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January 8, 2019

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

**Re: Monitoring Report # 260  
December 1 – December 31, 2018**

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 December 1 through December 31, 2018.

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

Sincerely,

A handwritten signature in cursive script that reads "Lawrence J. Gelb".

Lawrence J. Gelb  
Sr. Director Global EHS

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

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**UNIT D2 UPGRADIENT EXTRACTION DATA**

Month of: **Dec-18**

Date	Horizontal Well Extraction			TW-21			Daily Flow	Daily Total
	HW-S Gallons	GPM	Run Hrs.	TW-21 Gallons	GPM	Run Hrs.	GPM	Gallons
	Sat-12/1/18	-	-	-	93,567	65	24.00	65
Sun-12/2/18	-	-	-	93,661	65	24.00	65	93,661
Mon-12/3/18	-	-	-	93,560	65	24.00	65	93,560
Tue-12/4/18	-	-	-	93,550	65	24.00	65	93,550
Wed-12/5/18	-	-	-	93,525	65	24.00	65	93,525
Thu-12/6/18	-	-	-	93,512	65	24.00	65	93,512
Fri-12/7/18	-	-	-	93,533	65	24.00	65	93,533
Sat-12/8/18	-	-	-	93,513	65	24.00	65	93,513
Sun-12/9/18	-	-	-	93,485	65	24.00	65	93,485
Mon-12/10/18	-	-	-	93,484	65	24.00	65	93,484
Tue-12/11/18	-	-	-	93,500	65	24.00	65	93,500
Wed-12/12/18	-	-	-	93,524	65	24.00	65	93,524
Thu-12/13/18	-	-	-	93,527	65	24.00	65	93,527
Fri-12/14/18	-	-	-	93,582	65	24.00	65	93,582
Sat-12/15/18	-	-	-	93,540	65	24.00	65	93,540
Sun-12/16/18	-	-	-	93,545	65	24.00	65	93,545
Mon-12/17/18	-	-	-	33,952	65	8.72	24	33,952
Tue-12/18/18	-	-	-	-	-	-	0	-
Wed-12/19/18	-	-	-	46,772	65	11.97	32	46,772
Thu-12/20/18	-	-	-	93,565	65	24.00	65	93,565
Fri-12/21/18	736	92	0	93,565	65	24.00	65	94,301
Sat-12/22/18	-	-	-	93,527	65	24.00	65	93,527
Sun-12/23/18	-	-	-	93,547	65	24.00	65	93,547
Mon-12/24/18	-	-	-	93,548	65	24.00	65	93,548
Tue-12/25/18	-	-	-	93,517	65	24.00	65	93,517
Wed-12/26/18	-	-	-	93,575	65	24.00	65	93,575
Thu-12/27/18	-	-	-	93,578	65	24.00	65	93,578
Fri-12/28/18	-	-	-	93,638	65	24.00	65	93,638
Sat-12/29/18	-	-	-	93,525	65	24.00	65	93,525
Sun-12/30/18	-	-	-	93,537	65	24.00	65	93,537
Mon-12/31/18	-	-	-	93,531	65	24.00	65	93,531
<b>TOTALS</b>	<b>736</b>	<b>92</b>	<b>0.13</b>	<b>2,699,985</b>	<b>65</b>	<b>692.69</b>	<b>61</b>	<b>2,700,721</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>2,700,721 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>60.50 GPM</b>

12/17/18-12/19/18 - TW-21 was shut down for piping changes and relocation of DTE Energy meter at Porter Street pumping station.

**UNIT D2 DOWNGRADIENT EXTRACTION DATA**

Month of: **Dec-18**

Date	LB-4			Daily	Daily
	Gallons	GPM	Run Hrs.	Flow GPM	Total Gallons
Sat-12/1/18	144,197	100	24.00	100	144,197
Sun-12/2/18	144,184	100	24.00	100	144,184
Mon-12/3/18	144,174	100	24.00	100	144,174
Tue-12/4/18	144,166	100	24.00	100	144,166
Wed-12/5/18	144,246	100	24.00	100	144,246
Thu-12/6/18	144,235	100	24.00	100	144,235
Fri-12/7/18	144,304	100	24.00	100	144,304
Sat-12/8/18	144,227	100	24.00	100	144,227
Sun-12/9/18	144,202	100	24.00	100	144,202
Mon-12/10/18	144,254	100	24.00	100	144,254
Tue-12/11/18	141,859	100	23.60	99	141,859
Wed-12/12/18	144,274	100	24.00	100	144,274
Thu-12/13/18	139,334	100	23.21	97	139,334
Fri-12/14/18	144,149	100	24.00	100	144,149
Sat-12/15/18	144,123	100	24.00	100	144,123
Sun-12/16/18	144,192	100	24.00	100	144,192
Mon-12/17/18	57,927	100	9.65	40	57,927
Tue-12/18/18	-	-	-	0	-
Wed-12/19/18	66,224	100	11.01	46	66,224
Thu-12/20/18	144,176	100	24.00	100	144,176
Fri-12/21/18	142,746	100	23.75	99	142,746
Sat-12/22/18	144,163	100	24.00	100	144,163
Sun-12/23/18	144,183	100	24.00	100	144,183
Mon-12/24/18	144,246	100	24.00	100	144,246
Tue-12/25/18	144,218	100	24.00	100	144,218
Wed-12/26/18	144,275	100	24.00	100	144,275
Thu-12/27/18	144,212	100	24.00	100	144,212
Fri-12/28/18	144,244	100	24.00	100	144,244
Sat-12/29/18	144,200	100	24.00	100	144,200
Sun-12/30/18	144,225	100	24.00	100	144,225
Mon-12/31/18	144,254	100	24.00	100	144,254
<b>TOTALS</b>	<b>4,153,413</b>	<b>100</b>	<b>691.22</b>	<b>93</b>	<b>4,153,413</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>4,153,413 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>93.04 GPM</b>

12/17/18-12/19/18 - LB-4 was shut down for piping changes and relocation of DTE Energy meter at Porter Street pumping station.

**CORE AREA EXTRACTION DATA**

**Month of: Dec-18**

Core Area Well Extraction										Daily	Daily
Date	TW-2 (Dolph)			TW-10			TW-20			Flow	Total
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.		
Sat-12/1/18	18,636	13	24.00	-	-	-	43,217	30	24.00	43	61,853
Sun-12/2/18	18,772	13	24.00	-	-	-	43,529	30	24.00	43	62,301
Mon-12/3/18	18,796	13	24.00	-	-	-	43,531	30	24.00	43	62,327
Tue-12/4/18	16,974	12	24.00	-	-	-	43,615	30	24.00	42	60,589
Wed-12/5/18	15,900	11	24.00	-	-	-	43,274	30	24.00	41	59,174
Thu-12/6/18	16,486	11	24.00	-	-	-	43,239	30	24.00	41	59,725
Fri-12/7/18	16,836	12	24.00	-	-	-	43,196	30	24.00	42	60,032
Sat-12/8/18	16,405	11	24.00	-	-	-	43,451	30	24.00	42	59,856
Sun-12/9/18	16,039	11	24.00	-	-	-	43,203	30	24.00	41	59,242
Mon-12/10/18	16,002	11	24.00	-	-	-	43,233	30	24.00	41	59,235
Tue-12/11/18	16,945	12	24.00	-	-	-	43,176	30	24.00	42	60,121
Wed-12/12/18	18,568	13	24.00	-	-	-	43,502	30	24.00	43	62,070
Thu-12/13/18	18,888	13	24.00	-	-	-	43,443	30	24.00	43	62,331
Fri-12/14/18	19,018	13	24.00	-	-	-	43,201	30	24.00	43	62,219
Sat-12/15/18	19,088	13	24.00	-	-	-	43,300	30	24.00	43	62,388
Sun-12/16/18	19,155	13	24.00	-	-	-	43,340	30	24.00	43	62,495
Mon-12/17/18	19,208	13	24.00	31,962	35	15.22	43,232	30	24.00	66	94,402
Tue-12/18/18	18,132	13	24.00	50,400	35	24.00	43,633	30	24.00	78	112,165
Wed-12/19/18	18,377	13	24.00	28,280	35	13.47	43,549	30	24.00	63	90,206
Thu-12/20/18	18,581	13	24.00	-	-	-	43,031	30	24.00	43	61,612
Fri-12/21/18	18,709	13	24.00	-	-	-	42,960	30	24.00	43	61,669
Sat-12/22/18	18,747	13	24.00	-	-	-	42,921	30	24.00	43	61,668
Sun-12/23/18	18,899	13	24.00	-	-	-	43,271	30	24.00	43	62,170
Mon-12/24/18	19,075	13	24.00	-	-	-	43,417	30	24.00	43	62,492
Tue-12/25/18	17,846	12	24.00	-	-	-	43,403	30	24.00	43	61,249
Wed-12/26/18	18,394	13	24.00	-	-	-	43,295	30	24.00	43	61,689
Thu-12/27/18	18,548	13	24.00	-	-	-	43,205	30	24.00	43	61,753
Fri-12/28/18	18,629	13	24.00	-	-	-	43,484	30	24.00	43	62,113
Sat-12/29/18	18,461	13	24.00	-	-	-	43,073	30	24.00	43	61,534
Sun-12/30/18	18,428	13	24.00	-	-	-	43,289	30	24.00	43	61,717
Mon-12/31/18	18,880	13	24.00	-	-	-	43,172	30	24.00	43	62,052
<b>TOTALS</b>	<b>561,422</b>	<b>13</b>	<b>744.00</b>	<b>110,642</b>	<b>35</b>	<b>52.68</b>	<b>1,342,385</b>	<b>30</b>	<b>744.00</b>	<b>45</b>	<b>2,014,449</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>2,014,449 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>45.13 GPM</b>

**MARSHY AREA EXTRACTION DATA**

Month of: **Dec-18**

Marshy Well Extraction				Daily	Daily
Date	PW-1			Flow	Total
	Gallons	GPM	Run Hrs.	GPM	Gallons
Sat-12/1/18	2,341	2	17.63	2	2,341
Sun-12/2/18	2,426	2	18.70	2	2,426
Mon-12/3/18	2,431	2	19.10	2	2,431
Tue-12/4/18	2,473	2	19.73	2	2,473
Wed-12/5/18	2,481	2	20.35	2	2,481
Thu-12/6/18	2,500	2	21.68	2	2,500
Fri-12/7/18	2,532	2	23.05	2	2,532
Sat-12/8/18	2,557	2	23.80	2	2,557
Sun-12/9/18	2,554	2	24.00	2	2,554
Mon-12/10/18	2,539	2	24.00	2	2,539
Tue-12/11/18	2,527	2	24.00	2	2,527
Wed-12/12/18	2,500	2	24.00	2	2,500
Thu-12/13/18	2,486	2	24.00	2	2,486
Fri-12/14/18	2,487	2	24.00	2	2,487
Sat-12/15/18	2,479	2	24.00	2	2,479
Sun-12/16/18	2,448	2	24.00	2	2,448
Mon-12/17/18	2,408	2	24.00	2	2,408
Tue-12/18/18	2,400	2	24.00	2	2,400
Wed-12/19/18	2,383	2	24.00	2	2,383
Thu-12/20/18	2,352	2	24.00	2	2,352
Fri-12/21/18	2,338	2	24.00	2	2,338
Sat-12/22/18	2,353	2	24.00	2	2,353
Sun-12/23/18	2,361	2	24.00	2	2,361
Mon-12/24/18	2,363	2	24.00	2	2,363
Tue-12/25/18	2,357	2	24.00	2	2,357
Wed-12/26/18	2,338	2	24.00	2	2,338
Thu-12/27/18	2,262	2	24.00	2	2,262
Fri-12/28/18	2,263	2	24.00	2	2,263
Sat-12/29/18	2,295	2	24.00	2	2,295
Sun-12/30/18	2,280	2	24.00	2	2,280
Mon-12/31/18	2,246	2	24.00	2	2,246
<b>TOTALS</b>	<b>74,760</b>	<b>2</b>	<b>716.05</b>	<b>2</b>	<b>74,760</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>74,760 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>1.67 GPM</b>

PW-1 was down intermittently due to flow fluctuations.

**SOUTHWEST AREA EXTRACTION DATA**

**Month of: Dec-18**

SouthWest Well Extraction				Daily	Daily
Date	ACTIVE WELLS			Flow	Total
	Gallons	GPM	Run Hrs.	GPM	Gallons
Sat-12/1/18	5,769	4	24.00	4	5,769
Sun-12/2/18	5,679	4	24.00	4	5,679
Mon-12/3/18	5,667	4	24.00	4	5,667
Tue-12/4/18	5,730	4	24.00	4	5,730
Wed-12/5/18	5,726	4	24.00	4	5,726
Thu-12/6/18	5,681	4	24.00	4	5,681
Fri-12/7/18	5,710	4	24.00	4	5,710
Sat-12/8/18	5,799	4	24.00	4	5,799
Sun-12/9/18	5,789	4	24.00	4	5,789
Mon-12/10/18	5,750	4	24.00	4	5,750
Tue-12/11/18	5,634	4	24.00	4	5,634
Wed-12/12/18	5,635	4	24.00	4	5,635
Thu-12/13/18	5,641	4	24.00	4	5,641
Fri-12/14/18	5,702	4	24.00	4	5,702
Sat-12/15/18	5,706	4	24.00	4	5,706
Sun-12/16/18	5,732	4	24.00	4	5,732
Mon-12/17/18	5,731	4	24.00	4	5,731
Tue-12/18/18	5,765	4	24.00	4	5,765
Wed-12/19/18	5,846	4	24.00	4	5,846
Thu-12/20/18	5,949	4	24.00	4	5,949
Fri-12/21/18	5,991	4	24.00	4	5,991
Sat-12/22/18	6,055	4	24.00	4	6,055
Sun-12/23/18	6,133	4	24.00	4	6,133
Mon-12/24/18	6,173	4	24.00	4	6,173
Tue-12/25/18	6,214	4	24.00	4	6,214
Wed-12/26/18	6,137	4	24.00	4	6,137
Thu-12/27/18	6,100	4	24.00	4	6,100
Fri-12/28/18	6,074	4	24.00	4	6,074
Sat-12/29/18	6,055	4	24.00	4	6,055
Sun-12/30/18	6,023	4	24.00	4	6,023
Mon-12/31/18	6,008	4	24.00	4	6,008
<b>TOTALS</b>	<b>181,604</b>	<b>4</b>	<b>744.00</b>	<b>4</b>	<b>181,604</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>181,604 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>4.07 GPM</b>

Note: ACTIVE WELLS = TW-22  
 TW-8 was shut down for replacement

**UNIT "E" EXTRACTION DATA**

Month of: Dec-18

Date	TW-18			TW-19			TW-23			Daily	Daily
	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Gallons	GPM	Run Hrs.	Flow GPM	Total Gallons
Sat-12/1/18	240,913	167	24.00	43,785	30	24.00	99,489	69	24.00	267	384,187
Sun-12/2/18	240,944	167	24.00	43,827	30	24.00	99,527	69	24.00	267	384,298
Mon-12/3/18	240,895	167	24.00	43,772	30	24.00	99,354	69	24.00	267	384,021
Tue-12/4/18	240,983	167	24.00	43,770	30	24.00	99,521	69	24.00	267	384,274
Wed-12/5/18	240,941	167	24.00	43,791	30	24.00	99,508	69	24.00	267	384,240
Thu-12/6/18	240,975	167	24.00	43,774	30	24.00	99,415	69	24.00	267	384,164
Fri-12/7/18	241,015	167	24.00	43,766	30	24.00	99,354	69	24.00	267	384,135
Sat-12/8/18	240,939	167	24.00	43,765	30	24.00	99,338	69	24.00	267	384,042
Sun-12/9/18	241,013	167	24.00	43,802	30	24.00	99,408	69	24.00	267	384,223
Mon-12/10/18	240,944	167	24.00	43,561	31	23.80	98,691	69	23.80	266	383,196
Tue-12/11/18	240,962	167	24.00	44,465	32	23.50	97,235	69	23.50	266	382,662
Wed-12/12/18	240,942	167	24.00	45,514	32	24.00	99,318	69	24.00	268	385,774
Thu-12/13/18	240,927	167	24.00	38,326	31	20.40	84,481	69	20.40	253	363,734
Fri-12/14/18	240,959	167	24.00	44,608	31	24.00	99,329	69	24.00	267	384,896
Sat-12/15/18	240,962	167	24.00	44,626	31	24.00	99,351	69	24.00	267	384,939
Sun-12/16/18	240,964	167	24.00	44,621	31	24.00	99,397	69	24.00	267	384,982
Mon-12/17/18	240,949	167	24.00	13,666	31	7.40	30,452	69	7.40	198	285,067
Tue-12/18/18	240,973	167	24.00	-	-	-	-	-	-	167	240,973
Wed-12/19/18	241,033	167	24.00	24,266	30	13.30	55,091	69	13.30	222	320,390
Thu-12/20/18	240,998	167	24.00	43,895	30	24.00	99,331	69	24.00	267	384,224
Fri-12/21/18	240,974	167	24.00	43,510	31	23.60	97,881	69	23.60	266	382,365
Sat-12/22/18	241,027	167	24.00	44,163	31	24.00	99,357	69	24.00	267	384,547
Sun-12/23/18	240,997	167	24.00	44,132	31	24.00	99,313	69	24.00	267	384,442
Mon-12/24/18	241,036	167	24.00	44,179	31	24.00	99,472	69	24.00	267	384,687
Tue-12/25/18	240,997	167	24.00	44,223	31	24.00	99,379	69	24.00	267	384,599
Wed-12/26/18	240,993	167	24.00	44,228	31	24.00	99,566	69	24.00	267	384,787
Thu-12/27/18	240,881	167	24.00	44,236	31	24.00	99,546	69	24.00	267	384,663
Fri-12/28/18	240,930	167	24.00	44,223	31	24.00	99,429	69	24.00	267	384,582
Sat-12/29/18	240,979	167	24.00	44,205	31	24.00	99,435	69	24.00	267	384,619
Sun-12/30/18	240,996	167	24.00	44,235	31	24.00	99,427	69	24.00	267	384,658
Mon-12/31/18	240,882	167	24.00	44,253	31	24.00	99,430	69	24.00	267	384,565
<b>TOTALS</b>	<b>7,469,923</b>	<b>167</b>	<b>744.00</b>	<b>1,267,187</b>	<b>31</b>	<b>688.00</b>	<b>2,849,825</b>	<b>69</b>	<b>688.00</b>	<b>260</b>	<b>11,586,935</b>

<b>TOTAL VOLUME EXTRACTED :</b>	<b>11,586,935 GALLONS</b>
<b>DAYS IN MONTH :</b>	<b>31 DAYS</b>
<b>MONTHLY AVERAGE FLOW RATE :</b>	<b>259.56 GPM</b>

12/13/18 - TW-19 & TW-23 were shut down briefly due to a DTE Energy power outage.  
 12/17/18-12/19/18 - TW-19 & TW-23 were shut down for piping changes and relocation of DTE Energy meter at Porter Street pumping station.



**TABLE #7**

**Little Lake Area System**

MW-53i	
Date	1,4-Dioxane ug/L
09/05/18	78
10/02/18	46
11/07/18	42
12/03/18	77

A2 Cleaning Supply	
Date	1,4-Dioxane ug/L
09/07/18	84
10/02/18	83
11/12/18	66
12/06/18	88

Date	Gallons Purged
12/6/2018	28,000

**TABLE #8**

**INDIVIDUAL PURGE WELL CONCENTRATIONS**

<b>SAMPLE ID</b>	<b>Date Sampled</b>	<b>1,4-DIOXANE (ppb)</b>
DOLPH-12-10-18-13:28-1	12/10/18	120
TW-10-12-18-18-13:19-1	12/18/18	380
TW-20-12-10-18-13:22-1	12/10/18	1100
LB-4-12-10-18-13:47-1	12/10/18	480
TW-21-12-10-18-13:37-1	12/10/18	230
TW-18-12-10-18-13:32-1	12/10/18	270
TW-19-12-10-18-13:45-1	12/10/18	540
TW-23-12-10-18-14:01-1	12/10/18	710
PW-1-12-10-18-13:25-1	12/10/18	990
TW-22-12-10-18-13:29-1	12/10/18	480

**RED POND DATA**

**Month of: Dec-18**

Date	Time	Notes	Red Pond				
			Pond	Level	Aeration	Influent	Influent
			Visual Chk	Feet	Hours	Hours	GPM
Sat-12/1/18	3:05:00	(1)		5.0	-	24.00	480
Sun-12/2/18	3:00	(1)		4.9	-	24.00	481
Mon-12/3/18	3:00		Y	4.8	-	24.00	481
Tue-12/4/18	3:00		Y	4.9	-	24.00	480
Wed-12/5/18	3:00		Y	4.8	-	24.00	479
Thu-12/6/18	3:00		Y	4.7	-	24.00	479
Fri-12/7/18	3:00:00		Y	4.8	-	24.00	479
Sat-12/8/18	3:00	(1)		4.7	-	24.00	479
Sun-12/9/18	3:00	(1)		4.5	-	24.00	479
Mon-12/10/18	3:00		Y	4.4	-	24.00	478
Tue-12/11/18	3:00		Y	4.3	-	24.00	477
Wed-12/12/18	3:00		Y	4.2	-	24.00	482
Thu-12/13/18	3:00		Y	4.1	-	24.00	463
Fri-12/14/18	3:00		Y	4.0	-	24.00	481
Sat-12/15/18	3:00	(1)		4.0	-	24.00	481
Sun-12/16/18	3:00	(1)		3.9	-	24.00	482
Mon-12/17/18	3:00		Y	3.8	-	24.00	333
Tue-12/18/18	3:00		Y	4.2	-	24.00	251
Wed-12/19/18	3:00		Y	4.5	-	24.00	369
Thu-12/20/18	3:00		Y	4.9	-	24.00	480
Fri-12/21/18	3:00		Y	4.9	-	24.00	479
Sat-12/22/18	3:00	(1)		4.7	-	24.00	481
Sun-12/23/18	3:00	(1)		4.6	-	24.00	481
Mon-12/24/18	3:00		Y	4.5	-	24.00	482
Tue-12/25/18	3:00		Y	4.5	-	24.00	481
Wed-12/26/18	3:00		Y	4.4	-	24.00	481
Thu-12/27/18	3:00		Y	4.3	-	24.00	481
Fri-12/28/18	3:00		Y	4.3	-	24.00	481
Sat-12/29/18	3:00	(1)		4.2	-	24.00	481
Sun-12/30/18	3:00	(1)		4.1	-	24.00	481
Mon-12/31/18	3:00		Y	4.1	-	24.00	481
<b>TOTALS</b>			-	-	-	744	

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-12-03-18-12:56-1	12/3/2018	380
Red Pond-12-10-18-11:09-1	12/10/2018	400
Red Pond-12-17-18-05:25-1	12/17/2018	440
Red Pond-12-18-18-13:34-1	12/18/2018	340
Red Pond-12-26-18-08:50-1	12/26/2018	420
Red Pond-12-31-18-08:20-1	12/31/2018	380

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

**OZONE OPERATION REPORT**

**Month of: Dec-18**

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
Sat-12/1/18	3:07:00	(1)	240	24.00	0	0.00	241	24.00	0	0.00
Sun-12/2/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Mon-12/3/18	3:00 AM		240	23.53	0	0.00	240	23.53	0	0.00
Tue-12/4/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Wed-12/5/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Thu-12/6/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Fri-12/7/18	3:00:00		240	24.00	0	0.00	240	24.00	0	0.00
Sat-12/8/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Sun-12/9/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Mon-12/10/18	3:00 AM		240	23.87	0	0.00	240	23.88	0	0.00
Tue-12/11/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Wed-12/12/18	3:00 AM		240	24.00	0	0.00	241	24.00	0	0.00
Thu-12/13/18	3:00 AM		240	23.00	0	0.00	240	24.00	0	0.00
Fri-12/14/18	3:00 AM		240	23.83	0	0.00	241	23.85	0	0.00
Sat-12/15/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Sun-12/16/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Mon-12/17/18	3:00 AM		240	24.00	0	0.00	240	8.68	0	0.00
Tue-12/18/18	3:00 AM		240	23.18	0	0.00	0	0.00	0	0.00
Wed-12/19/18	3:00 AM		239	23.70	0	0.00	0	10.00	0	0.00
Thu-12/20/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Fri-12/21/18	3:00 AM		239	24.00	0	0.00	240	24.00	0	0.00
Sat-12/22/18	3:00 AM	(1)	240	24.00	0	0.00	240	24.00	0	0.00
Sun-12/23/18	3:00 AM	(1)	239	24.00	0	0.00	240	24.00	0	0.00
Mon-12/24/18	3:00 AM		240	24.00	0	0.00	241	24.00	0	0.00
Tue-12/25/18	3:00 AM		240	24.00	0	0.00	240	24.00	0	0.00
Wed-12/26/18	3:00 AM		240	24.00	0	0.00	239	23.87	0	0.00
Thu-12/27/18	3:00 AM		239	24.00	0	0.00	241	23.95	0	0.00
Fri-12/28/18	3:00 AM		240	24.00	0	0.00	241	23.92	0	0.00
Sat-12/29/18	3:00 AM	(1)	240	24.00	0	0.00	240	23.93	0	0.00
Sun-12/30/18	3:00 AM	(1)	240	24.00	0	0.00	241	23.83	0	0.00
Mon-12/31/18	3:00 AM		240	24.00	0	0.00	239	23.02	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.

12/17/18-12/19/18 - System 2A was shut down during piping changes and relocation of DTE Energy meter at Porter Street pumping station.

**TABLE #12**

**GREEN POND / DISCHARGE DATA**

Month of: **Dec-18**

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		
Sat-12/1/18	3:05:00	(1)		-	-						497	715,549	24.00	-	-	-	-	-	-	
Sun-12/2/18	3:00 AM	(1)		-	-						497	715,880	24.00	-	-	-	-	-	-	
Mon-12/3/18	3:00 AM		Y	-	-						485	698,703	24.00	-	-	-	-	-	-	
Tue-12/4/18	3:00 AM		Y	-	-						497	715,523	24.00	-	-	-	-	-	-	
Wed-12/5/18	3:00 AM		Y	-	-						497	715,572	24.00	-	-	-	-	-	-	
Thu-12/6/18	3:00 AM		Y	-	-						497	715,483	24.00	-	-	-	-	-	-	
Fri-12/7/18	3:00:00		Y	-	-						497	715,479	24.00	-	-	-	-	-	-	
Sat-12/8/18	3:00 AM	(1)		-	-						497	715,444	24.00	-	-	-	-	-	-	
Sun-12/9/18	3:00 AM	(1)		-	-						497	715,533	24.00	-	-	-	-	-	-	
Mon-12/10/18	3:00 AM		Y	-	-						497	708,590	23.77	-	-	-	-	-	-	
Tue-12/11/18	3:00 AM		Y	-	-						497	715,379	24.00	-	-	-	-	-	-	
Wed-12/12/18	3:00 AM		Y	-	-						497	715,505	24.00	-	-	-	-	-	-	
Thu-12/13/18	3:00 AM		Y	-	-						479	689,567	24.00	-	-	-	-	-	-	
Fri-12/14/18	3:00 AM		Y	-	-						496	708,807	23.80	-	-	-	-	-	-	
Sat-12/15/18	3:00 AM	(1)		-	-						497	715,591	24.00	-	-	-	-	-	-	
Sun-12/16/18	3:00 AM	(1)		-	-						497	715,866	24.00	-	-	-	-	-	-	
Mon-12/17/18	3:00 AM		Y	-	-						338	487,395	24.00	-	-	-	-	-	-	
Tue-12/18/18	3:00 AM		Y	-	-						248	343,758	23.07	-	-	-	-	-	-	
Wed-12/19/18	3:00 AM		Y	-	-						353	497,779	23.53	-	-	-	-	-	-	
Thu-12/20/18	3:00 AM		Y	-	-						497	716,120	24.00	-	-	-	-	-	-	
Fri-12/21/18	3:00 AM		Y	-	-						497	716,320	24.00	-	-	-	-	-	-	
Sat-12/22/18	3:00 AM	(1)		-	-						497	715,979	24.00	-	-	-	-	-	-	
Sun-12/23/18	3:00 AM	(1)		-	-						497	715,978	24.00	-	-	-	-	-	-	
Mon-12/24/18	3:00 AM		Y	-	-						497	715,878	24.00	-	-	-	-	-	-	
Tue-12/25/18	3:00 AM		Y	-	-						497	715,915	24.00	-	-	-	-	-	-	
Wed-12/26/18	3:00 AM		Y	-	-						495	712,415	24.00	-	-	-	-	-	-	
Thu-12/27/18	3:00 AM		Y	-	-						496	714,578	24.00	-	-	-	-	-	-	
Fri-12/28/18	3:00 AM		Y	-	-						496	714,528	24.00	-	-	-	-	-	-	
Sat-12/29/18	3:00 AM	(1)		-	-						496	714,156	24.00	-	-	-	-	-	-	
Sun-12/30/18	3:00 AM	(1)		-	-						493	709,529	24.00	-	-	-	-	-	-	
Mon-12/31/18	3:00 AM		Y	-	-						482	694,592	24.00	-	-	-	-	-	-	
<b>TOTALS</b>				-	-		-	-	-	-		<b>21,277,391</b>	<b>742</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
12/1/2018	0.716	*G	*G										
12/2/2018	0.716			5.2								9.1	
12/3/2018	0.699			5.1	0.380	<50	<0.16	yes	yes	6.5	6.5	7.9	22
12/4/2018	0.716			5		<50	<0.16			6.5	6.5	8.3	
12/5/2018	0.716			5.1		<50	<0.16		yes	6.7	6.7	8.7	30
12/6/2018	0.715			5.2		<50	<0.16			6.7	6.7	7.7	
12/7/2018	0.715					<50	<0.16			6.7	6.7		
12/8/2018	0.715												
12/9/2018	0.716			4.6								8.8	
12/10/2018	0.709			5.6	0.400	<50	<0.16	yes	yes	6.7	6.7	8	45
12/11/2018	0.715			5.5		<50	<0.16			6.8	6.8	8.9	
12/12/2018	0.716			5		<50	<0.16		yes	6.7	6.7	7.6	10
12/13/2018	0.690			5.6		<50	<0.16			6.7	6.7	7.4	
12/14/2018	0.709					<50	<0.16			6.6	6.6		
12/15/2018	0.716												
12/16/2018	0.716			4.8								7.4	
12/17/2018	0.487			4.6	0.440	<50	<0.16	yes	yes	6.6	6.6	7.9	40
12/18/2018	0.344			4.9	0.340	<50	<0.16			6.7	6.7	7.2	
12/19/2018	0.498			5.1		<50	<0.16		yes	6.7	6.7	7.4	18
12/20/2018	0.716			5.2		<50	<0.16			6.6	6.6	6.3	
12/21/2018	0.716					<50	<0.16			6.6	6.6		
12/22/2018	0.716												
12/23/2018	0.716			5.2								7.2	
12/24/2018	0.716			5.6								7.7	
12/25/2018	0.716			5.2								7	
12/26/2018	0.712			5.5	0.420	<50	<0.16	yes	yes	6.7	6.7	7.1	55
12/27/2018	0.715			5.6		<50	<0.16			6.6	6.6	6.8	
12/28/2018	0.715					<50	<0.16		yes	6.6	6.6		50
12/29/2018	0.714												
12/30/2018	0.710			5.4								7.4	
12/31/2018	0.695			5.2	0.380	<50	<0.16	yes	yes	6.7		6.6	70
<b>Discharged (mg)</b>	<b>21.277</b>												
<b>Monthly Avg</b>				<b>5.2</b>								<b>7.7</b>	

12/24/18-12/25/18 - Holiday