Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0261891**
Facility Type	**Industrial**	APS ID	**787575**
Major / Minor	**Minor**	Authorization ID	**1522316**

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

Applicant and Facility Information

Applicant Name	**Bear Valley Franklin County PA Joint Authority**	Facility Name	**Bear Valley WTP**
Applicant Address	218 School House Road St Thomas, PA 17252-0308	Facility Address	1602 Brooklyn Road N Ft Loudon, PA 17224
Applicant Contact	Doug Westover	Facility Contact	Andy Mayer
Applicant Phone	(717) 369-2828	Facility Phone	(717) 389-2828
Client ID	37850	Site ID	764170
SIC Code	4941	Municipality	Peters Township
SIC Description	Trans. & Utilities - Water Supply	County	Franklin
Date Application Received	April 7, 2025	EPA Waived?	Yes
Date Application Accepted	April 14, 2025	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Bear Valley Franklin County PA Joint Authority (Bear Valley) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was originally issued on October 06, 2020 and became effective on November 1, 2020. The permit expired October 31, 2025.

Based on the review, it is recommended that the permit be drafted.

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

Approve	Deny	Signatures	Date
X		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	December 8, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	January 14, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0364
Latitude	39° 54' 0.00"	Longitude	77° 52' 56.50"
Quad Name	McConnellsburg	Quad Code	1922
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Unnamed Tributary of West Branch Conococheague Creek (TSF, MF)	Stream Code	59565
NHD Com ID	49482890	RMI	0.40
Drainage Area	0.24	Yield (cfs/mi^2)	0.111
Q_{7-10} Flow (cfs)	0.0266	Q_{7-10} Basis	USGS Gage 01614500
Elevation (ft)		Slope (ft/ft)	
Watershed No.	13-C	Chapter 93 Class.	TSF, MF
Existing Use	TSF, MF	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	Hagerstown, Maryland		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Drainage Area

The discharge is to UNT of West Branch Conococheague Creek at RM 0.40. A drainage area upstream of the point of discharge is estimated to be 0.24 sq.mi. using USGS StreamStats available at https://streamstats.usgs.gov/ss/. A Point of First Use survey was conducted by DEP biologist on December 5, 2012 and indicated that the point of first use is at the discharge location. The survey however indicated that the stream is expected to lose surface flow in many summers due to the low macroinvertebrate diversity, the taxa found, and the physical characteristics of the stream.

Streamflow

USGS StreamStats produced a Q7-10 flow of 0.00295 cfs. However, the estimated drainage area is lower than the minimum required drainage area to accurately compute the low flow statistics in which USGS StreamStats calculated low flow statistics with unknown errors. As a result, a low flow yield method using a nearby USGS gage station no. 01614500 is used to calculate the Q7-10 flow as follows:

Low Flow Yield = 55.2 cfs / 494 sq. mi. = 0.111 cfs/sq.mi.
Q7-10 = 0.111 cfs/sq.mi. * 0.24 sq.mi. = 0.0266 cfs.

Unnamed Tributary of West Branch Conococheague Creek

Under 25 Pa Code §93.9z, all unnamed tributaries to West Branch Conococheague Creek from US 30 Bridge to PA-MD State Border are designated as trout stocking fishes and support migratory fishes. No special protection water is impacted by this discharge. DEP's latest integrated water quality report developed in 2024 indicates that the discharge is located within a stream segment listed as attaining use(s).

Public Water Supply Intake

The neared downstream public water supply intake is on the Potomac River near Hagerstown, MD. Given the distance and nature of the discharge, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Bear Valley Authority Water System				
WQM Permit No.	**Issuance Date**			
2814401	05/21/2015			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Physical (Industrial Waste)	Sedimentation	N/A	0.0364
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0728	0.01	N/A	N/A	N/A

Bear Valley owns and operates a municipal water treatment plant. Any waste generated during the water treatment process is sent to an onsite wastewater treatment plant which is a waste holding tank and sand drying beds. Filter backwash from membrane filtration units and wastes from flocculation/sedimentation process are sent to a waste holding tank. Effluent from this holding tank is discharged via Outfall 001 to the stream. Supernatant from drying beds which receive solids from the waste holding tank is also sent to Outfall 001. Any overflow from clearwell (WTP) is sent to Outfall 001 during the emergency situations. Dechlorination is provided in a manhole prior to stream discharge. Solids from the drying beds will be hauled to disposal site.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	01/22/2024: DEP conducted a routine inspection; no significant violation was identified at the time of inspection.
Other Comments:	Since the last permit reissuance, the facility has not had any permit violations. DEP's database shows there is no open violation associated with this facility or permittee.

Effluent Data

DMR Data for Outfall 001 (from November 1, 2024 to October 31, 2025)

Parameter	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24
Flow (MGD) Average Monthly	0.006	0.01	0.003	0.006	0.006	0.006	0.007	0.009	0.006	0.01	0.006	0.015
Flow (MGD) Daily Maximum	0.012	0.026	0.012	0.034	0.033	0.038	0.017	0.032	0.031	0.019	0.02	0.06
pH (S.U.) Instantaneous Minimum	7.41	7.47	7.56	7.57	7.47	7.41	7.61	7.53	7.75	7.55	7.56	7.53
pH (S.U.) Instantaneous Maximum	8.00	8.07	7.88	7.87	7.75	7.92	7.93	7.93	8.04	8.08	8.33	8.01
TRC (mg/L) Average Monthly	0.03	0.03	0.04	0.03	< 0.04	0.08	0.03	0.04	0.04	0.06	0.04	0.02
TRC (mg/L) Instantaneous Maximum	0.06	0.03	0.08	0.05	0.06	0.04	0.08	0.11	0.05	0.12	0.05	0.04
TSS (mg/L) Average Monthly	5	3	2.5	4	5	5.5	3	3	3	4	< 3	6
TSS (mg/L) Daily Maximum	7	5.5	2	4.50	7	4	4.50	3.50	4	4.5	4.5	7.5
Total Aluminum (lbs/day) Average Monthly	0.04	0.03	0.03	0.03	0.05	0.04	0.05	0.05	0.05	0.06	< 0.04	0.07
Total Aluminum (lbs/day) Daily Maximum	0.05	0.05	0.04	0.05	0.06	0.08	0.08	0.05	0.06	0.07	0.05	0.08
Total Aluminum (mg/L) Average Monthly	0.55	0.35	0.30	0.34	0.45	0.53	0.48	0.40	0.49	0.52	< 0.44	0.32
Total Aluminum (mg/L) Daily Maximum	0.82	0.52	0.36	0.49	0.53	0.59	0.60	0.52	0.59	0.58	0.62	0.41
Total Iron (lbs/day) Average Monthly	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.01	< 0.04
Total Iron (lbs/day) Daily Maximum	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.03	< 0.03	< 0.03	< 0.02	< 0.03	< 0.02	< 0.05
Total Iron (mg/L) Average Monthly	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.1	< 0.2
Total Iron (mg/L) Daily Maximum	< 0.2	< 0.2	0.22	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2

Parameter	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24
Total Manganese (lbs/day) Average Monthly	< 0.002	0.004	< 0.004	0.006	0.002	0.005	0.008	0.01	0.008	0.004	< 0.003	0.01
Total Manganese (lbs/day) Daily Maximum	< 0.002	0.005	0.006	0.009	0.003	0.01	0.01	0.02	0.02	0.006	0.003	0.02
Total Manganese (mg/L) Average Monthly	0.028	0.1	< 0.04	0.1	0.02	0.1	0.1	0.1	0.10	0.03	< 0.03	0.1
Total Manganese (mg/L) Daily Maximum	< 0.02	0.064	0.058	0.098	0.028	0.19	0.101	0.13	0.144	0.049	0.038	0.082
Total Zinc (lbs/day) Average Monthly	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.004
Total Zinc (lbs/day) Daily Maximum	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.003	< 0.003	< 0.003	< 0.002	< 0.003	< 0.002	< 0.005
Total Zinc (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Zinc (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.059	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Existing Effluent Limits and Monitoring Requirements

The table below summarizes effluent limitations and monitoring requirements specified in the current NPDES permit renewal.

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.08	XXX	0.25	1/day	Grab
Total Suspended Solids	XXX	XXX	XXX	30	60	75	1/week	8-Hr Composite
Aluminum, Total	0.21	0.42 Daily Max	XXX	0.70	1.40	1.75	1/week	8-Hr Composite
Iron, Total	Report	Report Daily Max	XXX	2.0	4.0	5	1/week	8-Hr Composite
Manganese, Total	Report	Report Daily Max	XXX	1.0	2.0	2.5	1/week	8-Hr Composite
Zinc, Total	0.06	0.12 Daily Max	XXX	0.20	0.40	0.5	1/week	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0364
Latitude 39º 54' 0.00" **Longitude** -77º 52' 56.50"
Wastewater Description: Water Treatment Effluent

Technology-Based Limitations

DEP's technical guidance no. 362-2183-003 addresses technology-based control requirements along with the following recommended Best Practicable Control Technology Currently Available (BPT) effluent requirements for WTP sludge and filter backwash:

Parameter	Limit (mg/l)	SBC
Suspended Solids	30	Average Monthly
	60	Daily Maximum
Iron, Total	2.0	Average Monthly
	4.0	Daily Maximum
Aluminum, Total	4.0	Average Monthly
	8.0	Daily Maximum
Manganese, Total	1.0	Average Monthly
	2.0	Daily Maximum
Flow	Monitor	Average Monthly
pH	6.0	Minimum
	9.0	Maximum
Total Residual Chlorine	0.5	Average Monthly
	1.0	Daily Maximum

These requirements apply, subject to water quality analysis and/or BPJ.

Water Quality-Based Limitations

WQM 7.0
CBOD5 and NH3-N are not pollutants of concern for the water treatment waste as the discharge of these pollutants is not resulting from the water treatment process. Therefore, WQM 7.0 modeling is not necessary and permit requirements for these pollutants are not recommended.

Total Residual Chlorine
Chlorine is used prior to filtrations. Also, any overflow from clearwell is sent to Outfall 001. DEP's TRC_CALC worksheet showed existing effluent limits are still adequate. No change is therefore recommended.

Toxics
Total Aluminum, Total Iron, and Total Manganese are existing toxic pollutants of concern and have numerical effluent limits in the permit. These effluent limits as mentioned earlier are also required by the technical guidance. DEP's Toxics Management Spreadsheet (TMS) shows that existing effluent limits for these parameters are still protective of water quality and no further WQBELs are needed. For Total Aluminum, TMS adjusted existing WQBELs so that it matches with the current water quality standards.

Previously, DEP developed effluent limits for Total Zinc as zinc orthophosphate was used as a corrosion inhibitor. The current application indicates that citric acid is now used as a corrosion inhibitor. The sample results from the application also demonstrates that no WQBELs are needed for Total Zinc. Normally, Antibacksliding policy is applied for WQBELs (40 CFR 122.44(l)(i)); however, because the source of Total Zinc is no longer existed and the fact that no reasonable potential has been demonstrated for Total Zinc, it is acceptable to remove existing WQBELs. This decision is supported by 40 CFR 122.44(l)(2)(i)(A) and (B)(1). Accordingly, it is recommended that existing effluent limits for Total Zinc be removed from the permit.

Additional Considerations

Flow Monitoring
Flow monitoring will remain in the permit and is required by 40 CFR § 122.44(i)(1)(ii).

Mass Loading Effluent Limitations
DEP's technical guidance no. 362-0400-001 recommends mass loading effluent limits for those pollutants that have water quality based limits and monitoring requirements for those that have technology based concentration limits. Accordingly, mass loading effluent limits based on the flow of 0.0364 MGD are recommended for Total Aluminum and mass loading monitoring requirements are recommended for Total Iron, Total Manganese and Total Suspended Solids.

Monitoring Frequency
Given that the facility has not had any violation, it is recommended that existing monitoring frequency for Total Suspended Solids, Total Aluminum, Total Iron and Total Manganese be changed from 1/week to 2/month. The monitoring frequency for all other parameters will remain unchanged.

Anti-Degradation requirements
The effluent limits for this discharge have been developed to ensure the existing in-stream uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Class A Wild Trout Fishery
No Class A Wild Trout is impacted by this discharge.

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" (386-0400-001), SOPs and/or BPJ.

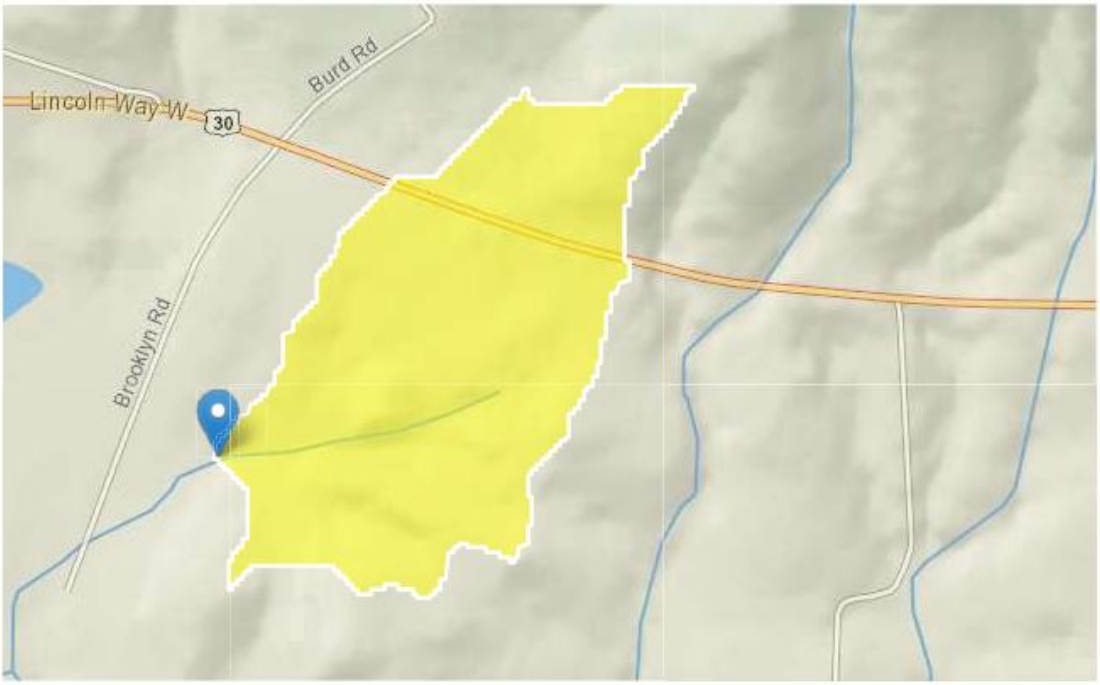
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.08	XXX	0.25	1/day	Grab
TSS	Report	Report Daily Max	XXX	30	60	75	2/month	8-Hr Composite
Total Aluminum	0.23	0.34 Daily Max	XXX	0.75	1.105	1.105	2/month	8-Hr Composite
Total Iron	Report	Report Daily Max	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	Report	Report Daily Max	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

StreamStats Report

Region ID: PA
Workspace ID: PA20200424144409307000
Clicked Point (Latitude, Longitude): 39.89989, -77.88238
Time: 2020-04-24 10:44:28 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.24	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.73	miles per square mile
ROCKDEP	Depth to rock	3.3	feet
CARBON	Percentage of area of carbonate rock	13	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.24	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.73	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.3	feet	3.32	5.65
CARBON	Percent Carbonate	13	percent	0	99

Low-Flow Statistics Disclaimers[Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0115	ft^3/s
30 Day 2 Year Low Flow	0.0185	ft^3/s
7 Day 10 Year Low Flow	0.00295	ft^3/s
30 Day 10 Year Low Flow	0.0051	ft^3/s
90 Day 10 Year Low Flow	0.0107	ft^3/s

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/)

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Application Version: 4.3.11

StreamStats Report

Region ID: PA
Workspace ID: PA20200424154912776000
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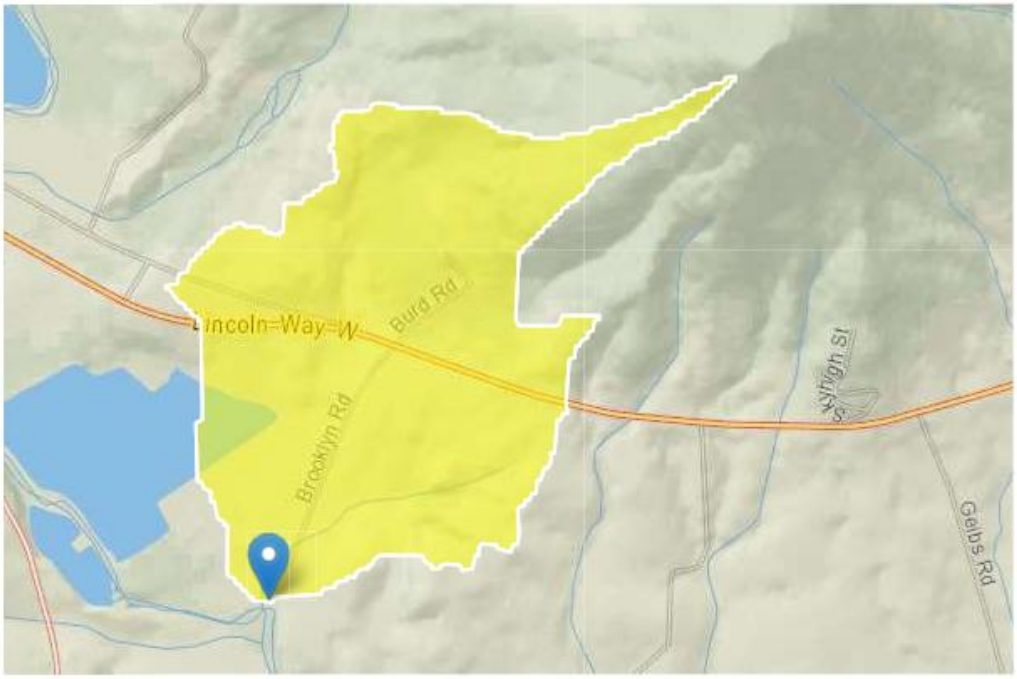
Time: 2020-04-24 11:49:30 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.1	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.1	miles per square mile
ROCKDEP	Depth to rock	3.3	feet
CARBON	Percentage of area of carbonate rock	14	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.1	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.1	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.3	feet	3.32	5.65
CARBON	Percent Carbonate	14	percent	0	99

Low-Flow Statistics Disclaimers[Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0522	ft^3/s
30 Day 2 Year Low Flow	0.0826	ft^3/s
7 Day 10 Year Low Flow	0.0144	ft^3/s
30 Day 10 Year Low Flow	0.0245	ft^3/s
90 Day 10 Year Low Flow	0.0489	ft^3/s

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/)

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Application Version: 4.3.11

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Bear Valley WTP** NPDES Permit No.: **PA0261891** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Filter Backwash**

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
0.0364	241	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		239									
	Chloride (PWS)	mg/L		14.3									
	Bromide	mg/L	<	0.011									
	Sulfate (PWS)	mg/L		35.2									
	Fluoride (PWS)	mg/L		0.458									
Group 2	Total Aluminum	µg/L		700									
	Total Antimony	µg/L	<	0.172									
	Total Arsenic	µg/L	<	2.5									
	Total Barium	µg/L		127									
	Total Beryllium	µg/L	<	0.135									
	Total Boron	µg/L	<	23.8									
	Total Cadmium	µg/L	<	0.114									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L		0.106									
	Total Copper	µg/L	<	1.85									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		38.6									
	Total Lead	µg/L	<	0.034									
	Total Manganese	µg/L	<	20									
	Total Mercury	µg/L	<	0.093									
	Total Nickel	µg/L		1.59									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	0.335									
	Total Silver	µg/L	<	0.096									
	Total Thallium	µg/L	<	0.03									
	Total Zinc	µg/L		2.9									
	Total Molybdenum	µg/L		0.456									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

Group 3	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										
	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										

	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Bear Valley WTP, NPDES Permit No. PA0261891, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **UNT of West Branch Conococheague C**

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	059565	0.4	602	0.24			Yes
End of Reach 1	059565	0	558	1.1			Yes

$Q_{7\text{-}10}$

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	0.4	0.111										100	7		
End of Reach 1	0	0.111													

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	0.4														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Bear Valley WTP, NPDES Permit No. PA0261891, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All ( ) Inputs ( ) Results ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.040 PMF: 1 Analysis Hardness (mg/l): 195.72 Analysis pH: 7.00

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,105	
Total Antimony	0	0		0	1,100	1,100	1,620	
Total Arsenic	0	0		0	340	340	501	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	30,935	
Total Boron	0	0		0	8,100	8,100	11,932	
Total Cadmium	0	0		0	3.867	4.22	6.22	Chem Translator of 0.916 applied
Total Chromium (III)	0	0		0	987.504	3,125	4,603	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	24.0	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	140	
Total Copper	0	0		0	25.301	26.4	38.8	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	133.047	192	283	Chem Translator of 0.693 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.43	Chem Translator of 0.85 applied
Total Nickel	0	0		0	826.386	828	1,220	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	10.210	12.0	17.7	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	95.8	
Total Zinc	0	0		0	206.992	212	312	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.040 PMF: 1 Analysis Hardness (mg/l): 195.72 Analysis pH: 7.00

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	324	
Total Arsenic	0	0		0	150	150	221	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	6,040	
Total Boron	0	0		0	1,600	1,600	2,357	
Total Cadmium	0	0		0	0.392	0.45	0.66	Chem Translator of 0.881 applied
Total Chromium (III)	0	0		0	128.454	149	220	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	15.3	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	28.0	
Total Copper	0	0		0	15.896	16.6	24.4	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,210	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	5.185	7.48	11.0	Chem Translator of 0.693 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.33	Chem Translator of 0.85 applied
Total Nickel	0	0		0	91.786	92.1	136	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	7.35	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	19.2	
Total Zinc	0	0		0	208.685	212	312	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.040 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	8.25	
Total Arsenic	0	0		0	10	10.0	14.7	
Total Barium	0	0		0	2,400	2,400	3,535	
Total Boron	0	0		0	3,100	3,100	4,567	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	442	

Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,473	
Total Mercury	0	0		0	0.050	0.05	0.074	
Total Nickel	0	0		0	610	610	899	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.35	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.105 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	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

Model Results Pollutants	Mass Limits AML	Mass Limits MDL	Concentration Limits AML	Concentration Limits MDL	12/8/2025 Units	Governing	WQBEL	Comments

	(lbs/day)	(lbs/day)					WQBEL	Basis	
Total Aluminum	0.23	0.34	750	1,105	1,105	µg/L	750	AFC	Discharge Conc ≥ 50% WQBEL (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 Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	3,535	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,357	µg/L	Discharge Conc < TQL
Total Cadmium	0.66	µg/L	Discharge Conc < TQL
Total Chromium (III)	220	µg/L	Discharge Conc < TQL
Hexavalent Chromium	15.3	µg/L	Discharge Conc < TQL
Total Cobalt	28.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	24.4	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	442	µg/L	Discharge Conc < TQL
Total Iron	2,210	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	11.0	µg/L	Discharge Conc < TQL
Total Manganese	1,473	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.074	µg/L	Discharge Conc < TQL
Total Nickel	136	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	7.35	µg/L	Discharge Conc < TQL
Total Silver	12.0	µg/L	Discharge Conc < TQL
Total Thallium	0.35	µg/L	Discharge Conc < TQL
Total Zinc	212	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS