pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254444**
Facility Type	**Non-Municipal**	APS ID	**1027967**
Major / Minor	**Minor**	Authorization ID	**1335257**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Consol PA Coal Company, LLC**	Facility Name	**Enlow Fork Mine Oak Spring Slope & Supply Yard STP**
Applicant Address	1000 Consol Energy Drive	Facility Address	Oak Spring Road
	Canonsburg, PA 15317		East Finley, PA 15323
Applicant Contact	Jaculyn Duke	Facility Contact	Brian Benson
Applicant Phone	(724) 416-8299	Facility Phone	(724) 416-8271
Client ID	259457	Site ID	744867
Ch 94 Load Status	Not Overloaded	Municipality	East Finley Township
Connection Status	No Limitations	County	Washington County
Date Application Received	November 25, 2020	EPA Waived?	Yes
Date Application Accepted	December 7, 2020	If No, Reason	-

Purpose of Application: Renewal of a minor NPDES Permit for an existing discharge of treated sanitary wastewater.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into sewers
B. Right of way
C. Solids handling
D. Public Sewer Availability
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management
III. TRC Effluent Limitations Below Quantitation Limits

There are 11 open violations in efacts associated with the subject Client ID (259457) as of 4/21/2021 (see Attachment 1).

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	4/21/2021
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	4/22/2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0028
Latitude	40º 2' 32.00"	Longitude	-80º 22' 35.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Rocky Run (TSF)	Stream Code	N/A
NHD Com ID	73869286	RMI	N/A (1.2)
Drainage Area	0.25	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.025	Q_{7-10} Basis	calculated
Elevation (ft)	1242	Slope (ft/ft)	0.003472
Watershed No.	20-E	Chapter 93 Class.	TSF
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	-

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	PA - West Virginia State border		
PWS Waters	Enlow Fork of the Wheeling Creek	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	16.0

Sludge use and disposal description and location(s): Sludge is not used, it is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.0028 MGD of treated sewage from a non-municipal STP in East Finley Township, Washington County.

Treatment permitted under WQM Permit No. 6311401 consists of the following: Screening/comminution, equalization, aeration, clarification, chlorination/dechlorination, and sludge digestion.

1. Streamflow:

Since there are no nearby streams with gages, the default yieldrate of 0.1 cfsm was used.

Yieldrate:	0.1	cfsm	(default)
Drainage Area:	0.25	sq. mi.	(USGS StreamStats)
% of stream allocated:	100%	Basis:	No nearby discharges
Q_{7-10}:	0.025	cfs	(calculated)

2. Wasteflow:

Maximum discharge: 0.0028 MGD = 0.0054 cfs

Runoff flow period: 24 hours Basis: Used for STPs with flow equalization

There is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). In accordance with the SOP, and since this is an existing discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be implemented in this NPDES Permit.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH_3-N, $CBOD_5$, Dissolved Oxygen, Total Residual Chlorine, influent Total Suspended Solids, and influent BOD5. NH_3-N, $CBOD_5$, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency was previously set to 1/day (when discharging) as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as a daily maximum.

Basis: Application of Chapter 92a47 technology-based limits

c. Fecal Coliform

05/01 - 09/30:	200/100ml	(monthly average geometric mean)
	1,000/100ml	(instantaneous maximum)
10/01 - 04/30:	2,000/100ml	(monthly average geometric mean)
	10,000/100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/quarter.

Basis: Application of Chapter 92a.61 as recommended by the SOP.

e. Phosphorus

☐ Limit necessary due to:

☐ Discharge to lake, pond, or impoundment
☐ Discharge to stream

Basis: N/A

☒ Limit not necessary

Basis: Chapter 96.5 does not apply. However, the previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 7.3 Standard Units (S.U.)

Basis: default value used in the absence of data

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25˚C (default value used for TSF modeling)

Background NH_3-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH_3-N Summer limits: 11.9 mg/l (monthly average)
23.8 mg/l (instantaneous maximum)

Calculated NH_3-N Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 2), which are less restrictive than the previous permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the previous limits are attainable, they will be retained with this renewal.

h. $CBOD_5$

Median discharge pH to be used: 7.3 Standard Units (S.U.)

Basis: default value used in the absence of data

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25˚C (default value used for TSF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value

$CBOD_5$ Summer limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

$CBOD_5$ Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 2), which are the same as the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the summer and winter limits are technology-based, per the SOP, the year-round limit of 25.0 mg/l monthly average and 50.0 mg/l instantaneous maximum will be retained with this renewal.

i. Dissolved Oxygen (DO)

- ☐ 4.0 mg/l - minimum desired in effluent to protect all aquatic life
- ☐ 5.0 mg/l - desired in effluent for WWF or TSF
- ☒ 6.0 mg/l - desired in effluent for CWF
- ☐ 6.0 mg/l - minimum required due to discharge falling under guidance document 391-2000-014
- ☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: Since the previous Dissolved Oxygen minimum of 6.0 mg/l is attainable, it will be retained with this renewal. The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 2) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency was previously set to 1/day (when discharging) as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

j. Total Residual Chlorine (TRC)

☐ No limit necessary

Basis: N/A

☒ TRC limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above were calculated using the TRC_Calc spreadsheet (see Attachment 3). Since the previous TRC limits are attainable, they will be retained with this renewal. The measurement frequency was previously set to 1/day (when discharging) as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

k. Influent Total Suspended Solids and BOD_5

Monitoring for these two parameters will not be required since this is a non-municipal STP.

l. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was not performed in accordance with State practices for Outfall 001 since there were only sewage-related parameters sampled for this facility with the renewal application.

5. Reasonable Potential for Downstream Public Water Supply (PWS):

Nearest Downstream potable water supply (PWS): PA - West Virginia State border

Distance downstream from the point of discharge: 16.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

6. Attachment List:

Attachment 1 - Open violations in efacts for client ID

Attachment 2 - WQ Modeling Printouts

Attachment 3 - TRC_Calc Spreadsheet

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
Flow (MGD) Average Monthly	0.00035	0.00045	0.0002	0.00018	0.00006	0.00105	0.0016	0.00074	0.00183	0.0001	0.00013	0.0002
pH (S.U.) Minimum	7.0	7.0	7.0	7.0	7.0	7.2	6.5	7.0	6.5	7.0	7.0	7.3
pH (S.U.) Maximum	8.0	8.4	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.2	8.0	8.0
DO (mg/L) Minimum	7.5	7.3	7.9	7.0	7.3	7.7	7.7	7.1	7.6	7.5	7.1	8.0
TRC (mg/L) Average Monthly	0.01	< 0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.02	< 0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02
CBOD5 (mg/L) Average Monthly	7	< 8	< 5	< 5	< 3	< 9	6	7	24	< 18	10	10
CBOD5 (mg/L) Instantaneous Maximum	8	17	6	< 6	4	16	8	11	66	38	11	12
TSS (mg/L) Average Monthly	< 5	< 5	< 5	< 5	< 5	< 5	< 8	< 6	< 5	< 5	< 6	< 5
TSS (mg/L) Instantaneous Maximum	< 5	< 5	< 5	< 5.0	< 5	< 5	10	6	< 5	< 5	7	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2	< 2	< 2	< 1	< 3	< 1	< 2	< 1	< 1	< 1	< 1	< 1
Total Nitrogen (mg/L) Daily Maximum			34.6									
Ammonia (mg/L) Average Monthly	< 1.4	< 2.1	< 0.8	< 0.8	< 0.9	< 0.8	< 0.8	< 0.6	< 0.8	< 0.8	< 0.8	< 0.8
Ammonia (mg/L) Instantaneous Maximum	1.9	8.6	< 0.8	< 0.8	0.9	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Phosphorus (mg/L) Daily Maximum			1.6									

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Daily when Discharging	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	Daily when Discharging	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.04	Daily when Discharging	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	2.8	XXX	5.6	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.9	XXX	3.8	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for Total Residual Chlorine (TRC) are water quality-based on Chapter 93.7. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. Monitoring for E. Coli, Total Nitrogen, and Total Phosphorus is based on Chapter 92a.61.

Attachment 1

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER MANAGEMENT SYSTEM
OPEN VIOLATIONS BY CLIENT

Client ID: 259457
Client: All

Open Violations: 11

CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID
259457	CONSOL PA COAL CO LLC	642227	D GRAY 1	Coal	Active	Oil & Gas	059-02117	2980875	874236
259457	CONSOL PA COAL CO LLC	551609	BAILEY MINE		Active	Mine Safety	21-01	3167867	913927
259457	CONSOL PA COAL CO LLC	281083	CONSOL PA COAL CO LLC/BAILEY PREP PLT		Active	Air Quality	25-1402386-1	2964145	873727
259457	CONSOL PA COAL CO LLC	281083	CONSOL PA COAL CO LLC/BAILEY PREP PLT		Active	Air Quality	25-1402386-1	2964146	873740
259457	CONSOL PA COAL CO LLC	281083	CONSOL PA COAL CO LLC/BAILEY PREP PLT		Active	Air Quality	25-1402386-1	2964147	873743
259457	CONSOL PA COAL CO LLC	281083	CONSOL PA COAL CO LLC/BAILEY PREP PLT		Active	Air Quality	25-1402386-1	2964148	873744
259457	CONSOL PA COAL CO LLC	281083	CONSOL PA COAL CO LLC/BAILEY PREP PLT		Active	Air Quality	25-1402386-1	3101659	898533
259457	CONSOL PA COAL CO LLC	277471	BAILEY DEEP MINE	Underground	Active	MING Coal Regulatory	30841316	1586418	504391
259457	CONSOL PA COAL CO LLC	277952	ENLOW FORK MINE	Underground	Active	MING Coal Regulatory	30841317	3155110	909032
259457	CONSOL PA COAL CO LLC					Safe Drinking Water	784380	3154664	908957
259457	CONSOL PA COAL CO LLC					Oil & Gas	OGO-31846	2389500	729376

INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
PF	01/08/2020	OGA3220(A)	PLUGGING REQUIREMENTS - Failure to plug the well upon abandoning it.		OG - SWRO
PF	04/14/2021	334-A-2-IV	(iv) At least one of the equipment safety ground conductors to each component is visible for its entire length. High-voltage resistance grounded systems shall have ground wire monitors to continuously monitor the continuity of the grounding circuits. All ground wire monitors shall be designed and constructed to be failsafe.		CO
PF	11/13/2019	127.444	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements, Compliance requirements. A person may not cause or permit the operation of a source subject to this article unless the source and air cleaning devices identified in the application for the plan approval and operating permit and the plan approval issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval and operating permit issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.	JESTER, WILLIAM	SWRO
PF	11/13/2019	127.444	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements, Compliance requirements. A person may not cause or permit the operation of a source subject to this article unless the source and air cleaning devices identified in the application for the plan approval and operating permit and the plan approval issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval and operating permit issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.	JESTER, WILLIAM	SWRO
PF	11/13/2019	127.25	Construction, Modification, Reactivation and Operation of Sources, Plan Approval Requirements, Compliance requirement. Failure to Operate and maintain a source or control device in accordance with the specifications.	JESTER, WILLIAM	SWRO
PF	11/13/2019	127.25	Construction, Modification, Reactivation and Operation of Sources, Plan Approval Requirements, Compliance requirement. Failure to Operate and maintain a source or control device in accordance with the specifications.	JESTER, WILLIAM	SWRO
PF	08/19/2020	127.444	Construction, Modification, Reactivation and Operation of Sources, Operating Permit Requirements, Compliance requirements. A person may not cause or permit the operation of a source subject to this article unless the source and air cleaning devices identified in the application for the plan approval and operating permit and the plan approval issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval and operating permit issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.	JESTER, WILLIAM	SWRO
PF	12/12/2006	89.52(C)	Discharging water that does not meet water quality limits	KOVACH, KENNETH	DMO - CALIFORNIA
PF	02/24/2021	86.13	Failure to comply with the terms and conditions of the permit	KOVACH, KENNETH	DMO - GREENSBURG
Site	12/08/2020	27	DISINFECTION/DISINFECTION BYPRODUCTS MONITORING/REPORTING VIOLATION		SWRO
CInt	04/01/2015	78.88(e)	OPERATING WELLS - MECHANICAL INTEGRITY OF OPERATING WELLS - Operator failed to submit an annual report to the Department identifying the compliance status of each well with the mechanical integrity requirements for structurally sound wells in compliance with 25 Pa. Code Section 78.73(c).		CO

Attachment 2

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY RUN

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)
1.200	Consol Coal	PA0254444	0.003	CBOD5	25		
				NH3-N	11.98	23.96	
				Dissolved Oxygen			4

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
20E	32712	ROCKY RUN	**1.200**	1242.00	0.25	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	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Consol Coal	PA0254444	0.0028	0.0000	0.0000	0.000	25.00	7.30

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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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
20E	32712	ROCKY RUN	**0.000**	1130.00	0.64	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	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
		0.0000	0.0000	0.0000	0.000	0.00	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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.200	0.003	25.000	7.033
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.292	0.292	7.857	0.044
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.40	0.472	1.77	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.614	29.370	Owens	5
Reach Travel Time (days)			
1.672			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.167	4.89	1.49	7.54
0.334	4.42	1.25	7.54
0.502	4.01	1.06	7.54
0.669	3.63	0.89	7.54
0.836	3.29	0.75	7.54
1.003	2.97	0.63	7.54
1.170	2.69	0.53	7.54
1.338	2.44	0.45	7.54
1.505	2.21	0.38	7.54
1.672	2.00	0.32	7.54

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D 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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY RUN

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
1.200	Consol Coal	10.59	49.73	10.59	49.73	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.200	Consol Coal	1.35	11.98	1.35	11.98	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.20	Consol Coal	25	25	11.98	11.98	4	4	0	0

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.200	0.03	0.00	0.03	.0043	0.01768	.292	2.29	7.86	0.04	1.672	25.00	7.03
Q1-10 Flow												
1.200	0.02	0.00	0.02	.0043	0.01768	NA	NA	NA	0.04	2.053	25.00	7.05
Q30-10 Flow												
1.200	0.03	0.00	0.03	.0043	0.01768	NA	NA	NA	0.05	1.439	25.00	7.03

Attachment 3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.025	= Q stream (cfs)	0.5	= CV Daily
0.0028	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.860	1.3.2.iii	WLA cfc = 1.806
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.693	5.1d	LTA_cfc = 1.050

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)**