

Appendix A – Greensand Field Notes

Sample Location Reference IDs

| Sample ID | Sample Location/Description |
|-------------|---|
| 01 RAW | Raw water sample from the Oakdale Well, collected upstream of chemical addition. |
| 11 POX | Post-oxidation sample, collected downstream of chemical addition (NaOCl,KOH) and upstream of the pilot filters. |
| 21 FILTER A | Effluent sample from pilot Filter A. Media: 24" GreensandPlus and 12" Anthracite. |
| 22 FILTER B | Effluent sample from pilot Filter B. Media: 24" GreensandPlus and 12" Anthracite. |
| 23 FILTER C | Effluent sample from pilot Filter C. Media: 24" GreensandPlus and 12" Anthracite. |
| 24 FILTER D | Effluent sample from pilot Filter D. Media: 24" GreensandPlus and 12" Anthracite. |
| 31 CBW A | Composite backwash sample, collected from water used during the backwash of Filter A. |
| 32 CBW B | Composite backwash sample, collected from water used during the backwash of Filter B. |
| 33 CBW C | Composite backwash sample, collected from water used during the backwash of Filter C. |
| 34 CBW D | Composite backwash sample, collected from water used during the backwash of Filter D. |
| 41 SSN A | Suspended supernatant sample, collected from the supernatant of a Filter A backwash that was allowed to settle. |
| 42 SSN B | Suspended supernatant sample, collected from the supernatant of a Filter B backwash that was allowed to settle. |
| 43 SSN C | Suspended supernatant sample, collected from the supernatant of a Filter C backwash that was allowed to settle. |
| 44 SSN D | Suspended supernatant sample, collected from the supernatant of a Filter D backwash that was allowed to settle. |

Appendix B – Biological Field Notes

Sample Location Reference IDs

| Sample ID | Sample Location/Description |
|-----------|---|
| 01 RAW | Raw water sample from the Oakdale Well, collected upstream of chemical and air addition. |
| 02 MPOKA | Post-oxidation sample, collected downstream of chemical (KOH) and air addition and upstream of M1 and M2. |
| 11 MEFF 1 | Effluent sample from M1. Media: 48" of 0.95 mm Sand (Acclimated for Mn Removal) |
| 12 MEFF 2 | Effluent sample from M2. Media: 48" of 0.95 mm Sand (Acclimated for Mn Removal) |

Appendix C – Greensand & Biological Lab Data

Laboratory Report Reference Numbers

| Lab Report # | Date | Page # | Trial # | Sample Location | Analysis |
|--------------|---------------------------|---------------------|-----------------------------------|--|--|
| L1919233 | 05/08/19 | C-2 - C-60 | 4 | Raw Filter A Filter C | Volatiles, Metals, Inorganics, Miscellaneous |
| L1919236 | 05/08/19 | C-61 - C-82 | 4 | Raw w/ SSN Filter A Filter C | Metals, pH |
| L1919237 | 05/08/19 | C-83 - C-104 | 4 | Raw Filter A Filter C | Metals, pH |
| L1919388 | 05/09/19 | C-105 - C-122 | 2-1 | Raw Filter M1 Filter M2 | Metals |
| L1919892 | 05/10/19 - 05/13/19 | C-123 - C-160 | 4 (Greensand) 2-1 (Biological) | Filter A and C CBW Filter A and C SSN Filter M1 and M2 CBW Filter M1 and M2 SSN | Metals, Inorganics, Miscellaneous |
| L1919267 | 05/16/19 | C-161 - C-183 | 4 | Filter A Filter C | Simulated Distribution System Analysis |
| L1929093 | 07/02/19 | C-184 - C-213 | 4-3 (M1) 4-2 (M2) | Raw Filter M1 Filter M2 Filter M1 and M2 CBW Filter M1 and M2 SSN | Metals, Inorganics, Miscellaneous |

Appendix D – Greensand Performance Figures

Filter Performance Operational Reference Table

| Trial | Fig. # | Page # | FSLR (gpm/sf) | Description |
|--------------|---------------|---------------|--------------------------|--------------------|
| A-1 | D.01 | D-2 | 5 | |
| B-1 | D.02 | D-3 | 5 | |
| C-1 | D.03 | D-4 | 5 | |
| D-1 | D.04 | D-5 | 5 | |
| A-2 | D.05 | D-6 | 4 | |
| B-2 | D.06 | D-7 | 4 | |
| C-2 | D.07 | D-8 | 6 | |
| D-2 | D.08 | D-9 | 6 | |
| A-3 | D.09 | D-10 | 7 | |
| B-3 | D.10 | D-12 | 7 | |
| C-3 | D.11 | D-14 | 5 | |
| D-3 | D.12 | D-11 | 5 | |
| A-4 | D.13 | D-16 | 5 | SSN Recycle |
| B-4 | D.14 | D-13 | 5 | |
| C-4 | D.15 | D-18 | 7 | |
| D-4 | D.16 | D-15 | 7 | |

Appendix E – Biological Performance Figures

Filter Performance Operational Reference Table

| Filter | Pretreatment | | Trial | Figure # | Page # | FSLR (gpm/sf) | Description |
|--------|--------------|-------------|-------|----------|--------|------------------|--|
| | pH (s.u.) | DO (ppm) | | | | | |
| M1 | 8.50 | 7.70 | 1-1 | E.01 | E-2 | 5 | Phase 1: Acclimation at Low Loading Rate |
| M2 | 8.50 | 7.70 | 1-1 | E.02 | E-3 | 5 | |
| M1 | 8.50 | 7.50 | 2-1 | E.03 | E-4 | 5 | Phase 2: Representative at Low Loading Rate |
| M2 | 8.50 | 7.50 | 2-1 | E.04 | E-5 | 5 | |
| M1 | 8.30 | 7.50 | 3-1 | E.05 | E-6 | 10 | Phase 3: Acclimation at High Loading Rate |
| M2 | 8.30 | 7.50 | 3-1 | E.06 | E-7 | 15 | |
| M1 | 8.30 | > 9.00 | 4-1 | E.07 | E-8 | 10 | Phase 4: Representative at High Loading Rate |
| M2 | 8.30 | > 9.00 | 4-1 | E.08 | E-9 | 15 | |
| M1 | 8.30 | > 9.00 | 4-2 | E.09 | E-10 | 10 | |
| M2 | 8.30 | > 9.00 | 4-2 | E.10 | E-11 | 15 | |
| M1 | 8.30 | > 9.00 | 4-3 | E.11 | E-12 | 10 | |
| M2 | 8.30 | > 9.00 | 4-3 | E.12 | E-13 | 15 | |
| M1 | 8.30 | > 9.00 | 4-4 | E.13 | E-14 | 10 | |
| M2 | 8.30 | > 9.00 | 4-4 | E.14 | E-15 | 15 | |
| M1 | 8.30 | > 9.00 | 4-5 | E.15 | E-16 | 10 | |
| M2 | 8.30 | > 9.00 | 4-5 | E.16 | E-17 | 15 | |
| M1 | 8.30 | > 9.00 | 4-6 | E.17 | E-18 | 10 | |