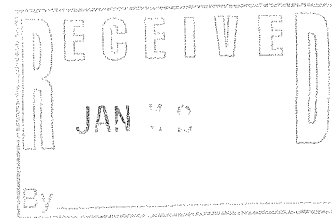
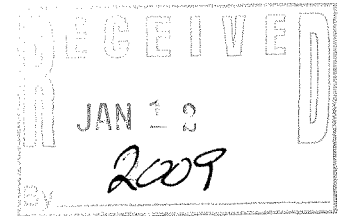


January 8, 2009

Mr. John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, WI 53703-0408



**Subject: July Through December 2008 Semiannual Status Report
Monitored Natural Attenuation Demonstration
Tecumseh Products Company, Grafton, Wisconsin
WDNR FID #24009170, BRRTS #02-46000751**



Dear Mr. Feeney:

Monitored natural attenuation (MNA) is ongoing at the Tecumseh Products Company (Tecumseh) in Grafton, Wisconsin. In December 2007, RMT, Inc. (RMT), on behalf of Tecumseh, submitted an MNA Demonstration Workplan to the Wisconsin Department of Natural Resources (WDNR), which outlined four rounds of semiannual monitoring to be completed at the site. The first round of sampling was completed in April 2008, and a Status Letter Report was submitted to the WDNR on June 23, 2008. The second round of sampling was completed in October 2008. In addition, Tecumseh has addressed other items requested by the WDNR in the WDNR's Conceptual Approval of the MNA Workplan since the previous reporting period. The purpose of this letter is to document the October 2008 sampling results and additional activities that have occurred at the site since June 2008.

Additional Activities

Well Construction

As part of the WDNR's Conceptual Approval of the Workplan, Tecumseh agreed to install an additional water table well to the east of the plant. On July 21, 2008, RMT oversaw the installation of MW-27. MW-27 was sampled on July 22, 2008, and this sampling event served as the baseline event for that well. Documentation of the well construction and a summary of the baseline sampling event were provided to the WDNR on August 21, 2008.

Well Abandonment of PW-30

The Heiser private well (PW-30), 951 N. Green Bay Road is no longer being used for drinking water; however, to ensure that this well presents no future risk, PW-30 was abandoned on September 3, 2008, and the Heiser property was connected to the City of Grafton's water supply. A copy of the well abandonment form is included in Attachment A.

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Downgradient Vapor Intrusion Evaluation

As part of the WNDR's Conceptual Approval of the Workplan, Tecumseh agreed to further investigate the off-site vapor intrusion potential downgradient from the former plant. Seven soil gas sampling wells were installed and sampled in July 2008. The results were presented to the WDNR in a letter dated August 22, 2008. The results of the soil gas sampling showed no evidence of impact from the groundwater plume.

Semiannual Monitoring

Sampling Method

The second round of semiannual groundwater monitoring was completed for the site in October 2008 for the wells shown on Figure 1. Since the previous semiannual report, and as discussed above, PW-30 was abandoned and has therefore been removed from the monitoring program, and MW-27 was constructed and has thus been added to the MNA program.

Groundwater samples were collected using low-flow purging and sampling methods. (The previous consultants did not use low-flow sampling methods; however, low-flow sampling was specified for the implementation of the MNA Demonstration workplan.) Groundwater samples were sent to Pace Analytical Services, Inc., and laboratory-analyzed for chloride, iron, manganese, nitrogen, sulfate, total organic carbon (TOC), and chlorinated volatile organic compounds (CVOCs). The laboratory reports for this period are included in Attachment B. In addition, the water level, pH, specific conductivity, temperature, oxidation-reduction potential, and dissolved oxygen concentration of the groundwater samples were measured in the field.

Results

The results of the CVOC analysis are summarized in Table 1, and the results of the field parameter measurements and nonvolatile compound laboratory analyses are summarized in Table 2.

For the on-site wells in the West Dock Area, the concentration of TCE rebounded somewhat in MW-25 between the April and October 2008 monitoring events. This rebound is likely due to soil flushing from significant rain events this summer; however additional data from future monitoring events will be needed to confirm this trend and conclusion. Although an increase in TCE was observed in this area, reductive dechlorination appears to be controlling the transport of TCE in the groundwater; as demonstrated by the increase in the concentration of the breakdown products cis-1,2-DCE and vinyl chloride in MW-25, the significant decrease in concentration of TCE between MW-25 and downgradient well MW-26, and the ongoing reducing conditions that persist in this area (ORP < -50 and DO <1).

Mr. John Feeney
Wisconsin Department of Natural Resources
January 8, 2009
Page 3

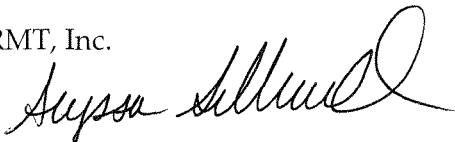
For the on-site wells along the eastern property line, the concentration of TCE remains relatively stable. For the off-site downgradient wells, the concentration of TCE remains stable in each of the wells with the exception of MW-19BR1. The apparent increase in the concentration of TCE in MW-19BR1 has raised questions as to whether the samples from MW-19BR1 and MW-19BR2 were mislabeled in some past events. The sample tubing for the MW-19BR1/19BR2 well nest is in the same well casing, and the labeling at the surface for the tubing leaves room for interpretation by the sampler. Therefore, RMT will take measures to confirm the labeling on the tubing during the next sampling event and will subsequently provide further interpretation of the data from MW-19BR1 and MW-19BR2.

RMT expects to complete the next round of groundwater monitoring in April 2009. A letter documenting the site activities and groundwater sampling results will be submitted to the WDNR the following summer.

Please feel free to contact Mr. Tom Stolzenburg, at 608-662-5287, or Alyssa Sellwood, at 608-662-5480, if you have any questions.

Sincerely,

RMT, Inc.



Alyssa Sellwood, P.E.
Project Engineer



Thomas R. Stolzenburg
Senior Project Manager

Attachments: Tables 1 and 2
Figure 1
Attachment A – Laboratory Reports

cc: Jason Smith – Tecumseh Products Company
Henry Handzel – DeWitt, Ross, and Stevens
John Rice – RMT

Attachment A
Laboratory Reports

Table 1
 Summary of Chlorinated VOCs Detected in Groundwater ($\mu\text{g/L}$)
 Tecumseh Products Company - Grafton, Wisconsin

WELL I.D.	SAMPLE DATE	TCE	CIS-1,2-DCE	TRANS-1,2-DCE	VINYL CHLORIDE	1,1,1-TCA	1,1-DCA	1,1-DCE	CHLOROETHANE
On-Site Monitoring Wells									
NR 140 Enforcement Standard		5	70	100	0.2	200	850	7	400
NR 140 Preventive Action Limit		0.5	7	20	0.02	40	85	0.7	80
MW-24R	4/28/2008	1.2 J	< 0.83	< 0.89	0.52 J	< 0.9	12.7	< 0.57	75.8
	10/7/2008	1.8	1.5 J	< 0.89	0.63	< 0.9	1.1 J	< 0.57	7.7
MW-25	4/30/2008	354	4.7 J	< 4.4	< 0.9	< 4.5	< 3.8	< 2.8	< 4.8
	10/8/2008	3,770	534	< 22.2	48.3	< 22.5	< 18.8	< 14.2	< 24.2
MW-26	4/30/2008	39.5	345	2.8 J	210	< 2.2	7.3	3.3 J	10
	10/8/2008	44.3	721	39	148	4.9 J	25.2	< 2.8	13.6 J
Eastern Property Line Wells									
MW-3	4/28/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/8/2008	DRY							
MW-3D	4/28/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/8/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	4.5	< 0.57	< 0.97
MW-3BR1	4/29/2008	102	18.5	< 0.89	1.2	36.4	27.1	10.7	< 0.97
	10/7/2008	104	18	< 0.89	1.3	51	28.1	11.1	< 0.97
MW-3BR2	4/29/2008	170	47.7	< 0.89	2	3.9	12.6	1.6 J	< 0.97
	10/7/2008	216	45.3	1.9 J	2.1	5.7	17.9	2.4	< 0.97
MW-3BR3	4/28/2008	No Sample							
	10/7/2008	222	61	8.3	3.9	7.1 J	28	2.5 J	< 2.4
MW-9	4/28/2008	992	1,010	< 8.9	< 1.8	211	94.8	16.1 J	< 9.7
	10/9/2008	1,200	819	9.8 J	< 1.8	225	45.3	21.1	< 9.7
MW-9D	4/28/2008	519	89.2	< 4.4	< 0.9	78.9	111	11.4	< 4.8
	10/9/2008	522	149	< 8.9	10.6	59.1	130	6.3 J	< 9.7
MW-12	4/28/2008	303	4.2 J	< 4.4	< 0.9	< 4.5	< 3.8	< 2.8	< 4.8
	10/9/2008	778	8.3 J	< 8.9	< 1.8	24.6 J	< 7.5	< 5.7	< 9.7
MW-12BR	4/30/2008	24.6	91.8	< 0.89	< 0.18	24.9	38.9	4.2	< 0.97
	10/8/2008	11.6	86.6	< 0.89	< 0.18	15	31.1	2.8	< 0.97
MW-13BR2	4/29/2008	311	25.5	< 2.2	1.8	185	191	7.5	< 2.4
	10/8/2008	265	29	< 0.89	2.7	155	158	34.8	< 0.97
MW-13BR3	4/29/2008	149	13.4	< 0.89	0.45 J	58.8	64.2	14.5	< 0.97
	10/8/2008	115	13.9	< 0.89	0.44 J	43.3	51.1	11.3	< 0.97

Table 1 (continued)
 Summary of Chlorinated VOCs Detected in Groundwater ($\mu\text{g/L}$)
 Tecumseh Products Company - Grafton, Wisconsin

WELL I.D.	SAMPLE DATE	TCE	CIS-1,2-DCE	TRANS-1,2-DCE	VINYL CHLORIDE	1,1,1-TCA	1,1-DCA	1,1-DCE	CHLOROETHANE
On-Site Monitoring Wells									
NR 140 Enforcement Standard		5	70	100	0.2	200	850	7	400
NR 140 Preventive Action Limit		0.5	7	20	0.02	40	85	0.7	80
Off-Site Downgradient Wells									
MW-14BR	4/29/2008	0.49 J	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/8/2008	0.48 J	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
MW-18BR1	4/29/2008	48	19	< 0.89	< 0.18	5.7	28.2	3.3	< 0.97
	10/7/2008	48.6	16.9	< 0.89	< 0.18	5.3	25.8	3.1	< 0.97
MW-18BR2	4/29/2008	129	63.9	1.4 J	< 0.18	19.5	96.4	12.8	< 0.97
	10/7/2008	146	63.4	2.8 J	< 0.18	20.1	96.2	12.3	< 0.97
MW-19BR1	4/29/2008	18.3	2.6 J	< 0.89	< 0.18	< 0.9	4.2	0.093 J	< 0.97
	10/7/2008	227	125	2.6 J	7.8	< 0.9	120	30.5	< 0.97
MW-19BR2	4/28/2008	No Sample							
	10/7/2008	< 0.48	< 0.83	< 0.89	0.87	< 0.9	< 0.75	< 0.57	< 0.97
MW-20BR1	4/29/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/7/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
MW-20BR2	4/29/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/7/2008	< 0.48	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
MW-22BR	4/29/2008	53.2	8.8	< 0.89	< 0.18	< 0.9	1.4 J	< 0.57	< 0.97
	10/8/2008	18.1	3.7	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
PW-30 (Heiser) ⁽¹⁾	4/29/2008	1.2 J	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
MW-27 ⁽²⁾	7/22/2008	0.98 J	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97
	10/8/2008	0.53 J	< 0.83	< 0.89	< 0.18	< 0.9	< 0.75	< 0.57	< 0.97

Notes:

⁽¹⁾ PW-30 (Heiser) was abandoned on September 3, 2008.

⁽²⁾ MW-27 was installed on July 22, 2008.

Bolded values = constituents that exceed NR 140 Enforcement Standards.

J = concentration detected equal to or greater than the method detection limit but less than the reporting limit.

DCE = dichloroethene.

DCA = dichloroethane.

TCA = trichloroethane.

TCE = trichloroethene.

Entered by: PMP 11/20/08

QC by: AAS 11/20/08

Table 2
Summary of Groundwater Field and Degradation Evaluation Parameters
Tecumseh Products Company - Grafton, Wisconsin

SAMPLE LOCATION	SAMPLE DATE	WATER LEVEL	pH	SPECIFIC CONDUCTANCE	TEMPERATURE	ORP	DISSOLVED OXYGEN	DISSOLVED NITRATE	DISSOLVED MANGANESE	DISSOLVED IRON	DISSOLVED SULFATE	CHLORIDE	TOC
UNITS		ft (M.S.L.)		$\mu\text{mhoms/cm}$	$^{\circ}\text{C}$	mV	mg/L	mg/L	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	mg/L	mg/L
On-Site Monitoring Wells													
MW-24R	4/28/08	753.95	7.08	1,735	10.3	-182	0.18	< 0.085 H	189	130 H	20.5	402	6.4
	10/7/08	747.87	7.1	1,080	16.5	-165	1.48 J	<0.085	140	<26	17.6	103	6.3
MW-25	4/30/08	757.86	7.18	820	11.7	-62	0.22	< 0.085 H	60.7	< 26 H	92.4	28.2 B	< 1.4
	10/8/08	753.01	7.2	875	14.9	-80	0.57	<0.085	66.6	<26	85.6	28.4	<1.4
MW-26	4/30/08	753.61	7.09	970	15	-164	0.18	< 0.085 H	83.8	< 26 H	89.8	72.6	< 1.4
	10/8/08	747.98	6.98	1,452	16	-183	0.96	<0.085	206	<26	92	186	3.3
Eastern Property Line Wells													
MW-3	4/28/08	755.21	7.25	1,343	8.1	176	4.51	3.6 H	8	< 26 H	21.4	241	1.9
	10/8/08												dry
MW-3D	4/28/08	752.86	6.94	1,136	12.5	-172	0.17	< 0.085 H	115	150 H	74.8	111	< 1.4
	10/8/08	746.81	7.12	1,189	15	-167	0.35	0.28 JH	73.2	<26	48.8	135	<1.4
MW-3BR1	4/29/08	NM	7.08	768	13	-237	0.33	< 0.085	59	< 26 H	68.6	35.9 B	2.1
	10/7/08	NM	7.13	790	16.1	-281	0.2	<0.085	59.5	<26	60.7	32.5	1.8 J
MW-3BR2	4/29/08	NM	7.2	1,117	14	-221	0.15	< 0.085	46	< 26 H	83.4	102	< 1.4
	10/7/08	NM	7.26	1,119	15.2	-169 R	0.5 R	<0.085	43.4	<26	82.8	99.8	1.4 J
MW-3BR3	4/29/08												No Sample
	10/7/08	NM	7.18	1,012	14.9	-231	0.2	<0.085	50.7	<26	83.3	73.4	1.6 J
MW-9	4/28/08	752.98	6.97	2,170	9	220	3.95	4.8 H, M	1.1 J	< 26 H	27.9 M	437 M	2.7
	10/9/08	746.73	6.87	1,371	17.6	56	1.19	3.3	17.9	<26	23.0 B	200	1.9 J
MW-9D	4/28/08	752.92	7.18	1,183	11.8	-88	0.39	< 0.085 H	130	< 26 H	86.8	119	< 1.4
	10/9/08	746.72	7.08	1,160	15	-98	0.15	<0.085	100	<26	87.2	117	<1.4
MW-12	4/28/08	753.01	7.17	769	9	250	2.39	0.18 H	9.1	< 26 H, R1	25.1 M	73.8 M	< 1.4
	10/9/08	746.74	6.81	770	NA	124	0.85	0.20 J	28.1	<26	26.9 B	57.2	<1.4
MW-12BR	4/30/08	752.61	7.18	1,031	11.2	-235	0.16	< 0.085 H	48.6	< 26 H	90.8	91.5	< 1.4
	10/8/08	746.59	7.35	1,087	15.2	-323	0.49	<0.085	66.1	<26	60.2	87.3	<1.4
MW-13BR2	4/29/08	NM	7.18	1,093	11.7	-201	0.29	< 0.085	73.4	< 26 H	87.6	108	< 1.4
	10/8/08	NM	6.98	1,105	16.3	-215	0.42	0.58	73.5	<26	78	102	<1.4
MW-13BR3	4/29/08	NM	7.21	917	12	-192	0.3	< 0.085	213	< 26 H	79.8	68.6	< 1.4
	10/8/08	NM	7.05	943	16.5	-184	0.50	<0.085	212	<26	77.3	61.5	<1.4

Table 2 (continued)
Summary of Groundwater Field and Degradation Evaluation Parameters
Tecumseh Products Company - Grafton, Wisconsin

SAMPLE LOCATION	SAMPLE DATE	WATER LEVEL	pH	SPECIFIC CONDUCTANCE	TEMPERATURE	ORP	DISSOLVED OXYGEN	DISSOLVED NITRATE	DISSOLVED MANGANESE	DISSOLVED IRON	DISSOLVED SULFATE	CHLORIDE	TOC
Off-Site Downgradient Wells													
MW-14BR	4/29/08	743.37	7.33	859	9.8	32	7.32	11.4 H	0.8 J	< 26 H	32.5	63.1	< 1.4
	10/8/08	736.08	7.13	856	15.9	208	8.06	10.0 H	1.5 J	<26	28.8	55.6	<1.4
MW-18BR1	4/29/08	NM	7.28	1,135	10.8	-68	4.48	7.8	0.67 J	< 26 H	36.9	136	< 1.4
	10/7/08	NM	7.17	1,166	13.5	-136	2.5	6.3	2.5 J	<26	34.7	134	1.6 J
MW-18BR2	4/29/08	NM	7.15	1,616	11	-251	1.08	3	102	< 26 H	43	243	19.4
	10/7/08	NM	7.1	1,496	13.4	-244	0.5	3.1	39.1	<26	44.6	242	1.8 J
MW-19BR1	4/29/08	NM	7.35	298	10.4	-180	0.3	0.31 J	10.2	< 26 H	5.5	6.7 B	9
	10/7/08	NM	7.08	1,024	12.2	-268	2.51	<0.085	101	<26	52.3	96	2.5
MW-19BR2	4/29/08	No Sample											
	10/7/08	NM	7.01	539	12.7	-299	2.19	2	204	<26	6.4	3.1 J	2.3
MW-20BR1	4/29/08	NM	8.13	987	9	-134	1.8	0.14 J	74.3	< 26 H	14.8	751	8.3
	10/7/08	NM	7.69	778	12.9	-274	1.62	0.16 J	93.2	<26	4.5	142	14.7
MW-20BR2	4/29/08	NM	6.93	1,554	10.4	-270	0.34	0.15 J	193	38 J, H	2.2 J	361	15.5
	10/7/08	NM	6.52	1,865	12.9	-290	0.31	0.16 J	189	<26	3.1 J	419	14.5
MW-22BR	4/29/08	749.78	7.38	732	12	-6	1.4	0.32 J	73.3	< 26 H	49.2	42.1 B	< 1.4
	10/8/08	743.91	7.18	760	14	180	0.5	0.17 JH	81.8	<26	41.5	52.5	<1.4
MW-27 ⁽²⁾	7/22/08	750.34	7.27	626	13.4	134	3.39	0.18 JM	52.7	<26	14.1 B	4 JM	4 JM
	10/8/08	746.89	7.09	512	15.1	62	2.61	<0.085	34	<26	15	3.1 J	<1.4
PW-30 (Heiser) ⁽¹⁾	4/29/08	NM	7.78	NA	10.2	-10	6.85	9.2 H	0.63 J	< 26 H	34.2	38.8 B	< 1.4
Terminal Electron Accepting Process ⁽³⁾			--	--	--	--	Aerobic respiration	Denitrification	Manganese reduction	Iron (III) reduction	Sulfate reduction	--	--
Trend During Biodegradation ⁽³⁾⁽⁴⁾			Optimal range: 5 to 9	Increase over background	--	< 50 mV suggests reductive dechlorination possible	Reductive dechlorination can occur in groundwater microcosms at < 1 to 2 mg/L	< 1 mg/L in source area	Increase over background	Increase over background	Decrease compared to background	Increase over background	> 20 mg/L preferred

Notes:

- NM = not measured. Water levels cannot be measured in the multi-level water 100 wells.
- NS = not sampled.
- B = analyte present in the method blank.
- H = preservation, extraction, or analysis performed past holding time.
- J = estimated value.
- M = matrix spike recovery was outside laboratory control limits.
- R1 = relative percent difference (RPD) value was outside control limits.
- = injection date not applicable as injections not performed in close proximity to well.

Footnotes:

- ⁽¹⁾ PW-30 (Heiser) was abandoned on 9/3/08.
- ⁽²⁾ MW-27 was installed on 7/22/08.
- ⁽³⁾ Wiedemier, 1998.
- ⁽⁴⁾ WDNR quick reference guide to natural biodegradation of chlorinated solvents, May 2007.

Entered by: PMP 11/20/08
 QC by: AAS 11/20/08



LEGEND

- WELLS IN MONITORING PROGRAM FOR MNA DEMONSTRATION APPROACH
- WELLS NOT IN PROGRAM

NOTES

1. AERIAL PHOTOGRAPHY FROM USDA – NATIONAL AGRICULTURE IMAGERY PROGRAM, DATED: JUNE 2, 2005 AND IMAGERY FROM SOUTH EAST WISCONSIN REGIONAL PLANNING COMMISSION, 2005.
2. PW-30 WAS ABANDONED ON SEPTEMBER 3, 2008 AND WAS THEREFORE REMOVED FROM THE MNA PROGRAM.
3. THE LOCATION OF MW-22BR(old) WAS BASED ON HISTORICAL MAPPING FROM THE SITE, BUT IS NOT THE LOCATION OF THE WELL INCLUDED IN RMT'S SAMPLING PROGRAM. THE PRECISE LOCATION OF MW-22BR WAS SURVEYED WITH A GPS UNIT IN JULY 2008, AND IS SHOWN ON THIS FIGURE. RMT HAS NOT FIELD VERIFIED IF A WELL IS LOCATED AT MW-22BR(old).



0 500 1,000 FEET

1" = 500'
1:6,000

PROJECT: TECUMSEH PRODUCTS COMPANY GRAFTON, WI			
SHEET TITLE: MNA MONITORING NETWORK			
DRAWN BY: PAPEZ J	SCALE: AS NOTED	PROJ. NO. 00-007397.07	
CHECKED BY: SAK		FILE NO. 73970501.mxd	
APPROVED BY: JMR	DATE PRINTED: 12/8/2008	FIGURE 1	
DATE: DECEMBER 2008			

RMT

744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334