



April 20, 2009

Ms. Dawn Cleary
General Motors Corporation
30200 Mound Road
Mail Code: 480-111-W60
Warren, Michigan 48090

Subject: Additional services - Area 2 remediation activities

Dear Ms. Cleary:

O'Brien & Gere is pleased to submit this letter report to present the results of the Area 2 remediation activities conducted at the General Motors Metal Fabricating Division (MFD) plant located at 10800 South Saginaw Street, Grand Blanc, Michigan. The purpose of the Area 2 remediation was to remediate an area approximately 40 foot by 40 foot, to a depth of about one foot for mercury impacts. The area is located in the former surplus dies and equipment storage area within Area 2, and is comprised of the area centered on Area 2 surface soil (SS2) sampling location number 20 (SS2-20), as shown on Figure 1.

Field Activities

A meeting was held on March 3, 2009 with James Innes with the Michigan Department of Environmental Quality (MDEQ) at the Site to discuss using soil from Area 2 to fill the basement of the former Press Room, which is currently being decommissioned. Although there are a number of impacts in Area 2 (primarily arsenic and poly-nuclear aromatic hydrocarbons [PNAs], and somewhat sporadic exceedances of the MDEQ ground water surface water interface [GSI] criteria), relocation of the soils from Area 2 to the basement of the former Press Room was considered moving soils from one area of the Site to another area with similar impacts, and an acceptable practice according to MDEQ regulations. The area impacted with mercury was considered dissimilar to the other impacts in the area, and Mr. Innes suggested the area be remediated to below drinking water quality criteria. O'Brien & Gere provided oversight and collected samples while MCM Management Corporation remediated the surficial mercury impacts within Area 2 on March 17, 2009.

A Caterpillar 345L excavator was used to remove the soil in an area approximately 40 foot by 40 foot, to a depth of 1.5 ft, around the original sample location SS2-20. The soil was placed directly into one of three 30 yard rolloff trailers. Approximately 90 yards of soil was remediated from the area. A generator waste profile was performed on the soil by The Environmental Quality Company and the remediated soil was sent as non-hazardous soil to Cove Landfill of Bad Axe/Richfield Management LLC.

O'Brien & Gere collected nine confirmatory samples (Figure 1) after the soil was removed from the area following the MDEQ *Sampling Strategies and Statistics Training Materials (S³TM) for Part 201 Cleanup Criteria* (MDEQ, 2002) guidance document, which replaced the former *Verification of Soil Remediation (VSR)* guidance document (MDNR 1994; Revision 1). Based on the amount of soil removed and the area of the excavation, five confirmatory samples (SS2-20-CF-1 through SS2-21-CF-5) were collected on the floor of the excavation, and four confirmatory samples (SS2-20-CS-1 through SS2-20-CS-4) were collected at the midpoint of the sidewall to confirm the area had been remediated below MDEQ residential drinking water criteria. A duplicate and a matrix spike/matrix spike duplicate were also collected to follow quality assurance quality control (QA/QC) procedures. The soil samples were placed directly into clean, pre-labeled, sample jars and analyzed for mercury. Samples were hand delivered to Merit Laboratories, Inc. via the laboratory's courier service. The soil samples were submitted to the analytical laboratory for analysis using appropriate chain of custody and standard QA/QC procedures.

Physical Findings

The soil collected during the remediation was consistent with soil borings logged during the Phase II investigation and Area 2 delineation investigation. The soil generally was a brown to pale brown, sand and gravel or sandy clay fill. Pieces of debris were also observed throughout the area during the remediation activities.

Analytical Results

The analytical results for the nine confirmatory samples were below the MDEQ residential drinking water protection criteria. The analytical results are presented in Table 1. Four of the nine confirmatory samples (SS2-20-CF-2, SS2-20-CF-3, SS2-20-CF-5, SS2-20-CS-3) were either non-detect or below the Michigan Statewide Default Background criteria. The remaining five confirmatory samples were above the Michigan Statewide Default Background criteria and the MDEQ GSI criteria, and ranged from 0.216 mg/kg at the duplicate for SS2-20-CF-4 to 1.146 mg/kg at SS2-20-CS-2. The sample with the highest concentration of mercury (SS2-20-CS-2), which presented the greatest potential for mercury to leach in the soil was analyzed using the synthetic precipitation leaching procedure (SPLP) by USEPA Method 1312. The SPLP analytical result for SS2-20-CS-2 was 0.6 ug/l (or 0.0006 mg/l), which exceeds the MDEQ GSI criteria for ground water of 0.0013 ug/l, and the detection limit of 0.2 ug/l. Therefore, as discussed with Mr. Innes, the GSI pathway should be addressed at some time in the future if and when the plant is closed through the Remedial Action Plan (RAP) process, which would likely include institutional controls being placed on the former Press Room basement area.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Clifford Yantz, P.G.
Project Associate

Table 1
Confirmatory Soil Samples - SS2-20 Area - Analytical Results
GM MFD
Grand Blanc, Michigan

Confirmatory Floor Results

Parameter		MDEQ Criteria							SS2-20-CF-1	SS2-20-CF-2	SS2-20-CF-3	SS2-20-CF-4	SS2-20-CF-4/ SS2-20-DUP-1	SS2-20-CF-5
		Statewide Default Background Levels	Residential Drinking Water Protection	GSI Protection	Residential Indoor Air	Industrial Indoor Air	Residential Direct Contact	Industrial Direct Contact						
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	48	89	160	580	0.264	<0.050	0.123	0.405	0.216	<0.050

Confirmatory Sidewall Results

Parameter		MDEQ Criteria							SS2-20-CS-1	SS2-20-CS-2	SS2-20-CS-3	SS2-20-CS-3/ SPLP	SS2-20-CS-4
		Statewide Default Background Levels	Residential Drinking Water Protection	GSI Protection	Residential Indoor Air	Industrial Indoor Air	Residential Direct Contact	Industrial Direct Contact					
Mercury	mg/kg	0.13	1.7	0.050 (M); 0.0012	48	89	160	580	0.440	1.146	0.103	0.6	0.692

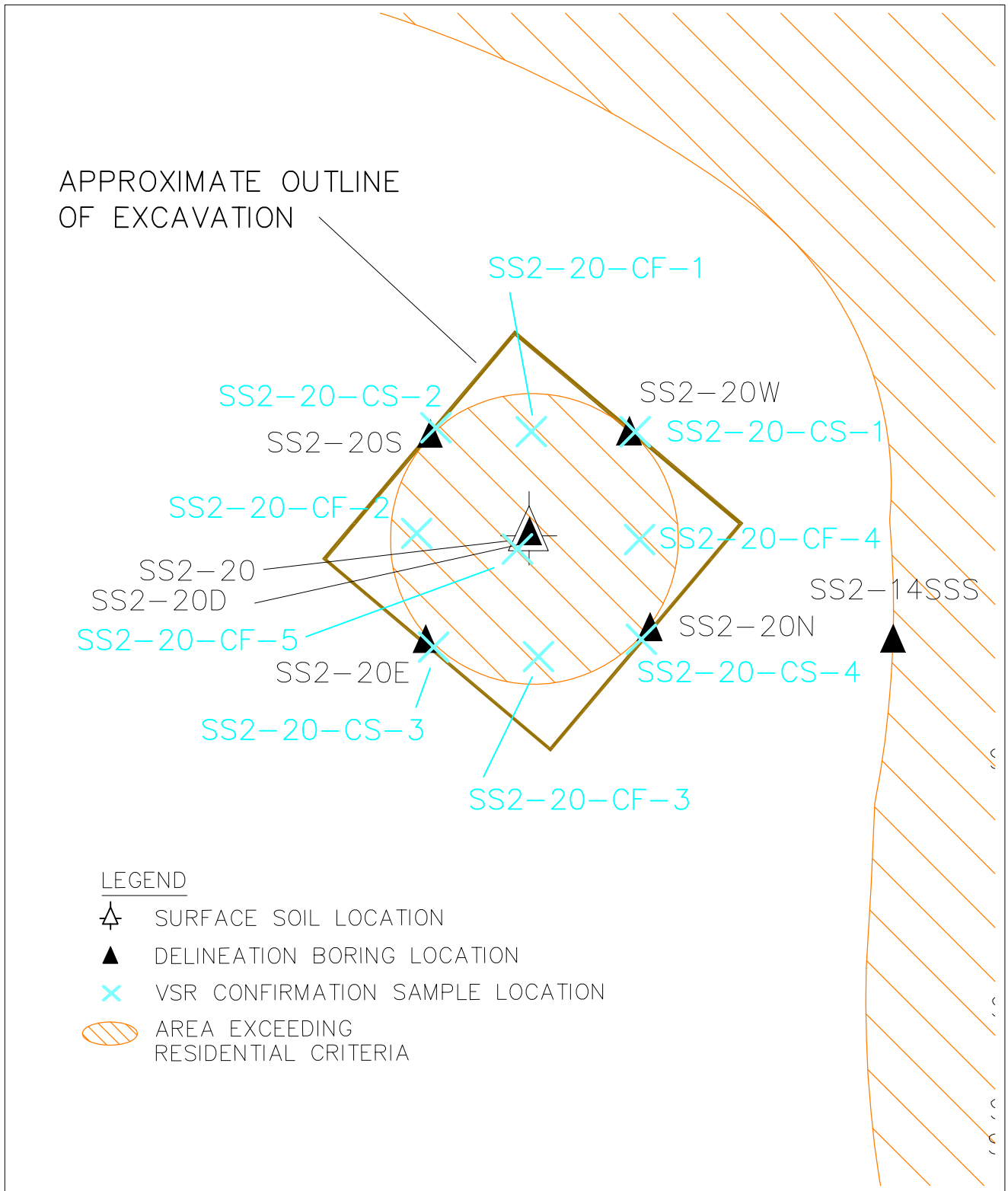
Bold lettering indicates samples with metals concentrations exceeding the Michigan Statewide Default Background

Exceeds GSI protection criteria only

(M) Calculated criterion is below the analytical target detection limit

SS2-20-CS-3/SPLP was analyzed using synthetic precipitation leaching procedure (SPLP) by USEPA Method 1312, and reported in ug/l

SS2-20-CS-3/SPLP exceeds the MDEQ GSI criteria for ground water of 0.0013 ug/l, and the detection limit of 0.2 ug/l

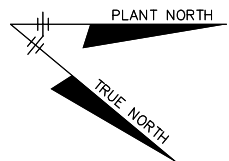


LEGEND

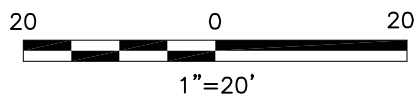
- SURFACE SOIL LOCATION
- DELINEATION BORING LOCATION
- VSR CONFIRMATION SAMPLE LOCATION
- AREA EXCEEDING RESIDENTIAL CRITERIA

GENERAL MOTORS MFD – GRAND BLANC
 (ENCORE SITE #29)
 GRAND BLANC, MICHIGAN

VSR SAMPLE LOCATIONS



4966/39923.010-VSR
 APRIL 2009





Analytical Laboratory Report

Supplemental Report

Report ID: S40169.01(02)
Generated on 04/01/2009
Replaces report S40169.01(01) generated on 03/19/2009

Report to

Attention: Clifford Yantz/ Kevin Schneider
O'Brien & Gere Engineers, Inc.
33469 West 14 Mile Road Suite 150
Farmington Hills, MI 48331

Phone: 248-477-5701 FAX: 248-661-4057
Email: YantzCS@obg.com/SchneiKB@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S40169.01-S40169.12
Project: Grand Blanc Area 5 Add. Services SSOW# E029004
Collected Date: 03/17/2009
Submitted Date/Time: 03/17/2009 15:00
Sampled by: Kevin Schneider
P.O. #: 4020457

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Supplemental Report

Sample Summary (12 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S40169.01	SS2-20-CF-1	Soil	03/17/2009 12:30
S40169.02	SS2-20-CF-2	Soil	03/17/2009 12:40
S40169.03	SS2-20-CF-3	Soil	03/17/2009 12:45
S40169.04	SS2-20-CF-4	Soil	03/17/2009 12:50
S40169.05	SS2-20-CF-5	Soil	03/17/2009 12:55
S40169.06	SS2-20-CS-1	Soil	03/17/2009 13:00
S40169.07	SS2-20-CS-2	Soil	03/17/2009 13:05
S40169.08	SS2-20-CS-3	Soil	03/17/2009 13:10
S40169.09	SS2-20-CS-3 MS	Soil	03/17/2009 13:10
S40169.10	SS2-20-CS-3 MSD	Soil	03/17/2009 13:10
S40169.11	SS2-20-CS-4	Soil	03/17/2009 13:15
S40169.12	SS2-20-DUP-1	Soil	03/17/2009



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.01
Sample Tag: SS2-20-CF-1
Collected Date/Time: 03/17/2009 12:30
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	93	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.264	mg/kg	0.050	7471A	03/19/09 13:45	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.02
Sample Tag: SS2-20-CF-2
Collected Date/Time: 03/17/2009 12:40
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	90	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	Not detected	mg/kg	0.050	7471A	03/19/09 13:47	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.03
Sample Tag: SS2-20-CF-3
Collected Date/Time: 03/17/2009 12:45
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	91	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.123	mg/kg	0.050	7471A	03/19/09 13:49	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.04
Sample Tag: SS2-20-CF-4
Collected Date/Time: 03/17/2009 12:50
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	91	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.405	mg/kg	0.050	7471A	03/19/09 13:51	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.05
Sample Tag: SS2-20-CF-5
Collected Date/Time: 03/17/2009 12:55
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	93	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	Not detected	mg/kg	0.050	7471A	03/19/09 13:52	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.06
Sample Tag: SS2-20-CS-1
Collected Date/Time: 03/17/2009 13:00
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	94	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.440	mg/kg	0.050	7471A	03/19/09 13:54	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.07
 Sample Tag: SS2-20-CS-2
 Collected Date/Time: 03/17/2009 13:05
 Matrix: Soil
 COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Mercury Digestion	Completed			7470A	03/30/09 10:30	JRT		
SPLP Extraction								
% Solids	100			1312	03/26/09 16:00	WAR		
Sample Used g	100			1312	03/26/09 16:00	WAR		
Final Volume mL	2,000			1312	03/26/09 16:00	WAR		
Final Extract pH	10.36			1312	03/26/09 16:00	WAR		
Inorganics								
Total Solids	89	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	1.146	mg/kg	0.050	7471A	03/19/09 14:04	JRT	7439-97-6	
Mercury, SPLP	0.0006	mg/L	0.0002	7471A	03/30/09 13:50	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.08
Sample Tag: SS2-20-CS-3
Collected Date/Time: 03/17/2009 13:10
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	89	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.103	mg/kg	0.050	7471A	03/19/09 14:08	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.09
Sample Tag: SS2-20-CS-3 MS
Collected Date/Time: 03/17/2009 13:10
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	88	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.230	mg/kg	0.050	7471A	03/19/09 14:22	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.10
Sample Tag: SS2-20-CS-3 MSD
Collected Date/Time: 03/17/2009 13:10
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	86	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.243	mg/kg	0.050	7471A	03/19/09 14:24	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.11
Sample Tag: SS2-20-CS-4
Collected Date/Time: 03/17/2009 13:15
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	95	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.692	mg/kg	0.050	7471A	03/19/09 14:01	JRT	7439-97-6	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S40169.12
Sample Tag: SS2-20-DUP-1
Collected Date/Time: 03/17/2009 :
Matrix: Soil
COC Reference: 49043

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.1	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7471A	03/18/09 13:00	JRT		
Inorganics								
Total Solids	94	%	1	Std M 2540 B	03/18/09 12:00	DJS		
Metals								
Mercury	0.216	mg/kg	0.050	7471A	03/19/09 14:06	JRT	7439-97-6	

Merit

Laboratories, Inc.

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www.meritlabs.com

C.O.C. PAGE # 1 OF 1

49043

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Cliff Yantz / Kevin Schneider
 COMPANY: O'Brien & Gere
 ADDRESS: 37000 Grand River
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335
 PHONE NO: 248-477-5701 FAX NO: _____
 E-MAIL ADDRESS: _____

CONTACT NAME: _____ SAME: _____
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO: _____ FAX NO: _____ P.O. NO: _____

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME: GM MFD Grand Blanc SAMPLER(S) - F. EASE PRINT SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD OTHER
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER

SPECIAL INSTRUCTIONS/NOTES

SSOW
E029004 ps

MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER O=OIL S=SOIL A=AIR L=LIQUID W=WASTE SD=SOLID M=MISC

Containers & Preservatives

MERIT LAB NO.	YEAR 2009		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NaOH	MeOH	OTHER	Mercury
	DATE	TIME											
40169.01	3/17	1230	SS2-20-CF-1	S	1	X							X
.02		1240	SS2-20-CF-2	S	1	X							X
.03		1245	SS2-20-CF-3	S	1	X							X
.04		1250	SS2-20-CF-4	S	1	X							X
.05		1255	SS2-20-CF-5	S	1	X							X
.06		1300	SS2-20-CS-1	S	1	X							X
.07		1305	SS2-20-CS-2	S	1	X							X
.08		1310	SS2-20-CS-3	S	1	X							X
.09/10		1310	SS2-20-CS-3MS/MSD	S	2	X							X
.10		1315	SS2-20-CS-4	S	1	X							X
.12			SS2-20-DUP-1	S	1	X							X

RELINQUISHED BY: Kevin Schneider O'Brien & Gere DATE: 3/17/09 TIME: 1255
 RECEIVED BY: Merit DATE: 3-17-09 TIME: 1255

RELINQUISHED BY: Cliff Yantz Merit DATE: 3/17/09 TIME: 1500
 RECEIVED BY: Paula DATE: 3/17/09 TIME: 1500
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____ NOTES: _____ TEMP ON ARRIVAL: 41

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE