Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0083747**
Facility Type	**Industrial**	APS ID	**17532**
Major / Minor	**Minor**	Authorization ID	**1490713**

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

Applicant and Facility Information

Applicant Name	**Weaber Inc.**	Facility Name	**Weaber Lumber Mill Lebanon**
Applicant Address	1231 Mount Wilson Road	Facility Address	1231 Mount Wilson Road
	Lebanon, PA 17042-4785		Lebanon, PA 17042-4785
Applicant Contact	Deacon Kinsey	Facility Contact	Deacon Kinsey
Applicant Phone	(717) 867-2212	Facility Phone	(717) 867-2212
Client ID	6817	Site ID	250882
SIC Code	2421	Municipality	South Annville Township
SIC Description	Manufacturing - Sawmills And Planing Mills, General	County	Lebanon
Date Application Received	July 1, 2024	EPA Waived?	Yes
Date Application Accepted	July 10, 2024	If No, Reason	

Purpose of Application: Permit renewal for discharge of treated sewage and stormwater.

Summary of Review

1.0 General Discussion

This fact sheet supports the renewal of an existing NPDES permit for discharge of treated sewage and stormwater from a hardwood lumber processing facility. The facilities major industrial activities are under roof and protected from exposure to stormwater. Raw log staging areas, maintenance shop drainage area and truck parking lot and some abandoned equipment parts, wood chip storage, wood drying kilns and tarn bark storage are outside and drains to various stormwater outfalls. Storm water outfall details are presented in the stormwater section of the report. The sewage treatment facility receives flow from bathrooms, floor drains and sinks. The treatment plant has a design capacity of 0.015 mgd and discharge effluent to outfall 001. Blowdown from the facility's boiler is also conveyed to the sewage plant for treatment. Stormwater is discharged from the site to 6 outfalls 002 to 007. All outfalls discharge into Gingrich Run which is classified for Trout Stocking (TSF). The facility is not covered under ELG because no lumber process wastewater is discharged. The existing NPDES permit was issued on June 27, 2019, with an effective date of July 1, 2019, and expiration date of June 30, 2024. The applicant submitted a complete NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit pending Department action on the renewal application.

Topographical Map showing the discharge location is presented in attachment A. Process flow diagram is presented in attachment D.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	July 1, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	July 22, 2025
X		*Maria D. Bebenek* Maria D. Bebenek, P.E./ Program Manager	July 22, 2025

Summary of Review

1.1 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.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.015
Latitude	40º 15' 46.36"	Longitude	-76º 30' 6.96"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Gingrich Run	Stream Code	09710
NHD Com ID	56400817	RMI	3.9
Drainage Area	0.40 sq. mi	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.04	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)	610	Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow regime modification, Organic Enrichment, Pathogens, Siltation, Suspended Solids		
Source(s) of Impairment	Agriculture, Agriculture, Source Unknown, Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Quittapahilla Creek Watershed

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

Nearest Downstream Public Water Supply Intake	PA American Water Company		
PWS Waters	Swatara Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	>15

Changes Since Last Permit Issuance: None.

1.3.1 Water Supply Intake

The closest water supply intake located downstream from the discharge is PA American Water Company on Swatara Creek in South Hanover Twp., Dauphin County. The distance downstream from the discharge to the intake is approximately 15 miles. The discharge will have no impact on the intake.

2.0 Treatment Facility Summary				

Treatment Facility Name: Weaber Lumber Mill

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Secondary	Extended Aeration	Hypochlorite	0.015

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.015		Not Overloaded	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance:

2.1 Treatment Facility Description

The treatment plant consists of a comminutor, EQ tank, 2 Aeration tanks, a clarifier, a sludge digester, chlorine contact tank, post aeration and de-chlorination.

3.0 Existing Effluent Limitations and Monitoring Requirements

3.1 Outfall 001,:

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	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.1	XXX	0.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	24-Hr Composite
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
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite

3.2 Outfalls 002, 003, 004, 006 and 007,.

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) (4)	XXX	Report Daily Max	XXX	XXX	XXX	XXX	1/6 months	Estimate
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Pentachlorophenol	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

3.3 Compliance History

3.3.1 DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.00590	0.00516	0.00735	0.00674	0.00449	0.00405	0.00229	0.00306	0.00378	0.00279	0.00434	0.00279
Flow (MGD) Daily Maximum	0.00954	0.00962	0.01355	0.01142	0.00827	0.01060	0.00601	0.00538	0.00859	0.00680	0.00739	0.0076
pH (S.U.) Daily Minimum	7.23	7.42	7.83	7.39	7.65	7.51	7.35	7.67	7.64	7.83	7.61	6.65
pH (S.U.) Daily Maximum	8.13	8.38	8.49	8.53	8.21	8.15	7.98	8.14	8.29	8.29	8.24	8.11
DO (mg/L) Daily Minimum	7.1	6.03	6.72	6.91	6.62	7.03	6.11	6.57	6.41	6.15	5.67	5.05
TRC (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
TRC (mg/L) Instantaneous Maximum	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
CBOD5 (mg/L) Average Monthly	3	8	4	8	15	< 3	6	< 2	3	< 4	< 3	11
TSS (mg/L) Average Monthly	7	16	40	19	16	12	17	9	13	20	9	6
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1
Nitrate-Nitrite (mg/L) Daily Maximum				33.8						33.8		
Total Nitrogen (mg/L) Daily Maximum				34.8						34.6		
Ammonia (mg/L) Average Monthly	1.8	< 0.1	< 0.1	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1	< 0.1
TKN (mg/L) Daily Maximum				0.98						0.75		
Total Phosphorus (mg/L) Daily Maximum				0.38						0.7		

3.3.2 DMR Data for Outfall 002 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Daily Maximum				1.010						0.977		
pH (S.U.) Daily Maximum				7.44						8.43		
COD (mg/L) Daily Maximum				40.4						260		
TSS (mg/L) Daily Maximum				8.0						423		
Total Arsenic (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Copper (mg/L) Daily Maximum				< 0.01						0.28		
Pentachloro-phenol (mg/L) Daily Maximum				< 0.0049						< 0.00495		

3.3.3 DMR Data for Outfall 003 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Daily Maximum				0.4839						0.430		
pH (S.U.) Daily Maximum				7.39						8.4		
COD (mg/L) Daily Maximum				75.1						113		
TSS (mg/L) Daily Maximum				12.3						235		
Total Arsenic (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Copper (mg/L) Daily Maximum				< 0.01						0.37		
Pentachloro-phenol (mg/L) Daily Maximum				< 0.005						< 0.00485		

3.3.4 DMR Data for Outfall 004 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Daily Maximum				0.2837						0.252		
pH (S.U.) Daily Maximum				8.11						9.22		
COD (mg/L) Daily Maximum				93.8						44.8		
TSS (mg/L) Daily Maximum				64.7						14.5		
Total Arsenic (mg/L) Daily Maximum				< 0.01						< 0.01		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.01		
Total Copper (mg/L) Daily Maximum				< 0.01						< 0.01		
Pentachloro-phenol (mg/L) Daily Maximum				< 0.00526						< 0.00098		

3.3.5 DMR Data for Outfall 006 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Daily Maximum				0.121						0.107		
pH (S.U.) Daily Maximum				7.74						7.47		
COD (mg/L) Daily Maximum				137						1290		
TSS (mg/L) Daily Maximum				< 4.0						820		
Total Arsenic (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Copper (mg/L) Daily Maximum				< 0.01						0.29		
Pentachloro-phenol (mg/L) Daily Maximum				< 0.001						0.00485		

3.3.6 DMR Data for Outfall 007 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Daily Maximum				0.154						0.138		
pH (S.U.) Daily Maximum				7.76						7.81		
COD (mg/L) Daily Maximum				146						624		
TSS (mg/L) Daily Maximum				5.2						400		
Total Arsenic (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Chromium (mg/L) Daily Maximum				< 0.01						< 0.02		
Total Copper (mg/L) Daily Maximum				< 0.01						< 0.02		
Pentachloro-phenol (mg/L) Daily Maximum				< 0.00116						< 0.0049		

3.3.7 Effluent Violations for Outfall 001, from: May 1, 2024 To: March 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	01/31/25	Avg Mo	40	mg/L	30	mg/L

3.3.8 Summary of DMRs:

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.3.1 to 3.3.6 indicate permit limits have been met most of the time. One violation of TSS limitation occurred during the past 12 months of operation as presented is section 3.1.2. It is unclear what caused the violation, and it appears to be a onetime occurrence. COD benchmark values have been exceeded two consecutive monitoring periods for outfalls 006 and 007. The facility has implemented a corrective action plan to address benchmark exceedances.

3.3.9 Summary of Inspections:

The facility has been inspected a couple of times during the past permit cycle. No effluent violation noted during plant inspections.

4.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .015
Latitude 40º 15' 46.15" **Longitude** -76º 30' 18.67"
Wastewater Description: IW Process Effluent with ELG

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits

4.1 Technology-Based Limitations

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

Parameter	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: Weekly averages are not applicable to this discharge

4.2 Water Quality-Based Limitations

4.2.1 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for $CBOD_5$, NH_3-N and DO in permits. The model simulates mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

4.2.2 Receiving Stream

The receiving stream is the Gingrich Run. According to 25 PA § 93.9o, this stream is protected for Trout Stocking (TSF) and Migratory Fishes (MF). It is located in Drainage List o and State Watershed 7-D. It has been assigned stream code 09710. According to the Department's Integrated Water Quality Monitoring and Assessment Report, Gingrich Run is impaired for aquatic life and recreational use and the impairment is due to suspended solids from agricultural activities, organic enrichment from urban runoff/Storm sewers and pathogens from unknown sources in the watershed. TMDL/WLA was approved in April of 2001 for the Quittapahilla creek watershed. See 303d listed streams section of the report for further discussion.

4.2.3 Stream flows

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No 01573000 on Swatara Creek. The Q_{7-10} and drainage area at the gage is 20.2ft3/s and 309 mi^2 respectively. The resulting

streamflows are as follows:

- Q_{7-10} = (20.2ft^3/s)/ 309 mi^2 = 0.1ft^3/s/ mi^2
- Q_{30-10} / Q_{7-10} = 1.41
- Q_{1-10} / Q_{7-10} = 0.81

The drainage area at discharge taken from previous protection report = 0.40 mi^2
The Q_{7-10} at discharge = 0.40 mi^2 x .10 ft^3/s/mi^2 = 0.04ft^3/s.

4.2.4 NH_3N Calculations

The NH_3-N calculations will be based on Chapter 93 regulations and the Division of Water Management's November 1997 NH_3-N Implementation Guideline The following background information will be used to determine the instream NH_3-N criteria used in the attached computer model of the stream.

- Discharge pH = 7.6(DMR median)
- Discharge Temperature = 25 ^{o} C (default)
- Stream pH = 7.0 (default)
- Stream Temperature = 20 ^{o} C (default)
- Background NH_3-N = 0.0 (default)

4.2.5 $CBOD_5$

The attached WQM 7.0 stream model results presented in attachment B indicates A monthly average limit of 25 mg/L $CBOD_5$ for the discharge is adequate to protect the water quality of the stream. This limit is consistent with the existing permit and the STP has been consistently achieving below this limitation. Therefore, the existing limit will remain in the permit for this permit cycle.

4.2.6 NH_3-N

The attached WQM 7.0 stream model results (attachment B) also indicates that a summer limit of 5.6 mg/L NH_3 as a monthly average is necessary to protect the aquatic life from toxicity effects. However, due to anti-backsliding restrictions, the existing summer limit of 1.5mg/L and winter limit of 4.5mg/L will remain in the permit.

4.2.7 Dissolved Oxygen

The existing permit contains a limit of 5 mg/l for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/l, this limit will be continued in the renewed permit with a daily monitoring requirement.

4.2.8 Total Suspended Solids (TSS):

There is no water quality criterion for TSS. The existing limit of 30 mg/l AML based on based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) per 40CFR 133.102(b)(2) will remain in the permit.

4.2.9 Total Residual Chlorine:

The attached TRC results presented in attachment C utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/L unless a facility-specific BAT has been developed. The results presented in attachment C indicates that a water quality limit of 0.26 mg/L and 0.85 mg/L IMAX would be needed to prevent toxicity concerns. This limit is less stringent than the existing average monthly limitation of <0.1mg/L and IMAX of <0.2mg/L. Due to anti-backsliding restrictions, the existing limit will remain in the permit. Past DMRs document that the STP can achieve less than 0.1 mg/L on an average and less than 0.2 mg/L maximum.

4.2.10 Chesapeake Bay Strategy

The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized based on their delivered TN and TP loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets if approved by DEP. Phase 4 (0.2 - 0.4mgd) and Phase 5(below 0.2mdg) are required to monitor and report TN series and TP during permit renewal. Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. This facility is, classified as a phase 5, and has been monitoring and will continue monitoring Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, Total Nitrogen and Total Phosphorus semi-annually throughout the next permit cycle to collect data

4.2.11 Fecal Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD and 1/year for design flows of 0.002 and < 0.05 MGD. Your discharge of 0.008 MGD requires 1/year monitoring as included in the permit

4.2.12 Toxics

The facility treats mainly domestic sewage and a very low volume of boiler blowdown, there are no parameters of concern associated with this discharge.

5.0 Stormwater Outfalls

Outfall No.	002	**Design Flow (MGD)**	0
Latitude	40º 15' 45.00"	**Longitude**	-76º 30' 14.00"
Wastewater Description:	Stormwater		

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 15' 51.00"	**Longitude**	-76º 30' 30.00"
Wastewater Description:	Stormwater		

Outfall No.	004	**Design Flow (MGD)**	0
Latitude	40º 15' 49.00"	**Longitude**	-76º 30' 25.00"
Wastewater Description:	Stormwater		

Outfall No.	005	**Design Flow (MGD)**	0
Latitude	40º 15' 53.00"	**Longitude**	-76º 30' 35.00"
Wastewater Description:	Stormwater		

Outfall No.	006	**Design Flow (MGD)**	0
Latitude	40º 15' 46.00"	**Longitude**	-76º 30' 9.00"
Wastewater Description:	Stormwater		

Outfall No.	007	**Design Flow (MGD)**	0
Latitude	40º 15' 45.00"	**Longitude**	-76º 30' 8.00"
Wastewater Description:	Stormwater		

5.1 Stormwater Requirements

The application identifies 5 outfalls 002, 003, 004, 005, 006 and 007 as receiving stormwater runoff from the Weaber Lumber Mill plant site. All significant industrial activities at the facility are protected from exposure to stormwater. Outfall 002 receives stormwater from Main Office area, raw log staging area, Mill No.2 and No. 5, Planning department and the

Warehouse. Drainage area is about 47.3 acres and is entirely impervious. Stormwater collects in a lagoon prior to discharge to outfall 002. The drainage area for Outfall 003 is about 34.7 acres and includes portions of planning department, log staging lunch/break room area, maintenance shop with some abandoned equipment parts, wood chip storage, wood drying kilns and tarn bark storage. Stormwater is collected in a lagoon prior to discharge to 003. Outfall 004 receives stormwater from a lagoon that receives flow from truck parking lot and general movement of raw material. Drainage area is about 12.9 acres. Outfall 005 has no industrial operations associated with the drainage area of about 14.9 acres. Operations associated with outfalls 006 and 007 include storage and staging of raw logs, wood chips and mulch. Drainage area to 006 is about 5.5 acres and drainage area to 007 is about 7 acres. Outfall 006 and 007 collects in one basin and eventually flow in one pipe underground to Gingrich Run. A comparison of stormwater monitoring data with water quality criteria indicates that in exception of COD and TSS which were high for some monitoring periods, all other parameters required to be monitored for the stormwater outfalls in the previous permit are within acceptable range.

Lumber products facilities fall under SIC 2421, the requirements in Appendix D of the current PAG 03 permit applies. The parameters in the current appendix D in the table below are slightly different from the parameters in the existing permit. The permit will be revised with the current requirement in the appendix D. The permittee shall monitor and report analytical results for the parameters listed below on Discharge Monitoring Reports (DMRs) for outfalls 002, 003, 004, 006 and 007. The benchmark values listed on the table are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan. Outfall 005(40º 15' 57.39"/76º 30' 33.29") does not receive runoff from industrial activities and will only be identified in the permit with no monitoring requirement.

Parameter	Minimum Measuring Frequency	Sample Type (mg/l)	Benchmark Values
Total Nitrogen	1 / 6months	Grab	XXX
Total Phosphorus	1 / 6months	Grab	XXX
pH (S.U.)	1 / 6months	Grab	9.0
TSS	1 / 6months	Grab	100
COD	1 / 6months	Grab	120
Pentachlorophenol	1 / 6months	Grab	XXX
Total Arsenic	1 / 6months	Grab	XXX
Total Chromium	1 / 6months	Grab	XXX
Total Copper	1 / 6months	Grab	XXX

5.1.1 Best Management Practices (BMPs)

In addition to general BMPs, the permittee shall implement the following BMPs that may be applicable to SIC code 2421

- Hardwood lumber manufacturers and others who handle hardwood residue must develop and implement (unless otherwise directed by DEP) the BMPs specified in the DEP-approved manual titled "Using Best Management Practices To Prevent And Control Pollution From Hardwood Residue Storage Sites," available through the Pennsylvania Hardwoods Development Council of the Pennsylvania Department of Agriculture.

- Substitute non-hazardous wood treatment and preserving chemicals for hazardous chemicals.

- Where dip tanks are used, hold wood over collection basins until dripping ceases.

- Store treated/preserved wood in covered areas, where practicable, or at a minimum, on impervious surfaces until completely dry.

- Expedite remediation of historic outside areas used for wood treating and preserving; remove or cover any contamination sources.

- Maximize recycling of treating/preserving solutions and use technologies that minimize fugitive losses.

- Provide for run-on and runoff controls in treating/preserving solution application and storage areas.

- At mill facilities, use dust control practices to limit fugitive emissions.
- Provide specific training to employees in spill prevention and response for hazardous wood treatment chemicals.
- In areas where storage, loading and unloading, and material handling occur, perform good housekeeping to minimize the discharge of wood debris, leachate generated from decaying wood materials, and the generation of dust.

6.0 Other Requirements

6.1 Biosolids Management

Digested sludge is land applied or hauled to Manheim or Capital Region Water by a license hauler (JG Environmental) .

6.2 Anti-backsliding

Not applicable to this permit

6.3 Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses 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.

6.4 Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

6.5 303d listed stream

The discharge is located on a stream segment that is designated on 303(d) list as impaired for aquatic life and recreational and the impairment is due to suspended solids from agricultural activities, organic enrichment from urban runoff/Storm sewers and pathogens from unknown sources in the watershed. TMDL/WLA was approved in April of 2001 for the Quittapahilla creek watershed. The TMDL document indicates that, the Gingrich Run segment listed for impairment due to suspended solids was addressed through a combination of load reductions under the Quittapahilla Creek sediment TMDL and the Killinger Creek phosphorus TMDL. Since Weaber Inc. has implemented an intensive BMPs and structural measures to control the runoff from the plant site, no additional effluent limit adjustments or TMDL/WLA requirements need to be included in their permit.

6.6 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

6.7 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

7.0 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	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.1	XXX	0.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	24-Hr Composite
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
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite

7.1 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.

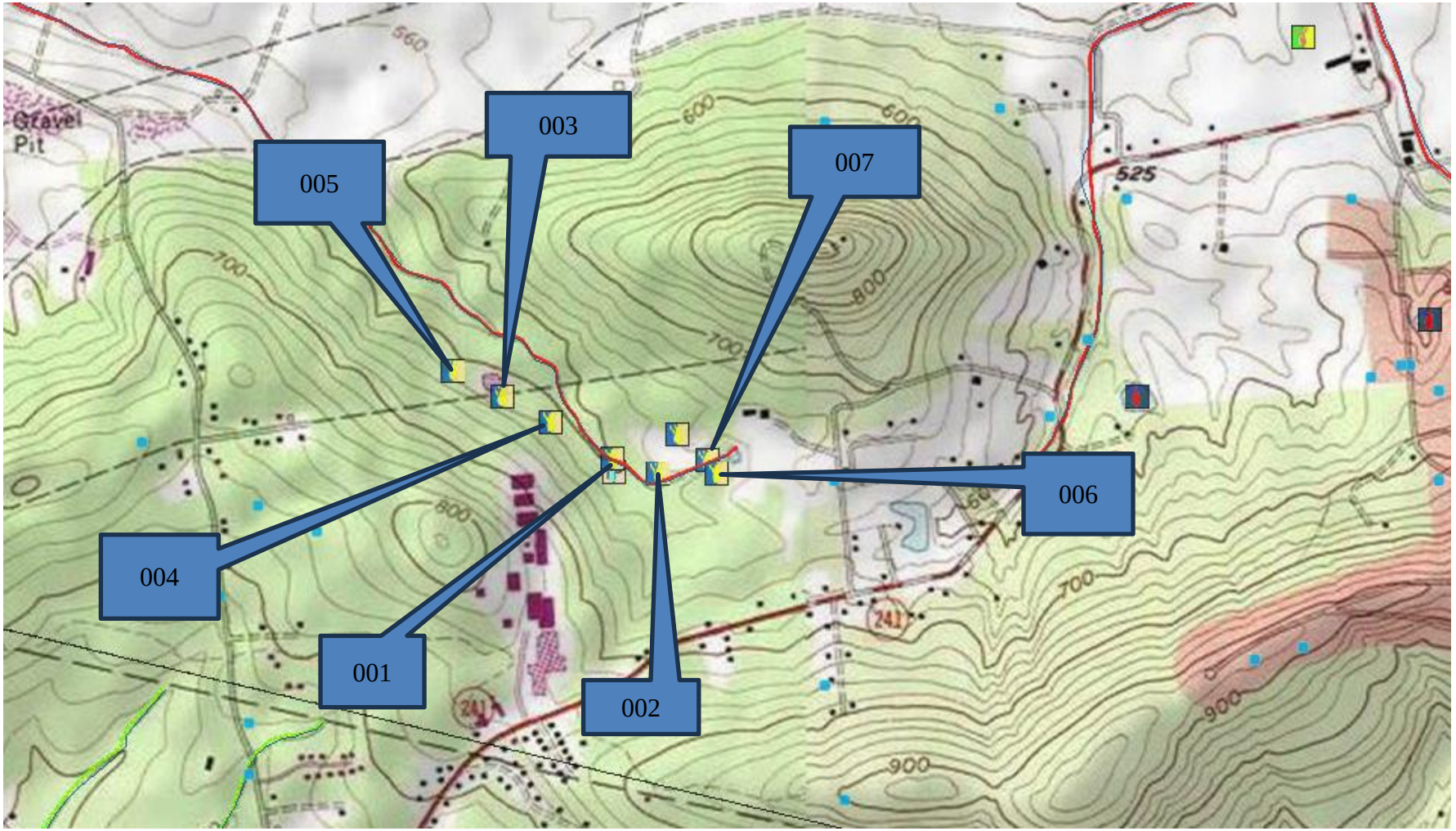
Outfalls 002, 003, 004, 006 and 007, Effective Period: Permit Effective Date through Permit Expiration Date.

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		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Pentachlorophenol	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

8.0 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: Establishing effluent limitations for individual industrial permit.
☐	Other:

Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07D	9710	GINGRICH 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)
3.900	Weaber Inc	PA0083747	0.015	CBOD5	25		
				NH3-N	5.63	11.26	
				Dissolved Oxygen			5

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
07D	9710	GINGRICH RUN	3.900	610.00	0.40	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	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
Weaber Inc	PA0083747	0.0150	0.0150	0.0150	0.000	25.00	7.60

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

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
07D	9710	GINGRICH RUN	2.620	425.00	0.60	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	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
		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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07D	9710	GINGRICH 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												
3.900	0.04	0.00	0.04	.0232	0.02737	.331	3.03	9.14	0.06	1.241	21.84	7.14
Q1-10 Flow												
3.900	0.03	0.00	0.03	.0232	0.02737	NA	NA	NA	0.06	1.333	22.09	7.16
Q30-10 Flow												
3.900	0.06	0.00	0.06	.0232	0.02737	NA	NA	NA	0.07	1.090	21.46	7.11

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	0.81	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.41	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07D	9710	GINGRICH 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
3.900	Weaber Inc	12.02	28.81	12.02	28.81	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
3.900	Weaber Inc	1.64	5.63	1.64	5.63	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)		
3.90	Weaber Inc	25	25	5.63	5.63	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07D	9710	GINGRICH RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.900	0.015	21.836	7.140
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.027	0.331	9.139	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.44	1.066	2.07	0.806
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.052	27.478	Owens	6
Reach Travel Time (days)			
1.241			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.124	9.04	1.87	7.97
0.248	7.83	1.69	7.97
0.372	6.78	1.53	7.97
0.496	5.87	1.39	7.97
0.620	5.09	1.25	7.97
0.744	4.41	1.13	7.97
0.868	3.81	1.03	7.97
0.993	3.30	0.93	7.97
1.117	2.86	0.84	7.97
1.241	2.48	0.76	7.97

C. TRC Calculations

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.04	= Q stream (cfs)	0.5	= CV Daily
0.015	= 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 = 0.569	1.3.2.iii	WLA cfc = 0.547
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.212	5.1d	LTA_cfc = 0.318

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.261	AFC
		INST MAX LIMIT (mg/l) = 0.853	

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)**