

MEMO

Date: September 16, 2008

To: Dawn Cleary cc:

From: John Bassett

Subject: **Notification of Newly Identified 310 Plater Pit in Bay B-49, General Motors Corporation, MLK Facility, IND 980700801**

This notification is made to the Indiana Department of Environmental Management (IDEM) pursuant to the requirements of Section F.5.h. of the Administrative Agreed Order Cause No.H-13855 regarding notification of a newly identified potential contaminant source area at the General Motors Corporation (GM) Dr. Martin Luther King Jr. (MLK) Boulevard Facility, Anderson, Indiana.

This notification includes the following data.

1. Site location on a topographic map
2. Designation of the type of unit
3. General unit dimensions and description
4. Available drawings
5. Dates of operation
6. Specifications of managed wastes
7. Other available information
8. Additional Investigation

Unit Location, Designation and Description

The Main Plant Building at the MLK Facility is currently undergoing demolition. On July 15, 2008 a sump pit was uncovered during concrete floor removal in Bay B-49 of Building 31 in the south portion of the former Main Plant Building. The sump pit appears to have been utilized to collect waste plating fluids associated with the former 310 Plater, and is herein referred to as the 310 Plater Pit. The pit location is shown in Figure 1. Photographs of the pit taken during inspection of the 310 Plater pit are provided in Attachment A.

Upon removal of the concrete floor, the pit was observed to be filled with sand and gravel and did not display any staining. The pit was rectangular in shape measuring 8 x 10 feet, and upon excavation was found to be about 10 feet deep. The concrete pit walls were observed to be intact, and no fractures were observed in the pit floor. The walls and floor of the pit had a rubber liner. The concrete pit walls and floor were removed and the soil around the pit was excavated. Excavated material was placed in four roll-off boxes and disposed of as chromium-impacted hazardous waste.

During excavation of the fill material and removal of the concrete, the concrete walls were broken. Water and sand flowed outside the pit and the water was observed to have a yellow color. During and following removal of the fill material and concrete walls and bottom of the sump, approximately 600 gallons of water was pumped from the excavation over a five-day period. The pumped water was contained in two totes and held for characterization and proper disposal. The open excavation was observed to slowly recharge after pumping.

Available Drawings

The 310 Plater location was verified from a 1970 site drawing which shows the plating conveyor occupying portions of Bays A47 – A51. The 310 Plater Pit is believed to have been utilized as a collection point for chromium plating wastewaters from this plater. The four corners of the 310 Plater Pit were surveyed after excavation using standard instrument surveying techniques referenced to the Indiana State Plane coordinate system. Figure 2 shows the surveyed location of the 310 Plater and 310 Plater Pit overlain on a building column grid drawing. The overlay indicates that the pit was located roughly midway along the conveyor length.

Dates of Operation

The 310 Plater was built about the time of the construction of Building 31 in 1956. It is believed to have been in operation until 1966. During decommissioning operations in 1966, the pit was backfilled with sand and covered with concrete.

Specifications of Managed Wastes

There are no direct analytical data available concerning the waste managed in the 310 Plater pit. Analytical data gathered during the B49 excavation during pit removal appear to indicate that the pit did manage chromium plating wastewater. These analytical data are provided in Attachment B and consist of two separate sample analyses.

A “pit water” sample was collected from a storage tote on July 24. This sample was analyzed for US EPA target analyte list (TAL) metals and total and amenable cyanide. Chromium was reported in this sample at a concentration of 42.3 mg/L. High concentrations of sodium (3,390 mg/L) and potassium (138 mg/L) were present in this sample, but the calcium concentration (6.22 mg/L) was low compared to average site groundwater values. The sodium, potassium, and calcium data are unusual, and are not indicative of ground water samples from the site. For example, the mean sodium concentration of 70 groundwater samples collected at the site is much lower (50.2 mg/L); the mean potassium concentration of 70 samples is much lower (11.0 mg/L), but the mean calcium concentration of 76 samples is much higher (138.2 mg/L). The pit water sample is highly enriched in sodium and potassium, but depleted in calcium with respect to average site groundwater.

Research has indicated that plating operations at the site typically utilized “soft” water. Soft water is produced by ion exchange systems that remove divalent cations, such as calcium, and

substitute monovalent ions such as sodium and potassium. The pit water sample matches the characteristic profile of soft water and strongly suggests that the water pumped from the B49 excavation is not groundwater but is residual plating wastewater contained within the 310 Plater Pit. This wastewater was likely released from the sand-filled tank during demolition and removal.

A waste characterization sample was obtained from one of the storage totes on July 30 and submitted for analysis of TCLP metals, reactive cyanide and sulfide. TCLP limits were exceeded for chromium, but reactive cyanide was not detected.

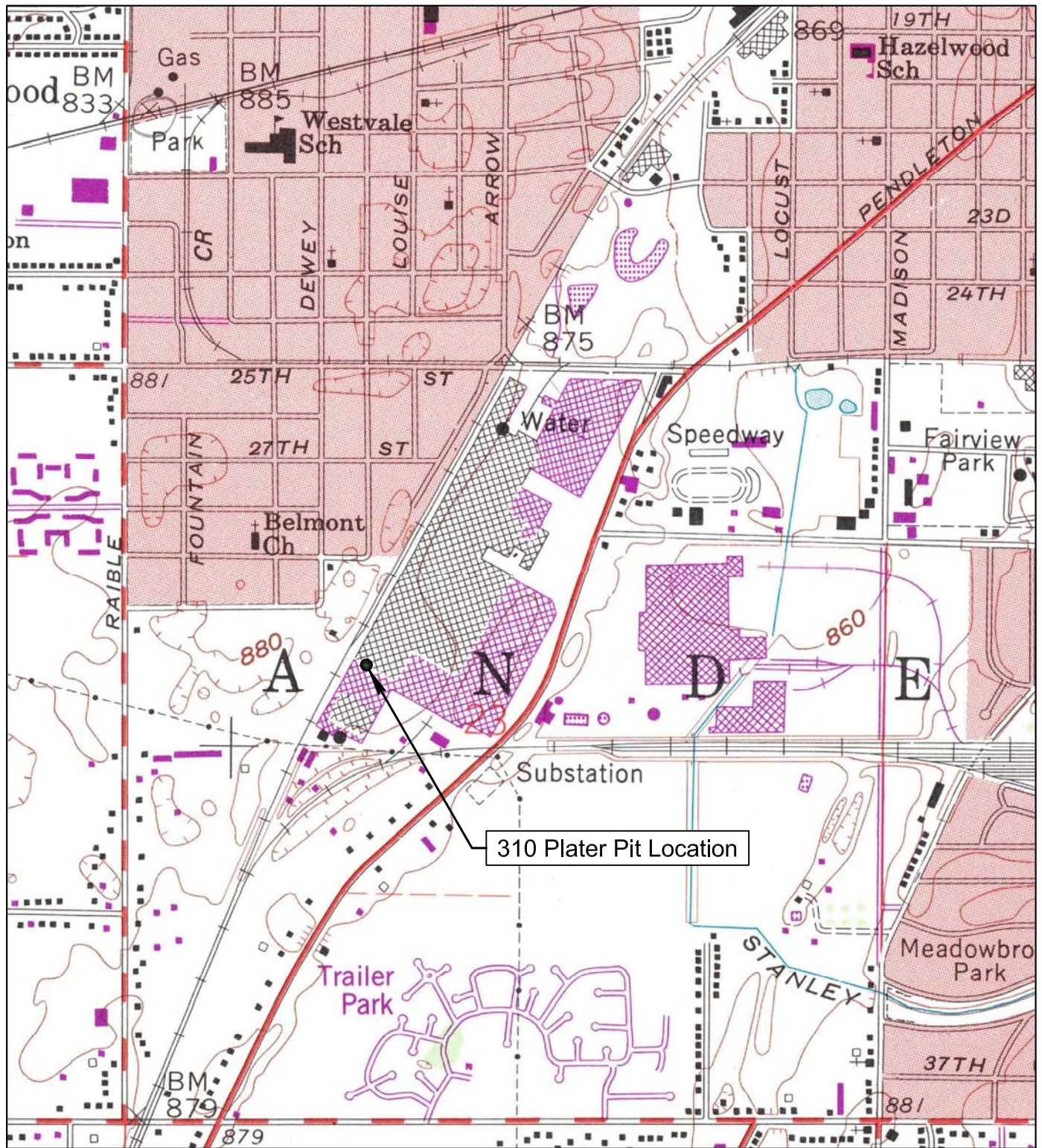
Other Available Information

No EPA MCL groundwater screening criteria for total chromium have been exceeded in any of the Unit 3s monitoring wells surrounding the 310 Plater Pit (Figure 2, MW 11, 12, 13, 14, 78, or 79) (Figure 4.23; Earth Tech and Environ, August 2005 Final RFI Report). Most recently, Unit 3S wells MW 78 and MW 79 had total chromium concentrations of 0.035 and 0.0049 mg/L in January 2005.

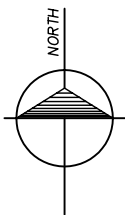
Additional Investigation

The water quality data from the July 24 pit water sample appear to be indicative of chromium plating wastewater, and do not represent groundwater conditions at the site. A release of chromium to groundwater can at this time not be confirmed. The data collected to date further indicate that the water in the excavation at the 310 Plater Pit was released during demolition of the concrete pit structure, and that all recoverable water was pumped from the pit over a five day period.

There are several known pits and sumps within the former Main Plant Building that will be inspected and evaluated during the demolition process. Following the inspection and evaluation of all pits and sumps, GM will prepare a work plan to further evaluate those pits and sumps, including the 310 Plater Pit, that warrant additional subsurface investigation. The purpose of the investigation will be to determine if hazardous constituents have been released to the environment, and if so, to determine the potential impact to human health using a risk screening evaluation.



Base taken from USGS Anderson South, Ind.
7.5' Topographic Quadrangle, 1994.



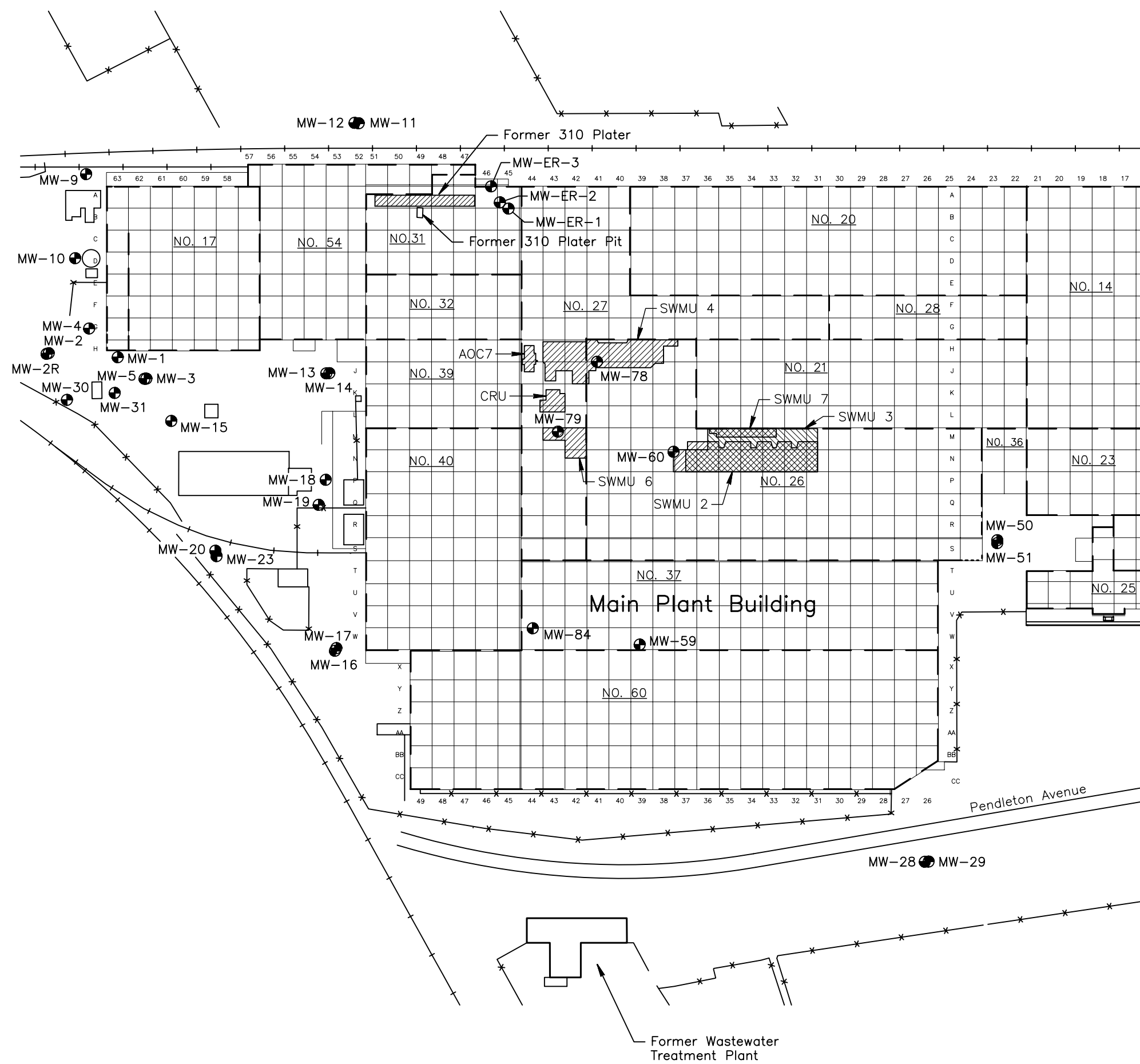
0 1000
Feet

EARTH TECH | **AECOM**

LOCATION OF 310 PLATER PIT

GENERAL MOTORS CORPORATION
MLK BOULEVARD FACILITY
ANDERSON, INDIANA

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
310PS Fg1.dwg	NLW	62906	AUG/2008	1



- Explanation
- Building Wall
 - Bay Grid
 - Fence Line
 - Railroad
 - Building Designation
 - Existing Monitoring Well Location

EARTH TECH | AECOM

LOCATION OF FORMER 310 PLATER
AND FORMER 310 PLATER PIT

GENERAL MOTORS CORPORATION
MLK BOULEVARD FACILITY
ANDERSON, INDIANA

FILE NAME: 310PS Fg2.dwg	DRN NLW	PROJECT NO. 62806	DATE AUG/2008	FIGURE NO. 2
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Plotted By: nancy.wilzbacher
Layout-Sheet Name: MODEL
Plot File Date Created: Aug/22/2008 2:03 PM

Attachment A

Photos



Photo 1. Excavation adjacent to 310 Plater pit.



Photo 2. 310 Plater pit.

Attachment B

Laboratory Data Reports

**July 24 TAL Sample
Data Validation Report for July 24 Sample**

July 30 Waste Characterization Sample

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WPW072408JB001

Lab Name: COMPUCHEM Contract: _____
Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 15848A
Matrix (soil/water): WATER Lab Sample ID: 1584801
Level (low/med): LOW Date Received: 7/25/2008
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
57-12-5	Amen Cyanide	1.9	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____
Comments: _____

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WPW072408JB001

Lab Name: COMPUCHEM

Contract: _____

Lab Code: LIBRTY

Case No.: _____

SAS No.: _____

SDG No.: 15848Matrix (soil/water): WATERLab Sample ID: 1584801Level (low/med): LOWDate Received: 7/25/2008% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1190			P
7440-36-0	Antimony	147			P
7440-38-2	Arsenic	173			P
7440-39-3	Barium	8.1	B		P
7440-41-7	Beryllium	0.18	U		P
7440-43-9	Cadmium	4.6	B		P
7440-70-2	Calcium	6220			P
7440-47-3	Chromium	42300			P
7440-48-4	Cobalt	28.1			P
7440-50-8	Copper	198			P
7439-89-6	Iron	1050		E	P
7439-92-1	Lead	2.7	B		P
7439-95-4	Magnesium	961	B		P
7439-96-5	Manganese	24.7		E	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	268			P
7440-09-7	Potassium	138000		E	P
7782-49-2	Selenium	22.7			P
7440-22-4	Silver	0.51	U		P
7440-23-5	Sodium	3390000		E	P
7440-28-0	Thallium	8.0	B		P
7440-62-2	Vanadium	49.9			P
7440-66-6	Zinc	27.1		E	P
57-12-5	Cyanide	1.9	U		AS

Color Before: YELLOWClarity Before: CLEAR

Texture: _____

Color After: YELLOWClarity After: CLEAR

Artifacts: _____

Comments: _____



**CONESTOGA-ROVERS
& ASSOCIATES**

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MEMORANDUM

TO: John Bassett [john.bassett@earthtech.com] REF. NO.: 017302 [17307-061012]
FROM: Deb Andrasko/bjw/17 *JSX* DATE: September 15, 2008
C.C.: Shannon Richardson E-Mail and Hard Copy if Requested
RE: **Data Quality Assessment and Validation**
Demolition Sampling - Waters
General Motors - MLK Boulevard Facility
Anderson, Indiana
July 2008

The following details a quality assessment and validation of the analytical data resulting from the collection of a groundwater sample from the General Motors Vehicle Manufacturing Plant (GM) in Anderson, Indiana, in July 2008. The sample summary detailing sample identification, sample location, and analytical parameters is presented in Table 1. Sample analyses were performed at CompuChem, in Cary, North Carolina (CompuChem), in accordance with the methodologies presented in Table 2. The analytical results summary is provided in Table 3. The Quality Control (QC) criteria used to assess the data were established by the methods and following documents:

- i) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994; and
- ii) Quality Assurance Project Plan (QAPP) for the Resource Conservation and Recovery Act (RCRA) Facility Investigation at GM Anderson, Indiana Facility, IND 980 700 801, Revision 2, October 14, 1997.

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 properly preserved and cooled to 4°C (±2°C) after collection. All samples were prepared and analyzed within the method-required holding times.

Initial Calibration – Metals Analyses

To calibrate the inductively coupled plasma (ICP), a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve. Resulting correlation coefficient for the mercury curve must be at least 0.995.

After calibration, 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 all metals calibration curves and ICVs were analyzed at the proper frequencies and were within the acceptance criteria.

Initial Calibration – General Chemistry Analyses

The general chemistry analyses of total cyanide and amenable cyanide were calibrated in accordance with the method and all calibration criteria were met.

Initial and Continuing Calibration Verification – Inorganics

Initial and continuing calibration verification criteria for inorganic analyses were the same criteria as used for assessing the initial calibration data. The 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. Most blank results were non-detect for the analytes of interest. Various metals were present in some of the blanks at low concentrations. All associated results with similar concentrations were qualified as non-detect (see Table 4). All non-detect results and results significantly greater than the blanks would not have been impacted.

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. Some LCSs are prepared and analyzed in duplicate.

LCSs were prepared and analyzed for all parameters. The LCS recoveries were within the control limits for all analytes of interest.

Inductively Coupled Plasma (ICP) 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. All ICS recoveries were within the established control limits of 80 to 120 percent.

Serial Dilution – Metals 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.

Serial dilution analysis was performed on the investigative sample and all results were within the method criteria with the exception of iron, manganese, potassium and sodium. The associated sample results were qualified as estimated due to the implied variability (see Table 5).

Contract Required Detection Limit (CRDL) Standard Analysis

To verify the linearity of the ICP calibration near the CRDL, a standard is analyzed which contains specified ICP analytes at a concentration of two times the CRDL or twice the instrument detection limit, whichever is greater.

General control limits of 80-120 percent were used to evaluate the data. All analyte recoveries were within the limits with the exception of potassium and arsenic. The associated results were qualified as estimated (see Table 6).

Analyte Quantitation

The reported quantitation results were checked to ensure results reported were accurate. The sample identified in Table 1 was reviewed. No discrepancies were found between the raw data and the sample results reported by the laboratory.

System Performance

System performance between various QC checks was evaluated to monitor for changes that may have caused the degradation of data quality. The sample identified in Table 1 was reviewed. No technical problems 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 qualifications noted.

TABLE 1
 SAMPLE COLLECTION AND ANALYSIS SUMMARY
 DEMOLITION SAMPLING - WATERS
 GENERAL MOTORS - MLK BOULEVARD FACILITY
 ANDERSON, INDIANA
 JULY 2008

<i>Sample I.D.</i>	<i>Location I.D.</i>	<i>Collection Date (mm/dd/yy)</i>	<i>Collection Time (hr:min)</i>	<i>Parameters</i>		
				<i>Metals</i>	<i>Total Cyanide</i>	<i>Amenable Cyanide</i>
WPW-072408-JB-001	Plater 310 Sump Pit	7/24/2008	11:05	X	X	X

TABLE 2
SUMMARY OF ANALYTICAL METHODOLOGIES
DEMOLITION SAMPLING - WATERS
GENERAL MOTORS - MLK BOULEVARD FACILITY
ANDERSON, INDIANA
JULY 2008

<i>Parameter</i>	<i>Method</i>
Metals, total (excluding mercury)	SW-846 6010B ¹
Mercury	SW-846 7470A ¹
Total and Amenable Cyanide	SW-846 9010B/9012A ¹

Notes:

- ¹ "Test Methods for Solid Waste Physical/Chemical Methods",
SW-846, 3rd Edition, September 1986 (with subsequent revisions).
TCL Target Compound List.

ANALYTICAL RESULTS SUMMARY
DEMOLITION SAMPLING - WATERS
GENERAL MOTORS - MLK BOULEVARD FACILITY
ANDERSON, INDIANA
JULY 2008

Sample Location: Plater 310 Sump Pit
Sample ID: WPW072408JB001
Sample Date: 7/24/2008

<i>Parameters:</i>	<i>Units</i>	
<i>Metals</i>		
Aluminum	µg/L	1190
Antimony	µg/L	147
Arsenic	µg/L	173 J
Barium	µg/L	8.1 U
Beryllium	µg/L	0.18 U
Cadmium	µg/L	4.6 J
Calcium	µg/L	6220
Chromium Total	µg/L	42300
Cobalt	µg/L	28.1
Copper	µg/L	198
Iron	µg/L	1050 J
Lead	µg/L	2.7 U
Magnesium	µg/L	961 J
Manganese	µg/L	24.7 J
Mercury	µg/L	0.10 U
Nickel	µg/L	268
Potassium	µg/L	138000 J
Selenium	µg/L	22.7
Silver	µg/L	0.51 U
Sodium	µg/L	3390000 J
Thallium	µg/L	8.0 J
Vanadium	µg/L	49.9
Zinc	µg/L	27.1
<i>General Chemistry</i>		
Cyanide (amenable)	µg/L	1.9 U
Cyanide (total)	µg/L	1.9 U

Notes: Notes:
J Estimated.
U Not detected.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
 DEMOLITION SAMPLING - WATERS
 GENERAL MOTORS - MLK BOULEVARD FACILITY
 ANDERSON, INDIANA
 JULY 2008

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Qualified Sample Result</i>	<i>Units</i>
Metals	08/04/08	Lead	1.594	WPW072408JB001	2.7 U	µg/L
		Barium	2.297	WPW072408JB001	8.1 U	µg/L

Notes:

U Non-detect.

TABLE 5
 QUALIFIED SAMPLE DATA DUE TO OUTLYING ICP SERIAL DILUTION RESULTS
 DEMOLITION SAMPLING - WATERS
 GENERAL MOTORS - MLK BOULEVARD FACILITY
 ANDERSON, INDIANA
 JULY 2008

<i>Parameter</i>	<i>Analyte</i>	<i>Serial Dilution Sample ID</i>	<i>%D</i>	<i>Associated Sample I.D.</i>	<i>Qualified Sample Result</i>	<i>Units</i>
Metals	Iron	WPW072408JB001	21	WPW072408JB001	1050 J	µg/L
	Manganese		14		24.7 J	µg/L
	Potassium		28		138000 J	µg/L
	Sodium		29		3390000 J	µg/L

Notes:

%D Percent difference.

J Estimated.

TABLE 6
 QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CRDL RECOVERIES
 DEMOLITION SAMPLING - WATERS
 GENERAL MOTORS - MLK BOULEVARD FACILITY
 ANDERSON, INDIANA
 JULY 2008

<i>Parameter</i>	<i>Analyte</i>	<i>CRDL Recovery (percent)</i>	<i>Control Limits</i>	<i>Sample ID</i>	<i>Qualified Sample Result</i>	<i>Units</i>
Metals	Potassium	70	80-120	WPW072408JB001	138000 J	µg/L
	Arsenic	54	80-120	WPW072408JB001	173 J	µg/L

Notes:
 CRDL Contract required detection limits.
 J Estimated.



Analytical Laboratory Report

Report ID: S37593.01(01)

Generated on 08/05/2008

Report to

Attention: Shannon Richardson
Conestoga-Rovers & Assoc., Inc.
14496 Sheldon Road Ste.
Plymouth, MI 48170

Phone: 734-453-5123 FAX: 734-453-5201

Email: Anderson Guide group

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): S37593.01-S37593.02

Project: 46387-10/Former Guide, Anderson, IN

Collected Date: 07/30/2008

Submitted Date/Time: 07/31/2008 09:00

Sampled by: Matt Groves

P.O. #: GMS16658

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 RDL.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S37593.01	W-073008-MG-001	Water	07/30/2008 14:30
S37593.02	S-073008-MG-001	Soil	07/30/2008 14:45



Analytical Laboratory Report

Lab Sample ID: S37593.01
Sample Tag: W-073008-MG-001
Collected Date/Time: 07/30/2008 14:30
Matrix: Water
COC Reference: 1322

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Amber	None	Yes	4.2	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	Limits	Flags
Extraction / Prep.								
Mercury Digestion	Completed			7470A	08/04/08 12:00	JRT		
Metal Digestion	Completed			3015A	08/01/08 12:00	PER		
TCLP Extraction								
Initial Sample pH	<0.5%			1311	07/31/08 16:00	WAR		
pH after 3.5 ml HCl	<0.5%			1311	07/31/08 16:00	WAR		
% Solids	<0.5%			1311	07/31/08 16:00	WAR		
Sample Used g	<0.5%			1311	07/31/08 16:00	WAR		
Final Volume mL	<0.5%			1311	07/31/08 16:00	WAR		
TCLP Extraction Fluid	<0.5%			1311	07/31/08 16:00	WAR		
Final Extract pH	<0.5%			1311	07/31/08 16:00	WAR		
Inorganics								
Reactive Cyanide	Not detected	mg/kg	1	9010B	08/05/08 13:10	JDP		
Reactive Sulfide	Not detected	mg/kg	0.4	9030B	08/05/08 10:10	JDP		
Metals								
Arsenic, TCLP	0.17	mg/L	0.02	6020	08/01/08 15:31	PER	5.0	
Barium, TCLP	Not detected	mg/L	0.05	6020	08/01/08 15:31	PER	100.0	
Cadmium, TCLP	Not detected	mg/L	0.005	6020	08/01/08 15:31	PER	1.0	
Chromium, TCLP	44.9	mg/L	0.05	6020	08/01/08 15:31	PER	5.0	!
Lead, TCLP	Not detected	mg/L	0.03	6020	08/01/08 15:31	PER	5.0	
Mercury, TCLP	Not detected	mg/L	0.0002	7471A	08/04/08 14:59	JRT	0.2	
Selenium, TCLP	Not detected	mg/L	0.05	6020	08/01/08 15:31	PER	1.0	
Silver, TCLP	Not detected	mg/L	0.005	6020	08/01/08 15:31	PER	5.0	

!-Result is outside of regulatory limits