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Ms. Tammy Moore  
U.S. Environmental Protection Agency – Region 5  
Waste, Pesticides, and Toxics Division  
77 W. Jackson Blvd. DE-97  
Chicago, IL 60604-3590

Subject:  
Results of 2006 Annual Groundwater Sampling Event  
GM NAO Flint Operations Site, Flint, Michigan

INDUSTRIAL

Dear Ms. Moore:

This report, being submitted on behalf of Kurt Blizzard of the General Motors Corporation (GM) by ARCADIS of New York, Inc. (ARCADIS BBL), presents the results of groundwater monitoring activities completed at the GM North American Operations (NAO) Flint Operations Site in Flint, Michigan (the site). Monitoring was performed in October and November 2006 in accordance with Section 2.7 of the report, *Migration of Contaminated Groundwater Under Control Environmental Indicator* (ENVIRON International Corporation, September 23, 2005) (CA 750 Report).

Date:  
April 25, 2007

Contact:  
Lisa R. Coffey, P.G.

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As we have discussed during our periodic project status calls, these activities were performed only at onsite monitoring wells, since GM had not yet secured access agreements with the offsite property owners affected by the monitoring. However, toward accomplishing the goals of the monitoring outlined in the CA 750 Report, in October 2006 GM proceeded with the measurement of groundwater and light non-aqueous phase liquid (LNAPL) levels at the monitoring wells listed in Table 2-7 of the CA 750 Report which are located on GM property. In November 2006, GM proceeded with the collection of groundwater samples at the monitoring wells listed in Table 2-6 of the CA 750 Report which are located on GM property.

Our ref:  
B0064410 #2.04

GM continues to pursue access agreements to allow access to all of the offsite monitoring locations, and an agreement with CSX has been successfully renewed. Future monitoring activities will be limited to onsite locations and locations on the CSX property until GM secures access agreements to conduct monitoring at the other offsite monitoring wells listed in Tables 2-6 and 2-7 of the CA 750 Report.

This report summarizes the scope of monitoring activities completed during 2006, the data collected, and the follow-up activities recommended in response to the monitoring data.

Imagine the result

On October 30 and 31, 2006, a groundwater and LNAPL elevation monitoring event was completed at select onsite monitoring wells. Groundwater elevation and LNAPL thickness data, which were within historical ranges, are summarized in Table 1. Groundwater elevation contour maps, prepared based on the October data, are attached (Figures 1 and 2).

On November 1 and 2, 2006, groundwater samples were collected from 22 onsite monitoring wells. Three monitoring wells (36-101, RFI-36-03 and RFI-36-46) were added to the groundwater monitoring program to provide additional monitoring at the property line because offsite monitoring was not possible downgradient of Factory 36. Monitoring well RFI-36-02, shown on Figure 3, was sampled as a replacement for monitoring well RFI-36-04 because monitoring well RFI-36-04 is damaged.

All monitoring wells were sampled using low-flow sampling methods in accordance with the *Field Sampling Plan* (FSP) (BBL, 2005). The static groundwater level in each well was measured to the nearest hundredth of 1 foot using an electronic water-level probe prior to sampling (Table 1). Each well was purged until measured field parameters (i.e., temperature, specific electrical conductivity, dissolved oxygen, oxidation/reduction potential, pH, and turbidity) stabilized. Field-measured data are summarized in Table 2. Groundwater samples were submitted to Merit Analytical Laboratories, as specified in the FSP, and analyzed using the procedures specified in the *Quality Assurance Project Plan* (QAPP) (BBL, 2005) for Project Analyte List volatile organic compounds (VOCs). The analytical results were validated, as specified in the QAPP, by Conestoga-Rovers & Associates (CRA). The *Data Validation Report* is included as Attachment 1.

The current and historical analytical results, which are summarized in Table 3 and shown on Figures 3 through 9, were generally consistent with historical ranges at all locations, with the exception of the data collected at three monitoring wells: RFI-02-12, 20-500R and RFI-09-53.

- Concentrations of acetone in groundwater at monitoring well RFI-02-12 decreased from 47 milligrams per liter (mg/L) in February 2005 to non-detect in December 2006. Analytical results for RFI-02-12 are shown on Figure 8.
- Benzene was detected at a concentration of 0.025 mg/L in the groundwater sample collected from monitoring well 20-500R, which exceeded the Generic Industrial Drinking Water (IDW) screening criteria of 0.005 mg/L, outlined in Part 201 of the Michigan Natural Resources Environmental Protection Act of 1994

April 25, 2007

(Public Act 451), as amended (Part 201). Monitoring well 20-500R was installed as a replacement for monitoring well 20-500, and was sampled for the first time during this event. Low levels of benzene (0.0013 - 0.0017 mg/L) had been detected in monitoring well 20-500 during monitoring events performed between 2001 and 2003. Analytical results for 20-500 and 20-500R are shown on Figure 4.

- The concentration of vinyl chloride in the groundwater sample collected from monitoring well RFI-09-53 was above the Part 201 IDW criteria of 0.002 mg/L for the first time. Vinyl chloride was detected at a concentration of 0.004 mg/L in 2006. Analytical results for RFI-09-53 are shown on Figure 9.

The next quarterly monitoring event will be conducted in April 2007. Monitoring wells 36-101, RFI-36-03, and RFI-36-46 will be included in the April event to monitor groundwater quality downgradient of Factory 36, since access agreements for the offsite properties (with the exception of CSX) have not been obtained. Monitoring wells RFI-36-09 and RFI-36-10 will be sampled for VOCs to confirm the concentrations of benzene and ethylbenzene detected in monitoring well 20-500R during the October/November event.

If you have any questions, please contact me.

Sincerely,

ARCADIS of New York, Inc.



Lisa R. Coffey, P.G.  
Senior Geologist II

Attachments:

- Table 1 – Groundwater Elevation Data
- Table 2 – Field Parameter Measurements
- Table 3 – Groundwater Analytical Results

- Figure 1 – Groundwater Elevation Contour Map – October 30-31, 2006 North End
- Figure 2 – Groundwater Elevation Contour Map – October 30-31, 2006 South End
- Figure 3 – Groundwater Analytical Data – Building 36 Area
- Figure 4 – Groundwater Analytical Data – Building 20 Area
- Figure 5 – Groundwater Analytical Data – Building 30 Area

Figure 6 – Groundwater Analytical Data – Factory 81 (Building 69, 70, 71, 72, 73, and 74) Area

Figure 7 – Groundwater Analytical Data – Former Buildings 03, 17, 28, 84, and 94 Area

Figure 8 – Groundwater Analytical Data – Former Building 02, 12, 23, and 29 Area

Figure 9 – Groundwater Analytical Data – Former Building 09 Area

Attachment 1 – Data Validation Report

Copies:

Kurt Blizzard, GM

Jean Caufield, GM

Amanda Kurzman, GM

James Walle, GM

Peter Quackenbush, MDEQ

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Flint Public Library, c/o Derek Kaiding (ARCADIS BBL)

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**Tables**

**Table 1. Groundwater Elevation Data, CA 750 Groundwater Monitoring Program  
General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

Well ID	Reference Point Elevation (feet)	LNAPL Density (extrapolated or measured)	October 30 - 31, 2006				
			Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation	Groundwater Elevation Corrected for LNAPL
03-3R	746.47	0.9	10.15	1.70	11.85	734.62	736.15
03-105R3	NA	--	--	0.00	9.09	NA	--
04-4	NA	--	--	0.00	6.32	NA	--
04-160	729.13	--	--	0.00	12.60	716.53	--
20-102	752.30	--	--	0.00	9.75	742.55	--
20-144	749.90	--	--	0.00	7.97	741.93	--
20-145	749.34	--	--	0.00	8.95	740.39	--
20-160	752.81	0.99	--	0.00	11.55	741.26	--
20-162	753.48	0.99	12.00	0.60	12.60	740.88	741.47
20-163R	750.58	0.99	10.15	3.05	13.20	737.38	740.40
20-168	753.44	0.99	12.8	0.90	13.70	739.74	740.63
20-500R	750.77	--	--	0.00	9.29	741.48	--
20-502	751.29	0.99	9.45	2.90	12.35	738.94	741.81
20-503	751.54	0.99	10.46	0.99	11.45	740.09	741.07
20-506	751.35	--	--	0.00	9.38	741.97	--
20-FP-10	747.25	--	--	0.00	6.84	740.41	--
20-FP-11R	744.09	--	--	0.00	3.75	740.34	--
20-FP-8	748.73	0.99	8.64	1.01	9.65	739.08	740.08
20-FP-9R	749.21	--	--	0.00	8.65	740.56	--
31-5	736.12	--	--	0.00	9.79	726.33	--
31-8	730.26	--	--	0.00	7.26	723.00	--
36 FP2	750.30	0.9	12.1	1.03	13.13	737.17	738.10
36 FP3	749.41	0.9	11.13	0.01	11.14	738.27	738.28
36 FP4	753.70	0.9	--	0.00	15.32	738.38	--
36 FP6	749.51	0.9	8.16	5.62	13.78	735.73	--
36 FP7	750.02	0.9	11.87	4.15	16.02	734.00	737.74
36 FP8	748.83	--	--	0.00	7.40	741.43	--
37-RW-NORTH	NA	0.9	9.85	0.01	9.86	NA	NA
37-RW-SOUTH	NA	--	--	0.00	10.24	NA	--
40-3	737.01	--	--	0.00	12.74	724.27	--
40-302	732.96	--	--	0.00	5.75	727.21	--
40-303R	730.41	--	--	0.00	12.36	718.05	--
40-304	731.11	--	--	0.00	3.10	728.01	--
40-305	731.24	--	--	0.00	4.10	727.14	--
40-6R	735.00	--	--	0.00	4.79	730.21	--
40-07R2	735.37	0.92	11.22	3.29	14.51	720.86	723.89
43-161	750.19	0.92	9.30	0.90	10.20	739.99	740.82
43-165	749.41	0.92	6.97	0.93	7.90	741.51	742.37
43-166	747.97	--	--	0.00	6.75	741.22	--
43-167	748.43	--	--	0.00	7.47	740.96	--
43-242	753.64	--	--	0.00	12.35	741.29	--
55-1	753.43	--	--	0.00	11.32	742.11	--
55-2	753.06	--	--	0.00	10.67	742.39	--
70-101	742.68	0.91	3.00	0.60	3.60	739.08	739.63
70-103	743.78	0.91	3.82	0.20	4.02	739.76	739.94
70-105	743.58	--	--	0.00	2.61	740.97	--
70-107R	742.80	0.91	3.31	4.44	7.75	735.05	739.09
84-6R2-D	726.80	--	--	0.00	5.42	721.38	--
84-7-D	727.42	--	--	0.00	8.58	718.84	--

See Notes on Page 4.

**Table 1. Groundwater Elevation Data, CA 750 Groundwater Monitoring Program  
General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

Well ID	Reference Point Elevation (feet)	LNAPL Density (extrapolated or measured)	October 30 - 31, 2006				
			Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation	Groundwater Elevation Corrected for LNAPL
87-FP1	715.79	--	--	0.00	1.55	714.24	--
87-FPD2	742.05	--	--	0.00	27.83	714.22	--
87-FPD3	742.05	--	--	0.00	24.75	717.30	--
88-7	742.20	--	--	0.00	3.40	738.80	--
ACSP-B2AR	738.66	--	--	0.00	25.82	712.84	--
BD01-04	736.02	--	--	0.00	15.56	720.46	--
MW-00-FP6	740.73	--	--	0.00	16.56	724.17	--
RFI-02-05	738.88	--	--	0.00	2.20	736.68	--
RFI-02-08R	736.07	--	--	0.00	5.55	730.52	--
RFI-02-12	738.51	--	--	0.00	5.15	733.36	--
RFI-02-14	738.73	0.95	5.35	3.65	9.00	729.73	733.20
RFI-03-02	742.35	--	--	0.00	6.25	736.10	--
RFI-05-06	752.13	--	--	0.00	11.60	740.53	--
RFI-05-13	754.16	0.92	12.70	3.15	15.85	738.31	741.21
RFI-05-14	754.12	0.92	12.63	1.87	14.50	739.62	741.34
RFI-07-03	726.74	--	--	0.00	0.25	726.49	--
RFI-07-08	728.12	--	--	0.00	12.36	715.76	--
RFI-09-04R	725.95	--	--	0.00	14.89	711.06	--
RFI-09-40R	729.76	0.75	6.01	2.62	8.63	721.13	723.10
RFI-09-44	728.22	--	--	0.00	4.95	723.27	--
RFI-09-45R	729.76	--	--	0.00	4.10	725.66	--
RFI-09-48	719.69	--	--	0.00	9.30	710.39	--
RFI-09-49R	726.43	--	--	0.00	14.75	711.68	--
RFI-09-52	730.21	--	--	0.00	7.38	722.83	--
RFI-09-53	725.48	--	--	0.00	9.85	715.63	--
RFI-09-56	726.93	--	--	0.00	4.35	722.58	--
RFI-09-57	724.90	--	--	0.00	4.25	720.65	--
RFI-09-58	723.38	--	--	0.00	4.20	719.18	--
RFI-10-28	752.58	--	--	0.00	12.75	739.83	--
RFI-12-02R	742.10	0.93	5.70	0.85	6.55	735.55	736.34
RFI-12-07R2	741.95	--	--	0.00	3.01	738.94	--
RFI-12-08 (Replaced)	742.08	0.93	7.50	0.25	7.75	734.33	734.56
RFI-12-09R	741.97	0.93	4.00	0.72	4.72	737.25	737.92
RFI-12-11D	742.09	0.93	7.94	3.66	11.60	730.49	733.89
RFI-12-11S	742.17	--	--	0.00	4.10	738.07	--
RFI-12-14R	742.20	--	--	0.00	4.43	737.77	--
RFI-12-15	742.13	--	--	0.00	4.35	737.78	--
RFI-12-21	741.50	--	--	0.00	9.47	732.03	--
RFI-12-22R	742.07	0.93	--	0.00	3.24	738.83	--
RFI-12-23	742.21	0.93	7.97	1.53	9.50	732.71	734.13
RFI-12-24	742.12	--	--	--	3.05	739.07	--
RFI-12-25	741.85	--	--	--	3.44	738.41	--
RFI-12-26	742.04	0.93	3.95	0.05	4.00	738.04	738.09
RFI-12-32	738.61	--	--	0.00	2.34	736.27	--
RFI-12-33	743.66	--	--	0.00	4.74	738.92	--
RFI-12-34	744.02	--	--	0.00	5.00	739.02	--
RFI-12-35	743.83	0.93	4.65	0.60	5.25	738.58	739.14
RFI-12-36	743.89	0.93	--	0.00	2.50	741.39	--

See Notes on Page 4.

**Table 1. Groundwater Elevation Data, CA 750 Groundwater Monitoring Program  
General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

Well ID	Reference Point Elevation (feet)	LNAPL Density (extrapolated or measured)	October 30 - 31, 2006				
			Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation	Groundwater Elevation Corrected for LNAPL
RFI-12-38	742.39	0.93	5.00	0.70	5.70	736.69	737.34
RFI-12-40	741.47	--	--	0.00	5.22	736.25	--
RFI-12-41	741.56	--	--	0.00	3.50	738.06	--
RFI-16-01	736.10	--	--	0.00	7.29	728.81	--
RFI-16-04R	732.12	--	--	0.00	7.50	724.62	--
RFI-16-07	733.26	--	--	0.00	6.60	726.66	--
RFI-16-08	733.24	0.86	5.85	0.63	6.48	726.76	727.30
RFI-16-09	733.39	--	--	0.00	5.21	728.18	--
RFI-16-10	736.09	0.86	7.88	0.32	8.20	727.89	728.17
RFI-16-12	735.58	--	--	0.00	8.20	727.38	--
RFI-16-20	732.35	--	--	0.00	7.78	724.57	--
RFI-16-24	736.39	--	--	0.00	8.32	728.07	--
RFI-17-02	720.27	--	--	0.00	3.05	717.22	--
RFI-17-02D	720.36	--	--	0.00	3.81	716.55	--
RFI-23-01R	741.73	--	--	0.00	3.18	738.55	--
RFI-23-02R	740.08	--	--	0.00	2.96	737.12	--
RFI-36-02	751.96	--	--	0.00	14.05	737.91	--
RFI-36-05	755.07	0.83	--	0.00	16.56	738.51	--
RFI-36-06	755.29	0.83	16.32	1.53	17.85	737.44	738.71
RFI-36-07	753.94	0.83	14.03	1.43	15.46	738.48	739.67
RFI-36-12	753.52	0.83	--	0.00	11.34	742.18	--
RFI-36-14	750.00	--	--	0.00	7.66	742.34	--
RFI-36-25R	754.67	--	--	0.00	14.23	740.44	--
RFI-36-29R	753.72	0.83	15.15	1.75	16.90	736.82	738.27
RFI-36-37	757.15	--	--	0.00	18.83	738.32	--
RFI-36-46	750.13	--	--	0.00	12.23	737.90	--
RFI-40-01R2	734.05	--	--	0.00	2.80	731.25	--
RFI-40-02R	735.34	--	7.55	0.60	8.15	727.19	727.19
RFI-40-03	735.33	--	--	0.00	8.00	727.33	--
RFI-40-04	728.15	--	--	0.00	9.75	718.40	--
RFI-40-07	729.35	0.92	--	0.00	1.31	728.04	--
RFI-40-09	731.85	--	--	0.00	8.72	723.13	--
RFI-40-10R	735.17	--	--	0.00	6.81	728.36	--
RFI-40-12R	743.12	0.92	8.95	0.60	9.55	733.57	734.12
RFI-40-13	731.92	--	--	0.00	7.02	724.90	--
RFI-40-15	732.18	--	--	0.00	2.26	729.92	--
RFI-55-01	751.85	--	--	0.00	8.26	743.59	--
RFI-55-02	752.88	--	--	0.00	10.23	742.65	--
RFI-81-02	745.92	--	--	0.00	15.00	730.92	--
RFI-81-03	745.70	--	--	0.00	14.11	731.59	--
RFI-81-07	NA	--	--	0.00	5.64	NA	--
RFI-81-08	741.43	--	--	0.00	8.02	733.41	--
RFI-81-35	743.23	--	--	0.00	13.78	729.45	--
RFI-81-45	742.87	--	--	0.00	4.35	738.52	--
RFI-81-50	740.60	--	--	0.00	2.93	737.67	--
RFI-81-51	742.35	--	--	0.00	13.27	729.08	--
RFI-83/84-01	741.34	--	--	0.00	4.07	737.27	--
RFI-83/84-04	745.51	0.89	10.40	0.02	10.42	735.09	735.11
RFI-83/84-06	745.58	0.89	10.10	2.33	12.43	733.15	735.22

See Notes on Page 4.

**Table 1. Groundwater Elevation Data, CA 750 Groundwater Monitoring Program  
General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

Well ID	Reference Point Elevation (feet)	LNAPL Density (extrapolated or measured)	October 30 - 31, 2006				Groundwater Elevation Corrected for LNAPL
			Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation	
RFI-83/84-07	746.56	0.88	8.10	1.95	10.05	736.51	738.23
RFI-83/84-29	742.76	--	--	0.00	12.38	730.38	--
RFI-83/84-49	745.25	0.89	9.51	4.00	13.51	731.74	735.30
RFI-83/84-54	746.41	--	--	0.00	8.21	738.20	--
RFI-84-03S	727.23	--	--	0.00	8.95	718.28	--
RFI-84-04I	727.23	--	--	0.00	8.75	718.48	--
RFI-84-04D	727.08	--	--	0.00	8.60	718.48	--
RFI-84-05	726.63	--	--	0.00	6.05	720.58	--
RFI-84-06R	720.12	--	--	0.00	4.36	715.76	--
RFI-84-06RD	720.18	--	--	0.00	6.00	714.18	--
RFI-84-07	727.12	--	--	0.00	7.27	719.85	--
RFI-84-08	727.22	--	--	0.00	9.87	717.35	--
RFI-84-09S	719.43	--	--	0.00	7.94	711.49	--
RFI-84-09D	719.27	--	--	0.00	7.45	711.82	--
RFI-84-11S	721.97	--	--	0.00	3.49	718.48	--
RFI-85-02R	742.91	0.86	--	0.00	13.25	729.66	--
RFI-85-04R	745.95	--	--	0.00	18.38	727.57	--
RFI-85-05	745.95	--	--	0.00	12.05	733.90	--
RFI-86-01R	735.51	--	--	0.00	21.43	714.08	--
RFI-86-03	736.62	0.87	--	0.00	6.15	730.47	--
RFI-86-06D	737.21	--	--	0.00	22.07	715.14	--
RFI-86-06S	737.32	--	--	0.00	11.37	725.95	--
RFI-86-08R	743.25	--	--	0.00	11.15	732.10	--
RFI-86-16R	731.76	--	--	0.00	15.67	716.09	--
RFI-94-08	727.44	--	--	0.00	14.73	712.71	--
RW-05 North	NA	--	13.10	1.90	15.00	NA	NA
Hamilton Bridge 2005	720.09	--	--	0.00	11.90	708.19	--

**Notes:**

Groundwater elevations relative to the NGVD of 1929, and are expressed relative to mean sea level.

NAPL density data are based on laboratory analysis of NAPL at select locations and extrapolation of data to nearby well locations.

NA = Not Available.

-- = Not Applicable; NAPL not present.

**Table 2. Field Parameter Measurements, CA 750 Groundwater Monitoring Program  
General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

Well ID	Date Sampled	pH (SU)	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTUs)
RFI-02-12	11/1/2006	7.12	16.13	1.110	0.37	160.1	4.01
RFI-09-04R	11/1/2006	6.93	15.14	1.641	1.03	158.4	0.34
RFI-09-48	11/1/2006	6.83	15.62	3.736	0.01	-48.4	4.71
RFI-09-53	11/1/2006	6.92	13.12	1.329	0.47	162.1	0.84
RFI-12-32	11/1/2006	7.28	14.43	0.973	0.18	104	3.94
RFI-17-02	11/1/2006	6.88	16.36	1.645	0.27	-12.9	4.23
RFI-17-02D	11/1/2006	7.19	15.35	1.900	0.30	-90.9	5.00
RFI-23-01R	11/1/2006	7.26	14.56	0.847	0.67	138.7	1.31
RFI-84-06R	11/1/2006	8.38	13.94	2.071	0.63	33.6	91.30
RFI-84-09D	11/1/2006	7.07	14.43	2.555	0.24	-60.8	26.90
RFI-84-09S	11/1/2006	7.02	15.25	1.248	0.27	29.7	1.32
RFI-84-11S	11/1/2006	6.84	14.01	1.606	0.43	37.7	4.59
20-500R	11/2/2006	6.88	15.53	4.223	0.37	-321.6	3.85
20-FP-10	11/2/2006	7.52	13.51	2.278	0.69	-127.5	3.06
36-101	11/2/2006	6.87	15.25	3.571	1.10	200.9	0.51
RFI-10-26	11/2/2006	7.06	13.17	5.680	8.62	107.01	4.48
RFI-36-02	11/2/2006	7.06	15.31	2.160	0.21	26.7	5.09
RFI-36-03	11/2/2006	7.85	14.95	4.671	0.36	58.3	4.42
RFI-36-14	11/2/2006	6.92	14.52	5.440	0.30	16	3.47
RFI-36-46	11/2/2006	6.66	14.41	4.639	0.95	77	2.02
RFI-81-50	11/2/2006	7.37	10.19	0.504	4.03	-141.8	0.91
RFI-84-06RD	11/2/2006	8.60	13.89	3.125	0.61	60.2	1.19

**Notes:**

°C = Celsius.

mg/L = milligrams per Liter.

mV = millivolts.

NA = Not Available.

NTUs = Nephelometric Turbidity Units.

SU = Standard Units.

mS/cm = milliSiemens per centimeter.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	Flammability and Explosivity Screening Level (FE)	Acute Inhalation Screening Level (GAI)	Groundwater Contact Criteria (GCC)	Groundwater Surface Water Interface (GSI)	Industrial & Commercial II, III & IV Drinking Water Criteria (IDW)	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria (IGVIA)	Residential & Commercial I Drinking Water Criteria (RDW)	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (RGVIA)	20-500		20-500R
									06/14/02	03/26/03	11/02/06
									VOLATILE ORGANIC COMPOUNDS (mg/L)		
1,1,1-Trichloroethane	{ID}	1,300 {S}	1,300 {S}	0.2	0.2 {A}	1,300 {S}	0.2 {A}	660	ND(0.0010)	ND(0.0010)	0.005 U
1,1,2,2-Tetrachloroethane	{ID}	{ID}	4.7	0.078 {X}	0.035	77	0.0085	12	ND(0.0010)	ND(0.0010)	0.005 U
1,1,2-Trichloroethane	{NA}	{ID}	21	0.33 {X}	0.005 {A}	110	0.005 {A}	17	ND(0.0010)	ND(0.0010)	0.005 U
1,1-Dichloroethane	380	{ID}	2,400	0.74	2.5	2,300	0.88	1,000	ND(0.0010)	0.0012	0.005 U
1,1-Dichloroethene	97 {I}	140 {I}	11 {I}	0.065 {I,X}	0.007 {I,A}	1.3 {I}	0.007 {I,A}	0.2 {I}	ND(0.0010)	ND(0.0010)	0.005 U
1,2,4-Trichlorobenzene	{NA}	300 {S}	19	0.03	0.07 {A}	300 {S}	0.07 {A}	300 {S}	ND(0.0050)	ND(0.0050)	0.01 U
1,2-Dibromo-3-chloropropane (DBCP)	{NA}	{ID}	0.39	{NA}	0.0002 {A}	1.2 {S}	0.0002 {A}	1.2 {S}	ND(0.0010)	ND(0.0010)	0.005 U
1,2-Dibromoethane (Ethylene Dibromide)	{ID}	{ID}	0.025	0.0002 {X}	0.00005 {A}	15	0.00005 {A}	2.4	ND(0.0010)	ND(0.0010)	0.005 U
1,2-Dichlorobenzene	{NA}	160 {S}	160 {S}	0.016	0.6 {A}	160 {S}	0.6 {A}	160 {S}	ND(0.0010)	ND(0.0010)	0.005 U
1,2-Dichloroethane	2,500 {I}	{ID}	19 {I}	0.36 {I,X}	0.005 {I,A}	59 {I}	0.005 {I,A}	9.6 {I}	ND(0.0010)	ND(0.0010)	0.005 U
1,2-Dichloropropane	550 {I}	2,800 {I,S}	16 {I}	0.29 {I,X}	0.005 {I,A}	36 {I}	0.005 {I,A}	16 {I}	ND(0.0010)	ND(0.0010)	0.005 U
1,3-Dichlorobenzene	{ID}	{ID}	2	0.038	0.019	{ID}	0.0066	{ID}	ND(0.0010)	ND(0.0010)	0.005 U
1,4-Dichlorobenzene	{NA}	{ID}	6.4	0.013	0.075 {A}	74 {S}	0.075 {A}	16	ND(0.0010)	ND(0.0010)	0.005 U
2-Butanone (Methyl Ethyl Ketone)	{ID}	240,000 {I,S}	240,000 {I,S}	2.2 {I}	38 {I}	240,000 {I,S}	13 {I}	240,000 {I,S}	ND(0.025)	ND(0.025)	0.1 UJ
2-Hexanone	{NA}	{ID}	5,200	{NA}	2.9	8,700	1	4,200	ND(0.050)	ND(0.050)	0.3 UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	{ID}	20,000 {I,S}	13,000 {I}	{ID}	5.2 {I}	20,000 {S}	1.8 {I}	20,000 {I,S}	ND(0.050)	ND(0.050)	0.05 U
Acetone	15,000 {I}	1,000,000 {I,D}	31,000 {I}	1.7 {I}	2.1 {I}	1,000,000 {I,D,S}	0.73 {I}	1,000,000 {I,D,S}	ND(0.025)	ND(0.025)	0.1 UJ
Benzene	68 {I}	67 {I}	11 {I}	0.2 {I,X}	0.005 {I,A}	35 {I}	0.005 {I,A}	5.6 {I}	0.0013	0.0017	0.025 {IDW,RDW}
Bromodichloromethane	{ID}	{ID}	14	{ID}	0.08 {A,W}	37	0.08 {A,W}	4.8	ND(0.0010)	ND(0.0010)	0.005 U
Bromoforn	{ID}	{ID}	140	{ID}	0.08 {A,W}	3,100 {S}	0.08 {A,W}	470	ND(0.0010)	ND(0.0010)	0.005 U
Bromomethane (Methyl Bromide)	{ID}	{ID}	70	0.035	0.029	9	0.01	4	ND(0.0010)	ND(0.0010)	0.01 U
Carbon disulfide	13 {I,R}	{ID}	1,200 {I,R,S}	{ID}	2.3 {I,R}	550 {I,R}	0.8 {I,R}	250 {I,R}	ND(0.0050)	ND(0.0050)	0.03 U
Carbon tetrachloride	{ID}	96	4.6	0.045 {X}	0.005 {A}	2.4	0.005 {A}	0.37	ND(0.0010)	ND(0.0010)	0.005 U
Chlorobenzene	160 {I}	{ID}	86 {I}	0.047 {I}	0.1 {I,A}	470 {I,S}	0.1 {I,A}	210 {I}	ND(0.0010)	ND(0.0010)	0.005 U
Chloroethane	110	{ID}	440	{ID}	1.7	5,700 {S}	0.43	5,700 {S}	ND(0.0010)	ND(0.0010)	0.005 U
Chloroform (Trichloromethane)	{ID}	{ID}	150	0.17 {X}	0.08 {A,W}	180	0.08 {A,W}	28	ND(0.0010)	ND(0.0010)	0.005 U
Chloromethane (Methyl Chloride)	36 {I}	210 {I}	490 {I}	{ID}	1.1 {I}	45 {I}	0.26 {I}	8.6 {I}	ND(0.0010)	ND(0.0010)	0.005 U
cis-1,2-Dichloroethene	530	{ID}	200	0.62	0.07 {A}	210	0.07 {A}	93	ND(0.0010)	0.012	0.005 U
cis-1,3-Dichloropropene	--	--	--	--	--	--	--	--	ND(0.0010)	ND(0.0010)	0.005 UJ
Cyclohexane	--	--	--	--	--	--	--	--	ND(0.0050)	ND(0.0050)	0.005 U
Dibromochloromethane	{ID}	{ID}	18	{ID}	0.08 {A,W}	110	0.08 {A,W}	14	ND(0.0010)	ND(0.0010)	0.005 U
Dichlorodifluoromethane (CFC-12)	{ID}	{ID}	300 {S}	{ID}	4.8	300 {S}	1.7	220	ND(0.0010)	ND(0.0010)	0.005 U
Ethylbenzene	43 {I}	170 {I,S}	170 {I,S}	0.018 {I}	0.7 {I,E}	170 {I,S}	0.7 {I,E}	110 {I}	ND(0.0010)	ND(0.0010)	0.429
Isopropylbenzene	29	{ID}	56 {S}	{ID}	2.3	56 {S}	0.8	56 {S}	ND(0.0050)	ND(0.0050)	0.326
m&p-Xylene	--	--	--	--	--	--	--	--	ND(0.0020)	ND(0.0020)	0.074

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	Flammability and Explosivity Screening Level (FE)	Acute Inhalation Screening Level (GAI)	Groundwater Contact Criteria (GCC)	Groundwater Surface Water Interface (GSI)	Industrial & Commercial II, III & IV Drinking Water Criteria (IDW)	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria (IGVIA)	Residential & Commercial I Drinking Water Criteria (RDW)	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (RGVIA)	20-500		20-500R
									06/14/02	03/26/03	11/02/06
									VOLATILE ORGANIC COMPOUNDS (mg/L)		
Methyl acetate	--	--	--	--	--	--	--	--	ND(0.0050)	ND(0.0050)	0.05 U
Methyl cyclohexane	--	--	--	--	--	--	--	--	ND(0.0010)	ND(0.0010)	0.01 J
Methyl Tert Butyl Ether	{ID}	{ID}	610	0.73 {X}	0.69 {E}	47,000 {S}	0.24 {E}	47,000 {S}	ND(0.0050)	ND(0.0050)	0.03 U
Methylene chloride	{ID}	{ID}	220	0.94 {X}	0.005 {A}	1,400	0.005 {A}	220	ND(0.0050)	ND(0.0050)	0.03 U
o-Xylene	--	--	--	--	--	--	--	--	ND(0.0010)	ND(0.0010)	0.004 J
Styrene	140	310 {S}	9.7	0.08	0.1 {A}	310 {S}	0.1 {A}	170	ND(0.0010)	ND(0.0010)	0.005 U
Tetrachloroethene	{ID}	200 {S}	12	0.045 {X}	0.005 {A}	170	0.005 {A}	25	ND(0.0010)	ND(0.0010)	0.005 U
Toluene	61 {I}	{ID}	530 {I,S}	0.14 {I}	1 {I,E}	530 {I,S}	1 {I,E}	530 {I,S}	ND(0.0010)	ND(0.0010)	0.0009 J
trans-1,2-Dichloroethene	230	{ID}	220	1.5	0.1 {A}	200	0.1 {A}	85	ND(0.0010)	0.0020	0.005 U
trans-1,3-Dichloropropene	--	--	--	--	--	--	--	--	ND(0.0010)	ND(0.0010)	0.005 U
Trichloroethene	{ID}	1,100 {S}	22	0.2 {X}	0.005 {A}	97	0.005 {A}	15	ND(0.0010)	0.0042	0.005 U
Trichlorofluoromethane (CFC-11)	{ID}	1,100 {S}	1,100 {S}	{NA}	7.3	1,100 {S}	2.6	1,100 {S}	ND(0.0010)	ND(0.0010)	0.005 U
Trifluorotrchloroethane (Freon 113)	{ID}	170 {S}	170 {S}	0.032	170 {S}	170 {S}	170 {S}	170 {S}	ND(0.0010)	ND(0.0010)	0.2 U
Vinyl chloride	33	{ID}	1	0.015	0.002 {A}	13	0.002 {A}	1.1	ND(0.0010)	ND(0.0010)	0.005 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	20-FP10			36-101		RFI-02-12			RFI-09-04R		
	09/25/01	02/22/02	11/02/06	09/28/01	11/02/06	10/05/04	02/24/05	11/01/06	06/24/02	03/24/03	10/05/04
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
1,1,1-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 J
1,1,2,2-Tetrachloroethane	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.001 U	0.0059	0.011	0.001 U [0.001 U]	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.0001 J	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.005 U	0.005 U	0.002 U	0.005 U	0.002 U	0.002 U [0.002 U]	0.002 U	0.002 U	0.005 U	0.005 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.025 U	0.025 U	0.02 U	0.025 U	0.02 U	0.007 J [0.007 J]	0.14 J	0.02 U	0.025 UJ	0.025 U	0.03 U
2-Hexanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U [0.05 U]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.05 U	0.05 U	0.01 U	0.05 U	0.01 U	0.001 U [0.001 U]	0.001 U	0.01 U	0.05 U	0.05 U	0.001 U
Acetone	0.025 U	0.025 U	0.02 U	0.025 U	0.02 U	2 (RDW) [2.36 EJ (IDW,RDW)]	47 (IDW,RDW)	0.02 U	0.025 U	0.025 U	0.03 U
Benzene	0.0061 (IDW,RDW)	0.0022 U	0.0003 J	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ [0.001 UJ]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ
Bromomethane (Methyl Bromide)	0.001 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 UJ [0.002 UJ]	R	0.002 U	0.001 U	0.001 UJ	0.002 UJ
Carbon disulfide	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ [0.005 UJ]	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 J
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ [0.001 UJ]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U
cis-1,2-Dichloroethane	0.001 U	0.001 U	0.003	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.00098 J	0.001 U	0.002
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 UJ	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	0.0013 J	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 UJ	0.005 U	0.005 U	0.001 U
Dibromochloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.005 U	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U
m&p-Xylene	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	20-FP10			36-101		RFI-02-12			RFI-09-04R		
	09/25/01	02/22/02	11/02/06	09/28/01	11/02/06	10/05/04	02/24/05	11/01/06	06/24/02	03/24/03	10/05/04
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
Methyl acetate	0.005 U	0.005 U	0.01 U	0.005 U	0.01 U	0.007 J [0.007 J]	0.18	0.01 U	0.005 U	0.005 U	0.01 UJ
Methyl cyclohexane	0.001 U	0.001 U	0.02 U	0.001 U	0.02 U	0.02 U [0.0002 J]	0.02 U	0.02 U	0.001 U	0.001 U	0.02 U
Methyl Tert Butyl Ether	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.0067 (IDW,RDW)	0.0055 (IDW,RDW)	0.011 (IDW,RDW)
Trichlorofluoromethane (CFC-11)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.004	0.0096	0.005
Trifluorotrchloroethane (Freon 113)	0.001 U	0.001 U	0.03 U	0.001 U	0.03 U	0.03 U [0.03 U]	0.03 U	0.03 U	0.001 U	0.001 U	0.03 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID:	RFI-09-04R		RFI-09-48				RFI-09-53			RFI-10-26		
	Date Collected:	06/08/05	11/01/06	04/24/03	10/06/04	12/08/05	11/01/06	04/07/05	06/08/05	11/01/06	02/21/02	06/20/02
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>												
1,1,1-Trichloroethane	0.0003 J	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.05	0.255 (IDW/RDW)	0.145 [0.132]	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.015	0.035	0.028 [0.026]	0.0042	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.004 J	0.002 [0.002]	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.002 U	0.002 U	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.01 U	0.002 U [0.002 U]	0.005 U	0.005 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.03 U	0.02 U	0.025 U	0.03 U	0.03 U	0.02 U	0.03 U	0.1 U	0.02 U [0.02 U]	0.025 U	0.025 U	0.02 U
2-Hexanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.3 U	0.05 U [0.05 U]	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.001 U	0.01 U	0.05 U	0.001 U	0.001 U	0.01 U	0.001 U	0.005 U	0.01 U [0.01 U]	0.05 U	0.05 U	0.01 U
Acetone	0.03 U	0.02 U	0.0019 J	0.03 U	0.03 U	0.02 U	0.03 UJ	0.1 U	0.02 U [0.02 U]	0.025 U	0.025 U	0.02 U
Benzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 J	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromofom	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 UJ	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	0.002 U	0.002 U	0.001 U	0.002 UJ	0.002 U	0.002 U	R	0.01 U	0.002 U [0.002 U]	0.001 U	0.001 U	0.002 U
Carbon disulfide	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.03 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 J	0.005 U	0.002 [0.001]	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.021	0.001 U	0.001 U
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.003 J	0.005 [0.004]	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.012	0.011	0.024 [0.021]	0.0056	0.001 U	0.001 U
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 UJ
Cyclohexane	0.001 U	0.001 UJ	0.005 U	0.001 U	0.001 U	0.001 UJ	0.001 UJ	0.005 U	0.001 UJ [0.001 UJ]	0.005 U	0.005 U	0.001 U
Dibromochloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.005 U	0.005 U	0.001 U
m&p-Xylene	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.002 U	0.002 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-09-04R		RFI-09-48				RFI-09-53			RFI-10-26		
	06/08/05	11/01/06	04/24/03	10/06/04	12/08/05	11/01/06	04/07/05	06/08/05	11/01/06	02/21/02	06/20/02	11/02/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>												
Methyl acetate	0.01 U	0.01 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U [0.01 U]	0.005 U	0.005 U	0.01 U
Methyl cyclohexane	0.02 U	0.02 U	0.001 U	0.02 U	0.02 U	0.02 U	0.0002 J	0.1 U	0.02 U [0.02 U]	0.001 U	0.001 U	0.02 U
Methyl Tert Butyl Ether	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.03 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.03 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
p-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 J	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Trichloroethene	0.009 (IDW,RDW)	0.012 (IDW,RDW)	0.001 U	0.001 U	0.001 U	0.001 U	0.035 (IDW,RDW)	0.184 (IDW,RDW)	0.113 (IDW,RDW) [0.106 (IDW,RDW)]	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	0.005 J	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (Freon 113)	0.03 U	0.03 U	0.001 U	0.03 U	0.03 U	0.03 U	0.0005 J	0.2 U	0.03 U [0.03 U]	0.001 U	0.001 U	0.03 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 J	0.005 U	0.004 (IDW,RDW) [0.004 (IDW,RDW)]	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-12-32		RFI-17-02				RFI-17-02D			RFI-23-01R
	10/04/04	11/01/06	10/03/01	06/09/05	12/08/05	11/01/06	07/29/05	12/08/05	11/01/06	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>										
1,1,1-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.001 U	0.002	0.002	0.002	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.002 U	0.002 U	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.03 U	0.02 U	0.025 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.02 U
2-Hexanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.001 U	0.01 U	0.05 U	0.001 U	0.001 U	0.01 U	0.001 U	0.001 U	0.01 U	0.01 U
Acetone	0.03 U	0.02 U	0.025 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.02 U
Benzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	0.002 UJ	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon disulfide	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.003	0.003	0.004	0.001
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	0.001 U	0.001 UJ	0.005 U	0.001 U	0.001 U	0.001 UJ	0.001 UJ	0.001 U	0.001 UJ	0.001 UJ
Dibromochloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylene	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-12-32		RFI-17-02				RFI-17-02D		RFI-23-01R	
	10/04/04	11/01/06	10/03/01	06/09/05	12/08/05	11/01/06	07/29/05	12/08/05	11/01/06	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>										
Methyl acetate	0.01 U	0.01 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	0.02 U	0.02 U	0.001 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	0.005 U	0.005 U	0.005 U	0.003 J	0.004 J	0.003 J	0.003 J	0.003 J	0.002 J	0.005 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002
Trichlorofluoromethane (CFC-11)	0.002	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrchloroethane (Freon 113)	0.03 U	0.03 U	0.001 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0009 J	0.003 (IDW,RDW)	0.003 (IDW,RDW)	0.002	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-36-02			RFI-36-03					RFI-36-14			
	10/04/01	10/13/04	11/02/06	09/27/01	06/18/02	03/25/03	06/09/05	11/02/06	10/02/01	06/17/02	10/11/04	11/02/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>												
1,1,1-Trichloroethane	0.001 U	0.0004 J	0.0002 J [0.0001 J]	0.042	0.019	0.054	0.002	0.008	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.00076 J	0.004 J	0.001 [0.002]	0.0045	0.086	0.16 D	0.001 U	0.0008 J	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.00076 J	0.003	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.005 U	0.002 U	0.002 U [0.002 U]	0.005 U	0.005 U	0.005 U	0.002 U	0.002 U	0.005 U [0.005 U]	0.005 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.0019	0.0011	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.025 U	0.03 U	0.02 U [0.02 U]	0.025 U	0.025 U	0.025 U	0.03 U	0.02 U	0.025 U [0.025 U]	0.025 U	0.03 U	0.02 U
2-Hexanone	0.05 U	0.05 U	0.05 U [0.05 U]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U [0.05 U]	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.05 U	0.001 U	0.01 U [0.01 U]	0.05 U	0.05 U	0.05 U	0.001 U	0.01 U	0.05 U [0.05 U]	0.05 U	0.001 U	0.01 U
Acetone	0.025 U	0.03 U	0.02 U [0.02 U]	0.025 U	0.0015 J	0.025 U	0.03 U	0.02 U	0.025 U [0.025 U]	0.025 U	0.03 U	0.02 U
Benzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.0028	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	0.001 U	0.002 U	0.002 U [0.002 U]	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U [0.001 U]	0.001 U	0.002 U	0.002 U
Carbon disulfide	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.016	0.019	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.012	0.0004 J	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.00077 J	0.0012	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Cyclohexane	0.005 U	0.001 U	0.001 U [0.001 U]	0.00079 J	0.005 U	0.005 U	0.001 U	0.001 U	0.005 U [0.005 U]	0.005 U	0.001 U	0.001 U
Dibromochloromethane	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.005 U	0.001 U	0.001 U [0.001 U]	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.005 U [0.005 U]	0.005 U	0.001 U	0.001 U
m&p-Xylene	0.002 U	0.001 U	0.001 U [0.001 U]	0.002 U	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U [0.002 U]	0.002 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-36-02			RFI-36-03					RFI-36-14			
	10/04/01	10/13/04	11/02/06	09/27/01	06/18/02	03/25/03	06/09/05	11/02/06	10/02/01	06/17/02	10/11/04	11/02/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>												
Methyl acetate	0.005 U	0.01 U	0.01 U [0.01 U]	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.005 U [0.005 U]	0.005 U	0.01 U	0.01 U
Methyl cyclohexane	0.001 U	0.02 U	0.02 U [0.02 U]	0.001 U	0.001 U	0.001 U	0.02 U	0.02 U	0.001 U [0.001 U]	0.001 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.00065 J	0.005 U	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
Methylene chloride	0.005 U	0.0004 J	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U [0.005 U]	0.005 U	0.005 U	0.005 U
o-Xylene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U [0.001 U]	0.00068 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U
Trifluorotrchloroethane (Freon 113)	0.001 U	0.03 U	0.03 U [0.03 U]	0.001 U	0.001 U	0.001 U	0.03 U	0.03 U	0.001 U [0.001 U]	0.001 U	0.03 U	0.03 U
Vinyl chloride	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.0019	0.001 U	0.001 U	0.001 U	0.001 U [0.001 U]	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-36-46						RFI-81-50	RFI-84-06R			
	02/25/02	06/17/02	03/25/03	10/11/04	06/09/05	11/02/06	11/02/06	04/02/03	07/22/05	12/08/05	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
1,1,1-Trichloroethane	0.033	0.059	0.072	0.044	0.018	0.008	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.055	0.11 D	0.049	0.016 J	0.021	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.012 (IDW,RDW)	0.021 (IDW,RDW)	0.013 (IDW,RDW)	0.005 J	0.004	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.005 U	0.005 U	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.005 U	0.002 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.00076 J	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.025 U	0.025 U	0.025 U	0.03 U	0.03 U	0.02 U	0.02 UJ	0.025 U	0.03 U	0.03 U	0.02 U
2-Hexanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.05 U	0.05 U	0.05 U	0.001 U	0.001 U	0.01 U	0.01 U	0.05 U	0.001 U	0.001 U	0.01 U
Acetone	0.025 U	0.025 U	0.025 U	0.03 U	0.03 U	0.02 U	0.02 UJ	0.025 U	0.03 U	0.03 U	0.02 U
Benzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.003
Bromodichloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	0.001 U	0.001 U	0.001 U	0.002 UJ	0.002 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U
Carbon disulfide	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 U	0.0018	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.00089 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 UJ	0.001 U	0.001 UJ
Dibromochloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U	0.0003 J
m&p-Xylene	0.002 U	0.002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.0001 J	0.002 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-36-46						RFI-81-50	RFI-84-06R			
	02/25/02	06/17/02	03/25/03	10/11/04	06/09/05	11/02/06	11/02/06	04/02/03	07/22/05	12/08/05	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
Methyl acetate	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	0.001 U	0.001 U	0.001 U	0.02 U	0.02 U	0.02 U	0.02 U	0.001 U	0.02 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	0.001 J	0.0008 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0003 J	0.005 U	0.005 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0004 J	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrchloroethane (Freon 113)	0.001 U	0.001 U	0.001 U	0.03 U	0.03 U	0.03 U	0.03 U	0.001 U	0.03 U	0.03 U	0.03 U
Vinyl chloride	0.0012	0.00059 J	0.001 U	0.001 U	0.001 U	0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-84-06RD			RFI-84-09D			RFI-84-09S			RFI-84-11s	
	07/21/05	12/08/05	11/02/06	07/22/05	12/08/05	11/01/06	07/22/05	12/08/05	11/01/06	07/28/05	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
1,1,1-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dibromo-3-chloropropane (DBCP)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene Dibromide)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl Ethyl Ketone)	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.02 U
2-Hexanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.001 U	0.001 U	0.01 U	0.001 U	0.001 U	0.01 U	0.001 U	0.001 U	0.01 U	0.001 U	0.01 U
Acetone	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.03 U	0.02 U	0.03 U	0.02 U
Benzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 J	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl Bromide)	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon disulfide	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl Chloride)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.004	0.004	0.004	0.001 U	0.001 U	0.0003 J	0.001 U	0.0009 J
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

Table 3. Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

Sample ID: Date Collected:	RFI-84-06RD			RFI-84-09D			RFI-84-09S			RFI-84-11s	
	07/21/05	12/08/05	11/02/06	07/22/05	12/08/05	11/01/06	07/22/05	12/08/05	11/01/06	07/28/05	11/01/06
<b>VOLATILE ORGANIC COMPOUNDS (mg/L)</b>											
Methyl acetate	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl Tert Butyl Ether	0.005 U	0.005 U	0.005 U	0.002 J	0.003 J	0.003 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Styrene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 J	0.0008 J	0.002
Trichlorofluoromethane (CFC-11)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrchloroethane (Freon 113)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U	0.003 (IDW,RDW)	0.003 (IDW,RDW)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

See Notes in Table 4.

**Table 4. Notes for Table 3 - Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

**General Notes:**

Samples were collected by ARCADIS of New York, Inc. (ARCADIS BBL, formerly known as Blasland, Bouck & Lee, Inc.), and submitted to Merit Laboratories, for analysis of Project Analyte List (PAL) volatile organic compounds.

Duplicate results are presented in brackets.

Groundwater concentrations are presented in milligrams per liter (mg/L).

Total Xylenes reported as the sum of m&p-Xylene and o-Xylene.

Shaded cells represent constituent concentrations that exceed at least one of the listed Michigan Part 201 Criteria:

For Groundwater:

RDW = Residential Drinking Water criteria, updated December 2004.

IDW = Industrial Drinking Water criteria, updated December 2004.

GSI = Groundwater/Surface Water Interaction criteria, updated December 2004.

GCC = Groundwater Contact criteria, updated December 2004.

GAI = Groundwater Acute Inhalation Screening Level, updated December 2004.

RGVIA = Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation criteria, updated December 2004.

IGVIA = Industrial & Commercial II, III, & IV Groundwater Volatilization to Indoor Air Inhalation criteria, updated December 2004.

FE = Flammability and Explosivity Screening Level, updated December 2004.

**Data Qualifiers:**

U = Not detected. The value represents the associated detection limit.

NS = Not analyzed for this constituent.

D = Concentration is based on a diluted sample analysis.

J = The compound/constituent was positively identified; however, the associated numerical value is an estimated concentration only.

E = Measured concentration exceeded the linear range of the instrument.

A diluted sample analysis was run; however, the undiluted result was chosen as representative of the sample concentration.

R = Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data shall not be used for any qualitative or quantitative purposes.

**MDEQ Criteria Qualifiers:**

ID = *Inadequate data* to develop criterion.

NA = Criterion or value is *not available* or, as is the case for Csat, *not applicable*.

{A} = Criterion is the State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{D} = Calculated criterion exceeds 100%, hence it is reduced to 100% (i.e., 1.0E+9 ppb). Evaluation of free phase contaminant, environmental impacts, adverse aesthetics and acute or local toxicity is required.

{E} = Criterion is the aesthetic drinking water value, as required by Sec. 20120(1)(5). A Notice of Aesthetic Impact may be employed as an institutional control mechanism where groundwater concentrations exceed the aesthetic DWC, but do not exceed the applicable health-based DWC. Health-based DWC are provided in the table below.

Hazardous Substance	CAS #	Residential Health-Based DWC	Industrial-Commercial Health-Based DWC
Aluminum	7429905	300	4,100
Copper	7440508	1,400	4,000
Diethyl ether	60297	3,700	10,000
Ethylbenzene	100414	700	700
Iron	7439896	2,000	5,600
Manganese	7439965	860	2,500

See Notes on Page 4.

**Table 4. Notes for Table 3 - Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

**MDEQ Criteria Qualifiers (Cont'd.):**

		Residential	Industrial-Commercial
Methyl-tert-butyl ether (MTBE)	1634044	240	690
Toluene	108883	1,000	1,000
1,2,4-Trimethylbenzene	95636	1,000	2,900
1,3,5-Trimethylbenzene	108678	1,000	2,900
Xylenes	1330207	10,000	10,000

(G) = The GSI criterion shown is not protective for surface water that is used as a drinking water source. For groundwater discharges to the Great Lakes and their connecting waters or discharges in close proximity to water supply intake(s) in inland surface waters, the generic GSI criterion is the Surface Water Human Drinking Water Value (HDV) listed in the table below except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criteria GSI criterion is the lesser of the HDV, the WV, and the calculated FCV (see formula in footnote {G}). Soil protection criteria based on the HDV are listed below except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk are the greater of the 20XGSI and GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	FCV Formula ug/L	FCV Conversion Factor (CF)	WV ug/L	HNDV ug/L
Barium <sup>x</sup>	$XP(1.0629*(LnH)+1.186)$	NA	NA	1.6E+5
Beryllium	$XP(2.5279*(LnH)-10.768)$	NA	NA	1,200
Cadmium <sup>x</sup>	$P(0.7852*(LnH)-2.715)$	$101672-((LnH)*0.04184)$	NA	130
Chromium (III) <sup>x</sup>	$P(0.819*(LnH)+0.6848)$	0.86	NA	9,400
Copper	$P(0.8545*(LnH)-1.702)$	0.96	NA	64,000
Lead <sup>x</sup>	$XP(1.273*(LnH)-3.296)*1.46203-((LnH)*0.14571)$	NA	NA	190
Manganese	$EXP(0.8784*(LnH)+2.226)$	NA	NA	59,000
Nickel	$P(0.846*(LnH)+0.0584)$	0.997	NA	2.1E+5
Pentachlorophenol <sup>x</sup>	$EXP(1.005*(pH)-5.134)$	NA	NA	2.8
Zinc	$P(0.8473*(LnH)+0.884)$	0.986	NA	22,000

Where,

$EXP(x)$  = The base of the natural logarithm raised to power  $x$  ( $e^x$ ).

$LnH$  = The natural logarithm of water hardness in mg  $CaCO_3/L$ .

$SS$  = Total suspended solids in mg/L.

\* = The multiplication symbol.

<sup>x</sup> = The GSI criterion developed here may not be protective for surface water that is used as a drinking water source.

Refer to footnote {X} for further guidance.

A spreadsheet that may be used to calculate GSI and GSI PC for {G} footnoted hazardous substances is available at <http://www.deq.state.mi.us/erd>.

**Table 4. Notes for Table 3 - Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan**

**MDEQ Criteria Qualifiers (Cont'd.):**

- {I} = Hazardous substance may exhibit the characteristic of ignitability as defined in 40 CFR 261.21.
- {J} = Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- {M} = Calculated criterion is below the analytical Target Detection Limit (TDL), therefore, the criterion defaults to the TDL.
- {R} = Hazardous substance may exhibit the characteristic of reactivity as defined in 40 CFR 261.23.
- {S} = Criterion defaults to the chemical-specific water solubility limit.
- {W} = Concentrations of trihalomethanes in groundwater must be added together to determine compliance with the State of Michigan Drinking Water Standard of 100 ug/L. Concentrations of trihalomethanes in soil must be added together to determine compliance with the DWPC of 2,000 ug/kg.
  
- {X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source. For groundwater discharges to the Great Lakes and their connecting waters or discharges in close proximity to water supply intake(s) in inland surface waters, the generic GSI criterion is the Surface Water Human Drinking Water Value (HDV) listed in the table below except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion is the lesser of the HDV, the WV and the calculated FCV (see formulas in footnote (G)). Soil protection criteria based on the HDV are listed below except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk are the greater of the 20 X GSI and GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	Chemical Abstract Service Number	Surface Water Human Drinking Water Values (HDV) (ug/L)	Soil GSI Protection Criteria for HDV (ug/Kg)
Acrylonitrile	107131	2.0 (M); 0.87	100 (M); 17
Atachlor	15972608	3.5	91
Antimony	7440360	2	1,400
Arsenic	7440382	50	23,000
Atrazine	1912249	4.3	86
Barium	7440393	1,900*	*
Benzene	71432	12	240
bis(2-Chloroethyl)ether	111444	1 (M); 0.79	100 (M); 20
Bromate	15541454	10 (M); 0.5	200 (M); 10
Butyl benzyl phthalate	85687	6.9	13,000
Cadmium	7440439	2.5*	*
Carbon tetrachloride	56235	5.6	110
Chloride	16887006	50,000	1.00E+06
Chloroform	67663	77	1,500
Chromium (III)	16065831	120*	*
Cyanazine	21725462	2 (M); 0.93	200 (M); 40
3,3'-Dichlorobenzidine	91941	0.3 (M); 0.14	2,000 (M); 7.7
1,2-Dichloroethane	107062	6	120
1,1-Dichloroethylene	75354	24	480
1,2-Dichloropropane	78875	9.1	180
N,N-Dimethylacetamide	127195	700	14,000
1,4-Dioxane	123911	34	680

Table 4. Notes for Table 3 - Groundwater Analytical Data, CA 750 Groundwater Monitoring Program, General Motors Corporation, NAO Flint Operations Site - Flint, Michigan

MDEQ Criteria Qualifiers (Cont'd.):

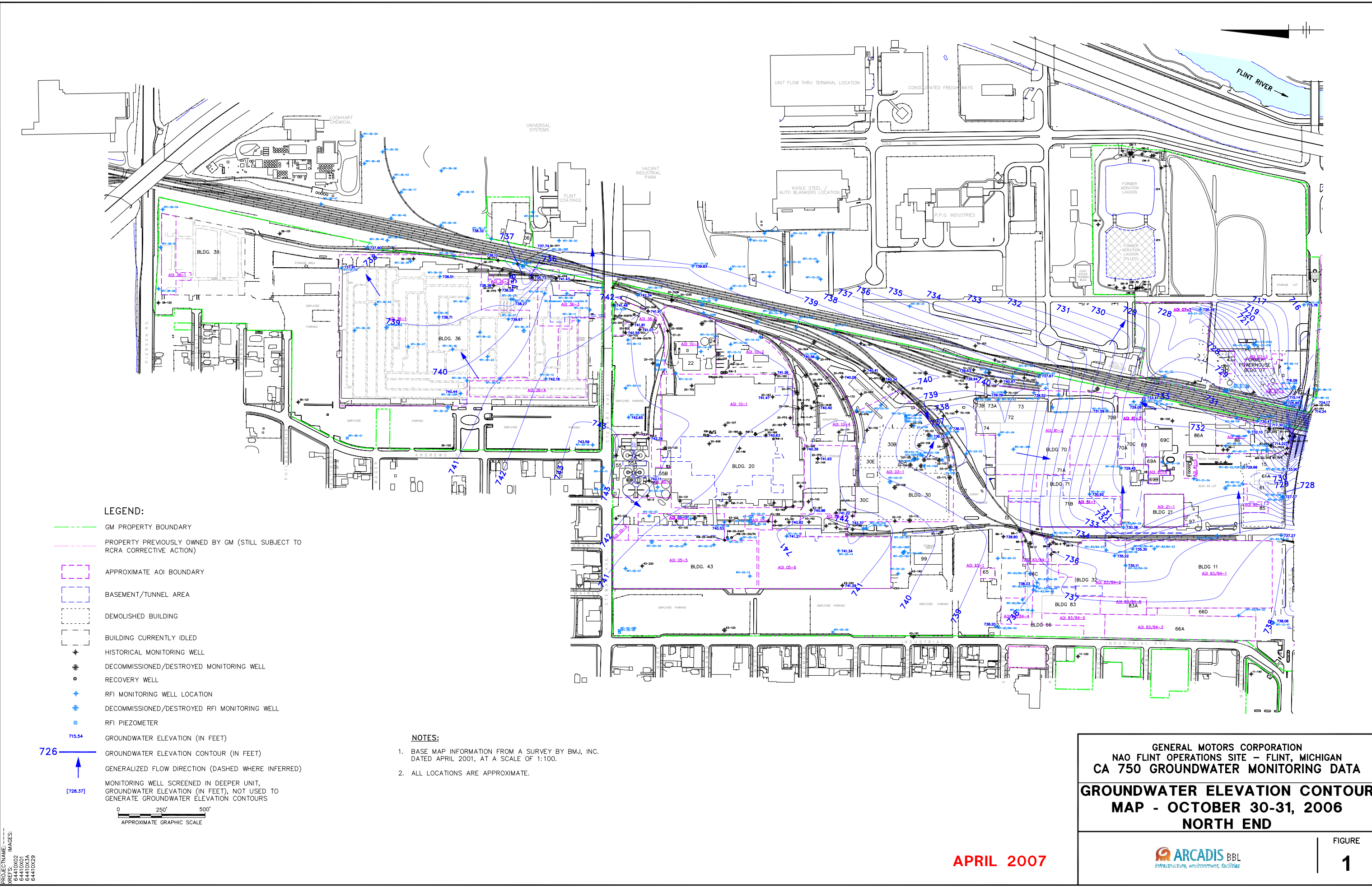
Hazardous Substance	Chemical Abstract Service Number	Surface Water Human Drinking Water Values (HDV) (ug/L)	Soil GSI Protection Criteria for HDV (ug/Kg)
Ethylene dibromide	106934	0.05 (M); 0.006	20 (M); 1.0
Ethylene glycol	107211	56,000	1.10E+06
Heptachlor	76448	0.01 (M); 0.0017	NLL
beta-Hexachlorocyclohexane	319857	0.024	20 (M)
Hexachloroethane	67721	5.3	310
Isophorone	78591	310	6,200
Isopropyl alcohol	67630	28,000	5.60E+05
Lead	7439921	14*	*
Manganese	7439965	3600	72,000
Methyl-tert-butyl ether (MTBE)	1634044	100	2,000
Methylene chloride	75092	47	940
Mirex	2385855	0.02 (M); 1.6E-5	NLL
Molybdenum	7439987	120	2,400
Nitrobenzene	98953	4.7	330 (M); 94
Pentachlorophenol	87865	1.8*	*
1,2,4,5-Tetrachlorobenzene	95943	2.8	3,300
1,1,1,2-Tetrachloroethane	630206	19	380
1,1,2,2-Tetrachloroethane	79345	3.2	64
Tetrachloroethylene	127184	11	220
Tetrahydrofuran	109999	350	7,000
Thallium	7440280	2.0 (M); 1.2	2,300
1,1,2-Trichloroethane	79005	12	240
Trichloroethylene	79016	29	580

See Notes on Page 4.

**ARCADIS** BBL

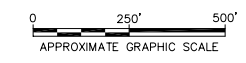
**Figures**

SYR-85-NES-RCA-QMS LAYER: ON=\*, OFF=REF, SHD=BUILDING, HIST\_SB, \*NAPL, \*RFI, \*SB-2001, \*RFI, \*SB\*  
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**LEGEND:**

- GM PROPERTY BOUNDARY
- PROPERTY PREVIOUSLY OWNED BY GM (STILL SUBJECT TO RCRA CORRECTIVE ACTION)
- APPROXIMATE AOI BOUNDARY
- BASEMENT/TUNNEL AREA
- DEMOLISHED BUILDING
- BUILDING CURRENTLY IDLED
- + HISTORICAL MONITORING WELL
- + DECOMMISSIONED/DESTROYED MONITORING WELL
- o RECOVERY WELL
- + RFI MONITORING WELL LOCATION
- + DECOMMISSIONED/DESTROYED RFI MONITORING WELL
- RFI PIEZOMETER
- 715.54 GROUNDWATER ELEVATION (IN FEET)
- 726 GROUNDWATER ELEVATION CONTOUR (IN FEET)
- ↑ GENERALIZED FLOW DIRECTION (DASHED WHERE INFERRED)
- 728.37 MONITORING WELL SCREENED IN DEEPER UNIT, GROUNDWATER ELEVATION (IN FEET), NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS



**NOTES:**

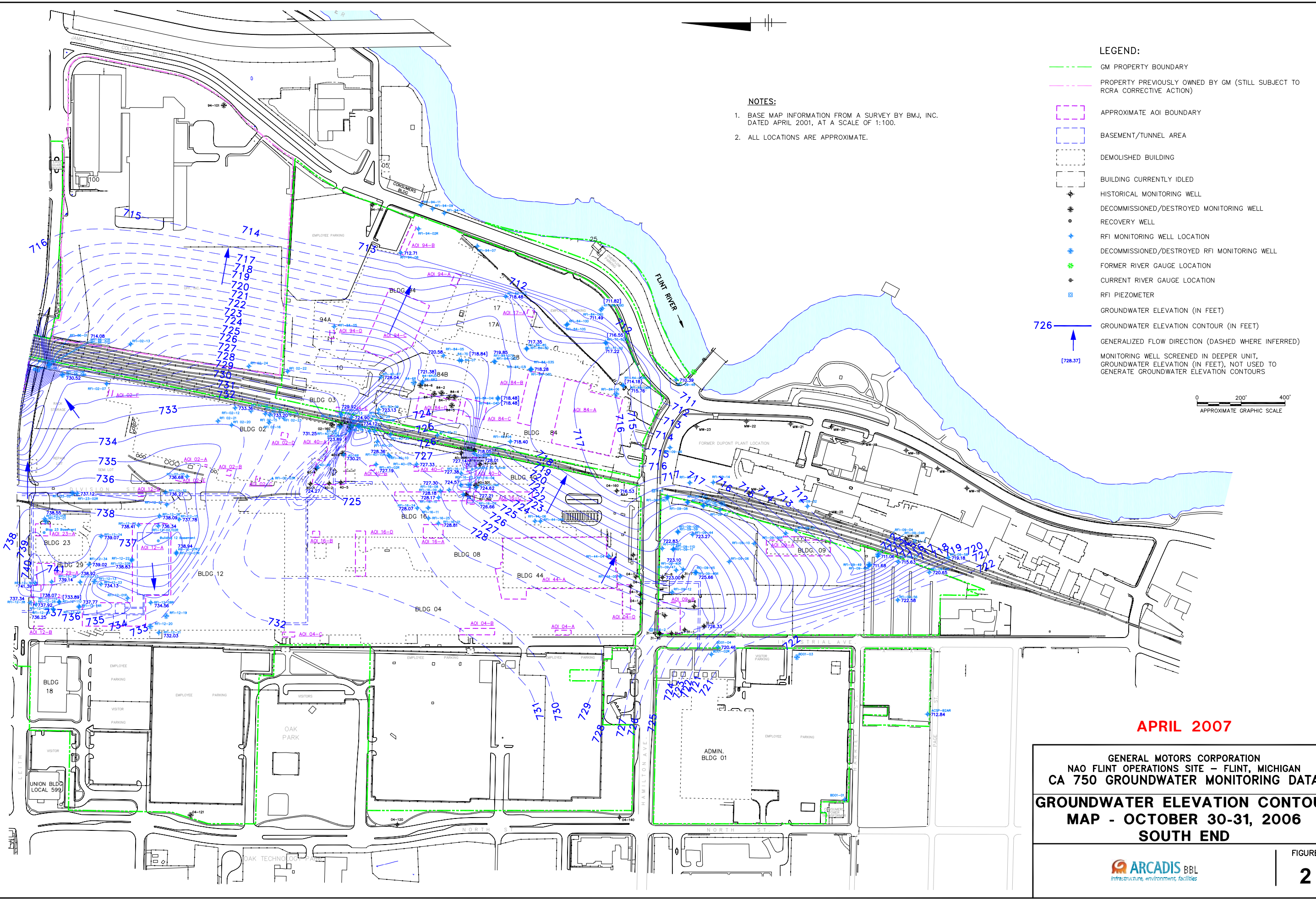
1. BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED APRIL 2001, AT A SCALE OF 1:100.
2. ALL LOCATIONS ARE APPROXIMATE.

**GENERAL MOTORS CORPORATION**  
**NAO FLINT OPERATIONS SITE – FLINT, MICHIGAN**  
**CA 750 GROUNDWATER MONITORING DATA**  
**GROUNDWATER ELEVATION CONTOUR**  
**MAP - OCTOBER 30-31, 2006**  
**NORTH END**

APRIL 2007



SYR-85-NES-RCA-QMS LAYER: ON=\*, OFF=REF, SHD=BUILDING, HIST=SB, \*NAPL, \*RFI=SB-2001, \*RFI=SB\*  
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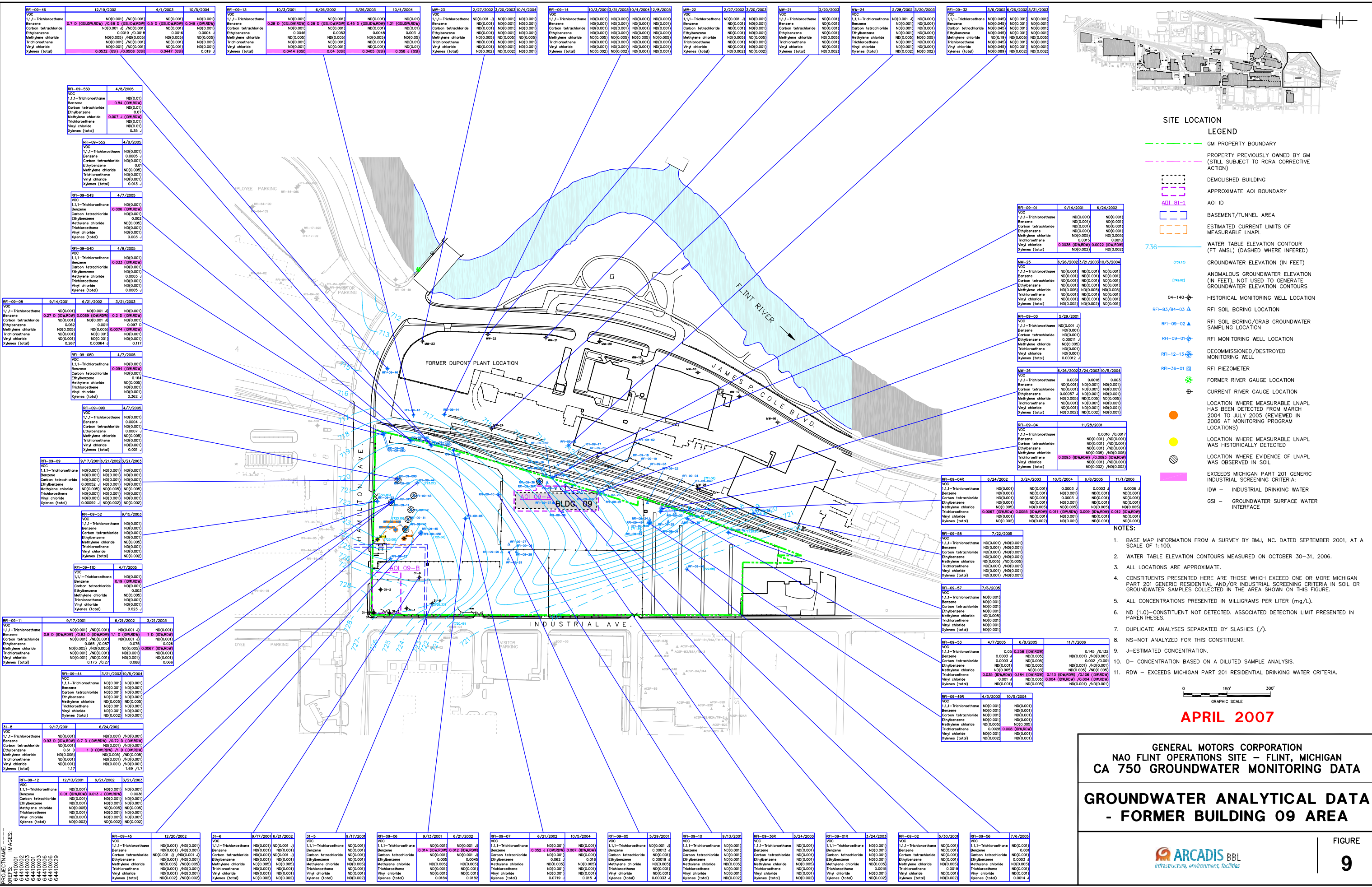








SYR-R5-NES LAF GMS LAYER. ON=OFF=REF\*. GRAYXO3D-NAPL\*. \*RFLSS.PEZ. \*JLNAPL-SHD. GRAYXO3D-PROPERTY  
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### SITE LOCATION

LEGEND

- GM PROPERTY BOUNDARY
- PROPERTY PREVIOUSLY OWNED BY GM (STILL SUBJECT TO RCRA CORRECTIVE ACTION)
- DEMOLISHED BUILDING
- APPROXIMATE AOI BOUNDARY
- AOI ID
- BASEMENT/TUNNEL AREA
- ESTIMATED CURRENT LIMITS OF MEASURABLE LNAPL
- 736 WATER TABLE ELEVATION CONTOUR (FT AMSL) (DASHED WHERE INFERRD)
- 736-10 GROUNDWATER ELEVATION (IN FEET)
- 734-00 ANOMALOUS GROUNDWATER ELEVATION (IN FEET), NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS
- 04-140 HISTORICAL MONITORING WELL LOCATION
- RFI-83/84-03 RFI SOIL BORING LOCATION
- RFI-09-02 RFI SOIL BORING/GRAB GROUNDWATER SAMPLING LOCATION
- RFI-09-01 RFI MONITORING WELL LOCATION
- RFI-12-13 DECOMMISSIONED/DESTROYED MONITORING WELL
- RFI-36-01 RFI PIEZOMETER
- FORMER RIVER GAUGE LOCATION
- CURRENT RIVER GAUGE LOCATION
- LOCATION WHERE MEASURABLE LNAPL HAS BEEN DETECTED FROM MARCH 2004 TO JULY 2005 (REVIEWED IN 2006 AT MONITORING PROGRAM LOCATIONS)
- LOCATION WHERE MEASURABLE LNAPL WAS HISTORICALLY DETECTED
- LOCATION WHERE EVIDENCE OF LNAPL WAS OBSERVED IN SOIL
- EXCEEDS MICHIGAN PART 201 GENERIC INDUSTRIAL SCREENING CRITERIA:
  - IDW - INDUSTRIAL DRINKING WATER
  - GSI - GROUNDWATER SURFACE WATER INTERFACE

- ### NOTES:
- BASE MAP INFORMATION FROM A SURVEY BY BMJ, INC. DATED SEPTEMBER 2001, AT A SCALE OF 1:100.
  - WATER TABLE ELEVATION CONTOURS MEASURED ON OCTOBER 30-31, 2006.
  - ALL LOCATIONS ARE APPROXIMATE.
  - CONSTITUENTS PRESENTED HERE ARE THOSE WHICH EXCEED ONE OR MORE MICHIGAN PART 201 GENERIC RESIDENTIAL AND/OR INDUSTRIAL SCREENING CRITERIA IN SOIL OR GROUNDWATER SAMPLES COLLECTED IN THE AREA SHOWN ON THIS FIGURE.
  - ALL CONCENTRATIONS PRESENTED IN MILLIGRAMS PER LITER (MG/L).
  - ND (1.0) - CONSTITUENT NOT DETECTED. ASSOCIATED DETECTION LIMIT PRESENTED IN PARENTHESES.
  - DUPLICATE ANALYSES SEPARATED BY SLASHES (/).
  - NS - NOT ANALYZED FOR THIS CONSTITUENT.
  - J - ESTIMATED CONCENTRATION.
  - D - CONCENTRATION BASED ON A DILUTED SAMPLE ANALYSIS.
  - RDW - EXCEEDS MICHIGAN PART 201 RESIDENTIAL DRINKING WATER CRITERIA.

APRIL 2007

GENERAL MOTORS CORPORATION  
NAO FLINT OPERATIONS SITE - FLINT, MICHIGAN  
CA 750 GROUNDWATER MONITORING DATA

## GROUNDWATER ANALYTICAL DATA - FORMER BUILDING 09 AREA

FIGURE 9

ARCADIS BBL  
Infrastructure, environment, facilities

**ARCADIS** BBL

**Attachment 1**

Data Validation Report



**CONESTOGA-ROVERS  
& ASSOCIATES**

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## MEMORANDUM

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TO: Lisa Coffey [lcoffey@bbl-inc.com]

REF. NO.: 17307-195013

FROM: Paul McMahon/jbh/15 *pm*

DATE: December 5, 2006

C.C.: JoAnn Robertson [jrobertson@bbl-inc.com]

E-Mail and U.S. Mail

RE: **Data Quality Assessment and Validation  
Quarterly Groundwater Monitoring  
General Motors NAO Flint Operations  
Flint, Michigan**

PREVIOUSLY TRANSMITTED  
BY E-MAIL

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The following details a quality assessment and validation of the analytical data resulting from the collection of 22 water, two trip blank, and two field duplicate samples from the General Motors Site (Site) in Flint, Michigan, in November 2006. The sample summary detailing sample identification, sample location, quality control (QC) samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Merit Laboratories, Inc. in East Lansing, Michigan (Merit), in accordance with the methodologies presented in Table 2. The QC criteria used to assess the data were established by the methods and following documents:

- i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99/008, October 1999;
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994; and
- iii) "Innovative Approaches to Data Validation", USEPA Region III, June 1995.

Full Contract Laboratory Program (CLP)-equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results and supporting quality assurance/quality control (QA/QC) provided.

### Holding Time Period and Sample Analysis

The holding time periods are presented in the analytical methods. All samples were prepared and analyzed within the method-required holding times.

### Gas Chromatography/Mass Spectrometer (GC/MS) Mass Calibration

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the volatile organic compound (VOC) method requires the analysis of the tuning compound bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the

method before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. Tuning compounds were analyzed at the required frequency throughout the VOC analysis periods. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

#### Initial Calibration - Organic Analyses, GC/MS

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a minimum of a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range.

Calibration data were reviewed for all samples. Linearity of the calibration curve and instrument sensitivity were evaluated against the following criteria:

- i) all relative response factors (RRFs) must be greater than or equal to 0.05; and
- ii) percent relative standard deviation (%RSD) values must not exceed 30 percent or if quadratic/linear regression is used, the correlation coefficient ( $R^2$ ) value must be at least 0.990.

Initial calibration standards were analyzed as required and all data showed acceptable sensitivity and linearity.

#### Initial Calibration - Arsenic Analyses

To calibrate the inductively coupled plasma/ mass spectrometer (ICP/MS), a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve.

After calibration, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves within a method-specific percent recovery of the accepted or true value.

A review of the data showed that the calibration curve and ICV were analyzed at the proper frequencies and were within the acceptance criteria.

#### Continuing Calibration - Organics, GC/MS

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

- i) all RRF values must be greater than or equal to 0.05; and
- ii) percent difference (%D) values must not exceed 25 percent.

Calibration standards were analyzed at the required frequency and all results met the above criteria for instrument sensitivity. Some VOCs exhibited variability in instrument response. Associated sample data for these compounds were qualified as estimated (see Table 3).

### Continuing Calibration - Arsenic

Continuing calibration criteria for inorganic analyses were the same criteria as used for assessing the initial calibration data. The continuing calibration verification data were within the acceptance criteria.

### Method Blank Samples

Method blanks are prepared and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the procedures.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch. The blank results were non-detect for most analytes of interest. Methylene chloride was detected in one blank, and the associated sample result was qualified as non-detect (see Table 4).

### Surrogate Compound Percent Recoveries (Surrogate Recoveries)

In accordance with the method employed, all samples, blanks, and QC samples analyzed for VOCs were spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of individual sample matrices on analytical efficiency and are assessed against laboratory control limits. All sample surrogate recoveries were within the laboratory specified control limits, demonstrating acceptable analytical accuracy.

### Laboratory Control Sample (LCS) Analysis

The LCS serves as a measure of overall analytical performance. LCSs are prepared with all analytes of interest and analyzed with each sample batch.

LCSs were prepared and analyzed for all parameters. The LCS recoveries were within the laboratory specified control limits for all analytes of interest except some high and low VOC recoveries. The associated non-detect VOC results were not impacted by the indicated high bias in the LCS. All remaining sample results associated with outlying LCS recoveries were qualified as estimated (see Table 5).

### Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD samples are prepared for each parameter and analyzed with each sample batch for the organic parameters. MS/MSD samples are prepared and analyzed with the samples for arsenic. The recoveries of spike analyses are used to assess the analytical accuracy achieved on individual sample matrices. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as shown in Table 1. Most MS/MSD recoveries were within laboratory control limits demonstrating acceptable overall analytical accuracy and precision. Outlying recoveries were reported for VOCs. No qualification of non-detect sample results was performed for outlying RPDs, or when only the MS recovery was out and the RPD and MSD recovery were acceptable. All remaining associated sample results were qualified as estimated (see Table 6).

### ICP/MS Interference Check Sample (ICS) Analysis

To verify that proper inter-element and background correction factors have been established by the laboratory, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning and end of each sample analysis period.

ICS analysis results were evaluated for all samples. The ICS recovery was within the established control limits of 80 to 120 percent.

### Serial Dilution - Arsenic Analyses

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples is analyzed at a five-fold dilution. For samples with sufficient analyte concentrations, the serial dilution results must agree within 10 percent of the original results.

No Site-specific serial dilution analyses were performed.

### Internal Standard (IS) Summaries

To correct for changes in GC/MS response and sensitivity, IS compounds are added to investigative samples and QC samples prior to VOC analyses. All results are calculated as a ratio of the IS response. The criteria by which the IS results are assessed are as follows:

- i) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard; and
- ii) the retention time of the IS must not vary more than  $\pm 30$  seconds from the associated calibration standard.

All sample IS results met the above criteria and all were correctly used to calculate sample results.

### Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organics reported adhered to the specified identification criteria.

### Trip Blanks - VOCs

Trip blanks are transported, stored, and analyzed with the investigative samples to identify potential cross-contamination of VOCs. Two trip blanks were collected, and all results were non-detect for the analytes of interest except for toluene in one trip blank. The associated sample results were non-detect and were not impacted.

Field Duplicates

Two samples were collected in duplicate as summarized in Table 1 and submitted to the laboratory for analysis. All sample results showed acceptable sampling and analytical precision.

System Performance

System performance between various QC checks was evaluated to monitor for changes that may have caused the degradation of data quality. The samples identified in Table 1 were reviewed. No technical problems or chromatographic anomalies were observed which require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used as reported with the noted qualifications.

**TABLE 1**  
**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**QUARTERLY GROUNDWATER MONITORING**  
**GENERAL MOTORS NAO FLINT OPERATIONS**  
**FLINT, MICHIGAN**  
**NOVEMBER 2006**

Sample ID	Location ID	Collection	Collection	Analysis/Parameters		Comments
		Date	Time	TCL VOCs	Arsenic <sup>(1)</sup>	
RFI-23-01R (110106)	RFI-23-01R	11/01/06	14:45	X		
RFI-12-32 (110106)	RFI-12-32	11/01/06	13:50	X		
RFI-09-48 (110106)	RFI-09-48	11/01/06	12:00	X		
RFI-09-04R (110106)	RFI-09-04R	11/01/06	10:05	X		MS/MSD
RFI-09-53 (110106)	RFI-09-53	11/01/06	9:00	X		
Dup-1 (110106)	RFI-09-53	11/01/06	-	X		Duplicate of RFI-09-53 (110106)
RFI-84-06R (110106)	RFI-84-06R	11/01/06	15:05	X		
RFI-84-09D (110106)	RFI-84-09D	11/01/06	16:15	X		
RFI-84-09S (110106)	RFI-84-09S	11/01/06	15:05	X		
RFI-84-11S (110106)	RFI-84-11S	11/01/06	13:25	X		
RFI-17-02 (110106)	RFI-17-02	11/01/06	12:20	X		
RFI-17-02D (110106)	RFI-17-02D	11/01/06	11:25	X		
RFI-02-12 (11006)	RFI-02-12	11/01/06	10:25	X		
TB-01 (110106)	-	11/01/06	-	X		Trip Blank
36-101 (110206)	36-101	11/02/06	9:20	X	X	MS/MSD
RFI-36-02 (110206)	RFI 36-02	11/02/06	11:40	X		
Dup-2 (110206)	RFI 36-02	11/02/06	-	X		Duplicate of RFI-36-02 (110206)
RFI-36-03 (110206)	RFI 36-03	11/02/06	13:00	X		
RFI-84-06RD (110206)	RFI-84-06RD	11/02/06	9:45	X		
20-500R (110206)	20-500R	11/02/06	11:10	X		
RFI-81-50 (110206)	RFI-81-50	11/02/06	12:50	X		
TB-02 (110206)	-	11/02/06	-	X		Trip Blank
20-FP10 (110206)	20-FP10	11/02/06	14:25	X		
RFI-10-26 (110206)	RFI-10-26	11/02/06	13:05	X		
RFI-36-46 (110206)	RFI 36-46	11/02/06	9:30	X		
RFI-36-14 (110206)	RFI 36-14	11/02/06	10:30	X		

Notes:

- Not applicable.
- <sup>(1)</sup> Total and Dissolved.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate.
- TCL Target Compound List.
- VOCs Volatile Organic Compounds

TABLE 2  
SUMMARY OF ANALYTICAL METHODOLOGIES  
QUARTERLY GROUNDWATER MONITORING  
GENERAL MOTORS NAO FLINT OPERATIONS  
FLINT, MICHIGAN  
NOVEMBER 2006

<i>Parameter</i>	<i>Method</i>
TCL VOCs	SW-846 8260 <sup>1</sup>
Arsenic	SW-846 6020 <sup>1</sup>

Notes:

<sup>1</sup> "Test Methods for Solid Waste Physical/Chemical Methods", SW-846, 3rd Edition, September 1986 (with subsequent revisions).

TCL Target Compound List.

VOCs Volatile Organic Compounds.

**TABLE 3**  
**QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS**  
**QUARTERLY GROUNDWATER MONITORING**  
**GENERAL MOTORS NAO FLINT OPERATIONS**  
**FLINT, MICHIGAN**  
**NOVEMBER 2006**

<i>Parameter</i>	<i>Calibration Date</i>	<i>Compound</i>	<i>%D</i>	<i>Associated Sample ID</i>	<i>Sample Results</i>	<i>Qualifier</i>	<i>Units</i>
VOCs	11/08/06	Acetone	57	20-500R(110206)	100 U	UJ	µg/L
				RFI-81-50(110206)	20 U	UJ	µg/L
VOCs	11/08/06	2-Butanone	28	20-500R(110206)	100 U	UJ	µg/L
				RFI-81-50(110206)	20 U	UJ	µg/L
VOCs	11/08/06	2-Hexanone	27	20-500R(110206)	300 U	UJ	µg/L
				RFI-81-50(110206)	50 U	UJ	µg/L

Notes:

%D Percent Difference.

U Non-detect at associated value.

UJ The analyte was not detected above the sample quantitation limit. The reported quantitation limit is an estimated quantity.

VOCs Volatile Organic Compounds.

**TABLE 4**  
**QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS**  
**QUARTERLY GROUNDWATER MONITORING**  
**GENERAL MOTORS NAO FLINT OPERATIONS**  
**FLINT, MICHIGAN**  
**NOVEMBER 2006**

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Sample Result</i>	<i>Qualified Result</i>	<i>Units</i>
VOCs	11/06/06	Methylene chloride	0.2J	20-500R(110206)	1 J	30 U	µg/L

Notes:

- J Estimated.
- U Non-detect at associated value.
- VOCs Volatile Organic Compounds.

TABLE 5  
 QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS  
 QUARTERLY GROUNDWATER MONITORING  
 GENERAL MOTORS NAO FLINT OPERATIONS  
 FLINT, MICHIGAN  
 NOVEMBER 2006

<i>Parameter</i>	<i>Compound</i>	<i>Preparation Date</i>	<i>Percent Recovery</i>	<i>Control Limits (percent)</i>	<i>Associated Sample ID</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>					
VOCs	cis-1,3-Dichloropropene	11/06/06	78	80 - 120	20-500R(110206)	5 U	µg/L	UJ					
					20-FP10(110206)	1 U	µg/L	UJ					
					36-101(110206)	1 U	µg/L	UJ					
					Dup-2(110206)	1 U	µg/L	UJ					
					RFI-10-26(110206)	1 U	µg/L	UJ					
					RFI-36-02(110206)	1 U	µg/L	UJ					
					RFI-36-03(110206)	1 U	µg/L	UJ					
					RFI-36-14(110206)	1 U	µg/L	UJ					
					RFI-36-46(110206)	1 U	µg/L	UJ					
					RFI-81-50(110206)	1 U	µg/L	UJ					
					RFI-84-06RD(110206)	1 U	µg/L	UJ					
					VOCs	Cyclohexane	11/07/06	52	78 - 146	Dup-1(110106)	1 U	µg/L	UJ
										RFI-02-12(110106)	1 U	µg/L	UJ
RFI-09-04R(110106)	1 U	µg/L	UJ										
RFI-09-48(110106)	1 U	µg/L	UJ										
RFI-09-53(110106)	1 U	µg/L	UJ										
RFI-12-32(110106)	1 U	µg/L	UJ										
RFI-17-02(110106)	1 U	µg/L	UJ										
RFI-17-02D(110106)	1 U	µg/L	UJ										
RFI-23-01R(110106)	1 U	µg/L	UJ										
RFI-84-06R(110106)	1 U	µg/L	UJ										
RFI-84-09D(110106)	1 U	µg/L	UJ										
RFI-84-09S(110106)	1 U	µg/L	UJ										
RFI-84-11S(110106)	1 U	µg/L	UJ										

Notes:

U Non-detect at associated value.

UJ The analyte was not detected above the sample quantitation limit. The reported quantitation limit is an estimated quantity.

VOCs Volatile Organic Compounds.

TABLE 6  
 QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES  
 QUARTERLY GROUNDWATER MONITORING  
 GENERAL MOTORS NAO FLINT OPERATIONS  
 FLINT, MICHIGAN  
 NOVEMBER 2006

Parameter	Associated Sample ID	Analyte	MS	MSD	RPD	Control Limits		Sample Result	Qualifier	Units
			Recovery (percent)	Recovery (percent)		Recovery (percent)	RPD (percent)			
VOCs	RFI-09-04R(110106)	Dichlorodifluoromethane	62	22	95	25 - 130	25	1 U	UJ	µg/L
		Chloromethane	77	43	56	54 - 147	25	1 U	UJ	µg/L
		Cyclohexane	52	46	13	78 - 146	25	1 U	UJ	µg/L

Notes:

MS Matrix Spike.

MSD Matrix Spike Duplicate.

U Non-detect at associated value.

UJ The analyte was not detected above the sample quantitation limit. The reported quantitation limit is an estimated quantity.

VOCs Volatile Organic Compounds.