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December 9, 2019

Claire Dijak  
Surface Water Quality Division  
Michigan Department of EGLE  
301 East Louis Glick Highway  
Jackson, Michigan 49201

**Re: Monitoring Report # 271  
November 1 – November 30, 2019**

Dear Ms. Dijak:

Pursuant to the National Pollutant Discharge Elimination System (NPDES) Permit No. MI0048453, please find the enclosed Monitoring Report for the period of November 1 through November 30, 2019.

Should you have any questions or concerns regarding this report, please contact me at 386-562-0176.

Sincerely,



Lawrence J. Gelb  
Sr. Director Global EHS

cc: Dan Hamel, MDEQ  
Supervisor, Scio Twp.  
City of Ann Arbor



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**TABLE #1**

**UNIT D2 UPGRADIENT EXTRACTION DATA**

Month of: **Nov-19**

Date	Horizontal Well Extraction			TW-9			TW-5			TW-21			Daily Flow	Daily Total
	HW-S Gallons	GPM	Run Hrs.	TW-9 Gallons	GPM	Run Hrs.	TW-5 Gallons	GPM	Run Hrs.	TW-21 Gallons	GPM	Run Hrs.	GPM	Gallons
Fri-11/1/19	-	-	-	-	-	-	-	-	-	86,447	60	24.00	60	86,447
Sat-11/2/19	-	-	-	-	-	-	-	-	-	86,434	60	24.00	60	86,434
Sun-11/3/19	-	-	-	-	-	-	-	-	-	86,441	60	24.00	60	86,441
Mon-11/4/19	-	-	-	-	-	-	-	-	-	86,487	60	24.00	60	86,487
Tue-11/5/19	-	-	-	-	-	-	-	-	-	86,414	60	24.00	60	86,414
Wed-11/6/19	-	-	-	-	-	-	-	-	-	86,413	60	24.00	60	86,413
Thu-11/7/19	-	-	-	-	-	-	-	-	-	78,993	55	24.00	55	78,993
Fri-11/8/19	-	-	-	-	-	-	-	-	-	71,997	50	24.00	50	71,997
Sat-11/9/19	-	-	-	-	-	-	-	-	-	72,009	50	24.00	50	72,009
Sun-11/10/19	-	-	-	-	-	-	-	-	-	72,067	50	24.00	50	72,067
Mon-11/11/19	-	-	-	-	-	-	-	-	-	71,993	50	24.00	50	71,993
Tue-11/12/19	-	-	-	-	-	-	-	-	-	82,981	58	24.00	58	82,981
Wed-11/13/19	-	-	-	-	-	-	-	-	-	86,498	60	24.00	60	86,498
Thu-11/14/19	-	-	-	-	-	-	-	-	-	86,406	60	24.00	60	86,406
Fri-11/15/19	-	-	-	-	-	-	-	-	-	86,421	60	24.00	60	86,421
Sat-11/16/19	-	-	-	-	-	-	-	-	-	90,085	63	24.00	63	90,085
Sun-11/17/19	-	-	-	-	-	-	-	-	-	93,639	65	24.00	65	93,639
Mon-11/18/19	-	-	-	-	-	-	-	-	-	93,673	65	24.00	65	93,673
Tue-11/19/19	-	-	-	-	-	-	-	-	-	93,631	65	24.00	65	93,631
Wed-11/20/19	-	-	-	-	-	-	-	-	-	93,584	65	24.00	65	93,584
Thu-11/21/19	-	-	-	-	-	-	-	-	-	87,927	61	24.00	61	87,927
Fri-11/22/19	-	-	-	-	-	-	-	-	-	86,447	60	24.00	60	86,447
Sat-11/23/19	-	-	-	33,528	51	11.05	-	-	-	86,411	60	24.00	83	119,939
Sun-11/24/19	-	-	-	-	-	-	-	-	-	86,431	60	24.00	60	86,431
Mon-11/25/19	-	-	-	-	-	-	-	-	-	86,450	60	24.00	60	86,450
Tue-11/26/19	-	-	-	-	-	-	-	-	-	86,475	60	24.00	60	86,475
Wed-11/27/19	-	-	-	-	-	-	-	-	-	86,458	60	24.00	60	86,458
Thu-11/28/19	-	-	-	-	-	-	-	-	-	86,435	60	24.00	60	86,435
Fri-11/29/19	-	-	-	-	-	-	-	-	-	86,439	60	24.00	60	86,439
Sat-11/30/19	-	-	-	-	-	-	-	-	-	86,433	60	24.00	60	86,433
<b>TOTALS</b>	-	-	-	<b>33,528</b>	<b>51</b>	<b>11.05</b>	-	-	-	<b>2,558,519</b>	<b>59</b>	<b>720.00</b>	<b>60</b>	<b>2,592,047</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>2,592,047 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>30 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>60.00 GPM</b>

**UNIT D2 DOWNGRADIENT EXTRACTION DATA**

**Month of: Nov-19**

Date	LB-1			LB-4			Daily	Daily
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Flow GPM	Total Gallons
Fri-11/1/19	-	-	-	144,196	100	24.00	100	144,196
Sat-11/2/19	-	-	-	144,211	100	24.00	100	144,211
Sun-11/3/19	-	-	-	150,196	104	24.00	104	150,196
Mon-11/4/19	-	-	-	144,180	100	24.00	100	144,180
Tue-11/5/19	-	-	-	144,197	100	24.00	100	144,197
Wed-11/6/19	-	-	-	140,688	100	23.41	98	140,688
Thu-11/7/19	-	-	-	144,198	100	24.00	100	144,198
Fri-11/8/19	-	-	-	142,024	100	23.63	99	142,024
Sat-11/9/19	-	-	-	144,222	100	24.00	100	144,222
Sun-11/10/19	-	-	-	144,202	100	24.00	100	144,202
Mon-11/11/19	-	-	-	137,409	100	22.86	95	137,409
Tue-11/12/19	-	-	-	141,863	100	23.60	99	141,863
Wed-11/13/19	-	-	-	144,183	100	24.00	100	144,183
Thu-11/14/19	-	-	-	141,840	100	23.61	99	141,840
Fri-11/15/19	-	-	-	138,138	100	23.00	96	138,138
Sat-11/16/19	-	-	-	139,050	100	23.16	97	139,050
Sun-11/17/19	-	-	-	144,180	100	24.00	100	144,180
Mon-11/18/19	-	-	-	144,217	100	24.00	100	144,217
Tue-11/19/19	-	-	-	144,213	100	24.00	100	144,213
Wed-11/20/19	-	-	-	137,400	100	22.88	95	137,400
Thu-11/21/19	-	-	-	144,204	100	24.00	100	144,204
Fri-11/22/19	-	-	-	144,212	100	24.00	100	144,212
Sat-11/23/19	-	-	-	144,179	100	24.00	100	144,179
Sun-11/24/19	-	-	-	144,202	100	24.00	100	144,202
Mon-11/25/19	-	-	-	144,206	100	24.00	100	144,206
Tue-11/26/19	-	-	-	144,211	100	24.00	100	144,211
Wed-11/27/19	-	-	-	144,215	100	24.00	100	144,215
Thu-11/28/19	-	-	-	144,220	100	24.00	100	144,220
Fri-11/29/19	-	-	-	144,214	100	24.00	100	144,214
Sat-11/30/19	-	-	-	144,200	100	24.00	100	144,200
<b>TOTALS</b>	-	-	-	<b>4,296,870</b>	<b>100</b>	<b>714.15</b>	<b>99</b>	<b>4,296,870</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>4,296,870 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>30 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>99.46 GPM</b>

11/11/19 - LB-4 was shut down briefly due to a DTE Energy power outage in the area.  
 11/20/19 - LB-4 was shut down briefly for a communications upgrade.

**TABLE #3**

**CORE AREA EXTRACTION DATA**

Month of: **Nov-19**

Core Area Well Extraction																		Daily Flow	Daily Total	
Date	TW-1			TW-2 (Dolph)			TW-3			TW-10			TW-14			TW-20			GPM	Gallons
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.		
Fri-11/1/19	-	-	-	30,664	21	24.00	-	-	-	-	-	-	-	-	-	28,920	20	24.00	41	59,584
Sat-11/2/19	-	-	-	1,258	21	1.00	-	-	-	-	-	-	-	-	-	1,208	20	1.00	2	2,466
Sun-11/3/19	-	-	-	30,010	21	24.00	-	-	-	-	-	-	-	-	-	28,819	20	24.00	41	58,829
Mon-11/4/19	-	-	-	30,103	21	24.00	-	-	-	-	-	-	-	-	-	28,825	20	24.00	41	58,928
Tue-11/5/19	-	-	-	29,476	21	23.77	-	-	-	-	-	-	-	-	-	28,646	20	24.00	40	58,122
Wed-11/6/19	-	-	-	28,750	20	23.60	-	-	-	-	-	-	-	-	-	28,845	20	24.00	40	57,595
Thu-11/7/19	-	-	-	28,290	20	23.40	-	-	-	-	-	-	-	-	-	28,891	20	24.00	40	57,181
Fri-11/8/19	-	-	-	27,717	20	23.15	-	-	-	-	-	-	-	-	-	28,787	20	24.00	39	56,504
Sat-11/9/19	-	-	-	27,715	20	23.43	-	-	-	-	-	-	-	-	-	28,841	20	24.00	39	56,556
Sun-11/10/19	-	-	-	27,151	19	23.45	-	-	-	-	-	-	-	-	-	28,899	20	24.00	39	56,050
Mon-11/11/19	-	-	-	26,513	19	23.30	-	-	-	-	-	-	-	-	-	28,875	20	24.00	38	55,388
Tue-11/12/19	-	-	-	25,860	19	23.13	-	-	-	-	-	-	-	-	-	28,782	20	24.00	38	54,642
Wed-11/13/19	-	-	-	25,754	18	24.00	-	-	-	-	-	-	-	-	-	28,785	20	24.00	38	54,539
Thu-11/14/19	-	-	-	25,549	18	24.00	-	-	-	-	-	-	-	-	-	28,756	20	24.00	38	54,305
Fri-11/15/19	-	-	-	24,995	17	24.00	-	-	-	-	-	-	-	-	-	28,813	20	24.00	37	53,808
Sat-11/16/19	-	-	-	24,563	17	24.00	-	-	-	-	-	-	-	-	-	28,925	20	24.00	37	53,488
Sun-11/17/19	-	-	-	24,609	17	24.00	-	-	-	-	-	-	-	-	-	28,895	20	24.00	37	53,504
Mon-11/18/19	-	-	-	24,452	17	24.00	-	-	-	-	-	-	-	-	-	28,984	20	24.00	37	53,436
Tue-11/19/19	-	-	-	23,937	17	24.00	-	-	-	-	-	-	-	-	-	29,008	20	24.00	37	52,945
Wed-11/20/19	-	-	-	23,250	16	24.00	-	-	-	-	-	-	-	-	-	28,787	20	24.00	36	52,037
Thu-11/21/19	-	-	-	23,359	16	24.00	-	-	-	-	-	-	-	-	-	28,900	20	24.00	36	52,259
Fri-11/22/19	-	-	-	22,795	16	24.00	-	-	-	-	-	-	-	-	-	28,845	20	24.00	36	51,640
Sat-11/23/19	-	-	-	22,816	16	24.00	-	-	-	32,422	45	12.08	-	-	-	28,910	20	24.00	58	84,148
Sun-11/24/19	-	-	-	22,612	16	24.00	-	-	-	-	-	-	-	-	-	28,782	20	24.00	36	51,394
Mon-11/25/19	-	-	-	22,275	15	24.00	-	-	-	-	-	-	-	-	-	28,080	20	24.00	35	50,355
Tue-11/26/19	-	-	-	21,890	15	24.00	-	-	-	-	-	-	-	-	-	28,739	20	24.00	35	50,629
Wed-11/27/19	-	-	-	21,945	15	24.00	-	-	-	-	-	-	-	-	-	28,859	20	24.00	35	50,804
Thu-11/28/19	-	-	-	20,943	15	24.00	-	-	-	-	-	-	-	-	-	26,631	28	16.10	33	47,574
Fri-11/29/19	-	-	-	20,973	15	24.00	-	-	-	-	-	-	-	-	-	25,580	36	11.68	32	46,553
Sat-11/30/19	-	-	-	21,226	15	24.00	-	-	-	-	-	-	-	-	-	25,589	36	11.82	33	46,815
<b>TOTALS</b>	-	-	-	<b>731,450</b>	<b>18</b>	<b>692.23</b>	-	-	-	<b>32,422</b>	<b>45</b>	<b>12.08</b>	-	-	-	<b>828,206</b>	<b>21</b>	<b>664.60</b>	<b>37</b>	<b>1,592,078</b>

TOTAL VOLUME EXTRACTED :	1,592,078 GALLONS
DAYS IN MONTH :	30 DAYS
MONTHLY AVERAGE FLOW RATE :	36.85 GPM

11/2/19 - Dolph & TW-20 were shut down for maintenance.  
 11/28/19 - 11/30/19 - TW-20 was shut down for maintenance.

**MARSHY AREA EXTRACTION DATA**

Month of: Nov-19

Marshy Well Extraction				Daily	Daily
Date	PW-1 Gallons	GPM	Run Hrs.	Flow GPM	Total Gallons
Fri-11/1/19	-		-		-
Sat-11/2/19	-		-		-
Sun-11/3/19	-		-		-
Mon-11/4/19	-		-		-
Tue-11/5/19	-		-		-
Wed-11/6/19	-		-		-
Thu-11/7/19	145	1	1.62	0	145
Fri-11/8/19	-		-		-
Sat-11/9/19	-		-		-
Sun-11/10/19	-		-		-
Mon-11/11/19	-		-		-
Tue-11/12/19	-		-		-
Wed-11/13/19	-		-		-
Thu-11/14/19	-		-		-
Fri-11/15/19	-		-		-
Sat-11/16/19	-		-		-
Sun-11/17/19	-		-		-
Mon-11/18/19	-		-		-
Tue-11/19/19	1,279	2	13.63	1	1,279
Wed-11/20/19	2,256	2	24.00	2	2,256
Thu-11/21/19	2,244	2	24.00	2	2,244
Fri-11/22/19	2,239	2	24.00	2	2,239
Sat-11/23/19	2,225	2	24.00	2	2,225
Sun-11/24/19	2,209	2	24.00	2	2,209
Mon-11/25/19	2,196	2	24.00	2	2,196
Tue-11/26/19	2,186	2	24.00	2	2,186
Wed-11/27/19	2,199	2	24.00	2	2,199
Thu-11/28/19	2,211	2	24.00	2	2,211
Fri-11/29/19	2,201	2	24.00	2	2,201
Sat-11/30/19	2,199	2	24.00	2	2,199
<b>TOTALS</b>	<b>25,789</b>	<b>2</b>	<b>279.25</b>	<b>1</b>	<b>25,789</b>

TOTAL VOLUME EXTRACTED :	25,789 GALLONS
DAYS IN MONTH :	30 DAYS
MONTHLY AVERAGE FLOW RATE :	0.60 GPM

PW-1 was shut down intermittently due to flow fluctuations



TABLE #5

SOUTHWEST AREA EXTRACTION DATA

Month of: Nov-19

SouthWest Well Extraction							Daily	Daily
Date	TW22			TW28			Flow	Total
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	GPM	Gallons
Fri-11/1/19	2,766	2	24.00	35,786	25	24.00	27	38,552
Sat-11/2/19	2,744	2	24.00	35,790	25	24.00	27	38,534
Sun-11/3/19	2,707	2	24.00	35,774	25	24.00	27	38,481
Mon-11/4/19	2,790	2	24.00	37,232	26	24.00	28	40,022
Tue-11/5/19	2,619	2	24.00	35,712	25	24.00	27	38,331
Wed-11/6/19	2,553	2	24.00	36,032	25	24.00	27	38,585
Thu-11/7/19	3,868	3	24.00	35,786	25	24.00	28	39,654
Fri-11/8/19	3,151	2	24.00	35,741	25	24.00	27	38,892
Sat-11/9/19	2,049	1	24.00	35,693	25	24.00	26	37,742
Sun-11/10/19	2,854	2	24.00	35,697	25	24.00	27	38,551
Mon-11/11/19	2,782	2	24.00	35,766	25	24.00	27	38,548
Tue-11/12/19	2,951	2	24.00	35,957	25	24.00	27	38,908
Wed-11/13/19	3,011	2	24.00	35,812	25	24.00	27	38,823
Thu-11/14/19	2,899	2	24.00	35,773	25	24.00	27	38,672
Fri-11/15/19	2,613	2	24.00	35,795	25	24.00	27	38,408
Sat-11/16/19	2,376	2	24.00	35,864	25	24.00	27	38,240
Sun-11/17/19	2,310	2	24.00	36,142	25	24.00	27	38,452
Mon-11/18/19	2,209	2	24.00	36,221	25	24.00	27	38,430
Tue-11/19/19	2,184	2	24.00	36,110	25	24.00	27	38,294
Wed-11/20/19	1,455	1	24.00	35,872	25	24.00	26	37,327
Thu-11/21/19	-	<1	24.00	35,986	25	24.00	25	35,986
Fri-11/22/19	-	<1	24.00	35,774	25	24.00	25	35,774
Sat-11/23/19	-	<1	24.00	35,753	25	24.00	25	35,753
Sun-11/24/19	-	<1	24.00	35,423	25	24.00	25	35,423
Mon-11/25/19	-	<1	24.00	35,070	24	24.00	24	35,070
Tue-11/26/19	-	<1	22.07	34,592	24	24.00	24	34,592
Wed-11/27/19	-	<1	20.52	34,409	24	24.00	24	34,409
Thu-11/28/19	-	<1	16.13	33,466	23	24.00	23	33,466
Fri-11/29/19	-	<1	2.15	33,354	23	24.00	23	33,354
Sat-11/30/19	-	-	-	33,316	23	24.00	23	33,316
<b>TOTALS</b>	<b>52,891</b>	<b>2</b>	<b>660.87</b>	<b>1,065,698</b>	<b>25</b>	<b>720.00</b>	<b>26</b>	<b>1,118,589</b>

TOTAL VOLUME EXTRACTED :	1,118,589 GALLONS
DAYS IN MONTH :	30 DAYS
MONTHLY AVERAGE FLOW RATE :	25.89 GPM

11/21/19 - 11/30/19 - TW-22 - Gallons not recorded due to low flow

**TABLE #6**

**UNIT "E" EXTRACTION DATA**

Month of: Nov-19

Date	TW-11			TW-17			TW-18			TW-19			TW-23			Daily Flow GPM	Daily Total Gallons
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.		
Fri-11/1/19	-	-	-	-	-	-	241,359	168	24.00	42,546	31	22.93	94,873	69	22.90	263	378,778
Sat-11/2/19	-	-	-	-	-	-	10,050	168	1.00	44,404	31	24.00	99,315	69	24.00	107	153,769
Sun-11/3/19	-	-	-	-	-	-	241,170	167	24.00	44,302	31	24.00	99,331	69	24.00	267	384,803
Mon-11/4/19	-	-	-	-	-	-	241,246	168	24.00	44,298	31	24.00	99,362	69	24.00	267	384,906
Tue-11/5/19	-	-	-	-	-	-	241,174	167	24.00	43,060	31	23.28	96,389	69	23.28	264	380,623
Wed-11/6/19	-	-	-	-	-	-	241,122	167	24.00	44,823	31	23.98	99,345	69	23.95	268	385,290
Thu-11/7/19	-	-	-	-	-	-	227,959	158	24.00	43,998	31	23.78	98,324	69	23.70	257	370,281
Fri-11/8/19	-	-	-	-	-	-	216,078	150	24.00	43,921	32	23.00	97,372	69	23.52	248	357,371
Sat-11/9/19	-	-	-	-	-	-	216,066	150	24.00	45,285	31	24.00	99,488	69	24.00	251	360,839
Sun-11/10/19	-	-	-	-	-	-	219,265	152	24.00	45,349	31	24.00	99,445	69	24.00	253	364,059
Mon-11/11/19	-	-	-	-	-	-	219,268	152	24.00	42,803	31	22.77	94,259	69	22.73	247	356,330
Tue-11/12/19	-	-	-	-	-	-	226,680	157	24.00	43,367	31	23.28	97,155	72	22.61	255	367,202
Wed-11/13/19	-	-	-	-	-	-	230,456	160	24.00	44,500	31	24.00	99,507	69	24.00	260	374,463
Thu-11/14/19	-	-	-	-	-	-	233,880	162	24.00	43,536	31	23.50	97,310	69	23.47	260	374,726
Fri-11/15/19	-	-	-	-	-	-	233,904	162	24.00	42,023	31	22.77	94,083	69	22.70	257	370,010
Sat-11/16/19	-	-	-	-	-	-	238,244	165	24.00	42,562	31	22.92	94,843	69	22.85	261	375,649
Sun-11/17/19	-	-	-	-	-	-	237,727	165	24.00	44,662	31	24.00	99,507	69	24.00	265	381,896
Mon-11/18/19	-	-	-	-	-	-	237,742	165	24.00	44,773	31	24.00	99,310	69	24.00	265	381,825
Tue-11/19/19	-	-	-	-	-	-	241,240	168	24.00	44,800	31	24.00	99,445	69	24.00	268	385,485
Wed-11/20/19	-	-	-	-	-	-	241,292	168	24.00	31,532	31	16.96	70,778	70	16.95	239	343,602
Thu-11/21/19	-	-	-	-	-	-	241,300	168	24.00	36,260	31	19.78	82,763	70	19.68	250	360,323
Fri-11/22/19	-	-	-	-	-	-	237,756	165	24.00	35,667	31	19.00	80,725	71	19.01	246	354,148
Sat-11/23/19	-	-	-	-	-	-	241,224	168	24.00	20,541	31	11.05	46,589	71	11.01	214	308,354
Sun-11/24/19	-	-	-	-	-	-	237,760	165	24.00	44,574	31	24.00	100,886	70	24.00	266	383,220
Mon-11/25/19	-	-	-	-	-	-	237,753	165	24.00	44,506	31	24.00	100,808	70	24.00	266	383,067
Tue-11/26/19	-	-	-	-	-	-	241,339	168	24.00	44,526	31	24.00	100,798	70	24.00	269	386,663
Wed-11/27/19	-	-	-	-	-	-	237,726	165	24.00	44,565	31	24.00	101,025	70	24.00	266	383,316
Thu-11/28/19	-	-	-	-	-	-	237,430	165	24.00	44,552	31	24.00	100,820	70	24.00	266	382,802
Fri-11/29/19	-	-	-	-	-	-	237,563	165	24.00	44,636	31	24.00	101,311	70	24.00	266	383,510
Sat-11/30/19	-	-	-	-	-	-	237,456	165	24.00	44,669	31	24.00	101,037	70	24.00	266	383,162
<b>TOTALS</b>	-	-	-	-	-	-	<b>6,823,229</b>	<b>163</b>	<b>697.00</b>	<b>1,271,040</b>	<b>31</b>	<b>683.00</b>	<b>2,846,203</b>	<b>70</b>	<b>682.36</b>	<b>253</b>	<b>10,940,472</b>

TOTAL VOLUME EXTRACTED :	10,940,472 GALLONS
DAYS IN MONTH :	30 DAYS
MONTHLY AVERAGE FLOW RATE :	253.25 GPM

- 11/1/19 - TW-19 & TW-23 were shut down briefly due to a DTE Energy power outage.
- 11/2/19 - TW-18 was shut down for maintenance.
- 11/11/19 - 11/12/19 - TW-19 & TW-23 were shut down briefly due to a DTE Energy power outage.
- 11/15/19 - 11/16/19 - TW-19 & TW-23 were shut down briefly due to a DTE Energy power outage.
- 11/20/19 - TW-19 & TW-23 were shut down for a communications upgrade.
- 11/21/19 - 11/23/19 - TW-19 & TW-23 were shut down due to a DTE Energy power outage.



**Little Lake Area System**

MW-53i	
Date	1,4-Dioxane ug/L
08/05/19	57
09/04/19	56
10/03/19	36
11/01/19	43

A2 Cleaning Supply Well	
Date	1,4-Dioxane ug/L
08/05/19	99
09/04/19	88
10/03/19	81
11/01/19	82

**TABLE #8**

**INDIVIDUAL PURGE WELL CONCENTRATIONS**

<b>SAMPLE ID</b>	<b>Date Sampled</b>	<b>1,4-DIOXANE (ppb)</b>
DOLPH-11-07-19-11:00-1	11/07/19	130
TW-10-11-25-19-14:10-1	11/25/19	440
TW-20-11-07-19-11:15-1	11/07/19	810
LB-4-11-07-19-10:35-1	11/07/19	440
TW-21-11-07-19-10:50-1	11/07/19	230
TW-9-11-25-19-14:32-1	11/25/19	450
TW-18-11-07-19-10:55-1	11/07/19	250
TW-19-11-07-19-10:30-1	11/07/19	490
TW-23-11-07-19-10:40-1	11/07/19	580
PW-1-11-07-19-11:10-1	11/07/19	750
TW-22-11-07-19-11:25-1	11/07/19	480
TW-28-11-07-19-11:20-1	11/07/19	700

**RED POND DATA**

Month of: **Nov-19**

Date	Time	Notes	Red Pond				
			Pond	Level	Aeration	Influent	Influent
			Visual Chk	Feet	Hours	Hours	GPM
Fri-11/1/19	02:00:00.000		Y	4.3	-	24.00	491
Sat-11/2/19	02:00:00.000	(1)		4.4	-	24.00	295
Sun-11/3/19	02:00:00.000	(1)		4.5	-	24.00	499
Mon-11/4/19	02:00:00.000		Y	4.8	-	24.00	496
Tue-11/5/19	02:00:00.000		Y	4.8	-	24.00	491
Wed-11/6/19	10:00:00.000		Y	4.9	-	24.00	492
Thu-11/7/19	13:45:00.000		Y	4.7	-	24.00	479
Fri-11/8/19	04:00:00.000		Y	4.5	-	24.00	463
Sat-11/9/19	04:00:00.000	(1)		4.1	-	24.00	466
Sun-11/10/19	20:30:00.000	(1)		3.9	-	24.00	469
Mon-11/11/19	12:15:00.000		Y	3.7	-	24.00	458
Tue-11/12/19	04:00:00.000		Y	3.6	-	24.00	476
Wed-11/13/19	04:00:00.000		Y	3.5	-	24.00	485
Thu-11/14/19	06:15:00.000		Y	3.4	-	24.00	483
Fri-11/15/19	17:15:00.000		Y	3.4	-	24.00	477
Sat-11/16/19	03:45:00.000	(1)		3.4	-	24.00	484
Sun-11/17/19	04:00:00.000	(1)		3.6	-	24.00	494
Mon-11/18/19	04:00:00.000		Y	3.7	-	24.00	494
Tue-11/19/19	08:30:00.000		Y	3.8	-	24.00	497
Wed-11/20/19	14:00:00.000		Y	3.4	-	24.00	463
Thu-11/21/19	19:45:00.000		Y	3.4	-	24.00	474
Fri-11/22/19	04:00:00.000		Y	3.4	-	24.00	468
Sat-11/23/19	03:00:00.000	(1)		3.3	-	24.00	482
Sun-11/24/19	04:00:00.000	(1)		3.5	-	24.00	488
Mon-11/25/19	04:00:00.000		Y	3.7	-	24.00	487
Tue-11/26/19	15:00:00.000		Y	4.0	-	24.00	489
Wed-11/27/19	04:00:00.000		Y	4.1	-	24.00	487
Thu-11/28/19	04:00:00.000		Y	4.2	-	24.00	484
Fri-11/29/19	04:00:00.000		Y	4.1	-	24.00	484
Sat-11/30/19	04:00:00.000	(1)		4.0	-	24.00	483
<b>TOTALS</b>			-		-	720	

Daily readings are collected by the Operator at various times of the day, resulting in varied readings and calculations.

(1) Manual readings were not taken due to weekend and/or holiday.

**TABLE #10**

**RED POND CONCENTRATIONS**

Concentrations of 1,4-Dioxane found in the Red Pond

<b>SAMPLE ID</b>	<b>Date Sampled</b>	<b>1,4-DIOXANE (ppb)</b>
Red Pond-11-04-19-08:37-1	11/4/2019	370
Red Pond-11-12-19-08:10-1	11/12/2019	380
Red Pond-11-18-19-08:41-1	11/18/2019	380
Red Pond-11-25-19-08:05-1	11/25/2019	380

Analyte value quantified from a dilution, reporting limit is raised to reflect dilution

**OZONE OPERATION REPORT**

**Month of: Nov-19**

Date	Time	Notes	SYSTEM-1A		SYSTEM-1B		SYSTEM-2A		SYSTEM-2B	
			Flow GPM	Run Hours	Flow GPM	Run Hours	Flow GPM	Run Hours	Flow GPM	Run Hours
Fri-11/1/19	12:00:00.00		240	22.90	0	0.00	241	22.90	0	0.00
Sat-11/2/19	12:00:00.00	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Sun-11/3/19	12:00:00.00	(1)	239	24.00	0	0.00	240	24.00	0	0.00
Mon-11/4/19	12:00:00.00		239	24.00	0	0.00	240	23.62	0	0.00
Tue-11/5/19	0:00:00.00		239	24.00	0	0.00	239	24.00	0	0.00
Wed-11/6/19	3:45:00.00		240	24.00	0	0.00	240	24.00	0	0.00
Thu-11/7/19	14:00:00.00		240	24.00	0	0.00	242	24.00	0	0.00
Fri-11/8/19	12:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Sat-11/9/19	12:00:00.00	(1)	239	24.00	0	0.00	240	23.90	0	0.00
Sun-11/10/19	14:00:00.00	(1)	240	24.00	0	0.00	239	24.00	0	0.00
Mon-11/11/19	10:30:00.00		240	24.00	0	0.00	240	24.00	0	0.00
Tue-11/12/19	12:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Wed-11/13/19	12:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Thu-11/14/19	14:00:00.00		240	23.02	0	0.00	240	24.00	0	0.00
Fri-11/15/19	16:15:00.00		240	24.00	0	0.00	239	24.00	0	0.00
Sat-11/16/19	7:15:00.00	(1)	240	23.58	0	0.00	239	23.45	0	0.00
Sun-11/17/19	12:00:00.00	(1)	239	24.00	0	0.00	240	24.00	0	0.00
Mon-11/18/19	12:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Tue-11/19/19	14:00:00.00		240	24.00	0	0.00	240	24.00	0	0.00
Wed-11/20/19	14:00:00.00		240	24.00	0	0.00	240	24.00	0	0.00
Thu-11/21/19	18:30:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Fri-11/22/19	14:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Sat-11/23/19	4:00:00.00	(1)	239	24.00	0	0.00	240	24.00	0	0.00
Sun-11/24/19	14:00:00.00	(1)	239	24.00	0	0.00	240	24.00	0	0.00
Mon-11/25/19	14:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Tue-11/26/19	9:45:00.00		240	24.00	0	0.00	240	24.00	0	0.00
Wed-11/27/19	14:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Thu-11/28/19	14:00:00.00		239	23.60	0	0.00	240	23.60	0	0.00
Fri-11/29/19	14:00:00.00		239	24.00	0	0.00	240	24.00	0	0.00
Sat-11/30/19	14:00:00.00	(1)	239	24.00	0	0.00	240	24.00	0	0.00

Daily readings are collected by the Operator at various times of the day, resulting in varied readings and calculations.

(1) Manual readings were not taken due to weekend and/or holiday.

11/1/19 - Treatment was shut down briefly for maintenance.

**GREEN POND / DISCHARGE DATA**

Month of: **Nov-19**

Date	Time	Notes	Green Pond																					
			Pond		Level		Aeration		Influent		Influent		Pond Discharge			Bypass Discharge			Recirc Thru UV to Pond			Recirc Thru UV to Disch		
			Visual Chk	Feet	Hours	Hours	GPM	GPM	Gallons	GPM	Gallons	Hours	GPM	Gallons	Hours	GPM	Gallons	Hours	GPM	Gallons	Hours			
Fri-11/1/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	679,088	22.78	-	-	-	-	-	-	-	-	-	-	
Sat-11/2/19	12:00:00.00	(1)		-	-	-	-	-	-	-	497	716,247	24.00	-	-	-	-	-	-	-	-	-	-	
Sun-11/3/19	12:00:00.00	(1)		-	-	-	-	-	-	-	497	716,185	24.00	-	-	-	-	-	-	-	-	-	-	
Mon-11/4/19	12:00:00.00		Y	-	-	-	-	-	-	-	497	703,234	23.60	-	-	-	-	-	-	-	-	-	-	
Tue-11/5/19	12:00:00.00		Y	-	-	-	-	-	-	-	497	715,331	24.00	-	-	-	-	-	-	-	-	-	-	
Wed-11/6/19	12:00:00.00		Y	-	-	-	-	-	-	-	497	715,096	24.00	-	-	-	-	-	-	-	-	-	-	
Thu-11/7/19	10:00:00.00		Y	-	-	-	-	-	-	-	497	715,115	24.00	-	-	-	-	-	-	-	-	-	-	
Fri-11/8/19	13:45:00.00		Y	-	-	-	-	-	-	-	493	710,301	24.00	-	-	-	-	-	-	-	-	-	-	
Sat-11/9/19	14:00:00.00	(1)		-	-	-	-	-	-	-	497	715,104	24.00	-	-	-	-	-	-	-	-	-	-	
Sun-11/10/19	14:00:00.00	(1)		-	-	-	-	-	-	-	497	715,122	24.00	-	-	-	-	-	-	-	-	-	-	
Mon-11/11/19	20:30:00.00		Y	-	-	-	-	-	-	-	496	714,817	24.00	-	-	-	-	-	-	-	-	-	-	
Tue-11/12/19	12:15:00.00		Y	-	-	-	-	-	-	-	496	714,622	24.00	-	-	-	-	-	-	-	-	-	-	
Wed-11/13/19	14:00:00.00		Y	-	-	-	-	-	-	-	496	714,736	24.00	-	-	-	-	-	-	-	-	-	-	
Thu-11/14/19	14:00:00.00		Y	-	-	-	-	-	-	-	496	714,947	24.00	-	-	-	-	-	-	-	-	-	-	
Fri-11/15/19	16:15:00.00		Y	-	-	-	-	-	-	-	497	715,053	24.00	-	-	-	-	-	-	-	-	-	-	
Sat-11/16/19	17:15:00.00	(1)		-	-	-	-	-	-	-	495	699,056	23.53	-	-	-	-	-	-	-	-	-	-	
Sun-11/17/19	13:45:00.00	(1)		-	-	-	-	-	-	-	497	715,864	24.00	-	-	-	-	-	-	-	-	-	-	
Mon-11/18/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	716,161	24.00	-	-	-	-	-	-	-	-	-	-	
Tue-11/19/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	716,126	24.00	-	-	-	-	-	-	-	-	-	-	
Wed-11/20/19	18:30:00.00		Y	-	-	-	-	-	-	-	497	715,977	24.00	-	-	-	-	-	-	-	-	-	-	
Thu-11/21/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	716,044	24.00	-	-	-	-	-	-	-	-	-	-	
Fri-11/22/19	19:45:00.00		Y	-	-	-	-	-	-	-	497	715,773	24.00	-	-	-	-	-	-	-	-	-	-	
Sat-11/23/19	14:00:00.00	(1)		-	-	-	-	-	-	-	497	715,611	24.00	-	-	-	-	-	-	-	-	-	-	
Sun-11/24/19	13:00:00.00	(1)		-	-	-	-	-	-	-	497	715,771	24.00	-	-	-	-	-	-	-	-	-	-	
Mon-11/25/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	715,906	24.00	-	-	-	-	-	-	-	-	-	-	
Tue-11/26/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	715,793	24.00	-	-	-	-	-	-	-	-	-	-	
Wed-11/27/19	15:00:00.00		Y	-	-	-	-	-	-	-	497	715,814	24.00	-	-	-	-	-	-	-	-	-	-	
Thu-11/28/19	14:00:00.00		Y	-	-	-	-	-	-	-	496	701,812	23.57	-	-	-	-	-	-	-	-	-	-	
Fri-11/29/19	14:00:00.00		Y	-	-	-	-	-	-	-	497	715,563	24.00	-	-	-	-	-	-	-	-	-	-	
Sat-11/30/19	14:00:00.00	(1)		-	-	-	-	-	-	-	497	715,641	24.00	-	-	-	-	-	-	-	-	-	-	
<b>TOTALS</b>												<b>21,381,910</b>	<b>717</b>											

Daily readings are collected by the Operator at various times of the day, resulting in varied readings and calculations.

(1) Manual readings were not taken due to weekend and/or holiday.

**TABLE #13**  
**Daily Discharge Monitoring Report**

	(Daily)	Quarterly	(Effluent - Outfall)	(Influent - Red Pond)	(Effluent - Outfall)	(Effluent - Outfall)	(Weekly)	(2 x Week)	(4 x Week)	(4 x Week)	(5 X Week)	(2 X Week)	
PARAMETER NAME	Flow	Total Barium	Total Barium	1,4-Dioxane	1,4-Dioxane	Hydrogen Peroxide	Hydrogen Peroxide	Outfall Observation	Equipment Inspection	pH (Min. Daily)	pH (Max. Daily)	Bromate	Sodium Bisulfite Dose Rate
PARAMETER CODE	50050	1007	1007	82388	82388	00139	00139	84130	46478	00400	00400	99814	99798
MONITORING PT.	001A	001A	001A	001A	001A	001A	001A	001A	001A	001A	001A	001A	001A
STAGE CODE	1	1	1	1	G	1	1	1	1	1	1	1	1
UNIT	MGD	ug/l	lbs/day	ug/l	mg/l	ug/l	lbs/day	yes/no	yes/no	S.U.	S.U.	ug/l	mg/l
11/1/2019	0.679	*G	*G			<50	<0.16	no	no	6.6	6.6		55
11/2/2019	0.716												
11/3/2019	0.716			6.5								7.6	
11/4/2019	0.703			5.6	0.370	<50	<0.16	yes	yes	6.7	6.7	7.4	15
11/5/2019	0.715			5.4		<50	<0.16	no	no	6.8	6.8	7.2	
11/6/2019	0.715			5.2		<50	<0.16	no	yes	6.6	6.6	7.1	
11/7/2019	0.715			5.6		<50	<0.16	no	no	7.0	7.0	7	
11/8/2019	0.710					<50	<0.16	no	no	6.8	6.8		35
11/9/2019	0.715												
11/10/2019	0.715			5								7.7	
11/11/2019	0.715			5.5								6.8	
11/12/2019	0.715			5.4	0.380	<50	<0.16	yes	yes	6.9	6.9	9.1	30
11/13/2019	0.715			5.9		<50	<0.16	no	yes	6.7	6.7	7	
11/14/2019	0.715			5.9		<50	<0.16	no	no	6.9	6.9	7.8	
11/15/2019	0.715					<50	<0.16	no	no	6.5	6.5		15
11/16/2019	0.699												
11/17/2019	0.716			5.5								6.4	
11/18/2019	0.716			5.7	0.380	<50	<0.16	yes	yes	6.5	6.5	6.7	20
11/19/2019	0.716			5.3		<50	<0.16	no	no	6.6	6.6	6.8	
11/20/2019	0.716			4.5		<50	<0.16	no	yes	6.6	6.6	6.9	
11/21/2019	0.716			5.8		<50	<0.16	no	no	6.7	6.7	6.2	
11/22/2019	0.716					<50	<0.16	no	no	6.6	6.6		30
11/23/2019	0.716												
11/24/2019	0.716			6.0								5.6	
11/25/2019	0.716			5.7	0.380	<50	<0.16	yes	yes	6.6	6.6	6.3	34
11/26/2019	0.716			5.5		<50	<0.16	no	no	6.5	6.5	6.7	
11/27/2019	0.716					<50	<0.16	no	yes	6.8	6.8		15
11/28/2019	0.702												
11/29/2019	0.716												
11/30/2019	0.716												
<b>Discharged</b>	<b>21.382</b>												
<b>Monthly Avg</b>				<b>5.6</b>								<b>7.0</b>	

11/11/19 - Holiday  
11/28/19 - 11/29/19 - Holiday