February 9, 2022

Ms. Sherrel Henry
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway – 20th Floor
New York, New York 10007-1866

Re: Peter Cooper Markhams Site, Dayton, NY
June 2021 Post-Remedial Groundwater Monitoring Event
Report Revised February 2022

Dear Ms. Henry:

On behalf of the cooperating Potentially Responsible Parties (cPRPs) for the above-referenced site, Benchmark Civil/Environmental Engineering & Geology, PLLC (Benchmark), has prepared this letter report to transmit the results of the June 2021 post-remedial groundwater monitoring event at the Peter Cooper Markhams Site in Dayton, New York (see Figure 1). A site maintenance summary is also included in this report. The work was performed in accordance with our approved (June 2009) Post-Remedial Operation, Maintenance and Monitoring (OM&M) Plan. Groundwater and surface water monitoring requirements are presented on Table 1.

## FIELD SAMPLING PROCEDURE

On June 25th, 2021, Benchmark staff collected a round of static water level measurements from the seven monitoring wells shown on Figure 2; measurements and groundwater elevations are summarized on Table 2. Groundwater samples were collected from on-site monitoring wells MW-5S, MW-7S, MW-8S, and MW-9S. At the time of sampling event Wetland F was dry, therefore no surface water sample was collected from the Wetland F location.

The monitoring wells were sampled using a Mini-Typhoon® submersible pump and dedicated PVC tubing in accordance with low-flow groundwater purging procedures. Field measurements for pH, Eh, specific conductance, temperature, turbidity, and visual/ olfactory observations were recorded and monitored for stabilization. Purging was considered complete when pH, specific conductivity, and temperature stabilized, and the turbidity measured below or stabilized above 50 NTU. Stability is defined as the variation between field measurements of 10 percent or less with no overall upward or downward trend in the measurements. Once the field parameters stabilized, groundwater samples were collected and analyzed for the parameters presented on Table 1. The submersible pump was decontaminated using Alconox and water following sample collection activities at each well.


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Attachment 1 includes sample collection logs. All water samples were transferred to laboratory supplied, pre-preserved sample containers and transported under chain-of-custody command to Eurofins Test America Laboratories for analysis in accordance with Table 1.

## ANALYTICAL RESULTS

Attachment 2 includes the laboratory analytical data for the June 25th, 2021, sampling event. Routine parameters detected above method detection limits are shown on Table 3 with their associated sample concentrations. NYSDEC Groundwater Quality Standards and Guidance Values (GWQS/GV; TOGS 1.1.1, June 1998) are presented for comparison. Concentrations exceeding the GWQS/GVs are highlighted.

As indicated on Table 3, sample concentrations were reported as non-detect or below GWQS/GV at all the monitored locations with the exceptions of: total manganese, iron and ammonia at MW-5S; total iron at MW-7S, and Nitrate (as Nitrogen) at MW-9S.

## HISTORICAL DATA

Table 3 includes routine groundwater monitoring results for past monitoring events. Charts showing trending of the monitored parameters (excluding arsenic, hexavalent chromium and sulfide, which are consistently reported as non-detect or only sporadically at all locations) are presented in Attachment 3. In general, the data indicate similar concentrations for the monitored parameters at each of the sampling locations, with no apparent trending except for an increase in ammonia at MW-5S. No other parameters have shown similar trending at MW-5S, which is in a topographically low area where significant leaf accumulation/decay has been observed and the groundwater elevation is within a few inches of ground surface. In addition, ammonia was detected in the laboratory method blank during the subject monitoring event, indicating potential positive analytical bias.

## DATA QUALITY

Site-specific quality control (QC) sampling during each event included the collection of one blind duplicate sample (collected from MW-5S) and one matrix spike/matrix spike duplicate (MS/MSD) sample (collected from MW-9S) for total metal analysis only. Recoveries for the MS/MSDs were within the acceptable ranges with good reproducibility. Blind duplicate results correlated well with MW-5S results.

## GROUNDWATER ELEVATION DATA

Groundwater monitoring includes a round of static water level measurements from seven monitoring wells across the site. Table 2 includes groundwater elevation data for the 2021 monitoring year. An isopotential map representing the shallow groundwater was prepared from the June 25th, 2021, depth-to-groundwater measurements and is presented as Figure 2. Based on those measurements, the inferred groundwater flow directions indicate that shallow groundwater migrates to the west towards wetland F, which is consistent with observations recorded during the site Remedial Investigation.

## ANNUAL MAINTENANCE SUMMARY REPORT

Post remedial site inspections have been performed during each groundwater monitoring event since June 2009. The June 2021 site inspection indicated no irregularities or changes to the property access or security. The final cover system appears in good condition, with the gas vent monitoring system intact and operational. Overgrown vegetation near and along access paths to the monitoring well locations was cut prior to the June 2021 sampling event and will be re-mowed prior to the next sampling event. A copy of the Field Inspection Form including a photolog is provided in Attachment 4.

## CONCLUSIONS

The groundwater monitoring data and site inspection yielded no evidence of significant impact from leaching from the containment cell area into the water table. In addition, no toxic metals (arsenic, chromium, hexavalent chromium) were detected above their representative GWQS/GVs at any of the sample locations. Accordingly, the data indicate that the implemented remedy at the Site remains protective of public health and the environment.

More specifically, the 2021 groundwater monitoring data compared to prior events indicate that there have been no significant changes in groundwater flow or groundwater quality attributable to the landfill. Although groundwater at MW-5S indicates levels of ammonia slightly above the GWQS/GVs standard since 2015, no other monitored parameters have shown similar trending. It is noted that groundwater elevations at MW-5S are close to grade, and the elevated ammonia levels detected in MW-5S may be attributed to the decaying of organic matter from surrounding trees and leaf debris.

Please contact us if you have any questions or require additional information.

Sincerely,
Benchmark Civil/Environmental Engineering & Geology, PLLC

Thomas H. Forbes, P.E.
President

Att.

Cc: M. Joy
R. Biltekoff
W. D'Angelo
M. Kuczka (NYSDEC)

# TABLES

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# TABLE 1

## MONITORING PROGRAM REQUIREMENTS

### June 2021 Monitoring Event
### Peter Cooper Markhams Site
### Dayton, New York

| Sample Location | Frequency | Parameters | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DTW | Field [1] | Total Metals [2] | | | | | Water Quality | | | |
| | | | | As | Cr | Hex. Cr. | Mn | Fe | Ammonia | Nitrate | Alkalinity | T. Sulfide |
| ***Groundwater*** | | | | | | | | | | | | |
| MW-2SR (cross-gradient) | 15-month | X | | | | | | | | | | |
| MW-4S | | X | | | | | | | | | | |
| MW-5S | | X | X | X | X | X | X | X | X | X | X | X |
| MW-6S | | X | | | | | | | | | | |
| MW-7S | | X | X | X | X | X | X | X | X | X | X | X |
| MW-8S | | X | X | X | X | X | X | X | X | X | X | X |
| MW-9S (upgradient) | | X | X | X | X | X | X | X | X | X | X | X |
| ***Surface Water*** | | | | | | | | | | | | |
| Wetland F (surface water) | 15-month | | X | X | X | X | X | X | X | X | X | X |
| ***QA/QC Samples*** [3] | | | | | | | | | | | | |
| Blind Duplicate | 15-month | | | X | X | X | X | X | | | | |
| Matrix Spike | | | | X | X | X | X | X | | | | |
| Matrix Spike Duplicate | | | | X | X | X | X | X | | | | |

**Notes:**

1. Field measurements include: pH, temperature, specific conductance, turbidity, Eh
2. If field measured turbidity is greater than 50 NTU, dissolved metals will also be collected.
3. QA/QC samples will be collected at a frequency of 1 per 20 for each matrix.
4. DTW = depth to water

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# TABLE 2

## SUMMARY OF GROUNDWATER ELEVATIONS
## 6/23/21
## Monitoring Event
## Peter Cooper Markhams Site
## Dayton, New York

| Location | TOR Elevation (fmsl) | DTW (fbTOR) | GWE (fmsl) |
|---|---|---|---|
| MW-2SR | 1313.33 | 8.10 | 1305.23 |
| MW-4S | 1313.11 | 9.85 | 1303.26 |
| MW-5S | 1302.70 | 3.48 | 1299.22 |
| MW-6S | 1315.47 | 14.41 | 1301.06 |
| MW-7S | 1312.82 | 12.90 | 1299.92 |
| MW-8S | 1304.10 | 4.90 | 1299.20 |
| MW-9S | 1314.13 | 6.70 | 1307.43 |

Notes:

1. DTW = depth to water
2. fbTOR = feet below top of riser
3. fmsl = feet above mean sea level
4. GWE = groundwater elevation
5. TOR = top of riser

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**TABLE 3**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]**

**June 2021 Monitoring Event**
**Peter Cooper Markhams Site**
**Dayton, New York**

| Parameter | Monitoring Location and Sample Collection Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | GWQS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-5S | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 04/25/02 | | 06/19/09 | | 12/30/09 | | 05/28/10 | | 06/22/11 | | 06/26/12 | | 06/24/13 | | 06/24/14 | | 10/27/15 | | 10/26/16 | | 10/20/17 | | 10/19/18 | | 02/05/20 | | 06/23/21 | | |
| ***Field Measurements [3]:*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sample No.* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | -- |
| pH (units) | -- | 6.81 | 6.75 | 6.78 | 6.58 | 6.68 | 6.80 | 6.86 | 6.90 | 7.00 | 6.88 | 6.88 | 6.89 | 6.92 | 7.12 | 7.13 | 6.92 | 6.92 | 6.69 | 6.70 | 6.91 | 6.88 | 6.89 | 7.12 | 6.94 | 6.92 | 6.86 | 6.98 | **6.5 - 8.5** |
| Temperature ($^{o}$C) | -- | 7.14 | 11.4 | 11.7 | 6.3 | 6.2 | 14.3 | 14.9 | 14.2 | 14.5 | 12.8 | 13.2 | 12.9 | 13.3 | 12.8 | 13.6 | 12.3 | 12.3 | 12.7 | 12.7 | 13.8 | 13.7 | 13.2 | 12.1 | 4.4 | 4.3 | 12.1 | 13.1 | **NA** |
| Sp. Conductance (mS) | -- | 822 | 1004 | 993 | 1099 | 1090 | 985 | 966 | 1035 | 1029 | 1005 | 1008 | 955 | 941 | 986 | 974 | 1041 | 1048 | 1050 | 1062 | 947 | 949 | 1207 | 1234 | 879 | 908 | 992 | 978 | **NA** |
| Turbidity (NTU) | -- | 2 | 4.6 | 2.4 | 2.9 | 2.9 | 37 | 5.47 | 4.29 | 3.11 | 4.04 | 3.42 | 9.82 | 5.32 | 8.77 | 6.79 | 5.53 | 5.53 | 4.39 | 2.77 | 1.96 | 1.53 | 10 | 6 | 31.5 | 25 | 8.91 | 1.4 | **NA** |
| Eh (mV) | -- | 67.3 | 69 | 70 | -29 | -20 | -38 | 21 | -9 | 15 | 15 | 30 | 105 | 100 | 150 | 130 | 59 | 82 | 108 | 100 | 155 | 154 | 70 | 88 | 135 | 130 | 230 | 286 | **NA** |
| ***Wet Chemistry (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alkalinity, Total | NA | | 538 D | | 470 D | | 471 D | | 478 | | 473 | | 474 | | 489 | | 518 | | 486 | | 511 | | 517 | | 453 B | | 469 | | **NA** |
| Ammonia | ND | | ND | | 0.047 | | ND | | ND | | 0.2 | | 0.13 | | 0.4 | | 1.2 | | **3.5** | | **3.6** | | **6.5** | | **12.9** | | **17.2 B** | | **2** |
| Nitrate (as Nitrogen) | 2.8 | | 0.271 | | 0.347 | | 0.443 CF6 | | ND | | 0.23 | | 1.2 | | ND | | 1.4 | | **14.1** | | 1.2 | | 0.43 | | **12.7** | | 1.9 | | **10** |
| ***Total Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | ND | | 0.0056 | | ND | | ND | | 0.0064 | | 0.005 | | 0.0051 | | 0.0047 | | 0.0042 | | 0.0054 | | ND | | 0.004 | | 0.004 | | 0.0042 | | **0.05** |
| Manganese | NA | | **1.61** | | **1.45** | | **1.50** | | **1.80** | | **1.6** | | **1.7** | | **2.6** | | **2.3** | | **2.2** | | **1.9** | | **2.2** | | **4.5** | | **2.5 B** | | **0.3** |
| Iron | NA | | **0.408** | | 0.128 | | **0.508** | | **0.560** | | 0.2 | | 0.053 | | **0.41** | | **0.49** | | 0.17 | | 0.091 | | 0.16 | | **1.2** | | **0.59** | | **0.3** |
| ***Soluble Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | 0.004 | | NA | | NA | | **0.05** |
| Manganese | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | NA | | **1.6** | | NA | | NA | | **0.3** |

**Notes:**

1. Only those compounds detected above the method detection limit at a minimum of one sample event are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.

**Definitions:**

B = Compound was found in the blank and sample.
J = Estimated value
NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
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CF6 = Results confirmed by reanalysis.

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**TABLE 3 (continued)**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]**

**June 2021 Monitoring Event**
**Peter Cooper Markhams Site**
**Dayton, New York**

| Parameter | Monitoring Location and Sample Collection Date | | | | | | | | | | | | | | | | | | | | | | | | | | GWQS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-7S | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 04/24/02 | | 06/19/09 | | 12/30/09 | | 05/28/10 | | 06/22/11 | | 06/26/12 | | 06/24/13 | | 06/24/14 | | 10/27/15 | | 10/26/16 | | 10/20/17 | | 10/19/18 | | 02/05/20 | | 06/23/21 | | |
| ***Field Measurements [3]:*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sample No.* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | -- |
| pH (units) | -- | 6.80 | 6.74 | 6.79 | 6.77 | 6.82 | 6.79 | 6.78 | 6.31 | 6.41 | 6.80 | 6.78 | -- | 7.23 | 7.06 | 7.05 | 7.02 | 7.03 | 6.91 | 7.00 | 7.05 | 7.07 | 7.04 | (5) | 7.03 | 7.01 | 6.95 | 6.96 | **6.5 - 8.5** |
| Temperature (°C) | -- | 8.77 | 9.6 | 10.1 | 5.4 | 7.7 | 15.0 | 15.1 | 13.7 | 13.4 | 9.8 | 9.7 | -- | 12.8 | 13.10 | 12.9 | 11.00 | 11.1 | 10.60 | 10.5 | 11.70 | 12.7 | 11.00 | (5) | 7.4 | 7.6 | 14.8 | 13.9 | **NA** |
| Sp. Conductance (mS) | -- | 1959 | 1753 | 1754 | 1804 | 1799 | 1687 | 1785 | 1771 | 1660 | 1786 | 1776 | -- | 1632 | 1648 | 1621 | 1612 | 1619 | 1595 | 1603 | 1498 | 1492 | 1715 | (5) | 1349 | 1375 | 1327 | 1340 | **NA** |
| Turbidity (NTU) | -- | 12.4 | >1000 | 180 | 405 | 537 | 190 | 27 | 96.8 | 40.4 | 47.6 | 49.4 | -- | 32.3 | 443 | 80 | 120 | 40.1 | 778 | 351 | 16.9 | 8.12 | 586 | (5) | 365 | 205 | 71 | 70 | **NA** |
| Eh (mV) | -- | 170 | -56 | -62 | -62 | -64 | -83 | -114 | -86 | -92 | -63 | -66 | -- | -26 | -25 | -41 | -60 | -60 | -36 | -36 | -84 | -92 | -61 | (5) | -9 | -10 | -40 | -38 | **NA** |
| ***Wet Chemistry (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alkalinity, Total | NA | | 519 D | | 586 D | | 446 D | | 438 | | 437 | | 410 | | 448 | | 431 | | 434 | | 439 | | 391 | | 438 B | | 398 B | | **NA** |
| Ammonia | ND | | 0.063 | | 0.119 | | 0.039 C | | ND | | ND | | 0.031 | | 0.069 | | 0.02 | | 0.033 | | ND | | 0.2 | | 0.2 | | 0.018 JB | | **2** |
| Nitrate (as Nitrogen) | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | 0.03 J | | 0.03 J | | **10** |
| ***Total Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | ND | | 0.0055 | | 0.0050 | | 0.0046 | | 0.0056 | | 0.0057 | | 0.0053 | | ND | | ND | | 0.0051 | | ND | | 0.0082 | | 0.0082 | | 0.0034 J | | **0.05** |
| Manganese | NA | | 0.264 | | **0.428** | | 0.213 | | 0.200 | | 0.2100 | | 0.19 | | 0.24 | | 0.19 | | 0.23 | | 0.18 | | **0.39** | | 0.26 | | 0.21 B | | **0.3** |
| Iron | NA | | **104** | | **83.3** | | **17.8** | | **25.0** | | **17.8** | | **14.1** | | **129** | | **17** | | **61.1** | | **10.3** | | **237** | | **25** | | **32** | | **0.3** |
| ***Soluble Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | NA | | 0.005 P | | 0.005 P | | 0.0043 | | 0.0056 | | NA | | NA | | 0.0044 | | ND | | ND | | NA | | ND | | 0.003 J | | ND | | **0.05** |
| Manganese | NA | | 0.206 P | | 0.186 P | | 0.193 | | 0.2 | | NA | | NA | | 0.19 | | 0.17 | | 0.2 | | NA | | 0.17 | | 0.2 | | NA | | **0.3** |
| Iron | NA | | ND | | ND | | **10.8 CF6** | | **10.2** | | NA | | NA | | 9.8 | | **8.3** | | **10** | | NA | | **7.5** | | 0.43 | | NA | | **0.3** |

**Notes:**

1. Only those compounds detected above the method detection limit at a minimum of one sample event are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
5. Surface water was more turbid at time of metals collection.

**Definitions:**

J = Estimated value
B = Compound was found in the blank and sample.
NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
P = Sample filtered in the laboratory
CF6 = Results confirmed by reanalysis.

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**TABLE 3 (continued)**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]**

**June 2021 Monitoring Event**
**Peter Cooper Markhams Site**
**Dayton, New York**

| Parameter | Monitoring Location and Sample Collection Date | | | | | | | | | | | | | | | | | | | | | | | | | | | GWQS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-8S | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 04/23/02 | | 06/19/09 | | 12/30/09 | | 05/28/10 | | 06/22/11 | | 06/26/12 | | 06/24/13 | | 06/24/14 | | 10/27/15 | | 10/26/16 | | 10/20/17 | | 10/19/18 | | 02/20/20 | | 06/23/21 | | |
| ***Field Measurements [3]:*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sample No.* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | -- |
| pH (units) | -- | 6.90 | 6.90 | 6.92 | 6.65 | 6.70 | 7.04 | **6.25** | 6.67 | 6.72 | 6.89 | 6.97 | 7.01 | 7.01 | 7.27 | 7.17 | 6.96 | 6.95 | 6.82 | 6.73 | 7.00 | 6.97 | 6.88 | 7.32 | 7.27 | 7.14 | 7.04 | 7.12 | **6.5 - 8.5** |
| Temperature (°C) | -- | 7.6 | 11.5 | 12.2 | 6.9 | 6.9 | 16.1 | 12.7 | 13.5 | 14.3 | 12.0 | 12.8 | 13.9 | 14.3 | 13.0 | 14.0 | 12.9 | 13.2 | 12.4 | 12.5 | 14.1 | 14.5 | 13.4 | 12.7 | 4.8 | 5.2 | 11.3 | 11.8 | **NA** |
| Sp. Conductance (mS) | -- | 755 | 754 | 764 | 767 | 767 | 653 | 635 | 886 | 879 | 822 | 809 | 700 | 691 | 781 | 766 | 811.5 | 817.4 | 894.0 | 892.0 | 759.3 | 773.6 | 811.0 | 823.0 | 575.7 | 593.5 | 627.0 | 595.0 | **NA** |
| Turbidity (NTU) | -- | 17 | 32 | 22 | 30 | 19 | 63 | 5.38 | 34.6 | 20 | 11.3 | 7.96 | 8.52 | 4.88 | 12.3 | 5.97 | 9.17 | 10.8 | 6.81 | 4.96 | 4.85 | 6.11 | 9 | 9 | 52.1 | 27.8 | 2.92 | 2.22 | **NA** |
| Eh (mV) | -- | 4.6 | 80 | 81 | 7 | 15 | 21 | 41 | 48 | 59 | 4 | 72 | 92 | 84 | 162 | 183 | 81 | 102 | 108 | 106 | 133 | 124 | 68 | 77 | 104 | 96 | 241 | 218 | **NA** |
| ***Wet Chemistry (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alkalinity, Total | NA | | 291 D | | 285 D | | 300 D | | 355 | | 372 | | 266 | | 286 | | 385 | | 426 | | 396 | | 348 | | 303 B | | 284 | | **NA** |
| Ammonia | 0.34 | | 0.038 | | 0.04 | | 0.042 | | 0.028 | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | **2** |
| Nitrate (as Nitrogen) | **14.6** | | 9.48 D | | 0.543 | | 1.98 | | 2.3 | | 3.8 | | 6.4 | | 7 | | 4 | | ND | | 0.54 | | 0.82 | | 6.9 | | 8.8 | | **10** |
| ***Total Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | ND | | ND | | ND | | ND | | 0.0093 | | 0.0044 | | ND | | ND | | ND | | 0.0042 | | ND | | ND | | 0.0026 J | | 0.0016 J | | **0.05** |
| Hexavalent Chromium | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | 0.0059 J | | ND | | **0.05** |
| Manganese | NA | | **19.6** | | **1.54** | | **2.34** | | **14.30** | | **6** | | **1.4** | | **1.7** | | **1.5** | | **1.9** | | **0.64** | | **0.61** | | **0.37** | | 0.28 B | | **0.3** |
| Iron | NA | | **1.93** | | ND | | 0.088 | | **0.61** | | 0.15 | | ND | | 0.15 | | 0.11 | | 0.097 | | ND | | 0.12 | | **0.91** | | 0.047 J | | **0.3** |

**Notes:**

1. Only those compounds detected above the method detection limit at a minimum of one sample event are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.

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NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
P = Sample filtered in the laboratory
CF6 = Results confirmed by reanalysis.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

**TABLE 3 (continued)**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]**

**June 2021 Monitoring Event**
**Peter Cooper Markhams Site**
**Dayton, New York**

| Parameter | Monitoring Location and Sample Collection Date | | | | | | | | | | | | | | | | | | | | | | | | | | GWQS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-9S [5] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 04/23/02 | | 06/19/09 | | 12/30/09 | | 05/28/10 | | 06/22/11 | | 06/26/12 | | 06/24/13 | | 06/24/14 | | 10/27/15 | | 10/26/16 | | 10/20/17 | | 10/19/18 | | 02/05/20 | | 06/23/21 | | |
| ***Field Measurements [3]:*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sample No.* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | *Initial* | *Final* | -- |
| pH (units) | -- | 7.36 | **6.48** | 6.52 | 6.84 | 6.79 | 7.71 | 6.78 | **6.31** | **6.38** | 6.88 | 7.11 | 7.72 | 7.74 | 7.83 | 7.65 | 7.12 | 7.06 | 7.73 | 7.56 | 7.31 | 7.27 | 7.35 | 7.10 | 6.58 | 6.79 | 6.78 | 6.73 | **6.5 - 8.5** |
| Temperature (°C) | -- | 6.02 | 12.2 | 12.6 | 6.5 | 5.4 | 12.2 | 12.4 | 15.7 | 16.1 | 13.0 | 13.4 | 14.6 | 15.3 | 12.8 | 14.0 | 12.6 | 12.7 | 12.9 | 12.9 | 13.0 | 13.2 | 12.7 | 12.4 | 4.6 | 4.6 | 11.8 | 11.9 | **NA** |
| Sp. Conductance (mS) | -- | 540 | 337 | 337 | 369 | 369 | 402 | 299 | 266 | 280 | 297 | 274 | 320 | 301 | 381 | 417 | 364.7 | 342.9 | 402 | 400 | 423.4 | 416.8 | 368.0 | 386.0 | 322.8 | 341.2 | 339.0 | 335.0 | **NA** |
| Turbidity (NTU) | -- | 11.2 | 6.2 | 4 | 2.43 | 2.02 | 18.6 | 2.98 | 7.26 | 9.45 | 9.51 | 5.84 | 12.5 | 10.4 | 24 | 14 | 1.66 | 2.38 | 0.7 | 0.23 | 0.96 | 0.89 | 13 | 10 | 23 | 20.9 | 2.99 | 2.99 | **NA** |
| Eh (mV) | -- | 1.8 | 93 | 90 | 52 | 56 | 4 | 50 | 54 | 80 | 48 | 23 | 503 | 132 | 149 | 155 | 134 | 131 | 73 | 71 | 116 | 114 | 125 | 115 | 148 | 142 | 208 | 241 | **NA** |
| ***Wet Chemistry (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alkalinity, Total | NA | | 98.4 D | | 98.8 D | | 73.5 C | | 39.1 | | 82.4 | | 92.2 | | 90.5 | | 116 | | 129 | | 137 | | 106 | | 104 B | | 81.4 B | | **NA** |
| Ammonia | ND < 10 | | ND | | 0.029 | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | 0.014 J | | ND | | **2** |
| Nitrate (as Nitrogen) | 9.3 | | 7.19 D | | **11.1 D** | | **12.1 D** | | **13.8** | | 5.8 | | 6.1 | | **13.7** | | 8.6 | | 5.5 | | 5.4 | | 8.1 | | **12.7 H** | | **12.9** | | **10** |
| ***Total Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | ND | | 0.0051 | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | ND | | 0.0018 J | | ND | | **0.05** |
| Manganese | NA | | **1.54** | | 0.005 | | 0.004 | | 0.008 | | 0.0046 | | 0.018 | | 0.021 | | 0.0037 | | 0.0037 | | 0.0076 | | 0.007 | | 0.11 | | 0.0023 JB | | **0.3** |
| Iron | NA | | **0.322** | | ND | | 0.076 | | 0.077 | | 0.057 | | 0.13 | | 0.31 | | 0.053 | | ND | | 0.1 | | 0.069 | | **1.9** | | 0.031 J | | **0.3** |

**Notes:**

1. Only those compounds detected above the method detection limit at a minimum of one sample event are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
5. Surface water was more turbid at time of metals collection.

**Definitions:**

H = Sample was prepped or analyzed beyond the specified holding time.
B = Compound was found in the blank and sample.
J = Estimated value
NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
P = Sample filtered in the laboratory
CF6 = Results confirmed by reanalysis.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

**TABLE 3 (continued)**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]**

**June 2021 Monitoring Event**
**Peter Cooper Markhams Site**
**Dayton, New York**

| Parameter | Wetland-F | | | | | | | | | | | | | | GWQS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 06/19/09 | | 12/30/09 | 05/28/10 | 06/22/11 | 06/26/12 | 06/24/13 | | 06/24/14 | 10/27/15 | 10/26/16 | 10/20/17 | 10/19/18 | 02/05/20 | 06/23/21 | |
| ***Field Measurements [3]:*** | | | | | | | | | | | | | | | | |
| *Sample No.* | *Initial* | *Final* | *Initial* | *Initial* | *Initial* | *Initial* | *Initial* | *Final* | *Initial* | *Initial* | *Initial* | *Initial* | *Initial* | *Initial* | *Initial* | -- |
| pH (units) | 7.24 | 7.24 | **6.04** | 7.45 | 7.27 | (6) | 7.70 | 7.70 | 7.13 | 7.42 | (6) | 7.18 | 7.34 | 6.94 | (6) | **6.5 - 8.5** |
| Temperature ($^{o}$C) | 16.7 | 16.9 | 2.00 | 22.00 | 20.90 | (6) | 27.8 | 27.7 | 20.00 | 9.40 | (6) | 11.4 | 6 | 0.8 | (6) | **NA** |
| Sp. Conductance (mS) | 416 | 426 | 571.8 | 469.0 | 385.0 | (6) | 752.8 | 748.0 | 484.0 | 299.4 | (6) | 268.8 | 638 | 611 | (6) | **NA** |
| Turbidity (NTU) | 1.2 | 250 | 588 | 6.79 | 7.83 | (6) | -- | -- | 21.3 | 2.97 [5] | (6) | 250 | 8 | 203 | (6) | **NA** |
| Eh (mV) | 3 | -42 | -39 | 530 | -1 | (6) | 97 | 89 | 86 | 11.8 | (6) | 112 | -49 | 9 | (6) | **NA** |
| ***Wet Chemistry (mg/L):*** | | | | | | | | | | | | | | | | |
| Alkalinity, Total | 228 D | | 274 D | 243 D | 204 | (6) | 325 | | 260 | 110 | (6) | 120 | 253 | 260 B | (6) | **NA** |
| Ammonia | 0.065 | | 0.167 | 0.088 | 0.2 | (6) | 0.20 | | 0.090 | .020 | (6) | .070 | 0.034 | 0.37 | (6) | **2** |
| Nitrate (as Nitrogen) | 7.9 D | | ND | ND | 3.8 | (6) | ND | | ND | ND | (6) | .27 | ND | 1.7 | (6) | **10** |
| Sulfide, Total | **0.173** | | ND | ND | ND | (6) | ND | | ND | ND | (6) | ND | ND | **1.2** | (6) | **0.05** |
| ***Total Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | |
| Chromium | ND | | 0.006 | ND | ND | (6) | 0.0045 | | 0.0084 | ND | (6) | .0041 | ND | 0.0049 | (6) | **0.05** |
| Manganese | **0.676** | | **0.305** | **0.392** | **0.51** | (6) | **2.9** | | **0.76** | **2.5** | (6) | **1.0** | **0.86** | **0.84** | (6) | **0.3** |
| Iron | **0.647** | | **6.14** | **0.715** | **0.94** | (6) | 0.22 | | **8.8** | **2.9** | (6) | **1.0** | **3.5** | **2.6** | (6) | **0.3** |
| ***Soluble Inorganic Compounds (mg/L):*** | | | | | | | | | | | | | | | | |
| Manganese | 0.0116 P | | 0.0272 P | NA | ND | (6) | NA | | 0.0043 | **0.60** | (6) | 0.21 | 0.018 | **0.45** | (6) | **0.3** |
| Iron | 0.104 P | | 0.089 P | NA | 0.07 | (6) | NA | | 0.057 | **1.0** | (6) | .0084 | **1.9** | 0.18 | (6) | **0.3** |

**Notes:**

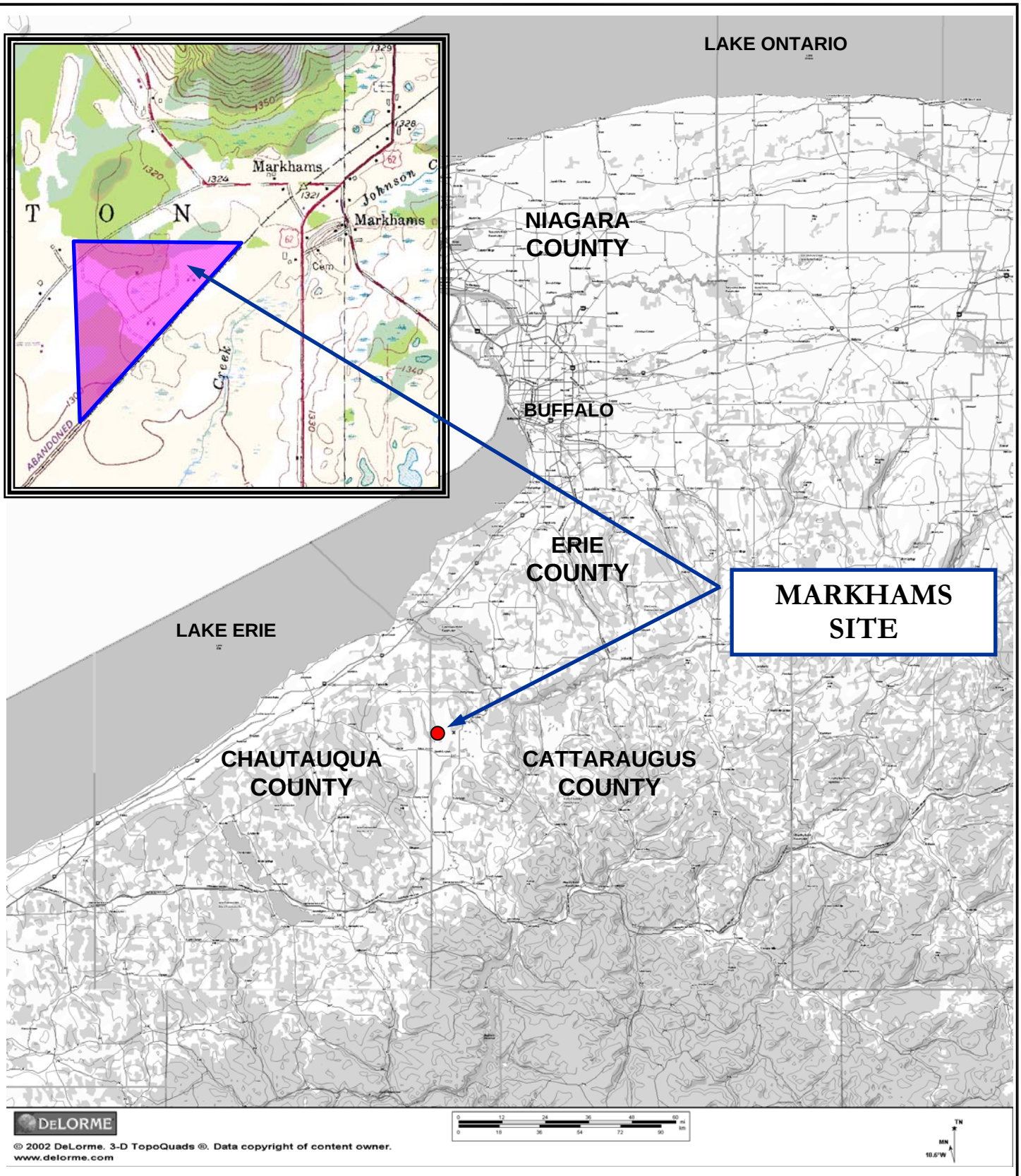
1. Only those compounds detected above the method detection limit at a minimum of one sample event are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
5. Surface water was more turbid at time of metals collection.
6. Sample location was dry

**Definitions:**

J = Estimated value
B = Compound was found in the blank and sample.
NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
P = Sample filtered in the laboratory
CF6 = Results confirmed by reanalysis.

# FIGURES

# FIGURE 1




FILEPATH=\CAD\Benchmark\Collier Shannon\Markhams Site\Post Remedial O&M Plan\figure 1\site location and vicinity map.dwg


BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599


PROJECT NO.: 0021-003-400

DATE: JANUARY 2008

DRAFTED BY: AJZ

## SITE LOCATION AND VICINITY MAP

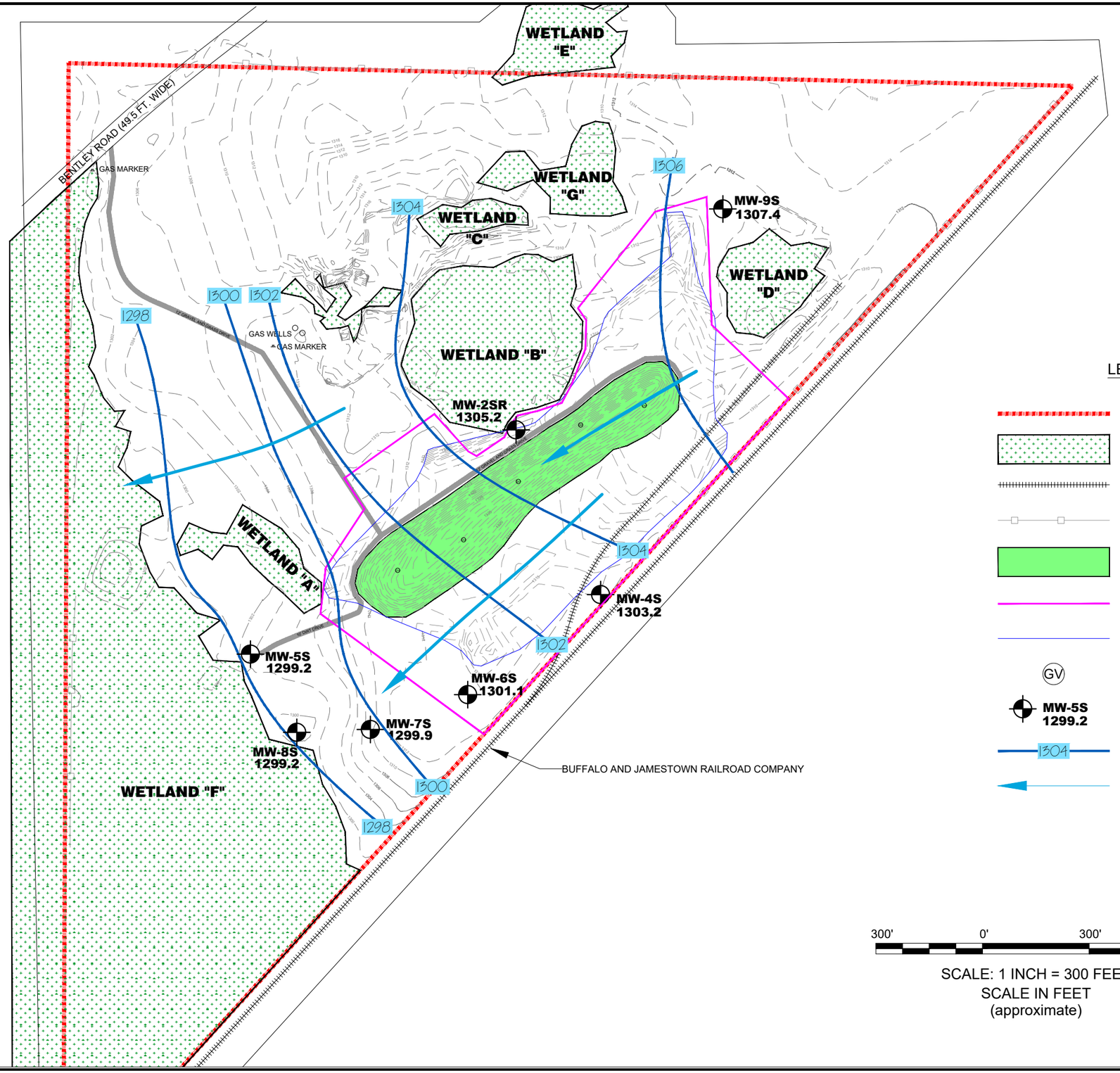
POST-REMEDIAL OPERATION & MAINTENANCE PLAN

PETER COOPER MARKHAMS SITE
DAYTON, NEW YORK

PREPARED FOR

RESPONDENTS FOR PETER COOPER MARKHAMS SITE

F:\CAD\Benchmark\Collier Shannon\Markhams SitePost-Remedial Monitoring\2021\Figure 2; Site Plan & Isopotential Map 2021.dwg, 7/14/2021 3:56:14 PM




N

LEGEND:

- PROPERTY BOUNDARY
- WETLAND AREA
- RAILROAD TRACKS
- FENCE LINE
- CONTAINMENT CELL
- REMEDIAL WORK LIMIT
- SURVEY LIMITS
- GV — CONTAINMENT CELL GAS VENT
- MW-5S 1299.2 — MONITORING WELL WITH GROUNDWATER ELEVATION (06/23/2021)
- 1304 — ISOPOTENTIAL CONTOUR
- GROUNDWATER FLOW DIRECTION

300' 0' 300' 600'

SCALE: 1 INCH = 300 FEET
SCALE IN FEET
(approximate)

DATE: JULY 2021
DRAFTED BY: CMC


BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NEW YORK 14218
(716) 856-0599


JOB NO.: 0199-001-100

# SITE PLAN & ISOPOTENTIAL MAP FOR JUNE 23, 2021

POST-REMEDIAL MONITORING
PETER COOPER MARKHAMS SUPERFUND SITE
DAYTON, NEW YORK
PREPARED FOR
CPRPs FOR PETER COOPER MARKHAMS

**FIGURE 2**

# ATTACHMENT 1

## SAMPLE COLLECTION LOGS

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# GROUNDWATER FIELD FORM

Project Name: Peter Cooper Markhams Site Date: 6/23/21

Location: Markhams Project No.: 0199-001-100 Field Team: RLO JMH

| Well No. MW-5S | Diameter (inches): 2" | Sample Date / Time: 6/23/21 |
|---|---|---|
| Product Depth (fbTOR): -- | Water Column (ft): | DTW when sampled: |
| DTW (static) (fbTOR): | One Well Volume (gal): | Purpose: ☐ Development ☐ Sample ☒ Purge & |
| Total Depth (fbTOR): | Total Volume Purged (gal): | Purge Method: Lowflow (mini monsoon) |

| Time | | Water Level (fbTOR) | Acc. Volume (gallons) | pH (units) | Temp. (deg. C) | SC (uS) | Turbidity (NTU) | DO (mg/L) | ORP (mV) | Appearance & Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | 0 | Initial | | 6.86 | 13.2 | 995 | 20.1 | | +268 | Clear |
| | 1 | | | 6.86 | 11.8 | 1041 | 13.6 | | +257 | Clear |
| | 2 | | | 7.66 | 12.0 | 1000 | 7.86 | | +244 | Clear |
| 1059 | 3 | 3.65 | ~~3.65~~ | 6.87 | 12.0 | 996 | 7.42 | | +228 | Clear |
| | 4 | | | | | | | | | |
| | 5 | | | | | | | | | |
| | 6 | | | | | | | | | |
| | 7 | | | | | | | | | |
| | 8 | | | | | | | | | |
| | 9 | | | | | | | | | |
| | 10 | | | | | | | | | |
| **Sample Information:** | | | | | | | | | | |
| 1101 | S1 | 3.65 | 2 | 6.86 | 12.1 | 992 | 8.91 | | +230 | Clear |
| 1110 | S2 | 3.65 | ~~2.5~~ | 6.98 | 13.1 | 978 | 1.4 | | +286 | Clear |

| Well No. MW-7S | Diameter (inches): 2" | Sample Date / Time: 6/23/21 |
|---|---|---|
| Product Depth (fbTOR): -- | Water Column (ft): | DTW when sampled: |
| DTW (static) (fbTOR): | One Well Volume (gal): | Purpose: ☐ Development ☐ Sample ☒ Purge & |
| Total Depth (fbTOR): 12.90 | Total Volume Purged (gal): | Purge Method: Lowflow (mini monsoon) |

| Time | | Water Level (fbTOR) | Acc. Volume (gallons) | pH (units) | Temp. (deg. C) | SC (uS) | Turbidity (NTU) | DO (mg/L) | ORP (mV) | Appearance & Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1157 | 0 | Initial | | 7.25 | 11.6 | 1257 | 562 | | -26 | TURBID |
| | 1 | | | 7.00 | 11.4 | 1336 | 495 | | -36 | ↓ |
| | 2 | | | 6.98 | 10.7 | 1328 | 299 | | -34 | |
| | 3 | | | 6.99 | 10.3 | 1320 | 234 | | -25 | |
| | 4 | | | | | | | | | |
| | 5 | | | | | | | | | |
| | 6 | | | | | | | | | |
| | 7 | | | | | | | | | |
| | 8 | | | | | | | | | |
| | 9 | | | | | | | | | |
| | 10 | | | | | | | | | |
| **Sample Information:** | | | | | | | | | | |
| 1201 | S1 | 13.20 | | 6.95 | 14.8 | 1327 | 71 | | -40 | TURBID |
| 1202 | S2 | 13.20 | | 6.96 | 13.9 | 1340 | 70 | | -38 | TURBID |

**REMARKS:** Collected Blind Dup from MW-5S

Collected Dissolved metals & Hexcr from MW-7S due to high turbidity.

*Note: All water level measurements are in feet, distance from top of riser.*

Volume Calculation

| Diam. | Vol. (g/ft) |
|---|---|
| 1" | 0.041 |
| 2" | 0.163 |
| 4" | 0.653 |
| 6" | 1.469 |

Stabilization Criteria

| Parameter | Criteria |
|---|---|
| pH | ± 0.1 unit |
| SC | ± 3% |
| Turbidity | ± 10% |
| DO | ± 0.3 mg/L |
| ORP | ± 10 mV |

**PREPARED BY:** RLO

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# GROUNDWATER FIELD FORM

Project Name: Peter Cooper Markhams Site  Date: 6/23/21

Location: Markhams  Project No.: 0199-001-100  Field Team: RLO / MH

| **Well No.** MW-9S | | | Diameter (inches): 2" | | | Sample Date / Time: 6/23/21 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Product Depth (fbTOR): -- | | | Water Column (ft): | | | DTW when sampled: | | | |
| DTW (static) (fbTOR): | | | One Well Volume (gal): | | | Purpose: ☐ Development ☐ Sample ☑ Purge & Sample | | | |
| Total Depth (fbTOR): 6.70 | | | Total Volume Purged (gal): | | | Purge Method: Lowflow (mini monsoon) | | | |
| Time | Water Level (fbTOR) | Acc. Volume (gallons) | pH (units) | Temp. (deg. C) | SC (uS) | Turbidity (NTU) | DO (mg/L) | ORP (mV) | Appearance & Odor |
| 1003 | 0 Initial | | 8.45 | 11.8 | 586 | 29 | | +132 | Clear |
| 1005 | 1 | | 7.54 | 11.4 | 351 | 9.7 | | +150 | |
| 1006 | 2 | | 7.16 | 11.5 | 343 | 5.6 | | +140 | |
| 1008 | 3 | | 7.01 | 11.4 | 337 | 4.3 | | +196 | |
| 1010 | 4 | | 6.97 | 11.5 | 331 | 2.99 | | +193 | |
| | 5 | | | | | | | | |
| | 6 | | | | | | | | |
| | 7 | | | | | | | | |
| | 8 | | | | | | | | |
| | 9 | | | | | | | | |
| | 10 | | | | | | | | |
| **Sample Information:** | | | | | | | | | |
| 1013 | S1 6.90 | 3 | 6.28 | 11.8 | 339 | 2.99 | | +208 | Clear |
| 1015 | S2 6.90 | 3.5 | 6.23 | 11.9 | 335 | 2.99 | | +241 | ↓ |

| **Well No.** MW-8S | | | Diameter (inches): 2" | | | Sample Date / Time: 6/23/21 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Product Depth (fbTOR): -- | | | Water Column (ft): | | | DTW when sampled: | | | |
| DTW (static) (fbTOR): 4.30 | | | One Well Volume (gal): | | | Purpose: ☐ Development ☐ Sample ☑ Purge & Sample | | | |
| Total Depth (fbTOR): | | | Total Volume Purged (gal): | | | Purge Method: Lowflow (mini monsoon) | | | |
| Time | Water Level (fbTOR) | Acc. Volume (gallons) | pH (units) | Temp. (deg. C) | SC (uS) | Turbidity (NTU) | DO (mg/L) | ORP (mV) | Appearance & Odor |
| 1138 | 0 Initial | | 7.56 | 12.1 | 583 | 58 | | +285 | Clear |
| 1139 | 1 | 1 | 7.31 | 11.3 | 549 | 22 | | +258 | |
| 1141 | 2 | 1.5 | 7.11 | 11.2 | 568 | 8.14 | | +245 | |
| 1142 | 3 | 2 | 7.09 | 11.3 | 583 | 3.95 | | +246 | |
| | 4 | | | | | | | | |
| | 5 | | | | | | | | |
| | 6 | | | | | | | | |
| | 7 | | | | | | | | |
| | 8 | | | | | | | | |
| | 9 | | | | | | | | |
| | 10 | | | | | | | | |
| **Sample Information:** | | | | | | | | | |
| 1143 | S1 4.35 | | 7.04 | 11.3 | 627 | 2.92 | | +241 | Clear |
| 1146 | S2 4.40 | | 7.12 | 11.8 | 595 | 2.22 | | +218 | Clear |

**REMARKS:** MS/MSD collected at MW-9S

*Note: All water level measurements are in feet, distance from top of riser.*

Volume Calculation

| Diam. | Vol. (g/ft) |
|---|---|
| 1" | 0.041 |
| 2" | 0.163 |
| 4" | 0.653 |
| 6" | 1.469 |

Stabilization Criteria

| Parameter | Criteria |
|---|---|
| pH | ± 0.1 unit |
| SC | ± 3% |
| Turbidity | ± 10% |
| DO | ± 0.3 mg/L |
| ORP | ± 10 mV |

**PREPARED BY:** RLO

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# WATER SAMPLE COLLECTION LOG

## PROJECT INFORMATION

Project Name: Peter Cooper Markhams Site

Project No.: B0199-001-100

Client:

Location: Markhams, NY

## SAMPLE DESCRIPTION

I.D.: WETLAND F

Matrix: ☑ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER

## SAMPLE INFORMATION

Date Collected:

Time Collected:

Date Shipped to Lab: N/A

Collected By:

Sample Type: ☐ POINT ☐ GRAB ☐ COMPOSITE

Sample Collection Method: ☐ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☐ OTHER

## SAMPLING INFORMATION

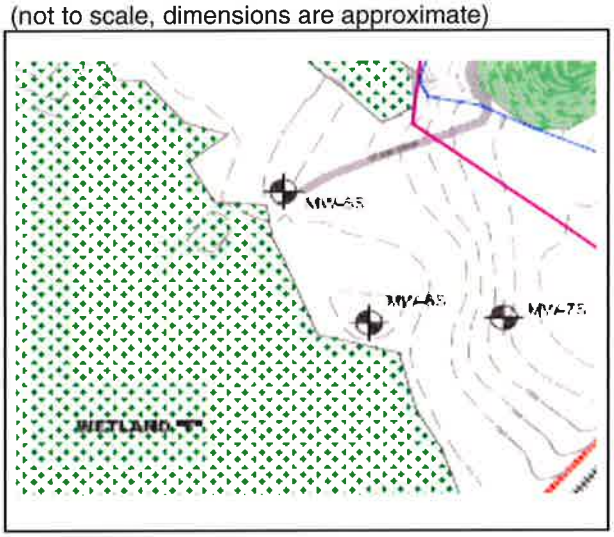
Weather:

Air Temperature:

| Parameter | First | Last | Units |
|---|---|---|---|
| pH | | | units |
| Temp. | | | °C |
| Cond. | | | mS |
| Turbidity | | | NTU |
| Eh / ORP | N/A | | mV |
| D.O. | | | ppm |
| Odor | | | olfactory |
| Appearance | | | visual |
| | | | |
| | | | |

## LOCATION SKETCH

(not to scale, dimensions are approximate)




## EXACT LOCATION (if applicable)

| Northing (ft) | Easting (ft) | Surface Elevation (fmsl) |
|---|---|---|
| | | |

**SAMPLE DESCRIPTION (appearance, olfactory):** SAMPLE LOCATION DRY NO STANDING WATER.

**SAMPLE ANALYSIS (depth, laboratory analysis required):** NO SAMPLE COLLECTED DURING THIS EVENT

**ADDITIONAL REMARKS:**

**PREPARED BY:** RLD **DATE:** 6/23/21

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

# TABLE 2

## SUMMARY OF GROUNDWATER ELEVATIONS

~~6/12/13~~ 6/23/21

## Monitoring Event
## Peter Cooper Markhams Site
## Dayton, New York

| Location | TOR Elevation (fmsl) | DTW (fbTOR) | GWE (fmsl) |
|---|---|---|---|
| MW-2SR | 1313.33 | 8.10 | 1313.33 |
| MW-4S | 1313.11 | 9.8J | 1313.11 |
| MW-5S | 1302.70 | 3.41 | 1302.70 |
| MW-6S | 1315.47 | 14.41 | 1315.47 |
| MW-7S | 1312.82 | 12.90 | 1312.82 |
| MW-8S | 1304.10 | 4.90 | 1304.10 |
| MW-9S | 1314.13 | 6.70 | 1314.13 |

Notes:
1. DTW = depth to water
2. fbTOR = feet below top of riser
3. fmsl = feet above mean sea level
4. GWE = groundwater elevation
5. TOR = top of riser

# ATTACHMENT 2

## TESTAMERICA LABORATORIES, INC.
## SAMPLE DATA SUMMARY PACKAGE
## JUNE 2021

BENCHMARK

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-186435-1
Client Project/Site: Benchmark-Peter Cooper sites
Sampling Event: Annual sampling

For:
Benchmark Env. Eng. & Science, PLLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Tom Forbes

*Authorized for release by:*
*6/30/2021 2:21:20 PM*
Rebecca Jones, Project Management Assistant I
Rebecca.Jones@Eurofinset.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
Brian.Fischer@Eurofinset.com

# Table of Contents

# Definitions/Glossary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Qualifiers

### Metals

| Qualifier | Qualifier Description |
|---|---|
| B | Compound was found in the blank and sample. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| B | Compound was found in the blank and sample. |
| H | Sample was prepped or analyzed beyond the specified holding time |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 480-186435-1

### Laboratory: Eurofins TestAmerica, Buffalo

**Narrative**

**Job Narrative**
**480-186435-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 6/23/2021 5:03 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.8º C.

**Receipt Exceptions**

Total and Dissolved 7196 volume received for this sample point: MW-7S (480-186435-2)

**Metals**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**General Chemistry**
Method 353.2: The results reported for the following sample do not concur with results previously reported for this site: MW-8S (480-186435-3). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-5S — Lab Sample ID: 480-186435-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.0042 | | 0.0040 | 0.0010 | mg/L | 1 | | 6010C | Total/NA |
| Iron | 0.59 | | 0.050 | 0.019 | mg/L | 1 | | 6010C | Total/NA |
| Manganese | 2.5 | B | 0.0030 | 0.00040 | mg/L | 1 | | 6010C | Total/NA |
| Alkalinity, Total | 469 | | 60.0 | 24.0 | mg/L | 6 | | 310.2 | Total/NA |
| Ammonia (as N) | 17.2 | B | 0.20 | 0.090 | mg/L | 10 | | 350.1 | Total/NA |
| Nitrate as N | 1.9 | | 0.050 | 0.020 | mg/L | 1 | | 353.2 | Total/NA |

## Client Sample ID: MW-7S — Lab Sample ID: 480-186435-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.0034 | J | 0.0040 | 0.0010 | mg/L | 1 | | 6010C | Total/NA |
| Iron | 32.0 | | 0.050 | 0.019 | mg/L | 1 | | 6010C | Total/NA |
| Manganese | 0.21 | B | 0.0030 | 0.00040 | mg/L | 1 | | 6010C | Total/NA |
| Alkalinity, Total | 398 | | 50.0 | 20.0 | mg/L | 5 | | 310.2 | Total/NA |
| Ammonia (as N) | 0.018 | J B | 0.020 | 0.0090 | mg/L | 1 | | 350.1 | Total/NA |
| Nitrate as N | 0.030 | J | 0.050 | 0.020 | mg/L | 1 | | 353.2 | Total/NA |

## Client Sample ID: MW-8S — Lab Sample ID: 480-186435-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.0016 | J | 0.0040 | 0.0010 | mg/L | 1 | | 6010C | Total/NA |
| Iron | 0.047 | J | 0.050 | 0.019 | mg/L | 1 | | 6010C | Total/NA |
| Manganese | 0.28 | B | 0.0030 | 0.00040 | mg/L | 1 | | 6010C | Total/NA |
| Alkalinity, Total | 284 | | 50.0 | 20.0 | mg/L | 5 | | 310.2 | Total/NA |
| Nitrate as N | 8.8 | | 0.050 | 0.020 | mg/L | 1 | | 353.2 | Total/NA |

## Client Sample ID: MW-9S — Lab Sample ID: 480-186435-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 0.031 | J | 0.050 | 0.019 | mg/L | 1 | | 6010C | Total/NA |
| Manganese | 0.0023 | J B | 0.0030 | 0.00040 | mg/L | 1 | | 6010C | Total/NA |
| Alkalinity, Total | 81.4 | | 20.0 | 8.0 | mg/L | 2 | | 310.2 | Total/NA |
| Nitrate as N | 12.9 | | 0.050 | 0.020 | mg/L | 1 | | 353.2 | Total/NA |

## Client Sample ID: Blind Duplicate — Lab Sample ID: 480-186435-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.0043 | | 0.0040 | 0.0010 | mg/L | 1 | | 6010C | Total/NA |
| Iron | 0.48 | | 0.050 | 0.019 | mg/L | 1 | | 6010C | Total/NA |
| Manganese | 2.4 | B | 0.0030 | 0.00040 | mg/L | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-5S

**Date Collected: 06/23/21 11:01**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-1

**Matrix: Water**

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 21:06 | 1 |
| **Chromium** | **0.0042** | | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 21:06 | 1 |
| **Iron** | **0.59** | | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 21:06 | 1 |
| **Manganese** | **2.5** | **B** | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 21:06 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity, Total** | **469** | | 60.0 | 24.0 | mg/L | | | 06/24/21 17:04 | 6 |
| **Ammonia (as N)** | **17.2** | **B** | 0.20 | 0.090 | mg/L | | | 06/28/21 10:38 | 10 |
| **Nitrate as N** | **1.9** | | 0.050 | 0.020 | mg/L | | | 06/24/21 18:42 | 1 |
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-7S

**Date Collected: 06/23/21 11:57**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-2

**Matrix: Water**

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 21:10 | 1 |
| **Chromium** | **0.0034** | **J** | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 21:10 | 1 |
| **Iron** | **32.0** | | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 21:10 | 1 |
| **Manganese** | **0.21** | **B** | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 21:10 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity, Total** | **398** | | 50.0 | 20.0 | mg/L | | | 06/24/21 17:04 | 5 |
| **Ammonia (as N)** | **0.018** | **J B** | 0.020 | 0.0090 | mg/L | | | 06/28/21 10:52 | 1 |
| **Nitrate as N** | **0.030** | **J** | 0.050 | 0.020 | mg/L | | | 06/24/21 17:26 | 1 |
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

### General Chemistry - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium, hexavalent (dissolved) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-8S

**Date Collected: 06/23/21 11:43**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-3

**Matrix: Water**

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 21:13 | 1 |
| **Chromium** | **0.0016** | **J** | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 21:13 | 1 |
| **Iron** | **0.047** | **J** | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 21:13 | 1 |
| **Manganese** | **0.28** | **B** | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 21:13 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity, Total** | **284** | | 50.0 | 20.0 | mg/L | | | 06/24/21 17:07 | 5 |
| Ammonia (as N) | ND | | 0.020 | 0.0090 | mg/L | | | 06/28/21 10:40 | 1 |
| **Nitrate as N** | **8.8** | | 0.050 | 0.020 | mg/L | | | 06/24/21 18:45 | 1 |
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-9S

**Date Collected: 06/23/21 10:13**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-4

**Matrix: Water**

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 21:17 | 1 |
| Chromium | ND | | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 21:17 | 1 |
| **Iron** | **0.031** | **J** | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 21:17 | 1 |
| **Manganese** | **0.0023** | **J B** | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 21:17 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity, Total** | **81.4** | | 20.0 | 8.0 | mg/L | | | 06/24/21 17:08 | 2 |
| Ammonia (as N) | ND | | 0.020 | 0.0090 | mg/L | | | 06/28/21 10:41 | 1 |
| **Nitrate as N** | **12.9** | | 0.050 | 0.020 | mg/L | | | 06/24/21 18:49 | 1 |
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: Blind Duplicate

**Date Collected: 06/23/21 11:50**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-5

**Matrix: Water**

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 21:35 | 1 |
| **Chromium** | **0.0043** | | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 21:35 | 1 |
| **Iron** | **0.48** | | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 21:35 | 1 |
| **Manganese** | **2.4** | **B** | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 21:35 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 10:15 | 1 |

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-586931/1-A**
**Matrix: Water**
**Analysis Batch: 587203**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 586931**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.015 | 0.0056 | mg/L | | 06/25/21 06:51 | 06/25/21 20:44 | 1 |
| Chromium | ND | | 0.0040 | 0.0010 | mg/L | | 06/25/21 06:51 | 06/25/21 20:44 | 1 |
| Iron | ND | | 0.050 | 0.019 | mg/L | | 06/25/21 06:51 | 06/25/21 20:44 | 1 |
| Manganese | 0.000610 | J | 0.0030 | 0.00040 | mg/L | | 06/25/21 06:51 | 06/25/21 20:44 | 1 |

**Lab Sample ID: LCS 480-586931/2-A**
**Matrix: Water**
**Analysis Batch: 587203**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 586931**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Arsenic | 0.200 | 0.202 | | mg/L | | 101 | 80 - 120 |
| Chromium | 0.200 | 0.205 | | mg/L | | 103 | 80 - 120 |
| Iron | 10.0 | 9.65 | | mg/L | | 96 | 80 - 120 |
| Manganese | 0.200 | 0.207 | | mg/L | | 104 | 80 - 120 |

**Lab Sample ID: 480-186435-4 MS**
**Matrix: Water**
**Analysis Batch: 587203**

**Client Sample ID: MW-9S**
**Prep Type: Total/NA**
**Prep Batch: 586931**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.200 | 0.208 | | mg/L | | 104 | 75 - 125 |
| Chromium | ND | | 0.200 | 0.204 | | mg/L | | 102 | 75 - 125 |
| Iron | 0.031 | J | 10.0 | 10.02 | | mg/L | | 100 | 75 - 125 |
| Manganese | 0.0023 | J B | 0.200 | 0.208 | | mg/L | | 103 | 75 - 125 |

**Lab Sample ID: 480-186435-4 MSD**
**Matrix: Water**
**Analysis Batch: 587203**

**Client Sample ID: MW-9S**
**Prep Type: Total/NA**
**Prep Batch: 586931**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 0.200 | 0.206 | | mg/L | | 103 | 75 - 125 | 1 | 20 |
| Chromium | ND | | 0.200 | 0.202 | | mg/L | | 101 | 75 - 125 | 1 | 20 |
| Iron | 0.031 | J | 10.0 | 9.71 | | mg/L | | 97 | 75 - 125 | 3 | 20 |
| Manganese | 0.0023 | J B | 0.200 | 0.207 | | mg/L | | 102 | 75 - 125 | 1 | 20 |

## Method: 310.2 - Alkalinity

**Lab Sample ID: MB 480-586905/103**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 4.98 | J | 10.0 | 4.0 | mg/L | | | 06/24/21 13:27 | 1 |

**Lab Sample ID: MB 480-586905/140**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total | ND | | 10.0 | 4.0 | mg/L | | | 06/24/21 13:56 | 1 |

## Method: 310.2 - Alkalinity

**Lab Sample ID: MB 480-586905/277**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total | ND | | 10.0 | 4.0 | mg/L | | | 06/24/21 16:53 | 1 |

**Lab Sample ID: MB 480-586905/299**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total | ND | | 10.0 | 4.0 | mg/L | | | 06/24/21 17:01 | 1 |

**Lab Sample ID: MB 480-586905/311**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity, Total | ND | | 10.0 | 4.0 | mg/L | | | 06/24/21 17:05 | 1 |

**Lab Sample ID: LCS 480-586905/102**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 50.0 | 53.35 | B | mg/L | | 107 | 90 - 110 |

**Lab Sample ID: LCS 480-586905/139**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 50.0 | 49.72 | | mg/L | | 99 | 90 - 110 |

**Lab Sample ID: LCS 480-586905/276**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 50.0 | 49.88 | | mg/L | | 100 | 90 - 110 |

**Lab Sample ID: LCS 480-586905/298**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 50.0 | 49.45 | | mg/L | | 99 | 90 - 110 |

**Lab Sample ID: LCS 480-586905/310**
**Matrix: Water**
**Analysis Batch: 586905**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity, Total | 50.0 | 49.34 | | mg/L | | 99 | 90 - 110 |

## Method: 350.1 - Nitrogen, Ammonia

**Lab Sample ID: MB 480-587213/27**
**Matrix: Water**
**Analysis Batch: 587213**
**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia (as N) | 0.0119 | J | 0.020 | 0.0090 | mg/L | | | 06/28/21 10:45 | 1 |

**Lab Sample ID: MB 480-587213/3**
**Matrix: Water**
**Analysis Batch: 587213**
**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia (as N) | 0.0132 | J | 0.020 | 0.0090 | mg/L | | | 06/28/21 10:25 | 1 |

**Lab Sample ID: LCS 480-587213/28**
**Matrix: Water**
**Analysis Batch: 587213**
**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ammonia (as N) | 1.00 | 0.973 | | mg/L | | 97 | 90 - 110 |

**Lab Sample ID: LCS 480-587213/4**
**Matrix: Water**
**Analysis Batch: 587213**
**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ammonia (as N) | 1.00 | 0.916 | | mg/L | | 92 | 90 - 110 |

## Method: 7196A - Chromium, Hexavalent

**Lab Sample ID: MB 480-586772/3**
**Matrix: Water**
**Analysis Batch: 586772**
**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 08:55 | 1 |

**Lab Sample ID: LCS 480-586772/4**
**Matrix: Water**
**Analysis Batch: 586772**
**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | 0.0500 | 0.0536 | | mg/L | | 107 | 85 - 115 |

**Lab Sample ID: MB 480-586882/3**
**Matrix: Water**
**Analysis Batch: 586882**
**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.010 | 0.0050 | mg/L | | | 06/24/21 10:15 | 1 |

## Method: 7196A - Chromium, Hexavalent (Continued)

**Lab Sample ID: LCS 480-586882/4**
**Matrix: Water**
**Analysis Batch: 586882**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | | | 0.0500 | 0.0499 | | mg/L | | 100 | 85 - 115 | | |

**Lab Sample ID: 480-186435-4 MS**
**Matrix: Water**
**Analysis Batch: 586882**

**Client Sample ID: MW-9S**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.0500 | 0.0451 | H | mg/L | | 90 | 85 - 115 | | |

**Lab Sample ID: 480-186435-4 MSD**
**Matrix: Water**
**Analysis Batch: 586882**

**Client Sample ID: MW-9S**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.0500 | 0.0475 | H | mg/L | | 95 | 85 - 115 | 5 | 20 |

**Lab Sample ID: 480-186435-5 MS**
**Matrix: Water**
**Analysis Batch: 586882**

**Client Sample ID: Blind Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | 0.0500 | 0.0487 | | mg/L | | 97 | 85 - 115 | | |

**Lab Sample ID: 480-186435-5 DU**
**Matrix: Water**
**Analysis Batch: 586882**

**Client Sample ID: Blind Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Chromium (hexavalent) | ND | | ND | | mg/L | | NC | 20 |

## Method: SM 4500 S2 F - Sulfide, Total

**Lab Sample ID: MB 480-587623/27**
**Matrix: Water**
**Analysis Batch: 587623**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

**Lab Sample ID: MB 480-587623/3**
**Matrix: Water**
**Analysis Batch: 587623**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | ND | | 1.0 | 0.67 | mg/L | | | 06/29/21 16:45 | 1 |

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Method: SM 4500 S2 F - Sulfide, Total (Continued)

**Lab Sample ID: LCS 480-587623/28**
**Matrix: Water**
**Analysis Batch: 587623**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Sulfide | 7.80 | 8.40 | | mg/L | | 108 | 90 - 110 |

**Lab Sample ID: LCS 480-587623/4**
**Matrix: Water**
**Analysis Batch: 587623**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Sulfide | 7.80 | 8.00 | | mg/L | | 103 | 90 - 110 |

# QC Association Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-186435-1
Project/Site: Benchmark-Peter Cooper sites

## Metals

### Prep Batch: 586931

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 3005A | |
| 480-186435-2 | MW-7S | Total/NA | Water | 3005A | |
| 480-186435-3 | MW-8S | Total/NA | Water | 3005A | |
| 480-186435-4 | MW-9S | Total/NA | Water | 3005A | |
| 480-186435-5 | Blind Duplicate | Total/NA | Water | 3005A | |
| MB 480-586931/1-A | Method Blank | Total/NA | Water | 3005A | |
| LCS 480-586931/2-A | Lab Control Sample | Total/NA | Water | 3005A | |
| 480-186435-4 MS | MW-9S | Total/NA | Water | 3005A | |
| 480-186435-4 MSD | MW-9S | Total/NA | Water | 3005A | |

### Analysis Batch: 587203

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 6010C | 586931 |
| 480-186435-2 | MW-7S | Total/NA | Water | 6010C | 586931 |
| 480-186435-3 | MW-8S | Total/NA | Water | 6010C | 586931 |
| 480-186435-4 | MW-9S | Total/NA | Water | 6010C | 586931 |
| 480-186435-5 | Blind Duplicate | Total/NA | Water | 6010C | 586931 |
| MB 480-586931/1-A | Method Blank | Total/NA | Water | 6010C | 586931 |
| LCS 480-586931/2-A | Lab Control Sample | Total/NA | Water | 6010C | 586931 |
| 480-186435-4 MS | MW-9S | Total/NA | Water | 6010C | 586931 |
| 480-186435-4 MSD | MW-9S | Total/NA | Water | 6010C | 586931 |

## General Chemistry

### Analysis Batch: 586772

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 7196A | |
| 480-186435-2 | MW-7S | Dissolved | Water | 7196A | 586780 |
| 480-186435-2 | MW-7S | Total/NA | Water | 7196A | |
| 480-186435-3 | MW-8S | Total/NA | Water | 7196A | |
| 480-186435-4 | MW-9S | Total/NA | Water | 7196A | |
| MB 480-586772/3 | Method Blank | Total/NA | Water | 7196A | |
| LCS 480-586772/4 | Lab Control Sample | Total/NA | Water | 7196A | |

### Filtration Batch: 586780

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-2 | MW-7S | Dissolved | Water | Filtration | |

### Analysis Batch: 586882

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-5 | Blind Duplicate | Total/NA | Water | 7196A | |
| MB 480-586882/3 | Method Blank | Total/NA | Water | 7196A | |
| LCS 480-586882/4 | Lab Control Sample | Total/NA | Water | 7196A | |
| 480-186435-4 MS | MW-9S | Total/NA | Water | 7196A | |
| 480-186435-4 MSD | MW-9S | Total/NA | Water | 7196A | |
| 480-186435-5 MS | Blind Duplicate | Total/NA | Water | 7196A | |
| 480-186435-5 DU | Blind Duplicate | Total/NA | Water | 7196A | |

### Analysis Batch: 586905

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 310.2 | |

## General Chemistry (Continued)

### Analysis Batch: 586905 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-2 | MW-7S | Total/NA | Water | 310.2 | |
| 480-186435-3 | MW-8S | Total/NA | Water | 310.2 | |
| 480-186435-4 | MW-9S | Total/NA | Water | 310.2 | |
| MB 480-586905/103 | Method Blank | Total/NA | Water | 310.2 | |
| MB 480-586905/140 | Method Blank | Total/NA | Water | 310.2 | |
| MB 480-586905/277 | Method Blank | Total/NA | Water | 310.2 | |
| MB 480-586905/299 | Method Blank | Total/NA | Water | 310.2 | |
| MB 480-586905/311 | Method Blank | Total/NA | Water | 310.2 | |
| LCS 480-586905/102 | Lab Control Sample | Total/NA | Water | 310.2 | |
| LCS 480-586905/139 | Lab Control Sample | Total/NA | Water | 310.2 | |
| LCS 480-586905/276 | Lab Control Sample | Total/NA | Water | 310.2 | |
| LCS 480-586905/298 | Lab Control Sample | Total/NA | Water | 310.2 | |
| LCS 480-586905/310 | Lab Control Sample | Total/NA | Water | 310.2 | |

### Analysis Batch: 586919

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 353.2 | |
| 480-186435-2 | MW-7S | Total/NA | Water | 353.2 | |
| 480-186435-3 | MW-8S | Total/NA | Water | 353.2 | |
| 480-186435-4 | MW-9S | Total/NA | Water | 353.2 | |

### Analysis Batch: 587213

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | 350.1 | |
| 480-186435-2 | MW-7S | Total/NA | Water | 350.1 | |
| 480-186435-3 | MW-8S | Total/NA | Water | 350.1 | |
| 480-186435-4 | MW-9S | Total/NA | Water | 350.1 | |
| MB 480-587213/27 | Method Blank | Total/NA | Water | 350.1 | |
| MB 480-587213/3 | Method Blank | Total/NA | Water | 350.1 | |
| LCS 480-587213/28 | Lab Control Sample | Total/NA | Water | 350.1 | |
| LCS 480-587213/4 | Lab Control Sample | Total/NA | Water | 350.1 | |

### Analysis Batch: 587623

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Total/NA | Water | SM 4500 S2 F | |
| 480-186435-2 | MW-7S | Total/NA | Water | SM 4500 S2 F | |
| 480-186435-3 | MW-8S | Total/NA | Water | SM 4500 S2 F | |
| 480-186435-4 | MW-9S | Total/NA | Water | SM 4500 S2 F | |
| MB 480-587623/27 | Method Blank | Total/NA | Water | SM 4500 S2 F | |
| MB 480-587623/3 | Method Blank | Total/NA | Water | SM 4500 S2 F | |
| LCS 480-587623/28 | Lab Control Sample | Total/NA | Water | SM 4500 S2 F | |
| LCS 480-587623/4 | Lab Control Sample | Total/NA | Water | SM 4500 S2 F | |

# Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-5S
**Date Collected: 06/23/21 11:01**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3005A | | | 586931 | 06/25/21 06:51 | ADM | TAL BUF |
| Total/NA | Analysis | 6010C | | 1 | 587203 | 06/25/21 21:06 | LMH | TAL BUF |
| Total/NA | Analysis | 310.2 | | 6 | 586905 | 06/24/21 17:04 | SRW | TAL BUF |
| Total/NA | Analysis | 350.1 | | 10 | 587213 | 06/28/21 10:38 | CLT | TAL BUF |
| Total/NA | Analysis | 353.2 | | 1 | 586919 | 06/24/21 18:42 | ALT | TAL BUF |
| Total/NA | Analysis | 7196A | | 1 | 586772 | 06/24/21 08:55 | DLG | TAL BUF |
| Total/NA | Analysis | SM 4500 S2 F | | 1 | 587623 | 06/29/21 16:45 | SRA | TAL BUF |

## Client Sample ID: MW-7S
**Date Collected: 06/23/21 11:57**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3005A | | | 586931 | 06/25/21 06:51 | ADM | TAL BUF |
| Total/NA | Analysis | 6010C | | 1 | 587203 | 06/25/21 21:10 | LMH | TAL BUF |
| Total/NA | Analysis | 310.2 | | 5 | 586905 | 06/24/21 17:04 | SRW | TAL BUF |
| Total/NA | Analysis | 350.1 | | 1 | 587213 | 06/28/21 10:52 | CLT | TAL BUF |
| Total/NA | Analysis | 353.2 | | 1 | 586919 | 06/24/21 17:26 | ALT | TAL BUF |
| Dissolved | Analysis | 7196A | | 1 | 586772 | 06/24/21 08:55 | DLG | TAL BUF |
| Dissolved | Filtration | Filtration | | | 586780 | 06/24/21 09:15 | DLG | TAL BUF |
| Total/NA | Analysis | 7196A | | 1 | 586772 | 06/24/21 08:55 | DLG | TAL BUF |
| Total/NA | Analysis | SM 4500 S2 F | | 1 | 587623 | 06/29/21 16:45 | SRA | TAL BUF |

## Client Sample ID: MW-8S
**Date Collected: 06/23/21 11:43**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-3
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3005A | | | 586931 | 06/25/21 06:51 | ADM | TAL BUF |
| Total/NA | Analysis | 6010C | | 1 | 587203 | 06/25/21 21:13 | LMH | TAL BUF |
| Total/NA | Analysis | 310.2 | | 5 | 586905 | 06/24/21 17:07 | SRW | TAL BUF |
| Total/NA | Analysis | 350.1 | | 1 | 587213 | 06/28/21 10:40 | CLT | TAL BUF |
| Total/NA | Analysis | 353.2 | | 1 | 586919 | 06/24/21 18:45 | ALT | TAL BUF |
| Total/NA | Analysis | 7196A | | 1 | 586772 | 06/24/21 08:55 | DLG | TAL BUF |
| Total/NA | Analysis | SM 4500 S2 F | | 1 | 587623 | 06/29/21 16:45 | SRA | TAL BUF |

## Client Sample ID: MW-9S
**Date Collected: 06/23/21 10:13**
**Date Received: 06/23/21 17:03**

## Lab Sample ID: 480-186435-4
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3005A | | | 586931 | 06/25/21 06:51 | ADM | TAL BUF |
| Total/NA | Analysis | 6010C | | 1 | 587203 | 06/25/21 21:17 | LMH | TAL BUF |
| Total/NA | Analysis | 310.2 | | 2 | 586905 | 06/24/21 17:08 | SRW | TAL BUF |

# Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

## Client Sample ID: MW-9S

**Lab Sample ID: 480-186435-4**

**Date Collected: 06/23/21 10:13**

**Matrix: Water**

**Date Received: 06/23/21 17:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 350.1 | | 1 | 587213 | 06/28/21 10:41 | CLT | TAL BUF |
| Total/NA | Analysis | 353.2 | | 1 | 586919 | 06/24/21 18:49 | ALT | TAL BUF |
| Total/NA | Analysis | 7196A | | 1 | 586772 | 06/24/21 08:55 | DLG | TAL BUF |
| Total/NA | Analysis | SM 4500 S2 F | | 1 | 587623 | 06/29/21 16:45 | SRA | TAL BUF |

## Client Sample ID: Blind Duplicate

**Lab Sample ID: 480-186435-5**

**Date Collected: 06/23/21 11:50**

**Matrix: Water**

**Date Received: 06/23/21 17:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3005A | | | 586931 | 06/25/21 06:51 | ADM | TAL BUF |
| Total/NA | Analysis | 6010C | | 1 | 587203 | 06/25/21 21:35 | LMH | TAL BUF |
| Total/NA | Analysis | 7196A | | 1 | 586882 | 06/24/21 10:15 | SRA | TAL BUF |

**Laboratory References:**

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: Benchmark Env. Eng. & Science, PLLC
Job ID: 480-186435-1
Project/Site: Benchmark-Peter Cooper sites

## Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| New York | NELAP | 10026 | 04-01-22 |

# Method Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 6010C | Metals (ICP) | SW846 | TAL BUF |
| 310.2 | Alkalinity | MCAWW | TAL BUF |
| 350.1 | Nitrogen, Ammonia | MCAWW | TAL BUF |
| 353.2 | Nitrate | EPA | TAL BUF |
| 7196A | Chromium, Hexavalent | SW846 | TAL BUF |
| SM 4500 S2 F | Sulfide, Total | SM | TAL BUF |
| 3005A | Preparation, Total Metals | SW846 | TAL BUF |
| Filtration | Sample Filtration | None | TAL BUF |

**Protocol References:**

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

Job ID: 480-186435-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Asset ID |
|---|---|---|---|---|---|
| 480-186435-1 | MW-5S | Water | 06/23/21 11:01 | 06/23/21 17:03 | |
| 480-186435-2 | MW-7S | Water | 06/23/21 11:57 | 06/23/21 17:03 | |
| 480-186435-3 | MW-8S | Water | 06/23/21 11:43 | 06/23/21 17:03 | |
| 480-186435-4 | MW-9S | Water | 06/23/21 10:13 | 06/23/21 17:03 | |
| 480-186435-5 | Blind Duplicate | Water | 06/23/21 11:50 | 06/23/21 17:03 | |

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information | Sampler: RLD | Lab PM: Fischer, Brian J | Carrier Tracking No(s): | COC No: 480-160359-27561.1 |
|---|---|---|---|---|
| Client Contact: Mr. Rick Dubisz | Phone: 716-997-4334 | E-Mail: Brian.Fischer@Eurofinset.com | State of Origin: | Page: Page 1 of 1 |
| Company: Benchmark Env. Eng. & Science, PLLC | PWSID: | | | Job #: |
| Address: 2558 Hamburg Turnpike Suite 300 | Due Date Requested: | | | |
| City: Lackawanna | TAT Requested (days): | | | |
| State, Zip: NY, 14218 | Compliance Project: Δ Yes Δ No | | | |
| Phone: | PO #: Purchase Order Requested | | | |
| Email: rdubisz@bm-tk.com | WO #: | | | |
| Project Name: Benchmark-Peter Cooper (Markhams) | Project #: 48004066 | | | |
| Site: New York | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 350.1 - (MOD) Local Method | 6010C - (MOD)As/Cr/Fe/Mn only (Markhams) | 6010C - (MOD) D. As/Cr/Fe/Mn only (Markhams) | SM4500_S2_D - Local Method | 353.2, 353.2_Nitrite, Nitrate_Calc | 7196A - Local Method | 310.2 - (MOD) Local Method | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | S | D | D | CB | N | N | N | | |
| WETLAND F | | | | Water | | | | | | | | | | | |
| MW-5S | 6/23/21 | 1101 | G | Water | | | V | V | V | V | V | V | V | | |
| MW-7S | | 1157 | | Water | | | V | V | V | V | V | V | V | | |
| MW-8S | | 1143 | | Water | | | V | V | | V | V | V | V | | |
| MW-9S | ~~6/23/21~~ | 1013 | | Water | | | V | V | | V | V | V | V | | |
| BLIND DUPLICATE | | 1150 | | Water | | | | V | | | | V | | | |
| MS (MW-9S) | | 1143 | | Water | | | | V | | | | V | | | |
| MSD (MW-9S) | | 1143 | | Water | | | | V | | | | V | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

480-186435 Chain of Custody

**Possible Hazard Identification**
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| | | | | | |
|---|---|---|---|---|---|
| Empty Kit Relinquished by: | | Date: | Time: | Method of Shipment: | |
| Relinquished by: | Date/Time: 6/23/21 1419 | Company | Received by: George Ingram | Date/Time: 6/23/21 1703 | Company FOXY |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: 6/23/21 1703 | Company TA |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 6.8 #1 ICE |
|---|---|---|

Ver: 11/01/2020

# Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-186435-1

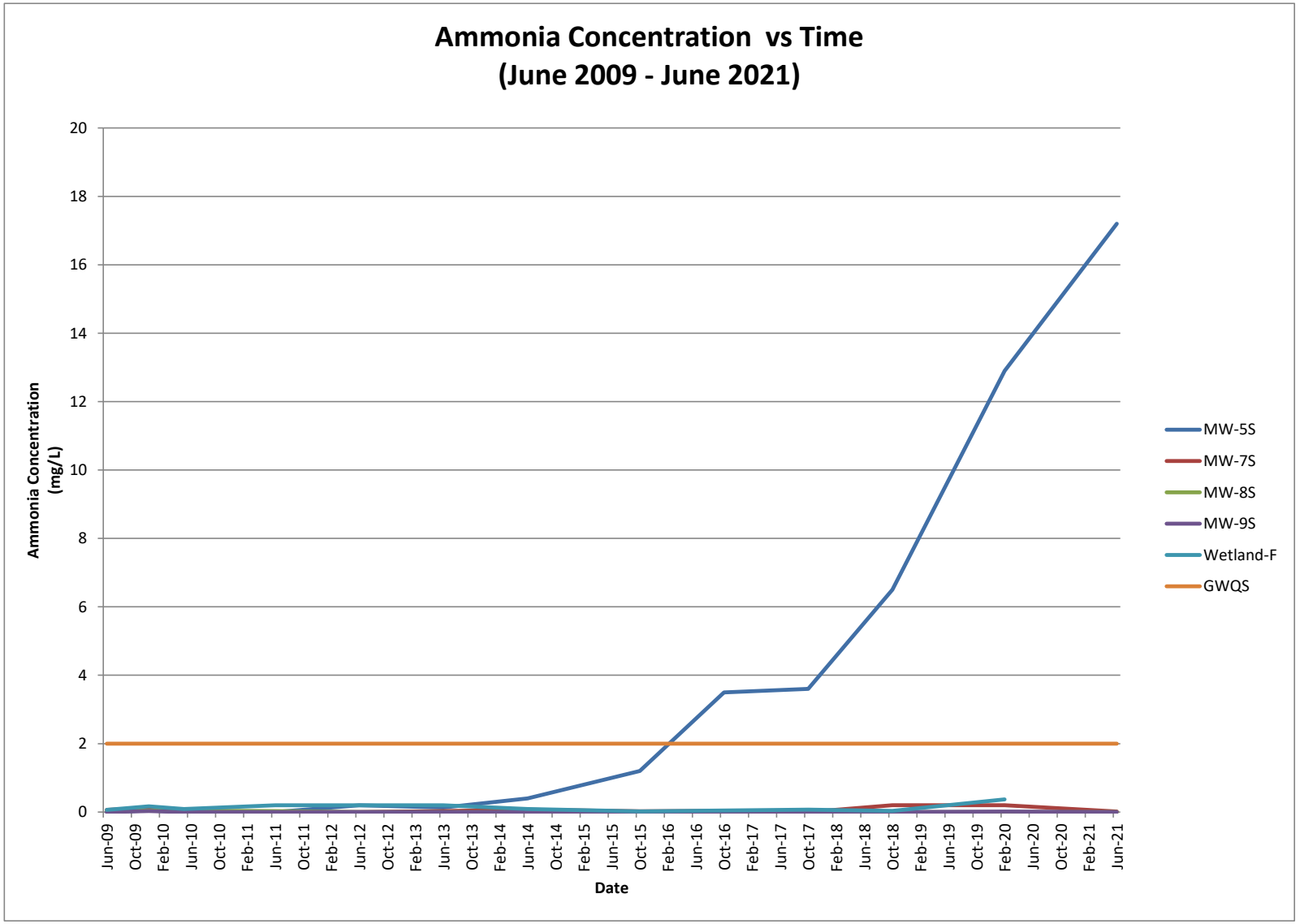
**Login Number: 186435**
**List Number: 1**
**Creator: Kolb, Chris M**

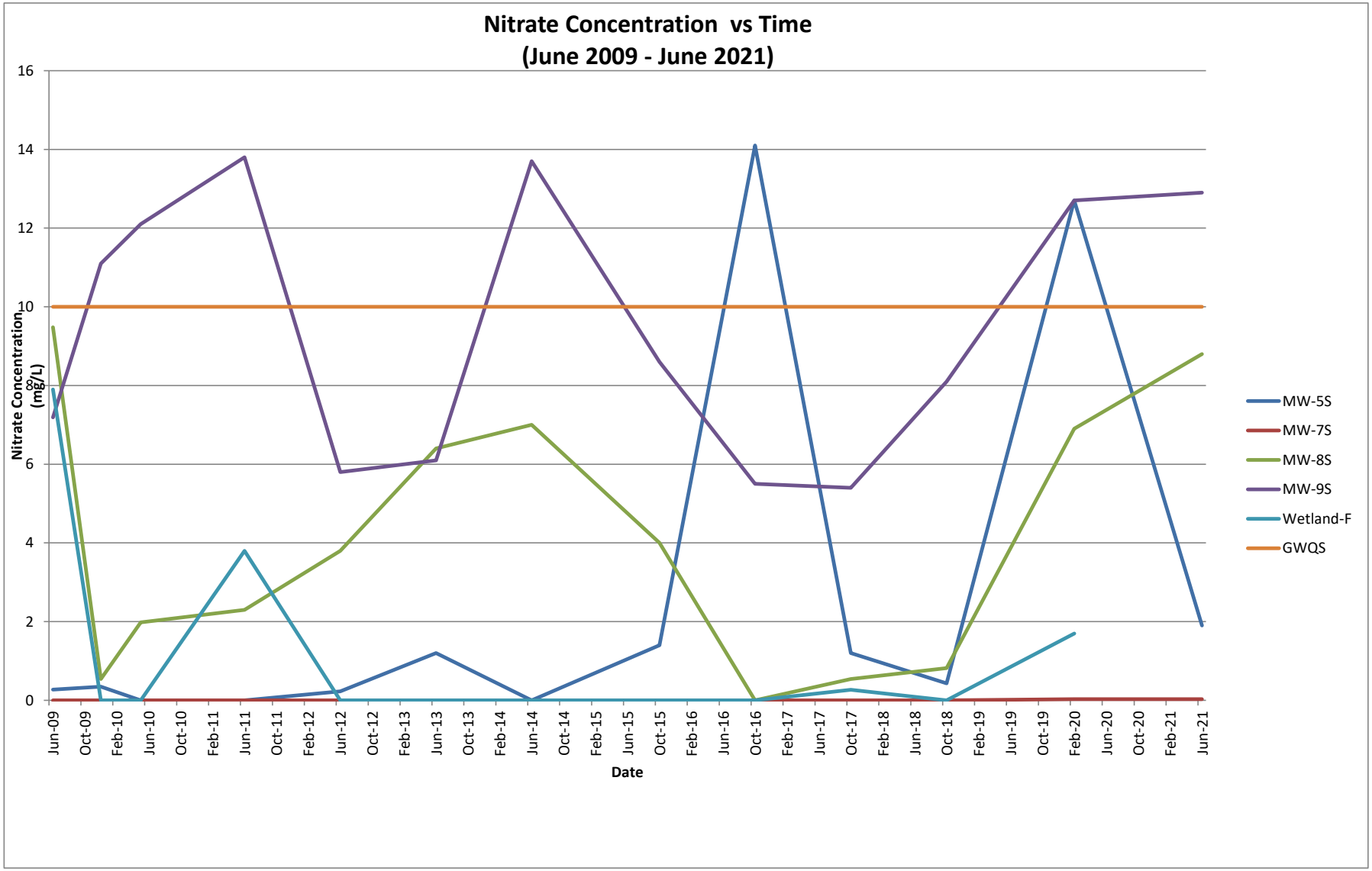
**List Source: Eurofins TestAmerica, Buffalo**

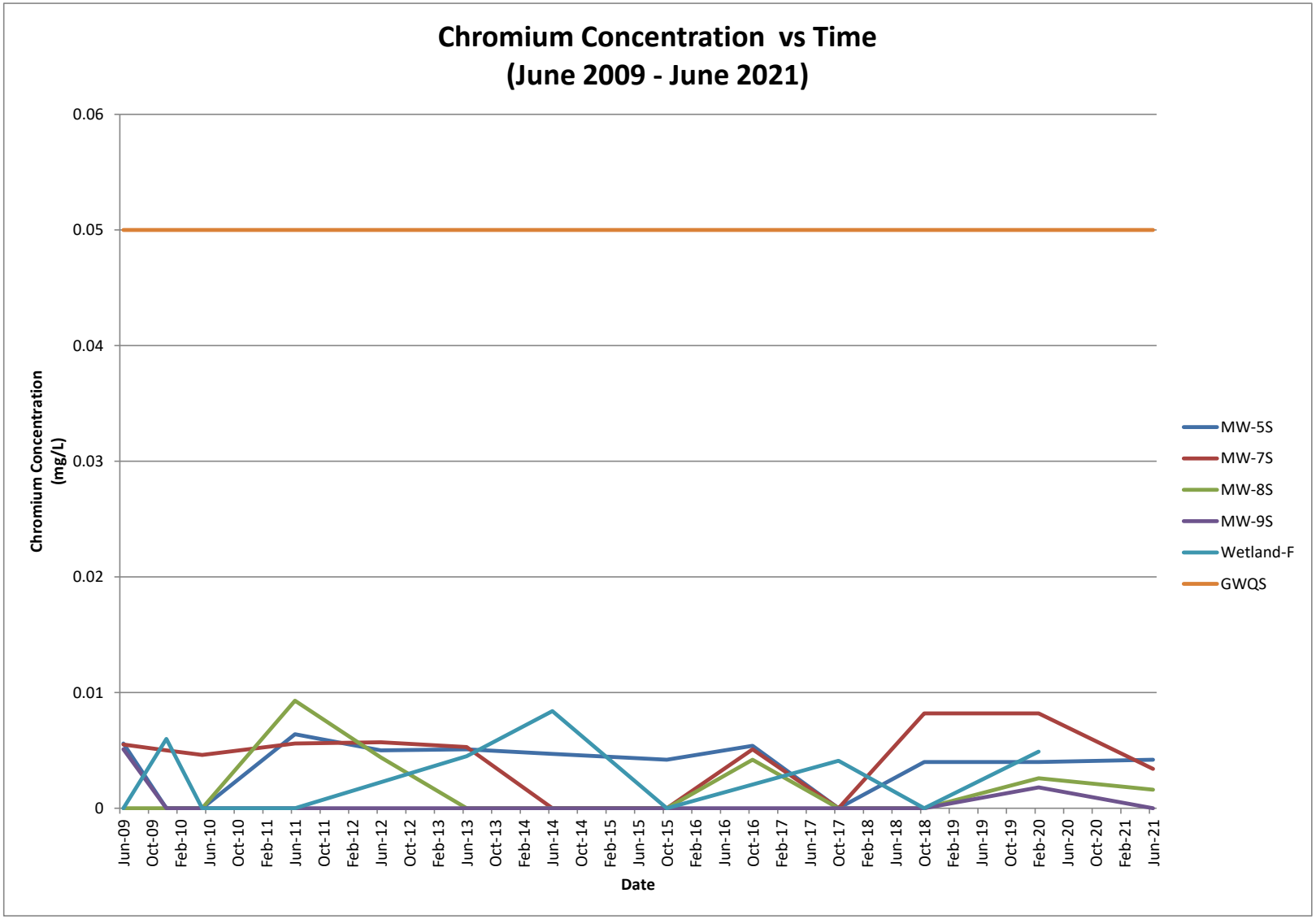
| Question | Answer | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time (Excluding tests with immediate HTs).. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | True | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Sampling Company provided. | True | benchmark |
| Samples received within 48 hours of sampling. | True | |
| Samples requiring field filtration have been filtered in the field. | True | |
| Chlorine Residual checked. | True | |

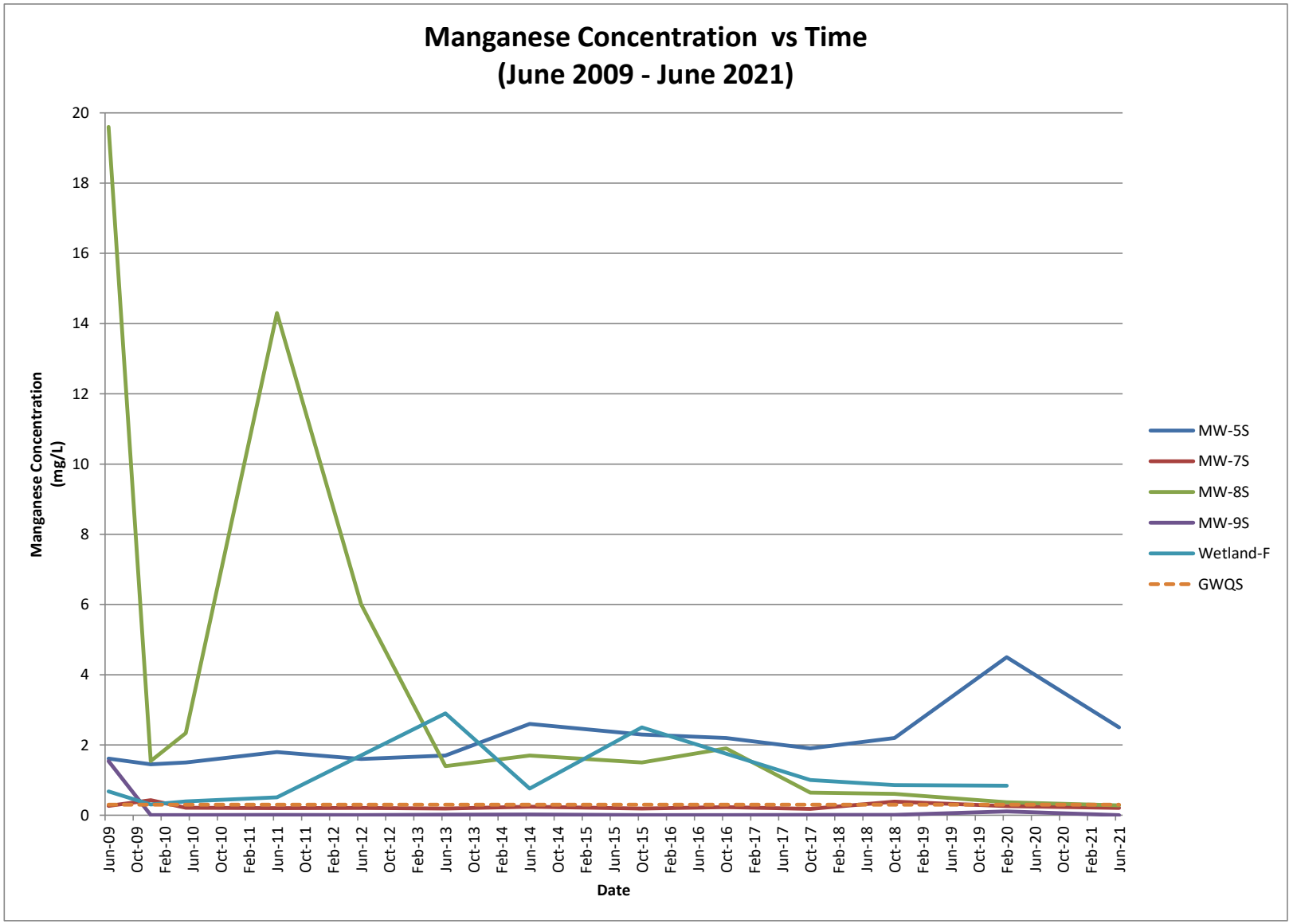
# ATTACHMENT 3

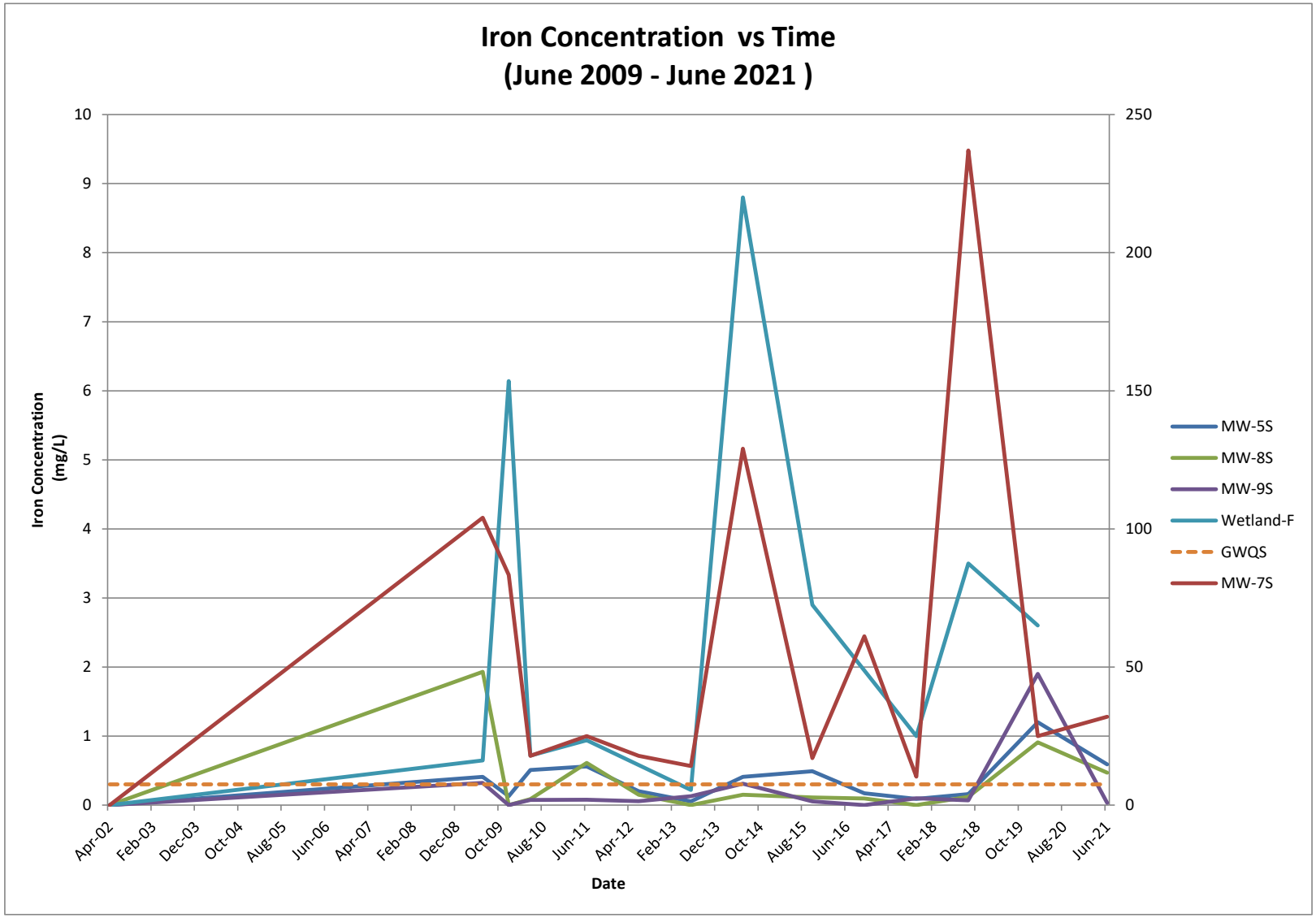
## HISTORIC DATA CHARTS


Ammonia Concentration vs Time
(June 2009 - June 2021)
Ammonia Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Jun-15
Oct-15
Feb-16
Jun-16
Oct-16
Feb-17
Jun-17
Oct-17
Feb-18
Jun-18
Oct-18
Feb-19
Jun-19
Oct-19
Feb-20
Jun-20
Oct-20
Feb-21
Jun-21
Date
MW-5S
MW-7S
MW-8S
MW-9S
Wetland-F
GWQS


Nitrate Concentration vs Time
(June 2009 - June 2021)
Nitrate Concentration (mg/L)
16
14
12
10
8
6
4
2
0
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Jun-15
Oct-15
Feb-16
Jun-16
Oct-16
Feb-17
Jun-17
Oct-17
Feb-18
Jun-18
Oct-18
Feb-19
Jun-19
Oct-19
Feb-20
Jun-20
Oct-20
Feb-21
Jun-21
Date
MW-5S
MW-7S
MW-8S
MW-9S
Wetland-F
GWQS


Chromium Concentration vs Time
(June 2009 - June 2021)
Chromium Concentration (mg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Jun-15
Oct-15
Feb-16
Jun-16
Oct-16
Feb-17
Jun-17
Oct-17
Feb-18
Jun-18
Oct-18
Feb-19
Jun-19
Oct-19
Feb-20
Jun-20
Oct-20
Feb-21
Jun-21
Date
MW-5S
MW-7S
MW-8S
MW-9S
Wetland-F
GWQS


Manganese Concentration vs Time
(June 2009 - June 2021)
Manganese Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Jun-15
Oct-15
Feb-16
Jun-16
Oct-16
Feb-17
Jun-17
Oct-17
Feb-18
Jun-18
Oct-18
Feb-19
Jun-19
Oct-19
Feb-20
Jun-20
Oct-20
Feb-21
Jun-21
Date
MW-5S
MW-7S
MW-8S
MW-9S
Wetland-F
GWQS


Iron Concentration vs Time
(June 2009 - June 2021 )
Iron Concentration (mg/L)
Date
MW-5S
MW-8S
MW-9S
Wetland-F
GWQS
MW-7S
0
1
2
3
4
5
6
7
8
9
10
0
50
100
150
200
250
Apr-02
Feb-03
Dec-03
Oct-04
Aug-05
Jun-06
Apr-07
Feb-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Aug-15
Jun-16
Apr-17
Feb-18
Dec-18
Oct-19
Aug-20
Jun-21

# ATTACHMENT 4

## FIELD INSPECTION FORM & PHOTO LOG

BENCHMARK
ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# Field Inspection Report
# Post-Remedial Operation & Maintenance Plan

Property Name: Peter Cooper Markhams Site  Project No.: 0199-001-100

Client: Biltekoff & Pullen

Property Address: Bentley Road  Dayton, NY 14041

Property ID: (Tax Assessment Map)  Section:  Block:  Lot(s):

Preparer's Name:  Date/Time:

## CERTIFICATION

The results of this inspection were discussed with the Site Manager. Any corrective actions required have been identified and noted in this report, and a supplemental Corrective Action Form has been completed. Proper implementation of these corrective actions have been discussed with the Site Manager, agreed upon, and scheduled.

**Preparer / Inspector:** R. Dubisz  **Date:** 6/23/21

**Signature:**

Next Scheduled Inspection Date:

## Property Access

| | | | |
|---|---|---|---|
| 1. Is the access road in need of repair? | ☐ yes | ☒ no | ☐ N/A |
| 2. Sufficient signage posted (No Trespassing)? | ☒ yes | ☐ no | ☐ N/A |
| 3. Has there been any noted or reported trespassing? | ☐ yes | ☒ no | ☐ N/A |

Please note any irregularities/ changes in site access and security:

## Final Surface Cover / Vegetation

The integrity of the vegetative soil cover or other surface coverage (e.g., asphalt, concrete) over the entire Site must be maintained. The following documents the condition of the above.

| | | | |
|---|---|---|---|
| 1. Final Cover is in Place and in good condition? | ☑ yes | ☐ no | ☐ N/A |
| Cover consists of (mainly): Wild Vegatative Grass Cover | | | |
| 2. Evidence of erosion? | ☐ yes | ☒ no | ☐ N/A |
| 3. Cracks visible in pavement? | ☐ yes | ☑ no | ☑ N/A |
| 4. Evidence of distressed vegetation/turf? | ☐ yes | ☒ no | ☐ N/A |
| 5. Evidence of unintended traffic and/or rutting? | ☐ yes | ☒ no | ☐ N/A |
| 6. Evidence of uneven settlement and/or ponding? | ☐ yes | ☒ no | ☐ N/A |

# Field Inspection Report
# Post-Remedial Operation & Maintenance Plan

## Final Surface Cover / Vegetation

7. Damage to any surface coverage? ☐ yes ☑ no ☐ N/A

If yes to any question above, please provide more information below.

## Gas Vent System Monitoring and Maintenance

Are there signs of stressed vegetation around gas vents? ☐ yes ☑ no ☐ N/A

Are the gas vents currently intact and operational? ☑ yes ☐ no ☐ N/A

Has regular maintenance and monitoring been documented and enclosed or referenced? ☐ yes ☐ no ☐ N/A

## Groundwater Monitoring

Is there a plan in place and currently being followed? ☑ yes ☐ no ☐ N/A

Are the wells currently intact and operational? ☑ yes ☐ no ☐ N/A

When was the most recent sampling event report and submittal? Date: Jan 2018

When is the next projected sampling event? Date:

## Property Use Changes / Site Development

Has the property usage changed, or site been redeveloped since the last inspection? ☐ yes ☑ no ☐ N/A

If yes, please list with date:

# Field Inspection Report
# Post-Remedial Operation & Maintenance Plan

**New Information**

Has any new information been brought to the owner/engineer's attention regarding any and/or all engineering and institutional controls and their operation and effectiveness?

☐ yes ☒ no ☐ N/A

Comments:

**This space for Notes and Comments**

Access to and around monitoring wells limited to overgrown brush/weeds. Brush/weed cutting required. Cutting of vegetation on final cover will be required.

**Please include the following Attachments:**

1. Site Sketch
2. Photographs

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# PHOTOGRAPHIC LOG

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| | Peter Cooper -Markhams Site | 0199-001-100 |

| Photo No. | Date |
|---|---|
| 1 | 06/23/21 |

**Direction Photo Taken:**
West

**Description:**
North slope of containment fill area.

| Photo No. | Date |
|---|---|
| 2 | 06/23/21 |

**Direction Photo Taken:**
East

**Description:**
Top of containment fill area.



*Prepared By:* *RLD*

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

# PHOTOGRAPHIC LOG

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| | Peter Cooper -Markhams Site | 0199-001-100 |

| Photo No. | Date |
|---|---|
| 3 | 06/23/21 |

**Direction Photo Taken:**
South

**Description:**
Facing south of containment fill area.

| Photo No. | Date |
|---|---|
| 4 | 06/23/21 |

**Direction Photo Taken:**
West

**Description:**
Top of containment fill area facing west.



*Prepared By:* *RLD*