



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

LU-9J

March 6, 2013

Jason Smith
Tecumseh Products Company
2700 West Wood Street
Paris, TN 38242

RE: Revised Supplemental Groundwater Investigation Workplan
Tecumseh Products Company
100 E. Patterson
Tecumseh, MI 49286
EPA ID#: MID005049440

Dear Mr. Smith,

This letter is in response to your February 27, 2013, submittal of the Revised Supplemental Groundwater Investigation Workplan and Revisions to the Quarterly Groundwater Compliance Monitoring Program for the Former Tecumseh Products Company Site in Tecumseh, Michigan and Response to USEPA Comments (RCRA-05-2010-0012), for the corrective action at the former Tecumseh Products Company facility in Tecumseh, Michigan. The work plan was prepared in response to EPA's request for additional information, following a meeting with EPA in October 2012, and in response to a February 1, 2013 comment letter prepared by EPA following our review of the *Technical Memorandum - Proposed Revisions to the Quarterly Groundwater Compliance Monitoring Program*, dated December 21, 2012, and *Supplemental Groundwater Investigation Workplan*, dated January 16, 2013.

The U.S. Environmental Protection Agency has reviewed the above referenced work plan and approves the proposed scope of work for additional investigation. The results of the additional investigation will be used to evaluate TPC's compliance with Section 13b of the Administrative Order on Consent (RCRA-05-2010-0012), dated March 30, 2010.

If you have any questions or items to discuss, please do not hesitate to contact me.

Sincerely,

Joseph Kelly, Project Manager
Remediation and Reuse Branch

cc: Graham Crockford, TRC Environmental Corporation (TPC Project Manager)
Douglas McClure, Conlin, McKenney & Philbrick, PC



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MAR - 6 2013

REPLY TO THE ATTENTION OF:

LU-9J

CERTIFIED MAIL: 7009 1680 0000 7671 3443
RETURNED RECEIPT REQUEST

Mr. Jason Smith
Corporate Environmental Director
Tecumseh Products Company
2700 West Wood Street
Paris, Tennessee 38242

RE: Extension of the Project Deadlines
RCRA 3008(h) Administrative Order on Consent (RCRA-05-2010-0012) –
Tecumseh Products Company – MID 005-049-440

Dear Mr. Smith:

The United States Environmental Protection Agency conducted a meeting with Tecumseh Products Company (TPC) on October 29-30, 2012, to discuss the status of environmental work underway at the former TPC site in Tecumseh, Michigan. As an outcome of this meeting, TPC will perform additional investigation and submittals to address the EPA comments provided during that meeting. The dates set forth in paragraphs 11, 13, and 15 of Administrative Order on Consent (AOC) for the site are hereby extended in accordance with Paragraph 21 of Section VI of that order.

Pursuant to paragraphs 11 and 13(b) of the AOC, TPC submitted to EPA, a Remedial Investigation (RI) and a Groundwater Environmental Indicator (EI) Demonstration Report (RI and Groundwater EI Report), both dated September 28, 2012. After reviewing these documents, in October 2012, EPA requested the installation of additional monitoring wells during the first half of 2013, and quarterly sampling events from those wells. TPC has agreed to perform the additional investigation, sampling, and analyses and submit the results in a Supplement to the Groundwater EI Report. Therefore, the 30-month period set forth in paragraphs 11 and 13(b) of the AOC is hereby extended to **July 31, 2015**, by which date TPC shall submit the Supplement to the RI and Groundwater EI Report demonstrating that the migration of contaminated groundwater is under control.

Pursuant to paragraph 13(a) of the AOC, on September 29, 2011, TPC submitted the Current Human Exposures Under Control Environmental Indicator Demonstration Report (Current Human Exposures EI Report) to the EPA. Subsequently, by letter dated December 28, 2011, from Jose Cisneros, Chief, Region 5 Remediation and Reuse Branch, the EPA extended the date for the Current Human Exposures EI demonstration to December 12, 2012, to allow time for

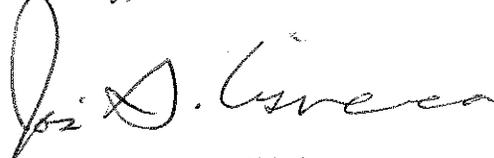
Extension of the Project Deadlines
Tecumseh Products Company

additional sub slab and crawl space soil gas sampling requested by EPA. In October 2012, EPA requested additional quarterly monitoring data from soil gas sample points in the vicinity of the on-site soil vapor extraction (SVE) system, through the second quarter, June of 2013. TPC has agreed to perform the additional data collection, analysis, and evaluation and to submit the results in a Supplement to the Current Human Exposures EI Report. Therefore, the date for the Current Human Exposures EI demonstration is hereby extended to **September 30, 2013**, by which date TPC shall submit the Supplement to the Current Human Exposures EI Report.

Under paragraph 15 of the AOC, a Final Corrective Measures Proposal shall be submitted within 36 months of the effective date of the AOC, *i.e.*, by March 29, 2013. To correspond with the extensions set forth above, the deadline for submitting the Final Corrective Measures Proposal is hereby extended to **January 31, 2016**.

A Technical Memorandum written by TRC and dated December 5, 2012, documenting the above-described action items in more detail has been reviewed by EPA, and is attached for reference. If you have any questions, please contact Joseph Kelly of my staff, by e-mail at kelly.joseph@epa.gov or by telephone at (312) 353-2111.

Sincerely,



Jose G. Cisneros, Chief
Remediation and Reuse Branch

Enclosure: TRC Technical Memorandum (December 5, 2012)

cc: Graham Crockford, TRC Environmental Corporation (TPC Project Manager)
Douglas McClure, Conlin, McKenney & Philbrick, PC

Technical Memorandum

Date: December 5, 2012; Revised December 19, 2012

To: Joseph Kelly, Project Manager
USEPA

From: Graham Crockford, Project Manager
TRC Environmental Corporation

cc: Susan Perdomo, USEPA Attorney
Bhooma Sundar, USEPA Vapor Intrusion Risk Assessor
David Petrovski, USEPA Hydrogeologist
Mario Mangino, USEPA Toxicologist
Colleen Olsberg, USEPA Environmental Health Scientist
Daniel Mazur, USEPA Ecological Risk Assessor
Jason Smith, Tecumseh Products Company
Douglas McClure, Conlin, McKenney & Philbrick, PC
Stacy Metz, TRC Environmental

Subject: Action Items from the October 2012 Project Meeting for Environmental Work
Associated with the Former Tecumseh Products Company Site (RCRA-05-2010-0012)

Project No.: 004305.0001.0000, Phase 6

Introduction

Tecumseh Products Company (TPC) and TRC Environmental Corporation (TRC) met with the United States Environmental Protection Agency (USEPA) for a project meeting on October 29 and 30, 2012 at USEPA Region V Headquarters in Chicago, Illinois. During that meeting TRC and TPC presented a summary of environmental work conducted pursuant to the March 29, 2010 RCRA 3008(h) Administrative Order on Consent (RCRA-05-2010-0012) (AOC) at the former TPC facility in Tecumseh, Michigan. Major milestones for the environmental work, which are described in Section VI of the AOC, include:

- Submittal of a **Current Human Exposures Under Control Environmental Indicator Demonstration Report** (Current Human Exposures EI Report) by September 29, 2011 (extended to December 12, 2012 by letter dated December 28, 2011 from Jose Cisneros of USEPA).
- Submittal of a **Groundwater Environmental Indicator Demonstration Report** (Groundwater EI Report) by September 29, 2012.

Technical Memorandum

- Submittal of a **Remedial Investigation Report** (RI Report) by September 29, 2012.
- Submittal of a **Final Corrective Measures Proposal** by March 29, 2013.

During the October 29-30, 2012 project meeting, USEPA provided comments on ecological risk, the current human exposures environmental indicator determination, vapor intrusion, groundwater stability, and nature and extent of contamination. These comments and discussions yielded a number of action items to provide USEPA with additional requested information, and to extend certain dates in the AOC accordingly. As agreed, TRC has memorialized those action items in this Technical Memorandum.

1. Groundwater to Surface Water Interface (GSI) Exposure Pathway

On September 29, 2012, TPC submitted the combined RI Report and Groundwater EI Report, in accordance with the requirements of the AOC. That report included an evaluation of potential risks to the River Raisin and adjacent wetland, and utilized a site specific mixing zone-based GSI criterion for trichloroethene (TCE). TPC submitted a request for the determination of mixing zone-based GSI criteria to Michigan Department of Environmental Quality (MDEQ) in June 2012, which is currently under review by MDEQ in coordination with USEPA Project Manager Joseph Kelly. Action items are as follows:

- If as expected, the MDEQ provided mixing zone-based GSI criterion for TCE is greater than the maximum detected TCE concentration at monitoring well MW-31, then USEPA will accept the environmental risk evaluation provided in the RI and Groundwater EI Report.
- If the MDEQ provided mixing zone-based GSI criterion for TCE is less than the maximum detected TCE concentration at monitoring well MW-31, then TPC will meet and confer with USEPA and MDEQ staff to evaluate what further investigation or evaluation of surface water impacts may be necessary in accordance with the AOC.

2. Current Human Exposures – Groundwater Contact

On September 29, 2011, TPC submitted the Current Human Exposures EI Report in accordance with the requirements of the AOC. During a March 2012 project meeting, USEPA requested that the groundwater contact (GC) criterion for TCE be recalculated to reflect recently updated TCE toxicity values that have not yet been incorporated into MDEQ Part 201 generic cleanup criteria. Calculation sheets and tables reflecting this site-specific TCE GC criterion were included in the RI and Groundwater EI Report.

- During the October 2012 project meeting, Colleen Olsberg of USEPA requested that the conceptual site model be summarized in a table (example format provided during the meeting) to support her review of the calculated site-specific TCE groundwater contact criterion. TPC plans to complete and submit this table with the fourth quarter 2012 progress report (due January 15, 2013).

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3. Vapor Intrusion

The Current Human Exposures EI Report included an evaluation of the potential for vapor intrusion at the five residential properties east of the site. On December 28, 2011 USEPA extended the date in Paragraph 13(a) of the AOC to December 12, 2012, so that EPA could review additional requested data, to be collected during three additional monitoring events (October 2011, May 2012, and November 2012).

In January 2012, at the request of USEPA, soil gas screening levels (SGSLs) were re-calculated to reflect updated toxicity data. Updated TCE toxicity data resulted in a reduction in the most restrictive residential SGSL for TCE from 23 parts per billion by volume (ppbv) to 4.0 ppbv. TCE has been detected above the revised residential SGSLs at sample locations in the residential area north of the site. During a meeting with USEPA in March 2012, TPC agreed to install a soil vapor extraction (SVE) system on-site to control the potential for off-site migration of TCE-affected soil gas from the site, to install additional soil gas sample points north and west of the site to further evaluate the nature and extent of TCE in soil gas, and to conduct two sample events to evaluate the effectiveness of the SVE system prior to December 12, 2012.

During the October 2012 project meeting, Bhooma Sundar of USEPA indicated that she preferred four consecutive quarterly soil gas sample events at soil gas sample points in residential areas north and west of the site (rather than the two events discussed in March 2012). B. Sundar also requested additional information, described below, to support her evaluation of the eventual Final Corrective Measures Proposal.

The current status of the **residential** vapor intrusion evaluation and related action items are summarized below:

- TPC conducted one additional crawlspace sample event at four residential properties east of the site, as scheduled, in November 2012.
- TPC conducted one additional indoor air and sub-slab depressurization/ventilation (SSDV) system exhaust sample in conjunction with the fourth quarter SSDV system inspection at the residential property east of the site with a SSDV system, as scheduled, in November 2012.
- TPC will prepare and submit a construction documentation report for the full-scale soil vapor extraction system installed at P-Building. The report will include results from SVE system exhaust sampling, including documentation of compliance with MDEQ air permit exemption requirements.
- If the SVE system exhaust sample results are above residential indoor criteria for TCE, TPC will collect a 24-hour ambient air sample at a location downwind of the SVE system exhaust, to evaluate the potential effect of the SVE system on ambient air quality in residential areas near the site.

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- TPC will conduct additional soil gas sample events during the fourth quarter 2012, the first quarter 2013, and the second quarter 2013 to evaluate SVE system performance in residential areas north and west of the site.
- TPC will propose a modification to continued quarterly sampling at soil gas sample locations east of the site. USEPA is amenable to reductions in soil gas sample frequency at locations where continued monitoring was not expected to add value to the evaluation of risk.
- Results from crawl space sampling, the SSDV system inspection, the fourth quarter 2012 soil gas sample event, the SVE system construction documentation report, and ambient air sampling described above will be compiled and provided to USEPA in January 2013.

The current status of the **non-residential** vapor intrusion evaluation and related action items are summarized below:

- As indicated in USEPA's online guidance for the environmental indicator determinations, USEPA is using Federal Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs) to evaluate current human exposure at non-residential properties.
- USEPA is scheduled to release final vapor intrusion guidance in early 2013. B. Sundar of USEPA has indicated that this guidance will address non-residential properties. The Michigan Legislature is also working with MDEQ to update Michigan's Part 201 acceptable indoor air concentrations for non-residential cleanup criteria. TPC will consider any final guidance or statutory or regulatory rule changes for vapor intrusion, as appropriate, when developing the Final Corrective Measures Proposal.
- In an email following the meeting, USEPA requested that the potential for vapor intrusion at non-residential properties near the southern source area be addressed. Current concentrations in soil gas at soil gas sample location SG-01 near the southern source area are below OSHA PELs, and applicable EPA and MDEQ guidance do not suggest that immediate response activity is necessary. However, TPC is evaluating southern source area mitigation and treatment options as possible interim measures, as well as investigating the building conditions of the adjacent non-residential property to evaluate actual building and use conditions and potential mitigation approaches on that property. Options for possible on-site interim measures to be evaluated include SVE, chemical oxidation, and reductive dechlorination.
- TPC will consider the following suggestions made by USEPA:
 - Preparation of a plan view map which illustrates building foundation types throughout the area of affected groundwater and along the western perimeter of the site.
 - Obtaining and providing to USEPA a description of the interior of the building located immediately south and east of the southern source area, along the west side of Maumee Street.
 - Southern source area control as a possible interim corrective measure.

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- Modification of the figure illustrating the extent of the intermediate clay layer and perched groundwater to more clearly depict near surface geological conditions.
- Collection of soil gas samples from the surficial clay to evaluate whether the surficial clay provides an effective barrier to vapor intrusion for slab-on-grade buildings in areas with affected soil gas below the surficial clay.

4. Groundwater Investigation and Sampling Activities

On September 29, 2012, TPC submitted the RI and Groundwater EI Report, in accordance with the requirements of the AOC. That report included a statistical evaluation of groundwater stability and a comprehensive summary of all the environmental work conducted to date. During the October 2012 project meeting, Joseph Kelly of USEPA requested additional information to support USEPA's preparation of the RCRA Form CA-750 and to support USEPA's review of the eventual Final Corrective Measures Proposal. Action items related to source area and groundwater investigation activities are summarized below:

- The current statistical evaluation (through the second quarter of 2012) indicates that in most cases contaminant concentrations do not exhibit an upward trend. However, Joseph Kelly requested additional rounds of data at monitoring wells exhibiting relatively high standard deviation to confirm that groundwater concentrations remain stable. TPC will continue quarterly sampling at monitoring wells with groundwater concentrations exhibiting high standard deviation.
- Joseph Kelly requested additional wells (and subsequent sample events at those wells) within the area of affected groundwater to verify plume stability.
 - TPC will propose additional wells within the area of affected groundwater. A Supplemental Groundwater Investigation Workplan with proposed well locations will be submitted with the fourth quarter 2012 progress report (due January 15, 2013).
 - USEPA agreed to consider a revised groundwater sampling program in which the sample frequency is reduced at monitoring wells which are either non-detect or exhibit low standard deviation. USEPA agreed to review and comment on the revised groundwater sampling program within approximately one month (assuming the revised program is submitted for review in mid-December), so that changes can be implemented during the first quarter 2013 groundwater sample event (typically conducted in January or early February).
 - In an email sent by J. Kelly on November 7, 2012, USEPA provided TPC with a list of "non-detect" wells that can be considered for reduced sample frequency (monitoring wells: MW-10S, MW-11S, MW-12S/D, MW-13S, MW-14S/D, MW-15S, MW-17S, MW-18S, MW-24s/D, MW-26S, MW-27S/D, MW-28S/D, MW-29S/D, and MW-30S/D). TPC will consider USEPA feedback when developing the revised groundwater monitoring program.

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- Following implementation of the Supplemental Groundwater Investigation Workplan, TPC will submit a Supplement to the RI and Groundwater EI Report documenting the results of the investigation and any new data from existing monitoring wells.
- TPC will consider the following comments/requests from USEPA when preparing the Supplemental Groundwater Investigation Workplan, when evaluating results of investigation activities, and when preparing figures to accompany the Supplement to the RI and Groundwater EI Report:
 - Preparation of additional cross-sections (specific recommendations provided in a follow-up email from J. Kelly of USEPA on November 7, 2012);
 - Revision of existing cross-sections to include flow nets, a more clear description of deep hydraulic head indicator marks, and/or additional investigation locations (specifics provided in a follow-up email from J. Kelly of USEPA on November 7, 2012);
 - Preparation of a map illustrating the elevation of the top of the clay confining unit; and
 - Modification of the figure illustrating the extent of the intermediate clay layer and perched groundwater to more clearly depict near surface geological conditions.
- USEPA will review and respond to the Supplemental Groundwater Investigation Workplan in a timely manner.

Summary and Date Extensions

- **Form CA-725:** TPC anticipates providing USEPA with soil gas data from the fourth consecutive quarterly soil gas sample event at soil gas sample points in residential areas north and west of the site following the second quarter 2013 sample event, and intends to submit the Supplement to Current Human Exposures EI Report by August 15, 2013. In order to allow time for USEPA review of that submittal, the date set forth in Paragraph 13(a) of the AOC should therefore be extended to **September 30, 2013**.
- **Form CA-750 and RI Report:** TPC anticipates that the Supplemental Groundwater Investigation Workplan will be submitted in January 2013, and implemented such that the first quarterly sample event at new monitoring wells will be conducted no later than the second quarter of 2013. Statistical evaluation of groundwater chemistry typically requires 8 quarterly sample events. TRC anticipates that the Supplement to the RI and Groundwater EI Report, which will include a statistical evaluation of groundwater stability at wells installed in the first half of 2013, will be submitted by June 15, 2015. In order to allow time for USEPA review of that submittal, the date set forth in Paragraph 13(b) of the AOC should therefore be extended to **July 31, 2015**.
- **Corrective Measures Proposal:** At present the Corrective Measures Proposal is due March 29, 2013. To correspond with the extensions described above, the deadline for submittal of the Final Corrective Measures Proposal set forth in Paragraph 15 of the AOC should be extended to **January 31, 2016**.

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In order to facilitate the proposed AOC extensions:

- TPC has drafted an accompanying draft extension letter for signature by USEPA.
- J. Kelly of USEPA agreed to communicate with USEPA Regional Counsel Susan Perdomo regarding how to process and facilitate the proposed extensions.