration (ug/L)
			November 2008
TPH-GRO	2B	MW-5I	93,600
TPH-DRO	2B	MW-9S	800,000
TPH-ORO	2B	MW-9S	60,000

- Half the detection limits of all the not-detected samples were below the screening value.
- ***Based on these, TPHs in Sub-area 2B will be further evaluated for plume stability.***

- **<u>n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, 2-chlorotoluene, 1,2,4-Trimethylbenzene, MTBE, tert-Butyl alchol, and Tetrahydrofuran</u>**

  - Total of 50 samples were collected for each of these chemicals.
  - All the chemicals had few detected concentrations; but none of detected concentrations exceeded screening values.
  - Only one of not-detected samples (MW-5I in Sub-area 2B) had half the detection limits greater than the screening levels for most of the chemicals.
  - During the previous sampling event in June 2003, all the chemicals except for 1,1-dichloroethylene and 1,2,4-trimethylbenzene were not-detected at detection limits below the screening values.
  - During the previous sampling event in June 2003, 1,2,4-Trimethylbenzene in MW-5I was detected at 21 ug/L which is slightly greater than the screening value of 15 ug/L.
  - Based on these, all the chemicals are not of concern.

- **<u>Methylene Chloride</u>**

  - Total of 50 samples were collected. Only one sample had detected concentration below the screening value of 4.8 ug/L.
  - Only two of not-detected samples (MW-5I in Sub-area 2B and RC15 in Sub-area 6B) had half the detection limits of 50 ug/L in MW-5I and 5 ug/L in RC15 greater than the screening value.
  - During the previous sampling event in June 2003, MW-5I had half the detection limit of 2.5 ug/L. During the previous sampling event in April 2006, RC15 had half the detection limit of 2.5 ug/L.
  - Methylene chloride is known as a common laboratory contaminant.
  - Based on these, methylene chloride is not of concern.

Based on above, the following are the conclusions:

- The following 14 chemicals exceeded the screening values and may be site

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Table 1
Comparison of Groundwater Data Collected in 2008 with Screening Values (ug/L)
Beoing Tract 1, St. Louis, Missouri

COCs in Groundwater	MCLs	Regional Screening Levels	MRBCA DTLs	Screening Values	MW-A15	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	MW-A29	MW-A1	MW-A3	MW-A8	MW-A6	B48N1	MW-5I
					S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	S. Bldg 45	Hush House	Hush House	2A	2A	2B	2B
Metals																	
Arsenic	10	0.045	10	**10**	na	na	na	na	na	na	na	**89**	**23**	**28.7**	**41.6**	<25	**37**
Barium	2,000	7,300	2,000	**2,000**	na	na	na	na	na	na	na	na	na	na	na	na	na
Cadmium	5	18	5	**5**	na	na	na	na	na	na	na	na	na	<2	<2	<2	<2
Chromium	100	-	100	**100**	na	na	na	na	na	na	na	na	na	na	na	na	na
Chromium (Hexavalent)	-	0.043	0.00337	**0.043**	na	na	na	na	na	na	na	na	na	na	na	na	na
Copper	1,300	1,500	624	**1,300**	na	na	na	na	na	na	na	na	na	na	na	na	na
Manganese	-	880	2,190	**880**	na	na	na	na	na	na	na	na	na	na	na	na	na
Mercury	2	0.57	50.7	**2**	na	na	na	na	na	na	na	na	na	na	na	na	na
SVOCs																	
Bis(2-ethylhexyl)phthalate	-	4.8	6	**4.8**	na	na	na	na	na	na	na	na	na	na	na	na	na
VOCs																	
1,1,2-Trichloro-1,2,2-trifluroethane	-	59,000	-	**59,000**	<20	<20	<20	<20	<20	<20	<20	<20	<20	na	na	<20	<1000
1,1,2-Trichloroethane	5	0.24	5	**5**	<5	<5	<5	<5	**1**	<5	<5	<5	<5	na	na	<5	**140**
1,1-Dichloroethane	-	2.4	24.9	**2.4**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,1-Dichloroethylene	7	340	7	**7**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,2,3-Trimethylbenzene	-	-	-	**-**	<5	<5	<5	<5	<5	<5	<5	**6.42**	<5	na	na	<5	<250
1,2,4-Trimethylbenzene	-	15	7.06	**15**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
1,2-Dichloroethene, Total	-	-	-	**-**	<5	<5	<5	<5	**1.4**	<5	<5	<5	<5	na	na	**28.2**	**4430**
1-Chlorobutane	-	1500	-	**1,500**	<5	<5	**49**	<5	**1.8**	<5	<5	<5	<5	na	na	<5	<250
2-Chlorotoluene	-	730	61.9	**730**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Acetone	-	22,000	2,970	**22,000**	<25	<25	**9.9**	<25	<25	<25	<25	**104**	**16**	na	na	<25	<1250
Benzene	5	0.41	5	**5**	**1.1**	<2	<2	<2	**1.4**	<2	<2	<2	<2	na	na	<2	<100
Carbon disulfide	-	1000	527	**1,000**	<5	<5	<5	<5	<5	<5	<5	**2**	<5	na	na	<5	<250
cis-1,2-Dichloroethylene	70	370	70	**70**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	**28.2**	**4,430**
Ehtylbenzene	700	1.5	700	**700**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Isopropylbenzene	-	680	330	**680**	**1.9**	<5	**9.83**	<5	<5	<5	<5	**4.5**	**3.3**	na	na	<5	<250
m,p-Xylenes	-	1,200	-	**1,200**	**1.3**	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
Methyl tert-butyl ether	-	12	128	**12**	<2	<2	<2	<2	<2	<2	<2	<2	<2	na	na	<2	<100
Methylene chloride	-	4.8	5	**4.8**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<100
Naphthalene	-	0.14	1.09	**0.14**	<10	<10	<10	<10	<10	<10	<10	<10	<10	na	na	<10	<500
n-Butylbenzene	-	-	98.9	**98.9**	<5	<5	**3.7**	<5	<5	<5	<5	**3**	**1.2**	na	na	<5	<250
n-Propylbenzene	-	1,300	115	**1,300**	<5	<5	**7.11**	<5	<5	<5	<5	**4.9**	**3.7**	na	na	<5	<250
o-Xylene	-	1,200	-	**1,200**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
sec-Butylbenzene	-	-	106	**106**	<5	<5	**2.8**	<5	<5	<5	<5	**4.1**	**2.1**	na	na	<5	<250
tert-Butyl alcohol	-	-	286	**286**	<25	<25	<25	<25	<25	<25	<25	<25	<25	na	na	<25	<1250
tert-Butylbenzene	-	-	103	**103**	<5	<5	**1.2**	<5	<5	<5	<5	**1**	**1**	na	na	<5	<250
Tetrachloroethylene	5	2	5	**5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	**4.1**	<250
Tetrahydrofuran	-	-	20.3	**20.3**	<20	<20	<20	<20	<20	<20	<20	<20	<20	na	na	<20	<1000
Toluene	1,000	2,300	1,000	**1,000**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
trans-1,2-Dichloroethylene	100	110	100	**100**	<5	<5	<5	<5	**1.4**	<5	<5	<5	<5	na	na	<5	<250
Trichloroethylene	5	2	5	**5**	<5	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	**89,000**
Vinyl chloride	2	0.016	2	**2**	<2	<2	<2	<2	<2	<2	<2	<2	<2	na	na	<2	**181**
Xylenes	10,000	200	10,000	**10,000**	**1.3**	<5	<5	<5	<5	<5	<5	<5	<5	na	na	<5	<250
TPH																	
TPH-GRO	-	-	18,100	**18,100**	<500	<500	**2,550**	<500	<500	<500	<500	**230**	<500	**798**	<500	**180**	**93,600**
TPH-DRO	-	-	34,300	**34,300**	**403**	**230**	**1,040**	**220**	**684**	**220**	**210**	**2,780**	**2,790**	**200**	**230**	**230**	**230**
TPH-ORO	-	-	31,800	**31,800**	<300	<300	**290**	<300	**270**	<300	<300	**556**	**493**	<300	<300	<300	<300

Notes:
All concentrations in ug/L
DTL: Default target level
MCL: Maximum contaminant level
MRBCA: Missouri risk-based corrective action
na: Not analyzed
Highlighted and bold: Detected concentration exceeds screening value.
Highlighted: Half the detection limit exceeds screening value.

Table 1
Comparison of Groundwater Data Collected in 2008 with Screening Values (ug/L)
Beoing Tract 1, St. Louis, Missouri

COCs in Groundwater	MCLs	Regional Screening Levels	MRBCA DTLs	Screening Values	B28MW4	MW7	MW3	MW9S	RC8D	RC15	B25MW1	MW5CS	MW5DS	MW8AS	MW8AD	MW6	MW6D
					6BN	6BS	6BS	6BS	6BS	6BS	6C	6C	6C	6C	6C	6C	6C
Metals																	
Arsenic	10	0.045	10	**10**	**24**	<25	**22**	**26.8**	<25	**30.7**	<25	**18**	**16**	**24**	<25	<25	**18**
Barium	2,000	7,300	2,000	**2,000**	**431**	**163**	**714**	**1,070**	**541**	**613**	**333**	**624**	**334**	**393**	**257**	na	na
Cadmium	5	18	5	**5**	<2	**0.6**	**0.5**	**0.3**	**1.8**	**0.7**	**0.3**	**3.6**	**0.7**	**1**	**0.7**	na	na
Chromium	100	-	100	**100**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**4.6**	**55.1**
Chromium (Hexavalent)	-	0.043	0.00337	**0.043**	na	na	na	na	na	na	<5	**4**	**5**	**7**	<5	na	na
Copper	1,300	1,500	624	**1,300**	na	na	na	na	na	na	na	na	Na	na	na	na	na
Manganese	-	880	2,190	**880**	**662**	**275**	**2,390**	**3,140**	**4,600**	**7,290**	na	na	na	na	na	na	na
Mercury	2	0.57	50.7	**2**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.27**	**0.22**	**0.08**	<0.2	na	na
SVOCs																	
Bis(2-ethylhexyl)phthalate	-	4.8	6	**4.8**	<6	<6	<6	<6	<6	**18**	na	na	na	na	na	na	na
VOCs																	
1,1,2-Trichloro-1,2,2-trifluroethane	-	59,000	-	**59,000**	**12,600**	<20	**21.6**	<20	<20	<40	<20	<20	<20	<20	<20	<20	<20
1,1,2-Trichloroethane	5	0.24	5	**5**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	-	2.4	24.9	**2.4**	<5	<5	<5	<5	<5	**15.8**	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethylene	7	340	7	**7**	<5	<5	**25.1**	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trimethylbenzene	-	-	-	**-**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	-	15	7.06	**15**	**3.6**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene, Total	-	-	-	**-**	**239**	<5	**16,800**	<5	**30.8**	**214**	<5	<5	<5	<5	<5	na	na
1-Chlorobutane	-	1500	-	**1,500**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
2-Chlorotoluene	-	730	61.9	**730**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Acetone	-	22,000	2,970	**22,000**	<25	<25	<25	<25	<25	**11**	<25	<25	**5.3**	<25	<25	<25	<25
Benzene	5	0.41	5	**5**	**109**	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2
Carbon disulfide	-	1000	527	**1,000**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	70	370	70	**70**	**53.6**	<5	**16,600**	<5	**29.3**	**210**	<5	<5	<5	<5	<5	<5	<5
Ehtylbenzene	700	1.5	700	**700**	**6.44**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	-	680	330	**680**	**3.2**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
m,p-Xylenes	-	1,200	-	**1,200**	**10.9**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Methyl tert-butyl ether	-	12	128	**12**	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2
Methylene chloride	-	4.8	5	**4.8**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Naphthalene	-	0.14	1.09	**0.14**	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10
n-Butylbenzene	-	-	98.9	**98.9**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	-	1,300	115	**1,300**	**1.8**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
o-Xylene	-	1,200	-	**1,200**	**8.65**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	-	-	106	**106**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
tert-Butyl alcohol	-	-	286	**286**	<25	<25	<25	<25	<25	**24**	<25	<25	<25	<25	<25	na	na
tert-Butylbenzene	-	-	103	**103**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	5	2	5	**5**	**7.41**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	**6.2**	<5
Tetrahydrofuran	-	-	20.3	**20.3**	**6.3**	<20	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20	<20
Toluene	1,000	2,300	1,000	**1,000**	**29.8**	<5	**1.1**	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethylene	100	110	100	**100**	**186**	<5	**190**	<5	**1.6**	**3.9**	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	5	2	5	**5**	**1.5**	<5	**13.8**	<5	**11.3**	**3**	<5	<5	<5	**2**	<5	**2**	<5
Vinyl chloride	2	0.016	2	**2**	**19.1**	<2	**789**	<2	<2	**198**	<2	<2	<2	<2	<2	<2	<2
Xylenes	10,000	200	10,000	**10,000**	**19.5**	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	na	na
TPH																	
TPH-GRO	-	-	18,100	**18,100**	**519**	<500	**7,130**	<500	<500	<1000	<500	<500	<500	<500	<500	na	na
TPH-DRO	-	-	34,300	**34,300**	**304**	**200**	<300	<300	**220**	**11,200**	<300	**230**	**200**	**220**	<300	na	na
TPH-ORO	-	-	31,800	**31,800**	<300	<300	<300	<300	<300	**9,330**	<300	<300	<300	<300	<300	na	na

Notes:
All concentrations in ug/L
DTL: Default target level
MCL: Maximum contaminant level
MRBCA: Missouri risk-based corrective action
na: Not analyzed
Highlighted and bold: Detected concentration exceeds screening value.
Highlighted: Half the detection limit exceeds screening value.

Table 2(a)
Summary of Detected Chemicals in Groundwater Exceeding Screening Values
Boeing Tract 1, St. Louis, Missouri

Chemical	No. of Samples	No. of Detects	Detected Sample Exceedences												
			No. of Sample	Hush House	2A	2B	3A	3D	3H	6A	6BN	6BS	6C	8A	8B
Metals															
Arsenic	44	31	31	MW-A1 and MW-A3	MW-A8 and MW-A6	MW-5I, MW-6S, MW-8I, MW-9S, MW-10S, MW-11S, SWMU17-0B-1, TP-3, TP-4, and TP-6	--	--	B4MW-10	MW-1	B27W3D, B28MW3, and B28MW4	MW3, MW9S, and RC15	MW5CS, MW5DS, MW8AS, and MW6D	MW10S and MW10D	B220N4, B220N6, and MW4
Chromium (Hexavalent)	5	3	3	--	--	--	--	--	--	--	--	--	MW5CS, MW5DS, and MW8AS	--	--
Manganese	14	14	10	--	--	--	--	B41S5D	B4MW-9	--	B27W3D and B28MW3	MW3, MW9S, RC8D, and RC15	--	MW10S and MW10D	--
SVOCs															
Bis(2-ethylhexyl)phthalate	8	1	1	--	--	--	--	--	--	--	--	RC15	--	--	--
VOCs															
1,1,2-Trichloroethane	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	50	5	3	--	--	--	--	B41MW-5	--	--	--	RC15	--	MW10S	--
1,1-Dichloroethylene	50	2	1	--	--	--	--	--	--	--	MW3	--	--	--	--
Benzene	50	6	1	--	--	--	--	--	--	--	B28MW4	--	--	--	--
cis-1,2-Dichloroethylene	50	14	5	--	--	MW-5I and TP-4	--	--	--	--	B27W3D	MW3 and RC15	--	--	--
Naphthalene	50	1	1	--	--	TP-4	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	50	6	3	--	--	TP-4	--	--	--	--	B28MW4	--	MW6	--	--
trans-1,2-Dichloroethylene	50	7	2	--	--	--	--	--	--	--	B28MW4	MW3	--	--	--
Trichloroethylene	50	13	9	--	--	MW-5I, MW-10S, MW-11S, and TP-4	--	--	--	MW1	--	MW3 and RC8D	--	MW10S and MW10D	--
Vinyl chloride	50	8	7	--	--	MW-5I and TP-4	B42N6	--	--	--	B27W3D and B28MW4	MW3 and RC15	--	--	--
TPHs															
TPH-GRO	53	12	1	--	--	MW-5I	--	--	--	--	--	--	--		--
TPH-DRO	53	43	1	--	--	MW-9S	--	--	--	--	--	--	--		--
TPH-ORO	53	18	1	--	--	MW-9S	--	--	--	--	--	--	--		--

Table 2(b)
Summary of Not Detected Chemicals in Groundwater Exceeding Screening Values
Boeing Tract 1, St. Louis, Missouri

Chemical	No. of Samples	No. of Detects	Half the Detection Limit Exceedences														
			No. of Sample	Hush House	S. Bldg 45	2B	2C	3A	3C	3D	3E	3H	6A	6BN	6BS	6C	8A
Metals																	
Arsenic	44	31	13	--	--	B48N1, MW-8S, MW-11I, and MW-11D	--	B41MW-18	--	B41MW-5 and B41S5D	--	B4MW-9	--	--	MW7 and RC8D	MW8AD, MW6, and B25MW1	--
Chromium (Hexavalent)	5	3	2	--	--	--	--	--	--	--	--	--	--	--	--	B25MW1 and MW8AD	--
SVOCs																	
Bis(2-ethylhexyl)phthalate	8	1	2	--	--	--	--	--	--	--	--	--	--	B27MW3D and B28MW3	--	--	--
VOCs																	
1,1-Dichloroethane	50	5	45	MW-A1 and MW-A3	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	B48N1, MW-5I, MW-6S, MW-8S, MW-8I, MW-9S, MW-10S, MW-11S, MW-11I, MW-11D, SWMU17-0B-1, TP-3, TP-4, and TP-6	MW-A12 and MW-A13	B41MW-18 and B42N6	--	B41S5D	B2E3 and B2E5	--	MW1	B27MW3D and B28MW4	MW-3, MW-7, MW-9S, and RC8D	B25MW1, MW5CS, MW5DS, MW8AS, MW8AD, MW6 and MW6D	MW10D
1,1-Dichloroethylene	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	50	2	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Benzene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	50	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	50	1	2	--	--	MW-5I	--	--	--	--	--	--	--	--	RC15	--	--
Naphthalene	50	1	49	MW-A1 and MW-A3	MW-A15, MW-A22, MW-A23, MW-A25, MW-A26, MW-A27, and MW-A29	B48N1, MW-5I, MW-6S, MW-8S, MW-8I, MW-9S, MW-10S, MW-11S, MW-11I, MW-11D, SWMU17-0B-1, TP-3, and TP-6	MW-A12 and MW-A13	B41MW-18 and B42N6	MW-A4	B41MW-5 and B41S5D	B2E3 and B2E5	--	MW1	B27MW3D, B28MW3, and B28MW4	MW-3, MW-7, MW-9S, RC8D, and RC15	B25MW1, MW5CS, MW5DS, MW8AS, MW8AD, MW6 and MW6D	MW10S and MW10D
n-Butylbenzene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	50	5	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
tert-Butyl alcohol	46	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	50	3	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	50	6	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
Tetrahydrofuran	50	1	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethylene	50	7	1	--	--	MW-5I	--	--	--	--	--	--	--	--	--	--	--

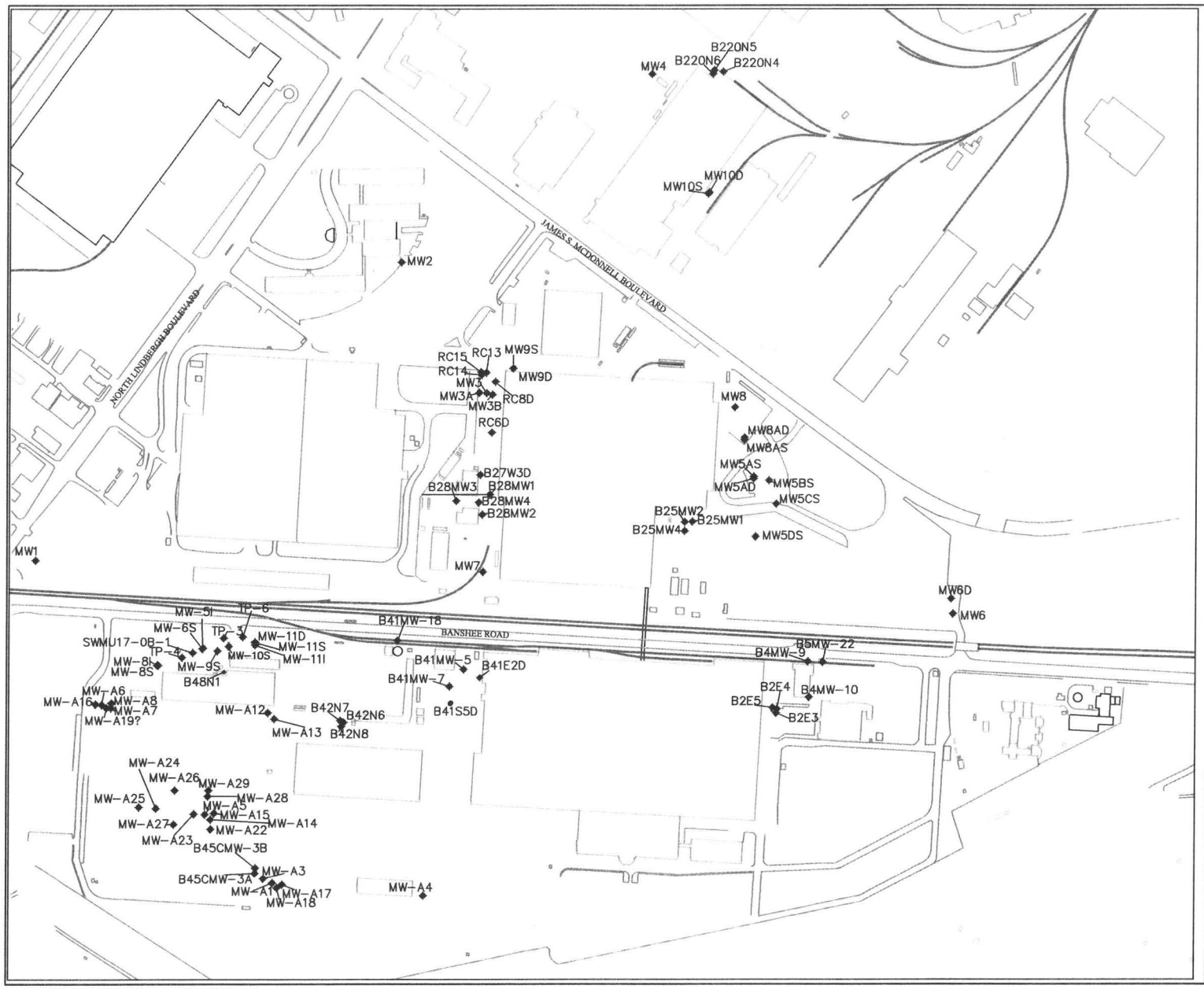

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Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JUNE 2010 REPORT TEXT, TABLES, AND FIGURES

Gauging was performed on 57 of the 59 wells on Figure 2-1 using a Heron Interface meter for wells 0.75-inch diameter or greater. A Heron Skinny Water Level meter was used to gauge the 0.5-inch diameter wells and any wells that had obstructions that prevented access with the interface meter. Gauging data is presented on Table 2-1. Two wells could not be gauged as the manway covers could not be accessed (RC15 in Sub-area 6B and MW-11D in Sub-area 2B). The gauged wells included one additional well, MW-A28 in Area 1 (South of Bldg. 45). This well was added for deployment of a Snap Sampler® system, since the MW-A15 manway was too small to accept the Snap Sampler® system as planned. MW-A28 is located about 70 feet North of MW-A15.

Eight wells had either sheen or measurable free product as shown on Table 2-1.

2.3 GROUNDWATER SAMPLING

Groundwater sampling was performed on April 26 – May 3, 2010 by Mihika Baruah, Bhoom Korpol, Marty Hughes, and Kendall Pickett of RAM Group. Joe Haake and Elmer Dwyer participated in this task.

Each well was gently gauged for groundwater depth and presence of LNAPL prior to sampling using a Solinst Interface meter for wells 0.75-inch diameter or greater. A Heron Skinny Water Level meter was used to gauge the 0.5-inch diameter well and any wells that had obstructions that prevented access with the interface meter. Well depths were not gauged to avoid disturbance of the water column prior to sampling. No wells had measureable LNAPL. MW-A1 and MW-A3 had sheen; thus, they were not sampled. Therefore, 42 wells were sampled using low-flow methods and nine wells were sampled using passive sampling methods.

All field equipment requiring calibration was calibrated in accordance with the manufacturer specifications periodically during the sampling (Appendix A).

2.3.1 Low-Flow Purging and Sampling

Thirty-seven 2-inch diameter, one 0.5-inch diameter, one 0.75-inch diameter, one 1-inch diameter, and two 4-inch diameter wells were sampled using low-flow methods (refer to Table 2-2). A CO_2 operated QED Sample Pro 1.75-inch bladder pump or small diameter Geotech SS18 0.67-inch bladder pump were used in all wells except the 0.5-inch diameter well, which was sampled using a Pegasus Athena Peristaltic pump. This well, B27W3D, was not purged prior to sampling based on previous experience that indicated the well would go dry before collection of all samples. This well went dry after collecting two 40ml VOA vials for VOCs and TPH-GRO and about ½-liter for TPH-DRO/ORO. Therefore, no samples were collected for total and dissolved metals (As, Ba, Cd, Cr, Mn, and Hg) as planned. However, there are other nearby wells that were sampled for metals (B28MW3 (totals only) and B28MW4 (totals and dissolved).

sampling.

The wells sampled using Snap Samplers® are presented in Table 2-3 and included wells of varying diameters (2-inch and 4-inch), varying depths (shallow, intermediate, and deep), and varying screened intervals between 10 to 15 feet of screen for comparison with the low-flow sampling results. Table 2-3 presents the Snap Sampler® deployment elevations in each well.

In wells MW8AS, MW10S, and MW10D sampled on the first day using Snap Samplers®, the sample containers contained air bubbles or were only partially filled or leaking when brought to surface. After contacting ProHydro, it was found that if the Snap Sampler® bottle caps were securely pushed closed upon reaching the surface, most sample containers would contain no headspace. In cases where a 40ml glass vial was partially filled or had an air bubble, the 40ml vial was immediately topped off with water from one of the 125ml plastic bottles. After the first day of sampling, this was not a problem.

2.4 MAINTENANCE AND REPAIR OF MONITORING WELLS

Some repairs and maintenance were performed on RC15 and B4MW-9 by Environmental Management Alternatives (EMA) during the period between the groundwater gauging and groundwater sampling. Additional recommended repairs will be presented in a separate document.

2.5 DECONTAMINATION PROCEDURES

All field sampling and gauging equipment that was re-used from well to well was decontaminated prior to use at each well using appropriate methods. The oil/water interface meters and small diameter water level meter were cleaned prior to use at each well using an Alconox wash and distilled water rinse. For wells with evidence of sheen or free product, an alcohol wash was added prior to the Alconox wash. Plastic sheeting was used at each well site to minimize cross contamination.

New disposable equipment and dedicated tubing used with the bladder pumps did not require decontamination. The peristaltic pump tubing was new and disposed after use in a single well. The Snap Sampler® systems are dedicated to each well and do not require decontamination, and the sample bottles are single-use and replaced with new bottles after sample collection.

The pumps (disassembled) and 4-way valves were cleaned prior to use in each well using an Alconox wash and distilled water rinse. Grab plates and O-rings were replaced with new ones as needed in the pumps.

- #10041218 dated May 10, 2010
- #10050079 dated May 11, 2010
- #10041181 dated May 13, 2010
- #10050500 dated May 18, 2010

Laboratory analytical methods and the analytes selected for analysis are presented in Table 4-1. The number of times each well has been sampled and analyzed is also presented in this table. Some dissolved metals analysis was dropped from specific wells with MDNR approval (RAM Group, 2010d). The comments section of Table 4-1 describes deviations for specific wells from the Revised Groundwater Gauging and Sampling Plan for 2010 (RAM, March 5, 2010).

Table 4-2 presents the comprehensive groundwater analytical results. Table 4-2(a) presents the detected concentrations, Table 4-2(b) presents the maximum detection limits for each chemical, Table 4-2(c) presents a summary of the detected concentrations and compares the maximum concentration for each detected chemical to the screening value, and Table 4-2(d) presents the wells with detected chemicals that exceeded screening values.

4.3 EVALUATION OF ANALYTICAL RESULTS

4.3.1 Detected Chemicals

The detected chemicals concentrations are presented on Table 4-2(a) and the maximum detected concentrations are compared to the very conservative screening values on Table 4-2(c). Twenty-eight chemicals were detected at least once consisting of the following:

- 6 metals (totals and dissolved)
- 1 SVOC
- TPH-GRO
- TPH-DRO
- TPH-ORO
- 18 VOCs

Of the 28 chemicals detected, the maximum concentration exceeded the groundwater screening levels for nine chemicals (2 metals, 1 SVOC, and 6 VOCs). The SVOC (bis(2-ethylhexyl)phthalate) is not a chemical of concern and was detected in only one well, MW9S. It was also detected in one well, RC15, at about the same concentration during the previous sampling event. Note that heptane, does not have a screening level for comparison; however, it is not a chemical of concern at the site and was detected in only two wells (MW-A23 and MW-A28) and not during the previous sampling event. Table 4-2(d) presents the wells in which the chemicals exceeded the screening levels.

Table 2-1
Field Gauging Data
Boeing Tract 1, Hazelwood, Missouri

Staff Initials: KLP / BRK

Subarea	Monitoring Well	Dia. (in.)	Well Depth (ft bgs)	Date	Time	PID (ppm)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	Comments (needed repairs, well bottom condition, etc)
Area 1: Runway Protection Zone (1 well)										
South of Bldg. 45	MW-A15	2	15	4/13/2010	1017	0	NA	3.69	11.44	Manway too small for Snap Sampler, deployed in MW-A28 instead. Soft
	MW-A22	2	15	4/13/2010	1012	5.6	NA	4.13	12.82	Hard
	MW-A23	2	15	4/13/2010	1004	150	NA	4.78	12.68	Hard
	MW-A25	2	15	4/13/2010	945	2.8	NA	3.95	12.76	Hard
	MW-A26	2	15	4/13/2010	950	0.3	NA	5.27	13.78	Hard
	MW-A27	2	15	4/13/2010	957	4.1	3.62	3.625	13.76	Hard
	MW-A28	2	15	4/13/2010	1023	23.1	NA	3.94	14.22	Deployed snap sampler setup planned for MW A15. Hard
	MW-A29	4	15	4/12/2010	1437	0	NA	3.91	14.5	OK for Snap Samplers, but need 4-inch dia dock. Hard
Hush House	MW-A1	2	15	4/13/2010	1222	105	Sheen	4.88	13.22	Hard
	MW-A3	2	15	4/13/2010	1212	10	4.05	4.06	14.77	Well cap sits too high to allow manway cover to lie flat. Hard
Area 2: Demolished Area (2 wells)										
2A	MW-A8	2	15	4/13/2010	1047					Could not locate.
	MW-A6	2	13	4/13/2010	1210	0	Sheen	4.83	12.9	Under front of luggage trailer. Soft
2B	B48N1	0.5	12.5	4/13/2010	1434	0	NA	6.4	11.79	Hard
	MW-5I	2	45	4/13/2010	1610	372	6.84	6.84	42.7	Broken bolt receptacle. Soft
	MW-6S	2	15	4/13/2010	1603	0.2	NA	4.19	14.99	Broken bolt receptacle. Hard
	MW-8S	2	16	4/13/2010	1629	1	NA	6.96	16.03	Hard
	MW-8I	2	40	4/13/2010	1625	0	NA	7.8	40.49	Missing 1 bolt. Soft
	MW-9S	2	16	4/13/2010	1443	22	4.04	4.05	16.36	Hard
	MW-10S	2	16	4/13/2010	1417	14	6.1	6.11	14.7	Hard
	MW-11S	2	16.5	4/12/2010	1533	0	NA	5.79	16.37	Hard

Table 2-1
Field Gauging Data
Boeing Tract 1, Hazelwood, Missouri

Staff Initials: KLP / BRK

Subarea	Monitoring Well	Dia. (in.)	Well Depth (ft bgs)	Date	Time	PID (ppm)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	Comments (needed repairs, well bottom condition, etc)
Area 6: GKN Facility (10 wells)										
6A	MW1	2	20	4/13/2010	853	0.8	NA	7.8	19.75	1 bolt & receptacle missing, other bolt broken in receptacle. Hard
6B	B27W3D	0.5	26	4/13/2010	744	0.2	NA	3.23	23.77	Manway too small for Snap Sampler. No manway bolts. TOC cut at steep angle. Hard
	B28MW3	2	12	4/13/2010	752	6.2	NA	4.39	11.56	No manway bolts. Hard
	B28MW4	2	15.6	4/13/2010	758	102	NA	5.29	20.3	Hard
	MW3	2	19.7	4/12/2010	1300	0	NA	5.18	19.23	Reduced Snap Sampler by one 125ml bottle since don't need Cr+6. Deployed 2 Snap Sampler strings in this well. No manway bolts or receptacles. Silty
	MW7	2	14.4	4/13/2010	735	0	NA	3.13	11.67	Hard
	MW9S	2	19	4/13/2010	810	1.8	NA	6.54	17.82	1 bolt missing. Hard
	MW9D	2	72.5	4/13/2010	805	NA	NA			Artesian NA
	RC8D	0.5	24	4/13/2010	820	2.2	NA	4.9	24.57	No manway bolts. Well top does not fit on TOC. Hard
	RC15	0.5	13	4/13/2010	835					Could not open manway cover.
6C	B25MW1	2	15.7	4/13/2010	1705	0	NA	9.22	15.17	Hard
	MW5CS	2	18.1	4/13/2010	1647	0	NA	8.99	20.02	N38 45.628, W-90 21.819 Hard
	MW5DS	2	17.5	4/13/2010	1657	0.2	NA	7.36	17.13	N38 45.608, W-90 21.836 No manway bolts. Hard
	MW8AS	2	16.5	4/12/2010	1005	0	NA	10.55	16.27	Reduced Snap Sampler by one 125ml bottle, due to approval onsite by MDNR to drop dissolved metals. Hard

Table 2-2
Low-Flow Field Sampling Data
Boeing Tract 1, Hazelwood, Missouri

Location/ Sub-area	Monitoring Well	Diameter (inches)	Screened Interval (ft bgs)	Total Depth (ft bgs)	Measured Depth to GW (ft btoc)	GPS Location	Dedicated Tubing Length (ft)	Pump Intake Target Depth (ft bgs)	Pump Intake Actual Depth (ft bgs)	Sampled After	Date / Time Sampled	Personnel Sampled	Can Accept Snap Samplers? (yes/no)	Comments
Hush House	MW-A3	2	5-15	15	3.61	38/45/22N -90/22/15W	16	10	NA	did not sample	5/3-4/10	MB/BRK	no, manway dia too small	began purging on 5/3/10, but had to quit due to escort schedule, sheen present on 5/4/10, did not sample, well casing too high for well cap and manway cover - need to change well cap or modify to allow manway to fit flush over cap
Area 2: Demolished Area (11 wells)														
2A	MW-A8	2	2.5-12.5	12.5	5.53	38/45/29N 90/22/23W	13	7.5	9	1 hour	4/30/2010 1218	EMH/KLP	yes, but tight fit	found well since gauging on 4/13/10
	MW-A6	2	2.5-12.5	12.5	4.59	38/45/29N -90/22/23W	13	7.5	8.5	1 hour	4/30/2010 1000	EMH/KLP	yes	found well under front of luggage cart, needs cap that will seal TOC
2B	MW-5I	2	32.0-42.0	42	6.89	38/45.51N -90/22.30W	42	37	37	1 hour	4/29/2010 1910	EMH/KLP	yes	
	MW-6S	2	5.0-15.0	15	3.95	38/45.51N -90/22.30W	15	10	10	1 hour	4/29/2010 1715	EMH/KLP	yes	
	MW-8S	2	8.0-16.0	16	6.46	38/45/30N -90/22/20W	17	12	11	1 hour	4/29/2010 1950	MB/BRK	yes	
	MW-8I	2	32.0-40.0	40	7.79	38/45/30N -90/22/20W	40	36	36	1 hour	4/29/2010 1445	EMH/KLP	yes	
	MW-11S	2	6.5-16.5	16.5	5.25	38/45.52N -90/22.26W	17.5	11.5	11.5	1 hour	4/29/2010 1705	MB/BRK	converted	
	MW-11I	2	32.0-40.0	40	7.62	38/45.516N -90/22.266W	41	36	36	1 hour	4/28/2010 2000	BRK/EMH	converted	

Table 3-1
Groundwater Gauging Data April 12-13, 2010
Boeing Tract 1, St. Louis, Missouri

Well ID	Area / Sub-Area	Screened Interval (ft bgs)	Date	TOC Elevation (ft msl)	Depth to Water (ft btoc)	Depth to Free Product (ft btoc)	Free Product Thickness (ft)	Ground water Elevation (ft msl)	Comments
Backfill Wells (screened intervals from 0 to 10 ft bgs)									
SWMW17-OB-I	2B	0-10	4/12/2010	--	4.91	NA		NA	Hard
Shallow Zone Wells (screened intervals from 2 to 26 ft bgs)									
MW-A1	1	5-15	4/13/2010	537.04	4.88	Sheen	Sheen	532.16	Hard
MW-A3	1	5-15	4/13/2010	537.14	4.06	4.05	0.010	533.08	Well cap sits too high to allow manway cover to lie flat. Hard
MW-A15	1	4.5-14.5	4/13/2010	539.36	3.69	NA		535.67	Soft
MW-A22	1	4.5-14.5	4/13/2010	539.64	4.13	NA		535.51	Hard
MW-A23	1	2.7-12.7	4/13/2010	540.17	4.78	NA		535.39	Hard
MW-A25	1	3-13	4/13/2010	539.70	3.95	NA		535.75	Hard
MW-A26	1	4-14	4/13/2010	539.49	5.27	NA		534.22	Hard
MW-A27	1	3.7-13.7	4/13/2010	539.89	3.63	3.62	0.005	536.27	Hard
MW-A28	1	4.5-14.5	4/13/2010	539.09	3.94	NA		535.15	Hard
MW-A29	1	4.5-14.5	4/12/2010	539.56	3.91	NA		535.65	OK for Snap Samplers, but need 4-inch dia dock. Hard
MW-A6	2A	2.5-12.5	4/13/2010	--	4.83	Sheen	Sheen	NA	Under front of luggage trailer. Soft
MW-A8*	2A	2.5-12.5	4/30/2010	--	5.53			NA	Could not located on 4/13/10; therefore, used GW depth prior to sampling on 4/30/10.
B48N1	2B	2.0-12.5	4/13/2010	539.92	6.40	NA		533.52	Hard
MW-6S	2B	5.0-15.0	4/13/2010	547.84	4.19	NA		543.65	Broken bolt receptacle. Hard
MW-8S	2B	8.0-16.0	4/13/2010	547.85	6.96	NA		540.89	Hard
MW-9S	2B	6.0-16.0	4/13/2010	547.11	4.05	4.04	0.010	543.06	Hard
MW-10S	2B	5.0-15.0	4/13/2010	547.77	6.11	6.10	0.010	541.66	Hard
MW-11S	2B	6.5-16.5	4/12/2010	547.21	5.79	NA		541.42	Hard
TP-3	2B	6.0-12.5	4/13/2010	548.52	5.04	NA		543.48	Hard
TP-4	2B	9.0-14.6	4/13/2010	547.07	3.90	NA		543.17	Missing manway bolts. Hard
TP-6	2B	6.0-16.0	4/13/2010	548.70	4.85	Sheen	Sheen	543.85	Hard
MW-A12	2C	4.5-14.5	4/13/2010	538.92	4.42	NA		534.50	Soft
MW-A13	2C	4.5-14.5	4/13/2010	538.79	5.18	NA		533.61	Lost PID filter in well. Silty
B41MW-18	3A	2-12	4/13/2010	541.62	4.43	NA		537.19	Hard
B42N6	3A	5-15	4/13/2010	--	2.28	NA		NA	Missing bolt, TOC cut crooked. Hard
MW-A4	3C	2-12	4/13/2010	534.40	9.40	9.40	Sheen	525.00	Well cap broken. Hard
B41MW-5	3D	2-12	4/13/2010	534.55	3.23	NA		531.32	No manway bolts. Hard
B2E3	3E	5-15	4/13/2010	--	6.96	NA		NA	Hard
B2E5	3E	3-13	4/13/2010	--	6.74	NA		NA	Hard
B4MW-9	3H	10-19.8	4/12/2010	531.66	9.06	NA		522.60	Cannot deploy Snap Sampler, TOC too close to manway, manway damaged, missing cover. Soft
B4MW-10	3H	2-12	4/12/2010	527.52	9.07	NA		518.45	Manway too small for Snap Sampler. Hard
MW1	6A	10-20	4/13/2010	558.73	7.80	NA		550.93	1 bolt & receptacle missing, other bolt broken in receptacle. Hard
B27W3D	6B	21-26	4/13/2010	535.86	3.23	NA		532.63	Manway too small for Snap Sampler. No manway bolts. TOC cut at steep angle. Hard
B28MW3	6B	2-12	4/13/2010	538.38	4.39	NA		533.99	No manway bolts. Hard
B28MW4	6B	5.5-20.5	4/13/2010	538.17	5.29	NA		532.88	Hard
MW3	6B	10-19.7	4/12/2010	535.89	5.18	NA		530.71	No manway bolts or receptacles. Silty
MW7	6B	7-11.9	4/13/2010	538.41	3.13	NA		535.28	Hard
MW9S	6B	8.0-18.0	4/13/2010	536.17	6.54	NA		529.63	1 bolt missing. Hard
RC15	6B	3-13	4/13/2010	--				NA	Could not open manway cover.
RC8D	6B	19-24	4/13/2010	536.42	4.90	NA		531.52	No manway bolts. Well top does not fit on TOC. Hard
B25MW1	6C	10.7-15.7	4/13/2010	537.42	9.22	NA		528.20	Hard
MW5CS	6C	8-17.64	4/13/2010	529.15	8.99	NA		520.16	Hard
MW5DS	6C	7-17.08	4/13/2010	530.92	7.36	NA		523.56	No manway bolts. Hard
MW8AS	6C	6-16.5	4/12/2010	533.86	10.55	NA		523.31	Hard
MW6	6D	8.0-23.0	4/12/2010	519.47	8.19	NA		511.28	Hard
MW10S	8A	8.0-18.0	4/12/2010	536.81	4.20	NA		532.61	Soft
B220N4	8B	3-13	4/12/2010	--	3.85	NA		NA	Hard

Table 4-1
Groundwater Analytical Methods
Boeing Tract 1, Hazelwood, Missouri

Location/ Sub-area	Monitoring Well	No. of Times Sampled	Analytical Methods*																			Comments
			VOC	SVOC	PCB	TPH-GRO	TPH-DRO/ ORO	As		Ba		Cd		Cr		Mn		Hg		Cr+6		
								Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
Area 1: Runway Protection Zone (9 wells)																						
South of Bldg. 45	MW-A22	4	X			X	X															
	MW-A23	4	X			X	X															
	MW-A25	2	X			X	X															
	MW-A26	2	X			X	X															
	MW-A27	4	X			X	X															Also Dup #3.
	MW-A28	1	X			X	X															
	MW-A29	2	X			X	X															
Hush House	MW-A1	4	X			X	X	X	X													Sheen present on 5/4/10, did not sample.
	MW-A3	2	X			X	X	X														Sheen present on 5/4/10, did not sample.
Area 2: Demolished Area (8 wells)																						
2A	MW-A8	4						X				X										
	MW-A6	2						X	X			X	X									
2B	MW-6S	11	X			X	X	X	X			X	X									
	MW-8I	12	X			X	X	X	X			X	X									
	MW-11S	12	X			X	X	X	X			X	X									
	MW-5I	14	X			X	X	X				X										
	MW-8S	12	X			X	X	X				X										
	MW-11I	12	X			X	X	X				X										
	MW-11D	12	X			X	X	X				X										
	SWMU17-OB-1	2	X			X	X	X				X										Also Dup #2.
2C	MW-A12	2	X			X	X															
Area 3: Retained Area (6 wells)																						
3A	B41MW-18	3	X			X	X	X														
	B42N6	3	X			X	X															Well went dry before samples for TPH-DRO/ORO could be collected.
3C	MW-A4	3	X			X	X															
3D	B41MW-5	4	X			X	X	X		X		X				X						Due to error on COC, did not run VOC.
	B41S5D	2	X			X	X	X	X	X	X	X	X			X	X					
3H	B4MW-9	2				X	X	X	X							X	X	X	X			Did not deploy Snap Sampler® due to well damage. Due to addition on 4/26/10 table, Low-flow sample was also analyzed for total & dissolved Hg.
	B4MW-10	2				X	X	X								X						Due to error on COC, sample was also run for total Hg.
Area 6: GKN Facility (8 wells)																						
6A	MW1	11	X			X	X	X		X		X		X								
6B	B28MW3	10	X			X	X	X		X		X		X		X		X				
	MW7	13	X			X	X	X		X		X		X		X		X				
	B27W3D	7	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			Well went dry before any metals samples could be collected.
	B28MW4	4	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	MW3	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	MW9S	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
6C	B25MW1	10	X			X	X	X		X		X		X				X		X		Sample did not meet hold time for Cr+6.
	MW5CS	13	X			X	X	X		X		X		X				X		X		Sample did not meet hold time for Cr+6.
	MW5DS	13	X			X	X	X		X		X		X				X		X		
	MW8AS	13	X			X	X	X	X	X	X	X	X	X	X			X	X	X	X	Did not run dissolved metals on Snap Sampler® per MDNR approval in field to reduce # of sample bottles. Due to addition on 4/26/10 table, Snap Sampler was also run for total Mn and Low-flow sample was also run for total & dissolved Mn. Due to error on COC, Snap Sampler® was not run for total Cr+6 or TPH-GRO, and Low-Flow sample was not run for TPH-GRO.

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010			4/29/2010	4/29/2010			
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6			MW-5I	MW-6S			
Area ID	South of Bldg. 45									2A				2B				
Metals (6010)																		
Chromium, Hexavalent																		
Arsenic										35.5		16	J	110		<	25	
Barium																		
Cadmium										< 2	<	2		< 2			0.6	J
Chromium																		
Manganese																		
Mercury (7470)																		
Arsenic, Dissolved												12	J			<	25	
Barium, Dissolved																		
Cadmium, Dissolved											<	2				<	2	
Chromium, Dissolved																		
Manganese, Dissolved																		
Mercury, Dissolved																		
PCBs (8082)																		
Aroclor 1254																		
SVOCs (8270)																		
1,2,4-Trichlorobenzene																		
1,2-Dichlorobenzene																		
1,3-Dichlorobenzene																		
1,4-Dichlorobenzene																		
2,4,5-Trichlorophenol																		
2,4,6-Trichlorophenol																		
2,4-Dichlorophenol																		
2,4-Dimethylphenol																		
2,4-Dinitrophenol																		
2,4-Dinitrotoluene																		
2,6-Dinitrotoluene																		
2-Chloronaphthalene																		
2-Chlorophenol																		
2-Methoxy-4-methylphenol																		
2-Methylnaphthalene																		
2-Nitroaniline																		
2-Nitrophenol																		
3,3'-Dichlorobenzidine																		
3-Nitroaniline																		
4,6-Dinitro-2-methylphenol																		
4-Bromophenyl phenyl ether																		
4-Chloro-3-methylphenol																		
4-Chloroaniline																		
4-Chlorophenyl phenyl ether																		
4-Nitroaniline																		
4-Nitrophenol																		

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Acenaphthene													
Acenaphthylene													
Aniline													
Anthracene													
Azobenzene													
Benzidine													
Benzo(a)anthracene													
Benzo(a)pyrene													
Benzo(b)fluoranthene													
Benzo(g,h,i)perylene													
Benzo(k)fluoranthene													
Benzoic acid													
Benzyl alcohol													
Bis(2-chloroethoxy)methane													
Bis(2-chloroethyl)ether													
Bis(2-chloroisopropyl)ether													
Bis(2-ethylhexyl)phthalate													
Butyl benzyl phthalate													
Carbazole													
Chrysene													
Dibenzo(a,h)anthracene													
Dibenzofuran													
Diethyl phthalate													
Dimethyl phthalate													
Di-n-butyl phthalate													
Di-n-octyl phthalate													
Fluoranthene													
Fluorene													
Hexachlorobenzene													
Hexachlorobutadiene													
Hexachlorocyclopentadiene													
Hexachloroethane													
Indeno(1,2,3-cd)pyrene													
Isophorone													
m,p-Cresol													
Naphthalene													
Nitrobenzene													
N-Nitrosodimethylamine													
N-Nitroso-di-n-propylamine													
N-Nitrosodiphenylamine													
o-Cresol													
Pentachlorophenol													
Phenanthrene													
Phenol													
Pyrene													
Pyridine													
Quinoline													
TPH (8270)													
TPH - GRO (C6 - C10) (8260)	< 500	**1600**	< 500	**360** J	< 500	**210** J	**3200**	**3510**	< 500			< 1000000	< 500
TPH-DRO (C10 - C21)	**200** J	**868**	< 300	**384**	**240** J	**270** J	**1820**	**1530**	< 300			< 300	**280** J
TPH-ORO (C21 - C35)	< 300	**220** J	< 300	< 300	< 300	< 300	**500** J	**270** J	< 300			< 300	< 300

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
VOCs (8260)													
1,1,1,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1,2-Trichloro-1,2,2-trifluoroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloro-2-propanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
1,1-Dichloroethane	< 5	< 5	< 5	**1.2** J	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,1-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,3-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,4-Trichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2,4-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dibromo-3-chloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dibromoethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,2-Dichloroethene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**9600** J	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3,5-Trimethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,3-Dichloropropene, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1,4-Dichloro-2-butene, Total	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
1,4-Dichlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
1-Chlorobutane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2-Butanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
2-Chloroethyl vinyl ether	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
2-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
2-Hexanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
2-Nitropropane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
4-Chlorotoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
4-Methyl-2-pentanone	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
Acetone	< 25	**7.3** J	< 25	< 25	< 25	< 25	**13** J	**18** J	< 25			< 50000	< 25
Acetonitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
Acrolein	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			< 200000	< 100
Acrylonitrile	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Allyl chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Benzene	< 2	< 2	< 2	**1.6** J	< 2	< 2	< 2	**1.6** J	< 2			< 4000	< 2
Bromobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Bromomethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Butyl acetate	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
Carbon disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Chloroform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Chloromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Chloroprene	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
cis-1,2-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**9600** J	< 5
cis-1,3-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
cis-1,4-Dichloro-2-butene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Cyclohexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Dibromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Dichlorodifluoromethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Diisopropyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Ethyl acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Ethyl ether	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethyl methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Ethyl-tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Heptane	< 20	**48.7**	< 20	< 20	< 20	< 20	**83.4**	< 20	< 20			< 40000	< 20
Hexachlorobutadiene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Hexachloroethane	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Iodomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Isopropylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**11.3**	< 5			< 10000	< 5
m,p-Xylenes	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Methacrylonitrile													
Methyl acetate													
Methyl Methacrylate	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Methyl tert-butyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Methylacrylate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Methylene chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Naphthalene	< 10	< 10	< 10	< 10	< 10	< 10	**2** J	**4.8** J	< 10			< 20000	< 10
n-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**4.9** J	< 5			< 10000	< 5
n-Hexane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
Nitrobenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
n-Propylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**7.16**	< 5			< 10000	< 5
o-Xylene													
Pentachloroethane	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
p-Isopropyltoluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Propionitrile	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50			< 100000	< 50
sec-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**3.1** J	< 5			< 10000	< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
tert-Amyl methyl ether	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
tert-Butyl alcohol	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25			< 50000	< 25
tert-Butylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	**1.3** J	**1.6** J	< 5			< 10000	< 5

Table 4-2
Groundwater Analytical Data (ug/L)
Boeing Tract 1, Hazelwood, Missouri

Date Collected	5/3/2010	5/3/2010	4/30/2010	4/30/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	5/3/2010	4/30/2010	4/30/2010	4/29/2010	4/29/2010
Sample	MW-A22	MW-A23	MW-A25	MW-A26	MW-A27	Dup #3 (MW-A27)	MW-A28-SS	MW-A28-LF	MW-A29	MW-A8	MW-A6	MW-5I	MW-6S
Area ID	South of Bldg. 45									2A		2B	
Tetrachloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Tetrahydrofuran	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 40000	< 20
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,2-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,3-Dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
trans-1,4-Dichloro-2-butene	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Trichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			**223000**	< 5
Trichlorofluoromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 10000	< 5
Vinyl acetate	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10			< 20000	< 10
Vinyl chloride	< 2	< 2	< 2	**1.8** J	< 2	< 2	< 2	< 2	< 2			< 4000	< 2
Xylenes, Total	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**1.5** J	< 5			< 10000	< 5

Lab Qualifiers:

Values in bold font are detected values except the values with "J" qualifier

J: analyte detected below reporting limit and estimated value shown

S: spike recovery outside accepted recovery limits

Table 4-2(a)
Detected Concentrations in Ground Water (ug/L)
Boeing Tract 1, Hazelwood, Missouri

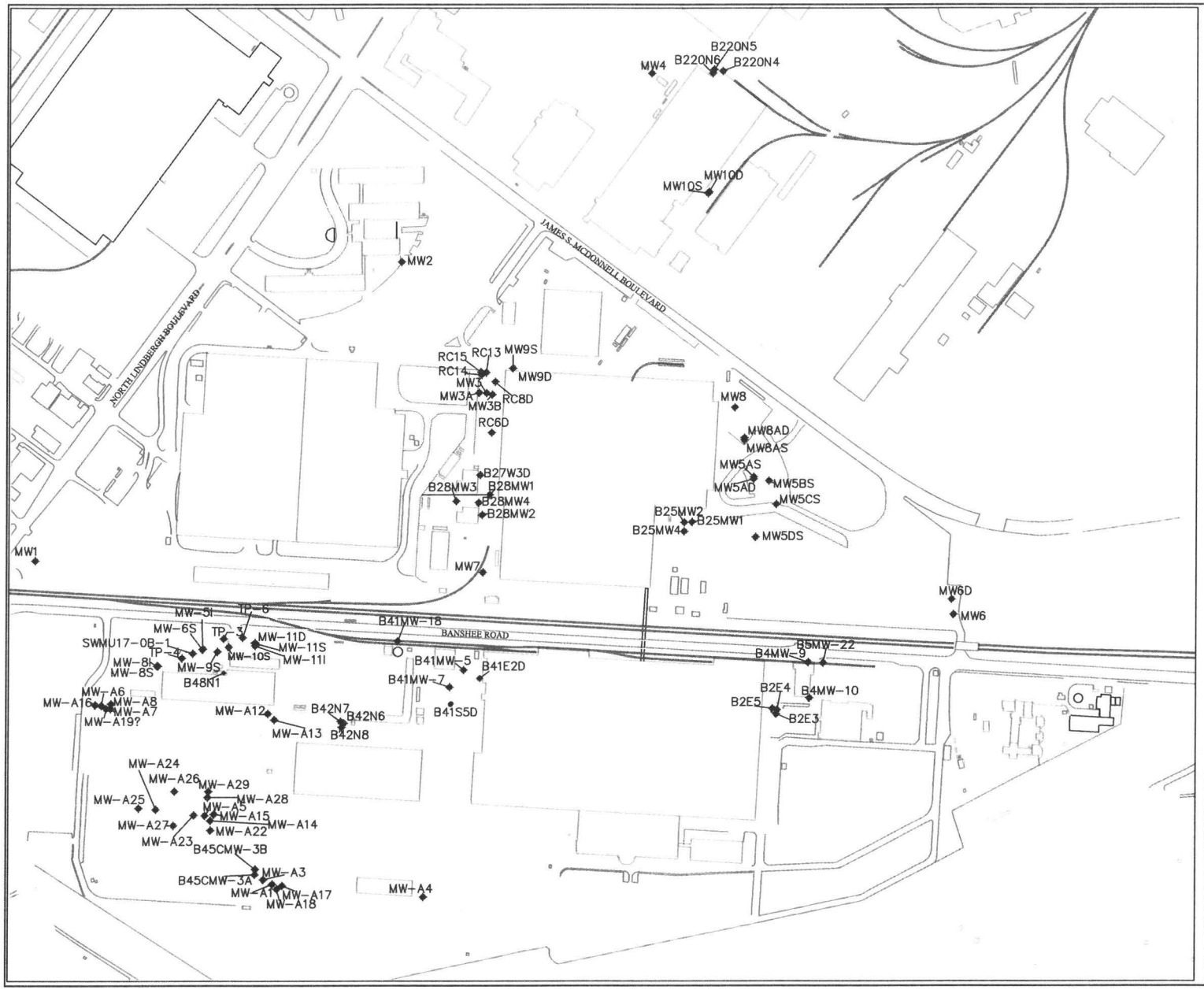
Date Collected	5/3/2010		5/3/2010		4/30/2010		5/3/2010		5/3/2010		5/3/2010		5/3/2010		4/30/2010		4/30/2010		4/29/2010		4/29/2010		4/29/2010		4/29/2010		4/29/2010	
Sample	MW-A22		MW-A23		MW-A26		MW-A27		Dup #3 (MW-A27)		MW-A28-SS		MW-A28-LF		MW-A8		MW-A6		MW-5I		MW-6S		MW-8S		MW8I		MW-11S-SS	
Area ID	South of Bldg. 45														2A				2B									
Metals (6010)																												
Arsenic															35.5		16	J	110						113			
Barium																												
Cadmium																					0.6	J					0.5	J
Chromium																												
Manganese																												
Mercury (7470)																												
Arsenic, Dissolved																	12	J							126			
Barium, Dissolved																												
Cadmium, Dissolved																									0.4	J	0.6	J
Chromium, Dissolved																												
Manganese, Dissolved																												
Mercury, Dissolved																												
SVOCs (8270)																												
Bis(2-ethylhexyl)phthalate																												
TPH (8270)																												
TPH - GRO (C6 - C10) (8260)			1,600		360	J			210	J	3,200		3,510															
TPH-DRO (C10 - C21)	200	J	868		384		240	J	270	J	1,820		1,530								280	J	200	J				
TPH-ORO (C21 - C35)			220	J							500	J	270	J														
VOCs (8260)																												
1,1-Dichloroethane					1.2	J																						
1,2-Dichloroethene, Total																			9,600	J								
Acetone			7.3	J							13	J	18	J														
Benzene					1.6	J							1.6	J														
cis-1,2-Dichloroethene																			9,600	J								
Heptane			48.7								83.4																	
Isopropylbenzene													11.3															
Naphthalene											2	J	4.8	J														
n-Butylbenzene													4.9	J														
n-Propylbenzene													7.16															
sec-Butylbenzene													3.1	J														
tert-Butylbenzene											1.3	J	1.6	J														
Tetrachloroethene																							2	J				
trans-1,2-Dichloroethene																												
Trichloroethene																			223,000								4.5	J
Trichlorofluoromethane																							1	J				
Vinyl chloride					1.8	J																						
Xylenes, Total													1.5	J														

Lab Qualifiers:
J: analyte detected below reporting limit

Table 4-2(d)
Wells with Detected Concentrations Exceeding Screening Levels (April - May 2010)
Boeing Tract 1, St. Louis, Missouri

Analyte	South of Bldg. 45	2A	2B	3D	3H	6B	6C	8A
Metals								
Arsenic		MW-A8 and MW-A6	MW-5I and MW8I			B28MW3, B28MW4, MW3, and MW9S		MW10S
Manganese				B41MW-5 and B41S5D	B4MW-9	B28MW3, MW3, and MW9S	MW-8AS and MW8AD	MW10S and MW10D
Arsenic, Dissolved		MW-A6	MW8I			B28MW4, MW3, and MW9S		
Manganese, Dissolved					B4MW-9	B28MW3, MW3, and MW9S		
SVOCs								
Bis(2-ethylhexyl)phthalate						MW9S		
VOCs								
1,1-Dichloroethane				B41S5D				
cis-1,2-Dichloroethene	MW-A28		MW-5I			MW3		
Naphthalene	MW-A28							
trans-1,2-Dichloroethene						MW3		
Trichloroethene			MW-5I					
Vinyl chloride			SWMU17-OB-1			MW3		

Notes:
Hush House: 2 wells had sheen hence not sampled
Areas 3A, 6A, and 8B have no exceedances in any wells.



RAM Group of Gannett Fleming, Inc.
5433 Westheimer, Suite 725, Houston, TX

Figure 2-1
Location of Monitoring Wells
(Shallow, Intermediate, and Deep Zones)
Boeing Tract 1
St. Louis, Missouri

November 2010/BR | RAM Group (049992)

REPLACEMENT PAGES TO JUNE 2010 REPORT APPENDIX B

In-Situ Inc.

Troll 9000
4/30/2010

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Mihika Baruah	Pump Model/Type	QED
Company Name	RAM Group of Gannett Fleming	Tubing Type	LDPE W/Teflon
Project Name	BOEING	Tubing Diameter	0.17 [in]
Site Name	49992	Tubing Length	13 [ft]
		Pump placement from TOC	8.5 [ft]

Well Information:		**Pumping information:**	
Well ID	MW-~~A16~~ A6	Final pumping rate	130 [mL/min]
Well diameter	2 [in]	Flowcell volume	658.02 [mL]
Well total depth	12.5 [ft]	Calculated Sample Rate	304 [sec]
Depth to top of screen	2.5 [ft]	Sample rate	304 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	4.59 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-3 %	+/-10 %	+/-0.3	+/-10
Last 5 Readings	9:35:42	59.08	6.81	533.29	6.60	0.19	-83.00
	9:40:57	59.21	6.81	542.60	5.10	0.15	-86.00
	9:46:13	59.37	6.82	552.60	6.70	0.12	-88.00
	9:51:28	59.42	6.83	561.32	3.80	0.09	-90.00
	9:56:43	59.62	6.83	569.17	3.40	0.07	-92.00
Variance in last 3 readings	9:46:13	0.16	0.01	10.00	1.60	-0.03	-2.00
	9:51:28	0.05	0.01	8.72	-2.90	-0.03	-2.00
	9:56:43	0.20	0.00	7.85	-0.40	-0.02	-2.00

Notes:
Sample Time:1000
Purged water volume:2.75 gal
Water quality parameters did not stabilize

Table A
Low Flow Purging Data at MW-~~A16~~ A6
Boeing Tract 1, Hazelwood, Missouri

Date	Time	ET	Temperature	Pressure	Barometric	Turbidity	Battery	ORP	pH	Rugged DO	Rugged DO Sat	Conductivity
		Sec	Fahrenheit	Feet H2O	Inches Hg	NTU	Volts	millivolts	pH	mg/L	%Saturation	microSiemens/cm
4/30/2010	8:53:41 AM	0	59.04	0	29.055	68.7	3.264	-78	6.73	-0.04	-0.4372	544.08
4/30/2010	8:58:57 AM	316	58.7	-2.869	29.056	65.6	3.264	-71	6.74	0.05	0.5317	471.83
4/30/2010	9:04:11 AM	630	58.56	-2.874	29.054	43.7	3.264	-68	6.75	0.24	2.4874	450.86
4/30/2010	9:09:26 AM	945	58.44	-0.308	29.05	26	3.235	-69	6.76	0.36	3.6534	459.27
4/30/2010	9:14:41 AM	1260	58.57	-0.822	29.049	18.4	3.264	-71	6.77	0.37	3.745	478.16
4/30/2010	9:19:58 AM	1577	58.75	-0.556	29.048	13.2	3.235	-74	6.78	0.33	3.3591	494.84
4/30/2010	9:25:12 AM	1891	58.92	0.216	29.047	9.3	3.294	-78	6.79	0.28	2.8514	511.12
4/30/2010	9:30:27 AM	2206	59.05	-2.834	29.041	9.1	3.294	-81	6.8	0.23	2.3319	522.29
4/30/2010	9:35:42 AM	2521	59.08	-0.944	29.037	6.6	3.235	-83	6.81	0.19	1.9114	533.29
4/30/2010	9:40:57 AM	2836	59.21	-0.476	29.037	5.1	3.294	-86	6.81	0.15	1.4922	542.6
4/30/2010	9:46:13 AM	3152	59.37	-0.643	29.035	6.7	3.264	-88	6.82	0.12	1.2017	552.6
4/30/2010	9:51:28 AM	3467	59.42	-0.021	29.034	3.8	3.264	-90	6.83	0.09	0.9085	561.32
4/30/2010	9:56:43 AM	3782	59.62	0.004	29.03	3.4	3.264	-92	6.83	0.07	0.7636	569.17

Monitor Well Low Flow Data

SITE NAME: Boeing
DATE: 4/30/10
WELL NO.: MW-~~A16~~ A6
PERSONNEL INITIALS: EMH/KLP

WELL DEPTH: 12.5ft
PRE-PURGE GW DEPTH w/o pump: 4.59
PRE-PURGE GW DEPTH w/ pump: 4.48
SCREENED INTERVAL: 2.5-12.5 ft
PUMP INTAKE DEPTH: 8.5 ft

PUMP TYPE: QED Bladder 2"
TUBING TYPE/SIZE: LDPE w/Teflon bonded/0.17"
PURGE START TIME: 0843
SAMPLE START TIME: 10:00
SAMPLE END TIME:

TIME	PH (units) (+/- 0.1 units)	Conductivity (uS/cm) (+/- 3%)	Redox (ORP) (mV) (+/- 10 units)	Dissolved Oxygen (mg/L) (+/- 10%)	Turbidity (NTU) (+/- 10%)	Water Temperature (°~~Celsius~~ F) (+/- 3%)	Purge Rate (ml/min)	Water Depth (ft btoc)
0853	6.73	544.1	-78	-0.04	68.70	59.04	130	5.15
0859	6.74	471.8	-71	+0.05	65.63	58.70	140	5.27
0904.	6.75	450.9	-68	0.24	43.71	58.56	135	5.45
0909	6.76	459.3	-69	0.36	26.01	58.44	135	5.58
0915	6.77	488.2	-71	0.37	18.42	58.57	120	5.68
0920	6.78	494.8	-74	0.33	13.18	58.75	120	5.77
0926	6.79	511.1	-78	0.28	9.30	58.92	120	5.89
0930	6.80	522.3	-81	0.23	9.140	59.05	120	5.99
0936	6.81	533.3	-83	0.19	6.629	59.08	120	6.09
0941	6.81	542.6	-86	0.15	5.076	59.21	120	6.16
0946	6.82	552.6	-88	0.12	6.659	59.37	120	6.24
0951	6.83	561.3	-90	0.09	3.751	59.41	120	6.32
0956	6.83	569.2	-92	0.07	3.413	59.62	115	6.38

Observations
(color, condition, etc.):
cut 13 ft of dedicated tubing
can be converted to snap sampler
PID = 0.1
Purge vol = 2.75 gallons

[illegible] - Boeing - GW Gauging
0700 Bhoom Kurpal > RAM
Kendall Pickett
Elmer Dwyer - Boeing
weather: Clear
Calm
mid 80's predicted
Safety Meeting
Calibrated PID

0730 Setup on MW7 at GKN
0740 B27W3D
TOC cut at steep angle
~~no cap on casing~~
manway - no bolts
0750 B28MW3
manway - no bolts
0755 B28MW4
0805 MW9D - artesian
0807 MW9S
- one bolt missing
0820 RC8D
Bolts missing
Cap off
0823 ~~RC14~~ RC15 special tool - manway
* Need long pipe wrench
Could not open manway cover

[illegible] - MW1
- missing one bolt
(bolt broken off in receptacle)
- other receptacle missing
0910 - B41MW-5
- no bolts
0925 - B41 MW-18

0945 - MW-A-25

0950 - MW-A26

0955 - MW-A27
(*) 0.005ft FSH
1003 - MW-A23

1011 - MW-A22

1015 - MW-A15

1045 - MW-A8 & ~~A16~~ A6
MW-A8 depth was way too shallow at 9.58 for a 15' well that was measured at 12.6' 7/08
MW-A16 - poss. covered with trailers. Measured at 6" dia well in general area

11:10 - 12:00 Lunch
12:05 MW-~~A16~~ A6 found it
photo w/ iphone under * luggage cart
* sheen when put probe in cup of water
1220. MW-A12

1230 MW-A13
- lost PID filter in well
1245 - ~~E~~ B42N6
missing one bolt
TOC crooked cut

1258 - MW-A4
Cap is broken

1310 - MW-A3 Hush house
well cap too high - keeps man way cover elevated above ground

1320 - MW-A1

1415 MW-10S

1430 B48N1

1440 MW-9S

1455 ~~B48N~~ B41S5D

1515 B2E3 & B2E5

1535 TP-6

1545 MW-11D
could not access well cover

1555 TP-3

1600 MW-6S & 5I
↳ broken bolt receptor

1618 TP-4
↳ No bolts for manway

1623 MW-8I & 8S
↳ missing bolt

Location _____ Date _____

Project / Client _____

815 Setting up on MW-~~A16~~A6
PID = 0.1 ppm
* Cannot seal well cap
(needs to be replaced)
Wtr. depth = 4.59 ft

10:30 Setting up on MW-A8
PID = 1.1 ppm
Wtr depth = 5.53
Can accept snapsamplers
but tight fit.

12:45 - 1:00 Lunch
13:00 - 1:15 Fix Pump
1:15 Setup on MW-A25
3.25 wtr depth
PID = 0.8 ppm
1:45 accidently disconnected
pump after purging
re-connected and flushed
3 purge cycles before
sampling

Location _____ Date _____

Project / Client _____

1600 Left site

REPLACEMENT PAGES TO JUNE 2010 REPORT APPENDIX C

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Risk Assessment & Management of Gannett
WorkOrder: 10041217
Lab ID: 10041217-003
Report Date: 10-May-10

Client Project: Boeing/049992
Client Sample ID: MW-~~A16~~ A6
Collection Date: 4/30/2010 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)								
Arsenic	NELAP	0.0250	J	**0.012**	mg/L	1	5/4/2010 5:52:33 PM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	5/4/2010 5:52:33 PM	LAL
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250	J	**0.016**	mg/L	1	5/4/2010 9:58:43 PM	LAL
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	5/4/2010 9:58:43 PM	LAL

Sample Narrative

CHAIN OF CUSTODY

pg. 1 of ___ Work Order # 1004121 7

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Boeing c/o RAM Group
Address: 5433 Westheimer Rd., Ste. 725
City / State / Zip: Houston, TX 77056
Contact: Kendall Pickett Phone: 713-784-5151
E-Mail: kpickett@ramgp.com Fax: 713-784-6105

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 1.6 °C
Preserved in: ☐ Lab ☒ Field DB 4/30/10
FOR LAB USE ONLY
Lab Notes: ø headspace
Comments: * Trip Blank info per container DB 4/30/10

Teklab, Inc.
Courier Pick Up

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

Project Name / Number: Boeing/049992
Sample Collector's Name: Kendall Pickett
Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other_____ ☐ 3 Day (50% Surcharge)
Billing Instructions: Boeing

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other TSP	MATRIX: Water	Drinking Water	Soil	Sludge	Sp. Waste	VOC/TPH-GRO 8260	TPH-DRO/OLO 8270	As, Cd Total	As, Cd Dissolved
1004121 7-001	MW-6S	4/29/10 1715	1	1						2	4					2	1	1	1
002	MW-5I	4/29/10 1910	1	1						2	4					2	1	1	
003	MW-~~A16~~A6	4/30/10 1000		2							2							1	1
004	MW-A8	4/30/10 1218		1							1							1	
005	MW-A25	4/30/10 1453	1							2	3					2	1		
006	Trip Blank	* 4/27/10 1130																	

Relinquished By	Date / Time	Received By	Date / Time
[signature]	4/30/10 16:20	[signature]	4/30/10 1600
[signature]	4/30/10 1655	[signature]	4/30/10 1655

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW – LAB PINK – SAMPLER'S COPY

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