Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0098817**
Facility Type	**Non-Municipal**	APS ID	**1121477**
Major / Minor	**Minor**	Authorization ID	**1499215**

Applicant and Facility Information

Applicant Name	**RMZ Holdings, Inc.**	Facility Name	**Hickory Acres STP**
Applicant Address	600 Pittsburgh Road	Facility Address	669 Nelson Road R
	Uniontown, PA 15401-2214		Farmington, PA 15437-1225
Applicant Contact	John Klink	Facility Contact	Edgar Harris
Applicant Phone	(724) 984-2110	Facility Phone	724-966-2278
Client ID	235845	Site ID	236773
Ch 94 Load Status	Not Overloaded	Municipality	Wharton Township
Connection Status		County	Fayette
Date Application Received	August 29, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The Pa Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from H&H Water Controls, Inc. (consultant) on behalf of RMZ Holdings, Inc. (permittee) on August 29, 2024 for Permittee's Hickory Acres STP (facility). This is a minor sewage facility with a design flow of 0.0049 MGD that discharges into an UNT to Meadow Run (HQ-CWF) in state watershed 19-E. The current permit will expire on November 30, 2024. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to expiration date. Renewal NPDES permit application under Clean Water Program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes to existing permit: Added: E-Coli.

Sludge use and disposal description and location(s): Offsite disposal to other WWTP.

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
√		Reza H. Chowdhury, E.I.T. / Project Manager	September 25, 2024
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	09/25/2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.0049
Latitude	39º 49' 3.24"	Longitude	-79º 34' 40.26"
Quad Name	Fort Necessity	Quad Code	2009
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Meadow Run (HQ-CWF)	Stream Code	38523
NHD Com ID	69922689	RMI	0.65
Drainage Area	1.84 mi^2	Yield (cfs/mi^2)	0.0022
Q_{7-10} Flow (cfs)	0.004	Q_{7-10} Basis	Previous fact sheet
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-E	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	North Fayette County Municipal Authority		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	46.67	Distance from Outfall (mi)	24.41

Changes Since Last Permit Issuance: None

Other Comments: The receiving stream, UNT to Meadow Run, is a High-Quality stream. The discharge existed before the stream designation, therefore, it is grandfathered and exempted from ABACT limits, unless the facility expands.

Treatment Facility Summary

Treatment Facility Name: Hickory Acres Apartments STP

WQM Permit No.	Issuance Date

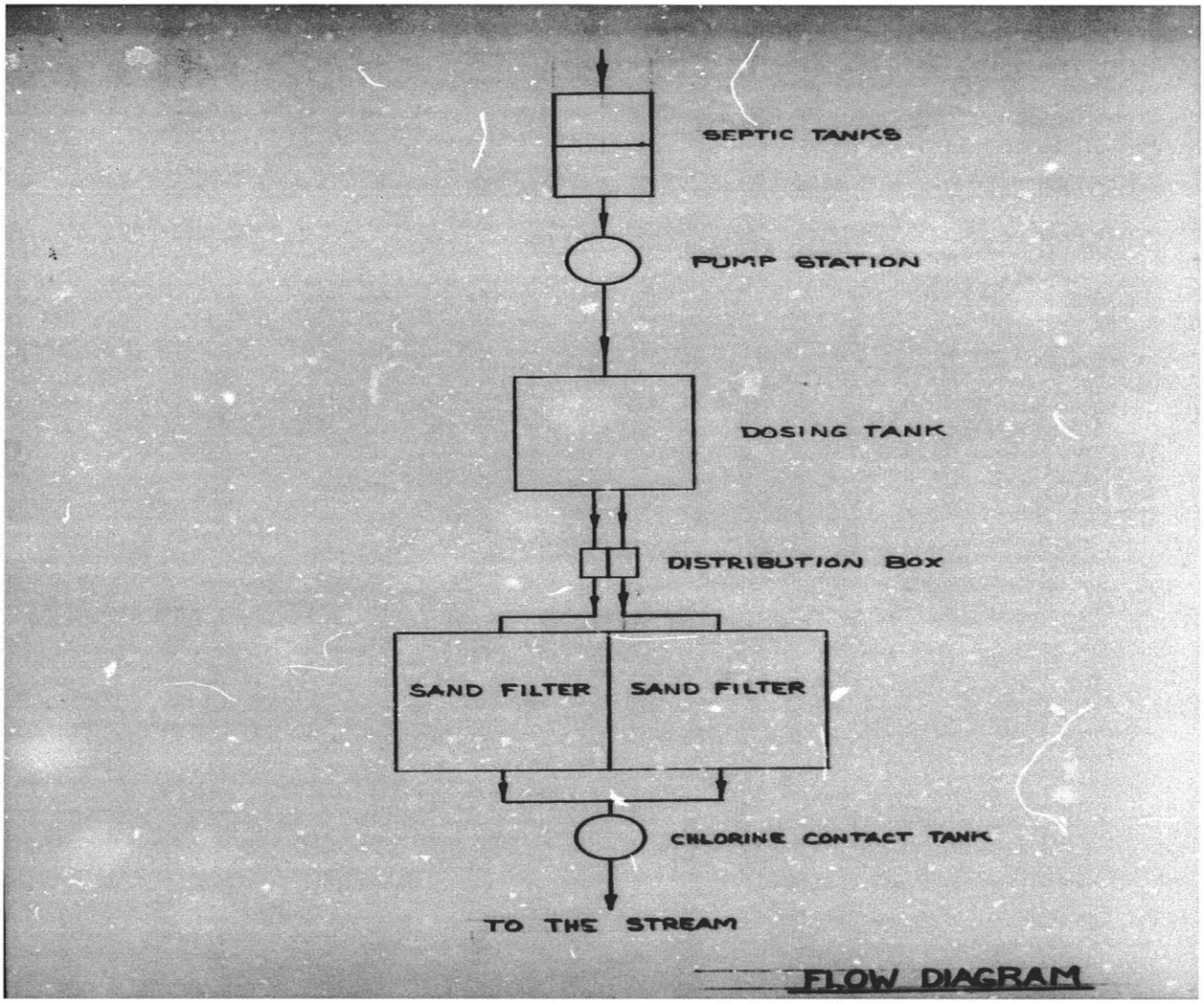
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia And Phosphorus	Septic Tank Sand Filter	Tablet chlorine	0.0049

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.005	5	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None

Facility Information

Hickory Acres STP is a minor non-municipal sewage treatment plant, serving 15 apartments. The NPDES permit was issued as new in 1988 even though the Part II WQM permit was issued in 1968 under permit number 468S071. The receiving stream is UNT to Meadow Run which has a Ch. 93 classification of High-Quality Cold-Water Fisheries (HQ-CWF). The stream was designated as CWF during the WQM permit issuance and re-designated on October 6, 1979. This facility was grandfathered from ABACT requirements since the permit was issued prior to stream designation. A water quality modeling was done at the time and current limits are based on that modeling efforts. The TRC limits were calculated during 1999 renewal and was re-evaluated during 2014 renewal. The facility consists of the following treatment units:



The day to day operation and maintenance aspects of the facility is contracted to H&H Water Controls, Inc.

Compliance History

DMR Data for Outfall 001 (from August 1, 2023 to July 31, 2024)

Parameter	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23
Flow (MGD) Average Monthly	0.00004	0.00005	0.00005	0.00008	0.00006	0.0006	0.00006	0.00005	0.00005	0.00005	0.00005	0.00004
pH (S.U.) Instantaneous Minimum	7.0	7.0	7.0	6.7	6.7	6.5	6.6	6.7	6.6	6.6	6.7	6.6
pH (S.U.) IMAX	7.1	7.2	7.2	7.2	7.4	7.0	7.0	7.0	7.0	6.9	7.0	7.1
DO (mg/L) Instantaneous Minimum	7.1	7.0	7.1	7.2	7.1	7.0	7.1	7.1	7.1	7.1	7.1	7.0
TRC (mg/L) Average Monthly	0.01	0.01	< 0.02	< 0.02	0.01	0.01	0.01	0.01	< 0.01	< 0.02	0.02	< 0.02
TRC (mg/L) IMAX	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02	< 0.02	0.02	0.02
CBOD5 (mg/L) Average Monthly	2.0	2.0	2.0	3.7	2.0	3.8	2.0	2.4	3.0	2.0	2.1	2.0
CBOD5 (mg/L) IMAX	2.0	2.0	2.0	5.3	2.0	5.5	2.0	2.8	3.9	2.0	2.1	2.0
TSS (mg/L) Average Monthly	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
TSS (mg/L) IMAX	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	1	1	1	1	1	1	1	1	1	1	1	1
Fecal Coliform (No./100 ml) IMAX	2	1	1	1	1	1	1	1	1	1	1	2
Total Nitrogen (mg/L) Daily Maximum								12.4				
Ammonia (mg/L) Average Monthly	0.7	0.3	0.7	1.8	0.7	1.2	2.7	5.9	2.7	0.3	0.4	0.2
Ammonia (mg/L) IMAX	1.0	0.4	0.9	2.8	0.9	1.8	3.0	6.8	5.2	0.5	0.5	0.2
Total Phosphorus (mg/L) Daily Maximum								0.2				

Inspection Report: A CEI was conducted on November 10, 2021. The inspection report didn't identify any violation. No issues were identified with the STP. The appearance of the outfall at the receiving stream didn't indicate any loss of solids or other discharge issues.

There's currently no open violation against the facility. No eDMR violations noted during a review of past 12 months eDMR data.

Existing Effluent Limitations

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)	0.0049	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	3/week	Grab
Dissolved Oxygen	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	3/week	Grab
TRC	XXX	XXX	XXX	0.3	XXX	0.7	3/week	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	Grab
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	20	XXX	25	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	15.0	XXX	30.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0049
Latitude 39º 49' 3.00" **Longitude** -79º 34' 40.00"
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)

Water Quality-Based Limitations

Since there's no change in the discharge quality, quantity, receiving stream designation etc. since the last time the model was utilized, a re-evaluation of the WQM modeling isn't necessary, per SOP BCW-PMT-033. All of the existing limits will be carried over. The previous model outputs will be attached with this fact sheet for reference.

E-Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends yearly E. Coli monitoring for sewage dischargers with a design flow between 2,000-50,000 GPD. This requirement will be applied from this permit term.

Anti-Backsliding
The proposed limits are at least as stringent as were in the current permit, therefore, anti-backsliding prohibition isn't applicable.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.0049	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	3/week	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	3/week	Grab
TRC	XXX	XXX	XXX	0.3	XXX	0.7	3/week	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	Grab
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	20	XXX	25	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	15.0	XXX	30.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: At Outfall 001

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

TRC_CALC.xlsx

1A	B	C	D	E	F	G
2	**TRC EVALUATION**				CI	
3	Input appropriate values in B4:B8 and E4:E7				Hickory Acres STP	
4	0.004	= Q stream (cfs)		0.235	= CV Daily	
5	0.0019	= Q discharge (MGD)		0.235	= 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	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 0.453		1.3.2.iii	WLA cfc = 0.434
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.599		5.1c	LTAMULT cfc = 0.767
13	PENTOXSD TRG	5.1b	LTA_afc= 0.271		5.1d	LTA_cfc = 0.333
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.104			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.300		AFC	
18			INST MAX LIMIT (mg/l) = 0.680			

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)

Chlorine demands of stream and discharge in conformance with SOPs.

DMRs confirm discharge flows consistently below 0.002 mgd.

CVs based on last 12 DMRs on file.

No. of samples consistent with current SOP requirements.

Summer

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow 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)
0.650	Hickory Acres	PA0098817	0.005	CBOD5	25		
				NH3-N	14.43	28.86	
				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
19E	38523	Trib 38523 to Meadow Run	**0.650**	1830.00	1.89	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	0.02	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
Hickory Acres	PA0098817	0.0049	0.0049	0.0000	0.000	20.00	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
19E	38523	Trib 38523 to Meadow Run	**0.000**	1740.00	2.13	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	0.03	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
19E	38523	Trib 38523 to Meadow 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												
0.650	0.02	0.00	0.02	.0076	0.02623	.295	3.52	11.93	0.03	1.324	20.00	7.00
Q1-10 Flow												
0.650	0.02	0.00	0.02	.0076	0.02623	NA	NA	NA	0.03	1.582	20.00	7.00
Q30-10 Flow												
0.650	0.05	0.00	0.05	.0076	0.02623	NA	NA	NA	0.04	0.941	20.00	7.00

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	2.11	Temperature Adjust Kr	☑
D.O. Saturation	85.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow 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
0.650	Hickory Acres	9.67	28.87	9.67	28.87	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
0.650	Hickory Acres	1.92	14.46	1.92	14.46	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)		
0.65	Hickory Acres	25	25	28.87	28.87	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.650	0.005	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.515	0.295	11.929	0.030
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.61	0.888	7.04	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.964	19.851	Owens	6
Reach Travel Time (days)			
1.324			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.132	6.77	6.42	7.58
0.265	6.02	5.85	7.76
0.397	5.35	5.33	7.79
0.530	4.76	4.86	7.79
0.662	4.23	4.43	7.79
0.794	3.76	4.04	7.79
0.927	3.34	3.68	7.79
1.059	2.97	3.35	7.79
1.191	2.64	3.06	7.79
1.324	2.35	2.79	7.79

Winter

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow 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)
0.650	Hickory Acres	PA0098817	0.005	CBOD5	25		
				NH3-N	25	50	
				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
19E	38523	Trib 38523 to Meadow Run	**0.650**	1830.00	1.89	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	0.02	0.00	0.000	0.000	0.0	0.00	0.00	5.00	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
Hickory Acres	PA0098817	0.0049	0.0049	0.0000	0.000	15.00	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
19E	38523	Trib 38523 to Meadow Run	0.000	1740.00	2.13	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	0.03	0.00	0.000	0.000	0.0	0.00	0.00	5.00	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
19E	38523	Trib 38523 to Meadow 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												
0.650	0.02	0.00	0.02	.0076	0.02623	.295	3.52	11.93	0.03	1.324	7.44	7.00
Q1-10 Flow												
0.650	0.02	0.00	0.02	.0076	0.02623	NA	NA	NA	0.03	1.582	8.35	7.00
Q30-10 Flow												
0.650	0.05	0.00	0.05	.0076	0.02623	NA	NA	NA	0.04	0.941	6.33	7.00

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	2.11	Temperature Adjust Kr	☑
D.O. Saturation	85.00%	Use Balanced Technology	☑
D.O. Goal	6		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow 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
0.650	Hickory Acres	20.59	50	20.59	50	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
0.650	Hickory Acres	4.08	25	4.08	25	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)		
0.65	Hickory Acres	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19E	38523	Trib 38523 to Meadow Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.650	0.005	7.439	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.515	0.295	11.929	0.030
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.61	1.040	6.10	0.266
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.964	14.737	Owens	6
Reach Travel Time (days)			
1.324			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.132	7.04	5.89	8.24
0.265	6.52	5.68	8.24
0.397	6.03	5.49	8.24
0.530	5.58	5.30	8.24
0.662	5.17	5.11	8.24
0.794	4.78	4.94	8.24
0.927	4.43	4.76	8.24
1.059	4.10	4.60	8.24
1.191	3.79	4.44	8.24
1.324	3.51	4.29	8.24