



**CONESTOGA-ROVERS
& ASSOCIATES**

May 27, 2009

Reference No. 17303

MDEQ, Remediation and Redevelopment Division
Jackson District Office
Jackson State Office Building
301 E. Louis Glick Highway
Jackson, Michigan 49201-1556

Dear Mr./Ms. District Supervisor:

Re: Form 4482, Notice of Migration of Contamination
General Motors Corporation - Company Vehicle Operations
Ypsilanti, Washtenaw County, Michigan

On behalf of ENCORE, a wholly owned subsidiary of General Motors Corporation (GM), Conestoga-Rovers & Associates, Inc. (CRA) is providing the enclosed revised form EQP4482 to update the information regarding contaminant migration pursuant to Part 201 of Act 451, forwarded to your attention in January 2008. This revision serves to inform you that as of April 30, 2009, there is reason to believe aluminum and sulfate are migrating in groundwater beyond the property boundaries to Tyler Pond at concentrations exceeding generic residential criteria based on information from monitoring wells GS-3 and GS-8, respectively. These detections were found during the latest sampling event (March 2009) at the Company Vehicle Operations (CVO) facility.

The CVO property is located at 2901 Tyler Road, Ypsilanti, Michigan (Site). The Site is bordered on the south by Tyler Road, the west by the Former Willow Run Assembly Plant property, and on the east and north by Tyler Pond. Currently, the Site is used to store, maintain and recover parts from company vehicles.

The Site has been repeatedly evaluated for volatile organic compounds (VOCs), metals and polychlorinated bi-phenyls in groundwater. There is a groundwater flow divide on the Site that directs groundwater flow northeast to Tyler Pond and southeast to Tyler Road.

Vinyl chloride, cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), benzene, xylenes (total), mercury, iron, and manganese have previously exceeded the MDEQ Part 201, Generic Residential Cleanup Criteria including the Generic Groundwater Surface Water Interface (GSI) Cleanup Criteria at the northern and southern property boundaries. The concentrations of lead, chromium (total), trichloroethene (TCE), arsenic, and vanadium have previously exceeded the generic GSI criteria at the northern property boundary. Ethylbenzene and 1,1-dichloroethene (1,1-DCE) exceeded the criteria at the southern property boundary.

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Facility-specific generic GSI criteria for metals were calculated in 2005 using the pH and hardness of Tyler Pond. Analytical data from December 2007 show that TCE, vinyl chloride, cis-1,2-DCE and iron levels continue to exceed the MDEQ Part 201, Generic Residential Cleanup Criteria.

The concentration of cis-1,2-DCE first exceeded the Final Acute Value (FAV) MDEQ water quality criterion at a northern boundary well during the June 2006 quarterly sampling event. Quarterly sampling events since June 2006 show a continued FAV exceedance for cis-1,2-DCE. A notification of the FAV exceedance for cis-1,2-DCE was formally submitted to Ms. Vicki Katko of the MDEQ on August 4, 2006. TCE exceeded the FAV for the first time in December 2006 and a notice was submitted on January 18, 2007 to Ms. Vicki Katko. An interim remedial action using enhanced biodegradation to decrease levels of chlorinated organics in the groundwater along a portion of the northern property boundary was implemented in April 2007.

Groundwater conditions at the Site remain under investigation. The MDEQ granted a *groundwater not in an aquifer determination* for the surficial unit from which this groundwater is sampled (letter from MDEQ to Ken Richards dated September 5, 2004). As you are aware, GM and ENCORE have been working with MDEQ representatives from the Jackson Office regarding a range of response actions to address groundwater conditions at the Site.

For additional information regarding this submittal, or conditions at this location, please contact Dr. Kenneth Richards at GM, telephone number (586-986-2208).

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Frederick W. Blickle, P.E.

AB/sp/13/Det.
Encl.

cc: Ken Richards/GM
Vicki Katko/MDEQ
Beth Landale/CRA

John McKenna

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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIALATION AND REDEVELOPMENT DIVISION

For DEQ Use Only
ITS # _____
Site ID # _____
Category Code: _____

NOTICE OF MIGRATION OF CONTAMINATION

(Under the authority of Part 201, Natural Resources and Environmental Protection Act, 1994 Act 451, as amended, (NREPA) and the Rules promulgated thereunder)

An owner or operator of property that is a facility, and/or who is subject to MCL 324.20114, and who has reason to believe that a hazardous substance is emanating from, has emanated from, or is likely to be emanating from the property and migrating beyond the boundaries of the property that he or she owns or operates is required under R 299.5522 and R 299.51017(1) to notify the Michigan Department of Environmental Quality ("DEQ") and affected property owners, unless he or she is exempt from MCL 324.20107a (see MCL 324.20107a(4) for exemptions), or unless he or she has provided the notice required by MCL 324.21309a. Submission of this notice does not fulfill the notification requirements of MCL 324.21309a.

The notice must be provided within 45 days after the owner or operator has reason to believe that hazardous substances have migrated, or are likely to have migrated, to or beyond the boundary of his or her property (see R 299.51017 and R 299.5522 for exceptions). If a person is required to provide additional notice as a result of the changes in R 299.51017 that took effect on December 21, 2002, then that additional notice shall be provided not later than September 21, 2003.

Use of this form is mandatory for the notice required by R 299.51017(1) and may also be used by parties subject to MCL 324.20114 to provide notice required by R 299.5522. This form may also be used to provide notice to affected property owners as required by those rules.

If a person holds a permit for an oil and gas well under Part 615, Supervisor of Wells, of the NREPA and there is a release from the oil and gas exploration or production activities, that person shall give notice to the DEQ and to the owner of the surface rights of the property.

If a person holds an easement and there is a release from the easement holder's activities, that person shall provide notice to the DEQ and to the grantor of the easement or the grantor's successor in interest, if any.

Completing this notice in no way relieves a person who is subject to MCL 324.20114 from the responsibility to undertake required response activities.

This notice must be sent to the DEQ office that serves the county in which the property is located. A list of DEQ offices is available at www.michigan.gov/bea, or by calling the Remediation and Redevelopment's Lansing office at 517-373-9837. The DEQ will not prepare acknowledgement of receipt of these notices. The sender is responsible for sending the report using a method that provides proof of delivery if such proof is desired. Please label the outside of the envelope "Migration Notice." Additional guidelines for the compliance with the requirements of R 200.51017(1) or R 299.5522 are available at www.michigan.gov/bea.

THIS NOTICE IS PROVIDED PURSUANT TO:

(check both, if applicable)

R 299.5522 ☒

R 299.51017 ☒

Please provide the following information as completely as possible.

1. Name and location of the property that hazardous substances are emanating from:

2. Status relative to the property:

(Check one or both, as applicable.)

Name: General Motors Corporation - Company Vehicle Operations

Address: 2901 Tyler Road

Location: South 1/2 of Section 12, T. 3S, R. 7E, Ypsilanti Township, Washtenaw County, Michigan

City/County: Ypsilanti, Washtenaw

Property Tax Identification Number, or if applicable, the ward and item number:

Owner ☒

Operator ☒

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Provide any additional ID numbers associated with the property (e.g., EPA ID No., BEA No., Part 213 facility ID No., etc.): **MIK468293311**

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3. Name, address, and telephone number of the property owner, operator, or other party submitting the notice:

Name: **Kenneth Richards, General Motors Corporation**
Address: **GM-WFG Remediation Team - 30200 Mound Road**
City/State: **Warren, Michigan**
Telephone number: **586-986-2208**

4. Name, address and telephone number of a contact person familiar with the content of the notice:

Name: **Fred Bickie, Conestoga-Rovers & Associates**
Address: **14496 Sheldon Road, Suite 200**
City/State: **Plymouth, Michigan**
Telephone: **734-453-5123**

5. If this Notice is provided pursuant to R 299.51017, provide the address and other location information for the adjacent property(s) onto which contamination is migrating, has migrated, or is likely to migrate. If this Notice is provided pursuant to R 299.5522, provide the address and other location information for each property onto which contamination has migrated. Notice should be sent to the property owner of record. If the impacted property is owned by the State of Michigan, notice should be sent to the department managing the property (i.e. a prison, state park, etc.). Notices to the Michigan Department of Transportation (MDOT) for state owned roadways should be sent to Ms. Heather Hicks, MDOT-Bureau of Transportation Planning, 425 W. Ottawa Street, P.O. Box 30050, Lansing, MI 48989. If it isn't readily apparent what state department manages the property, notices should be sent to Mr. Thomas Saxton, Tenant and Land Services, Department of Management and Budget, 1st Floor Lewis-Cass Building, P.O. Box 30026, Lansing, MI 48909.

Address: **Tyler Road**Notified? No ☐ Yes ☒ Date: **Previously Notified**City/State: **Ypsilanti, Michigan**Property Tax ID number: **0**Other: **Between Mc Gregor Road and Willow Run Airport**

Notified Washtenaw County Road Commission as owner of the right-of-way on September 19, 2003
Subsequent Notifications: March 18, 2004, February 16, 2005, September 6, 2005, June 7, 2006,
September 20, 2006, July 23, 2007, and January 23, 2008.

Address: **Fons Landfill**Notified? No ☐ Yes ☒ Date: **Previously Notified**City/State: **Ypsilanti, Michigan**Property Tax ID number: **0**Other: **South of Tyler Road, east of McGregor, west of Willow Run Creek**

Notified The Environmental Quality Company, contact for Fons Landfill Potential Responsible Parties
group on March 18, 2004
Subsequent Notification: February 16, 2005, September 6, 2005, June 7, 2006, September 20, 2006
July 23, 2007, and January 23, 2008.

Address: Notified? No ☐ Yes ☐ Date: City/State: Property Tax ID number: Other: Address: Notified? No ☐ Yes ☐ Date: City/State: Property Tax ID number: Other:

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6. Complete the Table on Page 3 of this Form for each hazardous substance that has migrated, or is likely to have migrated, beyond the property boundary at a concentration that exceeds a Generic Residential Cleanup Criterion developed by the DEQ pursuant to MCL 324.20120a(1). Complete and attach additional copies of Page 3, if necessary, to list all hazardous substances that must be reported. Include a scaled map or drawing that shows the location of sampling points identified on the Table on Page 3, the property boundaries, and the adjacent property owners if providing notice pursuant to R 299.1017(1) or all impacted property owners if providing notice pursuant to Rule 299.5522.

See attached

7. Provide a summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds that allowed by MCL 324.20120a(1)(a). This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

Several volatile organic compounds (VOCs) and metals have been identified at concentrations above Generic Residential Part 201 Criteria in groundwater at the Site. This EQP4482 submission was revised because aluminum and sulfate concentrations have further increased above screening criteria at the property boundaries. The GSI wells, GS-3 and GS-8, show an increase in their aluminum and sulfate concentrations, respectively.

The attached figure shows the monitoring well network at the property. Currently, three wells along the southern bank of Tyler Pond and two wells along the south property boundary are monitored on a regular basis. Groundwater flow is divided at the Site with half flowing northeast to Tyler Pond and the remainder flowing southeast to Tyler Road.

A short-term remedial action was implemented in April 2007 in response to the Final Acute Value (FAV) criterion exceedances of two VOCs at monitoring well GS-8. The short-term remedial action consisted of the injection of a soy lactate solution and nutrients to stimulate anaerobic degradation of the chlorinated compounds. GS-8 is sampled to evaluate the soy lactate's effectiveness at stimulating reductive dechlorination.

Site specific GSI Criteria were calculated based on the pH and hardness of Tyler Pond in 2005. All groundwater sample results were screened against the MDEQ Part 201 GSI Criteria and the Site Specific GSI criteria.

The following is a summary of the concentrations of constituents exceeding the MDEQ criteria at the property boundary:

- The maximum concentration of vinyl chloride detected on Site is 220,000 µg/L at well IW-33 (March 2005). The highest vinyl chloride concentration at boundary sampling location GS-8, to the north/northeast of IW-33, was 11,000 µg/L (June 2007). The highest concentration of vinyl chloride to the southeast of IW-33, at well MW19-02 was reported to be 26,000 µg/L from October 2005 data.
- The maximum concentration of cis-1,2-DCE detected on Site was 140,000 µg/L (June 2006) at well IW-44 and the highest boundary concentration of cis-1,2-DCE at well GS-8, northeast of IW-44, was 110,000 µg/L (June 2007). The highest concentration of cis-1,2-DCE to the south of IW-44, at well MW19-02 was reported to be 17,000 µg/L (October 2005).
- The maximum concentration of benzene detected on Site is 630 µg/L at injection well IW-12 (March 2004). The current concentration at well MW19-24 increased from 78 µg/L (Sept 2004) to 100 µg/L in December 2007. This well is located along the southern boundary of the Site. The highest concentration detected on the northern property boundary, 5.9 µg/L, occurred at GS-3 in June 2005.
- The highest concentration of xylenes detected on Site is 9,100 µg/L at well IW-33. The xylene concentration at boundary sampling location GS-6, to the north/northeast of IW-33, was 69 µg/L and to the southeast of IW-33, at well MW19-24 was 460 µg/L. All data are from June 2005.

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- The maximum concentration of manganese detected on Site was 15,700 µg/L at well IW-12. The boundary concentration of manganese to the northeast of IW-12, at well GS-8 was 2,360 µg/L, while the highest concentration of manganese to the southeast of IW-12, at well MW-4 was 436 µg/L. All data are from March 2006.
- The maximum concentration of trans-1,2-DCE on Site was 8,400 µg/L at well IW-18 (November 2002). The highest concentration of trans-1,2-DCE at well GS-8 (northeast) and MW19-02 (southeast), were 250 µg/L and 490 µg/L, respectively. Data are from June 2006 and December 2005, respectively.
- The maximum concentration of 1,1-DCE detected on Site was 1,300 µg/L at well IW-18 (November 2002) and the highest boundary concentration of 1,1-DCE at well MW19-02, southeast of IW-18, was 45 µg/L (June 2005).
- The maximum concentration of TCE in groundwater detected on Site occurred at well MW18-03 and was reported at 260,000 µg/L (June 2006). The highest concentration of TCE at boundary well GS-8, northeast of MW18-03 was 6,500 µg/L (June 2007).
- The highest concentration of ethylbenzene detected on Site was 3,500 µg/L at well IW-33. The maximum concentration of ethylbenzene to the southeast of IW-33, at well MW19-24 was 120 µg/L. Data are from June 2005.
- The maximum concentrations of lead and vanadium detected on Site occurred at the northeast boundary well, GS-8, and were reported to be 27.5 µg/L and 19.7 µg/L, respectively. The concentrations of lead and vanadium at GS-6 were 11.9 µg/L and 4.7 µg/L, respectively. Data are from March 2006.
- The maximum concentration of arsenic detected on Site was at boundary well GS-6, and was reported at 15.5 µg/L (June 2006). Current results show that arsenic concentration has fallen to non-detect levels at GS-6 (December 2007).
- The maximum concentration chromium (total) detected on Site is at boundary well, GS-8, and is reported to be 14.4 µg/L from June 2006 data. Current results show that chromium (total) concentration has fallen to non-detect levels at GS-8 (December 2007).
- The highest concentration of mercury detected on Site was at injection well IW-9 and was reported at 0.19 µg/L (March 2006). The maximum concentration of mercury at the southern boundary well, MW19-02, was reported as 0.099 µg/L in June 2006. The highest northern property boundary concentration occurred at GS-8 in June 2006 at 0.10 µg/L.
- The maximum concentration of iron on Site was 88,400 µg/L at MW18-03 (July 2006). The concentration of iron at northern boundary wells GS-6 and GS-8 increased to 1,210 µg/L and 4,430 µg/L respectively in December 2007. Concentrations of iron at the southern property wells also increased. The affected wells are MW19-01 (4,450 µg/L), MW19-02 (1,360 µg/L), MW19-03 (1,200 µg/L) and MW19-24 (11,700 µg/L). Data are from December 2007.
- The maximum concentration of aluminum was 445 µg/L at GS-3 (March 2008). The concentration of aluminum at northern boundary well was 266 µg/L in March 2009.
- The maximum concentration of sulfate was 261,000 µg/L at GS-8 (March 2009).

Based on groundwater flow and the concentrations of the hazardous substances analyzed near the boundary of the property General Motors Corporation has reason to believe that the contamination has or is migrating beyond the boundary of the source property.

8. If the person making this notice has reason to believe that a migrating hazardous substance has affected, or is likely to affect, a private or public water supply, then that water supply must be identified here:

No

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- | | YES | NO |
|---|-------------------------------------|-------------------------------------|
| 9. Is this notice being submitted within the timeframes established under R 299.5522 and/or R 299.51017, as applicable? | ☒ | ☐ |
| 10. Is this notice in addition to a notice submitted prior to <i>December 21, 2002?</i>
(R 299.51017(4)(c)) | ☒ | ☐ |
| 11. Is this notice related to an oil and gas well permit (R 299.51017(2))?
Permit #: | ☐ | ☒ |
| 12. Is this notice related to an easement (R 299.51017(3))?
(NOTE: All easement grantors <i>must</i> receive this notice.) | ☐ | ☒ |
| 13. Has surface water been affected (R 299.51017(1) and R 299.5522(2))?
(If yes, please identify the affected surface water body.)
<u>Myer Pond</u> | ☒ | ☐ |

CERTIFICATION:

With my signature below, I certify that I am the owner of the facility or that I am legally authorized to execute this notice on behalf of the owner or operator named on this form, and that to the best of my knowledge and belief the above representations are complete and accurate. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to \$25,000 for each violation.

Signature

Kenneth Richards
(Owner or person legally authorized to bind the person making this report)

Date:

5/27/09

Name (Typed or Printed)

Kenneth Richards

Title (Typed or Printed)

Project Manager

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See Item 6 on Page 2 of this Form for instructions to be used in completing this Table. Attach additional pages if necessary. The information to be included in each column of the Table is:

- Column A Name of hazardous substance.
 Column B Chemical Abstract Service (CAS) Number for the hazardous substance.
 Column C Maximum hazardous substance concentration measured on the property, expressed in parts per billion (e.g., ug/L or ug/Kg). Report maximum concentration separately for each environmental medium.
 Column D Sample location for Column C (relate to label on map).
 Column E Environmental medium in which concentration reported in Column C was measured (e.g., soil or groundwater).
 Column F Distance from point of maximum measured concentration (Column D) to property boundary, in direction of contaminant migration, if direction is known or can reasonably be inferred. If direction is unknown, list distance to nearest property boundary.
 Column G Direction of contaminant migration, if known.
 Column H Concentration closest to property boundary, if known. If a concentration lower than the maximum concentration reported in Column C has been measured at a point closer to the property boundary in the direction of contaminant migration, use Column I to list the concentration that was measured closest to the property boundary in the direction of contaminant migration.
 Column I Sample location for Column H (relate to label on map).
 Column J Environmental medium for measurement reported in Column H, if applicable.

Continued to next page

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Boundary Concentration	I Sample Location for "H"	J Environmental Medium for "H"
Vinyl Chloride	75014	220,000	IW-33	Groundwater	325 feet	NE	5.8- 11,000 µg/L	GS-3, GS-4, GS-6, GS-8	Groundwater
cis-1,2-DCE	156592	140,000	IW-44	Groundwater	500 feet	SE	3.7 - 26,000 µg/L	MW19-01, MW19-02, MW19-03, MW19-24	Groundwater
Benzene	71432	630	IW-12	Groundwater	230 feet	NE	81- 110,000 µg/L	GS-3, GS-6, GS-8	Groundwater
Xylene (total)	1330207	9,100	IW-33	Groundwater	450 feet	SE	240 - 17,000 µg/L	MW19-02, MW19-03, MW19-24	Groundwater
Manganese	7439965	15,700	IW-12	Groundwater	325 feet	NE	5.9 µg/L	GS-3	Groundwater
					500 feet	SE	5.7-100 µg/L	MW19-02, MW19-24	Groundwater
					230 feet	NE	69 µg/L	GS-6	Groundwater
					450 feet	SE	460 µg/L	MW19-24	Groundwater
						NE	78.1-2,360 µg/L	GS-3, GS-4, GS-6, GS-8	Groundwater
					450 feet	SE	67-436 µg/L	MW19-02, MW19-03, MW-4	Groundwater

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Boundary Concentration	I Sample Location for "H"	J Environmental Medium for "H"
trans-1,2-DCE	156605	8,400	IW-18	Groundwater	600 feet	SE	34 – 490 µg/L	MW19-02, MW19-03	Groundwater
1,1-DCE	75354	1,300	IW-18	Groundwater	800 feet	NE	220 µg/L – 250 µg/L	GS-6, GS-8	Groundwater
TCE	79016	260,000	MW18-03	Groundwater	500 feet	SE	45 µg/L	MW19-02	Groundwater
Ethylbenzene	100414	3,500	IW-33	Groundwater	200 feet	NE	6,500 µg/L	GS-8	Groundwater
Lead	7439921	27.5	GS-8	Groundwater	500 feet	SE	120 µg/L	MW19-24	Groundwater
Vanadium	7440622	19.7	GS-8	Groundwater	0 feet	NE	11.9-27.5 µg/L	GS-6, GS-8	Groundwater
Arsenic	7440382	15.5	GS-6	Groundwater	0 feet	NE	4.7-19.7 µg/L	GS-6, GS-8	Groundwater
Chromium (total)	16065831	14.4	GS-8	Groundwater	0 feet	NE	Non-Detect - 15.5 µg/L	GS-6, GS-8	Groundwater
Mercury	7439976	0.19	IW-9	Groundwater	200 feet	NE	Non-Detect - 14.4 µg/L	GS-8	Groundwater
Iron	7439896	88,400	MW18-03	Groundwater	420 feet	SE	0.099 µg/L	MW19-02	Groundwater
					300 feet	SE	615 µg/L – 11,700 µg/L	MW19-01, MW19-02, MW19-03, MW19-24	Groundwater
					325 feet	NE	1,210 µg/L – 4430 µg/L	GS-6, GS-8	Groundwater
Aluminum	7429905	445	GS-3	Groundwater	0 feet	NE	445 µg/L	GS-3, GS-4	Groundwater
Sulfate	14808798	261,000	GS-8	Groundwater	0 feet	NE	261,000 µg/L	GS-8	Groundwater

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61 NE/62 SE

Total Number of Samples Exceeding Criteria:

66 NE/92 SE

Total Number Samples Collected:

A scaled map or drawing showing these locations and the property boundaries must be submitted with this Notice

Jun 18, 2009 08:18

FORMER WILLOW RUN ASSEMBLY PLANT
COMPANY VEHICLE OPERATIONS AREA
Ypsilanti, Michigan

Jun 18, 2009 08:18

