

Smith, Ralph N - DNR

From: Dave Larsen <dlarsen@reiengineering.com>
Sent: Thursday, March 15, 2018 9:31 AM
To: Smith, Ralph N - DNR
Subject: mack lake
Attachments: Mack Lake - updated draft analytical table 2-2018.pdf

Follow Up Flag: Follow up
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Ralph – draft summary tables for 2nd of 4 approved rounds of groundwater sampling.

Thank you,
David N. Larsen P.G
Senior Hydrogeologist / Professional Geologist



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**Table 2a
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI**

Parameter	Sample Location			PZ100										Project Stalled
	ES	PAL	Date Units	11-Oct-04	18-Nov-04	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	
DRO			mg/l	1,700	NA	NA	NA	NA		Not	Not	Not	Not	
GRO			mg/l	3,100	NA	NA	NA	NA		Sampled	Sampled	Sampled	Sampled	
Lead	15	1.5	µg/l	NA	NA	< 1.4	NA	NA						
VOC Parameters														
Benzene	5	0.5	µg/l	3.3	11	NA	8	3.6						
Toluene	800	160	µg/l	32	< 0.22	NA	< 1.1	1.32*						
Ethylbenzene	700	140	µg/l	34	8.1	NA	4.1	1.16*						
Xylenes (mixed isomers)	2,000	400	µg/l	150	23	NA	7	3.3*						
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	10	NA	< 0.88	< 0.52						
Naphthalene	100	10	µg/l	7.4	NA	NA	NA	NA						
Trimethylbenzenes (mixed isomers)	480	96	µg/l	300	244	NA	113	23.6						

Parameter	Sample Location			PZ100							
	ES	PAL	Date Units	12-Jan-11	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	31-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA	NA	NA	Not
GRO			mg/l	NA	NA	NA	NA	NA	NA	NA	Sampled
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	
VOC Parameters											
Benzene	5	0.5	µg/l	1.78*	259	18.2	< 0.39	7.10	< 0.40	< 0.40	
Toluene	800	160	µg/l	1.81*	19.8	5.1	0.79*	0.85*	< 0.39	< 0.39	
Ethylbenzene	700	140	µg/l	0.794*	58.1	12.1	4.7	2.30	5.60	0.66*	
Xylenes (mixed isomers)	2,000	400	µg/l	3.24	98.2	24.49	7.9	4.97	16.50	1.6*	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.30	< 0.76	< 0.38	< 0.38	< 0.38	< 0.48	< 0.48	
Naphthalene	100	10	µg/l	< 2.0	10.9	5.1	1.6	0.84*	2.0	0.80*	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	2.33*	34.5	10.7	6.0	3.8	10.4	13.4	

Notes:

ES = NR140.10 Enforcement Standards

PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

All samples results prior to 1-12-2011 were collected, analyzed and reported by others

**Table 2b
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI**

Parameter	Sample Location			MW500										Project Stalled
	ES	PAL	Date Units	11-Oct-04	18-Nov-04	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	
DRO			mg/l	< 100	NA	NA	NA	Not		Not	Not	Not	Not	
GRO			mg/l	< 50	NA	NA	NA	Sampled		Sampled	Sampled	Sampled	Sampled	
Lead	15	1.5	µg/l	NA	NA	NA	NA							
VOC Parameters														
Benzene	5	0.5	µg/l	< 0.20	< 0.25	NA	< 0.25	No		Well	Well	Well	Well	
Toluene	800	160	µg/l	< 0.20	< 0.11	NA	< 0.11	Access		Under	Under	Under	Under	
Ethylbenzene	700	140	µg/l	< 0.50	< 0.22	NA	< 0.22	to		Asphalt	Asphalt	Asphalt	Asphalt	
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.50	< 0.39	NA	< 0.39	Well						
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.23	NA	< 0.23							
Naphthalene	100	10	µg/l	< 0.25	NA	NA	NA							
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.20	< 0.44	NA	< 0.44							
Natural Attenuation Parameters														
Iron	0.30	0.15	mg/l	NA	NA	NA	NA							
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA							
Sulfate	250	125	mg/l	NA	NA	NA	NA							

Parameter	Sample Location			MW500							
	ES	PAL	Date Units	12-Jan-11	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	Not	NA	NA	Not	Not
GRO			mg/l	NA	NA	NA	Sampled	NA	NA	Sampled	Sampled
Lead	15	1.5	µg/l	NA	NA	NA		NA	NA		
VOC Parameters											
Benzene	5	0.5	µg/l	< 0.31	< 0.39	< 0.39		< 0.39	< 0.40		
Toluene	800	160	µg/l	0.669*	< 0.42	< 0.42		< 0.42	< 0.39		
Ethylbenzene	700	140	µg/l	< 0.50	< 0.41	< 0.41		< 0.41	< 0.39		
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.62	< 0.87	< 0.87		< 0.87	< 0.80		
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.38	< 0.38		< 0.38	< 0.48		
Naphthalene	100	10	µg/l	< 2.0	< 0.40	< 0.40		< 0.40	< 0.42		
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.44	< 0.43	< 0.43		< 0.43	< 0.42		
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l	NA	NA	NA		NA	NA		
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA		NA	NA		
Sulfate	250	125	mg/l	NA	NA	NA		NA	NA		

Notes:

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Enforcement Standard exceeded

BOLD
<i>Italics</i>

Preventive Action Limit exceeded

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Table 2c
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			MW600										
	ES	PAL	Date Units	11-Oct-04	18-Nov-04	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled
DRO			mg/l	< 100	NA	NA	Not	NA		NA	NA	NA	NA	
GRO			mg/l	< 50	NA	NA	Sampled	NA		NA	NA	NA	NA	
Lead	15	1.5	µg/l	NA	NA	NA		NA		NA	NA	NA	NA	
VOC Parameters														
Benzene	5	0.5	µg/l	< 0.20	< 0.25	NA	No	< 0.17		< 0.25	< 0.25	< 0.25	< 0.25	
Toluene	800	160	µg/l	< 0.20	< 0.11	NA	Access	< 0.78		< 0.11	< 0.11	< 0.11	< 0.11	
Ethylbenzene	700	140	µg/l	< 0.50	< 0.22	NA	to	< 1.0		< 0.22	< 0.22	< 0.22	< 0.22	
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.50	< 0.39	NA	Well	< 2.84		< 0.39	< 0.39	< 0.39	< 0.39	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.23	NA		< 0.52		< 0.23	< 0.23	< 0.23	< 0.23	
Naphthalene	100	10	µg/l	< 0.25	NA	NA		NA		< 0.50	< 0.50	< 0.50	< 0.50	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.20	< 0.44	NA		< 1.95		< 0.25	< 0.25	< 0.25	< 0.25	
Natural Attenuation Parameters														
Iron	0.30	0.15	mg/l	NA	NA	NA		NA		2.3	34	4.2	72	
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA		NA		< 0.1	< 0.1	< 0.5	< 0.1	
Sulfate	250	125	mg/l	NA	NA	NA		NA		5.00	1.00	1.80	< 1.5	

Parameter	Sample Location			MW600							
	ES	PAL	Date Units	12-Jan-11	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	Not	NA	NA	Not	NA	NA	Not	Not
GRO			mg/l	Sampled	NA	NA	Sampled	NA	NA	Sampled	Sampled
Lead	15	1.5	µg/l		NA	NA		NA	NA		
VOC Parameters											
Benzene	5	0.5	µg/l	Under	< 0.39	< 0.39		< 0.39	< 0.40		
Toluene	800	160	µg/l	Debris	< 0.42	< 0.42		< 0.42	< 0.39		
Ethylbenzene	700	140	µg/l		< 0.41	< 0.41		< 0.41	< 0.39		
Xylenes (mixed isomers)	2,000	400	µg/l		< 0.87	< 0.87		< 0.87	< 0.80		
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l		< 0.38	< 0.38		< 0.38	< 0.48		
Naphthalene	100	10	µg/l		< 0.40	< 0.40		< 0.40	< 0.42		
Trimethylbenzenes (mixed isomers)	480	96	µg/l		< 0.43	< 0.43		< 0.43	< 0.42		
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l		NA	NA		NA	NA		
Nitrate/Nitrite	10	2	mg/l		NA	NA		NA	NA		
Sulfate	250	125	mg/l		NA	NA		NA	NA		

Notes:

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Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

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**Table 2d
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI**

Parameter	Sample Location			MW700										
	ES	PAL	Date	11-Oct-04	18-Nov-04	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled
DRO			mg/l	170	NA	NA	NA	NA		NA	NA	NA	NA	
GRO			mg/l	470	NA	NA	NA	NA		NA	NA	NA	NA	
Lead	15	1.5	µg/l	NA	NA	< 1.4	NA	NA		NA	NA	NA	NA	
VOC Parameters														
Benzene	5	0.5	µg/l	31	37	NA	53	11.6		<i>1.60</i>	<i>1.30</i>	<i>0.83</i>	<i>1.10</i>	
Toluene	800	160	µg/l	1.2	2.0	NA	2.4	5.9		< 0.11	< 0.11	< 0.11	< 0.11	
Ethylbenzene	700	140	µg/l	8.9	10	NA	19	3.6		4.00	1.00	1.00	0.29	
Xylenes (mixed isomers)	2,000	400	µg/l	1.3	1.5	NA	3.4	< 1.28		< 0.39	< 0.39	< 0.39	< 0.39	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.23	NA	< 0.63	< 0.34		< 0.23	< 0.23	< 0.23	< 0.23	
Naphthalene	100	10	µg/l	0.82	NA	NA	NA	< 2.2		< 0.5	< 0.5	0.97	< 0.5	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	0.23	< 0.44	NA	0.3	< 1.36		< 0.25	< 0.25	< 0.25	< 0.25	
Natural Attenuation Parameters														
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA		8.7	13	8.7	13	
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA		< 0.1	< 0.1	< 0.5	< 0.1	
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA		4.00	1.00	0.18	< 1.5	

Parameter	Sample Location			MW700							
	ES	PAL	Date	12-Jan-11	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	Not	NA	NA	Not	Not
GRO			mg/l	NA	NA	NA	Sampled	NA	NA	Sampled	Sampled
Lead	15	1.5	µg/l	NA	NA	NA		NA	NA		
VOC Parameters											
Benzene	5	0.5	µg/l	<i>2.71</i>	<i>2.0</i>	< 0.39		< 0.39	< 0.40		
Toluene	800	160	µg/l	0.659*	2.0	< 0.42		< 0.42	< 0.39		
Ethylbenzene	700	140	µg/l	2.71	< 0.41	< 0.41		< 0.41	< 0.39		
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.62	< 0.87	< 0.87		< 0.87	< 0.80		
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.38	< 0.38		< 0.38	< 0.48		
Naphthalene	100	10	µg/l	< 2.0	< 0.40	< 0.40		< 0.40	< 0.42		
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.44	< 0.43	< 0.43		< 0.43	< 0.42		
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l	NA	NA	NA		NA	NA		
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA		NA	NA		
Sulfate	250	125	mg/l	NA	NA	NA		NA	NA		

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA = Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded	BOLD
Preventive Action Limit exceeded	<i>Italics</i>

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Table 2e
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			SP800										
	ES	PAL	Date Units	18-Nov-04	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled	12-Jan-11
DRO			mg/l	NA	NA	Not	NA		Well	NA	NA	NA		NA
GRO			mg/l	NA	NA	Sampled	NA		Dry	NA	NA	NA		NA
Lead	15	1.5	µg/l	NA	NA		NA			NA	NA	NA		NA
VOC Parameters														
Benzene	5	0.5	µg/l	<i>1.6</i>	NA		< 0.17		Not	0.30	< 0.25	0.26		< 0.31
Toluene	800	160	µg/l	12	NA	Well	1.69*		Sampled	8.00	0.87	0.15		0.669*
Ethylbenzene	700	140	µg/l	< 0.50	NA	Frozen	< 0.2			< 0.22	< 0.22	< 0.22		< 0.50
Xylenes (mixed isomers)	2,000	400	µg/l	3.6	NA		< 1.28			< 0.39	< 0.39	< 0.39		< 0.62
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	NA		< 0.34			< 0.23	< 0.23	< 0.23		< 0.50
Naphthalene	100	10	µg/l	0.43	NA		< 2.2			< 0.5	< 0.5	< 0.5		< 2.0
Trimethylbenzenes (mixed isomers)	480	96	µg/l	0.44	NA		< 1.36			< 0.25	< 0.25	< 0.25		< 0.44
Natural Attenuation Parameters														
Iron	0.30	0.15	mg/l	NA	NA		NA			40	22	6.8		NA
Nitrate/Nitrite	10	2	mg/l	NA	NA		NA			< 0.1	< 0.5	< 0.1		NA
Sulfate	250	125	mg/l	NA	NA		NA			< 0.25	2.9	820		NA

Parameter	Sample Location			SP800						
	ES	PAL	Date Units	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA	NA	Not
GRO			mg/l	NA	NA	NA	NA	NA	NA	Sampled
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	
VOC Parameters										
Benzene	5	0.5	µg/l	< 0.39	< 0.39	Not	< 0.39	< 0.40	< 0.40	
Toluene	800	160	µg/l	< 0.42	1.2	Sampled	< 0.42	2.1	3.6	
Ethylbenzene	700	140	µg/l	< 0.41	< 0.41		< 0.41	< 0.39	< 0.39	
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.87	< 0.87		< 0.87	< 0.80	< 0.80	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.38	< 0.38		< 0.38	< 0.48	< 0.48	
Naphthalene	100	10	µg/l	< 0.40	< 0.40		< 0.40	< 0.42	< 0.42	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.43	< 0.43		< 0.43	0.44*	< 0.42	
Natural Attenuation Parameters										
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA	NA	
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA	NA	
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA	NA	

Notes:

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NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

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Table 2f
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			MW900									
	ES	PAL	Date Units	1-Feb-05	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled	12-Jan-11
DRO			mg/l	1.1	NA	NA		NA	NA	NA	NA		NA
GRO			mg/l	3,600	NA	NA		NA	NA	NA	NA		NA
Lead	15	1.5	µg/l	< 1.4	NA	NA		NA	NA	NA	NA		NA
VOC Parameters													
Benzene	5	0.5	µg/l	47	46	<i>3.15</i>		12	<i>3.0</i>	< 5.9	< 0.25		77.9
Toluene	800	160	µg/l	<i>630</i>	<i>560</i>	86		28	13	29	0.38		86.9
Ethylbenzene	700	140	µg/l	<i>360</i>	<i>370</i>	76		39	24	65	0.41		75.8
Xylenes (mixed isomers)	2,000	400	µg/l	<i>1,200</i>	<i>1,200</i>	239		130	42	170	1.40		246.2
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 5.0	< 1.2	< 0.34		< 2.0	< 0.23	< 0.23	< 0.23		8.48
Naphthalene	100	10	µg/l	<i>54</i>	<i>57</i>	<i>11.1</i>		7.0	2.0	8.2	< 0.5		<i>22.2</i>
Trimethylbenzenes (mixed isomers)	480	96	µg/l	<i>439</i>	<i>410</i>	92.1		80	20	98	1.91		<i>135.1</i>
Natural Attenuation Parameters													
Iron	0.30	0.15	mg/l	NA	NA	NA		12	9	12	0.380		NA
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA		< 0.1	< 0.1	< 0.5	0.35		NA
Sulfate	250	125	mg/l	NA	NA	NA		4	70	NA	21		NA

Parameter	Sample Location			MW900						
	ES	PAL	Date Units	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA	NA	NA
GRO			mg/l	NA	NA	NA	NA	NA	NA	NA
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA
VOC Parameters										
Benzene	5	0.5	µg/l	8.7	213	89.2	104	66.9	47.9	17.6
Toluene	800	160	µg/l	1.1	14.7	20.1	130	149	292	109
Ethylbenzene	700	140	µg/l	5.0	88.5	74.7	126	425	719	284
Xylenes (mixed isomers)	2,000	400	µg/l	6.3	142.7	132.5	297	912	1,973	599.9
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.38	2.9	0.76*	0.85*	5.1	3.2*	<1.9
Naphthalene	100	10	µg/l	0.92*	14.2	10.8	20.1	106	125	86.3
Trimethylbenzenes (mixed isomers)	480	96	µg/l	7.8	163	69.4	108.5	328	1,053	393.6
Natural Attenuation Parameters										
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA	NA	NA
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA	NA	NA

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

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Table 2g
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location		Date	MW1000								
	ES	PAL		Units	24-Mar-05	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled
DRO			mg/l	4.9	NA		Well	Well	Well	Well		NA
GRO			mg/l	9,700	NA		Dry	Dry	Filled	Filled		NA
Lead	15	1.5	µg/l	NA	NA				In	In		NA
VOC Parameters												
Benzene	5	0.5	µg/l	34	212							33.4
Toluene	800	160	µg/l	110	1,190		Not	Not	Not	Not		159
Ethylbenzene	700	140	µg/l	<i>610</i>	910		Sampled	Sampled	Sampled	Sampled		<i>531</i>
Xylenes (mixed isomers)	2,000	400	µg/l	<i>1,800</i>	<i>2,515*</i>							<i>1,076.8</i>
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 20	< 26							<i>30.3</i>
Naphthalene	100	10	µg/l	140	106*							<i>87.8</i>
Trimethylbenzenes (mixed isomers)	480	96	µg/l	1,550	731							<i>445</i>
Natural Attenuation Parameters												
Iron	0.30	0.15	mg/l	NA	NA							NA
Nitrate/Nitrite	10	2	mg/l	NA	NA							NA
Sulfate	250	125	mg/l	NA	NA							NA

Parameter	Sample Location		Date	MW1000							
	ES	PAL		Units	28-Apr-11	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA	NA	NA	NA
GRO			mg/l	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA	NA	NA	NA
VOC Parameters											
Benzene	5	0.5	µg/l	8.7	< 0.39	22.1	23.5	16.1	<i>0.62*</i>	<i>1.2</i>	
Toluene	800	160	µg/l	1.1	< 0.42	37.6	8.8	< 0.39	< 0.39	< 0.39	
Ethylbenzene	700	140	µg/l	5.0	< 0.41	<i>286</i>	308	17	15.4	23.4	
Xylenes (mixed isomers)	2,000	400	µg/l	6.3	< 0.87	<i>564.8</i>	<i>587.2</i>	25.9	23.7	28.5	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.38	< 0.38	2.9	3.3	< 0.48	< 0.48	0.80*	
Naphthalene	100	10	µg/l	0.92*	< 0.40	<i>67.8</i>	<i>61.9</i>	<i>19.8</i>	5.8	8.2	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	7.8	< 0.43	<i>230.6</i>	<i>243.4</i>	10.5	28.9	26.9	
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA	NA	NA	
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA	NA	NA	
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA	NA	NA	

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

All samples results prior to 1-12-2011 were collected, analyzed and reported by others

Table 2h
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			MW1200								
	ES	PAL	Date	1-Jun-06	Project Bid	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled	12-Jan-11	28-Apr-11
DRO			mg/l	NA		NA	NA	NA	NA		Not	NA
GRO			mg/l	NA		NA	NA	NA	NA		Sampled	NA
Lead	15	1.5	µg/l	NA		NA	NA	NA	NA			NA
VOC Parameters												
Benzene	5	0.5	µg/l	< 0.17		< 0.25	< 0.25	< 0.25	< 0.25		Under	< 0.39
Toluene	800	160	µg/l	< 0.59		< 0.11	< 0.11	< 0.11	< 0.11		Truck	< 0.42
Ethylbenzene	700	140	µg/l	< 0.2		< 0.22	< 0.22	< 0.22	< 0.22			< 0.41
Xylenes (mixed isomers)	2,000	400	µg/l	< 1.28		< 0.39	< 0.39	< 0.39	< 0.39			< 0.87
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.34		< 0.23	< 0.23	< 0.23	< 0.23			< 0.38
Naphthalene	100	10	µg/l	< 2.2		< 0.5	< 0.5	< 0.5	< 0.5			< 0.40
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 1.36		< 0.25	< 0.25	< 0.25	< 0.25			< 0.43
Natural Attenuation Parameters												
Iron	0.30	0.15	mg/l	NA		3.3	7.5	8.5	6.8			NA
Nitrate/Nitrite	10	2	mg/l	NA		0.80	0.14	< 0.5	< 0.1			NA
Sulfate	250	125	mg/l	NA		7	4	2	< 1.5			NA

Parameter	Sample Location			MW1200					
	ES	PAL	Date	22-Sep-11	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA	NA
GRO			mg/l	NA	NA	NA	NA	NA	NA
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA	NA
VOC Parameters									
Benzene	5	0.5	µg/l	<i>1.6</i>	< 0.39	< 0.39	< 0.40	< 0.40	< 0.40
Toluene	800	160	µg/l	8.3	< 0.42	< 0.42	< 0.39	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l	65.4	< 0.41	< 0.41	< 0.39	< 0.39	< 0.39
Xylenes (mixed isomers)	2,000	400	µg/l	126.8	< 0.87	< 0.87	< 0.80	< 0.80	< 0.80
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	1.6	< 0.38	< 0.38	< 0.48	< 0.48	< 0.48
Naphthalene	100	10	µg/l	13.7	< 0.40	< 0.40	< 0.42	< 0.42	< 0.42
Trimethylbenzenes (mixed isomers)	480	96	µg/l	73.3	< 0.43	< 0.43	< 0.42	< 0.42	< 0.42
Natural Attenuation Parameters									
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA	NA
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA	NA
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA	NA

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA = Not Analyzed

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Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

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Table 2i
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			MW1300							
	ES	PAL	Units	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled	12-Jan-11	28-Apr-11	22-Sep-11
DRO			mg/l	Well	Well	NA	Well		Well	NA	NA
GRO			mg/l	Dry	Dry	NA	Dry		Dry	NA	NA
Lead	15	1.5	µg/l			NA				NA	NA
VOC Parameters											
Benzene	5	0.5	µg/l	Not	Not	< 0.25	Not		Not	< 0.39	< 0.39
Toluene	800	160	µg/l	Sampled	Sampled	< 0.11	Sampled		Sampled	< 0.42	< 0.42
Ethylbenzene	700	140	µg/l			< 0.22				< 0.41	< 0.41
Xylenes (mixed isomers)	2,000	400	µg/l			< 0.39				< 0.87	< 0.87
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l			< 0.23				< 0.38	< 0.38
Naphthalene	100	10	µg/l			< 0.5				< 0.40	< 0.40
Trimethylbenzenes (mixed isomers)	480	96	µg/l			< 0.25				< 0.43	< 0.43
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l			48				NA	NA
Nitrate/Nitrite	10	2	mg/l			NA				NA	NA
Sulfate	250	125	mg/l			NA				NA	NA

Parameter	Sample Location			MW1300				
	ES	PAL	Units	9-May-12	8-May-13	30-Jun-15	9-Oct-17	13-Feb-18
DRO			mg/l	Not	NA	NA	NA	NA
GRO			mg/l	Sampled	NA	NA	NA	NA
Lead	15	1.5	µg/l		NA	NA	NA	NA
VOC Parameters								
Benzene	5	0.5	µg/l		< 0.39	< 0.40	< 0.40	< 0.40
Toluene	800	160	µg/l		< 0.42	< 0.39	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l		< 0.41	< 0.39	< 0.39	< 0.39
Xylenes (mixed isomers)	2,000	400	µg/l		< 0.87	< 0.80	< 0.80	< 0.80
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l		< 0.38	< 0.48	< 0.48	< 0.48
Naphthalene	100	10	µg/l		< 0.40	< 0.42	< 0.42	< 0.42
Trimethylbenzenes (mixed isomers)	480	96	µg/l		< 0.43	< 0.42	< 0.42	< 0.42
Natural Attenuation Parameters								
Iron	0.30	0.15	mg/l		NA	NA	NA	NA
Nitrate/Nitrite	10	2	mg/l		NA	NA	NA	NA
Sulfate	250	125	mg/l		NA	NA	NA	NA

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

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Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

Italics

All samples results prior to 1-12-2011 were collected, analyzed and reported by others

Table 2j
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

Parameter	Sample Location			MW1400							
	ES	PAL	Date	1-May-07	1-Aug-07	1-Nov-07	1-Mar-08	Project Stalled	12-Jan-11	28-Apr-11	22-Sep-11
DRO			mg/l	NA	NA	NA	NA		NA	NA	NA
GRO			mg/l	NA	NA	NA	NA		NA	NA	NA
Lead	15	1.5	µg/l	NA	NA	NA	NA		NA	NA	NA
VOC Parameters											
Benzene	5	0.5	µg/l	< 4.7	< 5.0	< 0.25	< 0.25		<i>1.77*</i>	<i>0.97*</i>	<i>0.96*</i>
Toluene	800	160	µg/l	< 0.11	< 6	< 0.11	< 0.11		< 0.37	<i>0.70*</i>	<i>0.67*</i>
Ethylbenzene	700	140	µg/l	< 0.22	< 0.6	< 0.22	< 0.22		< 0.50	<i>0.89*</i>	<i>0.85*</i>
Xylenes (mixed isomers)	2,000	400	µg/l	0.80	< 0.39	< 0.39	< 0.39		< 0.62	<i>1.1*</i>	<i>1.3*</i>
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	0.70	< 0.23	< 0.23	< 0.23		< 0.30	< 0.38	<i>0.43*</i>
Naphthalene	100	10	µg/l	< 0.8	< 0.5	< 0.5	< 0.5		<i>2.23*</i>	< 0.40	<i>0.64*</i>
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.25	< 0.25	< 0.25	< 0.25		< 0.40	< 0.43	< 0.43
Natural Attenuation Parameters											
Iron	0.30	0.15	mg/l	10	12	10	1.7		NA	NA	NA
Nitrate/Nitrite	10	2	mg/l	< 0.1	< 0.1	< 0.5	< 0.1		NA	NA	NA
Sulfate	250	125	mg/l	4	11	0.24	2.5		NA	NA	NA

Parameter	Sample Location			MW1400				
	ES	PAL	Date	9-May-12	8-May-13	30-Jun-15	31-Oct-17	13-Feb-18
DRO			mg/l	NA	NA	NA	NA	NA
GRO			mg/l	NA	NA	NA	NA	NA
Lead	15	1.5	µg/l	NA	NA	NA	NA	NA
VOC Parameters								
Benzene	5	0.5	µg/l	<i>0.71*</i>	<i>0.63*</i>	< 0.40	< 0.40	< 0.40
Toluene	800	160	µg/l	< 0.42	< 0.42	< 0.39	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l	< 0.41	< 0.41	1.1	1.7	1.4
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.87	< 0.87	< 0.80	2.7	<i>2.69*</i>
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.38	< 0.38	<i>0.61*</i>	< 0.48	< 0.48
Naphthalene	100	10	µg/l	< 0.40	< 0.40	<i>0.69*</i>	1.7	<i>0.48*</i>
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.43	< 0.43	< 0.42	< 0.42	< 0.42
Natural Attenuation Parameters								
Iron	0.30	0.15	mg/l	NA	NA	NA	NA	NA
Nitrate/Nitrite	10	2	mg/l	NA	NA	NA	NA	NA
Sulfate	250	125	mg/l	NA	NA	NA	NA	NA

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

Preventive Action Limit exceeded

BOLD
<i>Italics</i>

All samples results prior to 1-12-2011 were collected, analyzed and reported by others

Table 2k
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

	Sample Location			PZ2	
			Date	31-Oct-17	13-Feb-18
Parameter	ES	PAL	Units		
VOC Parameters					
Benzene	5	0.5	µg/l	< 0.40	< 0.40
Toluene	800	160	µg/l	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l	< 0.39	< 0.39
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80	< 0.80
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48	< 0.48
Naphthalene	100	10	µg/l	< 0.42	< 0.42
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42	< 0.42

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

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Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

<i>Italics</i>

Table 21
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

	Sample Location			PZ3	
	ES	PAL	Date	31-Oct-17	13-Feb-18
Parameter	ES	PAL	Units		
VOC Parameters					
Benzene	5	0.5	µg/l	< 0.40	< 0.40
Toluene	800	160	µg/l	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l	< 0.39	< 0.39
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80	< 0.80
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48	< 0.48
Naphthalene	100	10	µg/l	< 0.42	< 0.42
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42	< 0.42

Notes:

ES = NR140.10 Enforcement Standards

PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

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Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

<i>Italics</i>

Table 2m
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI

	Sample Location			PZ4	
			Date	31-Oct-17	13-Feb-18
Parameter	ES	PAL	Units		
VOC Parameters					
Benzene	5	0.5	µg/l	< 0.40	< 0.40
Toluene	800	160	µg/l	< 0.39	< 0.39
Ethylbenzene	700	140	µg/l	< 0.39	< 0.39
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80	< 0.80
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48	< 0.48
Naphthalene	100	10	µg/l	< 0.42	< 0.42
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42	< 0.42

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

BOLD

Preventive Action Limit exceeded

<i>Italics</i>

**Table 2n
Summary of Groundwater Analytical Results
Mack Lake
Trego, WI**

Parameter	Sample Location			PW1 (Former N10202 Cty Hwy K Well)				Project Bid	May-07	Aug-07	Nov-07	Mar-08	Project Stalled	PW1 (Current N10202 Cty Hwy K Well)						
	ES	PAL	Date Units	10/11/2004	11/18/2004	3/24/2005	6/1/2006							1/12/2011	4/28/2011	9/22/2011	5/9/2012	5/8/2013	6/30/2015	10/9/2017
Benzene	5	0.5	µg/l	< 0.20	< 0.25	< 0.25	< 0.17		Not	Not	Not	Not		Not	< 0.038	Not	< 0.41	< 0.047	< 0.21	< 0.23
Toluene	800	160	µg/l	< 0.20	< 0.11	< 0.11	< 0.25		Sampled	Sampled	Sampled	Sampled		Sampled	< 0.045	Sampled	< 0.67	< 0.065	< 0.12	< 0.22
Ethylbenzene	700	140	µg/l	< 0.50	< 0.22	< 0.22	< 0.20								< 0.034		< 0.54	< 0.078	< 0.23	< 0.22
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.50	< 0.39	< 0.39	< 0.51								< 0.12		< 1.8	< 0.15	< 0.41	< 0.20
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.23	< 0.23	< 0.34								< 0.040		< 0.61	< 0.048	< 0.16	< 0.48
Naphthalene	100	10	µg/l	< 0.55	NA	NA	< 2.2								< 0.058		< 0.89	< 0.11	< 0.14	< 0.23
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.20	< 0.44	< 0.44	< 1.36								< 0.050		< 0.83	< 0.086	< 0.20	< 0.22

Parameter	Sample Location			PW2 (N10212 Cty Hwy K)								Project Stalled	1/12/2011	4/28/2011	9/22/2011	5/9/2012	5/8/2013	6/30/2015	10/9/2017	
	ES	PAL	Date Units	10/11/2004	11/18/2004	3/24/2005	6/1/2006	Project Bid	May-07	Aug-07	Nov-07									Mar-08
Benzene	5	0.5	µg/l	< 0.20	< 0.25	Well	Well		Not	Not	< 0.05	Not		Not	< 0.038	Not	< 0.41	< 0.047	Not	Not
Toluene	800	160	µg/l	< 0.20	< 0.11	Not	Not		Sampled	Sampled	< 0.05	Sampled		Sampled	< 0.045	Sampled	< 0.67	< 0.065	Sampled	Sampled
Ethylbenzene	700	140	µg/l	< 0.50	< 0.22	Sampled	Sampled				< 0.05				< 0.034		< 0.54	< 0.078		
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.50	< 0.39						< 0.05				< 0.12		< 1.8	< 0.15		
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.50	< 0.23						< 0.05				< 0.040		< 0.61	< 0.048		
Naphthalene	100	10	µg/l	< 0.55	NA						< 0.25				< 0.058		< 0.89	< 0.11		
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.20	< 0.44						< 0.05				< 0.050		< 0.83	< 0.086		

Parameter	Sample Location			PW3 (N10189 Cty Hwy K)								Project Stalled	1/12/2011	4/28/2011	9/22/2011	5/9/2012	5/8/2013	6/30/2015	10/9/2017	
	ES	PAL	Date Units	10/11/2004	11/18/2004	3/24/2005	6/1/2006	Project Bid	May-07	Aug-07	Nov-07									Mar-08
Benzene	5	0.5	µg/l	Well	< 0.20	Well	< 0.2		Not	Not	< 0.05	Not		Not	Not	Not	< 0.41	< 0.047	Not	< 0.23
Toluene	800	160	µg/l	Not	< 0.20	Not	< 0.2		Sampled	Sampled	< 0.05	Sampled		Sampled	Sampled	Sampled	< 0.67	< 0.065	Sampled	< 0.22
Ethylbenzene	700	140	µg/l	Sampled	< 0.50	Sampled	< 0.2				< 0.05						< 0.54	< 0.078		< 0.22
Xylenes (mixed isomers)	2,000	400	µg/l		< 0.50		< 0.5				< 0.05						< 1.8	< 0.15		< 0.20
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l		< 0.50		< 0.5				< 0.05						< 0.61	< 0.048		< 0.48
Naphthalene	100	10	µg/l		< 0.25		< 3.0				< 0.25						< 0.89	< 0.11		< 0.23
Trimethylbenzenes (mixed isomers)	480	96	µg/l		< 0.40		< 0.4				< 0.05						< 0.83	< 0.086		< 0.22

Notes:

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PAL = NR140.10 Preventive Action Limits

NS = Not Sampled

NA - Not Analyzed

* = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Enforcement Standard exceeded

Preventive Action Limit exceeded

BOLD
<i>Italics</i>

All samples results prior to 1-12-2011 were collected, analyzed and reported by others