



January 14, 2011

Michelle Mullin
Project Manager
USEPA, Region 5
77 West Jackson Boulevard
LU-95
Chicago, IL 60604-3590

**Subject: RCRA 3008(h) Administrative Order on Consent (RCRA-05-2010-0012) –
Tecumseh Products Company
Fourth Quarter 2010 Progress Report – MID 005-049-440**

Dear Ms. Mullin:

Pursuant to Section VI of the above referenced Administrative Order on Consent (Consent Order) effective March 29, 2010, RMT, Inc. (RMT), on behalf of the Respondent, Tecumseh Products Company (TPC) submits this Fourth Quarter 2010 Progress Report. This report covers activities related to the Consent Order completed by TPC during the Fourth Quarter 2010 and planned for completion in the near future. The organization of this document includes as major headings the items required under Sections V through VIII of the Consent Order.

V. Project Manager

- The TPC Project Manager is Graham Crockford of RMT.
- The USEPA Project Manager is Michelle Mullin.

VI. Work to be Performed – Remedial Investigation Report and Environmental Indicators Reports

1. A Description of activities related to the completion of the Remedial Investigation (RI) Report and the Environmental Indicator (EI) Reports:
 - **Investigation Activities**
 - **Characterize Releases at or from the Facility** – Results of the preliminary on-site investigations are presented in the following documents: Environmental Site Assessment for

E:\WPAAM\PJT1\02751\09\4Q10\R0275109001-4Q.DOCX

Tecumseh Products Company, Tecumseh, Michigan (ENVIRON, October 2007), Phase I Environmental Site Assessment for the Tecumseh Products (Atwell-Hicks, October 2009), Phase II Environmental Site Assessment, Tecumseh Products Company (ATC, September 2009), the Current Conditions Report (RMT, September 2009), and the January 10, 2011 Technical Memorandum titled, "Summary of 2010 Soil and Groundwater Source Area Investigation Activities," which is included as Appendix A.

- **Define Appropriate Screening Criteria** – As described in the September 2009 Current Conditions Report (CCR), Michigan Department of Natural Resources and Environment (MDNRE) Part 201 Criteria will typically be used to assess risk related to ingestion of or direct contact with affected media. Currently groundwater data indicate that groundwater in a well upgradient of the River Raisin, has concentrations slightly above generic Part 201 groundwater/surface water interface (GSI) criteria. Although it is unlikely that the concentrations of VOCs venting to the River Raisin represent a risk to the environment, a mixing zone determination requesting site specific GSI criteria may be submitted to MDNRE.

Proposed screening levels for the volatilization to indoor air migration pathway were included in Technical Memorandum titled "Summary of Off-Site Soil Gas Investigation Activities – March through April 2010, Former Tecumseh Products Company Site, Tecumseh, Michigan" which was submitted as part of the Second Quarter 2010 Progress Report. Proposed groundwater screening levels for the volatilization to indoor air migration pathway (GWSLs) were accepted by USEPA in a comment letter dated August 24, 2010. In the comment letter dated August 24, 2010, Michelle Mullin of USEPA provided alternative residential soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1. TPC maintains that a soil gas attenuation factor of 0.1 is excessively conservative. However, in the interest of moving the project forward, TPC has agreed to consider the USEPA residential SGSLs when evaluating potential risks from volatilization to indoor air at residential properties.

Data in the USEPA vapor intrusion database is composed primarily of data from single family residential buildings. The potential for volatilization to indoor air is much different in commercial and industrial structures, such as those around perimeter of the former TPC site. Commercial/industrial building properties (slab-on-grade construction, larger building footprints, industrial air handling systems, higher ceilings, more indoor-outdoor air exchange due to loading dock activities, etc.) are expected to result in a lower attenuation factor at these properties. Based on an evaluation of paired indoor air/sub-slab soil gas data from the TPC manufacturing facility, TPC believes that an attenuation factor of 0.003 is a

reasonable, conservative, soil gas attenuation factor for commercial and industrial properties around the TPC site.

- **Define Any Unacceptable Risks to Human Health** – Potential exposure pathways are evaluated in the CCR. As described in the CCR, potentially complete human exposure pathways include the ingestion of affected groundwater and volatilization to indoor air. Water supply sources that are, or have the potential to be, affected by the off-site migration of contaminants were defined in the CCR. An updated evaluation of the potential for off-site vapor intrusion at the site is provided in the January 11, 2011 Technical Memorandum titled, “Summary of Third and Fourth Quarter 2010 Soil Gas Monitoring Data and Activities Completed to Evaluate the Potential for Off-Site Vapor Intrusion,” which is included as Appendix B. Investigation of the potentially complete, volatilization to indoor air migration pathway is ongoing.
- **Define Any Unacceptable Risks to the Environment** – The potential for unacceptable risk to the environment related to the discharge of affected groundwater to nearby surface water and wetlands was partially defined in the September 2009 CCR and the February 2010 Technical Memorandum titled Status Update – Characterization of Volatile Organic Compounds in Groundwater. Further investigation was conducted between March 2010 and June 2010 to define the maximum extent of affected groundwater. The results of this investigation were included in a Technical Memorandum titled “Summary of Groundwater Investigation Activities – March 2010 through June 2010, Former Tecumseh Products Company Site, Tecumseh, Michigan,” which was submitted with the Second Quarter 2010 Progress Report. Currently groundwater data indicate that groundwater in a well upgradient of the River Raisin, has concentrations slightly above generic Part 201 GSI criteria. Although it is unlikely that the concentrations of VOCs venting to the River Raisin represent a risk to the environment, a mixing zone determination requesting site specific GSI criteria may be submitted to MDNRE.
- **Determine the Stability of Contaminated Groundwater** – A quarterly groundwater monitoring program is underway to assess the stability of contaminated groundwater. Concentrations of chlorinated volatile organic compounds (CVOCs) at previously sampled locations are generally consistent with historic data. (See Appendix C for a copy of the January 6, 2011 Technical Memorandum titled, “Third Quarter 2010 Groundwater Monitoring Event.”) Once a sufficient quantity of data (typically eight sample events) has been collected, RMT will statistically assess the stability of the CVOCs in groundwater using Mann-Kendall Trend Tests.

■ **Presumptive Corrective Measures**

- **Decommission Affected Private Wells** – Two off-site private wells with affected water were identified. The first was decommissioned in 2009 (parcel number 323-330-00) and the second was decommissioned in November 2010 (parcel number 325-0322-00). Other private wells within the area of potentially affected groundwater are being monitored to confirm that VOCs are not detected.
- **Declaration of Restrictive Covenant** – As part of the Purchase Agreement between TPC and Tecumseh Bakery, LLC, a Declaration of Restrictive Covenant for the facility was recorded with the Lenawee County Register of Deeds. This Restrictive Covenant restricts the installation and use of on-site wells (excluding monitoring wells or other wells installed as part of the environmental work) and restricts Residential and Commercial I land use as defined by the MDNRE at the facility. The License Agreement Regarding Environmental Work provides provisions for additional restrictions to be placed on the property as needed.
- **Enact Local Well Ordinance** – A draft well ordinance has been prepared to restrict the installation of new wells and to decommission existing wells within the area potentially affected by the off-site migration of groundwater. The City of Tecumseh submitted the draft well ordinance to the MDNRE for review. MDNRE comments were received on June 29, 2010. TPC has addressed MDNRE comments, and is working with the City of Tecumseh to finalize the ordinance.
- **Mitigation of Indoor Air (On-Site)** – Recommendations to control the potential for volatilization to indoor air in P-Building (the proposed primary use area for Tecumseh Bakery) were submitted to Tecumseh Bakery in March 2010. Recommendations to control the potential for volatilization to indoor air in the secondary use area were submitted to Tecumseh Bakery in June 2010. These areas remain unoccupied, and TPC is unaware of any plans for future building use. TPC has purchased a new facility for their engineering research and development laboratories, and plans to relocate the remaining TPC staff to this facility in August 2011.

Mitigation of Indoor Air (Off-Site) – Characterization of the potential for volatilization to indoor air at off-site locations is in progress. At present, five residential properties have been identified in the vicinity of soil gas sample points where soil gas concentrations suggest that further investigation may be warranted. As a presumptive remedy, TPC intends to seek the permission of those property owners in order to install a sub-slab depressurization system at

each of these properties. As described in Appendix B, TPC has begun discussions with these homeowners.

- **Control Unacceptable Risks to the Environment** – At present no unacceptable risks to the environment have been identified.
- **Stabilize Migration of Contaminated Groundwater** – The determination of stability of the affected groundwater is ongoing. A monitoring well network has been installed, and quarterly monitoring is underway to determine stability.

■ **Reporting**

- **Environmental Indicators Report: Current Human Exposures under Control** – RMT will prepare the Environmental Indicators (Human Exposures) Report following completion of the tasks listed above which relate to the control of any significant or unacceptable current human exposures. This Environmental Indicators (Human Exposures) Report will be submitted to the USEPA no later than September 29, 2011.
- **Environmental Indicators Report: Groundwater Stabilized** – RMT will prepare the Environmental Indicators (Groundwater Stabilized) Report following completion of the tasks listed above which relate to the stabilization of groundwater contamination. This Environmental Indicators (Groundwater Stabilized) Report will be submitted to the USEPA no later than September 29, 2012.
- **Remedial Investigation Report** – RMT will prepare the Remedial Investigation Report following completion of remedial investigation activities which determine the nature and extent of any releases of hazardous waste and hazardous constituents at or from the facility. This Remedial Investigation Report will be submitted to the USEPA no later than September 29, 2012.

2. Estimate of Percentage of Work Completed:

- Work related to Remedial Investigation Report: 45% complete
- Work related to the Environmental Indicators Report – Current Human Exposures Under Control: 45% complete
- Work related to the Environmental Indicators Report – Groundwater Stabilized: 45% complete

3. A Summary of Activities during the Reporting Period

- Work related to evaluating the potential need for, and if necessary, the control of on-site human exposures
 - November 2010 – TPC has purchased a new facility for their engineering research and development laboratories, and plans to relocate the remaining TPC staff to this facility in August 2011;
 - November 2010 – The three new source area monitoring wells (MW-32s, MW-33s, and MW-34s) were sampled; and
 - October 2010 – December 2010 – An evaluation of data from the September 2010 source area investigation data and the November 2010 sample event data was performed (Appendix A).
- Work related to evaluating the potential need for, and if necessary, the control of off-site human exposures
 - October 2010 - December 2010 – TPC addressed MDNRE comments regarding the proposed well ordinance. Discussions with the City of Tecumseh and MDNRE to implement the well ordinance are ongoing;
 - October 2010 – An off-site soil gas re-sample event was conducted;
 - November 2010 – The remaining affected private well, used for irrigation purposes, was decommissioned;
 - December 2010 – A third complete round of off-site soil gas samples were collected; and
 - October 2010 - December 2010 – An evaluation of data from the September, October and December 2010 soil gas sample events was performed (Appendix B).
- Work related to evaluating the stabilization/migration of affected groundwater
 - October 2010 - December 2010 – An evaluation of data from the September groundwater sample event was performed (Appendix C); and
 - December 2010 – the fourth quarter groundwater sample event was conducted.

4. A Summary of Contacts with Representatives of Local Community, Public Interest Groups, or State Government during the Reporting Period

- As described above TPC communicated with the City of Tecumseh and the MDNRE regarding the proposed well ordinance.

- TPC communicated with the City of Tecumseh in order to update the public repository at City Hall.
- TPC observed the decommissioning of the affected private irrigation well.
- TPC communicated with the owners of residential properties located in the vicinity of certain soil gas sample points with regard to the possible installation a sub-slab depressurization system at each of these properties.

5. A Summary of Problems and Potential Problems Encountered During the Reporting Period

- See Data Quality Assurance sections in attached technical memoranda (Appendices A through C).

6. Action Taken to Rectify Problems Identified Above

- See Data Quality Assurance sections in attached technical memoranda (Appendices A through C).

7. Changes in Personnel during Reporting Period

- Lynn Dennison, TPC general counsel, resigned effective December 31, 2010. Her project responsibilities have been assumed by outside counsel (legal matters).

8. Projected Work for the Next Reporting Period

- Work related to evaluating the potential need for, and if necessary, the control of on-site human exposures
 - Continue the evaluation of potential source area control measures.
- Work related to evaluating the potential need for, and if necessary, the control of off-site human exposures
 - As a presumptive remedy, continue negotiations to install a sub-slab depressurization system at certain potentially affected residential properties;
 - Continue discussions with the City of Tecumseh and MDNRE to implement the proposed well ordinance;
 - Validate December 2010 soil gas data;

- Finalize non-residential soil gas screening levels to be used to evaluate the volatilization to indoor air migration pathway; and
- Collect and analyze another round of off-site soil gas samples.
- Work related to evaluating the stabilization/migration of affected groundwater:
 - Evaluate fourth quarter groundwater sample event data;
 - Following receipt of USEPA comments, finalize the Quality Assurance Project Plan (QAPP); and
 - Conduct the first quarter groundwater sampling event.

VI. Work to be Performed – Final Corrective Measures Proposal

Preparation of the Final Corrective Measures Proposal will be initiated following completion of the Remedial Investigation Report and the Environmental Indicators Reports.

VI. Work to be Performed – Final Corrective Measures Implementation

Work related to the Final Corrective Measures Implementation will be initiated following USEPA's Final Decision.

VI. Work to be Performed – Establish Public Repository of Information

TPC has established a public repository in the City Clerk's office at City Hall. A notice sheet has been posted on the bulletin board at City Hall which lists and briefly describes the documents included in the public repository. TPC will update the public repository as appropriate.

VII. Access

Prior to the installation of four monitoring wells (MW-16s, MW-17s, MW-22, and MW-31), TPC obtained an access agreement with an offsite property owner so that RMT could access these wells for routine groundwater sampling. TPC obtained a revised access agreement which also provides access for USEPA and its representatives on May 11, 2010. No other access agreements are required at this time.

VIII. Cost Estimates and Assurances of Financial Responsibility

The Initial Cost Estimate was submitted to the USEPA on April 28, 2010. USEPA approved the Cost Estimate in a letter dated June 22, 2010. TPC submitted a draft Financial Assurance document to the

Michelle Mullin
USEPA, Region 5
January 14, 2011
Page 9

USEPA for review on June 23, 2010. USEPA provided comments to the draft Financial Assurance document on June 25, 2010. The Financial Assurance documents were finalized on August 20, 2010. In accordance with the Consent Order, TPC will submit an annually updated cost estimate no later than January 30, 2011 and updated Financial Assurance documents no later than March 1, 2011. If you have any questions regarding this progress report, or the attachments, please contact me at (734) 971-7080, ext 7122, or graham.crockford@rmtinc.com.

Sincerely,

RMT, Inc.



Graham Crockford, C.P.G.
Project Manager

Attachments

Appendix A – January 10, 2011 Technical Memorandum, titled “Summary of 2010 Soil and Groundwater Source Area Investigation Activities”

Appendix B – January 11, 2011 Technical Memorandum, titled “Summary of Third and Fourth Quarter 2010 Soil Gas Monitoring Data and Activities Completed to Evaluate the Potential for Off-Site Vapor Intrusion”

Appendix C – January 6, 2011 Technical Memorandum, titled “Third Quarter 2010 Groundwater Monitoring Event”

cc: Roger Jackson, Tecumseh Products Company
Jason Smith, Tecumseh Products Company
Tina Mackey, Tecumseh Products Company (TPC files)
Douglas McClure, Conlin, McKenney and Philbrick, PC
Stacy Metz, RMT
City of Tecumseh - Public Repository

Appendix A

Appendix B

Appendix C