



3rd Quarter, 2014

(July, August, September)

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1,4-Dioxane Isoconcentration Map –Unit E – May 2014- Sept 2014

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

07/01/14 - LB-4 (D2) and TW-19 (E) were shut down briefly due to a DTE power outage in area caused by storms.

07/14/14 - Treatment was shut down briefly for maintenance.

07/18/14 - TW-19 (E) was shut down briefly for maintenance.

07/27/14 - TW-19 (E) was shut down briefly due to a DTE power outage in area caused by storms

08/16/14 - TW-21 (D2), TW-18 & TW-19 (E) were shut down briefly due to DTE Energy power surge.

09/05/14 - LB-1 was started briefly for software update/calibration. LB-4 was shut down briefly due to DTE Energy power outage caused by storms in the area.

09/16/14 - TW-21 (D2) was shut down briefly for connection of TW-16. TW-18 (E) was shut down briefly for the connection of TW-16.

09/18/14 - 09/19/14 - TW-19 (E) was shut down for piping changes related to the connection of TW-16.

09/23/14 - 09/24/14 - TW-19 (E) was shut down for the rehabilitation of TW-16.

Field Activities

09/16/14 – 09/22/14 – Modifications to IW-3 to turn into extraction well (now TW-16)

Submittals/Responses

07/16/14 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
 PLS submitted Monthly Monitoring Report (NPDES) to DEQ

07/18/14 PLS submitted 2nd Quarter 2014 Report to DEQ

08/14/14 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ

PLS submitted Monthly Monitoring Report (NPDES) to DEQ

09/03/14 DEQ correspondence to PLS regarding NPDES Reconnaissance Inspection of August 20, 2014

09/15/14 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

09/25/14 PLS submitted Plan for the Installation of Monitoring Wells in the Honey Creek Area to DEQ

Anticipated Major Activities for the Next Quarter

- Install a series of monitoring wells in the Honey Creek Area
- Rehabilitate and activate IW-3 (previously installed as an injection well in the Maple Village Shopping Center), recognized now as TW-16

Quarterly Performance Analysis

For the months of July, August, September 2014, over 232 pounds of 1,4-dioxane were removed and 66,113,759 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 90,700 pounds and the total volume of water discharged since May 1997 is over 7.2 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 AQUIFER

July 1 - July 31, 2014

| | 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 |
|-----------------------|-------------------|---------------------------------|---|--|------------------------------|---|
| C3 | | | | | | |
| | TW-2 (Dolph) | 650,922 | 15 | 0.0 | 0.4 | 74 |
| | TW-20 | 1,790,027 | 40 | 0.4 | 12.8 | 860 |
| | <i>Sub-Totals</i> | 2,440,949 | 55 | 0 | 13 | |
| Marshy | | | | | | |
| | PW-1 | 76,648 | 2 | 0.011 | 0.3 | 534 |
| | <i>Sub-Totals</i> | 76,648 | 2 | 0 | 0 | |
| E | | | | | | |
| | TW-18 | 7,042,152 | 158 | 0.5 | 16.2 | 276 |
| | TW-19 | 4,524,177 | 101 | 0.8 | 25.0 | 662 |
| | <i>Sub-Totals</i> | 11,566,329 | 259 | 1 | 41 | |
| Southwest | | | | | | |
| | Active Wells | 786,182 | 18 | 0.1 | 4.3 | 659 |
| | <i>Sub-Totals</i> | 786,182 | 18 | 0 | 4 | |
| D2 | | | | | | |
| | LB-4 | 4,437,607 | 99 | 0.5 | 16.3 | 440 |
| | TW-21 | 2,372,589 | 53 | 0.1 | 2.3 | 118 |
| | <i>Sub-Totals</i> | 6,810,196 | 153 | 1 | 19 | |
| Overall Totals | | 21,680,304 | 486 | 2.5 | 77.7 | |

*SW Active = TW-8, TW-22

August 1 - August 31, 2014

| | 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 |
|-----------------------|-------------------|---------------------------------|---|--|------------------------------|---|
| C3 | | | | | | |
| | TW-2 (Dolph) | 676,427 | 15 | 0.0 | 0.4 | 74 |
| | TW-20 | 1,796,824 | 40 | 0.4 | 13.0 | 869 |
| | <i>Sub-Totals</i> | 2,473,251 | 55 | 0 | 13 | |
| Marshy | | | | | | |
| | PW-1 | 77,808 | 2 | 0.0 | 0.4 | 584 |
| | <i>Sub-Totals</i> | 77,808 | 2 | 0 | 0 | |
| E | | | | | | |
| | TW-18 | 7,010,941 | 157 | 0.5 | 16.4 | 280 |
| | TW-19 | 4,490,936 | 101 | 0.8 | 25.1 | 670 |
| | | 11,501,877 | 258 | 1 | 41 | |
| Southwest | | | | | | |
| | Active Wells | 732,483 | 16 | 0.1 | 3.7 | 610 |
| | <i>Sub-Totals</i> | 732,483 | 16 | 0 | 4 | |
| D2 | | | | | | |
| | LB-4 | 4,465,297 | 100 | 0.6 | 17.4 | 466 |
| | TW-21 | 2,572,516 | 58 | 0.1 | 2.3 | 111 |
| | <i>Sub-Totals</i> | 7,037,813 | 158 | 1 | 20 | |
| Overall Totals | | 21,823,232 | 489 | 2.5 | 78.7 | |

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFER

September 1 - September 30, 2014

| | 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 |
|-----------------------|--------------------|---------------------------------|---|--|------------------------------|---|
| C3 | | | | | | |
| | TW-2 (Dolph) | 653,501 | 15 | 0.0 | 0.5 | 85 |
| | TW-20 | 1,734,405 | 40 | 0.4 | 12.6 | 870 |
| | <i>Sub-Totals</i> | 2,387,906 | 55 | 0 | 13 | |
| Marshy | | | | | | |
| | PW-1 | 74,864 | 2 | 0.0 | 0.3 | 522 |
| | <i>Sub-Totals</i> | 74,864 | 2 | 0 | 0 | |
| E | | | | | | |
| | TW-18 | 6,850,232 | 159 | 0.5 | 16.0 | 280 |
| | TW-19 | 4,180,798 | 97 | 0.8 | 23.4 | 670 |
| | | 11,031,030 | 255 | 1 | 39 | |
| Southwest | | | | | | |
| | Active Wells | 662,088 | 15 | 0.1 | 3.3 | 597 |
| | <i>Sub-Totals</i> | 662,088 | 15 | 0 | 3 | |
| D0 | | | | | | |
| | Ann Arbor Cleaning | 42,000 | | | 0.020 | 56 |
| | <i>Sub-Totals</i> | 42,000 | | | 0.020 | |
| D2 | | | | | | |
| | LB-1 | 1,579 | 0 | 0.0 | 0.0 | 550 |
| | LB-4 | 4,308,378 | 100 | 0.6 | 16.9 | 470 |
| | TW-21 | 2,554,755 | 59 | 0.1 | 2.5 | 120 |
| | <i>Sub-Totals</i> | 6,864,712 | 159 | 1 | 19 | |
| Overall Totals | | 21,020,600 | 487 | 2.5 | 75.5 | |

*SW Active = TW-8, TW-22

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

| A | B | C | D | E | F | G |
|----------|-------------------------------|----------------------------------|-------------------------------|--|---------------------------|---|
| 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 |

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

| A | B | C | D | E | F | G |
|--------|-------------------------------|----------------------------------|-------------------------------|--|---------------------------|---|
| 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-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 |

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

| A | B | C | D | E | F | G |
|--------|-------------------------------|----------------------------------|-------------------------------|--|---------------------------|---|
| 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-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 |

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

| A | B | C | D | E | F | G |
|----------------------|-------------------------------|----------------------------------|-------------------------------|--|---------------------------|---|
| 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-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 |
| Total to date | 6847 | 1164 | 527 | 59740 | 0 | 68278 |