pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0021695**
Facility Type	**Municipal**	APS ID	**274892**
Major / Minor	**Minor**	Authorization ID	**1405433**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Orbisonia & Rockhill Borough Joint Municipal Authority Huntingdon County**	Facility Name	**Orbisonia Rockhill STP**
Applicant Address	843 Elliott Street, PO Box 346	Facility Address	Croghan Pike/Us 522
	Orbisonia, PA 17243-0346		Orbisonia, PA 17243-0346
Applicant Contact	Sandra Snyder-Shoop	Facility Contact	Sandra Snyder-Shoop
Applicant Phone	(814) 447-5414	Facility Phone	(814) 447-5414
Client ID	34741	Site ID	252484
Ch 94 Load Status	Projected Hydraulic Overload	Municipality	Orbisonia Borough
Connection Status	No Exceptions Allowed	County	Huntingdon
Date Application Received	August 4, 2022	EPA Waived?	Yes
Date Application Accepted	August 5, 2022	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Skelly & Loy, Inc., on behalf of the Orbisonia & Rockhill Joint Municipal Authority (ORJMA), has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of the NPDES permit. The permit was reissued on January 19, 2018 and became effective on February 1, 2018. The permit will expire on January 31, 2023.

This facility receives 57% of its flow from Orbisonia Borough, 42% from Rockhill Borough, and 1% from Cromwell Township. There are no industrial contributors. The facility has average annual design flow and hydraulic design capacity of 0.183 MGD. The organic design capacity is 327.0 lbs BOD_5/day.

The WQM Part II permit No. 3195402 amendments were issued on June 10, 2009 & September 26, 2017.

Sludge use and disposal description and location(s): N/A due to dispose of at on-site reed beds and solids disposed to landfill.

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the proposed permit. Corrected NH_3-N average monthly limit from 19.0 lbs/day to 18.0 lbs/day.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	December 9, 2022
X		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	January 23, 2023

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.183
Latitude	40º 14' 45.93"	Longitude	-77º 53' 53.52"
Quad Name	Orbisonia	Quad Code	1722
Wastewater Description:	Sewage Effluent		
Receiving Waters	Blacklog Creek (CWF)	Stream Code	12797
NHD Com ID	66211533	RMI	1.37 miles
Drainage Area	66.7 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	See comments below
Elevation (ft)	612	Slope (ft/ft)	
Watershed No.	12-C	Chapter 93 Class.	CWF & MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Mifflintown Borough Municipal Authority Juniata County		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	37.26 miles	Distance from Outfall (mi)	Approximate 38.0 miles

Changes Since Last Permit Issuance: none

Drainage Area
The discharges are to Blacklog Creek at RMI 1.37 miles. A drainage area upstream of the discharge is estimated to be 66.7 mi.^{2}, according to USGS PA StreamStats available at: https://streamstats.usgs.gov/ss/.

Streamflow
Streamflow data was collected from the nearest upstream USGS stream gage 01564500 located in Aughwick Creek Three Springs, PA. Q_{7-10} values at this gage are 5.81 cfs respectively for the reporting. The drainage area was found to be 172 mi.^{2}. These values were obtained from the latest USGS streamflow report. The drainage area at DP was found to be 66.7 mi.^{2} from USGS StreamStats.

Q_{7-10} runoff rate = 5.81 cfs/ 172 mi.^{2} = 0.03 cfs/mi.^{2}
Q_{7-10} = 0.03 cfs/mi.^{2} * 66.7 mi.^{2} = 2.00 cfs

Blacklog Creek
25 Pa. Code § 93.9n classifies Blacklog Creek as Cold Water & Migratory Fishes (CWF & MF) surface water. Based on the 2022 Integrated Report, Blacklog Creek, assessment unit ID 20525, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

PWS Intake
The nearest downstream public water supply intake is the Mifflintown Borough Municipal Authority Juniata County on Juniata River. It is approximately 38.0 miles downstream of the discharge. Due to the distance, dilution, and effluent limits the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Orbisonia/Rockhill Municipal Authority - Rockhill STP				
WQM Permit No.	**Issuance Date**			
3195402 A-1	April 6, 2017			
3195402	June 10, 2009			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Contact Stabilization	Chlorine With Dechlorination	0.183
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.183	327	Projected Hydraulic Overload		Other WWTP

Changes Since Last Permit Issuance: none

Initially the treatment plant served Orbisonia and Rockhill Boroughs. A portion of Cromwell Township and three wastewater treatment plants owned and operated by Southern Huntingdon school district were added to the treatment plant during the last renewal. The application indicated there is no industrial or commercial contributor to this treatment plant. However, there are convenience store average wastewater flow of 0.0011 MGD & retirement home average wastewater flow of 0.0076 MGD.

The treatment facility is a double ditch oxidation secondary treatment with the following train.

Influent passes through a screen to the oxidation ditches if inflow is less than the capacity of the ditches. If flow is more than the oxidation ditch handling capacities, the influent flow is diverted to equalization tanks. After treatment in the ditches, the flow is disinfected and discharged to Blacklog Creek through Outfall 001. The sludge is directed to the sludge holding tank, which is then dewatered, and solids are sent to existing reed beds on site.

The system has the following treatment units:

- One bar screen, one fine screen
- Two Equalization tanks
- Two oxidation ditches
- Proposed double train chlorine contact tanks with dechlorination
- One sludge holding tank
- Four reed beds

The chemicals used sodium hypochlorite for disinfection and sodium bisulfate for dechlorination.

Compliance History	
Summary of DMRs:	The DMRs reported from November 1, 2021 to October 31, 2022 are summarized in the Table below (Pages # 6, 7, & 8).
Summary of Inspections:	10/18/2022: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. No violation identified during inspection. Recommendations were kept flow meter calibration records on site and available for inspection, assure the influent sample is kept at about 6 ^{o}C during the entire 24-hour composite period, and place a NIST traceable thermometer in sample storage refrigerator. The effluent was clear, and all field test results were within the permit limits. 4/27/2022: Mr. Clark, DEP's WQS, conducted a follow-up inspection. No violations identified during inspection. The treatment plant effluent appeared clear with fine solids. All field test results were within the permit limits. The west side oxidation ditch still has an abundance of thick brown foam on the surface. Composite sample dates and times were recorded on the laboratory chain of custody forms. A review of DMRs shows that influent supplementals forms were now included with the monthly reports and a Chesapeake Bay Supplemental Spreadsheet was submitted with the 2020-2021 annual DMR. 8/10/2021: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. There were violations identified during inspection. Recommendations were submit an influent / Process control supplemental form with monthly DMRs, attach a Chesapeake Bay Annual Spreadsheet to the 2019-2020 report and future quarterly and annual DMRs, be sure to keep effluent and influent samples on ice during the entire 24 hours of compositing, record composite sample on/off times and date in daily log book or bench sheet, check electrical connection to influent sampler to assure unit will not turn off during sampling, and operate scum trough often as possible. Effluent was clear and field test results were within the permit limits. 2/26/2020: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. No violation identified during inspection. Recommendations were be sure to keep influent samples on ice while compositing, continue with repair of air lines in EQ tank, adjust temperature in effluent compositor, add more details in maintenance and repair log books and print legibly, record composite sample on and off times in daily log book, attach a Chesapeake Bay Annual Spreadsheet to the quarterly eDMRs, and train all employees on use of SCADA system.
Other Comments:	There are three open violations against permittee.

Other Comments:

The table below summarizes the influent/effluent testing results submitted along with the application.

Influent Testing Results

Parameter	Min/Max Value	Average Value
BOD_5 (mg/L)	424 mg/L	102.1 mg/L
BOD_5 (lbs/day)	lbs/day	lbs/day
TSS (mg/L)	444 mg/L	82.5 mg/L
TSS (lbs/day)	lbs/day	lbs/day
TN (mg/L)	21.23 mg/L	21.23 mg/L
TN (lbs/day)	lbs/day	lbs/day
TP (mg/L)	3.23 mg/L	3.23 mg/L
TP (lbs/day)	lbs/day	lbs/day
NH_3-N (mg/L)	19.0 mg/L	19.0 mg/L
NH_3-N (lbs/day)	lbs/day	lbs/day
TDS (mg/L)	1,990 mg/L	1,990 mg/L
TDS (lbs/day)	lbs/day	193 lbs/day
TKN	21.18 mg/L	21.18 mg/L
NO_2-N + NO_3-N	0.05 mg/L	0.05 mg/L
Fecal Coliform	3255000No./100mL	3255000No./100mL

Effluent Testing Results

Parameter	Min/Max Value	Average Value
pH (minimum)	6.8 S.U.	
pH (maximum)	7.9 S.U.	
D.O (minimum)	5.0 mg/L	6.2 mg/L
TRC	0.45 mg/L	0.02 mg/L
Fecal Coliform	9678 No./100mL	37 No./100mL
$CBOD_5$	38.9 mg/L	7.7 mg/L
TSS	204 mg/L	14.7 mg/L
NH_3-N	21.4 mg/L	3.2 mg/L
TN	17.55 mg/L	5.70 mg/L
TP	5.08 mg/L	3.13 mg/L
Temp	63.1 F	63.1 F
TKN	16.35 mg/L	2.49 mg/L
NO_2-N + NO_3-N	6.56 mg/L	3.3 mg/L
TDS	340 mg/L	340 mg/L
Chloride	47.0 mg/L	47.0 mg/L
Bromide	< 0.036 mg/L	< 0.036 mg/L
Sulfate	47.8 mg/L	47.8 mg/L
Oil and Grease	< 1.62 mg/L	< 1.62 mg/L
Total Copper	0.0252 mg/L	0.0134 mg/L
Total Lead	< 0.00143 mg/L	< 0.00143 mg/L
Total Zinc	0.0213 mg/L	0.0213 mg/L

Compliance History

DMR Data for Outfall 001 (from November 1, 2021 to October 31, 2022)

Parameter	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21
Flow (MGD) Average Monthly	0.097	0.094	0.092	0.116	0.122	0.194	0.138	0.127	0.172	0.119	0.098	0.107
Flow (MGD) Daily Maximum	0.17	0.188	0.135	0.833	0.279	0.9	0.262	0.173	0.419	0.213	0.144	0.18
pH (S.U.) Minimum	7.0	7.1	7.2	6.6	7.1	7.0	7.0	7.0	7.0	7.2	6.8	7.2
pH (S.U.) Maximum	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.6	7.6	7.4	7.5
DO (mg/L) Minimum	6.1	6.0	6.0	6.0	6.4	6.2	6.6	6.2	6.8	6.2	6.8	5.4
TRC (mg/L) Average Monthly	< 0.01	0.01	< 0.01	0.02	0.01	0.02	0.02	0.01	< 0.01	< 0.02	< 0.02	< 0.02
TRC (mg/L) Instantaneous Maximum	0.03	0.02	0.02	0.06	0.02	0.07	0.1	0.04	0.03	0.03	0.09	0.03
CBOD5 (lbs/day) Average Monthly	4.0	< 5.5	< 3.2	< 3.3	3.4	< 16.9	6.6	5.9	< 7.9	< 12.1	< 5.4	< 2.5
CBOD5 (lbs/day) Weekly Average	5.3	8.6	4.9	5.4	4.1	11.0	11.2	8.3	12.9	23.5	11.6	3.5
CBOD5 (mg/L) Average Monthly	6.7	< 8.0	< 5.1	< 4.9	4.6	< 7.8	6.5	6.8	< 8.3	< 15.3	< 7.5	< 3.4
CBOD5 (mg/L) Weekly Average	9.7	13.2	7.8	6.6	6.0	13.4	12.6	9.6	11.9	30.6	17.0	5.1
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	98	79	59	80	91	71	103	87	59	148	90	99
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	191	131	110	105	163	91	162	124	66	329	158	207
BOD5 (mg/L) Raw Sewage Influent Average Monthly	149	116	95	126	131	80	100	98	64	183	111	132
TSS (lbs/day) Average Monthly	< 1.6	3.2	< 1.3	< 2.8	< 1.9	15.1	3.1	< 3.1	< 1.9	9.7	< 1.5	< 1.8
TSS (lbs/day) Raw Sewage Influent Average Monthly	53	47	49	72	60	59	56	57	53	40	47	103

TSS (lbs/day) Raw Sewage Influent Daily Maximum	137	62	76	100	83	68	77	82	87	53	64	247
TSS (lbs/day) Weekly Average	3.0	4.5	2.0	5.6	3.3	14.7	3.6	5.0	2.6	13.7	1.9	2.4
TSS (mg/L) Average Monthly	< 2.7	4.4	< 2.1	< 4.0	< 2.5	7.6	3.1	< 3.5	< 2.1	12.1	< 2.0	< 2.5
TSS (mg/L) Raw Sewage Influent Average Monthly	90	68	77	113	86	66	57	66	56	48	64	137
TSS (mg/L) Weekly Average	5.2	5.6	2.8	6.8	3.6	18.0	4.0	6.4	3.6	17.6	2.8	3.2
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 2	< 6.0	< 1	< 2	< 2	< 2	< 4	< 5	< 4	< 1	< 15
Fecal Coliform (No./100 ml) Instantaneous Maximum	2.0	4.1	1299.7	2	6.3	4.1	< 4	< 4	12.4	13.5	1	3960
Nitrate-Nitrite (mg/L) Average Quarterly		5.15			< 2.576			9.93			< 2.1	
Nitrate-Nitrite (lbs) Total Quarterly		6.01			4.97			7.70			< 1.5	
Total Nitrogen (mg/L) Average Quarterly		6.15			< 4.59			13.45			< 2.92	
Total Nitrogen (lbs) Total Quarterly		7.2			< 4.09			10.43			< 2.09	
Total Nitrogen (lbs) Total Annual		< 7.1										
Ammonia (lbs/day) Average Monthly	< 0.2	0.4	0.3	0.3	0.4	< 1	< 0.5	< 0.3	0.3	< 3.0	8	0.3
Ammonia (mg/L) Average Monthly	< 0.3	0.6	0.5	0.5	0.5	< 0.4	< 0.5	< 0.3	0.3	< 4.0	0.3	0.4
Ammonia (mg/L) Average Quarterly		5.1			0.655			< 0.500			0.342	
Ammonia (lbs) Total Quarterly		5.95			0.584			< 0.388			0.244	
Ammonia (lbs) Total Annual		< 7										
TKN (mg/L) Average Quarterly		1			2.015			3.520			0.82	
TKN (lbs) Total Quarterly		1.17			2.86			2.73			0.59	
Total Phosphorus (mg/L) Average Quarterly		2.91			2.42			5.32			3.51	

Total Phosphorus (lbs) Total Quarterly		3.4			3.43			4.13			2.5	
Total Phosphorus (lbs) Total Annual		8.3										
Total Copper (mg/L) Average Monthly	0.00526	0.0109	< 0.00386	0.00456	0.00523	0.0072	0.0166	0.0175	0.0135	0.0114	0.0155	0.0122
Total Copper (mg/L) Daily Maximum	0.00526	0.0109	< 0.00386	0.00456	0.00523	0.0072	0.0166	0.0175	0.0135	0.0114	0.0155	0.0122

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.183
Latitude 40º 14' 45.94" **Longitude** -77º 53' 53.52"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3-N calculations were based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

*	Discharge pH	7.0	(Default)
*	Discharge Temperature	20°C	(Default)
*	Stream pH	7.0	(Default)
*	Stream Temperature	20°C	(Default)
*	Background NH_3-N	0 mg/L	(Assumed since no nearby upstream WWTPs)

Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 20.03 mg/L NH_3-N as a monthly average (AML) and 40.06 mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. The existing limits of 12.0 mg/L AML & 25.0 mg/L IMAX were more stringent and will remain in the proposed permit. Recent DMRs and inspection reports indicate that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 12.0 mg/L x 0.183 MGD x 8.34 = 18.3 (18.0) lbs/day

$CBOD_5$:
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit (AML) of 25.0 mg/L, 40.0 mg/L AWL, & 50.0 mg/L IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Average monthly mass limit: 25.0 mg/L x 0.183 MGD x 8.34 = 38.16 (38.0) lbs/day
Average weekly mass limit: 40.0 mg/L x 0.183 MGD x 8.34 = 61.05 (61.0) lbs/day

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 1.9 revised March 22, 2021, and has been applied to other point source dischargers throughout the state.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 1.9 revised March 22, 2021, a routine monitoring for E. Coli will be included in the permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Total Suspended Solids (TSS):
The existing limits of 30.0 mg/L average monthly (AML), 45.0 mg/L average weekly (AWL), and 60.0 mg/L instantaneous maximum (IMAX) will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Past DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Mass based AML (lbs/day): 30.0 (mg/L) x 0.183 (MG/day) x 8.34 (lbs/MG) (L/mg) = 45.79 (45.0) lbs/day
Mass based AWL (lbs/day): 45.0 (mg/L) x 0.183 (MG/day) x 8.34 (lbs/MG) (L/mg) = 68.68 (65.0) lbs/day

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance forTRC (ID No. 391-2000-015) for developing chlorine limitations. The Guidance References Chapter 92a, Section 92a.48(b)(2) which established standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that an average monthly water quality limit of 0.5 mg/l and instantaneous maximum limit of 1.6 mg/l would be needed to prevent toxicity concerns. Minimum monitoring frequency will be 1/day.

Toxics:
The data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Pollutant testing results on the current renewal application were reviewed in comparison with DEP's Toxic Management Spreadsheet, version 1.3, March 2021, output recommends a routine monitoring requirement for Total Copper (Cu). Therefore, monitoring requirements for this parameter is remain in the proposed permit.

Total Phosphorus:
The discharge is into a stream segment of Blacklog Creek. DEP's Phosphorus guidance (1) mentions that *"(a) Phosphorus controls for waste discharges to streams shall be established, under subsection (b) whenever the Department determines that instream phosphorus, alone or in combination with other pollutants or instream conditions, contribute to impairment of designated uses as defined in Chapter 93 (relating to water quality standards). No determination made under this subsection shall constitute a final Department action with respect to any person until a specific treatment or control requirement is imposed under subsection (b)."* Since Blacklog Creek or Juniata Sub-basin doesn't have instream Phosphorus related impairment, local Phosphorus limit is not necessary now.

Total Dissolved Solids (TDS):
TDS and its associated solids including Bromide, Chloride, and Sulfate have become statewide pollutants of concern. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:

For point source discharges <u>and upon issuance or reissuance of an individual NPDES permit</u>:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

The sample result shows that effluent contains a maximum TDS concentration level of 340.0 mg/L and maximum load of 340.0 mg/L (0.183 x 340 x 8.34 = 518.91 lbs/day) and Bromide of < Detection Level. Thus, no monitoring and reporting or limit requirement is needed now. This justification will be re-evaluated in the next permit renewal.

Stormwater:
There is no known stormwater outfall associated with this facility.

Chesapeake Bay Strategy:
According to DEP's Chesapeake Bay Phase II Watershed Implementation Plan (WIP) Wastewater Supplement, this facility is considered a phase 5 non-significant sewage discharger with design flow less than 0.2 MGD but greater than 0.002 MGD. In general, DEP will issue permits for all phase 5 facilities with monitoring and reporting for Total Nitrogen (TN) and Total Phosphorus (TP) throughout the permit term at a frequency no less than annually. Furthermore, DEP's SOP No. BPNPSM-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. At this time, the Department is not requiring a total maximum annual nitrogen or phosphorus loading cap. Ammonia-Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP monitoring is already included in the existing permit and will remain in the proposed renewal.

The Chesapeake Bay parameters monitoring frequency for this facility will match that of the conventional pollutants monitoring frequency of one sample per quarter.

Anti-Degradation (93.4):
The effluent limits for this discharge have been developed to ensure that the existing in-stream water used 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.

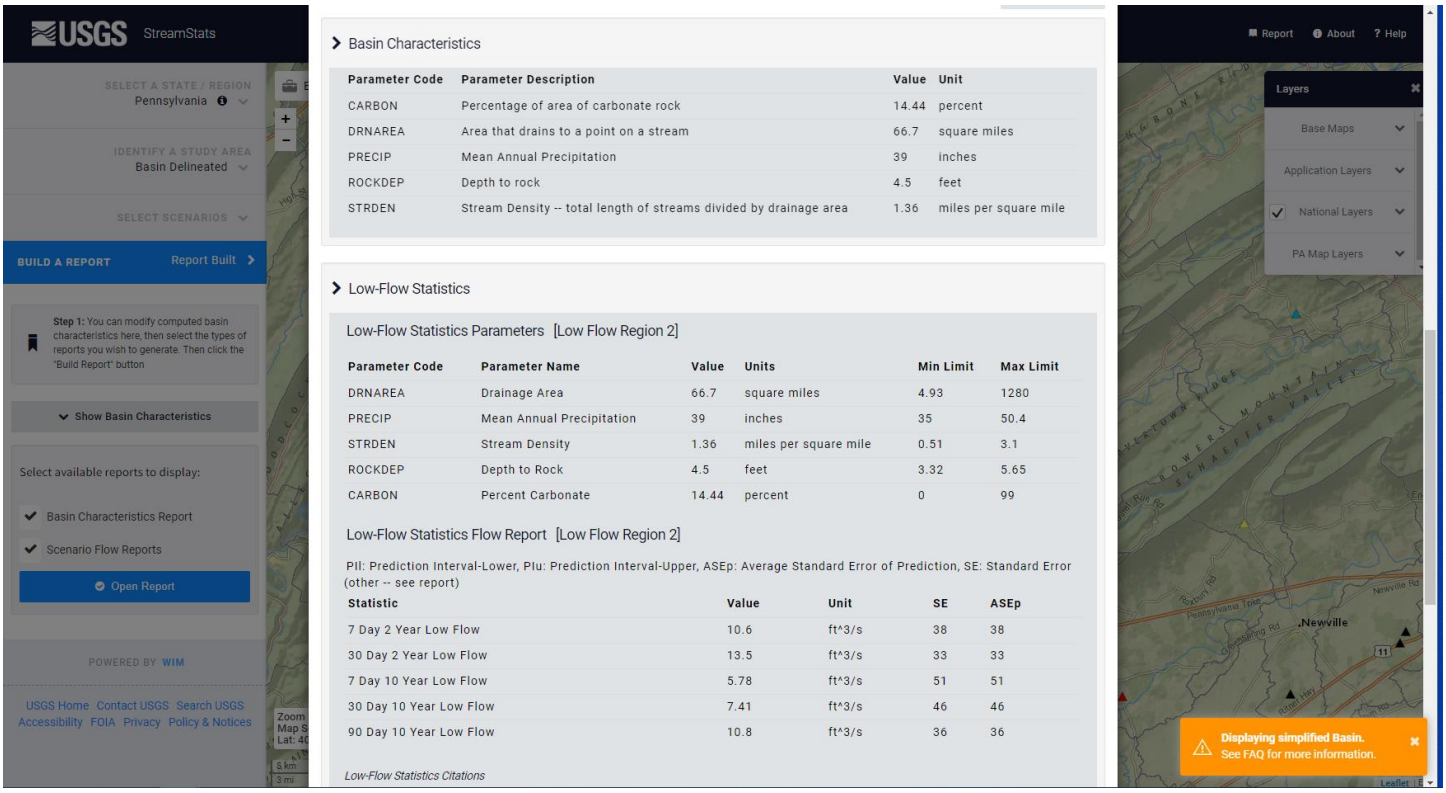
303d Listed Streams:
The discharge is not located on a 303d listed stream segment.

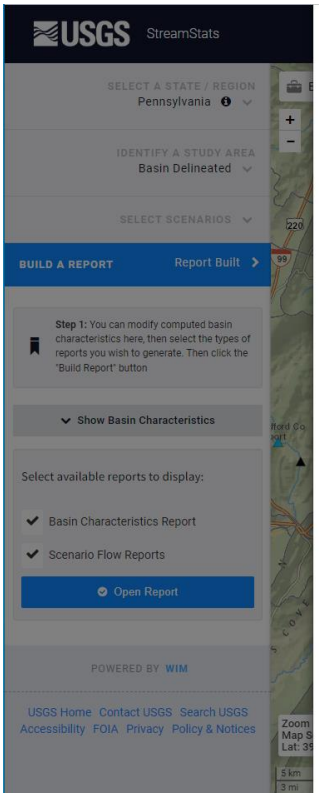
*	Discharge pH	7.0	(Default)
*	Discharge Temperature	20°C	(Default)
*	Stream pH	7.0	(Default)
*	Stream Temperature	20°C	(Default)
*	Background NH_3-N	0 mg/L	(Assumed since no nearby upstream WWTPs)

The following two nodes were used in modeling:

Node 1: Outfall 001 at Blacklog Creek (12797)
Elevation: 612 ft (USGS)
Drainage Area: 66.7 mi^2 (USGS StreamStats)
River Mile Index: 1.37 (PA DEP eMapPA)
Low Flow Yield: 0.03 cfs/mi^2
Discharge Flow: 0.183 MGD

Node 2: At the confluence with UNT Blacklog Creek (12798)
Elevation: 598 ft (USGS)
Drainage Area: 71.9 mi^2 (USGS StreamStats)
River Mile Index: 0.456 (PA DEP eMapPA)
Low Flow Yield: 0.03 cfs/mi^2
Discharge Flow: 0.00 MGD





Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	4.39	percent
DRNAREA	Area that drains to a point on a stream	172	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.15	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

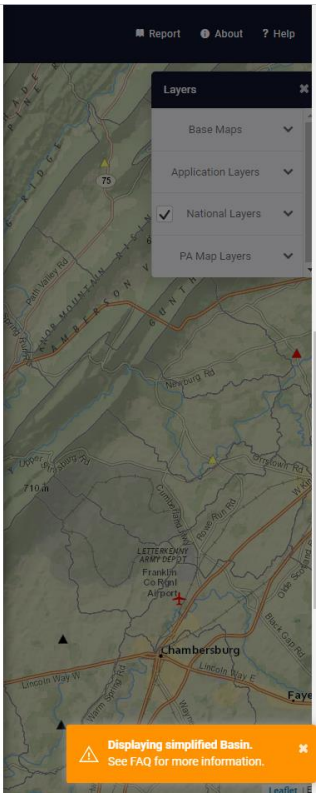
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	172	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.15	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	4.39	percent	0	99

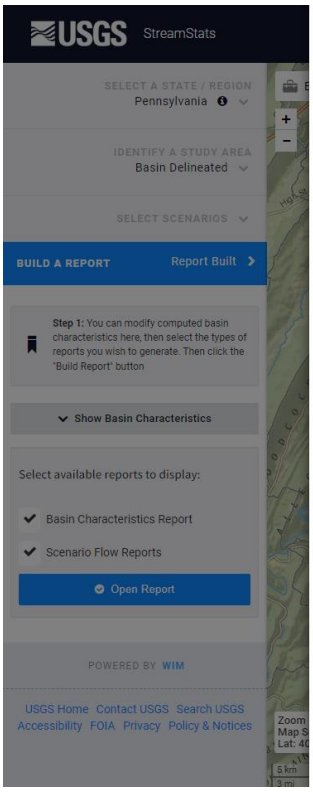
Low-Flow Statistics Flow Report [Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	12.7	ft^3/s	38	38
30 Day 2 Year Low Flow	17.6	ft^3/s	33	33
7 Day 10 Year Low Flow	5.81	ft^3/s	51	51
30 Day 10 Year Low Flow	8.27	ft^3/s	46	46
90 Day 10 Year Low Flow	13.5	ft^3/s	36	36

Low-Flow Statistics Citations





Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	14.67	percent
DRNAREA	Area that drains to a point on a stream	71.9	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.38	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

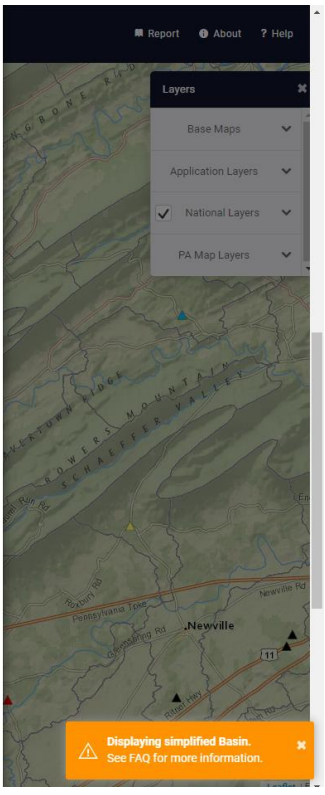
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	71.9	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.38	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	14.67	percent	0	99

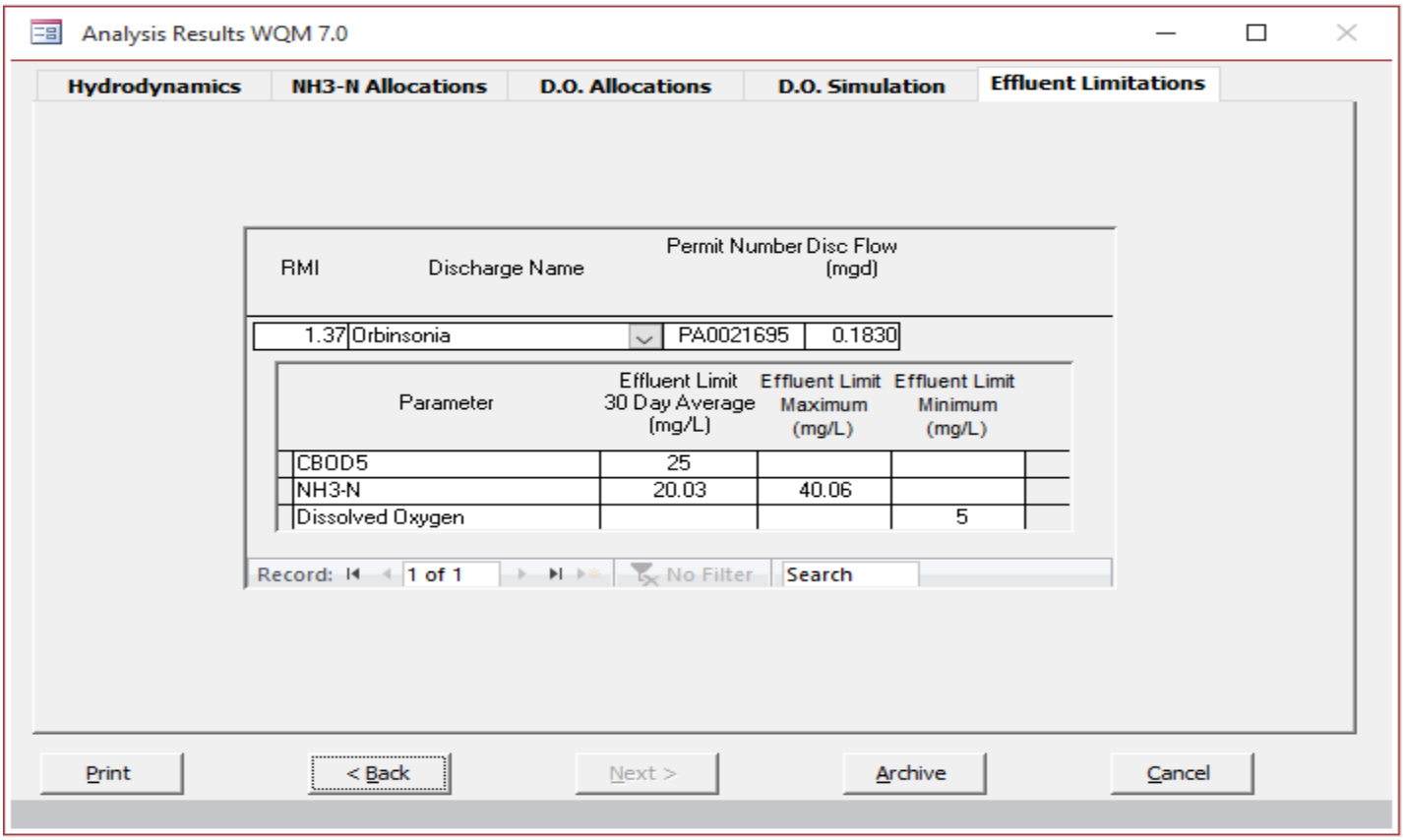
Low-Flow Statistics Flow Report [Low Flow Region 2]

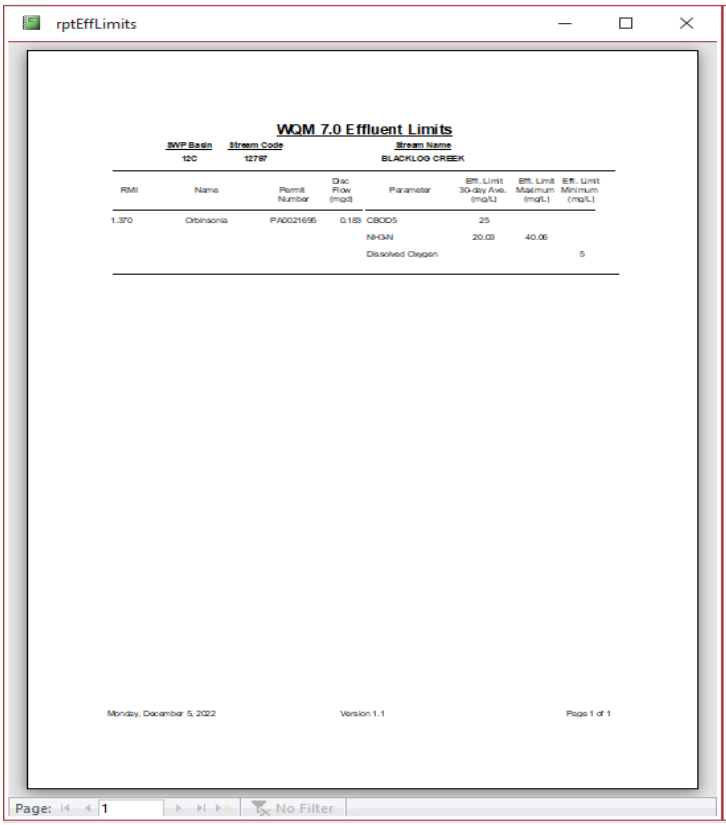
PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	11.4	ft^3/s	38	38
30 Day 2 Year Low Flow	14.5	ft^3/s	33	33
7 Day 10 Year Low Flow	6.24	ft^3/s	51	51
30 Day 10 Year Low Flow	7.99	ft^3/s	46	46
90 Day 10 Year Low Flow	11.6	ft^3/s	36	36

Low-Flow Statistics Citations




Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
1.37
Orbinsonia
PA0021695
0.1830
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
20.03
40.06
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel


rptEffLimits
WQM 7.0 Effluent Limits
SWP Basin
Stream Code
Stream Name
12C
12797
BLACKLOG CREEK
RMI
Name
Permit Number
Disc Flow (mgd)
Parameter
Eff. Limit 30-day Ave. (mg/L)
Eff. Limit Maximum (mg/L)
Eff. Limit Minimum (mg/L)
1.370
Orbinsonia
PA0021695
0.183
CBOD5
25
NH3-N
20.03
40.06
Dissolved Oxygen
5
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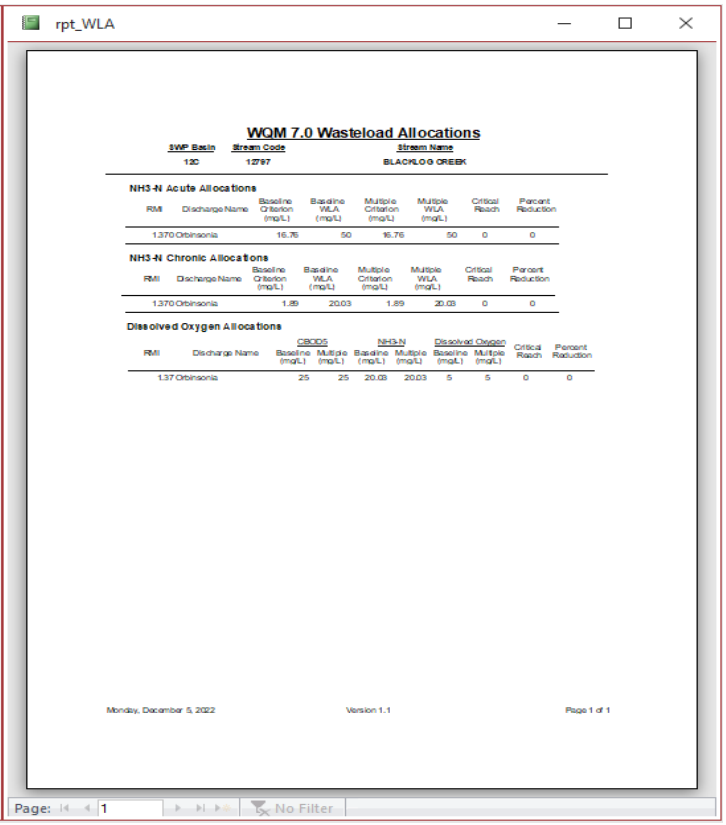
rpt_WLA
WQM 7.0 Wasteload Allocations
SWP Basin
Stream Code
Stream Name
12C
12797
BLACKLOG CREEK
NH3-N Acute Allocations
RMI
Discharge Name
Baseline Criterion (mg/L)
Baseline WLA (mg/L)
Multiple Criterion (mg/L)
Multiple WLA (mg/L)
Critical Reach
Percent Reduction
1.370
Orbinsonia
16.76
50
16.76
50
0
0
NH3-N Chronic Allocations
1.89
20.03
1.89
20.03
Dissolved Oxygen Allocations
CBOD5
NH3-N
Dissolved Oxygen
25
25
20.03
20.03
5
5
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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
12C	12797	BLACKLOG CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.370	0.183	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
28.273	0.638	44.300	0.127
Reach CBODS (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
4.85	0.838	2.48	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.841	3.489	Tsivoglou	6
Reach Travel Time (days)			
0.441			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.044	4.67	2.41	7.46
0.088	4.50	2.33	7.16
0.132	4.34	2.26	6.92
0.177	4.18	2.19	6.73
0.221	4.03	2.13	6.58
0.265	3.89	2.06	6.47
0.309	3.74	2.00	6.39
0.353	3.61	1.94	6.34
0.397	3.48	1.88	6.31
0.441	3.35	1.82	6.30

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted WD Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
12C	12797	BLACKLOG CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.370	2.00	0.00	2.00	.2831	0.00290	.638	28.27	44.3	0.13	0.441	20.00	7.00
Q1-10 Flow												
1.370	1.28	0.00	1.28	.2831	0.00290	NA	NA	NA	0.10	0.546	20.00	7.00
Q30-10 Flow												
1.370	2.72	0.00	2.72	.2831	0.00290	NA	NA	NA	0.15	0.378	20.00	7.00

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
12C	12797	BLACKLOG CREEK	1.370	612.00	66.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.030	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Orbisonia	PA0021695	0.1830	0.1830	0.1830	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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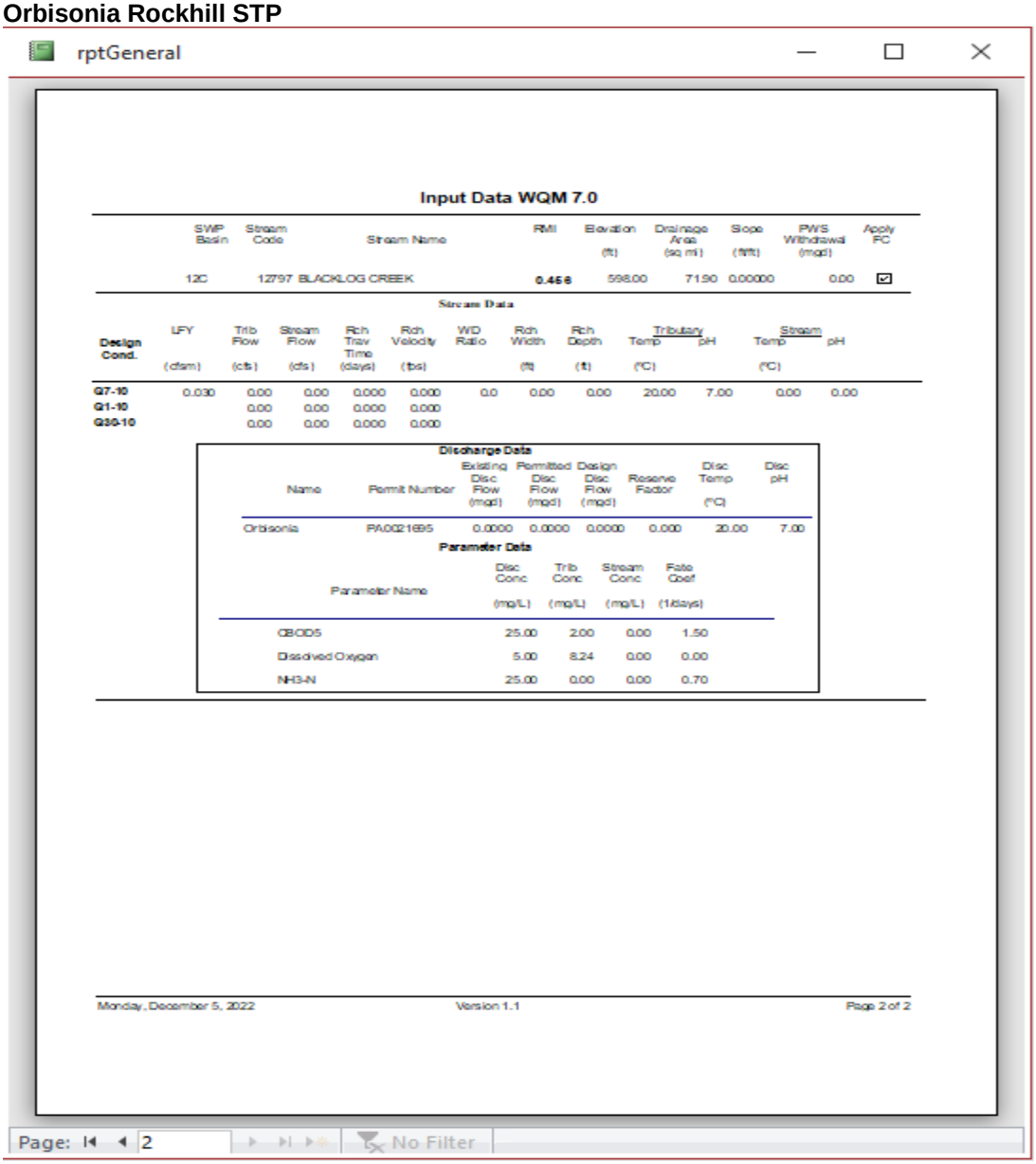

rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
12C	12797	BLACKLOG CREEK	0.456	598.00	71.90	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.030	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Orbisonia	PA0021695	0.0000	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

2	= Q stream (cfs)	0.5	= CV Daily
0.183	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= 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 = 2.273	1.3.2.iii	WLA cfc = 2.208
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.847	5.1d	LTA_cfc = 1.284

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Toxic Data:

Facility's design flow: 0.183 MGD

pH: 7.35 S.U. (average from Max/Min Data from renewal application, page 6, submitted in August 2022)

Hardness: 100 mg/l (Default)

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Orbisonia & Rockhill JMA** NPDES Permit No.: **PA0021695** Outfall No.: **001**

Evaluation Type: **Custom / Additives** Wastewater Description: **Blacklog Creek**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.183	100	7.35						

Discharge Pollutant	Units	Max Discharge Conc		0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
				Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Total Copper	mg/L		0.0252									
Total Lead	mg/L	<	0.00143									
Total Zinc	mg/L		0.0213									

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Orbisonia & Rockhill JMA, NPDES Permit No. PA0021695, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Blacklog Creek** No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	012797	1.37	612	66.7			Yes
End of Reach 1	012797	0.456	598	71.9			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.37	0.03										100	7		
End of Reach 1	0.456	0.03													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.37														
End of Reach 1	0.456														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Orbisonia & Rockhill JMA, NPDES Permit No. PA0021695, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All | ○ Inputs | ○ Results | ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.700 Analysis Hardness (mg/l): 100 Analysis pH: 7.04

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	83.3	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	486	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	713	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 30.620 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.03

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	75.3	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	25.7	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	967	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 30.620 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 11.623 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	

Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

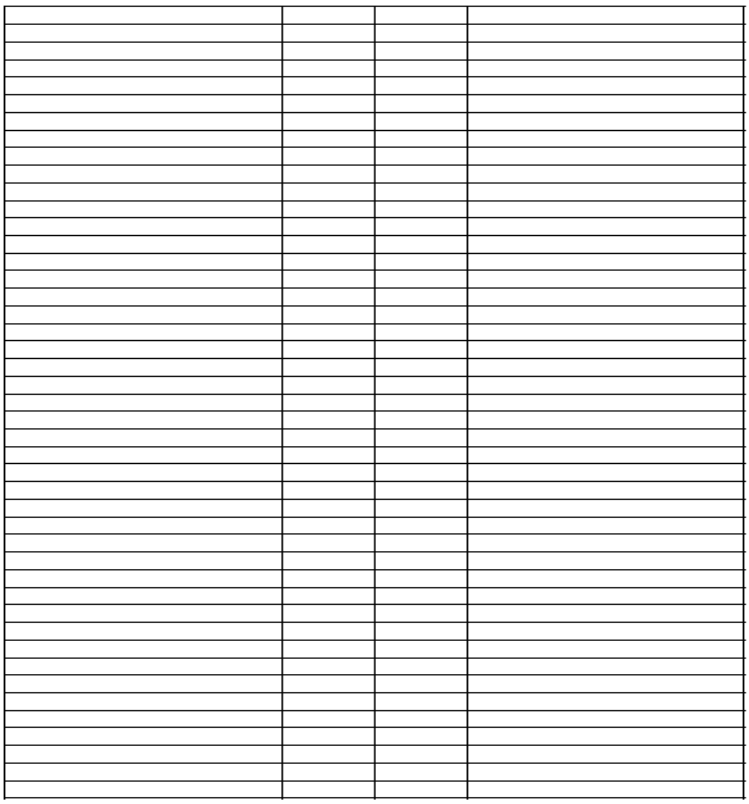
No. Samples/Month: 4

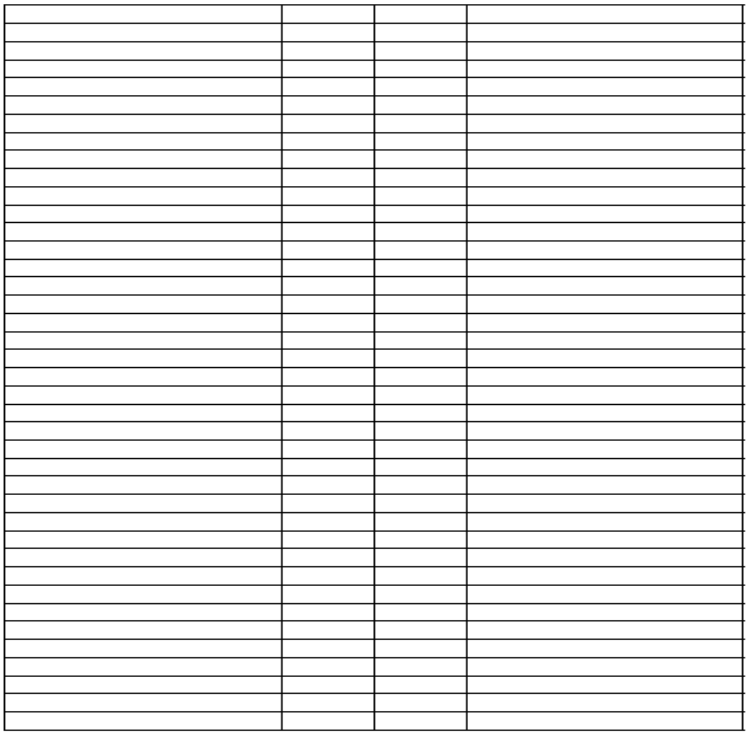
Pollutants	Mass Limits AML (lbs/day)	Mass Limits MDL (lbs/day)	Concentration Limits AML	Concentration Limits MDL	Concentration Limits IMAX	Concentration Limits Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	mg/L	0.053	AFC	Discharge Conc > 10% WQBEL (no RP)

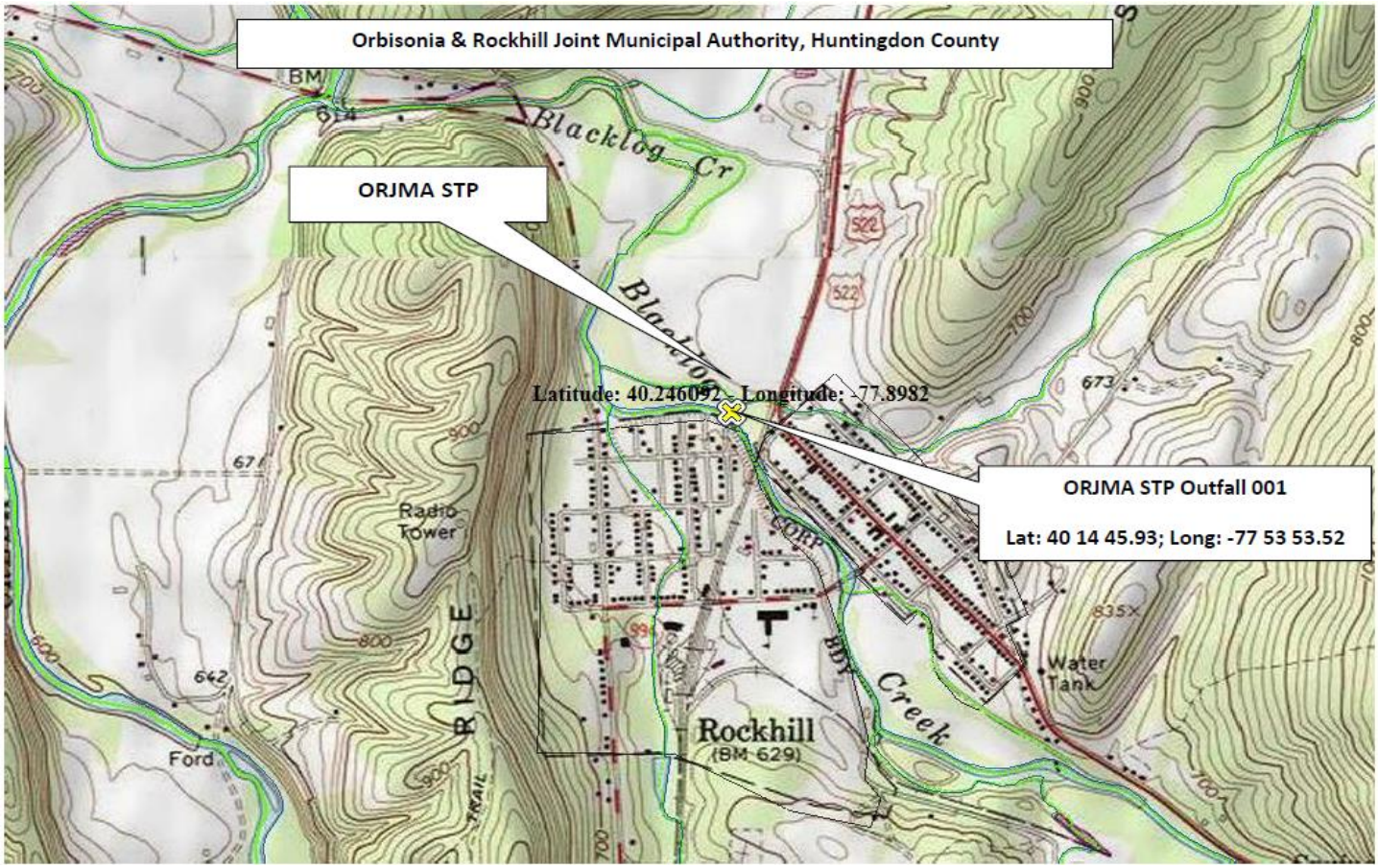
☑ ***Other Pollutants without Limits or Monitoring***

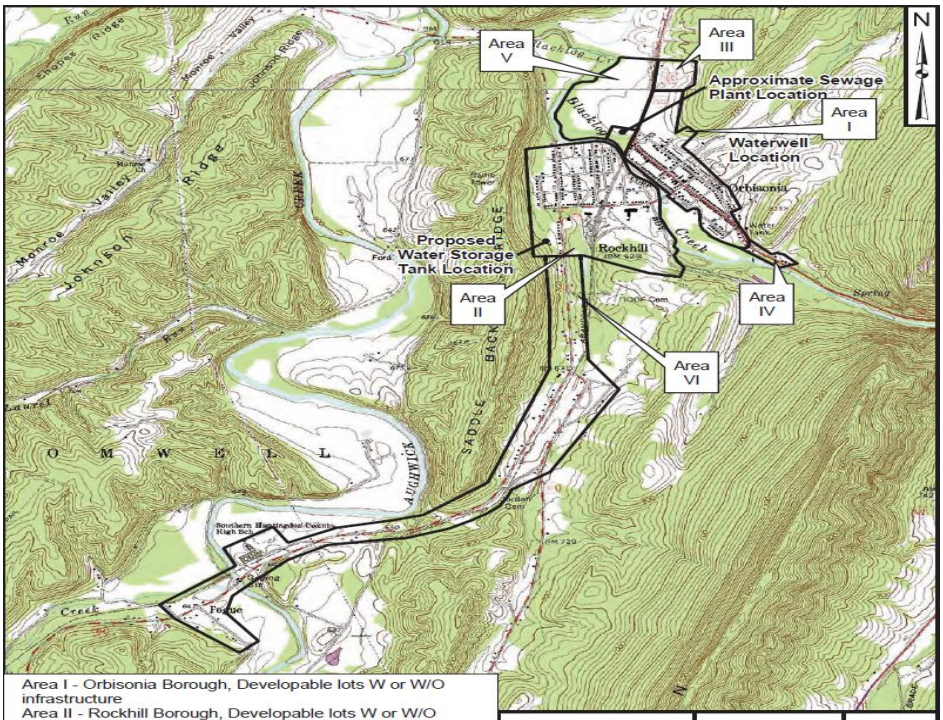
The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Lead	25.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	457	µg/L	Discharge Conc ≤ 10% WQBEL









Area I - Orbisonia Borough, Developable lots W or W/O infrastructure
Area II - Rockhill Borough, Developable lots W or W/O infrastructure
Area III - Cromwell Township, Remainder of Sandy Ridge Development W/O infrastructure
Area IV - Cromwell Township, Rt. 522 South area W/ or W/O Sewage problems
Area V - Cromwell Township, former Bollinger property W/O infrastructure
Area VI - Pine Tree Village and Pogue

Source: U.S.G.S. 7.5' Quadrangle - Butler Knob and Orbisonia, Pennsylvania

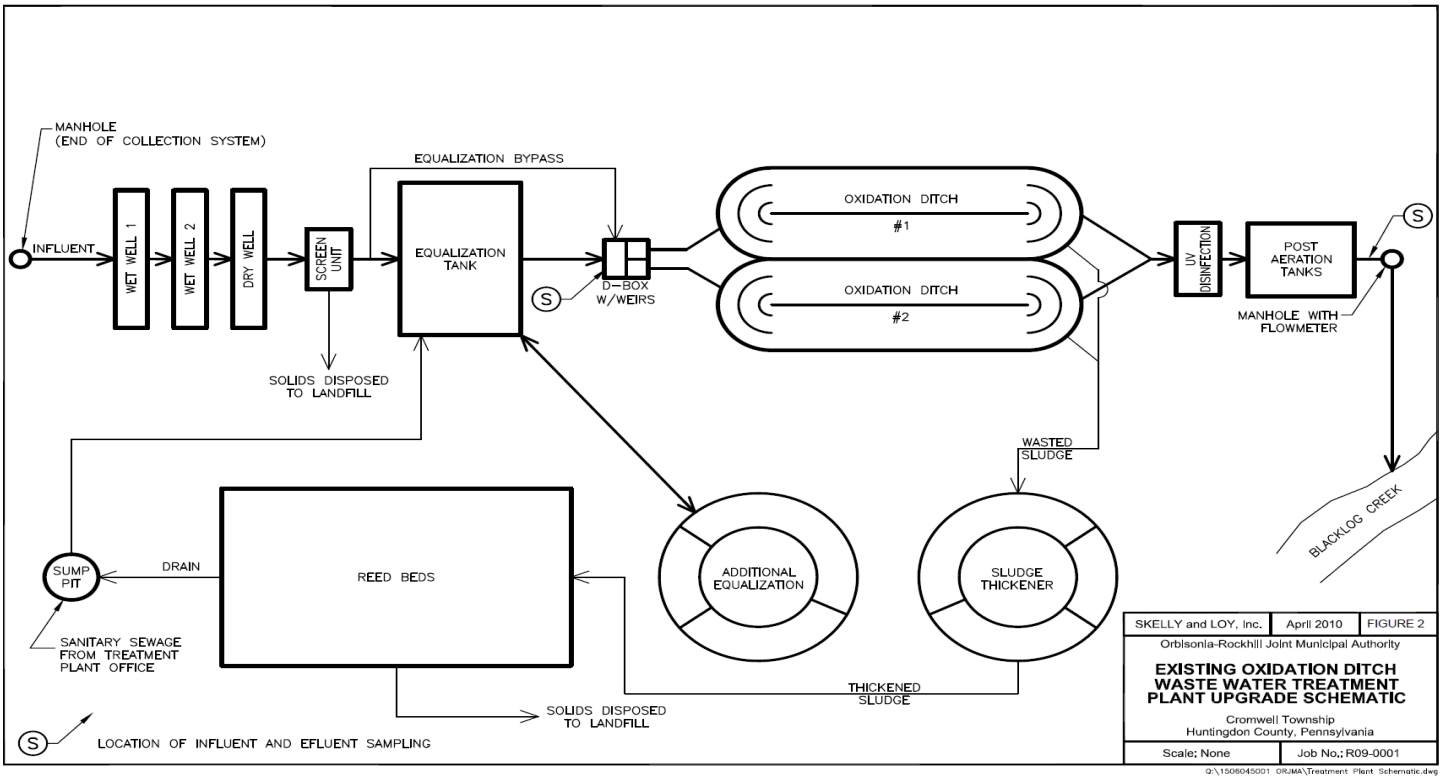
SKELLY and LOY, Inc.	April 2010	Figure 1

Orbisonia-Rockhill Joint Municipal Authority

EXISTING AND PROPOSED SERVICE AREAS

Orbisonia and Rockhill Boroughs, and Cromwell Township
Huntingdon County, Pennsylvania

Job No: R09-0001	Scale: 1" = 2500'


MANHOLE
(END OF COLLECTION SYSTEM)
INFLUENT
WET WELL 1
WET WELL 2
DRY WELL
SCREEN UNIT
SOLIDS DISPOSED TO LANDFILL
EQUALIZATION BYPASS
EQUALIZATION TANK
S
D-BOX W/WEIRS
OXIDATION DITCH #1
OXIDATION DITCH #2
UV DISINFECTION
POST AERATION TANKS
S
MANHOLE WITH FLOWMETER
WASTED SLUDGE
BLACKLOG CREEK
SUMP PIT
DRAIN
REED BEDS
ADDITIONAL EQUALIZATION
SLUDGE THICKENER
SANITARY SEWAGE FROM TREATMENT PLANT OFFICE
THICKENED SLUDGE
SOLIDS DISPOSED TO LANDFILL
S
LOCATION OF INFLUENT AND EFLUENT SAMPLING
SKELLY and LOY, Inc.
April 2010
FIGURE 2
Orbisonia-Rockhill Joint Municipal Authority
EXISTING OXIDATION DITCH
WASTE WATER TREATMENT
PLANT UPGRADE SCHEMATIC
Cromwell Township
Huntingdon County, Pennsylvania
Scale: None
Job No.: R09-0001
Q:\1506045001 ORJMA\Treatment Plant Schematic.dwg

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	38.0	61.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	45.0	65.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Ammonia	19	XXX	XXX	12.0	XXX	25	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/month	24-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

Chesapeake Bay Requirement.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report Total Qrtly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Total Qrtly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite

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	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	38.0	61.0 Wkly Avg	XXX	25.0	40.0	50.0	1/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	45.0	65.0 Wkly Avg.	XXX	30.0	45.0	60.0	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia	18.0	XXX	XXX	12.0	XXX	25.0	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report Total Qrtly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Total Qrtly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report Total Qrtly	Report	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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: No. BCW-PMT-033, version 1.9, revised March 22, 2021
☐	Other: