pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southeast Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0058211** |
| Facility Type | **Storm Water** | APS ID | **1015678** |
| Major / Minor | **Minor** | Authorization ID | **1313182** |

# NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Evergreen Resources Management Operations** | Facility Name | **Read Boyd Farm** |
| Applicant Address | 2 Righter Parkway Suite 120 | Facility Address | Route 452 & I-95 |
| | Wilmington, DE 19803-1529 | | Upper Chichester, PA 19061 |
| Applicant Contact | Scott Cullinan | Facility Contact | Mark A. Schaeffer |
| Applicant Phone | (302) 477-0139 | Facility Phone | (610) 840-2552 |
| Client ID | 320841 | Site ID | 452589 |
| SIC Code | 2911 | Municipality | Upper Chichester Township |
| SIC Description | Manufacturing - Petroleum Refining | County | Delaware |
| Date Application Received | April 15, 2020 | EPA Waived? | Yes |
| Date Application Accepted | May 15, 2020 | If No, Reason | |

Purpose of Application: Permit Renewal.

## Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Evergreen Resources Management Operations (permittee) on April 15, 2020 for permittee's Read Boyd Farm (facility), located in Upper Chichester Township, Delaware County. The current permit expired on September 30, 2020. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. This is an Individual Industrial Stormwater (NSIR) permit that discharges treated effluent through seven outfalls into Marcus Hook Creek in State Watershed 3-G. Renewal NPDES permit applications under Clean Water Program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Change in this renewal: Changed the permit type from minor industrial to individual stormwater.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| √ | | Reza H. Chowdhury, E.I.T. / Project Manager | December 20, 2021 |
| X | | Pravin Patel<br>Pravin C. Patel, P.E. / Environmental Engineer Manager | 12/22/2021 |

| **Discharge, Receiving Waters and Water Supply Information** | | | |
|---|---|---|---|
| Outfall No. | 005 | Design Flow (MGD) | 0 |
| Latitude | 39º 50' 0.64" | Longitude | -75º 2' 7.62" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek | Stream Code | 00511 |

| **Discharge, Receiving Waters and Water Supply Information** | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0 |
| Latitude | 39º 49' 58.7" | Longitude | -75º 25' 53.7" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF) | Stream Code | 00511 |

| **Discharge, Receiving Waters and Water Supply Information** | | | |
|---|---|---|---|
| Outfall No. | 002 | Design Flow (MGD) | 0 |
| Latitude | 39º 49' 59.50" | Longitude | -75º 25' 0.02" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF) | Stream Code | 00511 |

| **Discharge, Receiving Waters and Water Supply Information** | | | |
|---|---|---|---|
| Outfall No. | 004 | Design Flow (MGD) | 0 |
| Latitude | 39º 50' 0" | Longitude | -75º 25' 9.87" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF) | Stream Code | 00511 |

| **Discharge, Receiving Waters and Water Supply Information** | | | |
|---|---|---|---|
| Outfall No. | 006 | Design Flow (MGD) | 0 |
| Latitude | 39º 50' 4.69" | Longitude | -75º 25' 12.64" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF) | Stream Code | 00511 |

| Discharge, Receiving Waters and Water Supply Information | | | |
|---|---|---|---|
| Outfall No. | 007 | Design Flow (MGD) | 0 |
| Latitude | 39º 50' 5.16" | Longitude | -75º 25' 13.26" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF, MF) | Stream Code | 00511 |

| Discharge, Receiving Waters and Water Supply Information | | | |
|---|---|---|---|
| Outfall No. | 009 | Design Flow (MGD) | 0 |
| Latitude | 39º 50' 0.33" | Longitude | -75º 25' 20.98" |
| Quad Name | Marcus Hook | Quad Code | 09223 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Marcus Hook Creek (WWF) | Stream Code | 00511 |
| Nearest Downstream Public Water Supply Intake | None before Delaware border | | |

Changes Since Last Permit Issuance: See facility description in later section of this fact sheet.

**Treatment Facility Summary**

**Treatment Facility Name:** Read Boyd Farm

| WQM Permit No. | Issuance Date |
|---|---|
| | |
| | |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Storm Water | | | | |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| | | | | |

**303d Listed Streams:**
The receiving stream is aquatic life impaired due to urban runoff/storm sewer and habitat modification from water/flow variability. The permit limits, terms, and conditions were developed in such a way that the discharge from this facility is expected not to contribute to the existing impairment of the receiving stream or the watershed.

**Antidegradation (93.4):**
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

**Class A Wild Trout Fisheries:**
No Class A Wild Trout Fisheries are impacted by this discharge.

## Compliance History

**DMR Data for Outfall 001 (from January 1, 2020 to December 31, 2020)**

| Parameter | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instantaneous Minimum | 7.6 | | | 7.2 | | | 7.3 | | | 7.2 | | |
| pH (S.U.) Instantaneous Maximum | 7.6 | | | 7.2 | | | 7.3 | | | 7.2 | | |
| TSS (mg/L) Daily Maximum | 18 | | | 22 | | | 10.1 | | | 33.8 | | |
| Oil and Grease (mg/L) Daily Maximum | < 1.6 | | | 4.0 | | | < 1.4 | | | 2.2 | | |
| Total Aluminum (mg/L) Daily Maximum | 2.5 | | | 0.82 | | | 0.748 | | | 2.01 | | |
| Total Iron (mg/L) Daily Maximum | 3.1 | | | 1.2 | | | 1.04 | | | 1.77 | | |
| Total Manganese (mg/L) Daily Maximum | 0.10 | | | 0.034 | | | 0.0417 | | | 0.0336 | | |

**DMR Data for Outfall 002 (from January 1, 2020 to December 31, 2020)**

| Parameter | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instantaneous Minimum | 7.8 | | | 7.4 | | | 7.6 | | | 7.4 | | |
| pH (S.U.) Instantaneous Maximum | 7.8 | | | 7.4 | | | 7.6 | | | 7.4 | | |
| TSS (mg/L) Daily Maximum | 7.6 | | | 43 | | | 13.4 | | | 90.5 | | |
| Total Dissolved Solids (mg/L) Daily Maximum | 170 | | | 260 | | | 181 | | | 194 | | |
| Oil and Grease (mg/L) Daily Maximum | < 1.4 | | | 2.4 | | | < 1.4 | | | 3.3 | | |
| Total Aluminum (mg/L) Daily Maximum | 0.94 | | | 3.0 | | | 1.1 | | | 5.25 | | |
| Total Chromium (mg/L) Daily Maximum | 0.0025 | | | 0.0053 | | | 0.0032 | | | 0.0091 | | |
| Total Iron (mg/L) Daily Maximum | 0.79 | | | 2.8 | | | 1.25 | | | 6.39 | | |
| Total Lead (mg/L) Daily Maximum | < 0.0071 | | | < 0.015 | | | 0.0077 | | | 0.0122 | | |
| Total Manganese (mg/L) Daily Maximum | 0.020 | | | 0.47 | | | 0.0648 | | | 0.111 | | |

**DMR Data for Outfall 005 (from January 1, 2020 to December 31, 2020)**

| Parameter | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instantaneous Minimum | 7.4 | | | 3.9 | | | 7.5 | | | 7.3 | | |
| pH (S.U.) Instantaneous Maximum | 7.4 | | | 7.1 | | | 7.5 | | | 7.3 | | |
| TSS (mg/L) Daily Maximum | 53 | | | 110 | | | 22.4 | | | 66 | | |
| Oil and Grease (mg/L) Daily Maximum | < 1.6 | | | 3.1 | | | < 1.4 | | | 2.4 | | |
| Total Aluminum (mg/L) Daily Maximum | 3.0 | | | 4.7 | | | 1.22 | | | 4.02 | | |
| Total Iron (mg/L) Daily Maximum | 2.9 | | | 5.1 | | | 1.37 | | | 1.53 | | |
| Total Lead (mg/L) Daily Maximum | 0.0088 | | | 0.012 | | | < 0.0071 | | | 0.0089 | | |

**DMR Data for Outfall 006 (from January 1, 2020 to December 31, 2020)**

| Parameter | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instantaneous Minimum | 7.9 | | | 7.3 | | | 7.9 | | | 7.4 | | |
| pH (S.U.) Instantaneous Maximum | 7.9 | | | 7.3 | | | 7.9 | | | 7.4 | | |
| TSS (mg/L) Daily Maximum | 26 | | | 140 | | | 9.85 | | | 17.3 | | |
| Oil and Grease (mg/L) Daily Maximum | < 1.6 | | | 4.0 | | | < 1.4 | | | < 1.4 | | |
| Total Aluminum (mg/L) Daily Maximum | 1.7 | | | 6.9 | | | 0.637 | | | 1.06 | | |
| Total Barium (mg/L) Daily Maximum | 0.051 | | | 0.084 | | | 0.0358 | | | 0.0299 | | |
| Total Iron (mg/L) Daily Maximum | 1.7 | | | 8.9 | | | 0.75 | | | 0.744 | | |
| Total Lead (mg/L) Daily Maximum | 0.013 | | | 0.050 | | | < 0.0071 | | | < 0.0071 | | |

**DMR Data for Outfall 009 (from January 1, 2020 to December 31, 2020)**

| Parameter | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instantaneous Minimum | 7.4 | | | 7.9 | | | 7.5 | | | 7.3 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.)<br>Instantaneous Maximum | 7.4 | | | 7.9 | | | 7.5 | | | 7.3 | | |
| TSS (mg/L)<br>Daily Maximum | 16 | | | 31 | | | 40.4 | | | 50 | | |
| Oil and Grease (mg/L)<br>Daily Maximum | 2.3 | | | 3.4 | | | < 1.4 | | | 4 | | |
| Total Aluminum (mg/L)<br>Daily Maximum | 1.4 | | | 0.67 | | | 1.72 | | | 2.44 | | |
| Total Iron (mg/L)<br>Daily Maximum | 1.4 | | | 1.7 | | | 1.86 | | | 2.23 | | |

## Compliance History

**Effluent Violations for Outfall 002, from: February 1, 2020 To: December 31, 2020**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| Total Aluminum | 03/31/20 | Daily Max | 5.25 | mg/L | 5.0 | mg/L |
| Total Iron | 03/31/20 | Daily Max | 6.39 | mg/L | 5.0 | mg/L |

**Effluent Violations for Outfall 005, from: February 1, 2020 To: December 31, 2020**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| pH | 09/30/20 | Inst Min | 3.9 | S.U. | 6.0 | S.U. |
| TSS | 09/30/20 | Daily Max | 110 | mg/L | 100 | mg/L |
| Total Iron | 09/30/20 | Daily Max | 5.1 | mg/L | 5.0 | mg/L |

**Effluent Violations for Outfall 006, from: February 1, 2020 To: December 31, 2020**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| TSS | 09/30/20 | Daily Max | 140 | mg/L | 100 | mg/L |
| Total Aluminum | 09/30/20 | Daily Max | 6.9 | mg/L | 5.0 | mg/L |
| Total Iron | 09/30/20 | Daily Max | 8.9 | mg/L | 5.0 | mg/L |

Other Comments: No explanation was provided for the non-compliances in the Non-compliance report form, however, the PPC plan provided explanation and corrective actions taken until December 9, 2019. No NOV was issued by the time this fact sheet was prepared for the 2020 non-compliances.

## Facility description

Read Boyd Farm is located near the intersection of Route 452 and Interstate 95. The site is owned and maintained by Real Property Operations, a series of Evergreen Resources Group, LLC. The 71-acre site contains eleven (11) pits that contained approximately 540,000 cubic yards of sludge primarily derived from sulfuric acid wet refining processes. In addition, the site contains stockpiles of spent clay wastes generated by operation at the Marcus Hook Refinery between 1925-1965. The site has a neutralization facility which serves as a pretreatment plant for various groundwater, surface water, and impoundment pit water. The facility has several active remedial efforts being conducted across the site. In addition to the pits, major features at the site include:

1. A neutralization facility in the south-central portion of the site storing:
    a. one 55-gallon drum of pump crankcase oil
    b. one 55-gallon drum of compressor oil,
    c. one 6,000-gallon fiberglass caustic tank,
    d. one 9,000-gallon water aeration tank,
    e. one 2,000-gallon wastewater discharge wet well, and
    f. one 750-gallon fiberglass (neutralization) transfer tank.

2. Pit 8 Groundwater Interceptor Trench south of Pit 8 (manhole A and manhole B) that collects groundwater north of Marcus Hook Creek and beneath Marshall's Run and transports it to Pit 6, and ultimately, the neutralization facility for treatment,

3. Trenches located north of Pit 8 (caustic addition trench A), south of Pit 8 (caustic addition trench D), and southwest of pit 8A (caustic addition trench C), which receive periodic injections of caustic,

4. Clay Pile A located in the western portion of the facility,

5. Clay Pile A remediation system which contains piping and associated transfer equipment, for recovered groundwater (oily water),

6. A 550-gallon aboveground storage tank (tank 828) located northwest of Clay Pile A at the remediation system,

7. Clay Pile C located in the central portion of the site

8. Clay Pile C remediation system which contains piping and associated transfer equipment for recovered groundwater (oily water),

9. subsurface petroleum gas pipelines running northwest/southeast along the eastern property boundary,

10. An aboveground pipeline rack traversing the northern portion of the site along Marcus Hook Creek, and
11. Catch Basin-1 (CB-1) which intercepts surface water adjacent to Pit 7 and transfers water into Pit 2.

**Pits:** The 11 pits contain materials that have the appearance of tar-like to a hard coal-like substance. Accumulated stormwater on the surface of the pits is neutralized before it is discharged from the site via pipeline to the Marcus Hook Industrial Complex wastewater system. All pits are out of service and no longer accept sludge from off-site sources. Due to remedial efforts, only Pits 2 and 6 collect stormwater which is managed onsite. These pits collect stormwater which falls directly on them as well as surface runoff from areas surrounding Pits 1, 3, 4, and 5. Pits 7 and 7A have undergone neutralization, solidification, and stabilization (NSS) and therefore, stormwater runs off to the area surrounding the Pits. Pit 8 has been partially stabilized and capped, therefore, stormwater will not encounter the materials in the Pit, but will drain to the ground surrounding the Pit. Pit 8A has been stabilized, filled, and vegetated, therefore, stormwater runoff discharges to the swale between Pit 8 and 8A. The upper layer of Pit 9 has undergone the NSS process, therefore, stormwater that falls on Pit 9 drains to the surrounding terrain which ultimately flows to a permitted outfall. Pits 1, 3, 4, and 6 have partially neutralized, stabilized, and solidified but only Pit 6 collects rainfall which is managed onsite. Pit 5 is currently covered with treated sludge and Pit 11 has been excavated in its entirety and replaced with treated sludge. Pit conditions are monitored daily using and index to determine how much rainfall can occur without causing a high level discharge of water from Pit 2. The levels are reported internally as a High, Medium, Low, or Very Low Level. Overflow conditions, if present, would be observed by personnel on-site. The overflow water, if sufficient in quantity, would drain to Marcus Hook Creek. The Pit 2 overflow structure is a 24" diameter overflow piping that ties-in with Pit 6 underground overflow piping to a grated, concrete headwall located in a wooded area immediately east of Pit 2 and Pit 6.

**Neutralization Facility:** Stormwater flows by gravity from Pit 2 via underground piping to the existing neutralization facility where the pH is adjusted with caustic soda. Treatment takes place in a 9,000-gallon neutralization/aeration tank located in the neutralization facility. the neutralized water flows to a connected 2,000-gallon discharge tank through and underflow weir. The neutralized water is then pumped by pipeline to the Marcus Hook Industrial Complex where the wastewater is mixed with Industrial Complex wastewater. All Industrial Complex Wastewater is processed at the Industrial Complex pretreatment system and then pumped off-site to the DELCORA WWTP located in Chester County for final treatment and disposal.

**Pit 8 Groundwater Interceptor Trench:** The trench collects acidic groundwater and drains to two manholes, where groundwater is collected and pumped to the groundwater neutralization system. Manhole A (MH-A) collects groundwater from the trench south and east of Pit 7 and Manhole B (MH-B) collects groundwater from the trench south of Pit 8. When the groundwater level in either MH-A or MH-B reaches a predetermined level, the groundwater is automatically pumped to the groundwater neutralization system or to Pit 2. The pH of the water is neutralized in the treatment facility and transferred to Marcus Hook Industrial Complex via the site effluent water pipeline.

**Catch Basin 1:** CB-1 collects surface water from a swale that runs along the southern base of Pits 4,5, and 6 and the southwestern base of Pit 7. CB-1 was decommissioned prior to the NSS remediation at Pit 7. Upon completion, CB-1 was reinstalled in 2017. When in operation, the water is collected in CB-1 and transferred through buried piping to Pit 2 via a pump in the catch basin.

**Caustic Addition Trenches:** Three trenches were constructed for the groundwater and soil neutralization program. Trenches were constructed between Pit 8 and Pit 9 (Trench A); to the southeast of Pit 8A (Trench C); and southeast of Pit 8 (Trench D). A NaOH solution is periodically injected into well vault piping directly from a delivery truck. Groundwater is monitored in wells within and downgradient of the trenches to evaluate the appropriate frequency of caustic addition and the effect on groundwater chemistry downgradient of the trenches.

**Clay Pile Systems:** Clay Piles A, B, and C are the result of stockpiling of spent filtration clay wastes generated by operations at the Marcus Hook Refinery from the period of 1925 to 1965. An interceptor with HDPE barrier wall was installed to the northwest of Clay Pile A to recover oil and groundwater. This trench collects oil and water in sumps and air diaphragm pumps transfer the total fluids to Tank 828. Stormwater runoff from the area east of Clay Pile A drains by gravity to a rock-lined trench and basin and then flows by pipe to a permitted outfall. The trenches in Clay Pile C are used to collect oily water seeping from the pile. Clay Pile C has been covered and seeded to prevent any stormwater from contacting filter clay. The primary interceptor trench collects the water and pumps it into a polyethylene process tank. From the process tank the water is pumped via pipeline to the 5-line near the neutralization facility.

The extent of the coverage under the Individual Industrial Stormwater permit is limited to the stormwater outfalls. Stormwater not captured in the pits can run-off into Marcus Hook Creek from one of the seven major drainage areas. Outfalls 001, 002, 004, 005, 006, 007 and 009 are associated with these drainage areas. The areas that drain to each individual sample point are listed below.

Outfall 001: The area draining to this outfall is 109,700 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from the sediments from unpaved roads. The applied BMPs are swale enhancement, check dams, established vegetation, stone on road surfaces, and silt control.

Outfall 002: The area draining to this outfall is 30,900 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from the sediments from unpaved roads. The control measures are check dams, established vegetation, stone on road surfaces, check dams on road surfaces, and silt control.

Outfall 004: The area draining to this outfall is 23,000 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from the sediments from unpaved roads. The control measures are stone on road surfaces, check dams, and silt control.

Outfall 005: The area draining to this outfall is 76,100 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from the sediments from unpaved roads or stockpiled soils. The control measures are swale enhancement, check dams, silt control, and outfall enhancement.

Outfall 006: The area draining to this outfall is 65,150 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from sediments from unpaved roads or stockpiled soils. The control measures are check dams, stone on road surfaces, silt control, and outfall enhancement.

Outfall 007: The area draining to this outfall is 56,100 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from the sediments from unpaved roads. The control measures are stone on road surfaces, check dams, and stone berms.

Outfall 009: The area draining to this outfall is 84,700 sq. feet. The quality of the stormwater is not changed, and the potential pollutants are from sediments from unpaved roads. The control measures are stone on road surfaces, silt control, velocity dissipation device, French drain interceptor trench, check dams, swale enhancement, and silt berms.

**Existing limits**

Outfall 001: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Outfall 002: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Total Dissolved Solids | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| Total Chromium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Outfall 004: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Outfall 005: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |

Outfall 006: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Barium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |

Outfall 007: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| Total Dissolved Solids | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Barium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Outfall 009: Effective between October 1, 2015 through September 30, 2020

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instant. Minimum | Daily Maximum | Average Monthly | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/quarter | Grab |
| Total Suspended Solids | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |

## Development of effluent limitations

**Outfall 001:** The effluent sample results from Outfall 001 shows detected results for the pollutants listed in the permit. Since they are still Pollutants of Concern, the current limits will be carried over. Other parameters sampled per the requirement of the renewal application (BOD5, COD, Total Nitrogen, and Total Phosphorus) didn't exceed the 100 times of the most stringent criteria (if there is criteria) or 100 mg/l if there no criteria, and therefore, are not pollutants of concern.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Manganese, Total | 1.5 | Daily Max. | BPJ/BAT |

**Outfall 002:** The effluent sample results from Outfall 002 shows detected results for the pollutants listed in the permit which indicated they are still pollutants of concern. There were three pollutants for data collection: TDS, Total Chromium, and Total Lead. The sample results show maximum 846 mg/l of TDS concentration, <15 ug/l of Total Chromium (TQL is 4 ug/l), and 15.3 ug/l of Total Lead (most stringent criteria is 2.5 ug/l). Since all of these pollutants were detected and Total Chromium is non-detected above TQL and Total Lead is above most stringent criteria, they are still pollutants of concern and will be continued. The other sampled parameters (BOD5, COD, Total Nitrogen, and Total Phosphorus) are not concern at this time.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Manganese, Total | 1.5 | Daily Max. | BPJ/BAT |
| Chromium, Total | Report | Daily Max. | To collect Data |
| Lead, Total | Report | Daily Max. | To collect Data |
| TDS | Report | Daily Max | To collect Data |

**Outfall 004:** No sample results were provided as there was no discharge through this outfall. No DMR data available for last 12 months. Therefore, existing limits will be carried over.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Manganese, Total | 1.5 | Daily Max. | BPJ/BAT |
| Lead, Total | Report | Daily Max. | To collect Data |

**Outfall 005:** The effluent sample results shows detected results for the pollutants listed in the permit except Total Lead which was non-detect at lab's quantitation limit of 7.1 ug/l (TQL is 1 ug/l). It is still unclear if Total Lead is still a pollutant of concern unless it is tested at or below TQL. All existing parameters will be carried over. The other sampled parameters (BOD5, COD, Total Nitrogen, and Total Phosphorus) are not concern at this time.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Lead, Total | Report | Daily Max. | To collect Data |

**Outfall 006:** The effluent sample results shows detected results for the pollutants listed in the permit. The maximum reported concentration for Total Barium was 86.9 ug/l (criteria 2400 ug/l) and for Total Lead was 25.9 ug/l (criteria 2.5 ug/l). They are recommended to be carried over. The other sampled parameters (BOD5, COD, Total Nitrogen, and Total Phosphorus) are not concern at this time.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Lead, Total | Report | Daily Max. | To collect Data |
| Barium, Total | Report | Daily Max. | To collect Data |

**Outfall 007:** No sample results were provided as there was no discharge through this outfall. No DMR data available for last 12 months. Therefore, existing limits will be carried over.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |
| Manganese, Total | 1.5 | Daily Max. | BPJ/BAT |
| Lead, Total | Report | Daily Max. | To collect Data |
| Barium, Total | Report | Daily Max. | To collect Data |
| TDS | Report | Daily Max. | To collect Data |

**Outfall 009:** The effluent sample results shows detected results for the pollutants listed in the permit. they are recommended to be carried over.

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| pH | 6.0 to 9.0 STD at all times | | Chapter 95 |
| TSS | 100 | Daily Max. | BPJ/ BAT |
| Oil and Grease | 15 | Daily Max. | Chapter 95 |
| Aluminum, Total | 5.0 | Daily Max. | BPJ /BAT |
| Iron, Total | 5.0 | Daily Max. | BPJ/BAT |

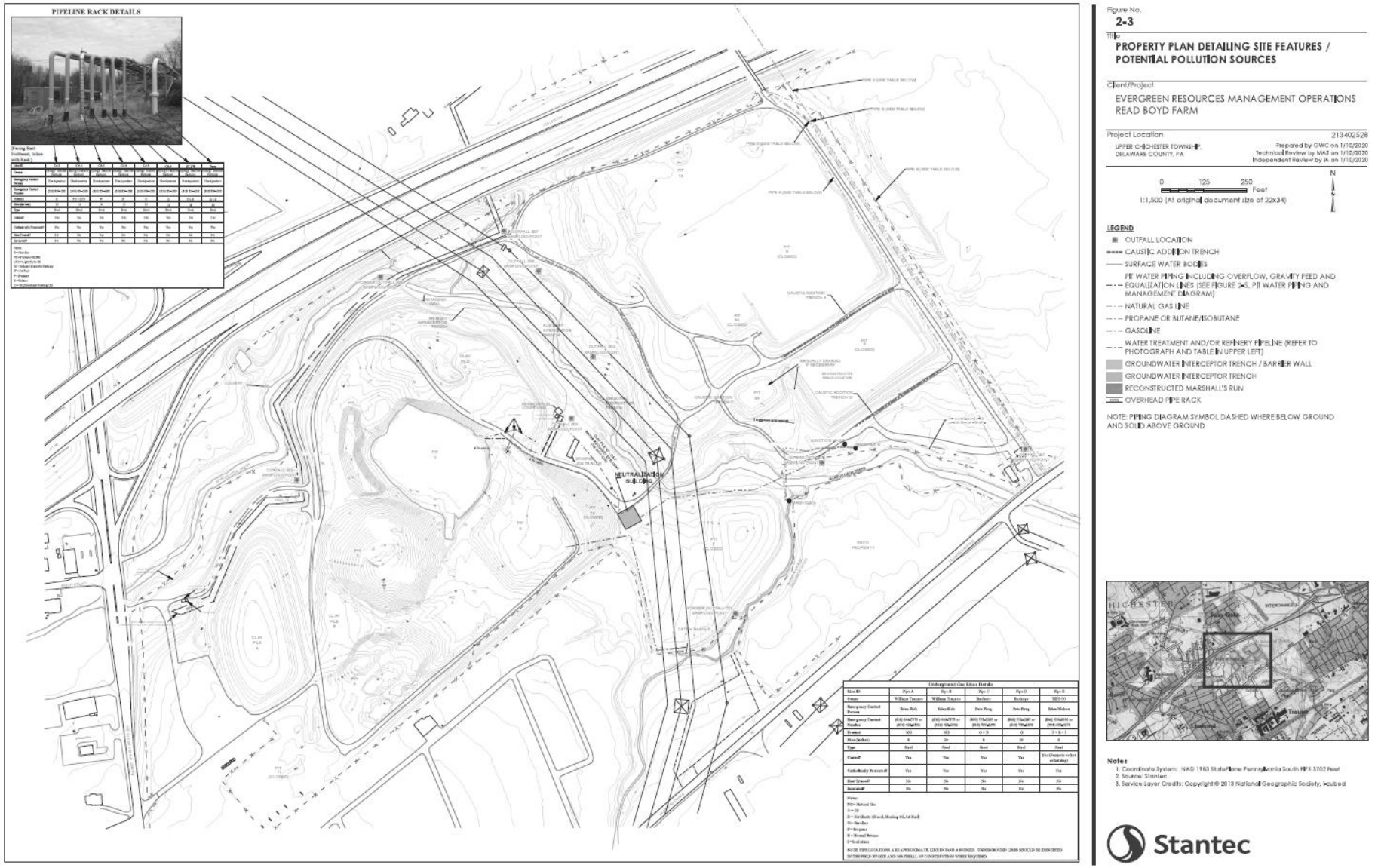


Figure No.
**2-3**

Title
**PROPERTY PLAN DETAILING SITE FEATURES / POTENTIAL POLLUTION SOURCES**

Client/Project
EVERGREEN RESOURCES MANAGEMENT OPERATIONS
READ BOYD FARM

Project Location
UPPER CHICHESTER TOWNSHIP,
DELAWARE COUNTY, PA

213402528

Prepared by GWC on 1/10/2020
Technical Review by MAS on 1/10/2020
Independent Review by IA on 1/10/2020

0 125 250 Feet
1:1,500 (At original document size of 22x34)

N

LEGEND
- OUTFALL LOCATION
- CAUSTIC ADDITION TRENCH
- SURFACE WATER BODIES
- PIT WATER PIPING INCLUDING OVERFLOW, GRAVITY FEED AND EQUALIZATION LINES (SEE FIGURE 2-5, PIT WATER PIPING AND MANAGEMENT DIAGRAM)
- NATURAL GAS LINE
- PROPANE OR BUTANE/ISOBUTANE
- GASOLINE
- WATER TREATMENT AND/OR REFINERY PIPELINE (REFER TO PHOTOGRAPH AND TABLE IN UPPER LEFT)
- GROUNDWATER INTERCEPTOR TRENCH / BARRIER WALL
- GROUNDWATER INTERCEPTOR TRENCH
- RECONSTRUCTED MARSHALL'S RUN
- OVERHEAD PIPE RACK

NOTE: PIPING DIAGRAM SYMBOL DASHED WHERE BELOW GROUND AND SOLID ABOVE GROUND

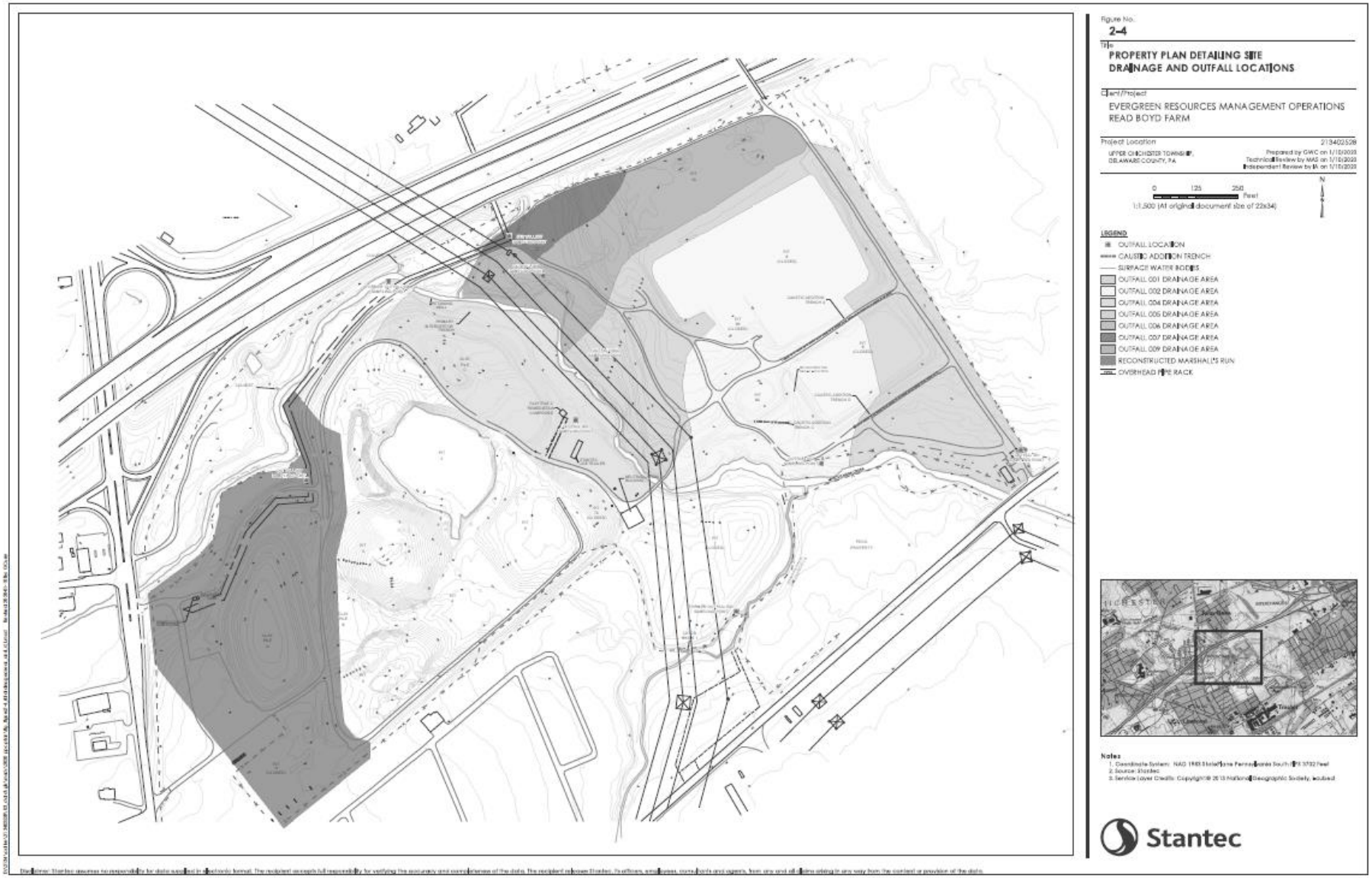
Figure No.
2-4
Title
PROPERTY PLAN DETAILING SITE DRAINAGE AND OUTFALL LOCATIONS
Client/Project
EVERGREEN RESOURCES MANAGEMENT OPERATIONS
READ BOYD FARM
Project Location
UPPER CHICHESTER TOWNSHIP, DELAWARE COUNTY, PA
213402528
Prepared by GWC on 1/15/2020
Technical Review by MAS on 1/15/2020
Independent Review by JA on 1/15/2020
0 125 250 Feet
1:1,500 (At original document size of 22x34)
N
LEGEND
OUTFALL LOCATION
CAUSTIC ADDITION TRENCH
SURFACE WATER BODIES
OUTFALL 001 DRAINAGE AREA
OUTFALL 002 DRAINAGE AREA
OUTFALL 004 DRAINAGE AREA
OUTFALL 005 DRAINAGE AREA
OUTFALL 006 DRAINAGE AREA
OUTFALL 007 DRAINAGE AREA
OUTFALL 009 DRAINAGE AREA
RECONSTRUCTED MARSHALLS RUN
OVERHEAD PIPE RACK
Notes
1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Source: Stantec
3. Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed
Stantec

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 001

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Total Dissolved Solids | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Chromium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 002

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 004, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 004

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 005, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 005

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 006, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Barium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 006

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 007, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Total Dissolved Solids | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Barium | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Lead | XXX | XXX | XXX | Report | XXX | XXX | 1/quarter | Grab |
| Total Manganese | XXX | XXX | XXX | 1.5 | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 007

Other Comments: None

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 009, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Daily Maximum | Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/quarter | Grab |
| TSS | XXX | XXX | XXX | 100 | XXX | XXX | 1/quarter | Grab |
| Oil and Grease | XXX | XXX | XXX | 15 | XXX | XXX | 1/quarter | Grab |
| Total Aluminum | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |
| Total Iron | XXX | XXX | XXX | 5.0 | XXX | XXX | 1/quarter | Grab |

Compliance Sampling Location: At Outfall 009

Other Comments: None

| Tools and References Used to Develop Permit | |
|---|---|
| | |
| ☐ | WQM for Windows Model (see Attachment ) |
| ☐ | Toxics Management Spreadsheet (see Attachment ) |
| ☐ | TRC Model Spreadsheet (see Attachment ) |
| ☐ | Temperature Model Spreadsheet (see Attachment ) |
| ☐ | Water Quality Toxics Management Strategy, 361-0100-003, 4/06. |
| ☐ | Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97. |
| ☐ | Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98. |
| ☐ | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96. |
| ☐ | Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97. |
| ☐ | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97. |
| ☐ | Pennsylvania CSO Policy, 385-2000-011, 9/08. |
| ☐ | Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03. |
| ☐ | Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97. |
| ☐ | Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97. |
| ☐ | Implementation Guidance Design Conditions, 391-2000-006, 9/97. |
| ☐ | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004. |
| ☐ | Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997. |
| ☐ | Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99. |
| ☐ | Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004. |
| ☐ | Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97. |
| ☐ | Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008. |
| ☐ | Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994. |
| ☐ | Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09. |
| ☐ | Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97. |
| ☐ | Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97. |
| ☐ | Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99. |
| ☐ | Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999. |
| ☐ | Design Stream Flows, 391-2000-023, 9/98. |
| ☐ | Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98. |
| ☐ | Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97. |
| ☐ | Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07. |
| ☐ | SOP: |
| ☐ | Other: |