pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	Renewal & Transfer	Application No.	**PA0033936**
Facility Type	Non-Municipal	APS ID	**1100042**
Major / Minor	Minor	Authorization ID	**1460233**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

New Applicant Name	**Denny Ridge Mobile Home Park LLC**	Facility Name	**Denny Ridge MHP**
New Applicant Address	4463 Pitts Road	Facility Address	14807 Nickelson Drive
	Adamsville, PA 16110-1323		Meadville, PA 16335-7880
Applicant Contact	John Nickelson	New Contact	Steven Pfaff
Applicant Phone	(814) 336-1007	New Contact Phone	(724) 932-5068
Applicant E Mail	jchasn@zoominternet.net	New Contact E Mail	pfaff1993@yahoo.com
Client ID	198912 New Client 380383	Site ID	2274
Municipality	Hayfield Township	County	Crawford
Ch 94 Load Status	Not Overloaded	Connection Status	No Limitations
SIC Code	6515	SIC Code	4952
SIC Description	Fin, Ins & Real Est - Mob Home Site Opers	SIC Description	Trans. & Utilities - Sewerage Systems
Application Received	March 4, 2019	EPA Waived?	Yes
Application Accepted	May 20, 2019	If No, Reason	

Purpose of Application: NPDES program treated sewage permit renewal and transfer.

Summary of Review

A new owner and operator is proposed to address existing noncompliance through an anticipated Consent Order and Agreement (COA). Electronically reporting as of October 11, 2011. No current reports or certified operator information are available. Lagoon sludge depth is unknown.

Proposed changes more frequent dissolved oxygen, pH and total residual chlorine monitoring, a higher technology based dissolved oxygen daily minimum requirement, and lower technology based TRC requirements.

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.

Approve	Deny	Signatures	Date
X		William H. Mentzer William H. Mentzer, P.E. Environmental Engineering Specialist	November 2, 2023
X		Chad W. Yurisic Chad W. Yurisic, P.E. Environmental Engineer Manager	11/7/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.01335
Latitude NHD	41º 40' 12.02"	Longitude NHD	-80º 14' 13.73"
Latitude DP	41º 40' 12.00"	Longitude DP	-80º 14' 12.00"
Quad Name	Meadville	Quad Code	0504
Wastewater:	Treated mobile home park domestic wastes		
Receiving Waters	Unnamed tributary to Cussewago Creek	Stream Code	52485
NHD Com ID	127350370	RMI	0.88
Drainage Area	0.68	Yield (cfs/mi^2)	0.100
Q_{7-10} Flow (cfs)	0 (intermittent stream)	Q_{7-10} Basis	Sugar Creek at Utica
Elevation (ft)	1189	Slope (ft/ft)	0.02854
Watershed No.	16-D	Chapter 93 Class.	WWF
Existing Use	**statewide**	Existing Use Qualifier	none
Use Exceptions	none	Exceptions to Criteria	none

Comments: This is a discharge to Cussewago Creek through two unnamed tributaries with perennial Stream conditions near the confluence with Cussewago Creek. Perennial stream conditions are at tributary 52478 RMI 0.36, elevation 1080.00 feet and basin drainage 1.4-square miles.

Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.2	1981 and 1982 stream data
Temperature (°C)	25	WWF default
BOD5	1.50	1981 and 1982 stream data
Ammonia	0.06	1981 and 1982 stream data
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Aqua Pa (Emlenton Water Company)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1250
PWS RMI	90.57	Distance from Outfall (mi)	67.89

Changes Since Last Permit Issuance: none

Other Comments:

Above the public water intake at Franklin, Pa the Allegheny River is regulated to provide a minimum stream flow.

Compliance History

No available eDMR reports limiting the compliance review.

The facility was inspected by Melissa Carver and Emily Bach on August 30, 2019 and August 23, 2019.
John Nickelson's operator certification expired in 2011 and has not been renewed.
Inspected on August 23, 2019.
Inspection Comments: The outfall remains broken.
Ongoing unpermitted discharge.
New unpermitted chlorine contact-tank discharge.
No tablets in chlorinator.
One mobile home not connected to the sewage system and using a port-a-john.
One mobile home has a continuing bad collection system connection.
John Nickelson visits the facility monthly while weekly analysis is required.
No discharge is frequently reported.
Annual sludge grid report and chlorine tablet receipts was requested.

Application Data

			MGD	PPD
Design Annual Average Flow			0.01335	
Hydraulic Design Capacity			0.01335	
Organic Design Capacity				
Annual Average Flow		2015	0.002478	
		2016	0.002405	
		2017	0.002414	
Highest Monthly Average Flow			0.002201	
Highest Monthly Average Flow Month	January			

No effluent data tabulation presented

Treatment Facility Summary

Treatment Facility Name: Denny Ridge MHP

WQM Permit No.		Issuance Date		
2072405		3 January 1973	1972	1, 2, 9, 10, 11,12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 29, & 30
2072405	A1	10 April 1978		
2072405	T1	28 January 1988	1983	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 21, and recording

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic tank with Stabilization Lagoon polishing	Hypochlorite	0.01335

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.013335	32.5	Not Overloaded	Anaerobic Digestion	Off-site

Changes Since Last Permit Issuance: Little maintenance provided

Other Comments:
Maintenance required

Some sludge anaerobic digestion is provided in the septic tanks and polishing lagoon bottoms. Sludge removal is not reported and during the August 30 inspection an annual sludge grid report was requested.

The existing NPDES permit requires an annual lagoon bottom sludge depth report. The report is based on determination of the sludge depth over the entire lagoon bottom

Sludge sources: Septic tanks and polishing lagoons. Annual sludge production is unknown. No specific sludge treatment is provided. Some anaerobic sludge digestion is expected in the septic tanks while the polishing lagoons depending on sludge build-up should provide some aerobic and anaerobic sludge digestion. Septic tank sludge is hauled off site.

Originally designed for 100 homes and 20 camp sites. In 1978 the system design was reduced to 60-homes with 25-units in use and no plans to add the remaining units. The current population was 56 people.

25 EDU are in use with a site specific 2.24 people per EDU. The estimated population-based flow is 0.003 920-MGD which is marginally higher than the application reported 0.003 MGD mean flow. The camper population density may be high as 3 people per unit will provide the 1978 design flow.

Original 1972 Design:

Units			Hydraulic per capita		Inorganic TSS			Organic BOD			Ammonia		Phosphate	
		people/unit	gpcd	gpd	ppcd	mg/L	PPD	ppcd	people	mg/L	PPD	mg/L	PPD	mg/L	PPD
100	Mobile homes	2.5	70	17 500				0.17	250		42.50				
60	campers	4	60	14 400				0.16	80		9.60				
20	campers	4	60	4 800				0.16	80		9.60				
Total 1				31 900	0.17	250	58	0.16	330	223	52.10	12		12	
Total 2				28 000											
Total 3				22 300											
maximum				56 000											
Alkalinity 950-mg/L															
1978 as built Design															
			70	13 350					191						
Recalculation			70	13 370	0.17	290	32.47	0.17	191	290	32.47				

TREATMENT FACILITIES

10,692-gallon primary septic tank followed by a 5,909-gallon secondary septic tank, 54,000-square foot 270-foot long by 200-foot wide by 5-foot deep primary polishing pond, 30,400-square foot 190-foot long by 160-foot wide by 5-foot deep secondary polishing pond, calcium (dry) hypo-chlorination, and 390-gallon, 4-foot 8-inch diameter by 3-foot deep with a 1-foot 3-inch freeboard chlorine contact tank.

Design Flow: 0.013350-MGD also stated as 0.013400-MGD
Runoff Flow: 0.020100-MGD
Maximum Flow: 0.026800-MGD

Primary – Septic Tanks

First Tank:	10,692-gallons
Second tank:	5,909 gallons
Total:	16,601-gallons

Polishing – Lagoons

Cell	1	2	total
Length	270-ft	190-ft	54,000 sq ft
Width	200-ft	160-ft	30,400-sq ft
Mean SWD	5	5	
Min SWD	2	2	
Operating SWD	5	5	
Freeboard	3	3	
Inside Slope	1:3	1:3	
Outside Slope	1:2	1:2	
Liner	earth	earth	

Disinfection – revised chlorinator and original contact tank.
Sanuril chlorinator using dry calcium hypochlorite
Contact Tank

Diameter	4-ft 8-inch
Mean SWD	3-ft
Freeboard	1'-ft 3-inch
Capacity	390-gallons

Application 2072405 is dated 5 June 1972, was revised on 19 December 1972 and issued on 3 January 1973 to provide waste treatment serving 100 mobile home sites and 20 camp sites (sites later reduced).

On 10 April 1978 Jack Walter, P.E. approved as built construction with down-sizing to 0.013350-MGD based on a 191-person population. The as built submission included a monitoring well between the lagoons and the receiving waters.

Application Data:

Parameter	Minimum	Mean	Maximum	Units		
pH	7.7		7.6	SU	2	Grab
TRC	0.4	1.5		mg/L	1	Grab
Fecal Coliform	< 10	200		#.100ml	1	Grab
CBOD5	2	25		mg/L	1	8 hr Comp
TSS	4	30		mg/L	1	8 hr comp

.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .01335
Latitude 41º 40' 12.00" **Longitude** -80º 14' 12.00"
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)
DO	4.0			BPJ

Comments:

Proposed are:
Daily DO, pH and TRC monitoring - increased from weekly. *In accordance with the Department's February 3, 2022 SOP for "New and Reissuance Sewage Individual NPDES Permit Applications" 11/7/2023 CWY*
4.0-mg/L minimum daily DO - up from 3.0-mg/L *In accordance with the Department's March 24, 2021 SOP for "Establishing Effluent Limitations for Individual Sewage Permits" 11/7/2023 CWY*
0.5-mg/L monthly average TRC - down from 1.5-mg/L. *Regulatory standard under §§92a.47(a)(8) and §§92a.48(b) and as calculated using the Department's TRC worksheet 11/7/2023 CWY*
Summer time ammonia limits of 9.3 mg/l monthly average and 18.6 mg/l maximum. A three year compliance schedule will be added to the permit as no sample data is available to determine if the existing facility is capable of meeting the more stringent limits. 11/8/2023 CWY
The revised requirement compliance cannot be verified because of self-monitoring report availability.

Water Quality-Based Limitations

The water quality evaluations are based on the TRC spreadsheet and DOSAG Model WQM7. Model print outs are attached.

TRC spreadsheet evaluation showed no chlorine impairment in the primary intermittent receiving waters.

WQM7 DOSAG evaluation recommended secondary treatment with a 4.0-mg/L technology based dissolved oxygen daily minimum. *Modeling indicates the need for a summer WQBEL for Ammonia of 9.3 mg/l average and 18.6 mg/l maximum.*

Best Professional Judgment (BPJ) Limitations

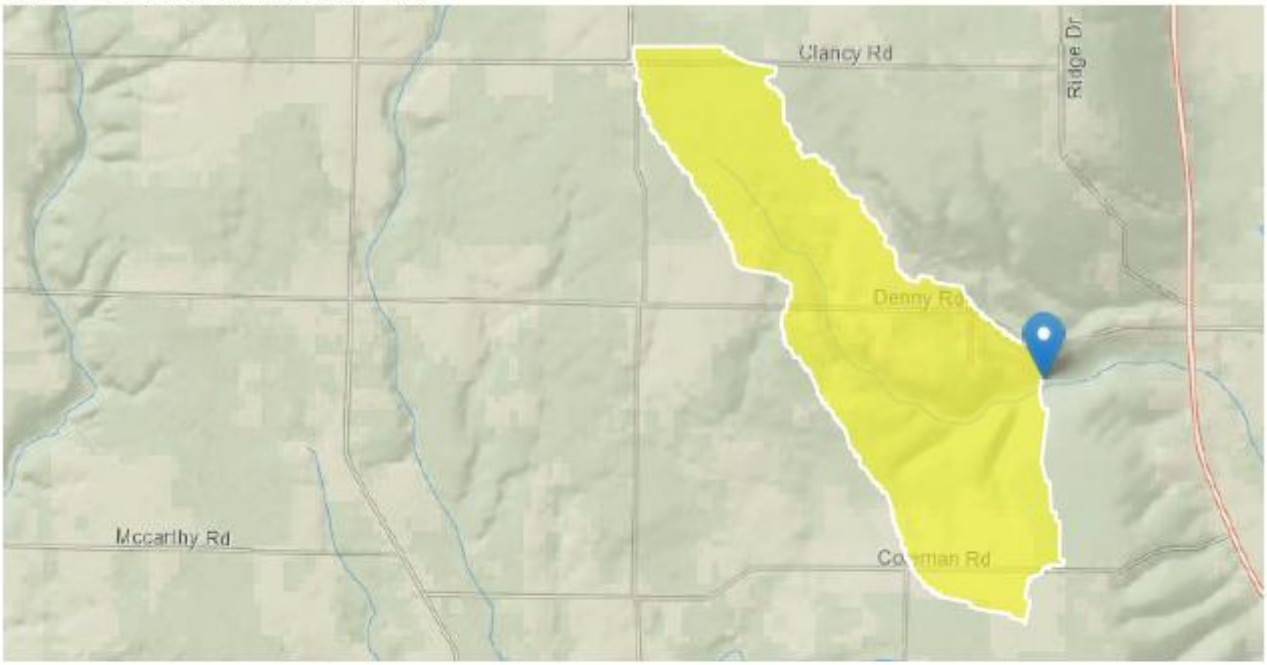
Comments: For DO at a facultative polishing lagoon.

Anti-Backsliding

The existing requirements are technology controlled and not subject to backsliding.

StreamStats Report

Region ID: PA
Workspace ID: PA20231108185343114000
Clicked Point (Latitude, Longitude): 41.67053, -80.23496
Time: 2023-11-08 13:54:06 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.68	square miles
ELEV	Mean Basin Elevation	1352	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.68	square miles	2.33	1720

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16D	52478	Trib 52478 to Cussewago 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)
0.880	Denny Ridge MHP	PA0033936	0.000	CBOD5	25		
				NH3-N	9.3	18.6	
				Dissolved Oxygen			3

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
16D	52478	Trib 52478 to Cussewago Creek	0.880	1189.00	0.68	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
Denny Ridge MHP	PA0033936	0.0000	0.0133	0.0133	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	7.54	0.00	0.00
NH3-N	25.00	0.10	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
16D	52478	Trib 52478 to Cussewago Creek	0.000	1098.00	1.02	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	3.00	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
16D	52478	Trib 52478 to Cussewago 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												
0.880	0.07	0.00	0.07	.0207	0.01959	.344	3.9	11.34	0.07	0.815	21.16	7.00
Q1-10 Flow												
0.880	0.04	0.00	0.04	.0207	0.01959	NA	NA	NA	0.06	0.977	21.61	7.00
Q30-10 Flow												
0.880	0.09	0.00	0.09	.0207	0.01959	NA	NA	NA	0.08	0.711	20.91	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16D	52478	Trib 52478 to Cussewago Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.880	0.013	21.165	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.905	0.344	11.341	0.066
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.36	0.991	2.24	0.766
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.482	25.941	Owens	5
Reach Travel Time (days)			
0.815			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.082	6.76	2.11	7.54
0.163	6.20	1.98	7.54
0.245	5.70	1.86	7.54
0.326	5.23	1.75	7.54
0.408	4.80	1.64	7.54
0.489	4.41	1.54	7.54
0.571	4.05	1.45	7.54
0.652	3.72	1.36	7.54
0.734	3.42	1.28	7.54
0.815	3.14	1.20	7.54

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16D	52478	Trib 52478 to Cussewago 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
0.880	Denny Ridge MH	14.67	45.36	14.67	45.36	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
0.880	Denny Ridge MH	1.78	9.3	1.78	9.3	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)		
0.88	Denny Ridge MHP	25	25	9.3	9.3	3	3	0	0

1A	B	C	D	E	F	G	H	I	J	K	L	M
	Discharger		Denny Ridge						Tuesday, March 1, 2022			
	Site		Denny Ridge STP					Revised	Thursday, November 2, 2023			
	Municipality		Hayfield Township									
	County		Crawford									
	NPDES Permit		PA0033936									
	0.5											
2			**TRC EVALUATION**									
3	Input appropriate values in B4:B8 and E4:E7											
4	79.5081		**= Q stream (cfs)**			**0.5**	**= CV Daily**					
5	0.0430		**= Q discharge (MGD)**			**0.5**	**= CV Hourly**					
6	30		**= no. samples**			**1**	**= AFC_Partial Mix Factor**					
7	0.3		**= Chlorine Demand of Stream**			**1**	**= CFC_Partial Mix Factor**					
8	0		**= Chlorine Demand of Discharge**			**15**	**= AFC_Criteria Compliance Time (min)**					
9			**= BAT/BPJ Value**			**720**	**= CFC_Criteria Compliance Time (min)**					
	0		**= % Factor of Safety (FOS)**				**=Decay Coefficient (K)**					
10	Source		Reference	AFC Calculations			Reference		CFC Calculations			
11	TRC		**1.3.2.iii**		WLA afc = 381.298		**1.3.2.iii**		WLA cfc = 371.728			
12	PENTOXSD TRG		**5.1a**		LTAMULT afc = 0.373		**5.1c**		LTAMULT cfc = 0.581			
13	PENTOXSD TRG		**5.1b**		LTA_afc= 142.081		**5.1d**		LTA_cfc = 216.105			
14												
15	Source					Effluent Limit Calculations						
16	PENTOXSD TRG		5.1f			AML MULT = 1.231						
17	PENTOXSD TRG		5.1g			AVG MON LIMIT (mg/l) = 0.500			BAT/BPJ			
18						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)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

	Chlorine Required		=	perennial	Chlorine Demand +			Chlorine Residual
Stream	Reach/Node		4	1	2	3	4	
Stream	Flow	Conditions		intermittent	perennial	perennial	perennial	
Stream	Code			52485	52478	52468	51591	
	Function						unknown	
Samples				30	30	30	30	
reach	outfall		RMI	1.01	0.67	5.53	32.2	
	Reach End		RMI	0	0	0	0	
reach			feet	5332.8	3537.6	29198.4	170016	
drainage			sq miles	0.51	1.2588	92.8	790.32	
TRC	limitation	average	mg/L	0.164	0.294	0.500	0.350	
		maximum	mg/L	0.535	0.961	1.600	1.600	
elevation		modelled	feet	1205.59	1090.27	1073.31	1065.35	
elevation		modelled	feet	1090.27	1073.31	1065.35	908.3	
slope		modelled	foot/foot	0.022	0.005	0.000	0.001	
low flow			cfs/sq mi	0.101	0.101	0.101	0.10	
discharge			mgd	0.0313	0.0420	0.0430	0.0430	
Runoff	Period		hours	24.000	24.000	24.000	24.000	

Dry stream discharge with no aquatic life to protection . 0.5-mg/L technology limt should be adequae as the chlorine shouldispate within a few feet of the discharge and not reach the perennial stream flow conditions.

stream	flow		cfs	0.05131	0.12664	9.33590	79.50810	
stream	flow		MGD	0.033161	0.081848	6.033953	51.387434	
stream	flow	total	MGD	0.064496	0.123848	6.076953	51.430434	
stream	chlorine	demand	mg/L	0.3	0.3	0.3	0.3	
discharge	discharge	demand	mg/L					
stream	Total Stream/Waste		ratio	2.1	2.9	141.3	1196.1	
permitted	TRC	mean	BAT	0.5	0.5	0.5	0.5	
permitted	TRC	maximum	BAT	1.6	1.6	1.6	1.6	

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Daily 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	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia Nov 1 – Apr 30	XXX	XXX	XXX	25	50	XXX	2/month	8-Hr Composite
Ammonia May 1 – Oct 31	XXX	XXX	XXX	9.3	18.6	XXX	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001 after disinfection

Other Comments: None