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January 8, 2019

Daniel Hamel  
Michigan Department of Environmental Quality  
Environmental Response Division  
Jackson District Office Building  
301 E. Louis Glick Highway  
Jackson, Michigan 49210

Re: **Quarterly Progress Report**  
**4th Quarter, 2018**  
October 1, 2018 to December 31, 2018

Dear Mr. Hamel:

Please find enclosed the Quarterly Progress Report for the period of October 1, 2018 to December 31, 2018.

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

Sincerely,

Lawrence J. Gelb  
Sr. Director Global EHS



**4th Quarter, 2018**

**(October, November, December)**

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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***

10/1/18 – 10/31/18 - PW-1 (Marshy) was shut down intermittently due to flow fluctuations.

10/06/18 - Treatment and extraction were shut down due to a DTE Energy power loss in the area.

10/13/18 - System 2B was shut down briefly for maintenance.

10/18/18 - PW-1 (Marshy) was shut down for maintenance

10/29/18 - 10/31/18 - TW-20 (C3) was shut down due to flow fluctuations.

10/31/18 - TW-18 (E) and treatment were shut down briefly for maintenance.

11/1/18 - 11/3/18 - TW-21 (D2), TW-20 (C3), and TW-18 (E) were shut down to regulate the Pond level.

11/1/18 - 11/25/18 - System-1B was placed on line while System-2A was shut down for maintenance.

11/1/18-11/30/18 - PW-1 (Marshy) was down intermittently due to flow fluctuations.

11/7/18 - 11/8/18 - TW-20 (C3) was shut down for rehabilitation.

11/11/18 - 11/16/18 - SW extraction was shut down intermittently due to low flow from TW-8.

11/14/18 - LB-4 (D2), TW-19 & TW-23 (E) were shut down briefly due to a DTE Energy power loss.

11/26/18 - Dolph & TW-20 (C3), TW-21 (D2), SW extraction, TW-18 (E), and treatment were shut down briefly due to a DTE Energy power loss.

11/26/18 - 11/27/18 - LB-4 (D2), TW-19 & TW-23 (E) were shut down due to a DTE Energy power loss.

11/28/18-11/30/18 - SW extraction was shut down for rehabilitation of TW-8 and TW-22. TW-8 remains shut down pending replacement.

11/30/18 - System-2A was shut down briefly for maintenance.

**12/1/18-12/7/18 - PW-1 (Marshy) was down intermittently due to flow fluctuations.**

12/13/18 - TW-19 & TW-23 (E) were shut down briefly due to a DTE Energy power outage.

12/17/18-12/19/18 - TW-21 & LB-4 (D2), TW-19 & TW-23 (E), and System 2A were shut down for piping changes and relocation of DTE Energy meter at Porter Street pumping station.

### ***Field Activities***

Porter pumping station building was replaced.

### **Submittals/Responses**

|          |                                                                                                                   |
|----------|-------------------------------------------------------------------------------------------------------------------|
| 10/09/18 | PLS submitted Discharge Monitoring Report (DMR) to DEQ<br>PLS submitted Monthly Monitoring Report (NPDES) to DEQ  |
| 10/19/18 | PLS submitted 3rd Quarter 2018 Report to DEQ                                                                      |
| 11/13/18 | PLS submitted Discharge Monitoring Report (DMR) to DEQ;<br>PLS submitted Monthly Monitoring Report (NPDES) to DEQ |
| 12/10/18 | PLS submitted Monthly Monitoring Report (NPDES) to DEQ<br>PLS submitted Discharge Monitoring Report (DMR) to DEQ; |

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

- Replace TW-8 and connect
- Work with MDEQ to collect surface water samples in the Allen Creek Drainage system
- Continue to work with intervenors toward achieving a Consent Judgment amendment

### **Quarterly Performance Analysis**

For the months of October, November, December 2018, over 219 pounds of 1,4-dioxane were removed and 63,675,523 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 94,623 pounds and the total volume of water discharged since May 1997 is over 8.3 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

October 1 - October 31, 2018

|                       | 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              | 4,489                           | 0                                         | 0.0                                        | 0.0                          | 69                                      |
|                       | TW-2 (Dolph)      | 500,542                         | 11                                        | 0.0                                        | 0.5                          | 129                                     |
|                       | TW-14             | 13,973                          | 0                                         | 0.0                                        | 0.0                          | 38                                      |
|                       | TW-20             | 1,304,041                       | 29                                        | 0.3                                        | 10.7                         | 979                                     |
|                       | <b>Sub-Totals</b> | <b>1,823,045</b>                | <b>41</b>                                 | <b>0</b>                                   | <b>11</b>                    |                                         |
| <b>Marshy</b>         |                   |                                 |                                           |                                            |                              |                                         |
|                       | PW-1              | 67,203                          | 2                                         | 0.018                                      | 0.6                          | 1006                                    |
|                       | <b>Sub-Totals</b> | <b>67,203</b>                   | <b>2</b>                                  | <b>0.02</b>                                | <b>0.6</b>                   |                                         |
| <b>E</b>              |                   |                                 |                                           |                                            |                              |                                         |
|                       | TW-17             | 6,451                           | 0                                         | 0.0                                        | 0.0                          | 389                                     |
|                       | TW-18             | 7,230,865                       | 162                                       | 0.5                                        | 15.6                         | 259                                     |
|                       | TW-19             | 1,370,991                       | 31                                        | 0.2                                        | 6.0                          | 526                                     |
|                       | TW-23             | 3,049,064                       | 68                                        | 0.6                                        | 17.3                         | 682                                     |
|                       | <b>Sub-Totals</b> | <b>11,657,371</b>               | <b>261</b>                                | <b>1</b>                                   | <b>39</b>                    |                                         |
| <b>Southwest</b>      |                   |                                 |                                           |                                            |                              |                                         |
|                       | Active Wells      | 507,474                         | 11                                        | 0.1                                        | 3.1                          | 736                                     |
|                       | <b>Sub-Totals</b> | <b>507,474</b>                  | <b>11</b>                                 | <b>0</b>                                   | <b>3</b>                     |                                         |
| <b>D2</b>             |                   |                                 |                                           |                                            |                              |                                         |
|                       | LB-4              | 4,430,330                       | 99                                        | 0.6                                        | 17.8                         | 481                                     |
|                       | TW-9              | 3,684                           | 0                                         | 0.0                                        | 0.0                          | 667                                     |
|                       | TW-21             | 2,871,914                       | 64                                        | 0.2                                        | 5.1                          | 221                                     |
|                       | <b>Sub-Totals</b> | <b>7,305,928</b>                | <b>164</b>                                | <b>1</b>                                   | <b>23</b>                    |                                         |
| <b>Overall Totals</b> |                   |                                 |                                           |                                            |                              |                                         |
|                       |                   | <b>21,361,021</b>               | <b>479</b>                                | <b>2.5</b>                                 | <b>76.8</b>                  |                                         |

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

# MASS REDUCTION DETAIL BY AQUIFIER

November 1 - November 30, 2018

|                       | 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)      | 527,369                         | 12                                        | 0.0                                        | 0.6                          | 130                                     |
|                       | TW-20             | 1,143,457                       | 26                                        | 0.3                                        | 10.3                         | 1068                                    |
|                       | <b>Sub-Totals</b> | <b>1,670,826</b>                | <b>39</b>                                 | <b>0</b>                                   | <b>11</b>                    |                                         |
| <b>Marshy</b>         |                   |                                 |                                           |                                            |                              |                                         |
|                       | PW-1              | 78,026                          | 2                                         | 0.0                                        | 0.6                          | 963                                     |
|                       | <b>Sub-Totals</b> | <b>78,026</b>                   | <b>2</b>                                  | <b>0</b>                                   | <b>1</b>                     |                                         |
| <b>E</b>              |                   |                                 |                                           |                                            |                              |                                         |
|                       | TW-18             | 6,860,798                       | 159                                       | 0.5                                        | 14.4                         | 253                                     |
|                       | TW-19             | 1,315,499                       | 30                                        | 0.2                                        | 5.3                          | 486                                     |
|                       | TW-23             | 2,953,050                       | 68                                        | 0.4                                        | 12.7                         | 514                                     |
|                       | <b>Sub-Totals</b> | <b>11,129,347</b>               | <b>258</b>                                | <b>1</b>                                   | <b>32</b>                    |                                         |
| <b>Southwest</b>      |                   |                                 |                                           |                                            |                              |                                         |
|                       | Active Wells      | 413,198                         | 10                                        | 0.1                                        | 2.5                          | 726                                     |
|                       | <b>Sub-Totals</b> | <b>413,198</b>                  | <b>10</b>                                 | <b>0</b>                                   | <b>3</b>                     |                                         |
| <b>D2</b>             |                   |                                 |                                           |                                            |                              |                                         |
|                       | LB-4              | 4,288,218                       | 99                                        | 0.6                                        | 17.4                         | 487                                     |
|                       | TW-21             | 2,753,390                       | 64                                        | 0.2                                        | 4.7                          | 213                                     |
|                       | <b>Sub-Totals</b> | <b>7,041,608</b>                | <b>163</b>                                | <b>1</b>                                   | <b>22</b>                    |                                         |
| <b>Overall Totals</b> |                   |                                 |                                           |                                            |                              |                                         |
|                       |                   | <b>20,333,005</b>               | <b>471</b>                                | <b>2.3</b>                                 | <b>68.6</b>                  |                                         |

\*SW Active = TW-8, TW-22 (TW-8 was shut down on 11/28/18; replacement pending)

# MASS REDUCTION DETAIL BY AQUIFIER

December 1 - December 31, 2018

|                       | 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)       | 561422                          | 13                                        | 0.0                                        | 0.6                          | 122.9                                   |
|                       | TW-10              | 110,642                         | 2                                         | 0.0                                        | 0.3                          | 292                                     |
|                       | TW-20              | 1,342,385                       | 30                                        | 0.4                                        | 12.3                         | 1100                                    |
|                       | <b>Sub-Totals</b>  | <b>2,014,449</b>                | <b>45</b>                                 | <b>0</b>                                   | <b>13</b>                    |                                         |
| <b>Marshy</b>         |                    |                                 |                                           |                                            |                              |                                         |
|                       | PW-1               | 74,760                          | 2                                         | 0.0                                        | 0.6                          | 978                                     |
|                       | <b>Sub-Totals</b>  | <b>74,760</b>                   | <b>2</b>                                  | <b>0</b>                                   | <b>1</b>                     |                                         |
| <b>E</b>              |                    |                                 |                                           |                                            |                              |                                         |
|                       | TW-18              | 7,469,923                       | 167                                       | 0.5                                        | 16.5                         | 264                                     |
|                       | TW-19              | 1,267,187                       | 28                                        | 0.2                                        | 5.5                          | 520                                     |
|                       | TW-23              | 2,849,825                       | 64                                        | 0.5                                        | 14.9                         | 635                                     |
|                       | <b>Sub-Totals</b>  | <b>11,586,935</b>               | <b>260</b>                                | <b>1</b>                                   | <b>37</b>                    |                                         |
| <b>Southwest</b>      |                    |                                 |                                           |                                            |                              |                                         |
|                       | Active Wells       | 181,604                         | 4                                         | 0.0                                        | 0.8                          | 547                                     |
|                       | <b>Sub-Totals</b>  | <b>181,604</b>                  | <b>4</b>                                  | <b>0</b>                                   | <b>1</b>                     |                                         |
| <b>D0</b>             |                    |                                 |                                           |                                            |                              |                                         |
|                       | Ann Arbor Cleaning | 28,000                          |                                           |                                            | 0.021                        | 88                                      |
|                       | <b>Sub-Totals</b>  | <b>28,000</b>                   |                                           |                                            | <b>0.021</b>                 |                                         |
| <b>D2</b>             |                    |                                 |                                           |                                            |                              |                                         |
|                       | LB-4               | 4,153,413                       | 93                                        | 0.5                                        | 17                           | 483                                     |
|                       | HW-S               | 736                             | 0                                         | 0.0                                        | 0.0                          | 900                                     |
|                       | TW-21              | 2,787,081                       | 62                                        | 0.2                                        | 5.0                          | 224                                     |
|                       | <b>Sub-Totals</b>  | <b>6,941,230</b>                | <b>155</b>                                | <b>1</b>                                   | <b>22</b>                    |                                         |
| <b>Overall Totals</b> |                    | <b>20,798,978</b>               | <b>466</b>                                | <b>2.4</b>                                 | <b>73.3</b>                  |                                         |

\*SW Active = TW-22



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

| A      | B                                   | C                                         | D                                | E                                            | F                            | G                                                                             |
|--------|-------------------------------------|-------------------------------------------|----------------------------------|----------------------------------------------|------------------------------|-------------------------------------------------------------------------------|
| Month  | Mass Removed<br>from Unit E<br>Only | Mass Removed<br>from<br>Southwest<br>Only | Mass Removed from<br>Marshy Only | Mass Removed<br>from Units C3<br>and D2 Only | Mass Removed<br>from Unit D0 | Total Mass<br>Removed from<br>Units E, D2, C3,<br>D0, Southwest and<br>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<br>from Unit E<br>Only | Mass Removed<br>from<br>Southwest<br>Only | Mass Removed from<br>Marshy Only | Mass Removed<br>from Units C3<br>and D2 Only | Mass Removed<br>from Unit D0 | Total Mass<br>Removed from<br>Units E, D2, C3,<br>D0, Southwest and<br>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)

| <b>A</b> | <b>B</b>                            | <b>C</b>                                  | <b>D</b>                         | <b>E</b>                                     | <b>F</b>                     | <b>G</b>                                                                      |
|----------|-------------------------------------|-------------------------------------------|----------------------------------|----------------------------------------------|------------------------------|-------------------------------------------------------------------------------|
| Month    | Mass Removed<br>from Unit E<br>Only | Mass Removed<br>from<br>Southwest<br>Only | Mass Removed from<br>Marshy Only | Mass Removed<br>from Units C3<br>and D2 Only | Mass Removed<br>from Unit D0 | Total Mass<br>Removed from<br>Units E, D2, C3,<br>D0, Southwest and<br>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<br>from Unit E<br>Only | Mass Removed<br>from<br>Southwest<br>Only | Mass Removed from<br>Marshy Only | Mass Removed<br>from Units C3<br>and D2 Only | Mass Removed<br>from Unit D0 | Total Mass<br>Removed from<br>Units E, D2, C3,<br>D0, Southwest and<br>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                                                                            |
| 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                                                                            |
| Oct-15 | 46                                  | 6                                         | 1.0                              | 34                                           | 0.000                        | 88                                                                            |
| Nov-15 | 46                                  | 6                                         | 1.3                              | 35                                           | 0.000                        | 88                                                                            |
| Dec-15 | 44                                  | 5                                         | 1.1                              | 35                                           | 0.018                        | 85                                                                            |
| Jan-16 | 46                                  | 4                                         | 1.1                              | 33                                           | 0.000                        | 84                                                                            |
| Feb-16 | 43                                  | 4                                         | 0.8                              | 27                                           | 0.000                        | 74                                                                            |
| Mar-16 | 41                                  | 6                                         | 0.6                              | 33                                           | 0.016                        | 80                                                                            |
| Apr-16 | 41                                  | 7                                         | 0.1                              | 33                                           | 0.000                        | 82                                                                            |
| May-16 | 45                                  | 7                                         | 0.0                              | 36                                           | 0.000                        | 87                                                                            |
| Jun-16 | 44                                  | 7                                         | 0.1                              | 34                                           | 0.018                        | 85                                                                            |
| Jul-16 | 44                                  | 7                                         | 0.4                              | 36                                           | 0.000                        | 88                                                                            |



**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<br>from Unit E<br>Only | Mass Removed<br>from<br>Southwest<br>Only | Mass Removed from<br>Marshy Only | Mass Removed<br>from Units C3<br>and D2 Only | Mass Removed<br>from Unit D0 | Total Mass<br>Removed from<br>Units E, D2, C3,<br>D0, Southwest and<br>Marshy |
| Aug-16               | 42                                  | 7                                         | 0.1                              | 34                                           | 0.000                        | 83                                                                            |
| Sep-16               | 38                                  | 5                                         | 0.9                              | 32                                           | 0.021                        | 77                                                                            |
| Oct-16               | 40                                  | 5                                         | 0.9                              | 31                                           | 0.000                        | 77                                                                            |
| Nov-16               | 41                                  | 6                                         | 0.1                              | 33                                           | 0.000                        | 79                                                                            |
| Dec-16               | 43                                  | 6                                         | 0.2                              | 33                                           | 0.017                        | 82                                                                            |
| Jan-17               | 44                                  | 6                                         | 0.8                              | 36                                           | 0.000                        | 87                                                                            |
| Feb-17               | 36                                  | 5                                         | 0.6                              | 29                                           | 0.000                        | 71                                                                            |
| Mar-17               | 39                                  | 5                                         | 0.6                              | 33                                           | 0.017                        | 78                                                                            |
| Apr-17               | 34                                  | 5                                         | 0.3                              | 31                                           | 0.000                        | 70                                                                            |
| May-17               | 32                                  | 5                                         | 0.5                              | 27                                           | 0.000                        | 64                                                                            |
| Jun-17               | 31                                  | 4                                         | 0.3                              | 26                                           | 0.018                        | 61                                                                            |
| Jul-17               | 32                                  | 5                                         | 0.1                              | 36                                           | 0.000                        | 73                                                                            |
| Aug-17               | 29                                  | 6                                         | 0.0                              | 37                                           | 0.000                        | 71                                                                            |
| Sep-17               | 31                                  | 5                                         | 0.0                              | 27                                           | 0.033                        | 63                                                                            |
| Oct-17               | 36                                  | 4                                         | 0.2                              | 28                                           | 0.000                        | 67                                                                            |
| Nov-17               | 34                                  | 5                                         | 0.7                              | 28                                           | 0.000                        | 68                                                                            |
| Dec-17               | 32                                  | 5                                         | 0.8                              | 28                                           | 0.020                        | 65                                                                            |
| Jan-18               | 36                                  | 6                                         | 0.9                              | 32                                           | 0.000                        | 75                                                                            |
| Feb-18               | 28                                  | 4                                         | 0.5                              | 26                                           | 0.000                        | 59                                                                            |
| Mar-18               | 37                                  | 4                                         | 0.6                              | 34                                           | 0.019                        | 75                                                                            |
| Apr-18               | 33                                  | 4                                         | 0.7                              | 31                                           | 0.000                        | 68                                                                            |
| May-18               | 36                                  | 4                                         | 0.5                              | 35                                           | 0.000                        | 75                                                                            |
| Jun-18               | 33                                  | 4                                         | 0.4                              | 32                                           | 0.016                        | 70                                                                            |
| Jul-18               | 33                                  | 4                                         | 0.3                              | 32                                           | 0.000                        | 69                                                                            |
| Aug-18               | 31                                  | 4                                         | 0.4                              | 33                                           | 0.000                        | 68                                                                            |
| Sep-18               | 33                                  | 3                                         | 0.5                              | 34                                           | 0.020                        | 71                                                                            |
| Oct-18               | 39                                  | 3                                         | 0.6                              | 34                                           | 0.000                        | 77                                                                            |
| Nov-18               | 32                                  | 3                                         | 0.6                              | 33                                           | 0.000                        | 69                                                                            |
| Dec-18               | 37                                  | 0.8                                       | 0.6                              | 35                                           | 0.021                        | 73                                                                            |
| <b>Total to date</b> | <b>8839</b>                         | <b>1395</b>                               | <b>552</b>                       | <b>61375</b>                                 | <b>0.60</b>                  | <b>72163</b>                                                                  |