



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

June 30, 2011

Mr. Robert Hare
Motors Liquidation Company
2100 South Opdyke Road
Pontiac, Michigan 48341

Dear Mr. Robert Hare:

SUBJECT: Audit of Corrective Actions – Violation Notice Letter
Location: Former General Motors Corporation
Area of Interest #50 - DUCO Stores – Building 34
660 South Boulevard East, Pontiac, Oakland County, Michigan
Confirmed Release Nos. C-0235-90, C-0776-90, and C-1831-91
Facility ID No. 0-0018277

The Department of Environmental Quality (DEQ), Remediation Division (RD), has conducted an audit of the corrective actions undertaken as a result of a release from a regulated underground storage tank (UST) system(s) at the facility.

The audit was completed under the authority of Section 21315, Leaking Underground Storage Tanks (LUST), of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) following receipt of the LUST Closure Report submitted by Conestoga-Rovers & Associates (CRA), Qualified Underground Storage Tank Consultant (QC) and certified by Mr. Thomas Kinney, Certified Professional.

The audit consisted of a review of the site file, including the Closure Report submitted by CRA for the above-referenced releases, received on October 25, 2010. Based on an audit of the information contained in the file and the Closure Report, the RD does not concur with the certification of the QC that corrective actions have been completed in accordance with Part 213 or that the site meets the criteria for a restricted Tier 1 nonresidential closure (formerly Industrial). On April 20, 2011, the DEQ responded with an audit letter (see attached). As stated in the audit letter, the data upon which the closure is based is not relevant, reliable or representative of contaminant concentrations which may be present on-site. The DEQ has identified numerous deficiencies within the Closure Report. This letter and the previous audit letter represent the list of deficiencies and non-compliance issues identified in the Closure Report. Based on this audit, the RD does not concur with the conclusions of the QC. The reasons for our decision are:

1. The report lacks sufficient justification for the Verification of Soil Remediation (VSR) samples collected. According to the information on page 7 of the October 10, 2010, CRA report, the VSR sampling does not appear to have been biased sampling (i.e. "the majority of floor and sidewall samples were predetermined").

2. On page 8 of the October 10, 2010, CRA report, CRA makes the statement that "Only Part 213 parameters are being evaluated in this Closure Report." This statement is made with the knowledge that at a minimum, tetrachloroethylene and trichloroethylene (TCE) were detected in previously collected soil samples within the area proposed for closure as indicated in the petrex soil gas survey that was conducted in 1990 (NERI Report, September 1990). The most recent soil investigations conducted between April 2006 and December 2009 also identified TCE and other hazardous substances present in concentrations exceeding residential criteria.

If a release from the UST system is commingled with other sources, the party responsible for conducting the corrective actions needs to find a way to differentiate between the two sources. Contamination associated with the release from the UST system is assumed to be present within a contaminant plume until it is defined and the plumes are demonstrated to be distinguishable or the contamination from multiple sources within the plume can be distinguished from each other.

If the commingled sources of contamination are distinguishable, the extent of the regulated release is defined to the residential cleanup criteria, and the corrective actions conducted result in a remedy such that any remaining contamination associated with the regulated release was at or below the applicable unrestricted residential cleanup criteria, no further corrective actions with respect to the release would be necessary, regardless of the presence of other contamination within the area of the release. However, this does appear to be the situation at the above-referenced site. All contamination within the defined area of the release defined and the closure must demonstrate the corrective actions are protective and consistent with the applicable land-use based cleanup criteria for all contaminants within the plume.

According to the Closure Report, the corrective action activities for the release regulated pursuant to Part 213, result in a remedy that includes the implementation of an institutional control in the form of a Restrictive Covenant (RC) which imposes land use restrictions.

3. Within the table on page 9, CRA incorrectly uses the soil saturation screening levels (Csat) to compare to site data. Csat screening levels are not appropriate to use at a site where the substance released is comprised of multiple contaminants.

Contrary to statements made on page 10, the absence of free product in a well does not equate to the absence of free product contamination within the soil matrix. To use the generic cleanup criteria for comparison to site data to evaluate risk, it must first be demonstrated that free phase contamination is not present or present at concentrations that do not pose a risk when left in place. The concentrations detected in soil samples collected from soil borings constructed across the property indicate the remaining concentrations exceed the effective solubility for one or more of the compounds detected, which is an indication that free phase contamination is likely present within site soils.

The generic Csat model assumes only one contaminant is present in the soil, not multiple contaminants. The individual Csat values presented in the criteria tables (and the equation used to develop the values) do not account for the effects of multiple contaminants being released to the soil. The presence of multiple contaminants has the effect of lowering the concentration at which saturation of any one compound might occur.

Although the effective solubility values generated by the DEQ are not promulgated criteria, in order to apply the promulgated criteria, one must first determine that it is applicable to the conditions at the site. Therefore, even in the absence of free phase contamination, to justify comparison to the generic criteria, it must be demonstrated that the physical and geological conditions of the site are consistent with the model assumptions. If not, then the application of the criteria based on the model or the application of the model itself is inappropriate. The DEQ has offered the effective solubility values or comparison to gasoline range organic (GRO) and diesel range organic (DRO) values of 50 parts per million, as ways to evaluate for the presence of free phase contamination. The DEQ cannot accept as a demonstration of compliance, a comparison to generic criteria that are not applicable if free phase contamination is present, without an effort to demonstrate free phase contamination is not present. An effort must be made to demonstrate free phase contamination is not present and the risks associated with the presence of free phase contamination must be adequately addressed both on and off-site.

4. Figures 4.1, 4.2 and 4.3 appear to be incorrect. The cross section in the figure only identifies the 1991 excavation as going to 10 feet. According to the text and verification sample depth, the excavation appears to have extended to a depth of 20 feet. This is not reflected in the figures. Additionally, Figure 4.2 does not display the location of the storm sewer.
5. It is unclear what building is referenced as the "powerhouse".
6. The soil boring logs for 13 – 19 were not included in the report.
7. Some of the data for samples collected were missing from the data tables; no data was included in the tables for samples identified as EV-12 through EV-19.
8. A review of the soil boring logs for SB-3-08 and SB-4-08 indicate a photoionization detector (PID) was not used to determine the samples selected for analysis and no other justification for the selected sample(s) from each boring was provided. The log, however, does indicate the selected sample was not taken from the soils noted to exhibit a strong odor.
9. A review of the soil boring logs for SB-1 through SB-7 indicate a PID was not used to determine the samples selected for analysis and no other justification for the selected sample(s) from each boring was provided.
10. The referenced September 1990 NERI report does not contain a map(s) of the petrex soil gas sample locations. A map depicting the sampling points within the area of the survey should be provided.

11. The location of the 500 gallon gasoline release that occurred in 1989 was not provided. In accordance with Section 21308a(1)(b)(xii), the Initial Assessment Report (IAR) is required to contain a map or information that indicates the component of the UST system from which the release occurred. If this information is not provided in an IAR, it should be provided in the Closure Report.
12. The location of the piping for the DUCO tanks was not identified. Pursuant to 21308a(1)(b)(vi)(c), identify locations of fill ports, dispensers and other pertinent system components including piping.
13. Pursuant to 21308a(1)(b)(vi)(B), the IAR is required to contain a site map which depicts the location of all other UST systems on the property. If this information is not provided in the IAR or Final Assessment Report (FAR) and or an IAR or FAR is not submitted, it should be included in the Closure Report.
14. The locations of identified releases on the remainder of 4 acre property were not provided.

NOTE: The many sanitary and storm sewer lines that run throughout the property have the ability to transport contaminants to other areas of the property, either inside or outside of the pipe, therefore all the releases on this property in the vicinity of sanitary or storm sewers that run through the area proposed for closure need to be identified. As indicated previously, it must be demonstrated that all contaminants within the area of the release proposed for closure meet the applicable cleanup criteria or are adequately addressed by the corrective actions conducted with respect to the release. Pursuant to Section 21308a(1)(b)(xix) the IAR is required to include the identification of any contamination on the site not resulting from the release and the source, if known.

15. The extent of contamination has not been defined pursuant to 21311a.(1)(a).
16. The Closure Report indicates the selected corrective actions include the imposition of a restriction on the use of the groundwater on the site. However it has not been adequately documented that groundwater is present on the site, and if present, that it is groundwater in an aquifer and contaminants are present in the groundwater at concentrations requiring a restriction on the use of the resource. In accordance with Section 21308a(1)(xx), the IAR is required to provide an estimate of the horizontal and vertical extent of soil and groundwater on the site. The full extent of both the horizontal and vertical distribution is required to be defined pursuant to Section 21311a(1)(a).

The following deficiencies were noted with respect to the groundwater investigations conducted on the site, the following list is not all inclusive:

- The absence of wells at locations where water was observed as noted on the soil boring logs.
- Installation of well screens at locations where water was not observed.
- Installation of 15' well screens.
- The absence of determining a water flow rate and direction.

- If/where groundwater is present, a determination of the vertical distribution of contamination within the groundwater plume.

17. Pursuant to Section 21312a(1), a Closure Report shall be submitted to the department with 30 days following *completion* of corrective actions. As submitted, the Closure Report seems to imply further remediation of the groundwater is necessary and will be accomplished via Natural Attenuation. Section 9 titled Feasibility Analysis states "the preferred corrective action is natural attenuation of the impacted groundwater, with institutional controls."

If you have questions regarding this matter, please feel free to contact me at by phone at the number listed below. All correspondence and reports regarding this matter should be sent to my attention at the DEQ-RD, Southeast Michigan District Office, 27700 Donald Court, Warren, Michigan, 48092.

Sincerely,



Richard Berak
Environmental Quality Analyst
Remediation Division
Southeast Michigan District office
586-753-3808

Enclosures

cc: Mr. Thomas Kinney, Conestoga-Rovers & Associates
Mr. Terence Gayman, Conestoga-Rovers & Associates
Mr. Peter Ramanauskas, U.S. EPA
Mr. Daniel P. Dailey, DEQ
Mr. Leonard Lipinski, DEQ
Ms. Cheryl Wilson, DEQ
Ms. Jeanne Schlaufman, DEQ
Ms. Kimberly Ethridge, DEQ
Mr. Gregory Barrows, DEQ



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
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DAN WYANT
DIRECTOR

April 20, 2011

CERTIFIED MAIL – 7009 1410 0000 6168 4089

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Motors Liquidation Company
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The audit consists of a review of the site file, including the Closure Report submitted by CRA for the above-referenced releases, received October 25, 2010. Based on an audit of the information contained in the file and the Closure Report, the RD **does not** concur with the certification of the QC that corrective actions have been completed in accordance with Part 213 or that the site meets the criteria for a restricted Tier 1 nonresidential closure (formerly Industrial). The reasons for our decision are:

- Compliance with Section 21311a. (1)(a) of the NREPA, and the Risk-Based Corrective Action (RBCA) process which requires that both the maximum contaminant concentrations and the full horizontal and vertical extent of contamination be determined to below Tier 1 Residential Risk-Based Screening Levels (RBSL) as specified in RRD Operational Memorandum No. 1, Attachment 1, has not been accomplished. In fact, an adequate RBCA evaluation (as required) can not be conducted without first identifying all potential source areas, investigating them to determine the maximum contaminant concentrations for all contaminants of concern, and generating data that is relevant reliable and representative.
- The data provided in the Closure Report, upon which CRA has based their justification for closure is not acceptable to the DEQ for that purpose. The data presented in the Closure Report has not been demonstrated to be relevant, reliable or representative of the

contaminant concentrations which may be present on-site. With respect to the pre-1998 data, current DEQ guidance, while not specific to soil data generated prior to the requirement for methanol preservation, does support the statutory and rule provisions that requires analytical data used to document compliance with the provisions of the statute and the cleanup criteria to be relevant, representative, and reliable to define the nature and extent of contamination. It is well documented that contaminant concentrations detected in soil samples collected in 1997 (or earlier) are underestimated, even when collected by persons well versed in the best sample collection techniques at the time.

With respect to the 2008 data, CRA has not demonstrated that the requirements of Method 5035A, were followed with regard to the selection of an appropriate sample preservative. Specifically, CRA has not demonstrated that the use of purified water is appropriate as a preservative for the soil samples collected based on 1) the carbonate content of the soil, and 2) the lack of biological activity in the soil.

To validate the 2008 dataset, it will be necessary to provide information that demonstrates for all samples preserved with purified water, the following:

- a. The soils contain sufficient carbonate content to interfere with preservation by sodium bisulfate. Please be advised that effervesce testing must be from within the soil impact area at each sample location and cannot rely on testing from other areas on the property.
- b. The soils are not biologically active; and therefore, not subject to the requirement of immediate onsite analysis provided in Method 5035A Appendix A Section A.1.3.
- The Closure Report indicates CRA has compared the detected contaminant concentrations to the generic risk-based criteria without first determining that the generic criteria are applicable to the site. When a substance that has been released is comprised of multiple contaminants (e.g., gasoline, diesel fuel, etc.), a comparison of contaminant concentrations to the generic C_{sat} is not appropriate. The C_{sat} for an individual chemical is the estimated concentration at which the chemical concentration in water, gas, and sorbed to solids, is at saturation. It is a theoretical maximum concentration above which a chemical may be present as non-aqueous phase liquid (NAPL), but does not take into account any chemical mass that might be in a NAPL state. However, this is true only for NAPL composed entirely of that single chemical. The presence of multiple contaminants has the effect of lowering the concentration at which saturation of any one compound might occur. With multi-chemical mixtures, it is possible (likely) for NAPL to be present when no single chemical approaches its C_{sat} concentration. The absence of free product or observable free phase contamination does not confirm the absence of NAPL within the soil matrix.

An effort must be made to demonstrate free phase contamination is not present in soils remaining at the site. Without such information, comparison to the generic criteria is not appropriate; and therefore, it could not be demonstrated that compliance with the applicable cleanup criteria has been achieved.

The owner or operator of this facility is required, under the provisions of Section 21315(3) of Act 451, to do the following:

1. Provide additional information related to the requirements of Part 213, as specified above.

2. Retain a QC to conduct additional corrective actions necessary to comply with Part 213, or to protect public health, safety and welfare, and the environment.

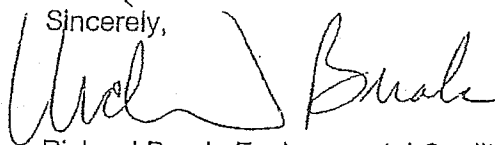
Please submit to this office *within 14-days receipt* of this audit, a written commitment to conduct the necessary response activities and submit a complete Final Assessment Report (FAR) which includes a complete Corrective Action Plan (CAP) that complies with Part 213 of the NREPA. The commitment should include a reasonable schedule for submitting a complete FAR/CAP in compliance with Sections 21311a and 21309a respectively. If the RD does not concur with the schedule as proposed, you will be notified. Please note that you are not in compliance with Part 213 until an adequate FAR/CAP is received.

This letter may not capture all of the violations, or all of the corrective actions necessary to comply with Part 213. It should be noted the DEQ identified numerous deficiencies within the Closure Report as submitted. As time allows, the DEQ will construct a follow-up letter which lists the deficiencies and non-compliance issues identified in the Closure Report.

Section 21307a(2) of Part 213, requires that the QC provide this office with a minimum of 48-hours notice prior to conducting any on-site activities.

If you have questions regarding this matter, please feel free to contact me by phone at the number listed below. All correspondence and reports regarding this matter should be sent to my attention at the DNRE-RD, Southeast Michigan District Office, 27700 Donald Court, Warren, Michigan, 48092.

Sincerely,



Richard Berak, Environmental Quality Analyst
Remediation Division
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586-753-3808

Enclosures

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