pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0102431**
Facility Type	**Non-Municipal**	APS ID	**1038504**
Major / Minor	**Minor**	Authorization ID	**1354168**

Applicant and Facility Information

Applicant Name	**Cedar Acres/Cunningham MHP Inc.**	Facility Name	**Cedar Acres MHP**
Applicant Address	203 Independence Lane	Facility Address	Old Rte 108
	New Castle, PA 16101-2883		New Castle, PA 16101
Applicant Contact	William Cunningham	Facility Contact	
Applicant Phone	(724) 658-1000	Facility Phone	
Applicant E Mail		Facility E Mail	
Client ID	113003	Site ID	257199
Municipality	Scott Township	County	Lawrence
Ch 94 Load Status	Not Overloaded	Connection Status	
SIC Code	6515	SIC Code	4952
SIC Description	Fin, Ins & Real Est - Mobile Home Site	SIC Description	Operators,Trans. & Utilities - Sewerage Sys
Application Received	May 5, 2021	EPA Waived?	Yes
Application Accepted	June 8. 2021	If No, Reason	

Purpose of Application NPDES discharge permit renewal

Summary of Review

The facility was cited for an expired permit and no renewal on March 12, 2021.

Previously daily DO, pH and TRC monitoring was proposed and subsequently daily monitoring was postponed allowing a daily monitoring schedule to be developed. Daily DO, pH and TRC monitoring is again proposed. Also proposed is E. Coli monitoring based on the Departments SOP for sewage discharges.

Sludge use and disposal description and location(s): Hauled by Pullman sanitary Service to the Mahoning Township WTP for further treatment.

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	January 3, 2022
X		Justin C. Dickey Justin C. Dickey, P.E. Environmental Engineer Manager	January 12, 2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0078
Latitude DP	41º 1' 44.00"	Longitude DP	-80º 11' 37.00"
Latitude NHD	41º 1' 44.55"	Longitude NHD	-80º 11' 37.06"
Quad Name	Harlansburg	Quad Code	1004
Wastewater:	Treated mobile home park domestic wastes		

Receiving Waters	Unnamed Trib of Slippery Rock Crk	Stream Code	34182
NHD Com ID	126219813	RMI	0.27
Drainage Area	0.56	Yield (cfs/mi^2)	0.07558
Q_{7-10} Flow (cfs)	0	Q_{7-10} Basis	perennial
Elevation (ft)	1152.32	Slope (ft/ft)	
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use	statewide	Existing Use Qualifier	none
Exceptions to Use	none	Exceptions to Criteria	none
Comments	Modelled as tributary 34181		

Flow Basis	Slippery Rock at Wurtemburg
	Yield 0.07588 cfs/sq mi

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	Hell Run dated August 18, 1987
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Pa American		
PWS Waters	Connoquenessing Creek	Flow at Intake (cfs)	NA
PWS RMI	0	Distance from Outfall (mi)	21.05

Changes Since Last Permit Issuance: Change in down-stream water supply intake.

Other Comments: Initially the first down-stream water supply intake was at Camp Allegheny. After this intake ceased operation the first downstream intake was at the Slippery Rock Creek mouth by Pa American. The Pa American subsequently consolidated local operations and moved their intake to the mouth of Connoquenessing Creek.

Treatment Facility Summary				
Treatment Facility Name: Cedar Acres MHP				
WQM Permit No.	**Issuance Date**			
3784404	March 8, 1985			
3784404 T-1	November 19, 1997			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Hypochlorite	0.0078
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0078	60	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: none
Other Comments:

Treatment: Extended aeration using: 1 comminutor, 3 aeration tanks, 1 settling tank, chlorination with 1 chlorine contact tank,

	Period	Units	Application Minimum	Average	Maximum	Maximum
Annual Average		MGD		0.0078		
Hydraulic Design		MGD		0.0078		
Organic Design		PPD		132		
Annual Average	2018	MGD		0.0060		
	2019	MGD		0.0060		
	2020	MGD		0.0060		
Highest Monthly Average	2020	MGD		0.0060		
	2020			November		
pH			6.85			8.41
DO			4.46	7.07		
TRC				0.33		0.6
Fecal Coliform				5.67		2400
CBOD5				6.22		23.1
TSS				15.5		19.1
NH3N				0.66		13.6
N				2.67`		19.1
P				3.95		7.68

Compliance History

DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
Flow (MGD) Average Monthly	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060
Flow (MGD) Daily Maximum	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060
pH (S.U.) Minimum	7.87	7.92	7.41	7.81	7.91	7.76	7.83	7.78	7.44	7.53	7.04	7.31
pH (S.U.) Maximum	8.30	8.31	8.64	8.19	8.45	8.41	8.10	8.27	7.99	7.95	7.95	7.76
DO (mg/L) Minimum	5.65	8.26	7.86	6.72	8.34	7.40	6.16	6.02	5.64	4.79	4.80	4.88
TRC (mg/L) Average Monthly	0.30	0.37	0.36	0.37	0.29	0.31	0.38	0.35	0.37	0.41	0.35	0.31
CBOD5 (mg/L) Average Monthly	4.60	12.75	5.4	< 4.0	8.75	3.55	< 4.0	< 4.0	< 4.0	5.1	5.50	12.10
TSS (mg/L) Average Monthly	16.75	14.75	8.75	8.0	9.75	5.0	11.75	21.5	17.25	13.75	26.50	51
Fecal Coliform (CFU/100 ml) Geometric Mean	1.0	1.42	< 1.0	16.12	1.414	1.0	< 1.0	1.0	1.0	1.0	1.41	15.49
Total Nitrogen (mg/L) Average Monthly	2.18	2.95	2.39	8.67	1.61	1.29	1.50	2.26	1.70	2.09	3.33	8.93
Ammonia (mg/L) Average Monthly	0.31	0.33	0.38	5.97	0.31	0.21	< 0.30	< 0.30	< 0.30	< 0.30	0.34	0.60
Total Phosphorus (mg/L) Average Monthly	5.16	4.10	2.13	1.49	2.45	2.61	4.43	4.25	4.47	5.82	7.47	7.04

Median 7.9-SU Summer median 7.9 SU

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0078
Latitude 41º 1' 44.00" **Longitude** -80º 11' 37.00"
Wastewater Description: Treated Sewage

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	IMAX		92

Comments: E Coli is a new parameter reviewed as bacteria. As a new parameter only monitoring is proposed.

Water Quality-Based Limitations

A Sewerage Program based “Reasonable Potential Analysis” determined the following parameters were candidates for limitations: BOD5 or CBOD5, TSS, nitrogen, ammonia, phosphorus, e coli, fecal coliform, DO, TRC and pH is BPJ based on the Department’s SOPs for sewage discharges.

BOD5 or CBOD5, TSS, and pH are limited by secondary treatment.

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

Parameter			Limit (mg/l)		SBC	Model		
Name	Period	Minimum	Average	Maximum		Minimum	Average	Maximum
CBOD5			25.0	50.0	NA		25.0	50.0
Ammonia	Summer		8.5	17.0			8.6	17.2
	Winter		25.5	51.0				
DO		4.0				4.0		
TRC			0.5	1.6			0.5	1.6

Comments: DO is BPJ based at 4.0-mg/L. TRC is spreadsheet based and assumes no aquatic life protection is needed in the intermittent stream reach.

Best Professional Judgment (BPJ) Limitations Comments: Only applies to DO. Monitoring for E. Coli, Total Nitrogen, and Total Phosphorus

Anti-Backsliding

N/A

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	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	25.0	XXX	50.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	8.5	XXX	17.0	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

1A	B	C	D	E	F	G	H	I	J	K	L	M
	Discharger		Cedar Acres							Monday, January 3, 2022		
	Site		Cedar Acres STP					Revised		Monday, January 3, 2022		
	Municipality		Scott Township									
	County		Lawrencwe									
	NPDES Permit		PA0102431									
	0.5											
2					**TRC EVALUATION**							
3	Input appropriate values in B4:B8 and E4:E7											
4	0.2307		**= Q stream (cfs)**			**0.5**	**= CV Daily**					
5	0.0078		**= Q discharge (MGD)**			**0.5**	**= CV Hourly**					
6	30		**= no. samples**			**1**	**= AFC_Partial Mix Factor**					
7	0.4		**= 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 = 8.029			**1.3.2.iii**			WLA cfc = 7.868		
12	PENTOXSD TRG		**5.1a**	LTAMULT afc = 0.373			**5.1c**			LTAMULT cfc = 0.581		
13	PENTOXSD TRG		**5.1b**	LTA_afc= 2.992			**5.1d**			LTA_cfc = 4.574		
14												
15	Source					Effluent Limit Calculations						
16	PENTOXSD TRG		5.1f			AML MULT = 1.231						
17	PENTOXSD TRG		5.1g			LIMIT (mg/l) = 0.500		BAT/BPJ				
18						X 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			2	1	2	
Stream	Flow	Conditions			intermittent	perennial	
Stream	Code				34182	34181	
	Function						
Samples					30	30	
reach	outfall		RMI		0.27	1.17	
	Reach End		RMI		0	0	
reach			feet		1425.6	6177.6	
drainage			sq miles		0.56	3.04	
TRC	limitation	average	mg/L		0.500	0.500	
		maximum	mg/L		1.600	1.600	
elevation		modelled	feet		1152.32	1140.49	
elevation		modelled	feet		1140.49	1103.22	
slope		modelled	foot/foot		0.008	0.006	
low flow			cfs/sq mi		0.076	0.076	
discharge			mgd		0.0078	0.0078	
Runoff	Period		hours		24.000	24.000	

No chlorine requirements indicated for the intermittent strsm reach.

stream	flow		cfs	0.04249	0.23067
stream	flow		MGD	0.027464	0.149088
stream	flow	total	MGD	0.035264	0.156888
stream	chlorine	demand	mg/L	0.4	0.4
discharge	discharge	demand	mg/L		
stream	Total Stream/Waste		ratio	4.5	20.1

permitted	TRC	mean	BAT	0.5	0.5
permitted	TRC	maximum	BAT	1.6	1.6

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
20C	34181	Trib 34181 to Slippery Rock Creek	**1.440**	1152.32	0.56	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	0.076	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.20	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
Cedar Acres	PA0102431	0.0078	0.0078	0.0078	0.000	25.00	7.90

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.10	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
20C	34181	Trib 34181 to Slippery Rock Creek	**1.170**	1140.49	3.04	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	0.076	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.20	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

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
20C	34181	Trib 34181 to Slippery Rock Creek	**0.000**	1103.22	307.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.076	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.20	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
20C	34181	Trib 34181 to Slippery Rock 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 (ºC)	Analysis pH
Q7-10 Flow												
1.440	0.04	0.00	0.04	.0121	0.00830	.319	3.5	10.99	0.05	0.338	21.11	7.28
1.170	0.23	0.00	0.23	.0121	0.00603	.405	7.92	19.53	0.08	0.946	20.25	7.22
Q1-10 Flow												
1.440	0.03	0.00	0.03	.0121	0.00830	NA	NA	NA	0.04	0.406	21.54	7.32
1.170	0.15	0.00	0.15	.0121	0.00603	NA	NA	NA	0.06	1.195	20.38	7.23
Q30-10 Flow												
1.440	0.06	0.00	0.06	.0121	0.00830	NA	NA	NA	0.06	0.294	20.86	7.26
1.170	0.31	0.00	0.31	.0121	0.00603	NA	NA	NA	0.09	0.802	20.19	7.21

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	95.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	34181	Trib 34181 to Slippery Rock 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
1.440	Cedar Acres	10.41	33.66	10.41	33.66	1	0
1.170		NA	NA	12.89	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
1.440	Cedar Acres	1.57	8.6	1.57	8.6	0	0
1.170		NA	NA	1.69	NA	NA	NA

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)		
1.44	Cedar Acres	25	25	8.6	8.6	4	4	0	0
1.17		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34181	Trib 34181 to Slippery Rock Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
1.440	0.008	21.106	7.285
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.504	0.319	10.989	0.049
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.09	1.095	1.98	0.762
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.305	24.415	Owens	5
Reach Travel Time (days)			
0.338			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.034	6.82	1.93	7.81
0.068	6.56	1.88	8.05
0.101	6.31	1.83	8.16
0.135	6.06	1.79	8.23
0.169	5.83	1.74	8.24
0.203	5.61	1.70	8.24
0.237	5.40	1.65	8.24
0.270	5.19	1.61	8.24
0.304	4.99	1.57	8.24
0.338	4.80	1.53	8.24

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
1.170	0.008	20.249	7.218
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.918	0.405	19.532	0.076
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.63	0.248	0.33	0.714
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.243	20.565	Owens	5
Reach Travel Time (days)			
0.946			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.095	2.57	0.31	8.24
0.189	2.51	0.29	8.24
0.284	2.45	0.27	8.24
0.378	2.39	0.25	8.24
0.473	2.34	0.23	8.24
0.567	2.28	0.22	8.24
0.662	2.23	0.20	8.24
0.756	2.18	0.19	8.24
0.851	2.12	0.18	8.24
0.946	2.07	0.17	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20C	34181	Trib 34181 to Slippery Rock 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)
1.440	Cedar Acres	PA0102431	0.008	CBOD5	25		
				NH3-N	8.6	17.2	
				Dissolved Oxygen			4