

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells in MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|---------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-43S | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 25-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | 16.97 | NS | NS | 16.11 | NS | NS | NS | NS | NS | NS | NS | NS | NS | 13.52 | NS | NS | 14.31 | 16.28 | 14.45 | 14.62 |
| pH | 6.7 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 6.1 | NS | NS | NS | 7.5 | NS | NS |
| Specific Conductivity (uS/cm) | 1.757 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 61.929 | NS | NS | NS | 990 | NS | NS |
| Dissolved Oxygen (mg/L) | 4.4 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 7.2 | NS | NS | NS | 4.3 | NS | NS |
| Temperature (Celsius) | 16.2 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 10.2 | NS | NS | NS | 16.0 | NS | NS |
| ORP (mV) | 283 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 536 | NS | NS | NS | -54 | NS | NS |
| Color | | Dark Purple | | | | | | | | | | Purple | | Light Purple | | | | | | |
| Sodium Permanganate (ppm) | NS | 63 | <1 | 1,610 | 1,520 | 2,120 | 880 | 401 | 184 | 125 | <1 | <1 | 11 | 952 | 10 | 18 | 9 | <1 | <1 | |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:





| | |
|--|---|
|  | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
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|-------------------------------|----------------|---------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-43D | | | | | | | | | | | | | | | | | |
| Parameter | Sampling Round | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 17.94 | 17.23 | 17.22 | 17.48 | 17.38 | 17.27 | 16.20 | 15.17 | 16.82 | 13.85 | 14.46 | 14.79 | 15.40 | 15.42 | 16.41 | 16.40 | 16.83 | 16.79 |
| pH | | 7.5 | 8.1 | 9.1 | 8.4 | 8.1 | 8.0 | 7.9 | 8.4 | 8.0 | 7.2 | 7.5 | 8.4 | 7.0 | 6.8 | 6.3 | 7.6 | 7.7 | 7.9 |
| Specific Conductivity (uS/cm) | | 423 | 376 | 327 | 342 | 334 | 389 | 426 | 289 | 571 | 118 | 261 | 373 | 269 | 233 | 408 | 327 | 339 | 444 |
| Dissolved Oxygen (mg/L) | | 2.0 | 3.2 | 4.3 | 4.1 | 5.0 | 5.6 | 6.3 | 5.3 | 2.5 | 4.8 | 6.3 | 0.4 | 6.9 | 6.5 | 2.8 | 7.1 | 7.0 | 3.2 |
| Temperature (Celsius) | | 15.0 | 12.2 | 11.5 | 11.9 | 10.4 | 11.0 | 12.3 | 11.3 | 6.6 | 12.1 | 9.0 | 11.0 | 13.3 | 13.0 | 16.6 | 14.4 | 14.1 | 14.0 |
| ORP (mV) | | 210 | 223 | 131 | -60 | 101 | 100 | 228 | 190 | -74 | 92 | 211 | -222 | 407 | 327 | 498 | 379 | 283 | 481 |
| Color | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

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Colorimetric Monitoring:





| | |
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Wayland, MA

| | | Wells in MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|---------------------------|-------------|----------|-----------|-----------|----------|-----------|-----------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-104 | | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 25-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 17.05 | NS | NS | 16.02 | NS | NS | NS | NS | NS | NS | NS | NS | 14.15 | NS | NS | 14.55 | NS | 14.80 | 14.95 |
| pH | | 7.4 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 7.2 |
| Specific Conductivity (uS/cm) | | 1,324 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 888 |
| Dissolved Oxygen (mg/L) | | 6.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 7.2 |
| Temperature (Celsius) | | 17.2 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 17.4 |
| ORP (mV) | | 202 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 547 |
| Color | | | Dark Purple | | | | Purple | | | | Light Purple, pink or rose | | | | Clear | | | | | |
| Sodium Permanganate (ppm) | | NS | 596 | 1,420 | 1,420 | 18 | 591 | 130 | 64 | 142 | 2 | <1 | <1 | 14 | 25 | 3 | 1 | <1 | <1 | 6 |

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| Sample ID | | MW-105 | | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 17.25 | NS | 14.34 | 16.48 | 14.80 | NS | NS | NS | NS | NS | NS | NS | 13.08 | NS | NS | 14.57 | 14.52 | 14.78 | 14.98 |
| pH | | 7.1 | NS | 9.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 6.9 |
| Specific Conductivity (uS/cm) | | 937 | NS | 280 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 1,681 |
| Dissolved Oxygen (mg/L) | | 5.5 | NS | 11.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 1.3 |
| Temperature (Celsius) | | 16.2 | NS | 5.5 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 15.1 |
| ORP (mV) | | 181 | NS | 99 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 599 |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | 131 | NS | 12 | 2 | 3 | <1 | 16 | <1 | 14 | <1 | 106 | 62 | 540 | 41 | 18 | 43 | 4 | NS |

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|-------------------------------|---------------|---------------------------|--|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-105M | | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 18.36 | NS | NS | 17.65 | 14.78 | NS | NS | NS | NS | NS | NS | NS | 18.02 | NS | NS | 16.32 | 16.02 | 16.58 | 16.60 |
| pH | | 6.8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Specific Conductivity (uS/cm) | | 759 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Dissolved Oxygen (mg/L) | | 1.8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Temperature (Celsius) | | 16.5 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| ORP (mV) | | -376 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Color | | | [Color bar showing varying shades of purple and blue across the sampling rounds] | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | 9 | 172 | 3,620 | 916 | 4 | 1 | 10 | 3 | 916 | <1 | <1 | 280 | 233 | 5 | 363 | <1 | 120 | 142 |

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|-------------------------------|---------------------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Sampling Round | MW-106 | | | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | 17.92 | NS | NS | 17.16 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 12.80 | NS | NS | 15.88 | 15.88 | 15.93 | 16.05 |
| pH | 7.1 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 7.2 | NS | NS | NS | 7.3 | NS | NS |
| Specific Conductivity (uS/cm) | 1,317 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 583 | NS | NS | NS | 290 | NS | NS |
| Dissolved Oxygen (mg/L) | 7.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 8.5 | NS | NS | NS | 8.3 | NS | NS |
| Temperature (Celsius) | 14.4 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 10.4 | NS | NS | NS | 16.8 | NS | NS |
| ORP (mV) | 295 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 279 | NS | NS | NS | 367 | NS | NS |
| Color | | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | NS | 532 | 620 | 16 | 568 | 11 | 23 | 63 | 194 | <1 | <1 | <1 | <1 | <1 | NS | 207 | 3 | <1 | NS | 21 | 14 | |

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|-------------------------------|---------------|---------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-106M | | | | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 27-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | 18.85 | NS | NS | 17.40 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 14.08 | 14.81 | 14.78 | 17.00 | NS* | 17.32 | 17.96 | |
| pH | 7.3 | NS | NS | 7.7 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 7.3 | 6.9 | NS | NS | NS | NS | |
| Specific Conductivity (uS/cm) | 1.140 | NS | NS | 972 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 611 | 512 | NS | NS | NS | NS | |
| Dissolved Oxygen (mg/L) | 1.8 | NS | NS | 10.3 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 9.1 | 8.3 | NS | NS | NS | NS | |
| Temperature (Celsius) | 16.2 | NS | NS | 9.7 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 12.8 | 13.0 | NS | NS | NS | NS | |
| ORP (mV) | -389 | NS | NS | 90 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 225.6 | 207 | NS | NS | NS | NS | |
| Color | | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | NS | 736 | 24 | NS | 64 | 664 | 720 | 81 | 3 | 135 | 277 | 99 | <1 | <1 | 374 | NS | NS | 1,410 | 815 | 810 | 1,030 | |

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* Unable to lower water level indicator due to obstruction in well.

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|-------------------------------|---------------|---------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-210 | | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | Week 46 | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Mar-03 | 11-Apr-03 | 25-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | 17.96 | NS | NS | 17.44 | NS | NS | NS | NS | NS | NS | NS | NS | 14.60 | NS | NS | 16.52 | 15.12 | 16.84 | 16.83 | |
| pH | 6.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | |
| Specific Conductivity (uS/cm) | 1,348 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | |
| Dissolved Oxygen (mg/L) | 2.1 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | |
| Temperature (Celsius) | 15.8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | |
| ORP (mV) | -107 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | NS | 13 | 57 | 458 | 374 | 1,105 | 87 | 145 | 151 | 171 | <1 | <1 | 152 | 52 | <1 | 282 | 24 | 177 | 174 | |

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| Sample ID | | MW-212 | | | | | | | | | | | | | | | | | | | | |
| Parameter | Sampling Round | Baseline* | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | |
| | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | Dry | NS | NS | NS | 17.51 | NS | NS | NS | NS | NS | NS | NS | NS | 14.83 | NS | 14.07 | 15.42 | NS | 14.65 | 14.58 | 14.36 | 14.94 |
| pH | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 4.9 | NS | NS | NS | NS | NS | NS | NS | NS |
| Specific Conductivity (uS/cm) | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 81 | NS | NS | NS | NS | NS | NS | NS | NS |
| Dissolved Oxygen (mg/L) | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 13.3 | NS | NS | NS | NS | NS | NS | NS | NS |
| Temperature (Celsius) | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 13.1 | NS | NS | NS | NS | NS | NS | NS | NS |
| ORP (mV) | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 137 | NS | NS | NS | NS | NS | NS | NS | NS |
| Color | Dry | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | Dry | 248 | 70 | 2,100 | 352 | <1 | 5 | <1 | 7 | 689 | <1 | <1 | NS | <1 | 211 | 225 | 79 | ND | 33 | 26 | 39 | |

*Less than 0.5" of water was only able to collect one 40ml vial for VOC analysis

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| | | MW-212M | | | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 23-Jan-03 | 30-Jan-03 | 12-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | 18.03 | NS | NS | 16.27 | NS | NS | NS | NS | NS | NS | NS | NS | 13.95 | NS | 14.21 | 13.65 | NS | 16.49 | 16.42 | 16.90 | 16.85 | |
| pH | 6.8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Specific Conductivity (uS/cm) | 576 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Dissolved Oxygen (mg/L) | 0.6 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Temperature (Celsius) | 15.0 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| ORP (mV) | -245 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Color | | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | NS | 172 | 6 | 298 | 1,460 | 351 | <1 | <1 | 1 | <1 | <1 | <1 | <1 | <1 | 16 | 1,200 | 943 | 213 | 110 | <1 | 306 | 257 |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Upgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Upgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--------------------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | MW-44S | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 28-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 1-Oct-03 |
| Depth to Water (ft) | | 17.96 | 17.42 | 17.24 | 17.35 | 16.59 | 16.43 | 15.89 | 15.18 | 14.47 | 14.10 | 16.83 | 18.65 | 14.15 | 15.87 | 15.52 | 15.55 | 16.38 | 16.21 | 16.21 |
| pH | | 6.3 | 7.3 | 6.8 | 6.3 | 6.7 | 6.9 | 6.2 | 7.1 | 6.4 | 7.6 | 6.3 | 6.8 | 6.6 | 6.5 | 6.3 | 6.4 | 6.0 | 6.8 | 6.6 |
| Specific Conductivity (uS/cm) | | 663 | 552 | 545 | 558 | 515 | 561 | 278 | 287 | 630 | 79 | 154 | 58 | 677 | 289 | 215 | 375 | 167 | 304 | 435 |
| Dissolved Oxygen (mg/L) | | 1.1 | 5.6 | 6.2 | 4.3 | 5.3 | 5.7 | 4.2 | 7.1 | 1.1 | 11.3 | 7.3 | 4.8 | 0.5 | 7.3 | 7.3 | 1.5 | 6.9 | 7.4 | 4.0 |
| Temperature (Celsius) | | 13.0 | 12.7 | 10.6 | 11.0 | 12.5 | 12.4 | 11.3 | 11.3 | 6.3 | 5.3 | 12.5 | 10.8 | 12.2 | 13.3 | 13.9 | 13.1 | 15.8 | 13.1 | 14.0 |
| ORP (mV) | | 271 | 290 | 234 | -66 | 105 | 92 | 301 | 106 | -33 | 126 | 94 | 242 | 242 | 188 | 167 | 233 | 421 | 293 | 246 |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

MW-44M was not sampled on 17-Sep-03 due to accessibility and instrument problems.

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Upgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Upgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--------------------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-44M | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 28-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 01-Oct-03 |
| Depth to Water (ft) | | 17.53 | 16.89 | 16.82 | 16.92 | 16.06 | 16.01 | 15.63 | 15.13 | 15.20 | 14.29 | 16.79 | 12.84 | 14.31 | 15.82 | 15.47 | 15.78 | 16.54 | 16.28 | 16.24 |
| pH | | 6.5 | 7.5 | 6.8 | 5.3 | 7.0 | 6.4 | 7.1 | 6.5 | 6.9 | 6.8 | 6.2 | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | NS | 6.6 |
| Specific Conductivity (uS/cm) | | 311 | 321 | 295 | 336 | 280 | 302 | 325 | 219 | 253 | 127 | 189 | 92 | 97 | 307 | 287 | 390 | 203 | NS | 470 |
| Dissolved Oxygen (mg/L) | | 0.8 | 3.2 | 3.6 | 8.7 | 2.2 | 3.2 | 5.2 | 4.4 | 2.4 | 13.2 | 5.4 | 5.3 | 0.9 | 7.5 | 7.6 | 0.5 | 6.9 | NS | 0.7 |
| Temperature (Celsius) | | 12.0 | 11.9 | 11.0 | 10.9 | 12.2 | 12.3 | 11.8 | 11.2 | 3.6 | 6.0 | 12.1 | 10.5 | 12.2 | 13.0 | 13.6 | 13.9 | 15.8 | NS | 13.8 |
| ORP (mV) | | 13 | 281 | 232 | -23 | 90 | 83 | 213 | 54 | -55 | 112 | 76 | 251 | 284 | 102 | 97 | 53 | 104 | NS | 30 |
| Color | | | | | | | | | | | | | | | | | | | | NS |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Upgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Upgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--------------------------------------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | MW-44D | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 28-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 1-Oct-03 |
| Depth to Water (ft) | | 17.72 | 17.05 | 16.99 | 17.21 | 16.21 | 16.13 | 15.60 | 15.72 | 14.07 | 16.75 | 15.81 | 14.48 | 15.81 | 15.43 | 16.00 | 16.27 | 16.40 | 16.39 |
| pH | | 7.6 | 7.4 | 7.1 | 6.8 | 7.1 | 7.0 | 6.9 | 7.0 | 7.3 | 6.8 | 6.3 | 5.5 | 6.0 | 5.9 | 7.6 | 6.0 | NS | 7.6 |
| Specific Conductivity (uS/cm) | | 429 | 414 | 418 | 425 | 387 | 412 | 461 | 117 | 183 | 217 | 54 | 42 | 339 | 302 | 362 | 221 | NS | 449 |
| Dissolved Oxygen (mg/L) | | 1.6 | 4.8 | 6.3 | 5.9 | 2.8 | 3.0 | 4.9 | 3.8 | 13.3 | 5.2 | 6.5 | 2.4 | 7.0 | 7.0 | 3.4 | 6.5 | NS | 2.6 |
| Temperature (Celsius) | | 13.1 | 12.7 | 11.2 | 10.3 | 12.4 | 12.3 | 11.2 | 11.3 | 5.9 | 11.9 | 10.3 | 12.1 | 13.1 | 13.3 | 13.6 | 15.6 | NS | 14.6 |
| ORP (mV) | | 335 | 290 | 216 | -67 | 83 | 52 | 356 | 113 | 183 | 51 | 222 | 277 | 99 | 66 | 448 | 67 | NS | 298 |
| Color | | | | | | | | | | | | | | | | | | | NS |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

MW-44D was not sampled on 17-Sep-03 due to accessibility and instrument problems.

Colorimetric Monitoring:





| | |
|--|---|
|  | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
|  | Purple - evidence of unreacted permanganate |
|  | Light Purple, pink or rose - trace permanganate |
|  | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Crossgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Crossgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|---|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-209 | | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 17.90 | 17.40 | 14.82 | 16.97 | 16.32 | NS | 16.26 | 14.00 | 12.90 | 10.98 | 13.80 | 14.81 | 14.92 | 13.82 | 11.72 | 11.65 | 15.10 | 15.32 | 15.21 | 15.90 |
| pH | | 6.9 | 7.3 | 7.1 | 6.8 | 10.3 | NS | 9.9 | 9.2 | 6.5 | 9.0 | 6.9 | 9.2 | 9.0 | 6.5 | 8.8 | 8.2 | 5.1 | 11.1 | 6.6 | 6.5 |
| Specific Conductivity (uS/cm) | | 989 | 568 | 772 | 1,261 | 380 | NS | 287 | 202 | 71 | 487 | 227 | 121 | 342 | 1,342 | 213 | 202 | 1,372 | 520 | 1,109 | 1,347 |
| Dissolved Oxygen (mg/L) | | 7.7 | 7.9 | 6.5 | 7.4 | 12.3 | NS | 11.7 | 11.0 | 8.3 | 10.3 | 8.6 | 10.3 | 11.1 | 8.5 | 9.2 | 8.9 | 7.8 | 8.7 | 8.4 | 8.4 |
| Temperature (Celsius) | | 17.3 | 11.6 | 6.4 | 11.5 | NS | NS | 10.3 | 9.7 | 11.1 | 9.3 | 7.3 | 11.8 | 10.6 | 12.4 | 13.3 | 14.3 | 18.7 | 19.0 | 16.4 | 16.0 |
| ORP (mV) | | 174 | 242 | 275 | 306 | 102 | NS | 214 | 37 | 30 | 239 | 112 | 89 | 127 | 229 | 183 | 169 | 584 | 128 | 315 | 342 |
| Color | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Crossgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Crossgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|----------------|---|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-211 | | | | | | | | | | | | | | | | | | |
| Parameter | Sampling Round | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | Week 46 | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 24-Apr-03 | 15-May-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 17.45 | 17.10 | 16.88 | 16.38 | 16.25 | 15.98 | 14.72 | 14.12 | 10.54 | 13.15 | 15.02 | 12.85 | 13.10 | 13.89 | 13.36 | 15.03 | 14.52 | 14.91 | 14.94 |
| pH | | 6.7 | 7.0 | 6.9 | 7.3 | 7.5 | 6.9 | 6.8 | 6.7 | 6.3 | 7.2 | 6.9 | 6.7 | 6.8 | 6.5 | 6.6 | 5.1 | 6.8 | 6.8 | 6.7 |
| Specific Conductivity (uS/cm) | | 2,064 | 1,169 | 1,435 | 1,589 | 1,327 | 1,225 | 1,222 | 1,741 | 307 | 433 | 1,277 | 1,441 | 1,585 | 287 | 254 | 1,391 | 572 | 929 | 1,204 |
| Dissolved Oxygen (mg/L) | | 2.0 | 4.3 | 5.8 | 8.2 | 8.0 | 9.2 | 6.3 | 7.7 | 8.0 | 9.4 | 7.5 | 6.2 | 2.1 | 7.2 | 7.1 | 0.8 | 4.7 | 5.0 | 0.6 |
| Temperature (Celsius) | | 16.2 | 12.3 | 10.6 | 11.4 | 12.1 | 11.1 | 9.9 | 9.3 | 10.5 | 6.7 | 12.8 | 8.0 | 9.8 | 13.2 | 13.3 | 17.4 | 16.4 | 16.8 | 18.5 |
| ORP (mV) | | 235 | 246 | 251 | 170 | 189 | 317 | 113 | 185 | 119 | 43 | 110 | 260 | 334 | 115 | 110 | 607 | 164 | 306 | 461 |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | MW-101 | | | | | | | | | | | | | | | |
| | | Baseline | Week 23 | | | | | Week 37 | | | | Week 46 | | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 30-Jan-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 2-Oct-03 |
| Depth to Water (ft) | | 20.81 | 20.38 | 19.89 | 19.59 | 19.65 | 15.51 | 18.25 | 18.42 | 15.72 | 15.88 | 17.05 | 16.91 | 18.61 | 18.85 | 19.51 | 19.65 |
| pH | | 6.1 | 6.9 | 6.4 | 6.6 | 7.6 | 7.0 | 7.1 | 8.0 | 6.2 | 6.4 | 6.2 | 6.0 | 5.9 | 6.9 | 6.4 | 6.1 |
| Specific Conductivity (uS/cm) | | 230 | 262 | 256 | 273 | 272 | 118 | 285 | 118 | 298 | 334 | 472 | 389 | 247 | 263 | 200 | 394 |
| Dissolved Oxygen (mg/L) | | 1.1 | 4.5 | 4.5 | 4.6 | 9.3 | 8.3 | 4.5 | 8.3 | 5.9 | 3.1 | 7.8 | 7.6 | 0.8 | 4.1 | 5.0 | 0.6 |
| Temperature (Celsius) | | 14.9 | 12.6 | 11.7 | 13.5 | 11.6 | 10.7 | 10.6 | 12.2 | 11.6 | 13.3 | 12.8 | 13.5 | 18.8 | 15.2 | 16.1 | 16.5 |
| ORP (mV) | | 157 | 285 | 226 | 109 | 115 | 109 | 200 | 99 | 249 | 506 | 110 | 106 | 527 | 109 | 347 | 235 |
| Color | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | 2 | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID Sampling Round | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | MW-102 | | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | Week 46 | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 20.46 | 20.02 | 19.66 | 19.44 | 19.10 | 19.37 | 17.68 | 15.27 | 18.48 | 17.36 | 17.89 | 18.39 | 16.20 | 16.18 | 16.89 | 16.80 | 18.49 | 18.70 | 19.42 | 19.50 |
| pH | | 6.6 | 6.8 | 6.8 | 6.4 | 7.1 | 7.5 | 7.0 | 6.3 | 6.6 | 7.4 | 7.1 | 6.9 | 6.7 | 6.6 | 6.2 | 6.3 | 6.2 | 6.8 | 6.6 | 6.5 |
| Specific Conductivity (uS/cm) | | 1,211 | 1,352 | 1,150 | 1,216 | 1,081 | 972 | 1,248 | 992 | 939 | 1,154 | 245 | 982 | 1,229 | 1,208 | 229 | 202 | 1,142 | 620 | 1,098 | 1,288 |
| Dissolved Oxygen (mg/L) | | 2.7 | 3.4 | 4.0 | 4.2 | 13.0 | 12.1 | 12.8 | 11.3 | 6.8 | 9.3 | 10.0 | 10.5 | 4.7 | 0.7 | 9.2 | 9.0 | 0.5 | 4.7 | 5.1 | 0.6 |
| Temperature (Celsius) | | 17.0 | 14.3 | 11.6 | 14.3 | 12.6 | 12.3 | 13.5 | 11.6 | 11.9 | 11.6 | 8.9 | 12.5 | 11.3 | 13.9 | 13.0 | 13.3 | 18.6 | 16.1 | 16.4 | 17.5 |
| ORP (mV) | | 242 | 234 | 260 | -136 | 136 | 98 | 390 | 92 | 124 | 177 | 168 | 110 | 211 | 165 | 133 | 116 | 434 | 121 | 366 | 458 |
| Color | | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|----------------|--|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-103 | | | | | | | | | | | | | | | | | | |
| Parameter | Sampling Round | Baseline | Week 13 | | | | | Week 23 | | | | | Week 37 | | | | | Week 46 | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 18.67 | 18.20 | 18.02 | 17.71 | 19.08 | 16.08 | 15.33 | 14.78 | 18.02 | 13.70 | 17.98 | 14.81 | 13.84 | 16.93 | 16.83 | 15.23 | 15.92 | 15.85 | 16.08 |
| pH | | 6.7 | 7.0 | 7.2 | 6.8 | 6.8 | 6.9 | 6.2 | 7.0 | 7.1 | 7.4 | 6.0 | 7.0 | 6.9 | 6.0 | 6.1 | 6.7 | 7.1 | 6.9 | 6.9 |
| Specific Conductivity (uS/cm) | | 1,637 | 1,509 | 1,298 | 1,663 | 1,389 | 1,331 | 1,012 | 1,381 | 1,202 | 264 | 1,107 | 302 | 1,341 | 331 | 307 | 1,061 | 320 | 998 | 1,221 |
| Dissolved Oxygen (mg/L) | | 6.4 | 7.7 | 9.8 | 7.7 | 12.2 | 13.2 | 11.5 | 9.3 | 10.4 | 10.8 | 11.1 | 9.8 | 8.3 | 9.7 | 9.2 | 6.5 | 8.7 | 7.6 | 6.4 |
| Temperature (Celsius) | | 16.9 | 13.3 | 9.8 | 12.8 | 12.9 | 13.2 | 11.3 | 10.1 | 12.0 | 8.7 | 13.0 | 10.7 | 13.0 | 13.3 | 13.2 | 16.8 | 15.1 | 15.4 | 16.4 |
| ORP (mV) | | 310 | 242 | 205 | -106 | 80 | 420 | 55 | 159 | 183 | 164 | 66 | 215 | 229 | 23 | 57 | 360 | 139 | 329 | 480 |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| Sample ID | | MW-107 | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 13 | | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-03 | 13-Mar-03 | 27-Mar-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 28-Jul-03 | 25-Aug-03 | 17-Sep-03 | 2-Oct-03 |
| Depth to Water (ft) | | 19.70 | 19.28 | 18.83 | 18.20 | 18.17 | 17.18 | 17.50 | 17.55 | 15.37 | 17.32 | 16.89 | 15.38 | 16.28 | 16.09 | NS* | NS* | 18.84 | 18.80 |
| pH | | 6.9 | 7.2 | 7.8 | 7.6 | 7.1 | 6.6 | 7.3 | 6.8 | 6.0 | 5.9 | 7.0 | 6.8 | 6.8 | 6.4 | 6.5 | 7.5 | 6.9 | 6.8 |
| Specific Conductivity (uS/cm) | | 1,027 | 433 | 878 | 887 | 808 | 1,098 | 521 | 701 | 571 | 291 | 721 | 930 | 328 | 333 | 992 | 990 | 798 | 1,138 |
| Dissolved Oxygen (mg/L) | | 0.6 | 6.8 | 4.9 | 10.0 | 10.5 | 5.6 | 9.1 | 0.2 | 7.0 | 7.3 | 9.3 | 0.5 | 9.2 | 8.2 | 0.3 | 4.3 | 3.1 | 0.4 |
| Temperature (Celsius) | | 14.8 | 11.7 | 13.2 | 9.8 | 9.9 | 10.2 | 9.9 | 10.0 | 10.3 | 11.3 | 12.4 | 12.9 | 13.2 | 13.2 | 16.5 | 16.0 | 15.8 | 15.2 |
| ORP (mV) | | 259 | 296 | 172 | 33 | 20 | 406 | 10 | -51 | 154 | 139 | 28 | -106 | 119 | 107 | -52 | -49 | 1 | -95 |
| Color | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

* Unable to lower water level indicator due to obstruction in well.

Colorimetric Monitoring:





| | |
|--|---|
|  | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
|  | Purple - evidence of unreacted permanganate |
|  | Light Purple, pink or rose - trace permanganate |
|  | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | MW-108 | | | | | | | | | | | | | | | | | | |
| | | Baseline | Week 13 | | | | | | Week 23 | | | | Week 37 | | | | Week 46 | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 11-Feb-03 | 27-Feb-02 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 28-Jul-03 | 25-Aug-03 | 17-Sep-03 | 2-Oct-03 |
| Depth to Water (ft) | | 20.10 | 19.95 | 19.23 | 18.80 | 18.83 | 17.42 | 17.61 | 17.98 | 15.54 | 17.58 | 16.93 | 16.02 | 15.47 | 16.32 | 16.12 | 17.51 | 18.20 | 18.85 | 19.01 |
| pH | | 5.9 | 6.8 | 6.8 | 7.1 | 7.3 | 6.7 | 6.4 | 6.0 | 7.5 | 7.9 | 6.2 | 6.0 | 5.9 | 6.2 | 6.1 | 5.5 | 6.8 | 6.3 | 5.8 |
| Specific Conductivity (uS/cm) | | 542 | 523 | 407 | 180 | 215 | 340 | 110 | 140 | 339 | 327 | 151 | 217 | 198 | 227 | 289 | 150 | 816 | 202 | 255 |
| Dissolved Oxygen (mg/L) | | 2.5 | 5.9 | 4.9 | 8.8 | 8.5 | 9.4 | 6.2 | 14.1 | 9.2 | 9.3 | 8.0 | 6.9 | 3.8 | 8.5 | 8.0 | 6.1 | 4.2 | 9.1 | 5.0 |
| Temperature (Celsius) | | 15.1 | 12.6 | 10.5 | 11.3 | 12.1 | 11.2 | 10.1 | 9.2 | 11.5 | 10.3 | 11.1 | 9.9 | 11.8 | 13.1 | 13.2 | 15.1 | 15.6 | 15.9 | 15.8 |
| ORP (mV) | | 274 | 291 | 89 | 79 | 62 | 432 | 109 | 244 | 192 | 203 | 89 | 207 | 121 | 132 | 119 | 345 | -104 | 331 | 274 |
| Color | | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| Sample ID | | MW-117 | | | | | | | | | | | | | |
| Sampling Round | Baseline | Week 13 | | | | Week 23 | | | | Week 37 | | | | Week 46 | |
| Parameter | Sampling Date | 3-Dec-02* | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 30-Jan-03 | 17-Feb-03 | 27-Feb-03 | 13-Mar-03 | 24-Apr-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 3-Oct-03 |
| Depth to Water (ft) | | 18.76 | Dry | Dry | Dry | Dry | 11.12 | 10.42 | 10.20 | 13.01 | 14.23 | 16.56 | 16.52 | 16.23 | 17.30 |
| pH | | 6.9 | Dry | Dry | Dry | Dry | 4.6 | 6.3 | 7.3 | 6.8 | 7.6 | 6.8 | 7.3 | 7.0 | 6.8 |
| Specific Conductivity (uS/cm) | | 1,328 | Dry | Dry | Dry | Dry | 210 | 487 | 303 | 417 | 386 | 377 | 339 | 366 | 458 |
| Dissolved Oxygen (mg/L) | | 11.1 | Dry | Dry | Dry | Dry | 20.0 | 13.3 | 8.6 | 6.8 | 8.7 | 7.5 | 7.9 | 10.2 | 8.3 |
| Temperature (Celsius) | | 16.1 | Dry | Dry | Dry | Dry | 10.8 | 12.3 | 7.3 | 11.8 | 14.8 | 16.7 | 17.1 | 16.2 | 16.3 |
| ORP (mV) | | 254 | Dry | Dry | Dry | Dry | 177 | 188 | 127 | 331 | 118 | 362 | 167 | 288 | 229 |
| Color | | | Dry | Dry | Dry | Dry | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | Dry | Dry | Dry | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS |

* Note: MW-117 was sampled on 3-Dec-02 for baseline data due to insufficient water volume in November, 2002.

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| Sample ID | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | |
|-------------------------------|--|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | MW-118 | | | | | | | | | | | | | |
| | Sampling Round | Baseline | Week 13 | | | | Week 23 | | | Week 37 | | Week 46 | | |
| Parameter | Sampling Date | 3-Dec-02* | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 17-Feb-03 | 27-Feb-03 | 13-Mar-03 | 24-Apr-03 | 12-Jun-03 | 30-Jul-03 | 25-Aug-03 | 17-Sep-03 | 3-Oct-03 |
| Depth to Water (ft) | | 18.73 | 18.62 | Dry | Dry | 15.98 | 15.48 | 14.75 | 14.08 | 14.17 | 16.02 | 15.27 | 16.85 | 16.95 |
| pH | | 7.0 | NS | Dry | Dry | NS | 5.5 | 6.2 | 6.65 | 8.2 | NS | 6.5 | 6.7 | 6.4 |
| Specific Conductivity (uS/cm) | | 669 | NS | Dry | Dry | NS | 354 | 238 | 686 | 402 | NS | 268 | 769 | 901 |
| Dissolved Oxygen (mg/L) | | 7.8 | NS | Dry | Dry | NS | 8.8 | 7.3 | 4.9 | 9.1 | NS | 7.2 | 7.3 | 4.2 |
| Temperature (Celsius) | | 17.9 | NS | Dry | Dry | NS | 13.1 | 8.8 | 18.0 | 14.1 | NS | 16.9 | 18.8 | 18.9 |
| ORP (mV) | | 244 | NS | Dry | Dry | NS | 98 | 112 | 322 | 108 | NS | 112 | 331 | 230 |
| Color | | | NS | Dry | Dry | NS | | | | | NS | | | |
| Sodium Permanganate (ppm) | | NS | NS | Dry | Dry | NS | NS | NS | NS | NS | NS | NS | NS | NS |

* Note: MW-118 was sampled on 3-Dec-02 for baseline data due to insufficient water volume in November, 2002.

Notes:

Permanganate addition conducted 13 and 14 November 2002.

NS = Not Sampled

MW-118 was not sampled on 11-Dec-02 due to excessive silt and no field parameteres measured 17-Feb-03 and 30-Jul-03 due to low yield.

Colorimetric Monitoring:





| | |
|--|---|
|  | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
|  | Purple - evidence of unreacted permanganate |
|  | Light Purple, pink or rose - trace permanganate |
|  | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sample ID | | MW-213 | | | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | | | |
| Parameter | Sampling Date | 11-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 2-Jan-03 | 16-Jan-03 | 30-Jan-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 30-Sep-03 |
| Depth to Water (ft) | | 19.34 | 18.62 | 18.63 | 18.59 | 18.20 | 18.25 | 16.32 | 14.98 | 15.08 | 18.21 | 12.93 | 14.72 | 16.54 | 16.27 | 16.53 | 16.40 | 16.98 | 16.81 |
| pH | | 6.4 | 6.9 | 6.7 | 7.2 | 6.7 | 7.0 | 6.8 | 6.5 | 6.9 | 6.0 | 6.5 | 6.6 | 6.0 | 6.2 | 6.5 | 6.6 | 6.6 | 6.5 |
| Specific Conductivity (uS/cm) | | 1,836 | 1,492 | 1,438 | 1,793 | 1,663 | 1,132 | 1,377 | 1,217 | 1,591 | 1,213 | 1,720 | 1,858 | 312 | 322 | 1,452 | 1,353 | 1,336 | 1,616 |
| Dissolved Oxygen (mg/L) | | 6.0 | 7.2 | 9.0 | 7.9 | 13.6 | 11.8 | 13.8 | 12.0 | 9.5 | 12.1 | 9.0 | 7.7 | 10.5 | 9.7 | 7.1 | 8.0 | 8.6 | 6.9 |
| Temperature (Celsius) | | 16.9 | 13.1 | 11.8 | 13.4 | 13.6 | 12.8 | 13.2 | 11.1 | 7.9 | 13.1 | 11.3 | 12.5 | 12.9 | 13.0 | 17.6 | 15.4 | 15.8 | 16.8 |
| ORP (mV) | | 205 | 228 | 214 | -100 | 97 | 52 | 313 | 82 | 174 | 53 | 241 | 218 | 55 | 62 | 355 | 152 | 309 | 517 |
| Color | | | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:





| | |
|--|---|
|  | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
|  | Purple - evidence of unreacted permanganate |
|  | Light Purple, pink or rose - trace permanganate |
|  | Clear - no evidence of permanganate |

Table 4
Groundwater Field Parameter Data - RAM Plan Modification #1
MW-43 Pilot Study Area - Downgradient Wells
Former Raytheon Facility
Wayland, MA

| | | Wells Downgradient of MW-43 Pilot Area | | | | | | | | | | | | | | | |
|-------------------------------|---------------|--|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| Sample ID | | MW-214 | | | | | | | | | | | | | | | |
| Sampling Round | | Baseline | Week 23 | | | | | Week 37 | | | | | Week 46 | | | | |
| Parameter | Sampling Date | 12-Nov-02 | 21-Nov-02 | 2-Dec-02 | 11-Dec-02 | 19-Dec-02 | 30-Jan-03 | 13-Mar-03 | 27-Mar-03 | 11-Apr-03 | 22-Apr-03 | 15-May-03 | 12-Jun-03 | 29-Jul-03 | 25-Aug-03 | 17-Sep-03 | 2-Oct-03 |
| Depth to Water (ft) | | 20.84 | 20.42 | 19.92 | 19.73 | 19.32 | 15.39 | 18.18 | 18.51 | 12.68 | 16.40 | 16.91 | 16.87 | 18.70 | 18.68 | 19.65 | 19.68 |
| pH | | 6.5 | 6.8 | 6.7 | 6.3 | 6.9 | 6.3 | 7.0 | 5.7 | 6.5 | 6.2 | 6.2 | 6.5 | 6.0 | 6.0 | 6.2 | 6.5 |
| Specific Conductivity (uS/cm) | | 641 | 429 | 404 | 388 | 542 | 338 | 1,159 | 318 | 509 | 688 | 291 | 311 | 460 | 339 | 471 | 620 |
| Dissolved Oxygen (mg/L) | | 0.9 | 4.1 | 4.0 | 10.2 | 6.1 | 5.2 | 4.4 | 5.2 | 8.1 | 3.6 | 6.2 | 7.0 | 4.3 | 7.3 | 4.3 | 0.5 |
| Temperature (Celsius) | | 15.6 | 13.9 | 11.6 | 11.8 | 13.7 | 11.0 | 10.2 | 13.9 | 11.0 | 14.6 | 13.5 | 13.7 | 20.0 | 15.3 | 17.0 | 17.4 |
| ORP (mV) | | -12 | 245 | 234 | 24 | 9 | 16 | 159 | 7 | 153 | 50 | -96 | -28 | 162 | 113 | 174 | -42 |
| Color | | | | | | | | | | | | | | | | | |
| Sodium Permanganate (ppm) | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Notes:
 Permanganate addition conducted 13 and 14 November 2002.
 NS = Not Sampled

Colorimetric Monitoring:

| | |
|--|---|
| | Dark Purple - evidence of unreacted permanganate ORP's typically > 500 mv |
| | Purple - evidence of unreacted permanganate |
| | Light Purple, pink or rose - trace permanganate |
| | Clear - no evidence of permanganate |