



**1st Quarter, 2011**

**(January, February, March)**

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JACKSON DISTRICT OFFICE

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1,4-Dioxane Isoconcentration Map for Units C3, D0, D2 & SW

## Summary of Activity

CEB = Central Environmental Building  
C3 = C3 aquifer  
D2 = D2 aquifer  
E = E aquifer  
SW = Southwest Property Area  
Maple = Maple Road

### ***Treatment Activities***

01/01/11 - 01/03/11 - HW-S (D2) and TW-11 (E) were shut down for maintenance.  
01/01/11 - 01/07/11 - TW-9 (D2) was shut down for maintenance.  
02/22/11 - 02/25/11 - TW-20 (C3) was shut down for maintenance.  
03/01/11 - 03/02/11 - TW-10 (C3) was shut down for maintenance.  
03/12/11 - 3/14/11 - System 2A was shut down for maintenance. TW-9 (D2), TW-17 (E), TW-10 & TW-14 (C3) were shut down to adjust the Pond level.  
03/24/11 - AE-3 (D2) was permanently shut down. This well was abandoned on 03/28/11.

### ***Field Activities***

01/03/11      Extraction and Treatment was shut down at Maple Road  
01/27/11      MW-128d was installed in Saginaw Forest  
01/28/11      MW-128s was installed in Saginaw Forest  
02/02/11      TW-13 was replaced by TW-22  
02/18/11      MW-129s/i/d was installed in City R-O-W on Ironwood  
03/09/11      MW-130s/i/d was installed in City R-O-W on Pamela  
02/25/11      MW-131 s/d was installed in County R-O-W on Eagle Pointe  
03/18/11      MW-133 s/i/d was installed at 3500 Jackson  
03/28/11      AE-3 was abandoned  
03/29/11      MW-134 s/i/d was installed near Jackson Plaza

## Submittals/Responses

01/18/11      PLS submitted Maple Interim Response Operation Report to DNRE  
                 PLS submitted Monthly Monitoring Report (NPDES) to DNRE  
                 PLS submitted Discharge Monitoring Report (DMR) electronically to DNRE  
                 PLS submitted 4th Quarter 2010 Report to DNRE  
  
02/14/11      PLS submitted Maple Interim Response Operation Report to DNRE  
                 PLS submitted Monthly Monitoring Report (NPDES) to DNRE  
                 PLS submitted Discharge Monitoring Report (DMR) electronically to DNRE  
  
03/09/11      DNRE correspondence to PLS approving Maple-Allison pipeline construction  
  
03/11/11      PLS submitted Monthly Monitoring Report (NPDES) to DNRE  
  
03/14/11      PLS submitted Discharge Monitoring Report (DMR) electronically to DNRE

### *Anticipated Major Activities for the Next Quarter*

- Secure access to install proposed Evergreen/Maple pipeline
- Take necessary steps to connect six homes to municipality (Expansion of PZ)

### *Quarterly Performance Analysis*

For the months of January, February, March 2011, over 602 pounds of 1,4-dioxane were removed and 146,762,410 gallons of water were extracted from the contaminated aquifers, treated and discharged. The total mass of 1,4-dioxane removed since May 1997 is over 84,500 pounds and the total volume of water discharged since May 1997 is over 6 billion gallons.

In general, the performance of the operation was as expected, purging and treating contaminated groundwater to the existing allowable capacities.

# **Mass Reduction**

MASS REDUCTION DETAIL BY AQUIFIER

January 1 - January 31, 2011

Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
<b>C3</b>					
TW-1	1,698,388	38	0.1	2.8	203
TW-2 (Dolph)	2,246,205	50	0.0	1.5	80
TW-3	-	0	0.0	0.0	5
TW-6	-	0	0.0	0.0	66
TW-10	4,065,577	91	0.8	23.7	699
TW-14	4,017,359	90	0.1	3.8	114
TW-20	2,235,705	50	0.9	27.3	1465
MW-22	-	0.0	0.0	0.0	1706
<i>Sub-Totals</i>	14,263,234	320	2	59	
<b>Marshy</b>					
PW-1	168,807	4	0.1	1.6	1141
<i>Sub-Totals</i>	168,807	4	0	2	
<b>E</b>					
TW-11	2,064,475	46	0.1	3.6	210
TW-12	-	0	0.0	0.0	23
TW-17	4,460,862	100	0.1	3.1	84
TW-18	6,708,062	150	0.6	17.9	319
MW-64	-	0	0.0	0.0	56
	13,233,399	296	1	25	
<b>Southwest</b>					
Active Wells	1,358,072	30	0.2	5.5	486
MW-10d	-	0.0	0.0	0.0	1073
MW-75	-	0	0.0	0.0	49
MW-45d	-	0.0	0.0	0.0	335
<i>Sub-Totals</i>	1,358,072	30	0	6	
<b>D2</b>					
LB-1	4,468,731	100	0.6	19.1	511
LB-3	1,790,591	40	0.2	6.9	459
AE-3	666,031	15	0.0	0.7	126
HW-S	1,042,910	23	0.2	7.7	895
TW-5	3,589,272	80	0.8	25.3	844
TW-9	3,008,307	67	0.6	18.2	785
TW-21	6,297,795	141	0.8	26.3	503
MW-11D	-	0	0.0	0.0	180
<i>Sub-Totals</i>	20,863,637	467	3	104	
<b>Overall Totals</b>	49,887,149	1,118	6.3	195.1	

\*SW Active = TW-8

**MASS REDUCTION DETAIL BY AQUIFIER**

February 1 - February 28, 2011

Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
<b>C3</b>					
TW-1	1,534,667	38	0.1	2.1	167
TW-2 (Dolph)	2,052,817	51	0.1	1.5	86
TW-3	-	0	0.0	0.0	5
TW-6	-	0	0.0	0.0	66
TW-10	3,671,849	91	0.9	25.6	835
TW-14	3,688,317	91	0.1	3.6	117
TW-20	1,834,353	45	0.9	24.6	1608
MW-22	-	0.0	0.0	0.0	1706
<i>Sub-Totals</i>	12,782,003	317	2	57	
<b>Marshy</b>					
PW-1	147,114	4	0.1	1.5	1192
<i>Sub-Totals</i>	147,114	4	0	1	
<b>E</b>					
TW-11	2,013,428	50	0.1	3.8	229
TW-12	-	0	0.0	0.0	23
TW-17	3,825,168	95	0.1	2.8	89
TW-18	5,627,895	140	0.7	18.5	394
MW-64	-	0	0.0	0.0	56
	11,466,491	284	1	25	
<b>Southwest</b>					
Active Wells	1,467,367	36	0.2	6.7	551
MW-10d	-	0.0	0.0	0.0	1073
MW-75	-	0	0.0	0.0	49
MW-45d	-	0.0	0.0	0.0	335
<i>Sub-Totals</i>	1,467,367	36	0	7	
<b>D2</b>					
LB-1	4,036,235	100	0.7	20.5	607
LB-3	1,616,242	40	0.3	7.7	573
AE-3	601,272	15	0.0	0.8	150
HW-S	1,007,341	25	0.3	8.4	996
TW-5	3,248,976	81	0.9	26.4	974
TW-9	3,489,692	87	1.0	28.3	972
TW-21	5,515,058	137	0.6	15.4	336
MW-11D	-	0	0.0	0.0	180
<i>Sub-Totals</i>	19,514,816	484	4	107	
<b>Overall Totals</b>	45,377,791	1,125	7.1	198.2	

\*SW Active = TW-8, TW-22

**MASS REDUCTION DETAIL BY AQUIFER**

March 1 - March 31, 2011

Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
<b>C3</b>					
TW-1	1,700,707	38	0.1	1.8	128
TW-2 (Dolph)	2,207,801	49	0.0	1.5	79
TW-3	-	0	0.0	0.0	5
TW-6	-	0	0.0	0.0	66
TW-10	3,609,402	81	0.8	23.3	775
TW-14	3,935,958	88	0.1	4.2	127
TW-20	2,635,155	59	1.1	33.3	1518
MW-22	-	0.0	0.0	0.0	1706
<i>Sub-Totals</i>	14,089,023	316	2	64	
<b>Marshy</b>					
PW-1	157,337	4	0.0	1.5	1131
<i>Sub-Totals</i>	157,337	4	0	1	
<b>E</b>					
TW-11	2,219,221	50	0.1	4.2	225
TW-12	-	0	0.0	0.0	23
TW-17	3,913,053	88	0.1	2.9	89
TW-18	5,950,268	133	0.6	19.4	390
MW-64	-	0	0.0	0.0	56
<i>Sub-Totals</i>	12,082,542	271	1	26	
<b>Southwest</b>					
Active Wells	1,593,452	36	0.2	7.6	573
MW-10d	-	0.0	0.0	0.0	1073
MW-75	-	0	0.0	0.0	49
MW-45d	-	0.0	0.0	0.0	335
<i>Sub-Totals</i>	1,593,452	36	0	8	
<b>D2</b>					
LB-1	4,468,434	100	0.7	21.8	585
LB-3	1,789,323	40	0.3	8.1	541
AE-3	501,944	11	0.0	0.6	136
HW-S	1,117,006	25	0.3	9.1	971
TW-5	3,654,008	82	0.9	27.4	899
TW-9	3,732,803	84	1.0	30.9	992
TW-21	5,804,988	130	0.4	11.7	241
MW-11D	-	0	0.0	0.0	180
<i>Sub-Totals</i>	21,068,506	472	4	110	
<b>Overall Totals</b>	48,990,860	1,097	6.7	209.1	

\*SW Active = TW-8, TW-22



**MASS REDUCTION SUMMARY**  
**Mass Removed Per Month (lb)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Total Mass Removed from Units E, D2, C3, Southwest and Marshy
Aug-00	0	0	8	366	374
Sep-00	0	0	9	332	341
Oct-00	0	5	9	583	597
Nov-00	0	3	12	1160	1175
Dec-00	0	0	10	1040	1050
Jan-01	0	0	7	816	823
Feb-01	0	0	7	1056	1063
Mar-01	0	0	11	1379	1390
Apr-01	0	0	9	1140	1149
May-01	0	1	8	990	999
Jun-01	0	2	8	933	943
Jul-01	0	2	10	1121	1133
Aug-01	0	2	13	1018	1033
Sep-01	0	1	9	909	919
Oct-01	0	5	8	896	909
Nov-01	0	4	5	827	836
Dec-01	0	6	4	768	778
Jan-02	0	6	5	753	764
Feb-02	0	4	6	691	701
Mar-02	0	7	7	663	677
Apr-02	0	6	7	682	695
May-02	100	9	7	898	1014
Jun-02	94	9	6	889	998
Jul-02	56	10	7	640	713
Aug-02	53	8	6	745	812
Sep-02	51	8	6	860	925
Oct-02	33	6	4	603	646
Nov-02	57	8	5	880	950
Dec-02	48	9	5	842	904
Jan-03	45	8	6	839	898
Feb-03	37	6	6	767	816
Mar-03	44	8	7	763	822
Apr-03	39	8	3	716	766
May-03	36	13	5	725	779
Jun-03	34	15	5	683	737
Jul-03	29	15	5	678	727
Aug-03	31	15	6	676	728
Sep-03	27	16	5	644	692
Oct-03	34	17	5	701	757
Nov-03	26	12	5	663	706
Dec-03	29	14	6	635	684
Jan-04	28	15	6	667	716
Feb-04	8	11	5	485	509
Mar-04	23	14	7	573	617
Apr-04	27	15	6	537	585
May-04	16	10	5	439	470
Jun-04	21	11	5	499	536
Jul-04	36	12	5	506	559

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<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Total Mass Removed from Units E, D2, C3, Southwest and Marshy
Aug-04	54	12	5	480	551
Sep-04	34	9	5	382	430
Oct-04	30	10	5	358	403
Nov-04	30	9	5	395	439
Dec-04	33	11	5	442	491
Jan-05	29	11	4	404	448
Feb-05	26	9	4	390	429
Mar-05	27	9	4	409	450
Apr-05	33	4	3	396	436
May-05	27	8	2	364	401
Jun-05	31	9	3	361	404
Jul-05	31	8	1	279	319
Aug-05	12	6	2	275	295
Sep-05	13	8	2	327	350
Oct-05	16	6	3	297	322
Nov-05	13	7	4	291	315
Dec-05	12	8	4	325	349
Jan-06	115	7	3	308	433
Feb-06	144	7	3	290	444
Mar-06	148	8	3	331	490
Apr-06	125	7	3	291	426
May-06	137	9	3	402	551
Jun-06	119	5	2	329	456
Jul-06	107	8	3	310	427
Aug-06	104	8	2	307	421
Sep-06	97	9	3	300	409
Oct-06	93	9	3	327	432
Nov-06	80	7	2	268	357
Dec-06	68	6	2	238	314
Jan-07	91	8	2	305	406
Feb-07	84	8	2	284	378
Mar-07	91	8	3	306	408
Apr-07	84	8	2	280	374
May-07	82	8	2	288	380
Jun-07	81	8	2	279	370
Jul-07	66	8	2	256	332
Aug-07	73	8	2	270	353
Sep-07	77	8	2	247	334
Oct-07	73	8	2	244	327
Nov-07	68	8	2	263	341
Dec-07	69	8	2	260	339
Jan-08	65	7	2	237	311
Feb-08	53	6	2	203	264
Mar-08	56	7	2	220	285
Apr-08	54	7	2	200	263
May-08	55	7	2	206	270
Jun-08	52	6	2	195	256
Jul-08	39	1	2	139	181

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**Mass Removed Per Month (lb)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Total Mass Removed from Units E, D2, C3, Southwest and Marshy
Aug-08	50	7	2	198	256
Sep-08	43	5	2	177	227
Oct-08	45	5	2	187	239
Nov-08	45	7	2	197	251
Dec-08	45	5	2	187	239
Jan-09	39	8	2	124	173
Feb-09	34	8	2	122	164
Mar-09	35	8	2	122	166
Apr-09	32	6	1	119	158
May-09	45	7	2	201	254
Jun-09	39	5	1	157	202
Jul-09	38	5	1	152	196
Aug-09	39	7	2	202	250
Sep-09	36	6	2	223	267
Oct-09	36	8	2	206	251
Nov-09	32	7	1	167	208
Dec-09	32	8	1	171	212
Jan-10	34	8	1	175	219
Feb-10	30	7	1	161	198
Mar-10	33	7	1	173	214
Apr-10	33	7	1	175	216
May-10	33	7	1	176	217
Jun-10	29	6	1	130	165
Jul-10	20	7	1	171	200
Aug-10	23	7	1	188	220
Sep-10	21	6	1	148	177
Oct-10	24	7	2	185	218
Nov-10	18	6	2	151	176
Dec-10	26	6	2	164	198
Jan-11	25	6	2	163	195
Feb-11	25	7	2	165	198
Mar-11	27	8	2	174	209
<b>Total to date</b>	<b>5229</b>	<b>937</b>	<b>501</b>	<b>56646</b>	<b>63312</b>

# Maps