pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0098400**
Facility Type	**Non-Municipal**	APS ID	**839205**
Major / Minor	**Minor**	Authorization ID	**1390602**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Albert Gallatin Area School District**	Facility Name	**Albert Gallatin South Jr. High School & Friendship Hill Elementary School STP**
Applicant Address	2625 Morgantown Road	Facility Address	224 New Geneva Road
	Uniontown, PA 15401-6703		Point Marion, PA 15474
Applicant Contact	Christopher Pegg	Facility Contact	Same as applicant
Applicant Phone	724-564-7190	Facility Phone	Same as applicant
Client ID	45088	Site ID	241946
Ch 94 Load Status	Not Overloaded	Municipality	Springhill Township
Connection Status	No Limitations	County	Fayette
Date Application Received	March 1, 2022	EPA Waived?	Yes
Date Application Accepted	April 1, 2022	If No, Reason	

Purpose of Application: Application for NPDES renewal for the discharge of treated sewage.

Summary of Review

The applicant has applied for the renewal of NPDES Permit No. PA0098400. The previous permit was issued on September 17, 2017 and will expire on September 30, 2022.

WQM Permit No. 2688409, issued May 05, 1989, approved the construction of the treatment processes listed below. There are not any more recent WQM permits for this facility.

- Flow equalization tank
- Flow proportioning chamber
- Extended aeration tank
- Final clarifier
- Chlorine contact tank
- Sludge holding tank

The applicant is currently enrolled in and will continue to use eDMR.

The Act 14-PL 834 Municipal Notification was provided by the December 9, 2021 letters and no comments were received.

Below is a summary of changes made to this permit:

- E. Coli monitoring has been imposed
- Technology-based weekly average effluent limitations for $CBOD_5$ and TSS have been imposed

Approve	Deny	Signatures	Date
X		Grace Polakoski Grace Polakoski, E.I.T. / Environmental Engineering Specialist	April 27, 2022
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	June 28, 2022

Summary of Review

- All “daily while discharging” monitoring frequencies have been changed to “1/day”
- Flow monitoring has been increased to 1/week

Sludge use and disposal description and location(s): Brownsville Sewage Treatment Plant

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)	.0143
Latitude	39º 47' 9"	Longitude	-79º 54' 58"
Quad Name	Masontown	Quad Code	39079G8
Wastewater Description:	Sewage Effluent		

Receiving Waters	Georges Creek (WWF)	Stream Code	41340
NHD Com ID	99418058	RMI	0.13
Drainage Area	64.9 sq. mi.	Yield (cfs/mi^2)	0.023
Q_{7-10} Flow (cfs)	1.49	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	781PA00980	Slope (ft/ft)	
Watershed No.	19-G	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake		Dunkard Valley JT Muni Auth	
PWS Waters	Monongahela River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	1.97

Changes Since Last Permit Issuance: USGS StreamStats was used to find the Q_{7-10} flow for Georges Creek.

Treatment Facility Summary

Treatment Facility Name: Albert Gallatin South Junior High/Friendship Hill Elementary STP

WQM Permit No.	Issuance Date
2688409	05/05/89
8965-S	12/13/57

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Chlorine With Dechlorination	0.0143

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0143		Not Overloaded	Dewatering	Other WWTP

Changes Since Last Permit Issuance: N/A

Compliance History

Facility: Al Gallatin HS and Friendship STP

NPDES Permit No.: PA0098400

Compliance Review Period: 4/2017 – 4/2022

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
2610677	04/11/2017	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
789656	04/11/2017	92A.61(G)	NPDES - Failure to use a format or process required by DEP for self-monitoring results	04/20/2017

Open Violations by Client ID: No open violations for client id 45088

Enforcement Summary:

ENF ID	ENF TYPE	ENF TYPE DESC	ENF FINALSTATUS	ENF CLOSED DATE
354808	NOV	Notice of Violation	Comply/Closed	04/20/2017

DMR Violation Summary:

MONITORING END DATE	PARAMETER	STATISTICAL BASE CODE	PERMIT VALUE	SAMPLE VALUE	UNIT OF MEASURE
1/31/2022	Total Suspended Solids	Average Monthly	30	31.5	mg/L
11/30/2021	Total Suspended Solids	Average Monthly	30	44	mg/L
11/30/2021	Total Suspended Solids	Instantaneous Maximum	60	62	mg/L
10/31/2021	Total Suspended Solids	Average Monthly	30	35	mg/L
9/30/2021	Total Suspended Solids	Average Monthly	30	39	mg/L
1/31/2021	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Average Monthly	25	27.9	mg/L
1/31/2021	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Instantaneous Maximum	50	53.1	mg/L
12/31/2020	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Average Monthly	25	27.8	mg/L
12/31/2020	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Instantaneous Maximum	50	50.9	mg/L
12/31/2020	Fecal Coliform	Geometric Mean	2000	4048	No./100 ml
12/31/2020	Total Suspended Solids	Average Monthly	30	44.5	mg/L
12/31/2020	Total Suspended Solids	Instantaneous Maximum	60	70	mg/L
11/30/2020	Total Suspended Solids	Average Monthly	30	49	mg/L
10/31/2020	Total Suspended Solids	Average Monthly	30	120	mg/L
10/31/2020	Total Suspended Solids	Instantaneous Maximum	60	218	mg/L
10/31/2019	Total Suspended Solids	Average Monthly	30	34	mg/L
4/30/2019	pH	Minimum	6	4.8	S.U.
11/30/2018	Total Suspended Solids	Average Monthly	30	34.5	mg/L
9/30/2018	Fecal Coliform	Instantaneous Maximum	1000	1620	No./100 ml

Compliance Status: Permittee not inspected since 10/21/2014. Permittee has numerous exceedances that ops will look into.
Completed by: John Murphy
Completed date: 4/22/2022

Compliance History

DMR Data for Outfall 001 (from March 1, 2021 to February 28, 2022)

Parameter	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21
Flow (MGD) Average Monthly	0.0120	0.0090	0.0090	0.0090	0.0090	0.0090			0.0040	0.0050	0.0060	0.0070
pH (S.U.) Minimum	6.5	7.4	6.9	7.22	6.8	7.1			7.33	7.23	7.24	7.4
pH (S.U.) Maximum	8.3	8.1	8.0	7.6	7.8	7.4			7.9	7.8	8.2	8.1
DO (mg/L) Daily Minimum	5.6	5.6	4.92	5.04	5.09	5.25			5.3	5.05	5.79	5.70
TRC (mg/L) Average Monthly	0.03	0.05	0.07	0.04	0.05	0.07			0.07	0.08	0.058	0.022
TRC (mg/L) Instantaneous Maximum	0.1	0.1	0.15	0.12	0.2	0.2			0.15	0.15	0.15	0.15
CBOD5 (mg/L) Average Monthly	7.95	18.05	10.15	9.3	21.7	2.0			11.2	8.0	11.5	21.35
CBOD5 (mg/L) Instantaneous Maximum	8.8	25.9	16.4	14.8	39.0	6.6			12.5	9.3	16.5	24.4
TSS (mg/L) Average Monthly	19.5	31.5	21.0	44.0	35.0	39.0			6.5	9.5	15.5	26.0
TSS (mg/L) Instantaneous Maximum	24.0	32.0	29.0	62.0	37.0	42.0			8.0	12.0	23.0	27.0
Fecal Coliform (No./100 ml) Geometric Mean	2	38.0	13.0	525	2	14.0			31	163.5	1.5	1.5
Fecal Coliform (No./100 ml) Instantaneous Maximum	2	72	20.0	750	2	27.1			58	326	2	2
Total Nitrogen (mg/L) Daily Maximum			37.882									
Ammonia (mg/L) Average Monthly	19.3	17.75	1.96	0.25	2.65	5.45			0.3	1.4	11.15	2.95
Ammonia (mg/L) Instantaneous Maximum					5.1	10.8			0.4	6.0		
Total Phosphorus (mg/L) Daily Maximum			4.8									

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2021 To: February 28, 2022

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	01/31/22	Avg Mo	31.5	mg/L	30.0	mg/L
TSS	10/31/21	Avg Mo	35.0	mg/L	30.0	mg/L
TSS	09/30/21	Avg Mo	39.0	mg/L	30.0	mg/L
TSS	11/30/21	Avg Mo	44.0	mg/L	30.0	mg/L
TSS	11/30/21	IMAX	62.0	mg/L	60.0	mg/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0143
Latitude 39º 47' 9.00" **Longitude** -79º 54' 58.00"
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)

Water Quality-Based Limitations

The discharge was evaluated using WQM7.0 to evaluate the $CBOD_5$, ammonia-nitrogen, and dissolved oxygen parameters. The modeling results show technology-based effluent limitations for these parameters are appropriate.

In the previous permit cycle, an average monthly limit of 20.0 mg/L and an IMAX of 40.0 mg/L in the summer was imposed for ammonia-nitrogen. Reporting for ammonia-nitrogen was required in the winter. Current modeling shows that a summer average monthly limit 25 mg/L is acceptable for ammonia-nitrogen. Per DEP SOP “Establishing Effluent Limitations for Individual Sewage Permits” (Rev. March 24, 2021, BCW-PMT-033), when modeling indicates that a summer limit 25 mg/L for ammonia-nitrogen is acceptable, a year-round monitoring requirement will be established, at a minimum. In order to comply with anti-backsliding regulations and to satisfy the requirements as stated in DEP SOPs, the summer average monthly limit of 20.0 mg/L and IMAX of 40.0 mg/L for ammonia-nitrogen will remain in place and monitoring will be imposed in the winter.

The discharge was evaluated using the Total Residual Chlorine spreadsheet (TRC_CALC). The modeling results confirm that a total residual chlorine limit is necessary to meet the in-stream water quality criterion. The TRC spreadsheet recommended a limit of 0.5 mg/L, which complies with regulatory standards under §§92a.47(a)(8) and 92a.48(b).

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	4	Minimum	WQM7.0
Ammonia Nitrogen (May 1 – Oct 31)	25	Average Monthly	WQM7.0
Total Residual Chlorine	0.5	Average Monthly	TRC_CALC

Best Professional Judgment (BPJ) Limitations

In accordance with the WQM7.0 modeling results, the standard in 25 PA Code Chapter 93, and best professional judgment, a Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations

Sewage discharges will include monitoring, at a minimum, for E. coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows >= 0.002 and < 0.05 MGD.

The receiving stream is not impaired for nutrients, therefore, annual sampling for nitrogen and phosphorus will be imposed per 25 PA Code §92.61b.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's Technical Guidance for the Development and Specification of Effluent Limitations.

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.

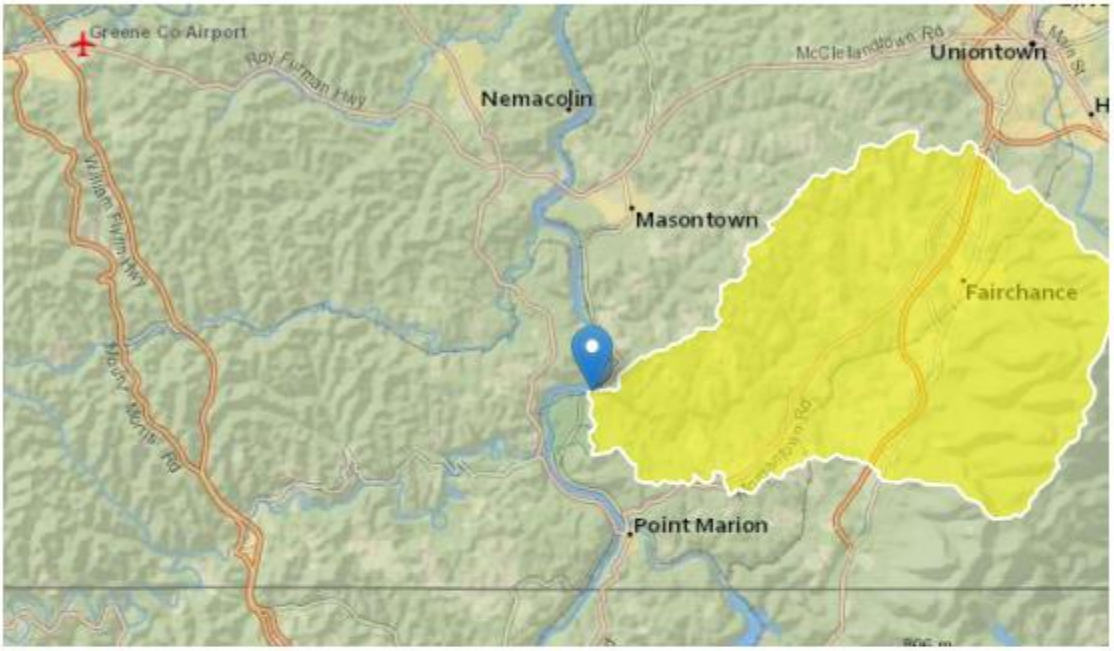
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report Wkly Avg	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	40.0	50	2/month	Grab
TSS	XXX	XXX	XXX	30.0	45.0	60	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	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	20.0	XXX	40.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

ATTACHMENT A:
USGS STREAMSTATS

StreamStats Report

Region ID: PA
Workspace ID: PA20220421181636018000
Clicked Point (Latitude, Longitude): 39.78595, -79.91612
Time: 2022-04-21 14:17:06 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	64.9	square miles
ELEV	Mean Basin Elevation	1326	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	64.9	square miles	2.26	1400

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1326	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

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	3.54	ft^3/s	43	43
30 Day 2 Year Low Flow	5.66	ft^3/s	38	38
7 Day 10 Year Low Flow	1.49	ft^3/s	66	66
30 Day 10 Year Low Flow	2.36	ft^3/s	54	54
90 Day 10 Year Low Flow	4.03	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.8.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

ATTACHMENT B:
WQM7.0 MODELING RESULTS

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
19G	41340	GEORGES CREEK	**0.130**	781.00	64.90	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	0.023	1.49	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
Albert Gallatin	PA0980400	0.0000	0.0000	0.0143	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	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
19G	41340	GEORGES CREEK	**0.080**	780.00	65.00	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	0.023	1.49	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	25.00	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 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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19G	41340	GEORGES CREEK

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												
0.130	1.49	0.00	1.49	.0221	0.00379	.604	24.24	40.16	0.10	0.030	24.93	7.00
Q1-10 Flow												
0.130	0.95	0.00	0.95	.0221	0.00379	NA	NA	NA	0.08	0.038	24.89	7.00
Q30-10 Flow												
0.130	2.03	0.00	2.03	.0221	0.00379	NA	NA	NA	0.12	0.025	24.95	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19G	41340	GEORGES CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.130	0.014	24.927	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
24.241	0.604	40.160	0.103
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.34	0.229	0.37	1.023
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.181	4.181	Tsivoglou	5
Reach Travel Time (days)			
0.030			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.003	2.33	0.36	7.55
0.006	2.33	0.36	7.55
0.009	2.33	0.36	7.55
0.012	2.33	0.36	7.55
0.015	2.33	0.36	7.55
0.018	2.32	0.36	7.55
0.021	2.32	0.36	7.55
0.024	2.32	0.36	7.55
0.027	2.32	0.36	7.55
0.030	2.32	0.35	7.55

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19G	41340	GEORGES 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
0.130	Albert Gallatin	11.18	50	11.18	50	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
0.130	Albert Gallatin	1.37	25	1.37	25	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)		
0.13	Albert Gallatin	25	25	25	25	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19G	41340	GEORGES CREEK

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)
0.130	Albert Gallatin	PA0980400	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

ATTACHMENT C:
TRC_CALC MODELING RESULTS

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.49	= Q stream (cfs)	0.5	= CV Daily
0.0149	= 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 = 20.640	1.3.2.iii	WLA cfc = 20.114
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 7.691	5.1d	LTA_cfc = 11.694

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)