



**3rd Quarter, 2015**

**(July, August, September)**

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## **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***

07/12/15 - Extraction and treatment were temporarily decreased in anticipation of the Pond cleaning.

07/13/15 - 07/16/15 - Pond cleaning.

07/17/15 - Extraction was brought on line in stages after Pond cleaning.

08/02/15 - 08/19/15 - PW-1 (Marshy) was shut down for pump maintenance.

08/16/15 - 08/17/15 - TW-21 & LB-4 (D2), TW-20 (C3), SW, TW-16, TW-18 & TW-19 (E3 ) and treatment were shut down for treatment system maintenance.

08/17/15 - TW-2 (C3) was shut down for treatment system maintenance.

08/18/15 - 08/21/15 - System-2A was shut down for maintenance.

08/19/15 – TW-16 & TW-19 (E3 ) were shut down for treatment system maintenance.

08/19/15 - 08/21/15 - TW-21 (D2), TW-20 (C3), and TW-18 (E3 ) were shut down for treatment system maintenance.

09/09/15 - PW-1 (Marshy) was shut down briefly for maintenance.

09/17/15 - TW-21 (D2), TW-16, TW-18, and TW-19 (E ) were shut down briefly due to radio frequency traffic.

### ***Field Activities***

07/13/15 – 07/16/15 – Pond cleaning

09/16/15 & 09/17/15 – former production / irrigation wells #1, #2, #3, and #4 were abandoned on former Gelman site.

### **Submittals/Responses**

07/01/15	DEQ correspondence to PLS re: Long Term Cost Report
07/09/15	PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
07/10/15	PLS submitted Monthly Monitoring Report (NPDES) to DEQ
07/10/15	PLS submitted 2nd Quarter 2015 Report to DEQ
08/10/15	PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
08/11/15	PLS submitted Monthly Monitoring Report (NPDES) to DEQ
09/16/15	PLS submitted Monthly Monitoring Report (NPDES) to DEQ
09/17/15	PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
09/30/15	Abandoned Well Plugging Records submitted to DEQ for former production / irrigation wells #1, #2, #3, and #4 were abandoned on former Gelman site.

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

- Examining different strategies to possibly reduce the hydrogen peroxide in the effluent water
- Reevaluate current purge rates from some of the extraction wells positioned inside the plumes

### **Quarterly Performance Analysis**

For the months of July, August, September 2015, over 242 pounds of 1,4-dioxane were removed and 61,805,814 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 91,600 pounds and the total volume of water discharged since May 1997 is over 7.5 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 SUMMARY**  
Mass Removed Per Month (lb)

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</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	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, 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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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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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
Apr-11	22	6	1	143		171
May-11	20	5	1	138		164
Jun-11	17	5	1	104		127
Jul-11	15	4	1	92		112
Aug-11	14	2	1	80		97
Sep-11	16	6	1	98		121
Oct-11	17	6	1	113		137
Nov-11	33	6	1	105		145
Dec-11	45	6	1	98		150
Jan-12	46	6	1	103		156
Feb-12	40	5	1	89		135
Mar-12	43	5	1	94	0.017	142
Apr-12	47	6	1	105	0.000	159
May-12	47	6	1	100	0.000	154
Jun-12	42	6	0.3	99	0.029	148
Jul-12	30	6	0.1	102	0.000	138



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Aug-12	29	6	0.0	75	0.000	109
Sep-12	32	5	0.1	62	0.029	100
Oct-12	27	5	0.0	57	0.000	88
Nov-12	33	4	0.0	62	0.000	99
Dec-12	31	3	0.0	52	0.020	86
Jan-13	46	3	0.0	54	0.000	103
Feb-13	46	3	0.0	47	0.000	95
Mar-13	53	3	0.0	53	0.029	109
Apr-13	46	5	0.1	61	0.000	113
May-13	57	8	1.0	60	0.000	126
Jun-13	43	7	0.7	52	0.029	102
Jul-13	57	9	0.9	61	0.000	128
Aug-13	48	7	0.8	63	0.000	120
Sep-13	46	7	0.6	60	0.023	113
Oct-13	46	7	0.8	61	0.000	115
Nov-13	52	7	0.7	57	0.000	117
Dec-13	57	8	1.0	72	0.026	138
Jan-14	47	8	0.7	66	0.000	122
Feb-14	37	7	0.4	48	0.000	92
Mar-14	42	6	0.5	58	0.025	107
Apr-14	44	6	0.4	58	0.000	108
May-14	46	6	0.4	61	0.000	113
Jun-14	38	5	0.3	34	0.019	77
Jul-14	41	4	0.3	32	0.000	78
Aug-14	42	4	0.4	33	0.000	79
Sep-14	39	3	0.3	33	0.020	76
Oct-14	42	3	0.3	33	0.000	79
Nov-14	46	3	0.3	33	0.000	82
Dec-14	50	3	0.3	37	0.000	90
Jan-15	45	2	0.3	32	0.016	80
Feb-15	41	2	0.3	28	0.000	72
Mar-15	46	2	0.5	29	0.027	77
Apr-15	49	2	0.4	29	0.000	80
May-15	47	3	0.3	29	0.000	79
Jun-15	42	5	0.3	33	0.019	81
Jul-15	38	6	0.4	30	0.000	74
Aug-15	44	7	0.7	34	0.000	86
Sep-15	42	7	1.2	33	0.013	82
<b>Total to date</b>	<b>7378</b>	<b>1208</b>	<b>532</b>	<b>60120</b>	<b>0.341</b>	<b>69239</b>

# MASS REDUCTION DETAIL BY AQUIFER

July 1 - July 31, 2015

	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-2 (Dolph)	438,547	10	0.0	1.0	280
	TW-20	1,690,262	38	0.4	11.6	820
	<b>Sub-Totals</b>	2,128,809	48	0	13	
<b>Marshy</b>						
	PW-1	108,691	2	0.014	0.4	490
	<b>Sub-Totals</b>	108,691	2	0	0	
<b>E</b>						
	TW-16	1,244,069	28	0.3	9.0	870
	TW-18	5,917,713	133	0.4	12.8	260
	TW-19	2,763,583	62	0.5	15.9	690
	<b>Sub-Totals</b>	9,925,365	222	1	38	
<b>Southwest</b>						
	Active Wells	1,006,535	23	0.2	5.5	654
	<b>Sub-Totals</b>	1,006,535	23	0	5	
<b>D2</b>						
	LB-4	3,929,290	88	0.5	15.4	470
	TW-21	2,002,922	45	0.1	1.9	120
	<b>Sub-Totals</b>	5,932,212	133	1	17	
<b>Overall Totals</b>		19,101,612	428	2.4	73.7	

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

August 1 - August 31, 2015

	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-2 (Dolph)	509,016	11	0.0	0.5	107
	TW-20	1,612,576	36	0.4	12.4	923
	<b>Sub-Totals</b>	2,121,592	48	0	13	
<b>Marshy</b>						
	PW-1	91,873	2	0.0	0.7	967
	<b>Sub-Totals</b>	91,873	2	0	1	
<b>E</b>						
	TW-16	1,388,855	31	0.3	10.4	898
	TW-18	6,309,713	141	0.5	16.1	307
	TW-19	3,088,334	69	0.6	17.5	681
	<b>Sub-Totals</b>	10,786,902	242	1	44	
<b>Southwest</b>						
	Active Wells	1,260,134	28	0.2	7.4	708
	<b>Sub-Totals</b>	1,260,134	28	0	7	
<b>D2</b>						
	LB-4	4,400,952	99	0.6	18.3	498
	TW-21	2,210,793	50	0.1	2.5	139
	<b>Sub-Totals</b>	6,611,745	148	1	21	
<b>Overall Totals</b>		20,872,246	468	2.8	85.9	

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

# MASS REDUCTION DETAIL BY AQUIFIER

September 1 - September 30, 2015

	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-2 (Dolph)	507,876	12	0.0	0.8	197
	TW-20	1,661,221	38	0.4	12.1	876
	<i>Sub-Totals</i>	2,169,097	50	0	13	
<b>Marshy</b>						
	PW-1	179,227	4	0.0	1.2	816
	<i>Sub-Totals</i>	179,227	4	0	1	
<b>E</b>						
	TW-16	1,358,872	31	0.3	9.8	862
	TW-18	6,614,989	153	0.5	16.0	291
	TW-19	3,015,837	70	0.5	15.8	626
	<i>Sub-Totals</i>	10,989,698	254	1	42	
<b>Southwest</b>						
	Active Wells	1,213,617	28	0.2	6.8	670
	<i>Sub-Totals</i>	1,213,617	28	0	7	
<b>D0</b>						
	Ann Arbor Cleaning	35,000			0.0131	45
	<i>Sub-Totals</i>	35,000			0.0131	
<b>D2</b>						
	LB-4	4,319,986	100	0.6	17.4	482
	TW-21	2,260,678	52	0.1	2.4	132
	<i>Sub-Totals</i>	6,580,664	152	1	20	
<b>Overall Totals</b>						
		21,132,303	489	2.7	82.4	

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

## **Maps**