

Application Type Renewal
Facility Type Non-Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0210668
APS ID 1090573
Authorization ID 1443433

Applicant and Facility Information

Applicant Name	<u>Perseus House Inc.</u>	Facility Name	<u>Andromeda House</u>
Applicant Address	<u>1511 Peach Street</u> <u>Erie, PA 16501-2104</u>	Facility Address	<u>39132 Mount Pleasant Road</u> <u>Spartansburg, PA 16434-1120</u>
Applicant Contact	<u>Nick Viglione</u>	Facility Contact	<u>Scott Martin</u>
Applicant Phone	<u>(814) 572-6096</u>	Facility Phone	<u></u>
Applicant E Mail	<u>nviglione@perseushouse.org</u>	Facility E Mail	<u>smartin@pereushouse.org</u>
Client ID	<u>44570</u>	Site ID	<u>250325</u>
Municipality	<u>Bloomfield Township</u>	County	<u>Crawford</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Connection Status	<u>No Limitations</u>
Application Received	<u>May 30, 2023</u>	EPA Waived?	<u>Yes</u>
Application Accepted	<u>June 20, 2023</u>	If No, Reason	<u></u>
Purpose of Application	<u>NPDES renewal</u>		

Summary of Review

No open violations listed. 8/15/2023 CWY E Coli monitoring added.

Don Green Sanitation conveyed approximately 7,200-gallons of sludge to the McKean Township Sewer Authority for additional treatment and disposal.

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		<i>William H. Mentzer</i> William H. Mentzer, P.E. Environmental Engineering Specialist	July 13, 2023
X		Chad W. Yurisc Chad W. Yurisc, P.E. Environmental Engineer Manager	8/15/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.0038</u>
Latitude - NPDES	<u>41° 49' 53.93"</u>	Longitude - NPDES	<u>-79° 46' 28.10"</u>
Latitude - NHD	<u>41° 49' 54.33"</u>	Longitude - NHD	<u>-79° 46' 37.20"</u>
Quad Name	<u>Lake Canadohta</u>	Quad Code	<u>0407</u>
Wastewater:	<u>Treated boarding school domestic wastes</u>		

Receiving Waters	<u>Unnamed tributary to Pine Hollow Run</u>	Stream Code	<u>54656</u>
NHD Com ID	<u>100467745</u>	RMI	<u>2.75</u>
Drainage Area	<u>0.16</u>	Yield (cfs/mi ²)	<u>0</u>
Q ₇₋₁₀ Flow (cfs)	<u>0</u>	Q ₇₋₁₀ Basis	<u>Intermittent stream</u>
Elevation (ft)	<u>1624.74</u>	Slope (ft/ft)	<u>0.00660</u>
Watershed No.	<u>16-E</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>statewide</u>	Existing Use Qualifier	<u>none</u>
Exceptions to Use	<u>none</u>	Exceptions to Criteria	<u>none</u>

Comments The monitoring location is after chlorination and prior to pumping.
The NHD outfall is at tributary Node RMI 1,01 or stream RMI 2.75

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

Background/Ambient Data	Data Source	
pH (SU)	<u>7.0</u>	<u>default</u>
Temperature (°F)	<u>68</u>	<u>default</u>
Hardness (mg/L)	<u>100</u>	<u>default</u>
5 Day CBOD	<u>2.0</u>	<u>default at perennial stream conditions</u>
Ammonia Nitrogen	<u>0.1</u>	<u>default at perennial stream conditions</u>
Other:	_____	_____

Nearest Downstream Public Water Supply Intake	<u>Aqua Pa (Emlenton Water Co) at Emlenton, PA</u>		
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>1250</u>
PWS RMI	<u>90.57</u>	Distance from Outfall (mi)	<u>136.39</u>

The water supply stream flow is the minimum regulated upstream flow at Franklin, PA.

Changes Since Last Permit Issuance: none

Other Comments:

The receiving stream flow is based on Oil Creek at Rouseville, Pa.

Discharge drainage precision is limited to 0.16 square miles as indicated through measured values ranging between 0.156 to 1.66 square miles.

Treatment Facility Summary				
Treatment Facility Name: Andromeda House				
WQM Permit No.	Issuance Date			
2092404A1	4/11/2006			
2096408	10/29/1996			
2092404	9/10/93			
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.0038
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0038	8.2	Not Overloaded	Aerated Sludge Holding	

Changes Since Last Permit Issuance: none

Other Comments:

The treatment facility has been rebuilt for compliance with the current NPDES permit requirements with no further permit violations reported.

Treatment: comminution with by-pass bar screen, 2,000-gallon equalization tank, 4,024-gallon aeration tank, clarifier with airlift sludge pumping, calcium hypochlorite disinfection with an 1,000-gallon contact tank, 2,000-gallon aerated sludge holding tank, two 2-hp 86-scfm blowers, one 1-hp 4-scfm blower and an 155-gpm effluent pump. De-chlorination was not addressed in the application and is not known to present.

The original design was for a small flow system serving a residential home. The treatment system was for a septic tank sand filter system with chlorination and a pumped discharge to roadside ditch northwest of the home. De-chlorination was not addressed in the application. The design was approved as WQM 2092404 on September 10, 1993.

Facility design was increased by WQM permit 2096408 through adding treatment capacity and retained the original effluent pumped discharge location. The permit was issued on 29 October 1996 for: six 1,000-gallon septic tanks. 1,000-gallon dosing tank, two sand filter beds, chlorination with a 1,000-gallon contact tank and effluent pumping. De-chlorination was not addressed in the application.

In 2006 WQM permit 2092404 Amendment 1 issued on April 11, 2006 to replace the septic tank-sand filter system with an activated sludge treatment facility was submitted. Design was for comminutor with bypass bar screen, 2,000-gallon equalization tank with two 0.5-hp pumps, 4,024-gallon aeration basin, 736-gallon clarifier with air-lift sludge pump, tablet chlorinator, 1,000-gallon chlorine contact tank, effluent pumping tank, 2,000-gallon sludge holding tank, and two 2-hp and one 1-hp blowers. Annual average flow is 0.0038-MGD, Hydraulic capacity is 0.0038-MGD, and the organic load is 8.16-PPD. This amendment retained effluent pumping and the discharge location. Upon permit issuance WQM permit 2096408 was cancelled.

As previously requested, and retained small flow monitoring based on actual flow is proposed.

For 2001 through summer 2017 the waste flow was at least 701-gpd and did not exceed 2,177-gpd. The current discharge is marginally higher and less than 1,000-gpd.

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	00	00	00	00	00	00	00	00	00	00	00	00
Flow (MGD) Daily Maximum	00	00	00	00	00	00	00	00	00	00	00	00
pH (S.U.) Daily Minimum	7.2	7.1	7.2	7.2	7.0	7.2	7.2	7.1	7.0	7.0	7.1	7.1
pH (S.U.) Daily Maximum	7.2	7.1	7.2	7.2	7.0	7.2	7.2	7.1	7.0	7.0	7.1	7.1
DO (mg/L) Daily Minimum	7.69	7.48	8.61	7.89	9.15	7.85	6.92	8.47	7.68	4.97	7.95	6.59
TRC (mg/L) Average Monthly	0.08	0.10	0.20	0.22	0.12	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instantaneous Max	0.60	0.48	0.56	0.22	0.12	0.61	0.54	0.64	0.42	0.65	0.63	0.55
CBOD5 (mg/L) Average Monthly	< 4.0	5.68	4.60	6.44	2.76	3.72	6.87	9.51	10.52	6.58	3.33	5.29
CBOD5 (mg/L) Instantaneous Max	< 4.0	5.68	4.60	6.44	2.76	3.72	6.87	9.51	10.52	6.58	3.33	5.29
TSS (mg/L) Average Monthly	5.0	7.50	7.0	10.0	9.0	10.0	10.0	5.0	21.0	24.0	7.0	14.0
TSS (mg/L) Instantaneous Max	5.0	7.50	7.0	10.0	9.0	10.0	10.0	5.0	21.0	24.0	7.0	14.0
F Coliform (#/100 ml) Geometric Mean	< 1	< 1	< 0.1	224.7	159.7	< 1	17	< 10	43	< 10	< 10	< 10
Fecal Coliform (No./100 ml) Inst Max	< 1	< 1	< 0.1	224.7	159.7	< 1	17	< 10	43	< 10	< 10	< 10
Total Nitrogen (mg/L) Average Quarterly		22.49			19.91			30.81			24.01	
Ammonia (mg/L) Average Quarterly		8.817			1.34			3.40			1.28	
Total Phosphorus (mg/L) Ave Quarterly		1.94			3.20			1.64			1.3	

Compliance History

No violations reported

	Month	Year	Flow MGD	Mass PPD				
Annual Average Design			0.0038					
Hydraulic Design			0.0038					
Organic Design				8.16				
Annual Average		2020	0.000913					
		2021	0.000787					
		2022	0.000640					
Highest Monthly Average	July	2022	0.000924					
pH				7.0		7.4		48
TRC					0.10	0.78		24
F Coliform				< 10	19.15	159.7		24
CBOD5				2.03	6.50	11.82		24
TSS				6.0	12.12	25.0		24
Am				< 0.5	2.48	9.8		16
N				2.24	22.17	51.67		16
P				0.21	1.29	3.20		16

No flows over 0.001-MGD reported and monthly monitoring retention recommended

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	.0038
Latitude	41° 49' 53.93"	Longitude	-79° 46' 28.10"
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	Daily Minimum		BPJ
E Coli	Report	Annual		BPJ

Comments: E Coli monitoring proposed.

Water Quality-Based Limitations

Ammonia, dissolved oxygen, nitrogen, phosphorus, and total residual chlorine are assumed pollutants based on prior reviews.

The normal drainage is to a local dry drainage swale draining south east to un-named tributary 54541 of Britton Run and then to the East Branch Oil Creek.

As specified the discharge is pumped north and west to a roadside ditch. The ditch conveys the waste flow northwest for approximately 530 feet then west in a drainage swale for another approximate 490 feet crossing the local road to an intermittent segment of Pine Hollow Run tributary 54656. At the roadside ditch an acceptable rip-rapped outfall is provided according to WQM application 2096408.

Disinfection and post chlorination monitoring is approximately 30 feet southeast of the pump station. This is the NPDES permit discharge point.

The un-named Pine Hollow Run tributary 54656 is an assessed intermittent stream. NHD places the outfall at RMI 1.01 while the NHD site RMI is 1.00. This is 2.75 miles above the stream mouth. Waters above this point have not been assessed. No water-quality based chlorine limitations are necessary at this point.

According to the USGS map perennial stream conditions should exist downstream at RMI 1.71 or 1.04 miles below the NHD outfall. At this point basin drainage is 0.257 square miles or 164.5 acres and the stream elevation is 1507.29-feet above sea level. The stream is not listed for nutrient control or special protection by either the Department or the Pa Fish and Boat Commission. The discharge is expected to approximate background condition at this point and DOSAG water-quality evaluation recommends secondary treatment with a 4.0-mg/L minimum daily DO limit.

Downstream 5.68 miles via Bloomfield Run is Oil Creek. Basin drainage at this point is 31.0-square miles with an 1140.00-foot elevation. The Pa Boat and Fish Commission has listed this Oil Creek segment as a trout approved fishery with trout stocking. At this point the estimated total waste flows are less than 1% of the basin flow and should not affect any water uses.

Best Professional Judgment (BPJ) Limitations

Comments: DO only.

Anti-Backsliding

Not appropriate

1A	B	C	D	E	F	G	H	I	J	K	L	M
	Discharger Site Municipality County NPDES Permit 0.5		Perseus House Inc. Andromeda House STP Bloomfield Township Crawford A0210668		Revised			Tuesday, June 20, 2023 Wednesday, June 21, 2023				
2	TRC EVALUATION											
3	Input appropriate values in B4:B8 and E4:E7											
4	0.022	= Q stream (cfs)							0.5	= CV Daily		
5	0.0038	= 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	0	= BAT/BPJ Value							720	= CFC_Criteria Compliance Time (min)		
		= % Factor of Safety (FOS)								= Decay Coefficient (K)		
10	Source Reference		AFC Calculations				Reference		CFC Calculations			
11	TRC	1.3.2.iii	WLA_afc = 1.200 LTAMULT_afc = 0.373 LTA_afc = 0.447				1.3.2.iii		WLA_cfc = 1.163 LTAMULT_cfc = 0.581 LTA_cfc = 0.676			
12	PENTOXSD TRG	5.1a					5.1c					
13	PENTOXSD TRG	5.1b					5.1d					
14	Source		Effluent Limit Calculations									
15	PENTOXSD TRG	5.1f	AML_MULT = 1.231						BAT/BPJ			
16	PENTOXSD TRG	5.1g	LIMIT (mg/l) = 0.500						LIMIT (mg/l) = 1.635			
17												
18												
	WLA_afc	$(0.19/e^{-(k \cdot AFC_tc)}) + [(AFC_Yc \cdot Qs \cdot 0.19 / Qd) \cdot e^{-(k \cdot AFC_tc)}] \dots + Xd + (AFC_Yc \cdot Qs \cdot Xs / Qd) \cdot (1 - FOS / 100)$										
	LTAMULT_afc	$EXP((0.5 \cdot LN(cvd^2 + 1)) - 2.326 \cdot LN(cvd^2 + 1)^{0.5})$										
	LTA_afc	$wla_afc \cdot LTAMULT_afc$										
	WLA_cfc	$(0.11/e^{-(k \cdot CFC_tc)}) + [(CFC_Yc \cdot Qs \cdot 0.11 / Qd) \cdot e^{-(k \cdot CFC_tc)}] \dots + Xd + (CFC_Yc \cdot Qs \cdot Xs / Qd) \cdot (1 - FOS / 100)$										
	LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no_samples + 1)) - 2.326 \cdot LN(cvd^2 / no_samples + 1)^{0.5})$										
	LTA_cfc	$wla_cfc \cdot LTAMULT_cfc$										
	AML_MULT	$EXP(2.326 \cdot LN((cvd^2 / no_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no_samples + 1))$										
	AVG MON LIMIT	$MIN(BAT_BPJ, MIN(LTA_afc, LTA_cfc) \cdot AML_MULT)$										
	INST MAX LIMIT	$1.5 \cdot ((av_mon_limit \cdot AML_MULT) / LTA_MULT_afc)$										
	$(0.011 / EXP(-k \cdot CFC_tc / 1440)) + ((CFC_Yc \cdot Qs \cdot 0.011) / (1.547 \cdot Qd)) \dots - EXP(-k \cdot CFC_tc / 1440) + Xd + (CFC_Yc \cdot Qs \cdot Xs / 1.547 \cdot Qd) \cdot (1 - FOS / 100)$											
	Stream	Chlorine Required	=	perennial	Chlorine Demand	+	Chlorine Residual					
	Stream	Reach/Node	1	1								
	Stream	Flow	Conditions	intermittent								
	Stream	Code		54656								
	Stream	Function		OUTFALL								
	Samples			30								
	reach	outfall	RMI	2.75								
	reach	Reach End	RMI	1.71								
	reach		feet	5491.2								
	drainage		sq miles	0.2								
	TRC	limitation	average	mg/L	0.500							
			maximum	mg/L	1.635							
	elevation	modelled	feet	1574.74								
	elevation	modelled	feet	1457.29								
	slope	modelled	foot/foot	0.021								
	low flow		cfs/sq mi	0.109								
	discharge		mgd	0.0038								
	Runoff	Period	hours	24.000								
	Technology control is adequate.											
	stream	flow		cfs	0.02177							
	stream	flow		MGD	0.014068							
	stream	flow	total	MGD	0.017868							
	stream	chlorine	demand	mg/L	0.3							
	discharge	discharge	demand	mg/L								
	stream	Total Stream/Waste	ratio		4.7							
	BAT	TRC	mean	BAT	0.5							
	BAT	TRC	maximum	BAT	1.6							
	B	C	D	E	F	G	H	I	J	K	L	M

Permit No. PA0210668

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
16E	54656	Trib 54656 to Pine Hollow Run	2.750	1574.74	0.16	0.00000	0.00	<input type="checkbox"/>

Stream Data

Design Cond.	LFY (cfs)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.109	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
Andromeda H STP	PA0210668	0.0038	0.0038	0.0038	0.000	25.00	7.00

Parameter Name	Parameter Data			
	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Permit No. PA0210668

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
16E	54656	Trib 54656 to Pine Hollow Run	1.710	1457.29	0.26	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)	(°C)	
Q7-10	0.109	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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

Permit No. PA0210668

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
16E	54656	Trib 54656 to Pine Hollow Run	0.000	1350.30	1.16	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)	(°C)	
Q7-10	0.109	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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

Permit No. PA0210668

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	95.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

Permit No. PA0210668

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
16E		54656				Trib 54656 to Pine Hollow 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												
2.750	0.02	0.00	0.02	.0059	0.02139	.286	1.89	6.6	0.04	1.471	21.26	7.00
1.710	0.03	0.00	0.03	.0059	0.01185	.3	2.47	8.25	0.05	2.287	20.87	7.00
Q1-10 Flow												
2.750	0.01	0.00	0.01	.0059	0.02139	NA	NA	NA	0.04	1.754	21.73	7.00
1.710	0.02	0.00	0.02	.0059	0.01185	NA	NA	NA	0.04	2.787	21.24	7.00
Q30-10 Flow												
2.750	0.02	0.00	0.02	.0059	0.02139	NA	NA	NA	0.05	1.287	20.99	7.00
1.710	0.04	0.00	0.04	.0059	0.01185	NA	NA	NA	0.05	1.977	20.67	7.00

Permit No. PA0210668

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
16E	54656	Trib 54656 to Pine Hollow 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
2.750	Andromeda H ST	NA	50	14.52	50	0	0
1.710		NA	NA	15.13	NA	NA	NA

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
2.750	Andromeda H ST	NA	25	1.77	25	0	0
1.710		NA	NA	1.81	NA	NA	NA

Dissolved Oxygen Allocations									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.75	Andromeda H STP	25	25	25	25	4	4	0	0
1.71		NA	NA	NA	NA	NA	NA	NA	NA

Permit No. PA0210668

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
16E	54656	Trib 54656 to Pine Hollow Run			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
2.750	0.004	21.262		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
1.886	0.286	6.597		0.043	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
7.81	0.841	6.39		0.771	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
7.172	27.631	Owens		NA	
<u>Reach Travel Time (days)</u>	Subreach Results				
1.471	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)	
	0.147	6.85	5.70	7.85	
	0.294	6.01	5.09	7.98	
	0.441	5.27	4.54	8.09	
	0.588	4.62	4.06	8.18	
	0.736	4.05	3.62	8.24	
	0.883	3.55	3.23	8.24	
	1.030	3.12	2.89	8.24	
	1.177	2.73	2.58	8.24	
	1.324	2.40	2.30	8.24	
	1.471	2.10	2.05	8.24	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
1.710	0.004	20.869		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
2.472	0.300	8.251		0.046	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
2.07	0.015	1.36		0.748	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
8.243	26.053	Owens		5	
<u>Reach Travel Time (days)</u>	Subreach Results				
2.287	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)	
	0.229	2.06	1.15	8.24	
	0.457	2.06	0.97	8.24	
	0.686	2.05	0.81	8.24	
	0.915	2.04	0.69	8.24	
	1.144	2.04	0.58	8.24	
	1.372	2.03	0.49	8.24	
	1.601	2.02	0.41	8.24	
	1.830	2.01	0.35	8.24	
	2.058	2.01	0.29	8.24	
	2.287	2.00	0.25	8.24	

Permit No. PA0210668

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
16E		54656	Trib 54656 to Pine Hollow 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)
2.750	Andromeda H STP	PA0210668	0.004	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

sed 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	1/month	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/month	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/month	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	1/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	1/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	1/month	Grab
E Coli	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Ammonia	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

Compliance Sampling Location: Outfall 001 after disinfection