

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

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0030341
APS ID 1099825
Authorization ID 1459871

Applicant and Facility Information

Applicant Name	<u>B&L Rentals, LLC</u>	Facility Name	<u>Plain Grove Apartments</u>
Applicant Address	<u>2025 Moores Corner Road</u> <u>Slippery Rock, PA 16057-6111</u>	Facility Address	<u>1352 Golf Course Road</u> <u>Volant, PA 16156</u>
Applicant Contact	<u>Brian Ladebu, Owner</u>	Facility Contact	<u>Brian Ladebu, Owner</u>
Applicant Phone	<u>(724) 421-5284</u>	Facility Phone	<u>(724) 421-5284</u>
Client ID	<u>345455</u>	Site ID	<u>451510</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Plain Grove Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Lawrence</u>
Date Application Received	<u>October 3, 2023</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>October 30, 2023</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of NPDES permit for discharge of treated sewage.</u>		

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.0032 MGD of treated sewage into an Unnamed Tributary to Taylor Run, a Cold-Water Fishery (CWF) receiving stream in State Water Plan Basin 20C Slippery Rock Creek. As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is not designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

Limitations for pH, CBOD₅, Total Suspended Solids (TSS), Fecal Coliform, and Dissolved Oxygen (DO) are technology-based and carried over from the previous permit.

Limitations for Ammonia-Nitrogen are water quality-based and carried over from the previous permit.

WQM 7.0 modeling did not recommend stricter limits.

The Total Residual Chlorine (TRC) Calculation Spreadsheet did not recommend stricter limitations than the previous permit. The TRC limits from the previous permit have been maintained in this permit renewal.

The quarterly monitoring and reporting for Total Nitrogen and Total Phosphorous has been maintained in this permit.

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows ≥ 1 MGD, 1/quarter for design flows ≥ 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

For this permit renewal, all monitoring frequencies for parameters with limitations are consistent with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (document no. 362-0400-001).

Approve	Deny	Signatures	Date
X		Allison S. Zukosky (signed) Allison S. Zukosky / Project Manager	December 6, 2024
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	December 11, 2024

Summary of Review

There are no representative stream gages in the vicinity of the outfall and the drainage area at Outfall 001 is too small for USGS StreamStats to estimate accurate low flow values. Therefore, the default Low Flow Yield (LFY) of 0.1 cfs/mi² was used to model the discharge. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats.

The existing permit expired on March 31, 2024, and the application for renewal was received on time.

A Water Management System Inspection query indicated that on October 5, 2021, a Compliance Evaluation was performed.

There are currently no open violations for this client that warrant withholding issuance of this permit.

Sludge use and disposal description and location(s): As per the Sewage Inspection Report dated October 5, 2021, sludge is hauled to the Mahoning Township WWTP by K&M Septic.

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0032
Latitude	41° 4' 17.58"	Longitude	-80° 9' 9.61"
Quad Name	Harlansburg	Quad Code	1004
Wastewater Description: Sewage Effluent			
Receiving Waters	Unnamed Tributary to Taylor Run (CWF)	Stream Code	34190
NHD Com ID	126219784	RMI	0.65
Drainage Area	0.85	Yield (cfs/mi²)	0.1
Q ₇₋₁₀ Flow (cfs)	0.085	Q ₇₋₁₀ Basis	State-wide default
Elevation (ft)	1,191.89	Slope (ft/ft)	-
Watershed No.	20-C	Chapter 93 Class.	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	Pennsylvania American Water Company - Ellwood City		
PWS Waters	Slippery Rock Creek	Flow at Intake (cfs)	-
PWS RMI	0.1	Distance from Outfall (mi)	~ 20.0

Treatment Facility Summary				
Treatment Facility Name: Plain Grove Apartments				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Chlorination	0.0032
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0032	19.2	Not Overloaded	-	Hauled

Compliance History

DMR Data for Outfall 001 (from November 1, 2023 to October 31, 2024)

Parameter	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23
Flow (MGD) Average Monthly	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flow (MGD) Weekly Average	0.005	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001
pH (S.U.) Instantaneous Minimum	7.19	7.15	7.37	7.11	7.36	7.1	7.1	7.2	7.2	7.1	7.1	7.0
pH (S.U.) Instantaneous Maximum	8.14	8.05	7.97	7.61	7.55	7.2	7.2	7.2	7.2	7.1	7.2	7.7
DO (mg/L) Daily Minimum	7.0	6.3	4.06	4.47	4.17	4.09	4.16	4.32	4.6	4.11	4.11	4.28
TRC (mg/L) Average Monthly	0.5	0.5	0.5	0.2	0.3	0.3	0.3	0.3	0.2	0.4	0.2	0.4
TRC (mg/L) Instantaneous Maximum	1.11	0.6	1.0	0.7	0.44	0.41	0.54	0.4	0.32	0.52	0.37	0.5
CBOD5 (mg/L) Average Monthly	< 2.0	< 6.5	< 2.0	2.1	< 2.5	< 2.0	< 2.0	< 2.0	8.9	6.6	< 3.4	< 3.7
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	12.0	6.0	< 6.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 7	< 3	< 1	< 4	> 49	< 1	< 1	< 1	1237	31	< 18	< 14
Fecal Coliform (No./100 ml) Instantaneous Maximum	44	12	< 1	20	> 2420	< 1	1	< 1	1986	62	330	210
Total Nitrogen (mg/L) Average Quarterly		27.1			4.72			12.7			14.42	
Ammonia (mg/L) Average Monthly	0.6	6.8	< 0.4	6.2	5.6	1.2	< 1.0	< 1.0	< 2.0	7.0	9.0	< 3.0
Total Phosphorus (mg/L) Average Quarterly		< 0.1			0.98			2.2			2.23	

Compliance History

Effluent Violations for Outfall 001, from: December 1, 2023 To: October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	06/30/24	Geo Mean	> 49	No./100 ml	200	No./100 ml
Fecal Coliform	06/30/24	IMAX	> 2420	No./100 ml	1000	No./100 ml

Development of Effluent Limitations

Outfall No. 001
Latitude 41° 4' 17.80"
Wastewater Description: Sewage Effluent

Design Flow (MGD) 0.0032
Longitude -80° 9' 9.80"

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)
	1.6	IMAX		
Dissolved Oxygen	4.0	Minimum	-	BPJ
E. Coli	Report	IMAX	-	92a.61

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen Nov 1 - Apr 30	25.0	Average Monthly	Previous Modeling/Permits
	50.0	IMAX	
Ammonia-Nitrogen May 1 - Oct 31	20.2	Average Monthly	
	40.4	IMAX	
Total Nitrogen	Report	Average Quarterly	
Total Phosphorus	Report	Average Quarterly	

Anti-Backsliding

No limitations were made less stringent.

Modeling Using State-wide Low-Flow Yield (LFY) of 0.1 cfs/mi²:

$$\frac{0.1 \text{ ft}^3/\text{sec}}{\text{mi}^2} \times 0.85 \text{ mi}^2 = \frac{0.085 \text{ ft}^3}{\text{sec}}$$

Modeling Using USGS StreamStats:

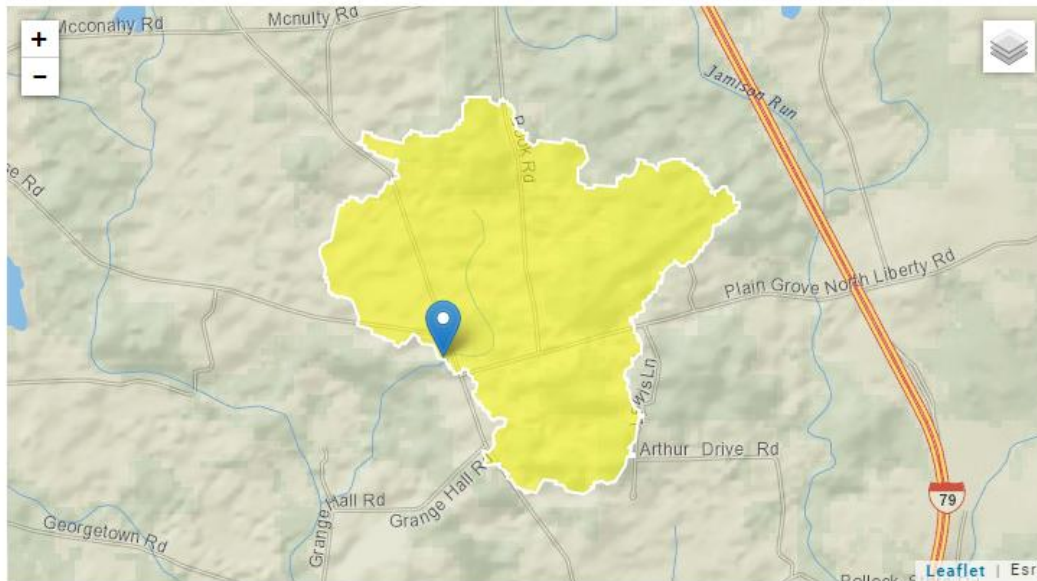
At Outfall 001 on Unnamed Tributary to Taylor Run:

RMI	Elevation (ft)	Drainage Area (mi ²)	Q ₇₋₁₀ Flow (cfs)
0.65	1,191.89	0.85	0.00679

$$\text{Low Flow Yield using StreamStats} = \frac{0.00679 \text{ ft}^3/\text{sec}}{0.85 \text{ mi}^2} = 0.008 \frac{\text{ft}^3/\text{sec}}{\text{mi}^2}$$

StreamStats Report

Region ID: PA
Workspace ID: PA20241115205949079000
Clicked Point (Latitude, Longitude): 41.07147, -80.15277
Time: 2024-11-15 16:00:12 -0500



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	0.85	square miles

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0237	ft ³ /s
30 Day 2 Year Low Flow	0.0461	ft ³ /s
7 Day 10 Year Low Flow	0.00679	ft ³ /s

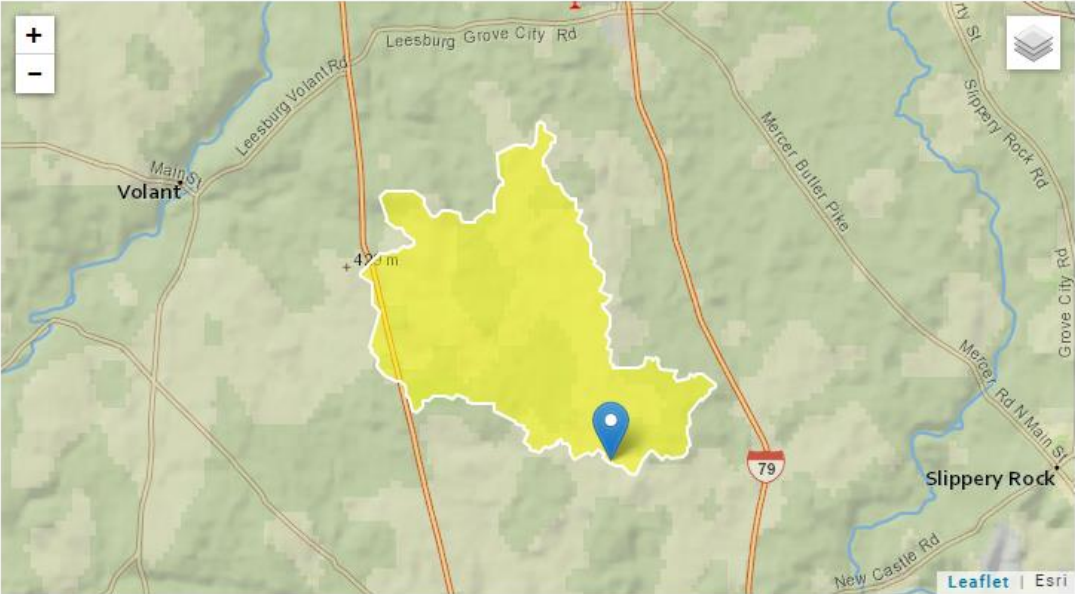
At confluence with Taylor Run (34185):

RMI	Elevation (ft)	Drainage Area (mi ²)
0.0	1,167.10	8.56

StreamStats Report

Region ID:
Workspace ID:
Clicked Point (Latitude, Longitude):
Time:

PA
PA20241115210634205000
41.06508, -80.15975
2024-11-15 16:07:01 -0500



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	8.56	square miles

WQM 7.0 Effluent Limits

SWP Basin		Stream Code		Stream Name			
20C		34190		Trib 34190 to Taylor 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	Plain Grove Apt	PA0030341	0.003	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

TRC EVALUATION				
Input appropriate values in A3:A9 and D3:D9				
0.085	= Q stream (cfs)	0.5	= CV Daily	
0.0032	= Q discharge (MGD)	0.5	= CV Hourly	
30	= no. samples	1	= AFC_Partial Mix Factor	
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor	
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)	
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)	
0	= % Factor of Safety (FOS)		= Decay Coefficient (K)	
Source	Reference	AFC Calculations		Reference CFC Calculations
TRC	1.3.2.iii	WLA afc = 5.496		1.3.2.iii WLA cfc = 5.351
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 2.048		5.1d LTA_cfc = 3.111
Source	Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT = 1.231		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ
		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	$1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)$			

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	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
20C		34190	Trib 34190 to Taylor 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	Plain Grove Apt	PA0030341	0.003	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
20C	34190	Trib 34190 to Taylor 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	Plain Grove Apt	9.38	50	9.38	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	Plain Grove Apt	1.89	25	1.89	25	0	0

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)		
0.65	Plain Grove Apt	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
20C	34190	Trib 34190 to Taylor Run		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
0.650	0.003	20.275	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
4.478	0.345	12.989	0.058	
<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>	
3.27	0.459	1.38	0.715	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
7.954	23.322	Owens	5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.682	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.068	3.16	1.31	8.20
	0.136	3.07	1.25	8.20
	0.205	2.97	1.19	8.20
	0.273	2.88	1.13	8.20
	0.341	2.79	1.08	8.20
	0.409	2.70	1.03	8.20
	0.477	2.62	0.98	8.20
	0.545	2.53	0.93	8.20
	0.614	2.46	0.89	8.20
	0.682	2.38	0.85	8.20

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
20C		34190		Trib 34190 to Taylor 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	0.09	0.00	0.09	.005	0.00722	.345	4.48	12.99	0.06	0.682	20.28	7.00
Q1-10 Flow												
0.650	0.05	0.00	0.05	.005	0.00722	NA	NA	NA	0.05	0.860	20.42	7.00
Q30-10 Flow												
0.650	0.12	0.00	0.12	.005	0.00722	NA	NA	NA	0.07	0.579	20.21	7.00

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	34190	Trib 34190 to Taylor Run	0.650	1191.89	0.85	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	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
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
Plain Grove Apt	PA0030341	0.0032	0.0032	0.0032	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	34190 Trib	34190 to Taylor Run	0.000	1167.10	8.56	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	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