

Technical Memorandum

Date: March 3, 2014

To: Joseph Kelly, Corrective Action Project Manager
Remediation and Reuse Branch

From: Graham Crockford, TRC
Project Manager for Tecumseh Products Company

cc: Susan Perdomo, USEPA
Jason Smith, Tecumseh Products Company
Douglas McClure, Conlin, McKenney & Philbrick, PC
Chris DeWetter, Tecumseh Products Company
Roger Jackson, Tecumseh Products Company
Stacy Metz, TRC

Project No.: 004311.0001.0000, Phase 5

Subject: DRAFT Preliminary Scope of Work to Address the USEPA Comment Letter Dated January 31, 2014 Regarding the Human Exposure Environmental Indicator Report

Pursuant to Section VI of the above referenced Administrative Order on Consent (Consent Order) effective March 29, 2010, TRC Environmental Corporation (TRC), on behalf of the Respondent Tecumseh Products Company (TPC), submits this DRAFT Preliminary Scope of Work to Address the USEPA Comment Letter Dated January 31, 2014 Regarding the Human Exposure Environmental Indicator Report (Draft SOW).

USEPA provided a response to TPC's September 30, 2013 Supplement to the Human Exposures Under Control Environmental Indicator Report on January 31, 2014. This comment letter is 34 pages long including 21 pages of text. As outlined in the email sent by Jason Smith of TPC on February 12, 2014, TPC suggested that USEPA's requested workplan be deferred until after a project meeting to discuss USEPA's comments and come to consensus on how best to move forward. USEPA responded to that request on February 20, 2014, requesting the submittal of a draft scope of work prior to scheduling a meeting date. This Draft SOW was prepared in response to that request. This Draft SOW is not meant to address each of the comments outlined in USEPA's January 31, 2013 comment letter in detail, but rather to provide a brief overview of the anticipated investigation efforts to address those comments. TPC anticipates that the final workplan, prepared after meeting with USEPA will provide a more comprehensive response to individual comments.

Technical Memorandum

Source Area Characterization

- Additional source area data -
TPC proposes to expand the passive soil gas (PSG) survey area to complete the lateral coverage over areas identified by USEPA. Existing PSG data are provided on Figure 1. TPC proposes to expand the investigation area to cover the former drum storage areas, tank areas, areas adjacent to former railroad spurs where loading/unloading of materials may have occurred, and the area east/southeast of the southern portion of the building where a number of outbuildings and two hazardous waste storage areas were located. The proposed PSG survey expansion areas are outlined on Figure 1. The previous and proposed PSG survey data will provide USEPA's requested "high resolution" depiction of the lateral distribution of contaminants in soil and groundwater in the areas noted by USEPA.
- Additional vertical distribution of contaminants data -
Subsequent to the expanded PSG survey and, to supplement the PSG survey data, a Geoprobe® equipped with a membrane interface probe (MIP) will be used to further delineate the vertical distribution of contaminants in the areas noted by USEPA. Each area identified by PSG data will be evaluated. MIP investigation areas (excluding any additional areas identified through the expanded PSG survey) are outlined on Figure 1.

The results of the MIP investigation will be evaluated in the context of existing soil and groundwater data in order to select a limited number of locations for confirmation sampling.
- Additional on-site monitoring wells -
The results of the MIP investigation will be used to evaluate the existing source area monitoring well network, and identify potential additional monitoring well locations, as appropriate.

Contaminant Plume Characterization

- Northeast portion of plume -
TPC proposes to use a Geoprobe® equipped with a MIP to further verify the distribution of contaminants migrating off-site to the northeast. A transect will be conducted in the right-of-way (ROW) along the northern perimeter of the site as illustrated on Figure 2. Additional transects will be completed further downgradient to further document and map the horizontal and vertical distribution of contaminants. Approximate transect locations are also illustrated on Figure 2. The actual size and location of downgradient transects will be adjusted, as appropriate, based on groundwater flow direction and the locations of the highest concentrations in the previous up gradient transect.
- Number of monitoring wells -
The results of the source area and downgradient MIP investigation will be used to evaluate the existing monitoring well network, and identify potential additional monitoring well locations, as appropriate.

Technical Memorandum

Human Exposures Under Control

- Soil gas screening levels (SGSLs) -
As noted in the comments provided by USEPA on January 31, 2014, Joseph Kelly of EPA previously had requested TPC to begin using MDEQ screening criteria for comparison with soil gas data. The MDEQ Vapor Intrusion Guidance, which was issued in May 2013, includes both sub-slab SGSLs and deep SGSLs. Deep SGSLs are applicable to samples collected 5 feet or more below ground surface. TRC notes that the AOC does not specifically require compliance with State guidance documents. However, all of the perimeter and off-site soil gas locations are screened a minimum of 5 feet below ground surface. Therefore soil gas data collected since that time were compared to the MDEQ Deep SGSLs. The letter provided on January 31, 2014 was the first notice from USEPA that TRC's application of MDEQ's 2013 VI Guidance is not in alignment with USEPA's apparent interpretation of that guidance.

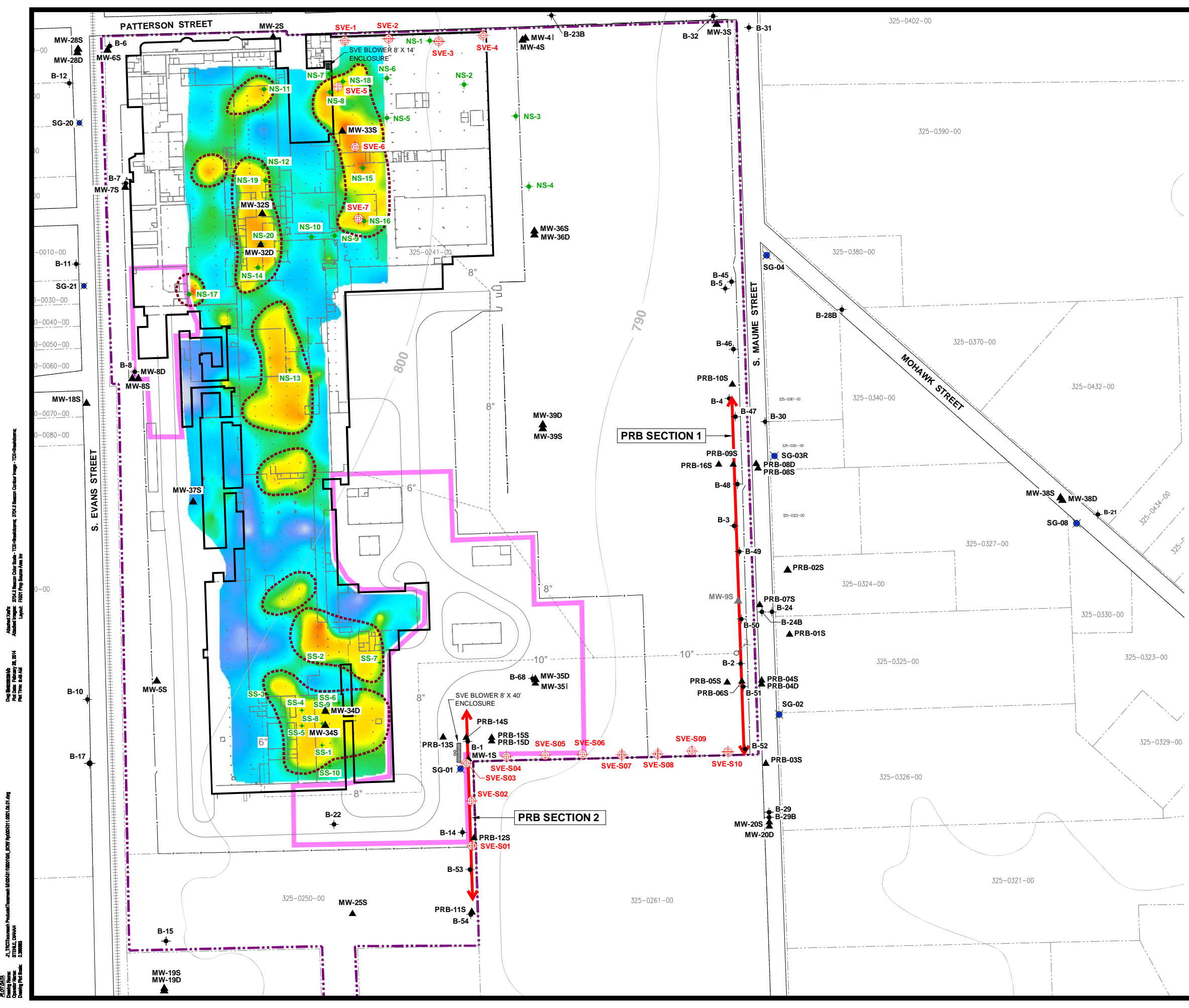
TPC would like to discuss the applicability of various soil gas screening levels with USEPA. In the interim, TPC is willing to compare soil gas data collected from residential areas to MDEQ Deep Soil Gas Screening Levels, and re-evaluate data in that context.

- Martin's Home Center Warehouse located on Maumee Street -
A perimeter SVE system is under construction to mitigate lateral migration of affected soil gas from the site and to dilute soil gas under the Martin's Home Center building which may be affected by contaminated groundwater. System start-up is scheduled for March 6, 2014, weather permitting. In order to monitor the performance of the perimeter SVE system, TPC proposes to install and complete quarterly monitoring at four soil gas sample points around the perimeter of the Martin's Home Center warehouse building, subject to owner agreement. The locations of proposed sample points are illustrated on Figure 3.
- Potential vapor intrusion around SG-10 and further northeast -
Subsurface investigation activities will be completed as described above. These data will be used to refine and update the conceptual site model. The location and number of existing soil gas sample points will then be evaluated so that adjustments may be made as necessary to verify that current human exposures are under control.
- Groundwater plume stability -
Subsurface investigation activities will be completed as described above. These data will be used to verify outer-edge plume stability pursuant to USEPA's Environmental Indicator Guidance and to further verify the adequacy of the area covered by the City of Tecumseh groundwater use ordinance.

Technical Memorandum

Figures

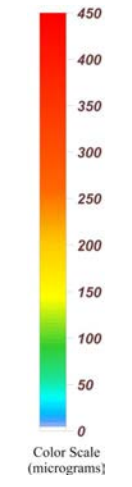
DRAFT



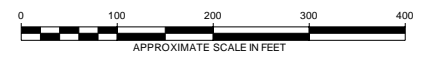
LEGEND

- FORMER TECUMSEH PRODUCTS SITE BOUNDARY
- PARCEL BOUNDARY
- B-54 PERIMETER / OFF-SITE INVESTIGATION SOIL BORING LOCATION AND NUMBER
- MW-4S MONITORING WELL LOCATION AND NUMBER
- MW-9S DECOMMISSIONED MONITORING WELL LOCATION AND NUMBER
- SS-2 SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
- SG-02 SOIL GAS SAMPLE LOCATION AND NUMBER
- 8" PIPE DIAMETER AND APPROXIMATE LOCATION OF ON-SITE SANITARY SEWER
- PRB LOCATION
- FENCE LINE
- SVE-S04 EXTRACTION WELL LOCATION AND NUMBER
- 800 APPROXIMATE GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP
- PROPOSED PASSIVE GAS SURVEY AREA
- OUTLINE OF MEMBRANE INTERFACE PROBE INVESTIGATION AREAS

COLOR SCALE FOR RELATIVE RESPONSE FROM PASSIVE SOIL GAS SURVEY - TCE AND BREAKDOWN PRODUCTS

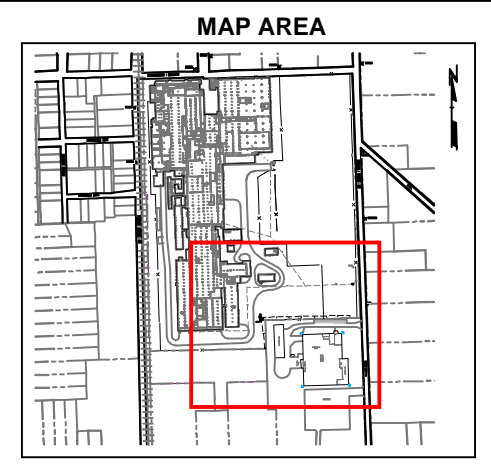
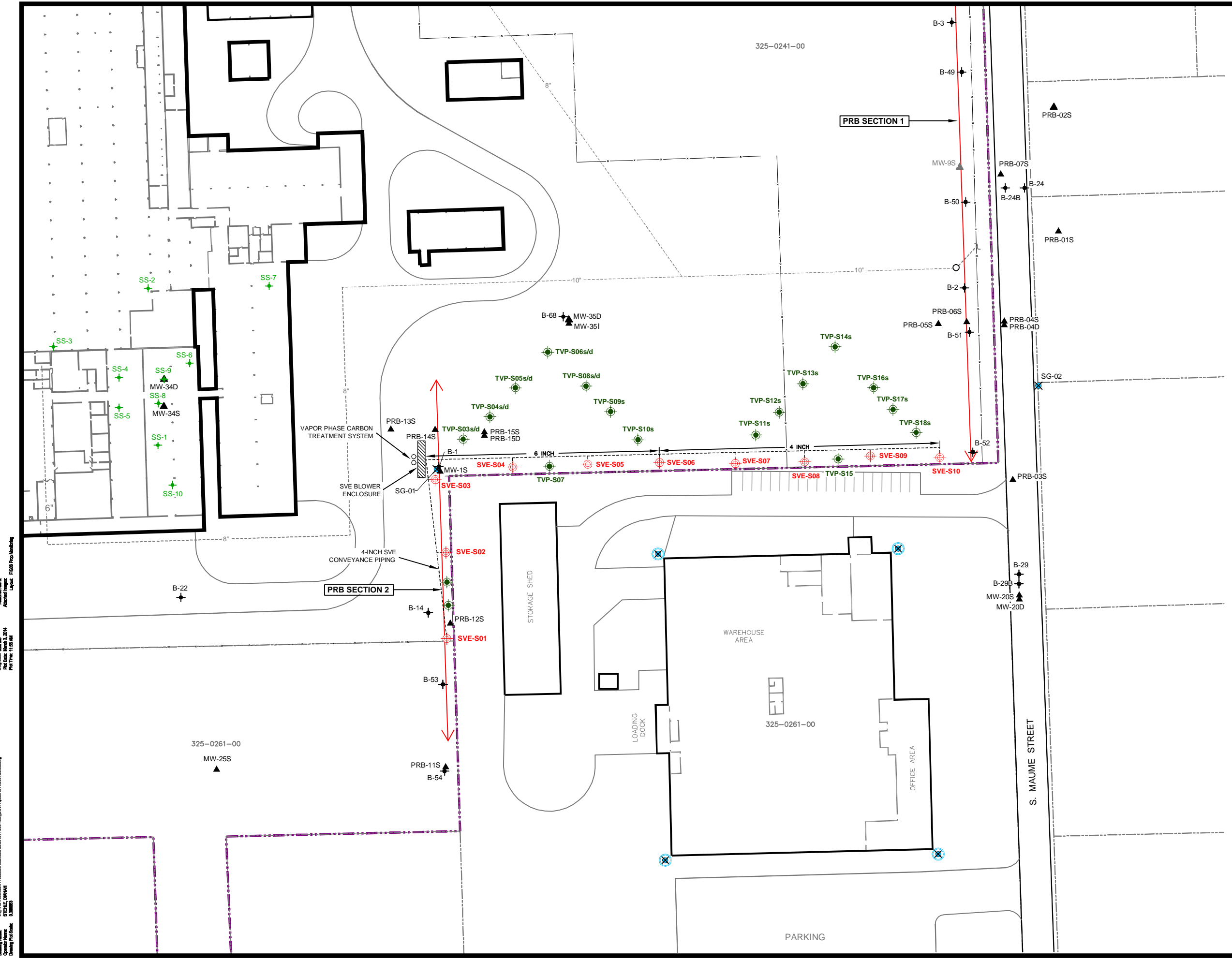


- NOTES**
- BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY THE CITY OF TECUMSEH, DRAWING NO. CITY.DWG, MARCH 2009.
 - GROUND TOPOGRAPHY BASED OFF 7.5 MINUTE U.S.G.S TOPOGRAPHIC QUADRANGLE MAP AND GROUND SURVEY DATA.



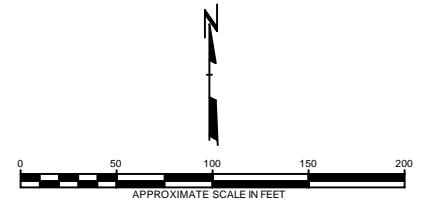
3					
2					
1					
NO.	BY	DATE	REVISION	APP'D.	
PROJ: FORMER TECUMSEH PRODUCTS SITE TECUMSEH, MICHIGAN					
TITLE: PROPOSED SOURCE AREA INVESTIGATION LOCATIONS					
DRAWN BY:	DGS	SCALE:	PROJ. NO.:	004311.0001.05	
CHECKED BY:	SEM	AS INDICATED	FILE NO.:	004311.0001.05.01.dwg	
APPROVED BY:	DM	DATE PRINTED:	FEBRUARY 2014		
DATE:	FEBRUARY 2014				
			1540 Eisenhower Place Ann Arbor, MI 48108 Phone: 734.971.7080 Fax: 734.971.9022		

J:\PROJECTS\2014\02\01\0001\0001.dwg
 Drawing Name: 004311.0001.05.01.dwg
 Drawing Path: J:\PROJECTS\2014\02\01\0001\0001.dwg
 Date: 2/11/2014 10:00:00 AM
 User: dm
 Plot Time: 2/11/2014 10:00:00 AM
 Plot Date: February 11, 2014
 Plot Time: 10:00:00 AM
 Legend: FIG01 Top Source Area III
 270x3.8 Reason Color Scale - TCE Breakdown
 270x3.8 Reason Color Scale - TCE Breakdown
 270x3.8 Reason Color Scale - TCE Breakdown
 270x3.8 Reason Color Scale - TCE Breakdown



- LEGEND**
- FORMER TECUMSEH PRODUCTS SITE BOUNDARY
 - PARCEL BOUNDARY
 - B-54 PERIMETER / OFF-SITE INVESTIGATION SOIL BORING LOCATION AND NUMBER
 - MW-4S MONITORING WELL LOCATION AND NUMBER
 - MW-9S DECOMMISSIONED MONITORING WELL LOCATION AND NUMBER
 - SS-2 SOURCE AREA INVESTIGATION BORING LOCATION AND NUMBER
 - SG-02 SOIL GAS SAMPLE LOCATION AND NUMBER
 -
 - PRB LOCATION
 - FENCE LINE
 - SVE-S04 EXTRACTION WELL LOCATION
 - TVP-S09 VACUUM MONITORING POINT LOCATION
 - SVE CONVEYANCE PIPING
 - PROPOSED SOIL GAS SAMPLE LOCATION

- NOTES**
1. BASE MAP DEVELOPED FROM SITE PLAN PROVIDED BY THE CITY OF TECUMSEH, DRAWING NO. CITY.DWG, MARCH 2009.



3					
2					
1					
NO.	BY	DATE	REVISION	APPD.	
PROJ: FORMER TECUMSEH PRODUCTS SITE TECUMSEH, MICHIGAN					
TITLE: PROPOSED MONITORING LOCATIONS FOR PERIMETER SOIL VAPOR EXTRACTION SYSTEM					
DRAWN BY:	DGS	SCALE:	PROJ. NO.:	004311.001.05	
CHECKED BY:	SEM	AS INDICATED	FILE NO.:	004311.0001.05.03.dwg	
APPROVED BY:	DM	DATE PRINTED:	FIGURE 3		
DATE:	FEBRUARY 2014				

TRC

1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
Fax: 734.971.9022

PL 07/2014
 Drawing Name: J:\TNC\Tecumseh Products\Tecumseh Products\0211001000_LCOW\0211001001.dwg
 Drawing File Path: J:\TNC\Tecumseh Products\Tecumseh Products\0211001000_LCOW\0211001001.dwg
 Date Plotted: March 3, 2014
 Plot Time: 11:58 AM
 Legend: FIG03 Prop Monitoring