

US EPA ARCHIVE DOCUMENT



Letter of Transmittal

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To: Michelle Mullin
Project Manager
USEPA, Region 5
77 West Jackson Boulevard
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Date: February 1, 2012
Project No.: 02751.13
Subject: TCE Toxicity
Updates

Prepared By: G. Crockford

Michelle-

As requested in your email dated January 9, 2012, TRC has updated data tables included in the Fourth Quarter 2011 Quarterly Progress Report to reflect recent updates to the toxicological data available for trichloroethene (TCE) in the Integrated Risk Information System (IRIS) Database. In order to update these tables, TRC prepared revised indoor air criteria, soil gas screening level, and groundwater screening level calculations sheets. The following documents are attached:

- Revised Indoor Air Criteria Calculations;
- Revised Soil Gas Screening Level Calculations;
- Revised Groundwater Screening Level Calculations;
- Revised Table 1 Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas, from Appendix A of the Fourth Quarter 2011 Quarterly Progress Report; and
- Revised Table 3 Summary of Detected Volatile Organic Compounds in Groundwater, from Appendix B of the Fourth Quarter 2011 Quarterly Progress Report

We can discuss the revised tables during our meeting next week. Meanwhile, if you have any questions or concerns regarding the revised indoor air criteria, soil gas screening levels, and groundwater screening levels please contact me.

Indoor Air Criteria Calculations



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SHEET_1__OF__2__

PROJECT / PROPOSAL NAME / LOCATION: Tecumseh Products Company, Tecumseh, Michigan		PROJECT / PROPOSAL NO.
SUBJECT: Longterm Indoor Air Criteria		2751.13
PREPARED BY: S. Metz	DATE: 2/16/10, 5/17/10, 1/27/12	FINAL ☐
CHECKED BY: K. Saucier, D. VanAntwerp, J. Hoffman	DATE: 2/18/10, 5/17/10, 1/31/12	REVISION x

Longterm Indoor Air Criteria (IAC) Calculation for Carcinogens (Residential):

$$IAC = (TR * AT) / (IURF * EF * ED * ET)$$

Target Risk (TR) =	1.00E-05		
Average Time (AT) =	25,550	days	(70 years * 365 days/year)
Inhalation Unit Risk Factor (URF) =	Chemical Specific	(ug/m ³) ⁻¹	
Exposure Frequency (EF) =	350	days/year	(350 = residential, 250 = non-residential)
Exposure Duration (ED) =	30	years	(30 = residential, 25 = non-residential)
Exposure Time (ET) =	1		(24 hr/24 hr = residential, 8 hr/24 hr = non-residential)

Longterm Indoor Air Criteria (IAC) Calculation for Carcinogens (Non-Residential):

$$IAC = (TR * AT) / (IURF * EF * ED * ET)$$

Target Risk (TR) =	1.00E-05		
Average Time (AT) =	25,550	days	(70 years * 365 days/year)
Inhalation Unit Risk Factor (URF) =	Chemical Specific	(ug/m ³) ⁻¹	
Exposure Frequency (EF) =	250	days/year	(350 = residential, 250 = non-residential)
Exposure Duration (ED) =	25	years	(30 = residential, 25 = non-residential)
Exposure Time (ET) =	0.333		(24 hr/24 hr = residential, 8 hr/24 hr = non-residential)

Longterm Indoor Air Criteria (IAC) Calculation for Non-Carcinogens (Residential):

$$IAC = (HQ * AT * RfC) / (EF * ED * ET)$$

Hazard Quotient (HQ) =	1		
Average Time (AT) =	10,950	days	(30 years * 365 days/year)
Reference Concentration (RfC) =	Chemical Specific	(ug/m ³)	
Exposure Frequency (EF) =	350	days/year	(350 = residential, 250 = non-residential)
Exposure Duration (ED) =	30	years	(30 = residential, 25 = non-residential)
Exposure Time (ET) =	1		(24 hr/24 hr = residential, 8 hr/24 hr = non-residential)

Longterm Indoor Air Criteria (IAC) Calculation for Non-Carcinogens (Non-Residential):

$$IAC = (HQ * AT * RfC) / (EF * ED * ET)$$

Hazard Quotient (HQ) =	1		
Average Time (AT) =	9,125	days	(25 years * 365 days/year)
Reference Concentration (RfC) =	Chemical Specific	(ug/m ³)	
Exposure Frequency (EF) =	250	days/year	(350 = residential, 250 = non-residential)
Exposure Duration (ED) =	25	years	(30 = residential, 25 = non-residential)
Exposure Time (ET) =	0.333		(24 hr/24 hr = residential, 8 hr/24 hr = non-residential)



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SHEET 2 OF 2

PROJECT / PROPOSAL NAME / LOCATION: Tecumseh Products Company, Tecumseh, Michigan		PROJECT / PROPOSAL NO.
SUBJECT: Longterm Indoor Air Criteria		2751.13
PREPARED BY: S. Metz	DATE: 2/16/10, 5/17/10, 1/27/12	FINAL ☐
CHECKED BY: K. Saucier, D. VanAntwerp, J. Hoffman	DATE: 2/18/10, 5/17/10, 1/31/12	REVISION x

Chemical Specific Values				
Compound	Conversion Factor (ug/m ³ to ppbv)	Unit Risk Factor (ug/m ³) ⁻¹	Reference Concentration (ug/m ³)	Data Source for URF and RfC Values ⁽¹⁾
1,1-Dichloroethane	0.25	1.60E-06	500	RSLs (URF)/ JEM (RfC)
1,2-Dichloroethane	0.25	2.60E-05	2400	IRIS (URF) / RSLs (RfC)
1,1-Dichloroethene	0.25		200	IRIS
cis-1,2-Dichloroethene	0.25		35	JEM
trans-1,2-Dichloroethene	0.25		60	RSLs
Tetrachloroethene	0.15	5.90E-06	270	RSLs
1,1,1-Trichloroethane	0.18		5000	IRIS
Trichloroethene	0.19	4.10E-06	2	IRIS
Vinyl Chloride ⁽²⁾	0.39	See Note 2	100	IRIS
2-Butanone (MEK)	0.33		5000	IRIS
Trichlorofluoromethane	0.18		700	RSLs

1) IRIS = USEPA Integrated Risk Information System, RSLs = USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites, JEM = USEPA Johnson and Ettinger Model Spreadsheet

2) IRIS lists two unit risk factors for vinyl chloride: $8.80 \times 10^{-6} \text{ (ug/m}^3\text{)}^{-1}$ for lifetime (i.e. residential) exposure and $4.40 \times 10^{-6} \text{ (ug/m}^3\text{)}^{-1}$ for exposure as an adult (i.e. non-residential).

Calculated Longterm Residential Indoor Air Criteria				
Compound	IAC for Carcinogens (ug/m ³)	IAC for Non-Carcinogens (ug/m ³)	Critical IAC (ug/m ³)	Critical IAC (ppbv)
2-Butanone (MEK)	NA	5,200	5,200	1,700
1,1-Dichloroethane	15	520	15	3.8
1,2-Dichloroethane	0.94	2,500	0.94	0.24
1,1-Dichloroethene	NA	210	210	52
cis-1,2-Dichloroethene	NA	37	37	9.3
trans-1,2-Dichloroethene	NA	63	63	16
Tetrachloroethene	4.1	280	4.1	0.62
1,1,1-Trichloroethane	NA	5,200	5,200	940
Trichloroethene	5.9	2.1	2.1	0.40
Trichlorofluoromethane	NA	730	730	130
Vinyl Chloride	2.8	100	2.8	1.1

Calculated Longterm Non-Residential Indoor Air Criteria				
Compound	IAC for Carcinogens (ug/m ³)	IAC for Non-Carcinogens (ug/m ³)	Critical IAC (ug/m ³)	Critical IAC (ppbv)
2-Butanone (MEK)	NA	22,000	22,000	7,300
1,1-Dichloroethane	77	2,200	77	19
1,2-Dichloroethane	4.7	11,000	4.7	1.2
1,1-Dichloroethene	NA	880	880	217
cis-1,2-Dichloroethene	NA	150	150	38
trans-1,2-Dichloroethene	NA	260	260	65
Tetrachloroethene	21	1,200	21	3.1
1,1,1-Trichloroethane	NA	22,000	22,000	4,000
Trichloroethene	30	8.8	8.8	1.7
Trichlorofluoromethane	NA	3,100	3,100	540
Vinyl Chloride	28	440	28	11

Soil Gas Screening Level Calculations



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SHEET 1 OF 2

PROJECT / PROPOSAL NAME / LOCATION: Tecumseh Products Company, Tecumseh, Michigan		PROJECT / PROPOSAL NO.
SUBJECT: Soil Gas Screening Levels		2751.13
PREPARED BY: S. Metz	DATE: 2/22/10, rev. 1 - 5/17/10, rev. 2 - 1/27/12	FINAL ☐
CHECKED BY: C. Daining, rev. 1 - D. VanAntwerp, J. Hoffman	DATE: 3/12/10, rev. 1 - 5/17/10, 1/31/12	REVISION x

Soil Gas Screening Level (SGSL) Calculation:

$$SGSL = IAC / \alpha$$

Indoor Air Criteria (IAC) = Chemical Specific (ug/m ³ or ppbv)	
Residential Sub-Slab Attenuation Factor (α) =	0.1 Default sub-slab value recommended by USEPA
Non-Residential Sub-Slab Attenuation Factor (α) =	0.02 Default sub-slab value recommended by MDEQ
Residential DEEP Attenuation Factor (α) =	0.1 Value recommended by USEPA in a comment letter dated 8/24/10
Residential DEEP Attenuation Factor (α) =	0.01 Value recommended in 2001 USEPA draft guidance
Residential DEEP Attenuation Factor (α) =	0.003 Calculated site specific attenuation factor
Non-Residential DEEP Attenuation Factor (α) =	0.003 Calculated site specific attenuation factor

Indoor Air Criteria				
Compound	Residential Indoor Air Criteria (ug/m ³)	Residential Indoor Air Criteria (ppbv)	Non-Residential Indoor Air Criteria (ug/m ³)	Non-Residential Indoor Air Criteria (ppbv)
1,1-Dichloroethane	15	3.8	77	19
1,2-Dichloroethane	0.94	0.24	4.7	1.2
1,1-Dichloroethene	210	52	880	217
cis-1,2-Dichloroethene	37	9.3	150	38
trans-1,2-Dichloroethene	63	16	260	65
Tetrachloroethene	4.1	0.62	21	3.1
1,1,1-Trichloroethane	5,200	940	22,000	4,000
Trichloroethene	2.1	0.40	8.8	1.7
Vinyl Chloride	2.8	1.1	28	11

Calculated Non-Residential Soil Gas Screening Levels				
Compound	Non-Residential Sub-Slab Soil Gas Screening Level (ug/m ³)	Non-Residential Sub-Slab Soil Gas Screening Level (ppbv)	Non-Residential DEEP Soil Gas Screening Level (ug/m ³)	Non-Residential DEEP Soil Gas Screening Level (ppbv)
1,1-Dichloroethane	3,800	960	26,000	6,400
1,2-Dichloroethane	240	59	1,600	400
1,1-Dichloroethene	44,000	11,000	290,000	72,000
cis-1,2-Dichloroethene	7,500	1,900	50,000	13,000
trans-1,2-Dichloroethene	13,000	3,300	87,000	22,000
Tetrachloroethene	1,000	160	6,900	1,000
1,1,1-Trichloroethane	1,100,000	200,000	7,300,000	1,300,000
Trichloroethene	440	84	2,900	560
Vinyl Chloride	1,400	540	9,300	3,600

Calculated Residential Soil Gas Screening Levels (ug/m ³)				
Compound	Residential Sub-Slab Soil Gas Screening Level (ug/m ³) $\alpha = 0.1$	Residential DEEP Soil Gas Screening Level (ug/m ³) $\alpha = 0.003$	Residential DEEP Soil Gas Screening Level (ug/m ³) $\alpha = 0.01$	Residential DEEP Soil Gas Screening Level (ug/m ³) $\alpha = 0.1$
1,1-Dichloroethane	150	5,100	1,500	150
1,2-Dichloroethane	9.4	310	94	9.4
1,1-Dichloroethene	2,100	70,000	21,000	2,100
cis-1,2-Dichloroethene	370	12,000	3,700	370
trans-1,2-Dichloroethene	630	21,000	6,300	630
Tetrachloroethene	41	1,400	410	41
1,1,1-Trichloroethane	52,000	1,700,000	520,000	52,000
Trichloroethene	21	700	210	21
Vinyl Chloride	28	920	280	28

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SHEET 2 OF 2

PROJECT / PROPOSAL NAME / LOCATION: Tecumseh Products Company, Tecumseh, Michigan		PROJECT / PROPOSAL NO.
SUBJECT: Soil Gas Screening Levels		8070.13
PREPARED BY: S. Metz	DATE: 2/22/10, rev. 1 - 5/17/10, rev. 2 - 1/27/12	FINAL ☐
CHECKED BY: C. Daining, rev. 1 - D. VanAntwerp, J. Hoffman	DATE: 3/12/10, rev. 1 - 5/17/10, 1/31/12	REVISION x

Calculated Residential Soil Gas Screening Levels (ppbv)				
Compound	Residential Sub-Slab Soil Gas Screening Level (ppbv) $\alpha = 0.1$	Residential DEEP Soil Gas Screening Level (ppbv) $\alpha = 0.003$	Residential DEEP Soil Gas Screening Level (ppbv) $\alpha = 0.01$	Residential DEEP Soil Gas Screening Level (ppbv) $\alpha = 0.1$
1,1-Dichloroethane	38	1,300	380	38
1,2-Dichloroethane	2.4	79	24	2.4
1,1-Dichloroethene	520	17,000	5,200	520
cis-1,2-Dichloroethene	93	3,100	930	93
trans-1,2-Dichloroethene	160	5,300	1,600	160
Tetrachloroethene	6.2	210	62	6.2
1,1,1-Trichloroethane	9,400	310,000	94,000	9,400
Trichloroethene	4.0	130	40	4.0
Vinyl Chloride	11	360	110	11

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Groundwater Screening Level Calculations



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SHEET _1_ OF _1_

PROJECT / PROPOSAL NAME / LOCATION: Tecumseh Products Company, Tecumseh, Michigan		PROJECT / PROPOSAL NO.
SUBJECT: Groundwater Screening Levels		2751.13
PREPARED BY: S. Metz	DATE: 2/22/10, 5/17/10, 1/30/12	FINAL ☐
CHECKED BY: C. Daining, D. VanAntwerp, J. Hoffman	DATE: 3/12/10, 5/17/10, 1/31/12	REVISION x

Generic Groundwater Screening Level (GWSL) Calculation:

$$\text{GWSL} = \text{IAC} / \alpha \times \text{HLC}' \times \text{TAF} \times 1000 \text{ L/m}^3$$

Indoor Air Criteria (IAC) = Chemical Specific (ug/m³)
Groundwater Attenuation Factor (α) = 0.001 (Default values recommended by MDNRE and USEPA)
Dimensionless Henry's Law Coefficient (HLC') = Chemical Specific
Temperature Adjustment Factor (TAF) = 0.50 (accounts for reduced volatility at avg soil temperatures in MI)

Calculated Generic Groundwater Screening Levels					
Compound	HLC'	Residential IAC (ug/m ³)	Non-Residential IAC (ug/m ³)	Residential GWSL (ug/L)	Non-Residential GWSL (ug/L)
2-Butanone (MEK)	2.29E-03	5,200	22,000	4,500,000	19,000,000
1,1-Dichloroethane	2.30E-01	15	77	130	670
1,2-Dichloroethane	4.00E-02	0.94	4.7	47	240
1,1-Dichloroethene	1.07E+00	210	880	390	1,600
cis-1,2-Dichloroethene	1.67E-01	37	150	440	1,800
trans-1,2-Dichloroethene	3.84E-01	63	260	330	1,400
Tetrachloroethene	7.53E-01	4.1	21	11	55
1,1,1-Trichloroethane	7.03E-01	5,200	22,000	15,000	63,000
Trichloroethene	4.21E-01	2.1	8.8	9.9	42
Trichlorofluoromethane	3.97E+00	730	3,100	370	1,600
Vinyl Chloride	1.10E+00	2.8	28	5.0	50

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Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas

Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan

Analyte	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential SGSs where $\alpha = 0.1$ ⁽¹⁾	38	2.4	520	93	160	6.2	9,400	4.0	11
Residential SGSs where $\alpha = 0.01$ ⁽²⁾	380	24	5,200	930	1,600	62	94,000	40	110
Site Specific Residential SGSs where $\alpha = 0.003$ ⁽³⁾	1,300	79	17,000	3,100	5,300	210	310,000	130	360
Site Specific Non-Residential SGSs where $\alpha = 0.003$ ⁽³⁾	6,400	400	72,000	13,000	22,000	1,000	1,300,000	560	3,600
Units	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv

SG-01 (8-8.5')	4/5/2010	5.7	<2.3	4.4	17.0	<4.4	<2.3	279	396	<2.3
	5/20/2010 ⁽⁴⁾	52.4	<4.4	21.6	184	<4.4	52.1	1,690	2,800	<4.4
	10/21/2010	74.7	<16.8	<16.8	272	25.8	222	8,300	32,100	<16.8
	12/9/2010	<709	<709	<709	<709	<709	<709	6,440	17,800	<709
	4/13/2011	32.8	166	21.0	110	7.79	84.6	2,630	10,500	<6.7
	6/27/2011	<180	<90	<180	<180	<180	98.0	1,420	7,340	<90
	9/28/2011	<100	<100	<100	220	<200	150	4,300	19,000	<100
	11/21/2011	<5.0	<5.0	7.4	39	<10	24	1,300	7,900	<5.0
SG-01 (DUP-01)	4/5/2010	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
	5/20/2010 ⁽⁴⁾	63.2	<4.4	31.0	245	22.6	256	2,120	3,770	<4.4
	9/28/2011	<100	<100	<100	270	<200	200	5,800	28,000	<100
	11/21/2011	22 ⁽⁸⁾	<5.0	9.9	48	<10	25	1,700	8,500	<5.0
SG-02 (5.5-6')	4/5/2010	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	19.6	<4.0	<4.0
	10/21/2010	<12.5	<12.5	<12.5	<12.5	<12.5	532	328	1,610	<12.5
	12/9/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	8.5	<3.5	<7.0	28.0	8.6	1,240	943	3,970	<3.5
	9/28/2011	<5.0	<5.0	<5.0	6.1	<10	1,100	230	550	<5.0
	11/21/2011	2.3	<1.0	<1.0	2.6	2.5	400	120	310	1.1
SG-03 (5-5.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6
	10/21/2010	91.0	<15.7	<15.7	193	90.3	<15.7	<15.7	<15.7	<15.7
	12/9/2010	47.7	<11.9	<11.9	98.0	48.5	<11.9	<11.9	<11.9	<11.9
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/27/2011	<0.36	<0.18	<0.37	<0.37	<0.37	6.8	4.8	22.3	<0.18
	9/28/2011	3.0	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	<2.0
	11/21/2011	3.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.8

Notes:

- 1) Soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1 as specified in a comment letter from USEPA dated August 24, 2010.
- 2) SGSs calculated using an attenuation factor of 0.01, as recommended in the Draft USEPA 2002 OSWER Vapor Intrusion Guidance.
- 3) Site Specific SGSs calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
- 4) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
- 5) Water in sample point prevented sample collection.
- 6) Analyte was evaluated for detection to the method detection limit.
- 7) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (-).
- 8) Quality control results are outside the established control limits, the result is approximate.

Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

ppbv - parts per billion by volume

NC - No Criteria

NS - No Sample

NA - Not Applicable

Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential SGSLS where $\alpha = 0.1$ ⁽¹⁾		38	2.4	520	93	160	6.2	9,400	4.0	11
Residential SGSLS where $\alpha = 0.01$ ⁽²⁾		380	24	5,200	930	1,600	62	94,000	40	110
Site Specific Residential SGSLS where $\alpha = 0.003$ ⁽³⁾		1,300	79	17,000	3,100	5,300	210	310,000	130	360
Site Specific Non-Residential SGSLS where $\alpha = 0.003$ ⁽³⁾		6,400	400	72,000	13,000	22,000	1,000	1,300,000	560	3,600
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-04 (5-5.5')	4/5/2010	<2.6	<1.3 ⁽⁶⁾	<2.6	<2.6	<4.9	<2.6	<2.6	<2.6	<2.5
	9/23/2010	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
	12/9/2010	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
	3/31/2011	<1.6	<1.6	<1.6	<1.6	<1.6	2.0	<1.6	<1.6	<1.6
	6/7/2011	<1.0	<0.53	<1.1	<1.1	<1.1	<0.52	<1.0	<0.53	<0.54
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	1.7	<1.0	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.4
SG-05 (7.5-8')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	28.7	26.6	<2.5
	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	708	1,320	<16.8
	12/9/2010	<15.7	<15.7	<15.7	<15.7	<15.7	<15.7	357	538	<15.7
	3/31/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	<0.34	<0.17	<0.35	<0.35	<0.35	<0.17	2.2	0.20	<0.17
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	2.1	1.1	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
SG-05 (DUP-01)	10/21/2010	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	581	1,020	<16.8
	12/9/2010	<211	<211	<211	<211	<211	<211	772	849	<211
SG-06 (8-8.5')	4/5/2010	<2.6	<2.6	<2.6	<2.6	<4.9	<2.6	<2.6	7.2	<2.5
	5/20/2010	<4.6	<4.6	<4.6	<4.6	<4.6	9.5	6.0	104	<4.6
	9/21/2010	<29.2	<29.2	<29.2	<29.2	<29.2	62.2	<29.2	263	<29.2
	12/9/2010	<3.9	<3.9	<3.9	6.1	<3.9	4.3	7.4	64.9	<3.9
	3/31/2011	0.73	<0.17	<0.35	<0.35	1.3	<0.17	1.7	14.1	<0.17
	6/7/2011	0.88	<0.18	<0.37	5.6	2.5	7.5	2.5	50.2	<0.18
	9/28/2011	3.6	<2.0	<2.0	35	6.4	16	7.7	150	<2.0
	11/21/2011	2.2	<1.0	<1.0	9.2	2.6	<1.0	5.1	29	1.1

Notes:

- 1) Soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1 as specified in a comment letter from USEPA dated August 24, 2010.
- 2) SGSLS calculated using an attenuation factor of 0.01, as recommended in the Draft USEPA 2002 OSWER Vapor Intrusion Guidance.
- 3) Site Specific SGSLS calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
- 4) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
- 5) Water in sample point prevented sample collection.
- 6) Analyte was evaluated for detection to the method detection limit.
- 7) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (-).
- 8) Quality control results are outside the established control limits, the result is approximate.

Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

ppbv - parts per billion by volume

NC - No Criteria

NS - No Sample

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Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential SGSs where $\alpha = 0.1$ ⁽¹⁾		38	2.4	520	93	160	6.2	9,400	4.0	11
Residential SGSs where $\alpha = 0.01$ ⁽²⁾		380	24	5,200	930	1,600	62	94,000	40	110
Site Specific Residential SGSs where $\alpha = 0.003$ ⁽³⁾		1,300	79	17,000	3,100	5,300	210	310,000	130	360
Site Specific Non-Residential SGSs where $\alpha = 0.003$ ⁽³⁾		6,400	400	72,000	13,000	22,000	1,000	1,300,000	560	3,600
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-07 (8-8.5')	4/5/2010	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2	<75.2
	5/20/2010	<5.0	<5.0	<5.0	<5.0	<5.0	13.8	6.8	145	<5.0
	9/21/2010	<69.6	<69.6	<69.6	<69.6	<69.6	140	<69.6	403	<69.6
	12/9/2010	<22.2	<22.2	<22.2	<22.2	<22.2	24.4	<22.2	139	<22.2
	3/31/2011	<0.34	<0.17	<0.35	<0.35	<0.35	5.9	4.3	47.2 ⁽⁸⁾	<0.17
	6/7/2011	<0.36	<0.18	<0.37	<0.37	<0.37	23.6	4.4 ⁽⁸⁾	171 ⁽⁸⁾	<0.18
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	76	16	260	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	2.7	3.1	1.5
SG-07 (DUP-01)	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	7.9	5.0	90.6 ⁽⁸⁾	<0.58
	6/7/2011	<0.36	<0.18	<0.37	<0.37	<0.37	28.4 ⁽⁸⁾	9.5 ⁽⁸⁾	97.2 ⁽⁸⁾	<0.18
SG-08 (6.5-7')	4/5/2010	<2.6	<1.3 ⁽⁶⁾	<2.6	<2.6	<5.1	<2.6	<2.6	<2.6	<2.6
	9/23/2010	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4.5	3.5	<2.0
	12/9/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011	<0.34	<0.17	<0.35	<0.35	<0.35	0.29	3.4	<0.17	<0.17
	6/27/2011	<0.34	<0.17	<0.35	<0.35	<0.35	<0.17	0.97	<0.18	<0.17
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	1.9	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	6.9	1.3	1.0
SG-09 (5.5-6')	4/5/2010 ⁽⁷⁾	--	--	--	--	--	--	--	--	--
	5/20/2010	10.6	<4.4	<4.4	<4.4	<4.4	<4.4	123	176	<4.4
	9/23/2010	<23.4	<23.4	<23.4	<23.4	<23.4	<23.4	142	436	<23.4
	12/9/2010	<13.2	<13.2	<13.2	<13.2	<13.2	<13.2	61.8	51.7	<13.2
	3/31/2011	4.3	<0.17	<0.35	1.3	<0.35	<0.17	52.5	13.9	<0.17
	6/27/2011	5.4	<0.17	<0.35	1.4	<0.35	<0.17	52.8	45.8	<0.17
	9/28/2011	1.7	<1.0	<1.0	<1.0	<2.0	<1.0	13	7.9	<1.0
	11/21/2011	3.8	<1.0	<1.0	<1.0	<2.0	<1.0	32	9.1	<1.0

Notes:

- 1) Soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1 as specified in a comment letter from USEPA dated August 24, 2010.
- 2) SGSs calculated using an attenuation factor of 0.01, as recommended in the Draft USEPA 2002 OSWER Vapor Intrusion Guidance.
- 3) Site Specific SGSs calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
- 4) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
- 5) Water in sample point prevented sample collection.
- 6) Analyte was evaluated for detection to the method detection limit.
- 7) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (--).
- 8) Quality control results are outside the established control limits, the result is approximate.

Bold font denotes concentrations detected above laboratory reporting limits.

Denotes concentrations above one or more soil gas screening level

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Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential SGSLs where $\alpha = 0.1$ ⁽¹⁾		38	2.4	520	93	160	6.2	9,400	4.0	11
Residential SGSLs where $\alpha = 0.01$ ⁽²⁾		380	24	5,200	930	1,600	62	94,000	40	110
Site Specific Residential SGSLs where $\alpha = 0.003$ ⁽³⁾		1,300	79	17,000	3,100	5,300	210	310,000	130	360
Site Specific Non-Residential SGSLs where $\alpha = 0.003$ ⁽³⁾		6,400	400	72,000	13,000	22,000	1,000	1,300,000	560	3,600
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv

SG-10 (5-5.5')	4/5/2010	<40.3 ⁽⁶⁾	<40.3 ⁽⁶⁾	<80.6	<80.6	<80.6	<40.3 ⁽⁶⁾	<80.6	<40.3 ⁽⁶⁾	<40.3 ⁽⁶⁾
	9/21/2010	<4.4	<2.2 ⁽⁶⁾	<4.4	<4.4	<4.4	<4.4	<4.4	11.5	<4.4
	12/9/2010	<8.7	<4.4 ⁽⁶⁾	<8.7	<8.7	<8.7	<4.4 ⁽⁶⁾	<8.7	<8.7	<8.7
	3/31/2011	<0.61	<0.61	<0.62	<0.62	<0.62	<0.61	<0.59	<0.60	<0.62
	6/27/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	1.4	19	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	19	56	<1.0
SG-11 (7.5-6')	4/5/2010	<2.8	<1.4 ⁽⁶⁾	<2.8	<2.8	<5.4	<2.8	<2.8	<2.8	<2.8
	9/23/2010	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4
	12/9/2010	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84	<0.84
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/7/2011	<0.39	<0.19	<0.40	<0.40	<0.40	0.89	0.54	1.2	<0.19
	9/28/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	6.8	18	<1.0
SG-12 (5-5.5')	4/5/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2020 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	<2.5	<1.3 ⁽⁶⁾	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
	3/31/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0

Notes:

- 1) Soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1 as specified in a comment letter from USEPA dated August 24, 2010.
- 2) SGSLs calculated using an attenuation factor of 0.01, as recommended in the Draft USEPA 2002 OSWER Vapor Intrusion Guidance.
- 3) Site Specific SGSLs calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
- 4) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
- 5) Water in sample point prevented sample collection.
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- 8) Quality control results are outside the established control limits, the result is approximate.

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Table 1
Summary of Chlorinated Volatile Organic Compounds in Off-Site Soil Gas
Tecumseh Products Company
Tecumseh, Michigan

Analyte		1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential SGSLS where $\alpha = 0.1$ ⁽¹⁾		38	2.4	520	93	160	6.2	9,400	4.0	11
Residential SGSLS where $\alpha = 0.01$ ⁽²⁾		380	24	5,200	930	1,600	62	94,000	40	110
Site Specific Residential SGSLS where $\alpha = 0.003$ ⁽³⁾		1,300	79	17,000	3,100	5,300	210	310,000	130	360
Site Specific Non-Residential SGSLS where $\alpha = 0.003$ ⁽³⁾		6,400	400	72,000	13,000	22,000	1,000	1,300,000	560	3,600
Units		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
SG-13 (5.5-6')	4/5/2010	<2.5	<1.3 ⁽⁶⁾	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
	5/20/2010	<4.5	<2.2 ⁽⁶⁾	<4.5	<4.5	<4.5	<4.5	<4.5	6.1	<4.5
	9/23/2010	<1.5	<1.5	<1.5	2.5	5.6	<1.5	<1.5	<1.5	<1.5
	12/9/2010	<1.6	<1.6	<1.6	<1.6	2.9	<1.6	<1.6	<1.6	<1.6
	3/31/2011	<0.56	<0.56	<0.57	<0.57	<0.57	<0.57	<0.56	<0.57	<0.58
	6/7/2011	1.5	<0.19	<0.40	4.8	10.8	0.77	0.81	1.6	<0.19
	9/28/2011	1.1	<1.0	<1.0	6.2	10	<1.0	<1.0	<1.0	<1.0
	11/21/2011	1.9	<1.0	<1.0	2.0	4.0	<1.0	<1.0	<1.0	<1.0
SG-14 (6.5-7') ⁽⁵⁾	4/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/20/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/21/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
SG-15 (11-11.5')	9/23/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/15/2010 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/31/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/27/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2011 ⁽⁵⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	10	30	<1.0
SG-16 (7.5-8')	9/23/2010	<2.5	<2.5	<2.5	<2.5	<2.5	2.6	<2.5	<2.5	<2.5
	12/9/2010	<15.7	<7.8 ⁽⁶⁾	<15.7	<15.7	<15.7	<7.8 ⁽⁶⁾	<15.7	<15.7	<7.8 ⁽⁶⁾
	3/31/2011	<0.61	<0.61	<0.60	<0.60	<0.60	<0.61	<0.59	<0.60	<0.62
	6/7/2011	<1.1	<0.53	<1.1	<1.1	<1.1	<0.54	<1.1	0.62	<0.54
	9/28/2011	<1.0	<1.0	<1.0	3.3	<2.0	7.4	<1.0	28	<1.0
	11/21/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.1

Notes:

- 1) Soil gas screening levels (SGSLs) calculated using an attenuation factor of 0.1 as specified in a comment letter from USEPA dated August 24, 2010.
- 2) SGSLS calculated using an attenuation factor of 0.01, as recommended in the Draft USEPA 2002 OSWER Vapor Intrusion Guidance.
- 3) Site Specific SGSLS calculated used an attenuation factor (0.003). This attenuation factor was determined using the USEPA Johnson and Ettinger Model calculation spreadsheet, Version 3.1. The site specific model used the spreadsheet default parameters conservatively assuming a sand substrate, a depth to foundation of 200 cm (basement), and a sample depth of 200 cm.
- 4) Elevated concentrations of 2-propanol (tracer) detected; DUP-01 results from 5/20/10 reflect true soil gas concentrations. Tracer concentration from SG-01 and analytical data from DUP-01 suggests that sample was diluted with approximately 30-percent ambient air.
- 5) Water in sample point prevented sample collection.
- 6) Analyte was evaluated for detection to the method detection limit.
- 7) Elevated concentrations of 2-propanol (tracer) detected. Analytical data for other analytes are presumed to be invalid (--).
- 8) Quality control results are outside the established control limits, the result is approximate.

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Table 3
Summary of Detected Volatile Organic Compounds in Groundwater

Table 3
Summary of Detected Volatile Organic Compounds in Groundwater
Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte	2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria	13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria	38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria	2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion	4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion	1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria	2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

MW-01s (16-21')	3/13/2009	<100	<20	<20	<20	<20	<20	750	2,700	<20	<20
	4/20/2009	NA	<100	<100	<100	<100	<100	1,100	2,200	NA	<100
	12/9/2009	<100	<20	<20	<20	<20	<20	1,000	3,400	<20	<20
	3/17/2010	<100	<20	<20	<20	<20	<20	1,400	2,500	<20	<20
	5/18/2010	<100	<20	<20	<20	<20	<20	1,000	2,700	<20	<20
	9/3/2010	<100	<20	<20	<20	<20	<20	750	2,400	<20	<20
	12/28/2010	<100	<20	<20	<20	<20	<20	1,100	2,500	<20	<20
	2/25/2011	<50	<10	<10	<10	<10	<10	560	1,300	<10	<10
	5/11/2011 ⁽³⁾	<50	<10	<10	<10	<10	<10	860	1,900	<10	<10
	7/28/2011	<100	<20	<20	<20	<20	<20	500	1,900	<20	<20
DUP-01 (MW-01s)	10/6/2011	<100	<20	<20	<20	<20	<20	540	2,000	<20	<20
MW-02s (23-28')	3/13/2009	<20	<20	<20	<20	<20	<20	720	2,700	<20	<20
	3/13/2009	<10	<2.0	<2.0	2.4	<2.0	2.2	2.5	280	<2.0	<2.0
	4/20/2009	NA	<10	<10	<10	<10	<10	<10	130	NA	<10
	12/9/2009	<10	<2.0	<2.0	3.7	<2.0	2.7	2.9	250	<2.0	<2.0
	3/17/2010	13	<2.0	<2.0	4.1	<2.0	2.3	3.1	290	<2.0	<2.0
	5/18/2010	<10	<2.0	<2.0	2.3	<2.0	2.4	2.6	210	<2.0	<2.0
	9/3/2010	<10	<2.0	<2.0	2.3	<2.0	2.3	2.3	220	<2.0	<2.0
	12/22/2010	<10	<2.0	<2.0	2.4	<2.0	2.3	3.1	240	<2.0	<2.0
	2/24/2011	<10	<2.0	<2.0	2.0	<2.0	<2.0	2.6	240	<2.0	<2.0
	5/10/2011 ⁽³⁾	<10	<2.0	<2.0	<2.0	<2.0	<2.0	2.3	250	<2.0	<2.0
MW-03s (9-14')	7/28/2011 ⁽⁴⁾	<10	<2.0	<2.0	2.0	<2.0	2.2	2.4	280	<2.0	<2.0
	10/7/2011	<10	<2.0	<2.0	<2.0	<2.0	2.5	2.5	220	<2.0	<2.0
	3/13/2009	<10	9.1	<2.0	240	9.1	<2.0	<2.0	<2.0	<2.0	140
	4/20/2009	NA	18	<10	490	18	<10	<10	<10	NA	210
	12/8/2009	<120	46	<25	2,200	83	<25	<25	<25	<25	130
	3/17/2010	<25	11	<5.0	460	17	<5.0	<5.0	<5.0	<5.0	42
	5/18/2010	<25	14	<5.0	630	24	<5.0	<5.0	<5.0	<5.0	34
	9/3/2010	<50	29	<10	1,600	63	<10	<10	<10	<10	83
	12/22/2010	<50	32	<10	1,800	82	<10	<10	<10	<10	70
	2/25/2011	<100	33	<20	2,200	110	<20	<20	<20	<20	75
DUP-01 (MW-03s)	5/10/2011 ⁽³⁾	<100	25	<20	1,600	77	<20	<20	<20	<20	52
	7/28/2011	<100	23	<20	1,700	78	<20	<20	<20.0	<20	65
	10/6/2011	<100	24	<20	2,100	100	<20	<20	<20	<20	91
	12/8/2009	<120	42	<25	2,000	73	<25	<25	<25	<25	120

Notes:

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ug/L = micrograms per liter

NC = No criteria

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Bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

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3) The average temperature in this sample shipment exceeded the recommended temperature range. Sample results are approximate.

4) Quality control results for trichloroethene are outside the established control limits, the result is approximate.

Table 3
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Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-04s (15-20')	3/13/2009	<120	<25	<25	2,100	70	<25	<25	5,000	<25	460
	4/20/2009	NA	<100	<100	1,700	<100	<100	<100	4,000	NA	520
	12/9/2009	<250	<50	<50	2,500	90	<50	<50	7,100	<50	270
	3/17/2010	<250	<50	<50	2,900	82	<50	<50	7,500	<50	520
	5/18/2010	<250	<50	<50	2,100	58	<50	<50	4,700	<50	280
	9/3/2010	<250	<50	<50	2,400	70	<50	<50	5,200	<50	200
	12/22/2010	<250	<50	<50	2,700	91	<50	<50	6,700	<50	270
	2/25/2011	<250	<50	<50	2,500	82	<50	<50	5,900	<50	280
	5/11/2011 ⁽³⁾	<250	<50	<50	1,900	58	<50	<50	4,600	<50	270
MW-05s (25-30')	7/28/2011	<250	<50	<50	1,700	50	<50	<50	4,600	<50	190
	10/6/2011	<250	<50	<50	2,000	58	<50	<50	4,600	<50	190
	3/13/2009	<5.0	<1.0	<1.0	<1.0	<1.0	3.5	<1.0	120	<1.0	<1.0
	4/20/2009	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	140	NA	<5.0
	12/10/2009	<5.0	<1.0	<1.0	<1.0	<1.0	5.3	<1.0	190	<1.0	<1.0
	3/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	6.3	<1.0	160	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	4.6	<1.0	160	<1.0	<1.0
	9/3/2010	<5.0	<1.0	<1.0	<1.0	<1.0	4.6	<1.0	140	<1.0	<1.0
	12/21/2010	<5.0	<1.0	<1.0	<1.0	<1.0	4.9	<1.0	160	<1.0	<1.0
MW-06s (24-29')	2/24/2011	<5.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	130	<1.0	<1.0
	5/13/2011	<5.0	<1.0	<1.0	<1.0	<1.0	4.9	<1.0	160	<1.0	<1.0
	7/27/2011	<5.0	<1.0	<1.0	<1.0	<1.0	4.8	<1.0	150	<1.0	<1.0
	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	5.1	<1.0	150	<1.0	<1.0
	3/16/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	21	<1.0	<1.0
	4/20/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	23	NA	<1.0
	12/9/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	37	<1.0	<1.0
	3/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	31	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	33	<1.0	<1.0
MW-06s (24-29')	9/3/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	29	<1.0	<1.0
	12/21/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	34	<1.0	<1.0
	2/18/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	35	<1.0	<1.0
	5/10/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	<1.0	<1.0
	7/27/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	30	<1.0	<1.0

Notes:
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Bold font denotes concentrations detected above laboratory reporting limits
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Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-07s (23.5-28.5')	3/16/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	10	<1.0	<1.0
	4/20/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	11	NA	<1.0
	12/10/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	14	<1.0	<1.0
	3/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	13	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	13	<1.0	<1.0
	9/3/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	12	<1.0	<1.0
	12/21/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	16	<1.0	<1.0
	2/24/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	12	<1.0	<1.0
	5/13/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	12	<1.0	<1.0
MW-08s (23.5-28.5')	7/27/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	11	<1.0	<1.0
	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	13	<1.0	<1.0
	3/16/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	<1.0	<1.0
MW-08s (23.5-28.5')	4/20/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	NA	<1.0
	12/10/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	<1.0	<1.0
DUP-01 (MW-08s)	4/20/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	NA	<1.0
MW-09s (7-12')	3/16/2009	<100	<20	<20	<20	<20	<20	160	1,700	<20	<20
	4/20/2009	NA	<100	<100	<100	<100	<100	220	2,100	NA	<100
	12/9/2009	<100	<20	<20	<20	<20	<20	150	2,400	<20	<20
	3/18/2010	<100	<20	<20	<20	<20	<20	120	1,500	<20	<20
	5/18/2010	<100	<20	<20	<20	<20	<20	120	1,700	<20	<20
	9/8/2010	<100	<20	<20	<20	<20	<20	120	1,700	<20	<20
	2/25/2011	<50	<10	<10	<10	<10	<10	84	1,100	<10	<10
	5/11/2011 ⁽³⁾	<50	<10	<10	<10	<10	<10	83	1,200	<10	<10
MW-10s (8-13')	5/15/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/9/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-10s)	10/4/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-10s)	5/15/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10d (14-19')	12/9/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-11s (29-34')	5/14/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/13/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/17/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/22/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-11s)	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-01 (MW-11s)	9/3/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12s (12-17')	5/15/2009	NA	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0
	12/30/2009	<5.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
	12/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/14/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0
MW-12d (33-38')	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0
	3/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/14/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Notes:

Residential and Industrial Drinking Water (DW) Criteria, Groundwater Surface Water Interface (GSI) Criteria, and Groundwater Contact Criteria from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006, as amended March 25, 2011.

Groundwater Screening Levels (GWSLs) for Vapor Intrusion were calculated in accordance with the MDEQ Remediation and Redevelopment Division Program Redesign 2009 document titled *Background Document: Draft Proposed Vapor Intrusion Indoor Air Criteria (IAC), Soil Gas Criteria (SGC), and Groundwater Screening Levels (GW_{vi}SLs) for Vapor Intrusion*, using both residential and non-residential exposure scenarios and the most recent chemical specific toxicity values accepted and/or published by the United States Environmental Protection Agency (USEPA). Proposed GWSLs were approved by USEPA in a comment letter dated August 24, 2010.

ug/L = micrograms per liter

NC = No criteria

NA = Not analyzed

Bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

3) The average temperature in this sample shipment exceeded the recommended temperature range. Sample results are approximate.

4) Quality control results for trichloroethene are outside the established control limits, the result is approximate.

Table 3
Summary of Detected Volatile Organic Compounds in Groundwater
Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-13s (13-18')	5/15/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/10/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/14/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-14s (4-9')	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/11/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-14d (37.5-42.5')	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-01 (MW-14d)	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Notes:
Residential and Industrial Drinking Water (DW) Criteria, Groundwater Surface Water Interface (GSI) Criteria, and Groundwater Contact Criteria from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006, as amended March 25, 2011.
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Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-15s (30-35')	5/15/2009	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/30/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/17/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17s (3-8')	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/23/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/7/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/11/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-18s (26-31')	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/4/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/17/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-19s (25-30')	7/22/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	31	<1.0	<1.0
	1/13/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.2	2.3	36	<1.0	<1.0
	3/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.7	36	<1.0	<1.0
	5/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	32	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.2	1.8	33	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	37	<1.0	<1.0
	2/18/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.8	41	<1.0	<1.0
	5/10/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	28	<1.0	<1.0
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.0	1.4	27	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.7	28	<1.0	<1.0

Notes:

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Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
DUP-03 (MW-19s)	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	1.0	1.7	32	<1.0	<1.0
DUP-02 (MW-19s)	2/18/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.8	39	<1.0	<1.0
	5/10/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	29	<1.0	<1.0
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.4	27	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	1.1	1.6	28	<1.0	<1.0
MW-19d (40-45')	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/8/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/18/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/10/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-01 (MW-19d)	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-20s (8-13')	12/30/2009	<5.0	48	4.0	9.6	<1.0	<1.0	150	71	2.9	<1.0
	1/13/2010	<5.0	50	3.5	9.0	<1.0	<1.0	170	70	2.8	<1.0
	3/17/2010	<5.0	51	3.8	9.4	<1.0	<1.0	160	64	3.2	<1.0
	5/18/2010	<10	58	5.1	12	<2.0	<2.0	210	94	3.4	<2.0
	9/9/2010	<10	34	4.2	10	<2.0	<2.0	230	110	3.8	<2.0
	12/21/2010	<10	24	3.6	6.1	<2.0	<2.0	200	89	3.6	<2.0
	2/18/2011	<10	19	3.3	5.5	<2.0	<2.0	190	93	3.5	<2.0
	5/13/2011	<10	14	2.8	4.1	<2.0	<2.0	190	91	2.9	<2.0
	7/25/2011	<10	6.5	<2.0	2.4	<2.0	<2.0	190	100	2.3	<2.0
MW-20d (38.5-43.5')	10/10/2011	<1.0	5.8	<2.0	<2.0	<2.0	<2.0	190	110	3.1	<2.0
	12/30/2009	<5.0	1.2	<1.0	86	<1.0	<1.0	1.9	<1.0	<1.0	3.5
	1/13/2010	<5.0	<1.0	<1.0	94	2.0	<1.0	<1.0	<1.0	<1.0	3.7
	3/17/2010	<5.0	<1.0	<1.0	85	<1.0	<1.0	<1.0	<1.0	<1.0	4.4
	5/18/2010	<5.0	<1.0	<1.0	120	<1.0	<1.0	<1.0	<1.0	<1.0	3.7
	9/8/2010	<5.0	<1.0	<1.0	95	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/21/2010	<5.0	<1.0	<1.0	200	<1.0	<1.0	<1.0	<1.0	<1.0	3.5
	2/18/2011	<10	<2.0	<2.0	190	<2.0	<2.0	<2.0	<2.0	<2.0	3.2
	5/13/2011	<10	<2.0	<2.0	170	<2.0	<2.0	<2.0	<2.0	<2.0	2.6
DUP-03 (MW-20d)	7/25/2011	<5.0	<1.0	<1.0	170	<1.0	<1.0	<1.0	<1.0	<1.0	2.6
	10/10/2011	<10	<2.0	<2.0	200	<2.0	<2.0	<2.0	<2.0	<2.0	2.5
DUP-03 (MW-20d)	5/18/2010	<5.0	<1.0	<1.0	120	1.0	<1.0	<1.0	<1.0	<1.0	3.7

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Table 3
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Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-21 (28.5-33.5')	12/8/2009	<50	31	<10	59	<10	<10	54	840	<10	<10
	1/13/2010	<50	28	<10	62	<10	<10	56	730	<10	<10
	3/23/2010	<5.0	33	2.2	81	7.5	<1.0	62	850	<1.0	<1.0
	5/18/2010	<50	35	<10	89	<10	<10	63	830	<10	<10
	10/15/2010	<50	26	<10	80	<10	<10	59	810	<10	<10
	12/22/2010	<50	25	<10	69	<10	<10	55	730	<10	<10
	2/24/2011	<50	25	<10	66	<10	<10	52	730	<10	<10
	5/11/2011 ⁽³⁾	<50	24	<10	65	<10	<10	49	740	<10	<10
	7/28/2011	<50	22	<10	77	<10	<10	54	1,000	<10	<10
DUP-02 (MW-21)	10/6/2011	<50	22	<10	74	<10	<10	55	960	<10	<10
	3/23/2010	<5.0	33	2.2	79	7.8	<1.0	61	810	<1.0	<1.0
DUP-03 (MW-21)	2/24/2011	<50	24	<10	66	<10	<10	50	740	<10	<10
	5/11/2011 ⁽³⁾	<50	24	<10	66	<10	<10	49	750	<10	<10
	7/28/2011	<50	23	<10	78	<10	<10	57	1,000	<10	<10
	10/6/2011	<50	21	<10	73	<10	<10	52	910	<10	<10
MW-22 (25-30')	12/7/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
	3/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.5
	5/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.0
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.3
	12/22/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.0
	2/24/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3
	5/11/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4
	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8
MW-23 (17-22')	10/4/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.2
	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.2
	1/13/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.6
	3/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0
	5/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.1
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.0
	12/21/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	17
	2/18/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18
	5/10/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	25
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	23
	11/4/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11

Notes:

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Fourth Quarter 2011

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Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-24s (18.5'-23.5')	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/14/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/19/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-24d (39-44')	12/8/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/14/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/19/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-25s (20-25')	12/10/2009	<5.0	1.7	<1.0	8.8	<1.0	<1.0	4.8	<1.0	<1.0	<1.0
	3/16/2010	<5.0	1.2	<1.0	<1.0	<1.0	<1.0	17	1.1	<1.0	<1.0
	5/14/2010	<5.0	1.2	<1.0	<1.0	<1.0	<1.0	18	1.0	<1.0	<1.0
	9/9/2010	<5.0	1.0	<1.0	<1.0	<1.0	<1.0	19	1.4	<1.0	<1.0
	12/22/2010	<5.0	1.2	<1.0	<1.0	<1.0	<1.0	26	2.4	<1.0	<1.0
	2/24/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	19	2.2	<1.0	<1.0
	5/13/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	21	2.2	<1.0	<1.0
	7/28/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	19	2.5	<1.0	<1.0
DUP-01 (MW-25s)	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	2.8	<1.0	<1.0
MW-26s (28-33')	3/16/2010	<5.0	1.3	<1.0	<1.0	<1.0	<1.0	18	1.0	<1.0	<1.0
	4/6/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/14/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/17/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/25/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-27s (7-12')	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.0	<1.0	<1.0
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0
	7/21/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DUP-02 (MW-27s)	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-27d (37.5-42.5')	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/9/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/20/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/9/2011 ⁽³⁾	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-28s (25-30')	7/22/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/5/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-28d (49-54')	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/22/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/16/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/22/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/7/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Notes:
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Bold font denotes concentrations detected above laboratory reporting limits

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Table 3
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Former Tecumseh Products Company Site
Tecumseh, Michigan
Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-29s (13-18')	3/18/2010	<5.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/15/2010	<5.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-29d (58.5-63.5')	3/18/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/15/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/12/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-30s (11-16')	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/13/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-30d (25.5-30.5')	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/23/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/17/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	9/10/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/16/2010	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	2/15/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/13/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-31 (33.3-38.3')	7/20/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/10/2011	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/18/2010	<5.0	14	<1.0	19	2.2	<1.0	20	180	<1.0	<1.0
	9/9/2010	<10	<2.0	<2.0	15	<2.0	<2.0	48	220	<2.0	2.5
	12/22/2010 ⁽⁴⁾	<10	16	<2.0	29	2.9	<2.0	27	260	<2.0	<2.0
	2/24/2011	<10	16	<2.0	31	3.1	<2.0	26	300	<2.0	<2.0
	5/11/2011 ⁽³⁾	<10	15	<2.0	24	3.0	<2.0	22	250	<2.0	<2.0
	7/21/2011	<5.0	7.4	<1.0	14	1.2	<1.0	11	130	<1.0	<1.0
	10/4/2011	<5.0	18	<1.0	40	3.4	<1.0	28	340	<1.0	<1.0

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Former Tecumseh Products Company Site
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Fourth Quarter 2011

Analyte		2-Butanone	1,1-Dichloroethane	1,1-Dichloroethene ⁽²⁾	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Trichloro-fluoromethane	Vinyl Chloride
Residential DW Criteria		13,000	880	7.0	70	100	5.0	200	5.0	2,600	2.0
Industrial DW Criteria		38,000	2,500	7.0	70	100	5.0	200	5.0	7,300	2.0
GSI Criteria		2,200	740	130	620	1,500 ⁽¹⁾	60 ⁽¹⁾	89	200 ⁽¹⁾	NC	13 ⁽¹⁾
Residential GWSLs for Vapor Intrusion		4.5E+06	130	390	440	330	11	15,000	9.9	370	5.0
Non-Residential GWSLs for Vapor Intrusion		1.9E+07	670	1,600	1,800	1,400	55	63,000	42	1,600	50
Groundwater Contact Criteria		2.4E+08	2.4E+06	11,000	2.0E+05	2.2E+05	12,000	1.3E+06	22,000	1.1E+06	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
DUP-01 (MW-31)	6/18/2010	<5.0	12	<1.0	19	2.3	<1.0	21	170	<1.0	<1.0
MW-32s (23-28')	9/10/2010	<100	150	<20	270	26	<20	220	2,400	<20	<20
	11/18/2010	<100	<20	<20	190	<20	<20	560	2,800	<20	<20
	12/28/2010	<100	<20	<20	200	<20	<20	510	2,300	<20	<20
	2/25/2011	<100	<20	<20	190	<20	<20	420	2,300	<20	<20
	5/10/2011 ⁽³⁾	<100	<20	<20	170	<20	<20	380	2,300	<20	31
	7/28/2011	<100	<20	<20	140	<20	<20	380	2,400	<20	<20
	10/6/2011	<100	<20	<20	160	<20	<20	350	2,200	<20	<20
MW-33s (21-26')	9/10/2010	<5.0	12	<1.0	13	<1.0	<1.0	<1.0	76	<1.0	64
	11/18/2010	<5.0	14	<1.0	22	<1.0	<1.0	1.1	150	<1.0	56
	12/22/2010	<5.0	14	<1.0	22	1.2	<1.0	1.0	130	<1.0	57
	2/24/2011	<5.0	12	<1.0	20	1.0	<1.0	<1.0	110	<1.0	60
	5/10/2011 ⁽³⁾	<10	11	<2.0	21	<2.0	<2.0	<2.0	220	<2.0	55
	7/28/2011	<10	8.9	<2.0	18	<2.0	<2.0	<2.0	260	<2.0	22
	10/6/2011	<10	11	<2.0	19	<2.0	<2.0	<2.0	220	<2.0	48
DUP-01 (MW-33s)	11/18/2010	<5.0	14	<1.0	23	<1.0	<1.0	1.2	150	<1.0	55
MW-34s (23-28')	9/17/2010	<100	<20	<20	<20	<20	<20	1,600	1,100	<20	<20
	11/18/2010	<100	<20	<20	<20	<20	<20	1,600	1,200	<20	<20
	12/28/2010	<50	<10	13	<10	<10	<10	1,400	1,000	<10	<10
	2/25/2011	<50	<10	<10	<10	<10	<10	1,100	900	<10	<10
	5/10/2011 ⁽³⁾	<50	<10	<10	<10	<10	<10	1,200	970	<10	<10
	7/28/2011	<50	<10	<10	<10	<10	<10	1,300	1,100	<10	<10
	10/6/2011	<50	<10	<10	<10	<10	<10	1,200	1,000	<10	<10

Notes:

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