

Application Type Renewal & Transfer  
 Facility Type Non-Municipal  
 Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0062324  
 APS ID 565422  
 Authorization ID 1166612

**Applicant and Facility Information**

Applicant Name	<u>Pike County Environmental Enterprises LLC</u>	Facility Name	<u>Pike County Environmental STP</u>
Applicant Address	<u>PO Box 297 Matamoras, PA 18336</u>	Facility Address	<u>1116 Delaware Drive Matamoras, PA 18336</u>
Applicant Contact	<u>Brian Cutler</u>	Facility Contact	<u>Ryan Rysinger</u>
Applicant Phone	<u>(570) 491-2911</u>	Facility Phone	<u>(845) 888-5755</u>
Client ID	<u>52968</u>	Site ID	<u>250214</u>
Ch 94 Load Status	<u>Overloaded (until Treatment Lagoon is replaced) NA – no connections authorized (hailed-in waste facility only)</u>	Municipality	<u>Westfall Township</u>
Connection Status		County	<u>Pike</u>
Date Application Received	<u>November 22, 2016 May 30, 2017 (transfer application complete and merged with NPDES Permit Renewal Application for new operator)</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted		If No, Reason	<u>-</u>
Purpose of Application	<u>RENEWAL/TRANSFER OF EXISTING NPDES PERMIT.</u>		

**Summary of Review**

This is a 0.100 MGD (non-municipal) NPDES Permit Renewal (merged with subsequent NPDES/WQM Permit Transfer application) for an existing Septage Treatment Plant (STP) that accepts only hailed-in septage and municipal WWTP sludges/solids with discharges to the Delaware River (WWF; Stream Code #2; impaired for fish consumption due to metals). **NOTE:** WQM permit transfers were issued separately from this NPDES Permit Renewal/Transfer.

**Background:**

- **Facility Classification:** Due to primary wastes being septage and municipal WWTP (without SIUs) sewage sludge, this facility is classified as a non-municipal STP. The Department will re-evaluate waste sources in next NPDES Permit cycle in case facility warrants an IW NPDES Permit due to non-sewage wastes at that time.
- **Rating WQM Permit Application:** There is a concurrent Part II WQM Permit Application No. 5219402 for rating the facility from 0.049 MGD hydraulic design & 214.5 lbs BOD5/day organic design capacities to 0.100 MGD hydraulic design capacity (NPDES Permit basis flow) & 438 lbs BOD5/day organic design capacity. Substantial design changes proposed. The NPDES Permit basis flow will not change.
- **October 5, 2018 Consent Order & Agreement:** This Consent Order & Agreement is in effect. (The current owner/operator took over a facility with many operational issues and failing units/equipment).
- **DRBC Docket:** There is a concurrent Draft DRBC Docket No. D-1989-082-4 Update application for the STP rating and modification. The Draft Docket contains new and more stringent permit limits for both current operations and the

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	September 3, 2019
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

### Summary of Review

upgraded facility. Existing Docket requirements have been incorporated into this permit. Additional Draft Docket limits have been incorporated into this Draft NPDES Permit renewal per Chapter 92a.12.

- **GP Coverage/Biosolids:** There is a pending transfer for the General Permit (NPDES) No. PAG072201 (Beneficial Use of Exceptional Quality Biosolids) that allows for the sale, distribution, and land application of Exceptional Quality Biosolids meeting General Permit requirements (including PA MSW Chapter 271 Biosolids Quality requirements; Sampling & analysis requirements; Land application requirements; Blending requirements; Monitoring requirements; Record-keeping requirements, Sewage sludge quality enhancement plan, etc.). The General Permit is for beneficial use of biosolids that meets specific conditions, it does not automatically incorporate the processing of the sludge.
  - PAG-07 Biosolids requirements include:
    - Lime stabilization for pathogen control includes: Lime Stabilization—Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after 2 hours of contact for pathogen reduction.
    - Vector Reduction would involve: The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 2 hours and then at 11.5 or higher for an additional 22 hours.
  - PAG-07 “Solids” requirements include:
    - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials.
    - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials
- **Monitoring Points:** Besides the Outfall No. 001 effluent monitoring point, there are two regulated NPDES monitoring locations (not counting any site-produced sludge/biosolids sampling location prior to disposal or beneficial use under General Permit coverage):
  - **Internal Monitoring Point No. 101:** Per WQM Permit Design Engineer Report, all incoming wastewater is directed into the “solids management treatment process” with BFP filtrate directed into the “liquids treatment process”. This is the BFP filtrate sampling point, the point of compliance for hydraulic and organic design capacities (after solids removal), and influent monitoring point for wastewater that is subsequently treated and discharge to the Delaware River.
  - **Internal Monitoring Point No. 102 (Hauled-in Wastewater Sampling Monitoring Point):** This is an existing process control monitoring point (also previous influent monitoring point) and NPDES Part A.III.C.3 (Hauled-in Wastewater) reporting requirements sampling point.
- **Previous Permittee:** Pike County Environmental Inc. Old permittee mailing address (PO Box) not accepting mail. All correspondence will be sent to previous permittee’s attorney per OCC direction: Anthony J. Magnotta, 1307 Purdytown Turnpike, Suite A, Lakeview, PA 18438.

Part C Special Conditions: New conditions bolded.

- **Part C.I.A, B, C, D:** Standard conditions including: Stormwater prohibition; Necessary Property rights; Residuals Management; **Planning (new)**.
- **Part C.I.E:** **New Chlorine Minimization condition (UV is the approved method of disinfection)**
- **Part C.I.F:** **New O&M Plan condition to address the ongoing operational changes and proposed facility upgrades.**
- **Part C.I.G:** **New condition referencing facility-specific DRBC Docket requirements for the public record.**
- **Part C.I.H:** Existing Changing Stream/Effluent Condition
- **Part C.I.I:** Existing Change in Delaware River WQS Condition.
- **Part C.I.J:** **New NPDES Permit Renewal Condition. The next NPDES Permit Renewal application’s influent and effluent sampling shall address Major Sewage Pollutant Groups 1 and 2 constituents at minimum. This is due to extremely variable loadings from WWTP sludges and solids, in addition to the normally wide range of septage and septage-related (solids pumpings), and to allow maximum flexibility in accepting new sewage/septage waste streams in future.**
- **Part C.I.K:** **New recordkeeping requirement to retain copies of septage, sewage sludge, and biosolids information onsite, and to provide upon Department request during normal business hours.**

**Summary of Review**

- **Part C.II: New Standard Solids Management conditions (lagoon) modified due to site-specific considerations (including additional reporting requirements regarding sludge volumes onsite and annual report due to unusual nature of facility and previous owner/operator issues).**

NOTE: Previous Part C.I.F (Semiannual Metals monitoring) deleted as monitoring requirements are spelled out in Part A.

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.100
Latitude	41° 23' 30.16"	Longitude	-74° 42' 54.17"
Quad Name	Port Jervis North	Quad Code	0748 (3.25.4)
Wastewater Description: Sewage Effluent			
Receiving Waters	Delaware River (WWF, MF)	Stream Code	2
NHD Com ID	26165978	RMI	256.5 (DRBC RMI)
Drainage Area	3070 square miles	Yield (cfs/mi <sup>2</sup> )	0.1840
Q <sub>7-10</sub> Flow (cfs)	565	Q <sub>7-10</sub> Basis	See below
Elevation (ft)	~416 Feet	Slope (ft/ft)	-
Watershed No.	1-D	Chapter 93 Class.	WWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired (fish consumption)		
Cause(s) of Impairment	MERCURY, Metals		
Source(s) of Impairment	SOURCE UNKNOWN, SOURCE UNKNOWN		
TMDL Status	-	Name	
<u>Background/Ambient Data:</u> None available		<u>Data Source:</u>	
pH (SU)	-	-	
Temperature (°F)	-	-	
Hardness (mg/L)	~19	Downstream River sample at USGS Gage and WQN monitoring point at bridge. 8/21/2018 Monitoring Point No. 47982, Sample #2252575.	
Other:	-	-	
<u>Nearest Downstream Public Water Supply Intake</u>		City of Easton	
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~72

Changes Since Last Permit Issuance: None known.

Other Comments:

**Stream Impairment: DEP Central Office clarified that the metals causing impairment were mercury and lead.**

- Facility might be a source of mercury due to extreme variability of waste streams (septage and WWTP sludges/solids). Monitoring will be required.
- Facility might be a source of lead due to variability of waste streams. Monitoring will be required.

**Q7-10 Low Flow:** The USGS Gage #01434000 (Delaware River at Port Jervis NY, Elevation 415.35 Feet, 3070 square mile drainage area) is about 1.7 miles downstream of Outfall #001. The previous NPDES Permit Renewal Application Fact Sheet used 1987 – 2011 data in DFLOW to calculate an overall Q7-10 flow of 1130 CFS, but then only assumed 565 CFS (50% of the flow) due to the fact the river is bordered by another state (i.e. unknown discharges outside PA) in accordance with the previous conservative modeling. This approach was retained for conservatism. This equates to a 0.1840 CFS/square mile LFY. These assumptions were retained for conservatism. NOTE: The values are roughly consistent with the 2019 DRBC Docket which indicated a 595 CFS Q7-10 flow for the discharge location.

**Treatment Facility Summary**

**Treatment Facility Name:** Pike County Environmental Septage Treatment Plant (STP)

WQM Permit No.	Issuance Date	Scope
5219402	TBD (Application)	Application Rerating plant to 0.100 MGD NPDES Permit Basis Flow; proposed replacement Treatment Lagoon (simultaneous nitrification/denitrification); replacement sand filter; new chemical additive systems; proposed supplemental chlorine disinfection, etc. See below for details.
5217406	12/19/2018	Existing as-built/as-operated Septage Treatment Plant <u>as documented to form the basis of future permitting and/or corrective actions</u> under the October 5, 2018 Consent Order & Agreement. <ul style="list-style-type: none"> <li>• <b>No Treatment Plant, Treatment Unit and/or Equipment rerating is approved.</b></li> <li>• <b>No new waste treatment unit is approved.</b></li> <li>• <b>No new waste streams/categories are approved.</b></li> <li>• <b>No treatment unit bypassing is approved.</b></li> <li>• <b>No change to the approved operating mode of existing treatment units (including 180,000-gallon Equalization Tank) is approved</b></li> </ul> “Clean-up WQM permit” Special Conditions: <u>A:</u> Authorization of ad-hoc bioreactor ceases with lagoon replacement unit. <u>B:</u> Onsite biosolids management <u>C:</u> Incorporation of unapproved site change technical information into replacement lagoon WQM Permit Application (WQM No. 5219401). <u>D:</u> Post-BFP filtrate flow-meter and 24-hour composite sampling point.
5218402	11/6/2018	Installation and operation of Replacement Groundwater Monitor Well 3R, plus abandonment of Monitor Well 3B at this facility. Special Condition <u>A</u> required compliance with previous groundwater monitoring requirements.
5216402	11/6/2018	After-the-fact approval to authorize operation and maintenance of four (4) influent equalization sludge transfer pumps that were installed without a permit at the existing extended aeration wastewater treatment plant.
5290406-T2	11/6/2018	Transfer and operation of existing STP to new owner/operator in accordance with Consent Order & Agreement. WQM Permit incorporated by reference the administratively extended NPDES Permit and previous WQM permit (STP construction & operation). <u>Special Conditions:</u> <u>A:</u> Requirement for flow-proportional effluent 24-hour composite sampler <u>B:</u> <b>Derating-related condition (in event of CO&amp;A-derating contingency) to Ad Hoc Bioreactor capacities identified in original WQM permitting.</b> <u>C:</u> List of required NPDES Supplemental Forms (updated copies supplied with Part II WQM Permit for present operator)
5217402 (application)	<b>Withdrawn</b>	Withdrawn WQM Permit Application for replacement groundwater well and lagoon liner modification.
5290406-T1	6/17/1993	Transfer of STP permit to previous permittee (Pike County Environmental Inc.) with groundwater special conditions
5290406	9/18/1991	The as-built facility was originally permitted for 0.049 MGD of septage received over an 8-hour time-frame. Septage Treatment Facility permit (previous closed IW rendering treatment plant expanded/modified to treat septage) was previously issued to M&S Sanitary Sewage Disposal Inc. Groundwater monitoring Special Conditions. See below for information pertaining to originally permitted/as-built design)
NOTE:	-	Previous Rendering Plant NPDES/WQM permits are not relevant to this facility except as historical information. Previous Rendering Plant’s TP

		units (including lagoon) predate PA technical guidance (DWFDM or other). For example, liner technology radically changed during the later 1980s.		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary*	Extended Aeration*	Ultraviolet permitted; Chlorination in use.	0.100 (NPDES permit basis flow)*
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.049*	214.5*	Not Overloaded	Belt filter press, polymerization, liming	Landfill Disposal at present; beneficial use allowed if GP biosolids coverage

**\*WQM Permit Application No. 5219402 proposes modifying/rerating Treatment Plant to 0.100 MGD hydraulic design capacity (NPDES Permit basis flow) and 438 lbs BOD5/day organic design capacity, with proposed Biological Nutrient Reduction (BNR) i.e. simultaneous nitrification/denitrification within the replacement lagoon unit. The hydraulic/organic design capacity/Loading values are measured after separation of solids component for separate biosolids processing & beneficial use and/or disposal.**

Changes Since Last Permit Issuance:

- **Acceptance of WWTP sludge/solids for treatment onsite.**
- **New owner/operator has done much required maintenance, and WQM permitted equipment upgrades for interim operations (see Clean-up WQM permit discussed above for details). Belt Filter Press (BFP) was replaced.**
- **Poly-aluminium chloride (PAC) is now in usage onsite.**
- **Permitted treatment units are out-of-service (or removed altogether):**
  - **Comminutor:** Removed by previous owner/operator, with no replacement planned.
  - **Primary Clarifier:** Non-functional with no plan for return-to-service per WQM Permit Application No. 5219402.
  - **Extended Aeration Treatment Lagoon:** Excavated after liner failure (i.e. no lagoon exists onsite, only excavated hole). Proposed for replacement by new "BNR Lagoon Unit" (larger capacity; new treatment process; new goal of achieving TN reduction). Replacement-in-kind is not possible due to changes in lagoon/liner technology standards since original construction as part of Rendering Plant treatment system; capacity changes; new DRBC BDT limits (nutrients); etc.
  - **UV disinfection System:** Status is uncertain. The facility is using unpermitted chlorine/dechlorination tablets at present. WQM Permit Application No. 5219402 indicates planned return to service after replacement of sand filters (solids might be impacting UV system effectiveness).
  - **Sand Filter Units:** Will be replaced per WQM Permit Application No. 5219402.
  - **"Ad Hoc Bioreactor":** 180,000-gallon EQ Tank is being operated in "Ad Hoc Bioreactor Mode" (option discussed in original WQM permit application documents but with reduced hydraulic/organic capacities). See WQM Permit Nos. 5290406-T2 and 5217406 IRRs for details. The facility plans to return the tank to EQ usage after Lagoon is replaced.

Other Comments:

**General Site Process:** See the WQM Permit No. 5217406 IRR (Clean-up WQM) for a detailed documented breakdown of the as-built/as-operated STP (with nonfunctional/removed units and unpermitted changes deferred to Replacement Treatment Unit WQM Application, i.e. WQM Permit Application No. 5219402). See future WQM Permit No. 5219402 IRR for breakdown of proposed process upgrades. The basic process involves:

- Receipt of hauled-in wastewater (weighed and sampled for process control)
- Bar screens/grit classifier directs flow to the "Solids Management Process" (56,000-gallon Outside Storage Tank; 24,400-gallon Inside Storage Tank; polymer treatment; Belt Filter Press):

- Post-BFP Solids are limed as needed, and stored in the “inside” roll-off and outside roll-off storage area prior to either offsite disposal or offsite beneficial use. Presumably, any General Permit-requirements are met prior to reuse (no details given in NDPEs/WQM permit applications).
- BFP Filtrate is directed to the “liquids treatment process”. The “liquids treatment process” includes:
  - The new influent composite sampler and flow-meter (point of compliance for hydraulic/organic design capacity loadings)
  - The 180,000-gallon Equalization Tank (presently being used as an “Ad hoc bioreactor” in the absence of the permitted Extended Aeration Lagoon, but to revert to equalization usage when lagoon is replaced per WQM Permit Application No. 5219402);
  - Sodium Bicarbonate injection (alkalinity per WQM Permit Application No. 5219402, status unclear);
  - The “not permitted” WQM Permit Application No. 5219402-proposed “Simultaneous Nitrification/Denitrification” (a.k.a. “BNR”) Lagoon (to replace the out-of-service excavated permitted Extended Aeration Treatment Lagoon).
  - PAC injection (phosphorus control, status unclear per WQM Permit Application No. 5219402);
  - The final clarifier;
  - The unpermitted chlorination system (being used in absence of UV disinfection system with proposal for continued use per WQM Permit Application No. 5219402);
  - Flow valves to direct flow to either recirculation (via 180,000-gallon EQ Tank) or sand filter
  - The sand filters (to be replaced with new sand filter per WQM Permit Application No. 5219402);
  - The “final effluent storage tanks” (used for storage and source of BFP washwater);
  - The unpermitted sodium sulfite dechlorination tablets addition (with potential for continued use per WQM Permit Application No. 5219402);
  - The absent UV disinfection system (status of repair not identified, proposed return to service after replacement sand filter is operating per WQM Permit Application No. 5219402);
  - Effluent Composite Sampler
  - Discharge to the Delaware River during operating hours (with planned recirculation to 180,000-gallon EQ Tank during off-hours).
  - Former Primary Clarifier will not be returned to service per WQM Permit Application No. 5219402.

**Variable Influent Loadings:** The facility is subject to a wide range of influent loadings due to nature of hauled-in wastes (septage and septic tank pumpings; sludges from assorted sources).

- **Old Data (reflecting trucked-in influent prior to processing):** Influent BOD5 loadings ranged from an average 87 – 9520 lbs/day (average of 1015 lb/day for 24 samples), and influent TSS loadings ranged from 807 – 13446 lbs/day (average of 5693 lb/day for 10 samples) per the Renewal Application (measured at truck sampling location prior to solids fraction removal). **See Tables 2 and 3 below for variability of influent raw septage loadings.**
- **BFP Filtrate Data:** There is limited data available regarding BFP filtrate loading variability (new influent point installed per WQM permit condition). 2019 WQM Permit Application No. 5219402 Module 1 (Jan 2018 – March 2019) data from five samples (Monday through Saturday operating hours) included:
  - CBOD5: 463 mg/l Daily Max, 200.3 mg/l Monthly Average
  - TSS: 153 mg/l Daily Max; 120 mg/l Monthly Average
  - Ammonia-N: 92.6 mg/l Daily Max; 50.7 mg/l Monthly Average
  - TKN: 123 mg/l Daily Max; 83.1 mg/l Monthly Average
  - Nitrate-Nitrite-N: 67.4 mg/l Daily Max; 22.3 mg/l Monthly Average
  - Total Nitrogen: 141.4 mg/l Daily Max; 105.2 mg/l Monthly Average
  - Total Phosphorus: 12 mg/l Daily Max; 7.1 mg/l Monthly Average
  - No metals data provided.

**Original WQM Design Organic Loading Capacity:** The treatment plant capacity depends on the limiting factor for the design. Per the DE Report, the limiting factor is the extended aeration lagoon capacity (214.5 lbs/day BOD, not counting organic loading solids removed prior to the Lagoon by belt filter) is the limiting factor:

- **Design Criteria (DE Report page 7):** The DE Report narrative indicated that the proposed extended treatment plant was designed to treat 550 mg/l BOD5 and 500 mg/l TSS. The Low Flow Septage Treatment Facilities Design Criteria (page 1) also explicitly noted the same BOD5 and TSS loading criteria applied (550 ppm BOD5 and 500 ppm TSS).

- Raw Septage per reference to EPA Manual (1984 EPA "Septage Treatment and Disposal"): NOTE: Septage is highly variable. A 1999 EPA Fact Sheet notes that septage includes liquids/solids pumped out of a septic tank, cess pool or other primary treatment sources but can range from 1132 mg/l – 130,575 mg/l solids and 440 mg/l – 78,600 mg/l BOD.
- 15,000 mg/l TSS (8,500 mg/l in representative NY facility cited)
- 7,000 mg/l BOD5 (3,600 mg/l in representative NY facility cited)
- Belt Filter Press Effluent: 90% TSS and BOD5 removal assumed per reference to EPA Manual, i.e. Filtrate would have 1,500 mg/l TSS and 700 mg/l BOD5. NOTE: Validity of removal assumption not clear – exact EPA citation not given, and any removal efficiency would be impacted by treatment plant design (including location of belt filters in overall process, any use of chemicals, etc.). **The 2019 WQM Permit Application No. 5219402 indicates the original Module 1 design loadings assumptions (organic and TSS) are being met in the BFP filtrate.**
- Primary Clarifier Effluent:
  - 50% removal of TSS and 25% removal of BOD5 assumed per reference to EPA manual. NOTE: Validity of removal assumption not clear – exact EPA citation not given, and any removal efficiency would be impacted by treatment plant design (including location of primary clarifier in overall process, any use of chemicals, etc.). The applicant has not provided actual operating data, and recently replaced Belt Filter Press.
  - 750 mg/l TSS and 525 mg/l BOD5 effluent assumed going to extended aeration system. Separate WQM Permit Application No. 5219402 indicates this in the same ballpark recent operational experience.
- Extended Aeration System (i.e. removed site aerated lagoon):
  - Original WQM Permitting DE Report indicated a proposed design organic loading of 214.5 lb BOD5/day per the Design Engineer Report page 13 for the extended aerated lagoon treatment unit.
  - Assumed a 550 mg/l BOD5 influent concentration and 25 mg/l BOD5 effluent concentration at 0.049 MGD for aeration tankage/lagoon treatment which is the biological treatment portion of the facility.

**Site Sludge:** In 2019, Site sludge has been going for both disposal (Keystone Landfill) and beneficial use (Little Lakes Farm in Damascus, Wayne County; Lycoming Landfill in Montgomery, Lycoming County; Mark Darling Farm in Marietta, Lackawanna County) per available 2019 Sewage Sludge/Biosolids Production and Disposal Reports.

Compliance History

DMR Data for Outfall 001 (from June 1, 2018 to May 31, 2019)

Parameter	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18
<b>Flow (MGD)</b> <b>Average Monthly</b>	0.039	0.048	0.035	0.031	0.037	0.044	<b>0.066</b>	<b>0.061</b>	<b>0.052</b>	<b>0.053</b>	<b>0.052</b>	<b>0.061</b>
<b>Flow (MGD)</b> <b>Daily Maximum</b>	0.093	0.094	0.096	0.073	0.065	0.081	<b>0.128</b>	<b>0.102</b>	<b>0.109</b>	<b>0.130</b>	<b>0.120</b>	<b>0.194</b>
pH (S.U.) Minimum	6.54	6.55	6.76	6.29	5.16	6.64	7.16	7.0	7.0	6.9	6.8	7.6
pH (S.U.) Maximum	7.56	7.85	8.36	8.73	7.99	7.94	8.13	8.1	7.7	7.9	7.8	7.8
<b>TRC (mg/L)</b> <b>Average Monthly</b>	0.1	<b>0.8</b>	<b>0.8</b>	<b>1.1</b>	<b>1.3</b>	<b>0.6</b>	<b>0.7</b>	0.4	0.3	0.1	<b>0.8</b>	0.3
<b>TRC (mg/L)</b> <b>Instantaneous Maximum</b>	0.36	<b>1.8</b>	1.09	<b>2.52</b>	<b>3.11</b>	<b>1.77</b>	1.28	1.2	1.0	0.07	1.0	1.0
CBOD5 (lbs/day) Average Monthly	< 0.6	4.0	< 10.8	< 6.5	6.7	4.1	2.8	2.9	1.5	2.2	< 1.3	< 1.8
CBOD5 (mg/L) Average Monthly	< 4	11	< 31	< 15	14	11	7	4	2	4	< 2	< 3
<b>TSS (lbs/day)</b> <b>Average Monthly</b>	1.0	2.0	<b>68.0</b>	21.0	11.0	10.0	5.0	< 5.0	< 3.0	< 3.0	< 3.0	< 3.0
<b>TSS (mg/L)</b> <b>Average Monthly</b>	11	6	<b>167</b>	<b>53</b>	25	23	12	< 8	< 5	< 5	< 5	< 5
Total Dissolved Solids (mg/L) Average Monthly	1025	959	1370	1615	1101	962	923	1082	1110	1180	1110	1155
<b>Fecal Coliform (CFU/100 ml)</b> <b>Geometric Mean</b>	10	1	<b>&gt; 1849</b>	< 10	< 3	< 8	155	< 2	< 2	< 3	< 2	13
<b>Fecal Coliform (CFU/100 ml)</b> <b>Instantaneous Maximum</b>	23.3	1	<b>&gt; 2419.6</b>	104.3	< 3	20	<b>1500</b>	< 3	3	3	< 3	54
<b>Ammonia (mg/L)</b> <b>Average Monthly</b>	0.29	3.26	3.6	1.47	2.02	12.7	<b>29.92</b>	<b>21.82</b>	1.002	0.297	0.573	0.378
Total Aluminum (mg/L) Average					1.07						0.143	

**NPDES Permit Fact Sheet  
Pike County Environmental STP**

**NPDES Permit No. PA0062324**

Total Beryllium (mg/L) Average					< 0.001						< 0.001	
Total Cadmium (mg/L) Average					< 0.003						< 0.003	
Total Copper (mg/L) Average					0.0148						0.013	
Total Lead (mg/L) Average					< 0.005						< 0.005	

**DMR Data for Outfall 001 (from July 1, 2017 to June 30, 2018)**

Parameter	JUN-18	MAY-18	APR-18	MAR-18	FEB-18	JAN-18	DEC-17	NOV-17	OCT-17	SEP-17	AUG-17	JUL-17
<b>Flow (MGD) Average Monthly</b>	<b>0.061</b>	<b>0.060</b>	<b>0.054</b>	0.039	0.035	0.029	0.03	0.049	<b>0.056</b>	<b>0.061</b>	<b>0.068</b>	<b>0.067</b>
<b>Flow (MGD) Daily Maximum</b>	<b>0.194</b>	<b>0.165</b>	<b>0.173</b>	<b>0.135</b>	<b>0.139</b>	<b>0.160</b>	<b>0.081</b>	<b>0.128</b>	<b>0.138</b>	<b>0.102</b>	<b>0.111</b>	<b>0.100</b>
pH (S.U.) Minimum	7.6	7.6	7.4	7.5	7.7	7.5	7.6	7.6	7.5	6.8	6.7	7.5
pH (S.U.) Maximum	7.8	7.9	7.8	8.4	8.2	8.4	8.4	8.1	7.8	7.7	7.9	8.0
<b>TRC (mg/L) Average Monthly</b>	0.3	<b>0.9</b>	<b>1.2</b>	<b>0.8</b>	0.4	0.3	<b>0.8</b>	<b>0.7</b>	0.5	<b>0.7</b>	<b>0.7</b>	0.3
<b>TRC (mg/L) Instantaneous Maximum</b>	1.0	1.1	<b>1.2</b>	1.0	0.8	0.5	1.0	<b>1.2</b>	1.0	1.1	1.1	0.7
CBOD5 (lbs/day) Average Monthly	< 1.8	6.6	3.5	10.0	3.8	8.4	1.1	1.9	3.1	5.8	< 2.5	9.0
CBOD5 (mg/L) Average Monthly	< 3	8	7	23	15	14	4	4	6	9	< 4	17
TSS (lbs/day) Average Monthly	< 3.0	< 6.0	10.0	10.0	5.0	< 4.0	3.0	< 2.0	8.0	5.0	6.0	6.0
TSS (mg/L) Average Monthly	< 5	< 8	21	24	18	< 7	12	< 6	16	9	10	10
Total Dissolved Solids (mg/L) Average Monthly	1155	1076	1605	1330	1430	1180	1185	782	978	1057	990	683
Fecal Coliform (CFU/100 ml) Geometric Mean	13	< 2	72	< 2	3	167	< 3	< 2	< 1	< 1	< 5	18

<b>Fecal Coliform (CFU/100 ml) Instantaneous Maximum</b>	54	3	<b>1730</b>	3	3	<b>14000</b>	3	3	< 1	1	24	320
<b>Ammonia (mg/L) Average Monthly</b>	0.378	4.69	<b>11.18</b>	46	<b>25.7</b>	<b>34.8</b>	<b>10.62</b>	<b>18.18</b>	4.16	4.53	3.64	7.87
Total Aluminum (mg/L) Average						0.327						< 0.1
Total Beryllium (mg/L) Average						< 0.001						< 0.001
Total Cadmium (mg/L) Average						< 0.001						< 0.001
Total Copper (mg/L) Average						0.029						0.039
Total Lead (mg/L) Average						< 0.01						< 0.001

**Compliance History**

**Effluent Violations for Outfall 001, from: July 1, 2018 To: July 31, 2019**

Parameter	Date	SBC	DMR Value	Units	Limit Value
pH	01/31/19	Min	5.16	S.U.	6.0
TRC	01/31/19	Avg Mo	1.3	mg/L	1.2
TRC	01/31/19	IMAX	3.11	mg/L	2.8
CBOD5	03/31/19	Avg Mo	< 31	mg/L	25
TSS	03/31/19	Avg Mo	68.0	lbs/day	25.0
TSS	02/28/19	Avg Mo	53	mg/L	30
TSS	03/31/19	Avg Mo	167	mg/L	30
Fecal Coliform	03/31/19	Geo Mean	> 1849	CFU/100 ml	200

NPDES Permit Fact Sheet  
Pike County Environmental STP

NPDES Permit No. PA0062324

Fecal Coliform	11/30/18	IMAX	1500	CFU/100 ml	1000
Fecal Coliform	03/31/19	IMAX	> 2419.6	CFU/100 ml	1000
Fecal Coliform	06/30/19	Geo Mean	297	CFU/100 ml	200
Fecal Coliform	06/30/19	IMAX	1986.3	CFU/100 ml	1000

Summary of Inspections:

CLIENT	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR ID	# OF VIOLATIONS
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2840696	02/11/2019	Complaint Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2829557	01/09/2019	Routine/Partial Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2803137	11/06/2018	Routine/Partial Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2773455	09/11/2018	Administrative/File Review	Violation(s) Noted	00635243	<u>1</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2620866	07/25/2017	Routine/Partial Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2552790	01/17/2017	Follow-up Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2538100	11/18/2016	Routine/Partial Inspection	No Violations Noted	00615077	<u>0</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2618231	11/08/2016	Routine/Partial Inspection	Violation(s) Noted	00462913	<u>2</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2529043	10/18/2016	Routine/Partial Inspection	Violation(s) Noted	00462913	<u>1</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2505292	07/26/2016	Routine/Partial Inspection	Violation(s) Noted	00462913	<u>2</u>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2497630	07/01/2016	Administrative/File Review	Violation(s) Noted	00488085	<u>1</u>

PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2504127	06/17/2016	Routine/Partial Inspection	Repairs or Upgrade Required	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2507262	11/09/2015	Routine/Partial Inspection	Violation(s) Noted	00462913	<a href="#">1</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2425424	10/06/2015	Follow-up Inspection	No Violations Noted	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2407899	09/16/2015	Routine/Partial Inspection	No Violations Noted	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2406161	09/09/2015	Follow-up Inspection	Violation(s) Noted	00462913	<a href="#">1</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2407835	08/05/2015	Compliance Evaluation	No Violations Noted	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2384155	07/02/2015	Administrative/File Review	Violation(s) Noted	00635243	<a href="#">1</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2400553	06/19/2015	Routine/Partial Inspection	No Violations Noted	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2490193	03/17/2015	Routine/Partial Inspection	Violation(s) Noted	00462913	<a href="#">1</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2366165	01/21/2015	Routine/Partial Inspection	Outstanding Violations - No Viols Req'd	00462913	<a href="#">0</a>
PIKE CNTY ENV ENTERPRISES LLC	WPCNP	2335412	01/12/2015	Follow-up Inspection	Recurring Violations	00462913	<a href="#">1</a>

Other Comments:

- Previous Change in Owner/Operator:** The present owner/operator (becoming owner on March 29, 2017, took over operations earlier, with a subsequent October 5, 2018 Consent Order & Agreement) was not responsible for noncompliance by previous owner/operator, except as they accepted overall responsibilities when they took over the facility per NPDES/WQM permit transfer application and Consent Order & Agreement. New owner/operator has indicated very limited information on previous compliance history and indicated facility files were missing information.

- **Past Compliance issues (previous Owner/Operator):** See October 5, 2018 Consent Order & Agreement for summary of compliance history. Issues included:
  - **Nonfunctional Treatment Units & Equipment:** Abandoned Extended Aeration Lagoon, nonfunctional Primary Clarifier, non-functional UV disinfection system (with unpermitted chlorine back-up disinfection); assorted failing equipment that had to be replaced by the present owner/operator.
  - **Waste Management Violations per Compliance History Review Section:** Biosolids related including failure to meet biosolids pathogen/vector reduction requirements (time, temperature, pH); unpermitted sludge storage; no berm for storage area runoff; failure to provide 24-hour notice prior to distribution; operating a waste transfer facility without a permit.
  - **Clean Water Violations History Review Section:** Effluent exceedances; onsite overflows; Failure to notify regarding noncompliance; Failure to submit monitoring reports (DMR and groundwater) or late submittals; Failure to maintain adequate freeboard.
  - **Potential Additional Violation:** The Applications indicate facility is accepting “WWTP sludges”, for which a NPDES Part A.III.C.2 (Planned Changes to Waste Stream) notification or NPDES Part A.III.C.3.a (Receipt of Residual Waste) might have been required. Potential for impacts on the existing GP PAG-07 (for beneficial use of exceptional quality biosolids) coverage. **DEP Soil Scientist has indicated no additional biosolids concerns arising from the acceptance of municipal WWTP (without SIU) sewage sludge.**
  
- **Present Compliance Status: In addition to the above listed violations:**
  - October 10, 2018 Administrative Order (annual fee payment) was issued (with previous 9/11/2018 NOV issuance).
  - **March 2019 permit limit exceedances:** Blamed upon “interference by industrial user” that impacted plant biology (septage load) per DEP Facilities Noncompliance Summary. The only industrial users are Municipal WWTPs. No Part A.III.C.2 non-residential septage or new waste source/type notification was submitted to this reviewer’s knowledge. No Part B.I.D Pretreatment limits received to this reviewer’s knowledge.
  - **Facility compliance with effluent limits has been impacted due to missing permitted treatment units and out-of-service/failing units:**
    - **UV Disinfection System:** The UV disinfection system is still not returned to service. It remains the permitted disinfection method.
      - Problems with the existing failing sand filters (excessive solids possibly reducing UV disinfection effectiveness) does not override the need to return the UV disinfection system to service.
      - There is no WQM Permit for a chlorine disinfection system onsite, i.e. no engineered chlorination/dechlorination system meeting PA Domestic Wastewater Facilities Manual (DWFM) requirements. Fecal exceedances and TRC exceedances indicate the existing onsite chlorination/dechlorination system is not adequate to meet existing permit limits.
    - **Missing Lagoon Treatment Unit:**
      - **In the absence of a permitted treatment unit (excavated Extended Aeration Lagoon), the Facility is essentially in hydraulic overload and organic overload (at <0.049 MGD monthly average flows), using a permitted equalization tank as a “bioreactor” with limited organic/hydraulic capacities. See Treatment Section above for details. The original WQM Permitting indicated this Ad Hoc Bioreactor operating mode might have the following capacities (old units in new operating modes often cannot meet theoretical capacities):**
        - **0.025 MGD Hydraulic Design Capacity**
        - **110 lbs BOD5/day Organic Design Capacity**
      - At present, it is unclear if the proposed replacement Treatment Lagoon design (WQM Permit Application No. 5219401 required by CO&A) will be capable of meeting new Ammonia-N and Total Nitrogen Limits due to cold weather inhibition of lagoon biological activity (nitrification and denitrification) and other basic design issues. See separate WQM Permit Application No. 5219402 correspondence for more information.
  - **9/3/2019 WMS “Open Violation by Client Query”:** No open violations.

Client: All

Open Violations: 0

No data was found using the criteria entered. Please revise your choices and try again

**Development of Effluent Limitations**

Outfall No. 001 Design Flow (MGD) .100 (NPDES permit basis flow)  
 Latitude 41° 23' 28.00" Longitude -74° 42' 57.00"  
 Wastewater Description: Sewage Effluent

**Permit Limits/Monitoring:** Changes are bolded. Some sampling data is bolded to allow for comparison with existing/future permit limits.

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
Duration of Discharge	Report (hours) Report (hours)	Total Monthly Daily Max	Due to intermittent and variable length daily discharges, the duration of discharges will be reported. Application indicated planned 8-hour/day (Monday – Friday) discharges but use of double shifts appear to be a common practice.
Daily Influent Flow (MGD)	Report Report	Daily Max Monthly Average	New requirement (calculated via Hauled-in Waste Form monthly form) and reported to allow for comparison with daily effluent Flows.
Daily Effluent Flow (MGD)	Report Report	Daily Max Monthly Average	Existing requirement.  EDMR data (7/17-5/2019) ranged from 0.029 to <b>0.068 MGD</b> monthly average, with <b>0.194 MGD</b> Max Daily flow.
CBOD5 (pre-upgrade)	20.8 Lbs/d <b>Report Lbs/d</b> 25.0 <b>Report</b> 50.0	Monthly Average <b>Daily Max</b> Monthly Average <b>Daily Max</b> IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. <b>Significant digit added.</b>  Application data: <b>56 mg/l max</b> and 9 mg/l average (24 samples).  EDMR data (7/17-5/2019) ranged from 2 to <b>&lt;31 mg/l</b> monthly average.  2019 Module 1 indicated daily max of 36.3 mg/l and 10.7 mg/l monthly average (1/2018 – 3/2019)
CBOD5 (post-upgrade)	<b>8.3 Lbs/d</b> <b>Report Lbs/d</b> 10.0 <b>Report</b> 20.0	Monthly Average Daily Max Monthly Average Daily Max IMAX	DRBC requirement incorporated per Chapter 92a.12. Standard sewage multiplier for IMAX
CBOD5 Minimum Monthly Reduction	85%	Monthly Average	DRBC requirement incorporated per Chapter 92a.12. DRBC Docket has additional reporting requirements (see below) for CBOD5 from outside the Delaware River Basin with annual DRBC reporting requirement.
TSS (pre-upgrade)	25.0 Lbs/d <b>Report Lbs/d</b> 30.0 <b>Report</b>	Monthly Average <b>Daily Max</b> Monthly Average <b>Daily Max</b>	Existing Technology limit (Chapter 92a.47).  Application data: 27.5 mg/l max and 10 mg/l average (24 samples).

	60.0	IMAX	EDMR data (7/17-5/2019) ranged from <5 to <b>167 mg/l</b> monthly average.  2019 Module 1 indicated daily max of <b>320 mg/l</b> and monthly average of 25.7 mg/l (1/2018 – 3/2019)
TSS (post-upgrade)	8.3 Lbs/d Report Lbs/d 10.0 Report 20.0	Monthly Average Daily Max Monthly Average Daily Max IMAX	DRBC requirement incorporated per Chapter 92a.12.
pH	6.0 – 9.0 SU	Inst. Min - IMAX	Existing Technology limit (Chapter 92a.47)  Application data: 6.3 – 8.1 SU range.  EDMR data (7/17-5/2019) ranged from <b>5.16</b> to 8.73 SU.  2019 Module 1 indicated range of <b>5.16</b> – 8.7 SU (1/2018 – 3/2019)
Dissolved Oxygen (DO) (pre-upgrade)	Report	Inst. Minimum	DRBC requirement incorporated per Chapter 92a.12 and Chapter 92a.61.  2019 Module 1 indicated minimum of <b>0.8 mg/l</b> and <b>7.95 mg/l</b> monthly average (1/2018 – 3/2019). No EDMR data. No Application data.
Dissolved Oxygen (DO) (post-upgrade)	6.0	Inst. Minimum	DRBC requirement incorporated per Chapter 92a.12 and Chapter 92a.61
Fecal Coliform (pre-upgrade)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit/DRBC limit. <b>Fecal Coliform units changed to #/100 ml per current DEP permitting process.</b>  Application indicated <b>2000/100</b> ml max with 44/100 ml average.  EDMR data (7/17-5/2019) ranged from 1/100 ml to <b>&gt;1849/100 ml Geometric Mean</b> , 1/100 ml to <b>14,000/100 ml IMAX</b> .  2019 Module 1 indicated IMAX of <b>14,000/100 ml</b> and average of 152.9/100 ml (1/2018 – 3/2019)
Fecal Coliform (post-upgrade)	50/100 ml 1,000/100 ml	Geo Mean IMAX	DRBC requirement incorporated per Chapter 92a.12
Total Residual Chlorine	0.50 1.17	Average Monthly IMAX	<b>UV disinfection is the approved method of disinfection. Old permit TRC limits (1.2/2.8 mg/l) were Regional POTW BAT limits, now superseded by Chapter 92a.48. Chlorine Minimization condition (with Part A limits) in this renewal.</b>  No application data.

			EDMR data (7/17-5/2019) ranged from 0.07 - <b>1.3 mg/l</b> monthly average and <b>3.11 mg/l</b> IMAX.  2019 Module 1 indicated IMAX of <b>3.11 mg/l</b> and monthly average <b>0.67 mg/l</b> (1/2018 – 3/2019)
Ammonia-Nitrogen (pre-upgrade)	Report Lbs/d Report Lb/d <b>20.0</b> Report <b>40.0</b>	Monthly Average Daily Max Monthly Average Daily Max IMAX	<b>DRBC requirement incorporated per Chapter 92a.12. Standard multiplier for IMAX.</b>  Application data indicated 8.6 mg/l max and 1.4 mg/l average (24 samples).  EDMR data (7/17-5/2019) ranged from 0.029 to <b>29.92 mg/l</b> monthly average.  2019 Module 1 indicated daily max of <b>64.5</b> mg/l and monthly average of 13.1 mg/l (1/2018 – 3/2019)
Ammonia-Nitrogen (post-upgrade)	Report Lbs/d Report Lb/d <b>1.5</b> Report <b>3.0</b>	Monthly Average Daily Max Monthly Average Daily Max IMAX	<b>DRBC BDT requirement incorporated per Chapter 92a.12. Standard multiplier for IMAX.</b>
Total Phosphorus (pre-upgrade)	Report Lbs/d Report Lb/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	<b>DRBC requirement incorporated per Chapter 92a.12 and 92a.61.</b>  Application data indicated 4.23 mg/l max and 1.1 mg/l average (24 samples).  2019 Module 1 indicated daily max of <b>11.8</b> mg/l and <b>2.38</b> mg/l monthly average (1/2018 – 3/2019). No EDMR data.
Total Phosphorus (post-upgrade)	Report Lbs/d Report Lb/d <b>2.0</b> Report <b>4.0</b>	Monthly Average Daily Max Monthly Average Daily Max IMAX	<b>DRBC requirement incorporated per Chapter 92a.12. Standard sewage multiplier used for IMAX.</b>
TKN	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	<b>DRBC requirement incorporated per Chapter 92a.12 and 92a.61.</b>  Application data indicated 3.1 mg/l max and 2.2 mg/l average (24 samples).  2019 Module 1 indicated daily max of <b>80.6</b> mg/l and <b>21.7</b> mg/l monthly average (1/2018 – 3/2019). No EDMR data.
Nitrate-Nitrite-N	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	<b>DRBC requirement incorporated per Chapter 92a.12 and 92a.61.</b>  Application data indicated 10.2 mg/l max and 1.9 mg/l average (24 samples).  2019 Module 1 indicated daily max of <b>56.4</b> mg/l and monthly average of <b>23.9</b> mg/l (1/2018 – 3/2019). No EDMR data.

<p><b>Total Nitrogen (pre-upgrade)</b></p>	<p><b>Report Lbs/d Report Lbs/d Report Report</b></p>	<p><b>Monthly Average Daily Max Monthly Average Daily Max</b></p>	<p><b>DRBC requirement incorporated per Chapter 92a.12 and 92a.61.</b></p> <p>Application data indicated 12.42 mg/l max and 4.2 mg/l average (24 samples).</p> <p>2019 Module 1 indicated daily max of 116.4 mg/l and monthly average of 45.6 mg/l (1/2018 – 3/2019). No EDMR data.</p>
<p><b>Total Nitrogen (post-upgrade)</b></p>	<p><b>Report Lbs/d Report Lbs/d 10.0 Report 20.0</b></p>	<p><b>Monthly Average Daily Max Monthly Average Daily Max IMAX</b></p>	<p><b>DRBC requirement incorporated per Chapter 92a.12 and 92a.61. Standard sewage multiplier for IMAX.</b></p>
<p><b>Total Dissolved Solids (TDS)</b></p>	<p><b>Report Lbs/d Report Lbs/d 2000.0 2250.0 4000.0</b></p>	<p><b>Monthly Average Daily Max Monthly Average Daily Max IMAX</b></p>	<p><b>New DRBC limits incorporated per Chapter 92a.12. Standard sewage multiplier used for IMAX.</b></p> <p>Application data indicated 631 mg/l max and 293 mg/l average (24 samples).</p> <p>EDMR data (7/17-5/2019) ranged from 683 mg/l to 1615 mg/l monthly average.</p> <p>2019 Module 1 indicated daily max of 1680 mg/l and 1215 mg/l monthly average (1/2018 – 3/2019).</p>
<p><b>Oil &amp; Grease</b></p>	<p><b>15.0 30.0</b></p>	<p><b>Monthly Average IMAX</b></p>	<p><b>New reporting requirement due to proposed oil &amp; grease loads (WQM Permit Application No. 5219402), with existing Narrative permit limits.</b></p> <p>Application data was &lt;5 mg/l (2 samples).</p>
<p>Chlorides, Sulfates, and Bromide</p>	<p>Not needed</p>	<p>-</p>	<p>Not required per Toxic Screening Spreadsheet, with TDS limits acting as indicator of excessive solids.</p> <p>Application data:  Chlorides: 232 mg/l (max of 2 samples)  Bromide: &lt;0.25 mg/l (max of 2 samples)  Sulfate: 64.6 mg/l (max of 2 samples)</p>
<p>Aluminum</p>	<p><b>Report Lbs/d Report Lbs/d Report Report</b></p>	<p><b>Semi-annual Avg Daily Max Semi-annual Avg Daily Max</b></p>	<p>Existing monitoring requirement retained due to limited data, potential influent variability, use of PAC. Requirement will be re-evaluated in next NPDES Permit Renewal.</p> <p>Application data indicated 0.2 mg/l max and 0.2 mg/l average (3 samples).</p> <p>EDMR data (7/17-5/2019) ranged from 0.143 to 1.07 mg/l monthly average (semi-annual sampling).</p> <p>2019 Module 1 indicated daily max of 1.07 and average of 0.513 mg/l/ mg/l (1/2018 – 3/2019).</p>

Beryllium	<p><b>Report Lbs/d  Report Lbs/d  Report  Report</b></p>	<p><b>Monthly Avg  Daily Max  Monthly Avg  Daily Max</b></p>	<p>Monitoring upon request only. Monitoring retained to maximize flexibility in accepting waste streams.</p> <p>Application data indicated 0.01 mg/l max and 0.005 mg/l average (3 samples).</p> <p>EDMR data (7/17-5/2019) was &lt;0.001 mg/l monthly average (semi-annual sampling).</p> <p>2019 Module 1 indicated daily max/monthly average of &lt;0.001 mg/l (1/2018 – 3/2019).</p>
Cadmium	<p><b>Report Lbs/d  Report Lbs/d  Report  Report</b></p>	<p><b>Monthly Avg  Daily Max  Monthly Avg  Daily Max</b></p>	<p>Existing (2/year) monitoring requirement retained per Reasonable Potential Analysis. Additional reporting due to unusual variability of plant loadings (septage plus WWTP sludges).</p> <p>Application data indicated 0.01 mg/l max and 0.005 mg/l average (3 samples).</p> <p>EDMR data (7/17-5/2019) ranged from &lt;0.001 to &lt;0.003 mg/l monthly average (semi-annual sampling).</p> <p>2019 Module 1 indicated average of &lt;0.002 mg/l - &lt;0.003 mg/l daily max (1/2018 – 3/2019).</p>
Copper	<p><b>Report Lbs/d  Report Lbs/d  Report  Report</b></p>	<p><b>Monthly Average  Daily Max  Monthly Average  Daily Max</b></p>	<p>Existing (2/year) monitoring requirement retained per Reasonable Potential Analysis. Additional reporting due to unusual variability of plant loadings (septage plus WWTP sludges).</p> <p>Application data indicated 0.05 mg/l max and 0.03 mg/l average (3 samples).</p> <p>EDMR data (7/17-5/2019) ranged from 0.013 to 0.039 mg/l monthly average (semi-annual sampling).</p> <p>2019 Module 1 indicated 0.029 mg/l daily max and average of &lt;0.019 mg/l.</p>
Lead	<p><b>Report Lbs/d  Report Lbs/d  Report  Report</b></p>	<p><b>Monthly Average  Daily Max  Monthly Average  Daily Max</b></p>	<p><b>Monthly monitoring will be required due to lead being a known cause of stream impairment.</b></p> <p>Application data indicated 0.05 mg/l max and 0.02 mg/l average (3 samples).</p> <p>EDMR data (7/17-5/2019) ranged from &lt;0.001 to &lt;0.005 mg/l monthly average (semi-annual sampling).</p> <p>2019 Module 1 indicated daily max of &lt;0.010 and average of &lt;0.007 mg/l (1/2018 – 3/2019).</p>

Mercury	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monthly monitoring requirement due to being a known cause of stream impairment and Reasonable Potential Analysis. No EDMR data.
Silver	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring requirement due to Reasonable Potential analysis (see below). No EDMR data or current application data available.
Zinc	Report Lbs/d Report Lbs/d Report Report	Semi-annual Avg Daily Max Semi-annual Avg Daily Max	See above. Monitoring to allow for maximum flexibility in waste streams.  Application data indicated 0.0534 mg/l max and 0.038 mg/l average (3 samples). No EDMR data.
UV intensity (mW/cm <sup>2</sup> )	Report	Inst. Minimum	New standard requirement (Chapter 92a.61). Fecal coliform exceedances have occurred at this facility. UV disinfection is the approved disinfection method at this facility.
Free Cyanide	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility with WWTP sludges and solids. No application or EDMR data.
Total PCBs	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility due to receipt of WWTP sludges and solids. No application or EDMR data.

Comments:

**DRBC Limits:** The 7/16/2019 Draft DRBC Docket No. D-1989-082-4 included new Best Demonstrated Technology (BDT) limits upon completion of facility upgrade and >0.049 MGD monthly average flows in addition to other limits effective upon Docket action for the existing facility. This Docket will supersede the existing Docket requirements (issued after new owner/operator took over facility, after previous NPDES permit action, i.e. new requirements).

- As the WQM Permit Application No. 5219401 includes rerating the treatment plant to 0.100 MGD (NPDES Permit basis flow) concurrent with STP upgrading construction, the new BDT limits will become effective upon completion of the upgrade construction.
- The more stringent DRBC limits and/or monitoring requirements supersede WQM 7.0 Water Quality modeling Ammonia-N and DO limits per Chapter 92a.12.

**Monitoring Requirement Changes:**

- **New Flow-proportional 24-hour Composite Effluent Sampling Requirement:** Due to nature of facility and site-specific conditions (extremely variable influent loadings with no normal sewage base loading to dilute high concentrations) plus out-of-service WWTP Units (primary clarifier; extended aeration basin/lagoon; UV disinfection system), 24-hour composite sampling is required.
- **Daily Maximum and Mass Loading reporting is now required:** No additional sampling is required.
- **Minimum Sampling Frequencies:**
  - Sampling Frequencies have been updated to standard monitoring frequencies for 0.100 MGD sewage facilities.
  - Other non-metal constituents (TDS, etc.) will be monitored on same frequency due to variability of facility influent flows, historic effluent problems, and WQM Permit Application No. 5219402 technical issues (replacement biological treatment unit, etc.).
  - Metal constituents (contributing to fish consumption impairment or with Reasonable Potential) will be monitored monthly. Other metals shall be monitored semi-annual in the effluent. Influent monitoring will be upon request (see IMPs Nos. 101 and 102).

- Monitoring upon request for several constituents to allow for maximum operational flexibility in terms of waste streams.

**Additional DRBC Reporting Requirements Not included in Permit:** The DRBC Docket ID# D-1989-082-3 (in effect) and the Draft DRBC Docket ID# D-1989-082-4 have unusual facility-specific requirements such as limitations on the facility service area, DRBC-specific annual reporting requirements, etc. These DRBC Docket requirements are not being incorporated into the permit, because they are not identified as permit limits (subject to Chapter 92a.12) but as separate DRBC requirements.

**Reasonable Potential Analysis:** The Reasonable Potential Analysis was expanded to address other metals and constituents using 1990 WQM permit application data (when available), sewage sludge (not leachate) constituent data from Biosolids permit/regulations (as worst case), and EPA Technical Guidance (raw septage average as worst case for filtrate) to flag constituents of concern. Facility is presently limited to receiving hauled-in residential septage, non-residential septage with oil & grease component, and municipal WWTP (no significant industrial user) sewage sludge. Other hauled-in wastes would require prior notification (NPDES Permit Part A.III.C.2) and/or trigger NPDES Permit Part A.III.C.3 (Hauled-In Wastes) residual waste requirements. See attached Toxic Screening Spreadsheet, PENTOSXD modeling, and attached Tables for details.

- **Summary of Conclusions:**

- **Silver:** No post-1990 sampling data available. Monitoring has been incorporated into this Permit to gather data due to Reasonable Potential for exceedances based on previous insensitive 1990 permit application data (<10 ug/l) which is equivalent to average raw septage per EPA sources, and due to restricted facility sources (residential septage; nonresidential septage with oil & grease contribution; municipal WWTP (without Significant Industrial Users) sewage sludge). The Department retains broad authority to reopen the permit in event future data shows high silver concentration levels and/or if future Part A.III.C.2 (Planned Changes in Waste Stream) or Part A.III.C.3 (Hauled-in Wastes: Residual Waste) data indicates potential sources.
- **Mercury:** The Delaware River is impaired for Fish Consumption due to mercury and lead. Monitoring will be required in this permit cycle.
- **Cadmium, Copper and Lead:** Monitoring is required per Analysis. Lead is also a known cause of impairment in the receiving stream.
- **Aluminum:** Semi-annual monitoring will be required in this permit term as the facility will be using aluminum-based treatment chemicals for phosphorus reduction. Historical data will not reflect future usage pattern.
- **Organics (Table 2):** No monitoring is required for organics found in septage per Reasonable Potential Analysis, even assuming effluent concentrations equivalent to raw septage average concentrations. The presumption is that residential septage will not have greater concentrations of organics than domestic sewage going into a 0.100 MGD Sewage Treatment Plant, with organics being consumed by the biological treatment process while metals might pass-through. Other wastes would be subject to NPDES Permit Part A.III.C.2 notification requirements.
- **Total PCBs:** No data available, but sewage sludge constituent of interest. Sewage sludge max concentration entered into Reasonable Potential analysis and PENTOXSD Modeling, but not expected in facility influent. Monitoring upon request to maximize facility flexibility regarding WWTP sludges. PCBs are not expected in residential septage, but can be found in WWTP sludges (see Chapter 271 Biosolids tables) due to illegal disposal in the WWTP service area.
- **Free Cyanide:** No data available, but sewage sludge constituent of interest. Sewage sludge max concentration entered into Reasonable Potential analysis and PENTOXSD Modeling, but not expected in facility influent. Monitoring upon request to maximize facility flexibility regarding WWTP sludges. Free cyanide is not expected in residential septage but can be found in WWTP sludges.
- **Zinc:** Monitoring to maximize facility flexibility regarding WWTP sludges, based on raw septage influent average concentrations and potential high concentrations in WWTP sludges.
- **Beryllium:** No monitoring required per Reasonable Potential Analysis. Monitoring upon request to maximize facility flexibility in accepting waste streams.

- **Water Quality Modeling Considerations:**

- **Constituents of Concern for Septage:**
  - See Table 2 below.

- All constituents of interest (with WQ criteria/standards) were modeled to develop hypothetical permit limits (Water Quality-based Effluent Limits) except TDS (no public water surface water intake until Easton, with DRBC limits being incorporated into permit).
- Downstream river total hardness sample data (19 mg/l) was used in water quality modeling to account for hardness-dependent metals water quality criteria.
- The Reasonable Potential Analysis input constituent and constituent concentrations came from several sources:
  - Available effluent data for monitored constituents/metals (Application, DMR, WQM Permit Application);
  - Original 1990-1991 Screened Constituents based on belt filtrate sampling at a similar plant from DEP Fact Sheet (that have applicable Water Quality Standards);
  - EPA Table-identified “average raw septage” concentrations for PCBs, Free Cyanide, Organics, and other constituents in the absence of other data for screening purposes.
- Related Biosolids Requirements and Potential Pass-through Constituents: The Facility generates a sewage sludge/biosolids product that is either beneficially used under Chapter 271 (and General Permit PAG-07) or landfilled.
  - Site-generated biosolids product is screened for Chapter 271 biosolids constituents of interest prior to beneficial use via land application. Such screening would help flag constituent concentration spiking that might also pass-through to the receiving stream.
  - Landfilled biosolids product is screened by any receiving landfill under the DEP Waste Management module process. This analysis would help spot evidence of spiking of assorted constituents.
  - Contacted DEP Soil Scientist (Tim Craven) about whether municipal WWTP sludges (no SIUs) raised any issues or concerns regarding any particular constituent. He indicated no concerns at that time.

**TOXICS SCREENING ANALYSIS  
 WATER QUALITY POLLUTANTS OF CONCERN  
 VERSION 2.6**

Facility: Pike County Environmental STP  
 Analysis Hardness (mg/L): 19  
 Stream Flow, Q<sub>7-10</sub> (cfs): 565

NPDES Permit No.: PA0062324  
 Discharge Flow (MGD): 0.1

Outfall: 001  
 Analysis pH (SU): 7

Parameter	Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent QBEL (µg/L)	Screening Recommendation
Total Dissolved Solids	1815000	500000	Yes		
Chloride	232000	250000	No		
Bromide	< 250	N/A	No		
Sulfate	64800	250000	No		
1,4-Dioxane		N/A			
Total Aluminum	1070	750	Yes	41584.22	No Limits/Monitoring
Total Beryllium	10	N/A	No		
Total Cadmium	10	0.079	Yes	22.957	Monitor
Total Copper	39	2.28	Yes	169.861	Monitor
Total Lead	50	0.38	Yes	230.036	Monitor
Total Zinc	53.4	29.3	Yes	1694.235	No Limits/Monitoring
Total Arsenic	5	10	No	5933.896	
Total Antimony	50	5.6	Yes	3322.962	No Limits/Monitoring
Total Chromium	10	N/A	No		
Total Nickel	40	12.8	Yes	6648.169	No Limits/Monitoring
Total Selenium	5	4.989154013	Yes	2960.512	No Limits/Monitoring
Total Silver	10	0.22	Yes	13.1	Establish Limits
Total Cobalt	406	19	Yes	5267.869	No Limits/Monitoring
Total Iron	39300	1500	Yes	5470000	No Limits/Monitoring
Total Manganese	6090	1000	Yes	593389.6	No Limits/Monitoring
Total Mercury	0.59	0.05	Yes	29.689	No Limits/Monitoring
Total Thallium	10	0.24	Yes	142.414	No Limits/Monitoring
Total Barium	5760	2400	Yes	1160000	No Limits/Monitoring
PCBs, Total	8600	0.000084	Yes	0.189	Establish Limits
Total Molybdenum	75000	N/A	No		
Free Available Cyanide	469	5.2	Yes	1219.804	Monitor
Acetone	10600	3500	Yes	2070000	No Limits/Monitoring
Benzene	62	1.2	Yes	3540.715	No Limits/Monitoring
Ethylbenzene	67	530	No	160792.3	
Methyl Ethyl Ketone	3850	21000	No	12460000	
Methylene Chloride	101	4.6	Yes	13572.74	No Limits/Monitoring
Toluene	170	330	No	94257.56	
Total Xylenes	51	210	No	60990.19	
2-Propanol	14100	89000	No	24390000	

**WQM 7.0 Effluent Limits**

**SWP Basin**    **Stream Code**                      **Stream Name**  
 03I                      2    DELAWARE RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
256.500	PCEE WWTP	PA0062324	0.100	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4



TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9			Pike County Environmental Enterprises WWTP		
565	= Q stream (cfs)		0.5	= CV Daily	
0.1	= Q discharge (MGD)		0.5	= CV Hourly	
4	= no. samples		0.023	= AFC_Partial Mix Factor	
0.3	= Chlorine Demand of Stream		0.162	= CFC_Partial Mix Factor	
0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
0	= % Factor of Safety (FOS)			=Decay Coefficient (K)	
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 26.815		1.3.2.iii	WLA cfc = 184.018
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 9.992		5.1d	LTA_cfc = 106.979
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML MULT = 1.720			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
		INST MAX LIMIT (mg/l) = 1.170			

**Development of Effluent Limitations**

**Outfall No.** 101 **Design Flow (MGD)** 0.100 MGD (hydraulic capacity)  
**Latitude** 41° 23' 28.00" **Longitude** -74° 42' 57.00"  
**Wastewater Description:** Post BFP Filtrate Influent to Liquid Treatment process prior to discharge to the Delaware River

**Permit Monitoring:**

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
Daily Influent Flow (MGD)	Report Report	Daily Max Monthly Average	New monitoring requirement per Chapter 92a.61 to determine actual hydraulic loadings on the STP (after solids removal).
Temperature (°F) (in-situ)	Report	Inst. Min	New monitoring requirement per Chapter 92a.61. Due to concerns over winter nitrification problems in proposed lagoon design, the influent temperature to the EQ Tank will be monitored and reported here.
Influent CBOD5	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	DRBC requirement incorporated per Chapter 92a.12 and 92a.61. Monitoring paired with effluent CBOD5 to allow direct comparison.
Influent TSS, Ammonia-N, TKN, TP	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring upon request requirement (Chapter 92a.61)
Metals	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring upon request requirement (Chapter 92a.61) for metals of interest. Metals listed in Outfall No. 001 section.
Free Cyanide	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility with WWTP sludges and solids. No application or EDMR data.
Total PCBs	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility due to receipt of WWTP sludges and solids. No application or EDMR data.

**Comments:** This is the Belt Filter Press Filtrate influent monitoring point to determine hydraulic and organic loadings on the STP per WQM Permits (i.e. after removal of solids fraction being separated for separate biosolids beneficial use and/or disposal). This is also the appropriate location for spot-checking influent loadings for the treatment plant portion discharging to the Delaware River to maximize flexibility in approvable waste streams.

**Development of Effluent Limitations**

<b>Outfall No.</b>	102	<b>Design Flow (MGD)</b>	NA (Hauled In Truck monitoring point not limited to 0.100 MGD due to subsequent solids separation)
<b>Latitude</b>	41° 23' 28.00"	<b>Longitude</b>	-74° 42' 57.00"
<b>Wastewater Description:</b> <u>Hauled in wastewater Truck Sampling point</u>			

**Permit Limits and/or Monitoring**

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
Daily Influent Flow (MGD)	Report Report	Daily Max Monthly Average	New requirement (calculated via Hauled-in Waste Form monthly form) and reported to allow for comparison with daily effluent Flows.
Influent BOD5, TSS, Ammonia-N, TKN. TP	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring/Reporting upon request. The facility is grab sampling the incoming hauled-in wastewater trucks, compositing the sample, centrifuging it, and sending centrate to offsite lab for analysis of these parameters. See below for available influent data.
Metals	Report (lb/d) Report (lb/d) Report Report	Monthly Average Daily Max Monthly Average Daily Max	New monitoring upon request requirement (Chapter 92a.61) for metals of interest. Metals listed in Outfall No. 001 Section.
Free Cyanide	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility with WWTP sludges and solids. No application or EDMR data.
Total PCBs	Report Lbs/d Report Lbs/d Report Report	Monthly Average Daily Max Monthly Average Daily Max	Monitoring upon request only, to facilitate maximum facility flexibility due to receipt of WWTP sludges and solids. No application or EDMR data.

Comments:

**This is an existing process control monitoring point (and previous influent monitoring point) that is being retained to allow for reporting of total influent flows/loadings to maximize flexibility in approvable waste streams.**

Process Control Sampling: Facility takes grab samples of incoming waste loads for process control, and composites them. The Facility then centrifuges the samples and separately analyzes the solids samples (presumed to represent future sludges) and liquid samples (presumed to represent future BFP filtrate loadings). Due to variation of procedures from potential DEP requested monitoring, NPDES Permit Part A.III.B.7-reporting is not required for process control sampling results.

The NPDES Permit specifies the (non-flow) monitoring is upon request, whether single truck or all trucked-in wastes that day. NPDES Permit Part A.III.A and B requirements pertain to Department-requested monitoring & reporting. If the facility separately analyzes the solids/liquids fractions, the analytical results for both must be submitted with the DMR/EDMR results.

**Table 1 (Reasonable Potential Analysis Screening in addition to Toxic Screening Spreadsheet)**

<b>Pollutant</b>	<b>Reasonable Potential Analysis &amp; Screening Inputs</b>
Arsenic	<b>0.005 mg/l in ~1990 NPDES Permit application data used in modeling.</b> No 2019 Module 1 data.
<b>Cadmium</b>	<b>Highest concentration of 0.010 mg/l.</b> 2019 Module 1 indicated daily max of <0.003 mg/l (1/2018 – 3/2019)
<b>Copper</b>	2019 Module 1 indicated daily max of 0.039 mg/l (1/2018 – 3/2019)
<b>Lead</b>	<b>Highest application concentration of 0.050 mg/l.</b> 2019 Module 1 indicated daily max of <0.01 mg/l (1/2018 – 3/2019)
<b>Mercury</b>	This is a known cause of stream impairment, requiring monitoring. <b>0.00059 mg/l in ~1990 NPDES permit application data used in modeling.</b>
Molybdenum	No data available. No PA WQS.
Nickel	<b>&lt;0.040 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
PCBs	No data available.
Selenium	<b>&lt;0.005 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
<b>Zinc</b>	<b>Highest concentration of 2 samples was 0.053 mg/l.</b>
Aluminum	Poly-aluminum chloride (PAC) is now in usage onsite. <b>2019 Module 1 indicated daily max of 1.07 mg/l (1/2018 – 3/2019)</b>
Antimony	<b>&lt; 0.050 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
Beryllium	<b>Highest concentration of 0.010 mg/l.</b> No WQS. 2019 Module 1 indicated daily max of <0.001 mg/l (1/2018 – 3/2019)
Chromium Total	<b>&lt;0.010 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
<b>Silver</b>	<b>&lt;0.010 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
Thallium	<b>&lt;0.010 mg/l in ~1990 NPDES Permit application data used in modeling.</b>
Iron	No data available. <b>EPA Raw Septage Average concentration used.</b>
Manganese	No data available. <b>EPA Raw Septage Average concentration used.</b>
Barium	No data available. <b>EPA Raw Septage Average concentration used.</b>
<b>Free Cyanide</b>	No data available. <b>EPA Raw Septage Average concentration used.</b>
Cobalt	No data available. <b>EPA Raw Septage Average concentration used.</b>
Tin	No data available. No PA WQS in Chapter 93.
Organics	No data available. <b>EPA Raw Septage Average concentration used when there was water quality criteria. Methyl Alcohol does not have a WQ criterion.</b>
<b>Total PCBs</b>	<b>No data available. Chapter 271 biosolids ceiling concentration used.</b>

**Table 2 (Raw Septage Constituents)**

Constituent	1984 EPA Recommended Design Values for Septage* (mg/l)	1994 EPA Septage Table Average Values** (mg/l)	PAG-03 Biosolids Pollutant Ceilings for EQ Biosolids Table 1 Ceiling concentrations** (mg/l)	Draft DWFDM Table A-1 Suggested Septage Design Values (mg/l)	Highest Concentration or EPA average raw septage value absent other information (mg/l)	WQBEL or TBEL (mg/l)
<b>Aluminum</b>	50	-	-	-	1.070	41.58422
Arsenic	0.2	0.141	75	-	0.050	5.933686
Barium	-	5.76	-	-	5.76 (average)	1160.000
<b>Cadmium</b>	0.7	0.097	85	-	0.010	<b>0.022957</b>
Chromium	1.0	0.49	-	-	<10 Total, assuming III: 0.010 IV: 0.010	III: 13.2005 IV: 0.903391
Cobalt	-	0.406	1500	-	0.406 (average)	5.267334
<b>Copper</b>	6.0	4.84	4300	-	0.039	<b>0.169861</b>
<b>Cyanide</b>	-	0.469	-	-	0.469 (average)	1.219804
Iron	200	39.3	-	-	39.3 (average)	5470.000
Lead	10	1.21	840	-	0.050	<b>0.230036</b>
Manganese	5	6.09	420	-	6.09 (average)	593.3896
<b>Mercury</b>	0.25	0.005	57	-	0.00059	<b>0.029669</b>
Molybdenum	-	-	75	-	75.0 (Ceiling)	No WQS
Nickel	1	0.526	420	-	<0.040 (ND)	6.648169
Selenium	0.1	-	100	-	<0.005 (ND)	296.0512
<b>Silver</b>	-	<b>0.099</b>	-	-	<b>&lt;0.010 (ND)</b>	<b>0.0131</b>
Tin	-	0.076	-	-	0.010	No WQS
Zinc	40	9.97	7500	-	0.053	<b>1.694235</b>
<b>ORGANICS</b>	-	-	-	-	-	-
Acetone	-	10.6	-	-	-	-
Benzene	-	0.062	-	-	-	-
Ethylbenzene	-	0.067	-	-	-	-
Isopropyl Alcohol	-	14.1	-	-	-	-
Methyl alcohol	-	15.8	-	-	-	No WQS
MEK	-	3.65	-	-	-	-
Methylene Chloride	-	0.101	-	-	-	-
Toluene	-	0.17	-	-	-	-
Xylene	-	0.051	-	-	-	-
<b>Total PCBs</b>	-	-	8.6	-	-	<b>0.000189</b>
<b>Other Constituents</b>	-	-	-	-	-	-
TSS	-	-	-	15,000	-	10 (DRBC)
BOD5	-	-	-	7,000	-	10 CBOD5 (DRBC)
COD	-	-	-	15,000	-	-
TKN	-	-	-	700	-	-
Ammonia-N	-	-	-	150	-	20/1.5 (DRBC)
Total Phosphorus	-	-	-	250	-	2.0 (DRBC)
Alkalinity	-	-	-	1,000	-	-
Grease	-	-	-	8,000	-	15/30 (Chapter 95.2)

Other Constituents previously sampled for	-	-	-	-	-	-
Antimony	-	-	-	-	<0.050 (ND)	3.322982
Beryllium	-	-	-	-	0.010	No WQS
Thallium	-	-	-	-	<0.010 (ND)	<b>0.142414</b>

\* The 1984 U.S. EPA Handbook "Septage treatment and disposal" (EPA/625/6-84/009) Table 3-5 (Heavy metal concentrations in Septage Compared to Typical Domestic Wastewater Sludges)

\*\*The 1994 EPA Guide to Septage Treatment and Disposal (EPA/625/R-94/002) Table 2-3 (Characteristics of Septage):

\*\*\*The DEP General Permit PAG-07 (Exceptional Quality Biosolids) referenced PA Chapter §271.914(b)(3) (Table 3, Pollutant Concentrations)

**Table 3 (Available Effluent Data from NPDES data/2017 WQM Application and DEP Sampling) with bolding of new owner/operator data**

Constituent	Min (mg/l unless specified other)	Max (mg/l unless specified other)	Average (mg/l unless specified other)	Number of samples	Comment
Influent BOD5	159 (WQM)	19,300 (WQM)	3,497 (WQM)	?	440 – 78,600 mg/l per EPA Raw Septage Table 2-2.
Influent TSS	1,850 (WQM)	34,900 (WQM)	12,077 (WQM)	?	310 – 93,378 mg/l per EPA Raw Septage Table 2-2.
pH	7.1 SU (NPDES?) 6.7 SU (WQM) 6.3 SU	8.1 SU NPDES? 8.1 SU (WQM) 8.1 SU	7.5 mg/l No data (WQM)	36 ? 24	EPA Guidance indicates pH can range from 1.5 to 12.6 SU per EPA Raw Septage Table 2-2.
DO	3.3 7 (WQM) No data	12.4 mg/l 12 (WQM) No data	8.1 mg/l Not data	33 ? -	<b>Data not on form but in supplied tables. WWF stream.</b>
TRC	0.1 mg/l 0.1 mg/l (WQM) No data (UV)	1.1 mg/l 1.1 mg/l (WQM) No data (UV)	0.5 mg/l No data (WQM) No data (UV)	11 ? -	0 to 1.1 mg/l per eDMR data. No application data provided.
Fecal Coliform	1/100 ml 1 CFU/100 ml (WQM) 1/100 ml	16/100 ml 370 CFU/100 ml (WQM) 2000/100 ml	11/100 ml 9 CFU/100 ml 44/100 ml GEO	8 ? 24	<1 to <b>14,000</b> <b>CFU/100 ml</b> per eDMR data.
CBOD5	2 mg/l 6 (WQM) 3 mg/l (<1 lb/d)	56 mg/l 27 (WQM) 13 mg/l (3 lb/d)	9 mg/l 8 (WQM) 5 mg/l (1 lb/d)	24 9	
TSS	5 mg/l 3 (WQM) 3 mg/l (<1 lb/d)	56 mg/l 13 (WQM) 12 mg/l (5 lb/d)	10 mg/l 8 (WQM) 7 mg/l (3 lb/d)	24 9	
Ammonia-N	0.1 mg/l 0.7 mg/l (0.1 lb/d)	8.6 mg/l 7.5 mg/l (4.8 lb/d)	1.4 mg/l 2.5 mg/l (1.1 lb/d)	24 9	Ranges 3 – 116 mg/l

					per EPA Raw Septage Table 2-2.
Total N	0.6 mg/l <b>4.0 mg/l (0.6 lb/d)</b>	12.42 mg/l <b>49.9 mg/l (15.4 lb/d)</b>	4.2 mg/l <b>13.5 mg/l (4.9 lb/d)</b>	24 <b>8</b>	-
Total P	0.39 mg/l <b>0.3 mg/l (&lt;1 lb/d)</b>	4.23 mg/l <b>1.6 mg/l (0.6 lb/d)</b>	1.1 mg/l <b>0.7 mg/l (0.3 lb/d)</b>	24 <b>8</b>	15.63 mg/l in 2014 DEP sample. Ranges 20 – 210 mg/l per EPA Raw Septage Table 2-2.
Nitrate-Nitrite as N	0.02 mg/l <b>2.3 mg/l (0.2 lb/d)</b>	10.2 mg/l <b>44.5 mg/l (13.7 lb/d)</b>	1.9 mg/l <b>7.9 mg/l (2.6 lb/d)</b>	24 <b>8</b>	44.19 mg/l Nitrate-N & 0.03 mg/l Nitrite-N in 2014 DEP sample.
TDS	2.5 mg/l <b>9 mg/l (1 lb/d)</b>	631 mg/l <b>1260 mg/l (790 lb/d)</b>	293 mg/l <b>803 mg/l (291 lb/d)</b>	24 <b>9</b>	1088 mg/l in 2014 DEP sample. 177 – 1075 mg/l per eDMR data.
Total Copper	0.01 mg/l <b>0.019 mg/l (0.005 lb/d)</b>	0.05 mg/l <b>0.020 mg/l (0.018 lb/d)</b>	0.03 mg/l <b>0.019 mg/l (0.012 lb/d)</b>	3 <b>2</b>	97 ug/l in 2014 DEP sample. <b>2/14 DMR had 0.265 mg/l copper, 8/13 DMR had 0.225 mg/l copper.</b>
Total Lead	0.01 mg/l <b>0.001 mg/l (0.001 lb/d)</b>	0.05 mg/l <b>0.050 mg/l (0.013 lb/d)</b>	0.02 mg/l <b>0.025 mg/l (0.007 lb/d)</b>	3 <b>2</b>	1 ug/l in 2014 DEP sample.
Total Zinc	No data <b>0.22 mg/l (0.07 lb/d)</b>	No data <b>0.053 mg/l (0.053 lb/d)</b>	No data <b>0.038 mg/l (0.030 lb/d)</b>	No data <b>2</b>	-
Aluminum	0.2 mg/l <b>0.100 mg/l (0.025 lb/d)</b>	0.2 mg/l <b>0.100 mg/l (0.098 lb/d)</b>	0.2 mg/l <b>0.100 mg/l (0.062 lb/d)</b>	3 <b>2</b>	200 ug/l in 2014 DEP sample.
Beryllium	0.002 mg/l <b>&lt;0.0001466 mg/l (0 lb/d)</b>	0.01 mg/l <b>0.010 mg/l (0.003 lb/d)</b>	0.005 mg/l <b>0.005 mg/l (0.001 lb/d)</b>	3 <b>2</b>	1.0 ug/l in 2014 DEP sample.
Cadmium	0.001 mg/l <b>&lt;0.000067 mg/l (0 lb/d)</b>	0.01 mg/l <b>0.010 mg/l (0.003 lb/d)</b>	0.005 mg/l <b>0.005 mg/l (0.001 lb/d)</b>	3 <b>2</b>	10 ug/l in 2014 DEP sample
Chloride	-	<b>232 mg/l</b>	<b>153 mg/l</b>	<b>2</b>	-
Bromide	-	<b>&lt;0.25 mg/l</b>	<b>&lt;0.16 mg/l</b>	<b>2</b>	-

Sulfate	-	<b>64.6 mg/l</b>	<b>43.1 mg/l</b>	<b>2</b>	-
Oil & Grease	-	<b>&lt;5 mg/l</b>	<b>&lt;5 mg/l</b>	<b>2</b>	Ranges from 208 – 23,368 mg/l per EPA Raw Septage Table 2-2.

**Table 4 (NPDES Permit Application Raw Influent Data with new owner/operator data bolded)**

Constituent	Min (mg/l unless specified other)	Max (mg/l unless specified other)	Average (mg/l unless specified other)	Number of samples	Comment
BOD5	249 mg/l (87 lb/d) <b>790 mg/l</b> <b>33 lb/day</b>	9520 mg/l (4319 lb/d) <b>1170 mg/l</b> <b>789 lb/day</b>	3539 mg/l (1015 lb/d) <b>1060 mg/l</b> <b>316 lb/day</b>	24 <b>98</b>	The 98 discharges were to the “holding tank”, with no discharges to EQ Tank per Application data.
TSS	2430 mg/l 807 lb/d <b>320 mg/l</b> <b>9 lb/day</b>	26,000 mg/l 13,446 lb/d <b>540 mg/l</b> <b>331 lb/day</b>	14,230 mg/l 5,693 lb/d <b>384 mg/l</b> <b>122 lb/day</b>	10 <b>98</b>	-
TDS	<b>1140 mg/l</b> <b>62 lb/d</b>	<b>1280 mg/l</b> <b>941 lb/d</b>	<b>1239 mg/l</b> <b>372 lb/d</b>	<b>98</b>	-
Ammonia-N	<b>64 mg/l</b> <b>1.9 lb/d</b>	<b>86 mg/l</b> <b>56.5 lb/d</b>	<b>70.4 mg/l</b> <b>22.0 lb/d</b>	<b>98</b>	-
TKN	<b>240 mg/l</b> <b>7.0 lb/d</b>	<b>245 mg/l</b> <b>185.2 lb/d</b>	<b>241.5 mg/l</b> <b>74.0 lb/d</b>	<b>98</b>	-
Nitrate-Nitrite as N	<b>0.4 mg/l</b> <b>&lt;1 lb/d</b>	<b>0.4 mg/l</b> <b>0.3 lb/d</b>	<b>0.4 mg/l</b> <b>0.1 lb/d</b>	<b>98</b>	-
Total N	<b>240.4 mg/l</b> <b>7.0 lb/d</b>	<b>245.4 mg/l</b> <b>185.5 lb/d</b>	<b>241.9 mg/l</b> <b>74.1 lb/d</b>	<b>98</b>	-
Total P	<b>28.0 mg/l</b> <b>0.8 lb/d</b>	<b>40.0 mg/l</b> <b>25.7 lb/d</b>	<b>31.5 mg/l</b> <b>9.9 lb/d</b>	<b>98</b>	-

**Table 5 (Clean-up WQM Application Module 1 Data based on 2017 Sampling)**

Constituent	Monthly average (mg/l unless noted otherwise)	Max Daily (mg/l unless noted otherwise)	Minimum Daily (mg/l unless noted otherwise)	IMAX (mg/l unless noted otherwise)	NPDES Renewal Application Data** and EDMR Data (8/17 – 7/18) (mg/l unless noted otherwise) or comment
<b>Influent</b>	-	-	-	-	-
BOD5*	3,497	19,300	159	19,300	11/22/2016 NPDES Application data: 249 – 9,250 mg/l, average of 3,539 mg/l (24 samples) 87 – 4,319 lbs/day, average of 1,015 lbs/day (24 samples) 6/13/2017 NPDES Application Supplement data: 1,170 mg/l (789 lbs/day), 1 sample
TSS*	12,077	34,900	1,850	34,900	11/22/2016 NPDES Application data:

					2,330 mg/l – 26,000 mg/l, average of 14,230 mg/l 807 – 13,446 lbs/day, average of 5,693 lbs/day (10 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 540 mg/l (331 lbs/day), 1 sample
TN	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 245.4 mg/l (185.5 lbs/day), 1 sample
TP	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 40.0 mg/l (25.7 lbs/day), 1 sample
Ammonia-N	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 86.0 mg/l (56.5 lbs/day), 1 sample
TDS	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 1,280 mg/l (941 lbs/day), 1 sample
TKN	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 245.0 mg/l, 1 sample
Nitrate-Nitrite as N	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data:</u> 0.4 mg/l, 1 sample
<b>Effluent</b>	-	-	-	-	-
CBOD5	6	27	3	-	<u>11/22/2016 NPDES Application data:</u> 3 – 56 mg/l with average of 9 mg/l (24 samples)
TSS	8	13	3	-	<u>11/22/2016 NPDES Application data:</u> 5 – 27.5 mg/l with average of 10 mg/l (24 samples)
TDS	764	1,260	279	-	<u>6/13/2017 NPDES Application Supplement data:</u> 1,260 mg; max, average of 803 mg/l (9 samples)
Ammonia-N	3.0	9.5	0.5	-	<u>11/22/2016 NPDES Application data:</u> 0.1 – 8.6 mg/l with average of 1.4 mg/l (24 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 7.5 mg/l max; average of 2.5, 9 samples
TKN	5.9	12.7	1.6	-	<u>11/22/2016 NPDES Application data:</u> 0.1 – 3.1, with average of 2.2 mg/l (24 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 10.7 mg/l max, average of 5.6 (8 samples)
Nitrate-Nitrite as N	10.1	44.5	0.2	-	<u>11/22/2016 NPDES Application data:</u> 0.02 – 10.2, with average of 1.9 mg/l (24 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 44.5 mg/l max, average of 7.8 mg/l (8 samples)
TN	16.0	52.3	2.2	-	<u>11/22/2016 NPDES Application data:</u> 0.6 – 12.42 mg/l with average of 4.2 mg/l (24 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 49.9 mg/l max, average of 13.5 mg/l average (8 samples)
TP	1.1	3.0	0.3	-	<u>11/22/2016 NPDES Application data:</u> 0.39 – 4.23 mg/l, with average of 1.1 (24 samples) <u>6/13/2017 NPDES Application Supplement data:</u> 1.6 mg/l max, average of 0.7 mg/l (8 samples)
pH	-	8.1 SU	6.7 SU	-	<u>11/22/2016 NPDES Application data:</u> 6.3 – 8.1 SU (24 samples)
DO	-	12	7	-	-
TRC	0.5	1.1	0.1	-	<u>11/22/2016 NPDES Application data:</u> No data
Fecal Coliform	9	370	1	-	<u>11/22/2016 NPDES Application data:</u> 1 – 2000/100 ml with average of 44/100 ml (24 samples)
Aluminum	<0.001	<0.001	<0.001	-	<u>11/22/2016 NPDES Application data:</u> 0.2 mg/l (3 samples)
Beryllium	<0.006	<0.01	<0.001	-	<u>11/22/2016 NPDES Application data:</u> 0.001 – 0.01 with average of 0.2 (3 samples)

Cadmium	<0.006	<0.01	<0.001	-	<u>11/22/2016 NPDES Application data: 0.001 – 0.01, with average of 0.03 (3 samples)</u>
Copper	0.029	0.039	0.020	-	<u>11/22/2016 NPDES Application data: 0.01 – 0.05 with average of 0.03 (3 samples)</u> <u>6/13/2017 NPDES Application Supplement data: 0.0195 mg/l max, average of 0.019 (2 samples)</u>
Lead	<0.026	<0.05	<0.001	-	<u>11/22/2016 NPDES Application data: 0.01 – 0.05, average of 0.02 (3 samples)</u> <u>6/13/2017 NPDES Application Supplement data: &lt;0.050 mg/l max, average of 0.025 mg/l (2 samples)</u>
Chlorides	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data: 232 mg/l max, average of 153 mg/l (2 samples)</u>
Bromide	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data: &lt;.25 mg/l, average of &lt;0.16 mg/l (2 samples)</u>
Sulfate	-	-	-	-	<u>6/13/2017 NPDES Application Supplement data: 64.5 mg/l max, average of 43.1 mg/l (2 samples)</u>

\*Unclear if this includes the solids fraction of the composited truck grab samples.

\*\*Farr Engineering did 11/22/2016 NPDES Permit Renewal Application. Gannett Fleming did the NPDES Permit Renewal Supplemental Data. Doetsch & Pitingaro provided the Clean-up WQM Application data (based on 2017 sampling data). EDMR presumably inputted by contract operators (JCO).

**Communications Log for NPDES Renewal/Transfer Application(s):** This log does not include separate Part II WQM permit application-related discussions or CO&A enforcement/legal discussions.

**11/27/2016:** NPDES renewal application received.

**1/20/2017:** NPDES Permit Transfer Application received (WQM permit transfer request split off for separate processing later).

**1/23/2017:** NPDES Application Incompleteness Letter on the NPDES Permit Renewal application to previous owner/operator (copying new owner/operator).

**2/28/2017:** Meeting with applicant (which noted need for clarification of overlapping issues for NPDES/WQM Permit Transfer Application, NPDES Permit Renewal Application and Part II WQM Permit application for replacement groundwater well/lagoon liner system changes). See 3/3/2017 Berger Meeting Summary E-mail for details.

**5/26/2017:** NPDES/WQM Permit Transfer Application supplemental information received.

**5/30/2017:** Administrative Extension Letter for the existing NPDES Permit due to complete NPDES/WQM Permit Transfer Application. NPDES Permit Renewal Application merged into NPDES/WQM Permit Transfer Application as noted in letter and previous DEP correspondence.

**6/13/2017:** NPDES Permit Renewal Supplemental information received.

**6/14/2017:** Revised DRBC Docket (for new owner/operator) issued by DRBC.

**6/20/2017:** DEP (Berger) E-mail asking for DRBC copy of revised application to be sent directly to DRBC, plus clarification if any additional information/revision was forthcoming, plus question whether they were going to propose changing the existing treatment process (omission of UV disinfection from process description plus other units). E-mail noted DEP waiting for Part II WQM Permit Application information (replacement groundwater well; proposed lagoon liner system changes).

**7/3/2017:** Gannett Fleming E-mail with narrative response to 5/30/2017 DEP Letter and status of DRBC notification.

**7/17/2017:** DEP (Amy Bellanca) E-mail noting the Department still expected a revised WQM Permit application for a replacement Groundwater Monitoring Well. **NOTE:** This WQM permit application is outside the scope of the existing WQM permit being transferred, and will be handled separately.

**7/17/2017:** Tam Enterprises E-mail indicated they were abandoning a WQM Permitted GW well (covered under WQM permit being transferred).

**NOTE:** Due to CO&A negotiations, separate WQM Permit Applications (groundwater well replacement and "clean-up" WQM permit to document current conditions), and DRBC indications that the new draft DRBC Docket would contain more stringent permit limits, the NPDES Permit Renewal/Transfer Application was put on-hold.

**10/5/2018:** Consent Order & Agreement

**11/6/2018:** WQM Permit No. 5290406-T2 issued (separated from NPDES Permit Transfer action). Cover letter noted that issuance of Draft NPDES Permit Renewal/Transfer was awaiting Draft DRBC Docket for rerating/site changes due to expected new DRBC permit limits. Cover letter also clarified existing Administratively Extended NPDES permit requirements (NPDES Permit referenced in Standard Conditions).

**11/6/2018:** WQM Permit No. 5218401 (replacement lagoon groundwater monitoring well) issued.

**11/6/2018:** WQM Permit No. 5217406 ("clean-up WQM permit to document existing conditions) issued.

**1/7/2019:** Receipt of 1/2/2019 WQM Permit Nos. 5290406-T2 construction certification (installation/calibration of effluent flow proportional 24-hour composite sampler) and 5218401 (replacement groundwater monitoring well 3R)

**5/14/2019:** WQM Permit No. 5219402 WQM Permit Application Incompleteness Letter (DRBC Docket requirement-related).

**7/26/2019:** 7/16/2019 DRBC Draft Docket for rerated/modified facility received.