O'BRIEN & GERE

July 13, 2009

Mr. Richard A. Conforti, Jr., P.E
Environmental Engineer
Waste and Hazardous Materials Division
Department of Environmental Quality
PO Box 30241
Lansing, MI 48909-7741

Subject: REALM Coldwater Road Landfill
MID 005 356 860
Response to Comments- Addendum to the June 1999 Closure Certification Report for the Former WWTP

Dear Mr. Conforti:

This letter is in response to the Michigan Department of Environmental Quality (MDEQ) letter dated March 24, 2009 providing comments on the Addendum to the June 1999 Closure Certification Report for the Former Wastewater Treatment Plant (WWTP) submitted in September 2008 and the teleconference call with the MDEQ on May 4, 2009. The MDEQ indicated in their March 24, 2009 letter they were not in agreement with the facility's conclusion that closure of the former WWTP pursuant to Part 111 has been achieved. Please note that Motors Liquidation Company (MLC) will now be managing this site as of July10, 2009.

The MDEQ comments and responses are discussed below:

MDEQ comment 1:

> " ... there are iron and/or manganese concentrations in groundwater above Part 201 residential drinking water protection criteria in the six monitoring wells (MW-1, MW-2, MW-3, MW-6, MW-7 and MW-8) located within approximately 100 feet of the facility's western property boundary. The Report does not delineate the extent of this groundwater contamination or document that the contamination above the drinking water criteria is contained within the facility's property."

Response:

Section R 299.5707, R299.5706a(5)(b) of the MI Part 201 regulations allows for a background concentration to be substituted for the generic cleanup criterion when the cleanup criterion is less than background. Therefore, background values were calculated for iron and manganese in groundwater at the former WWTP area. The background groundwater quality

for iron and manganese were determined from the historical Coldwater Road Landfill Site (on-site) monitoring well data (dissolved concentrations).

The MDEQ Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria 2002 permits the mean plus three standard deviations (SD) for a site-specific background determination for groundwater if the data is normally or log normally distributed, and the 95% upper confidence limit (UCL) for non-parametric (not normally or log normally distributed) data. Groundwater data from the shallow (perched groundwater) wells B-7, B-9, B-18A, B-19Ar, B-24r, and B-28 (shown on Figure 1) for the Coldwater Road Landfill Site were selected to develop the site-specific background values for iron and manganese. These wells were selected since they are believed to represent background conditions at the Site, i.e., the metals concentrations which exist do not appear to be attributable to any release at or regionally proximate to the Site. Since only dissolved metals groundwater data is available for the landfill Site, this data was used as a conservative measure in developing the site-specific background concentrations. Monitoring wells B-14, B-29 and B-30 were excluded from the analysis because B-14 had questionable zinc results in the past and has been replaced by B-28, and wells B-29 and B-30 have also been abandoned, but were also located very close to B-28 and would have biased the analysis in this area of the site.

The dissolved iron data is close to being log normally distributed, but just fails the test for log normally distribution. Therefore, the iron data was analyzed using the U.S. EPA recommended ProUCL program to calculate the 95% UCL concentration (attached as Exhibit A) which resulted in a background value of 1,730 ug/l.

Using the same set of wells listed above, a site-specific background was also calculated for manganese. The dissolved manganese data is log normally distributed, therefore, the dissolved manganese background concentration was calculated using the mean plus three SD, which resulted in a value of 1,312 ug/l. The dissolved manganese background calculation worksheet is included in Exhibit B.

The enclosed Table 1 summarizes the iron and manganese ground water results from the last two quarters of the quarterly sampling program (December 2007 and March 2008) compared to the site specific background values and Residential Health-Based Drinking Water criteria. The comparison shows that the results of the quarterly groundwater sampling program at the former WWTP are below the site-specific background for iron, except for one sample collected during the December 2007 sampling event at well OBG MW-3 (1,780 ug/l). However, this detection of iron is below the Health-Based Drinking Water criterion (2,000 ug/l). Therefore, no additional sampling or investigation is necessary to assess the extent of iron detected in groundwater at the former WWTP area.

One well location (OBG MW-3) exhibited concentrations of manganese above the calculated background concentration for the last two quarterly sampling events. Therefore, we propose to use the background value as the criteria for which the extent of manganese in groundwater will be assessed.

MDEQ Comment 2:

"The facility's proposed approach of implementing a prohibition of on-site use of groundwater for drinking water through the filing of a Declaration of Restrictive Covenant is not acceptable since it does not address potential off-site exposure (i.e.,

drinking contaminated groundwater) issues. Final closure of the area cannot be approved until the facility can reliably document that no potential off-site exposure can ever occur or that no off-site migration of contaminated groundwater above applicable criteria is occurring."

Response:

Potential off-site exposure will be addressed through the installation and sampling of two monitoring wells at the west property boundary to determine the concentrations of manganese. The locations of the proposed monitoring wells are depicted on Figure 2. Fieldwork will be performed in accordance with the Post-Closure Care Plan and the MDEQ-approved December 2006 Work Plan. Groundwater samples will be collected using low-flow sampling methods for two quarterly groundwater events with samples collected and analyzed for total manganese. If the results indicate manganese concentrations are below the site-specific background, closure of the area will be pursued through an Addendum to the Closure Certification Report. The site deed restriction would be expanded to prohibit use of the groundwater at the entire site, including the former WWTP area. The current Declaration of Restrictive Covenant prohibits the construction of wells or other devices to extract groundwater for consumption, irrigation, dewatering or any other use at two areas of the Coldwater Road Landfill Site: the Remaining Materials Area (RMA) and the landfill.

MDEQ Comment 3:

"In addition, it should also be noted that the facility's conclusion that the shallow groundwater at the site is not an aquifer cannot be supported by the WHMD unless that designation is formally approved through submittal of a Groundwater Not In An Aquifer (GWNIAA) Determination."

Response:

It is our intent not to rely on a GWNIAA determination for Site closure, but instead document that there are no exceedances of the Residential Health-Based Drinking Water criteria or site-specific background values at the western property boundary, thus demonstrating no off-site exposure (i.e., drinking contaminated groundwater) issues.

Additional MDEQ Comment:

During our teleconference call on May 4, 2009, the MDEQ expressed concern that the detections of volatile organic compounds (VOCs) at well OBG MW-5 (included on Table 2) were not delineated vertically and could potentially migrate to the lower usable aquifer.

Response:

Therefore, MDEQ recommended a deep monitoring well be installed at the site to assess the potential vertical extent of VOC impact to groundwater. The Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451 R299.5528 states that a remedial investigation shall define the nature and extent of contamination in excess of the applicable generic residential cleanup criteria. No VOCs were detected at OBG MW-5 (or at adjacent wells OBG MW-6 or OBG MW-8) above the Generic Residential Drinking Water criteria during four rounds of quarterly sampling. Therefore, no further investigation is required under NREPA R299.5528.

If you have any questions regarding this response letter, please call me at (248) 477-5701, ext. 13.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

Scott L. Cormier, PE
Vice President

cc: Joe Rogers – MDEQ
John McCabe – MDEQ
Tony Finch – O'Brien & Gere

TABLES

TABLE 1
REALM
Coldwater Road Facility
Ground Water Analytical Results- Third Quarter (December 2007)
Metals Method 200.8

Sample Location	OBG MW-1	OBG MW-2	OBG MW-3	OBG MW-4	OBG MW-5	OBG MW-6	OBG MW-7	OBG MW-8	MDEQ Part 201 Residential Health-Based Drinking Water Criteria	Site-Specific Background
Date Collected	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007		
Parameter										
Total Inorganics										
Iron	440	630	1,780	420	1,490	990	970	520	2,000	1,730
Manganese	216	307	**5,080**	118	521	642	46	371	860	1,312
Dissolved Inorganics										
Iron	NS	NS	NS	NS	790	NS	NS	NS	2,000	1,730
Manganese	NS	NS	NS	NS	502	NS	NS	NS	860	1,312

Notes:

1) Results and criteria are shown in ug/l (ppb).

2) Samples analyzed by Merit Laboratories, Inc. of East Lansing, Michigan.

3) MDEQ Part 201 Residential Health-Based Drinking Water Protection Criteria as listed in Operational Memorandum #1, dated January 23, 2006.

4) "NS" denotes the well was not sampled for this constituient.

5) Bold type indicates concentration above Site-Specifc Background and Part 201 Residential Health-Based Drinking Water criteria.

6) Site-specific background calculated in accordance with MDEQ Sampling Strategies and Statistical Training Materials for Part 201 Cleanup Criteria dated 2002 using dissolved metals.

TABLE 1
REALM
Coldwater Road Facility
Ground Water Analytical Results- Fourth Quarter (March 2008)
Metals Method 200.8

Sample Location	OBG MW-1	OBG MW-2	OBG MW-3	OBG MW-4	OBG MW-5	OBG MW-6	OBG MW-7	OBG MW-8	MDEQ Part 201 Residential Health-Based Drinking Water Criteria	Site-Specific Background
Date Collected	03/18/2008	03/18/2008	03/18/2008	03/18/2008	03/18/2008	03/18/2008	03/18/2008	03/18/2008		
Parameter										
Total Inorganics										
Iron	160J	280J	1,180J	130J	1,770J	350J	560J	280J	2,000	1,730
Manganese	405	97	**5,050**	54	532	322	212	337	860	1,312
Dissolved inorganics										
Iron	NS	NS	NS	NS	190	NS	NS	NS	2,000	1,730
Manganese	NS	NS	NS	NS	520	NS	NS	NS	860	1,312

Notes:
1) Results and criteria are shown in ug/l (ppb).
2) Samples analyzed by Merit Laboratories, Inc. of East Lansing, Michigan.
3) MDEQ Part 201 Residential Health-Based Drinking Water Protection Criteria as listed in Operational Memorandum #1, dated January 23, 2006.
4) "NS" denotes the well was not sampled for this constituient.
5) Bold type indicates concentration above Site-Specifc Background and Part 201 Residential Health-Based Drinking Water criteria.
6) "J" denotes estimated concentration.

FIGURES

Exhibit A

Site-Specific Background Calculation for Iron

REALM

Coldwater Road Landfill

Former Wastewater Treatment Plant

Groundwater Background Determination for Dissolved Iron

Iron			
Well	Date Collected	Concentration (ug/l)	Detection
B-7	Nov-98	10	D
B-7	Nov-99	260	D
B-7	Dec-00	50	D
B-7	Oct-01	330	D
B-7	Nov-02	250	D
B-7	Nov-03	190	D
B-7	Dec-04	180	D
B-7	Jun-05	170	D
B-7	Dec-05	150	D
B-7	Jun-06	190	D
B-7	Jun-07	130	D
B-7	Jun-08	350	D
B-9	Nov-97	650	D
B-9	Nov-99	610	D
B-9	Dec-00	50	D
B-9	Oct-01	940	D
B-9	Dec-04	570	D
B-9	Jun-05	480	D
B-9	Dec-05	320	D
B-9	Jun-06	390	D
B-9	Jun-07	320	D
B-9	Jul-08	780	D
B-18A	Nov-97	380	D
B-18A	Nov-98	240	D
B-18A	Nov-99	180	D
B-18A	Dec-00	10	*
B-18A	Dec-00	40	D
B-18A	Oct-01	350	D
B-18A	Nov-02	190	D
B-18A	Nov-03	160	D
B-18A	Dec-04	900	D
B-18A	Jun-05	170	D
B-18A	Dec-05	390	D
B-18A	Jun-06	170	D

Iron			
Well	Date Collected	Concentration (ug/l)	Detection
B-18A	Jun-07	110	D
B-18A	Jun-08	310	D
B-19AR	Nov-03	20	D
B-19AR	Dec-04	240	D
B-19AR	Dec-04	170	D
B-19AR	Jun-05	1,320	D
B-19AR	Dec-05	160	D
B-19AR	Dec-05	150	D
B-19AR	Jun-06	240	D
B-19AR	Jun-07	70	D
B-19AR	Jun-08	380	D
B-24R	Nov-98	60	D
B-24R	Jun-05	10,600	D
B-24R	Dec-05	3,180	D
B-24R	Jun-06	3,760	D
B-24R	Jun-07	2,400	D
B-24R	Jun-08	3,490	D
B-28	Jun-06	2,380	D
B-28	Jun-07	1,690	D
B-28	Jun-08	370	D

1) Iron data is nonparametric, so background concentration was determined by calculating the 95% Upper Confidence Limit (UCL) was calculated using USEPA approved ProUCL (see attached ProUCL output).

2) "*" denotes one half of the detection limit if non-detected.

3) "D" denotes concentration detected.

REALM
Coldwater Road Landfill
Former Wastewater Treatment Plant
95% UCL for Dissolved Iron (ProUCL Output)

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Fe

General Statistics			
Number of Valid Data	54	Number of Detected Data	53
Number of Distinct Detected Data	38	Number of Non-Detect Data	1
		Percent Non-Detects	1.85%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	10	Minimum Detected	2.303
Maximum Detected	10600	Maximum Detected	9.269
Mean of Detected	785.7	Mean of Detected	5.721
SD of Detected	1628	SD of Detected	1.317
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	10	Maximum Non-Detect	2.303
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.326	Lilliefors Test Statistic	0.143
5% Lilliefors Critical Value	0.122	5% Lilliefors Critical Value	0.122
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	771.2	Mean	5.645
SD	1616	SD	1.419
95% DL/2 (t) UCL	1139	95% H-Stat (DL/2) UCL	1171
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	751.7	Mean in Log Scale	5.658
SD	1621	SD in Log Scale	1.384
95% MLE (t) UCL	1121	Mean in Original Scale	771.3
95% MLE (Tiku) UCL	1082	SD in Original Scale	1616
		95% Percentile Bootstrap UCL	1163
		95% BCA Bootstrap UCL	1324
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.622	**Data do not follow a Discernable Distribution (0.05)**	
Theta Star	1262		
nu star	65.98		
A-D Test Statistic	3.098	Nonparametric Statistics	
5% A-D Critical Value	0.802	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.802	Mean	771.3
5% K-S Critical Value	0.128	SD	1601
Data not Gamma Distributed at 5% Significance Level		SE of Mean	220
		95% KM (t) UCL	1140
Assuming Gamma Distribution		95% KM (z) UCL	1133
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1139
Minimum	1.00E-09	95% KM (bootstrap t) UCL	1533
Maximum	10600	95% KM (BCA) UCL	1161
Mean	771.1	95% KM (Percentile Bootstrap) UCL	1164
Median	255	95% KM (Chebyshev) UCL	1730
SD	1616	97.5% KM (Chebyshev) UCL	2145
k star	0.442	99% KM (Chebyshev) UCL	2960
Theta star	1744		
Nu star	47.75	**Potential UCLs to Use**	
AppChi2	32.89	**95% KM (Chebyshev) UCL**	**Background= 1730 ug/l (ppb)**
95% Gamma Approximate UCL	1119		
95% Adjusted Gamma UCL	1131		

Note: DL/2 is not a recommended method.

Exhibit B

Site-Specific Background Calculation for Manganese

REALM
Coldwater Road Landfill
Former Wastewater Treatment Plant
Groundwater Background Determination for Dissolved Manganese

Manganese			
Well	Date Collected	Concentration (ug/l)	Detection
B-7	Nov-98	424	D
B-7	Nov-99	313	D
B-7	Nov-02	5	*
B-7	Nov-03	5	*
B-7	Dec-04	74	D
B-7	Jun-05	31	D
B-7	Dec-05	50	D
B-7	Jun-06	150	D
B-7	Jun-07	42	D
B-7	Jun-08	10	D
B-9	Nov-97	741	D
B-9	Nov-99	1280	D
B-9	Dec-04	248	D
B-9	Jun-05	701	D
B-9	Dec-05	410	D
B-9	Jun-06	330	D
B-9	Jun-07	1,900	D
B-9	Jul-08	812	D
B-18A	Nov-97	62	D
B-18A	Nov-98	128	D
B-18A	Nov-99	155	D
B-18A	Nov-02	26	D
B-18A	Nov-03	5	*
B-18A	Dec-04	363	D
B-18A	Jun-05	80	D
B-18A	Dec-05	170	D
B-18A	Jun-06	50	D
B-18A	Jun-07	22	D
B-18A	Jun-08	5	*
B-19AR	Nov-03	5	*
B-19AR	Dec-04	11	D
B-19AR	Dec-04	5	*
B-19AR	Jun-05	228	D
B-19AR	Dec-05	10	*
B-19AR	Jun-06	210	D
B-19AR	Jun-07	21	D
B-19AR	Jun-08	9	D
B-24R	Nov-98	120	D
B-24R	Jun-05	448	D
B-24R	Dec-05	210	D
B-24R	Jun-06	210	D
B-24R	Jun-07	194	D
B-24R	Jun-08	175	D
B-28	Jun-06	210	D
B-28	Jun-07	160	D
B-28	Jun-08	84	D

Manganese:	X =	237
	V =	125527.87
	SD =	358.21
	CV =	1.51
Background =	**ug/l (ppb)**	**1311.64**

where:
X = mean
V = variance
SD = standard deviation
CV = coefficient of variance
background = X + 3*SD

Notes:
1) Manganese data is lognormally distributed, so background concentration was determined by calculating the mean plus three standard deviations (see above).
2) "*" denotes one half of the detection limit if non-detected.
3) "D" denotes concentration detected.

I:\PROJECTS\4966\32223\NOTES\FEMN BG\001a.MXD

WETLANDS

B-19AR

B-19A

B-24R

B-18A

~ LANDFILL ~

B-7

B-9

OBG MW-6

OBG MW-5

OBG MW-8

FORMER WASTEWATER TREATMENT PLANT

B-28

OBG MW-7

OBG MW-2

I-475

MORRIS HILLS

OBG MW-1

OBG MW-4

OBG MW-3

HORTON

FENCE

ABANDONED RAILROAD

MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

PLOT DATE: 2/1/2008 jmo

FIGURE 1

N

LEGEND

PERCHED MONITORING WELL LOCATION

REALM
COLDWATER ROAD
FLINT, MICHIGAN

PERCHED WELL LOCATIONS

0 75 150 300 450 600
Feet

MAY 2009
4966/32223/NOTES/001a

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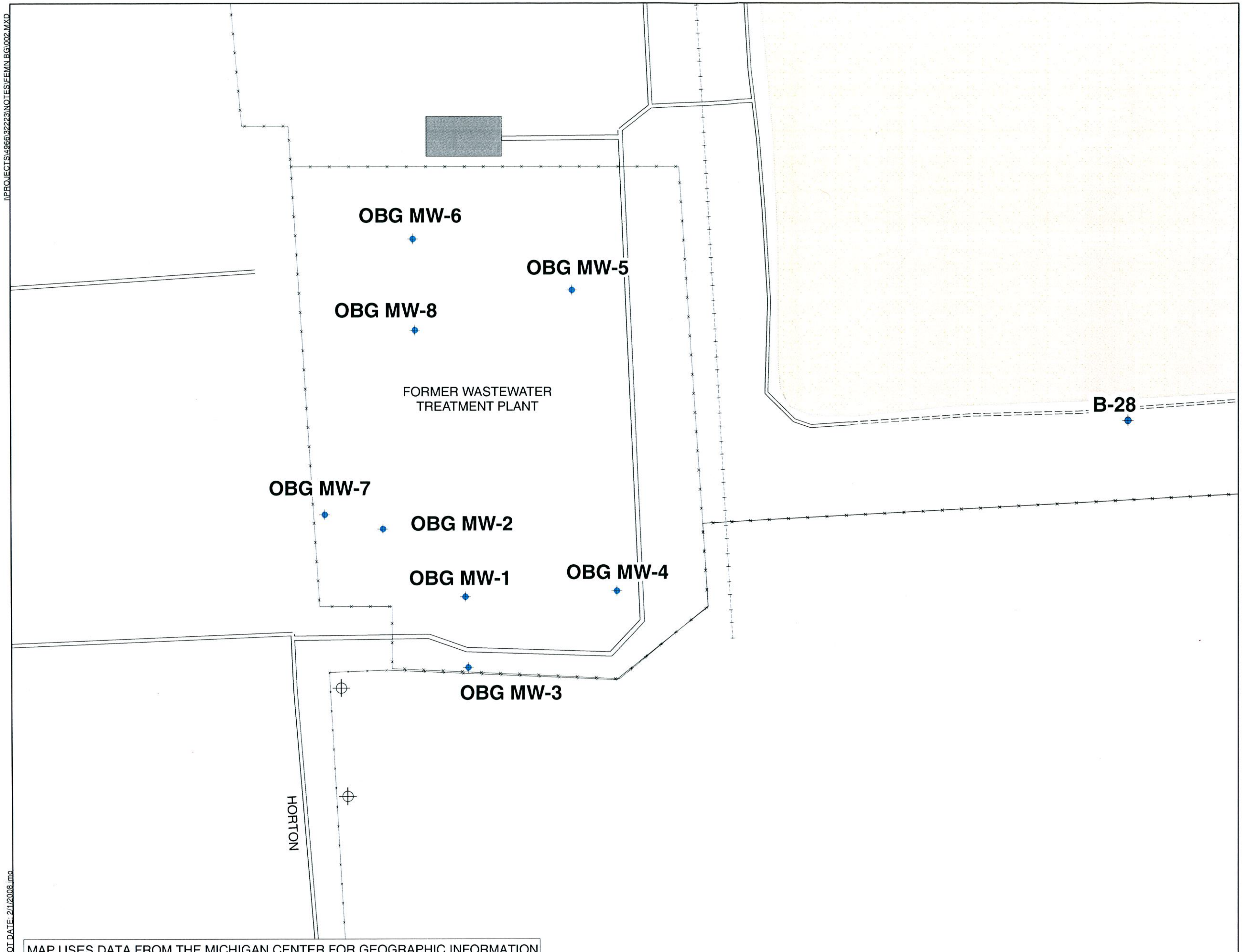

FIGURE 2

N

LEGEND

PERCHED MONITORING WELL LOCATION

PROPOSED PERCHED MONITORING WELL LOCATION

REALM
COLDWATER ROAD
FLINT, MICHIGAN

PROPOSED PERCHED WELL LOCATIONS

0 25 50 100 150 200
Feet

MAY 2009
4966/32223/NOTES/002

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