Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0085782**
Facility Type	**Municipal**	APS ID	**485115**
Major / Minor	**Minor**	Authorization ID	**1456967**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Ruscombmanor Township Berks County**	Facility Name	**Golden Oaks**
Applicant Address	204 Oak Lane Fleetwood, PA 19522-8942	Facility Address	2 Erhardt Lane Fleetwood, PA 19522
Applicant Contact	Don Miller	Facility Contact	Don Miller
Applicant Phone	(610) 944-7242	Facility Phone	(610) 944-7242
Client ID	117230	Site ID	260819
Ch 94 Load Status	Not Overloaded	Municipality	Ruscombmanor Township
Connection Status		County	Berks
Date Application Received	October 4, 2023	EPA Waived?	Yes
Date Application Accepted	October 11, 2023	If No, Reason	

Purpose of Application: NPDES permits renewal.

Summary of Review

On behalf of Ruscombmanor Township Berks County, LTL Consultants, has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. This permit renewal application was received on October 4, 2023. The permit was last reissued on March 29, 2019; and became effective on April 1, 2019. The permit will expire on March 31, 2024 but the terms and conditions of the permit have been extended since that time.

The facility has a design of 0.0645 MGD average annual flow and hydraulic capacity design of 0.105 MGD. The collection system has 100% sewers from Ruscombmanor Township. The discharge of treated sewage located in Ruscombmanor Township; Berks County is into UNT to Furnace Creek which is designated for cold-water fishes.

The facility's DMRs from August 1, 2023 to July 31, 2024 indicated not exceeding 0.05 MGD monthly average. Therefore, the average design flow of 0.05 MGD is used for calculation of pollutants concentration & mass load limits in this proposed permit.

The WQM No. 0693410 ownership transfer was issued on 6/11/2003. The 0693410 04-1 & 0693410 08-1 amendments were issued on 7/23/2004 & 8/6/2008. The WQG02060801 was issued on 5/14/2008. The WQM No. 0608405 was issued on 5/15/2009. The WQG02061201 was issued on 2/19/2012.

DRBC Docket No. D-2007-034 CP-4 approval date was 12/11/2019 and expiration date was 3/31/2024.

Sludge use and disposal description and location(s): N/A because sludge is hauled by Kline's Septic contractor.

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the permit.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	September 19, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	September 26, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.05
Latitude	40º 25' 20"	Longitude	-75º 49' 27"
Quad Name	Fleetwood	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	UNT to Furnace Creek (CWF)	Stream Code	1689 to 1688
NHD Com ID	25973104	RMI	0.38
Drainage Area	0.45 mi.^{2}	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	0.0322	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-D	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	PA American Water at Royersford/Phoenixville		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	46.5 miles	Distance from Outfall (mi)	Approximate 31.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to UNT to Furnace Creek at RMI 0.38 miles. A drainage area upstream of the discharge is estimated to be 0.45 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/. The Q_{7-10} is 0.0322 cfs, then the low flow yield is 0.07 cfs/mi.^{2} (0.0322 cfs/0.45 mi.^{2}).

303d Listed Streams (Impaired Waters)
The discharge enters an Unnamed Tributary of Furnace Creek which has not been assessed. Furnace Creek is included on a 303d list: more than 6 miles are impaired for recreation use due to pathogens. It was listed in 2016 but no TMDL has yet been developed. This permit includes limits for Fecal Coliform based on State Standards. The facility has been consistently meeting their Fecal Coliform limits. No increase in discharge flow is occurring.

Potable Water Supply Intake
The nearest downstream public water supply intake is the PA American Water at Royersford/Phoenixville intake on the Schuylkill River, approximately 31 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Golden Oaks WWTP

WQM Permit No.	Issuance Date
0693410 T-1	6/11/2003
0693410 04-1	7/23/2004
0693410 08-1	8/6/2008
WQG02060801	5/14/2008
0608405	5/15/2009
WQG02061201	2/29/2012

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Hypochlorite	0.0645

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.105	188	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance:

Treatment plant consists of: bar screen (1) – EQ tanks (2) – aeration tanks (6) – clarifier tanks (2) - sludge storage tanks (2) – Chlorine contact tank (1) – Dechlorination chamber (1) - discharge.

Chemical used:
Soda Ash is used for pH control at a rate of 100 lbs/day.

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 2.715 dry tons.

Industrial/Commercial Users:
The permit application indicated there are no commercial or industrial contributors to the treatment plant.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	5/03/2018: Mr. Buss, DEP's WQS, conducted a compliance evaluation inspection. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection. The recommendation was update emergency notification information to include DEP 24-hour hotline.
Other Comments:	There is one open violation against the facility or the permittee.

Other Comments:

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	0.0243	0.0239	0.0222	0.0212	0.0221	0.0199	0.0232	0.0235	0.0211	0.0218	0.0225	0.025
Flow (MGD) Daily Maximum	0.0372	0.0362	0.0349	0.0325	0.0421	0.0282	0.0472	0.0514	0.034	0.0308	0.0491	0.044
pH (S.U.) Instantaneous Minimum	6.7	6.4	7.4	7.5	7.4	7.6	7.5	7.5	7.5	7.6	7.0	6.9
pH (S.U.) Instantaneous Maximum	8.0	8.2	9.3	8.8	8.4	9.3	8.2	8.6	9.3	8.9	8.8	8.3
DO (mg/L) Instantaneous Minimum	7.8	7.5	7.6	8.3	8.0	7.6	7.7	6.8	9.1	8.6	6.0	6.7
TRC (mg/L) Average Monthly	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.03	< 0.02	< 0.02
TRC (mg/L) Instantaneous Maximum	0.05	0.27	0.08	0.06	0.06	0.06	0.07	0.09	0.05	0.12	0.09	0.05
CBOD5 (lbs/day) Average Monthly	0.8	0.4	1.1	1.4	0.08	0.8	1.0	0.7	0.7	0.9	0.8	0.8
CBOD5 (mg/L) Average Monthly	3.0	3.3	5.6	7.7	4.4	4.5	4.7	3.8	3.9	4.3	4.0	3.8
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	94	62	60	34	62	113	55	118	24	45	17	41
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	103	83	65	34	71	134	59	197	26	67	23	42
BOD5 (mg/L) Raw Sewage Influent Average Monthly	338	596	287	169	316	674	271	602	124	238	90	181
TSS (lbs/day) Average Monthly	< 0.4	0.4	1.6	5.0	1.2	0.7	< 0.8	0.7	0.8	3.3	1.8	2.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	125	65	65	27	50	63	74	90	25	40	40	47
TSS (lbs/day) Raw Sewage Influent Daily Maximum	150	82	74	27	57	79	111	160	39	65	65	57

TSS (mg/L) Average Monthly	< 1.5	3.5	8.0	29.5	6.5	4.0	< 4.0	3.5	4.0	14.5	9.0	13.0
TSS (mg/L) Raw Sewage Influent Average Monthly	463	611	310	135	256	373	362	457	128	217	203	211
Total Dissolved Solids (lbs/day) Average Monthly	252	112	172	170	105	145	142	146	153	189	172	196
Total Dissolved Solids (mg/L) Average Monthly	909.0	945.0	821.0	822.0	572.0	860.0	704.0	765.0	804.0	926.0	885.0	881.0
Fecal Coliform (No./100 ml) Geometric Mean	50	50	16	44	< 24	26	14	35	23	52	150	140
Fecal Coliform (No./100 ml) Instantaneous Maximum	52	76	38	48	280	31	18	36	26	62	230	200
Total Nitrogen (lbs/day) Average Monthly	< 15	E	< 11	6	5	< 7	6	< 7	8	10	10	E
Total Nitrogen (mg/L) Average Monthly	< 58.3	E	< 49.4	35.08	22.91	< 40.2	29.78	< 34.9	45.24	48.74	52.94	E
Ammonia (lbs/day) Average Monthly	0.02	0.01	0.1	0.05	< 0.04	0.01	0.009	0.02	0.04	0.02	0.01	0.02
Ammonia (mg/L) Average Monthly	0.1	0.1	0.6	0.3	< 0.2	0.1	0.05	0.1	0.2	0.1	0.1	0.1
Total Phosphorus (lbs/day) Average Monthly	2	E	2	1	1	0.9	1	1	1	1	2	E
Total Phosphorus (mg/L) Average Monthly	6.8	E	7.91	8.57	5.64	5.28	5.98	6.73	6.26	6.51	7.9	E

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	**0.07**	XXX	**0.23**	1/day	Grab
CBOD5	10.4	XXX	XXX	25.0	XXX	50	2/month	8-hour composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-hour composite
TSS	12.5	XXX	XXX	30.0	XXX	60	2/month	8-hour composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-hour composite
Total Dissolved Solids	Report	XXX	XXX	1000.0	XXX	2000	1/month	8-hour composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	7.2	XXX	14.4	2/month	8-hour composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	2.4	XXX	4.8	2/month	8-hour composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1month	8-hour composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/month	8-hour composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.05
Latitude 40º 25' 20.00" **Longitude** -75º 49' 27.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

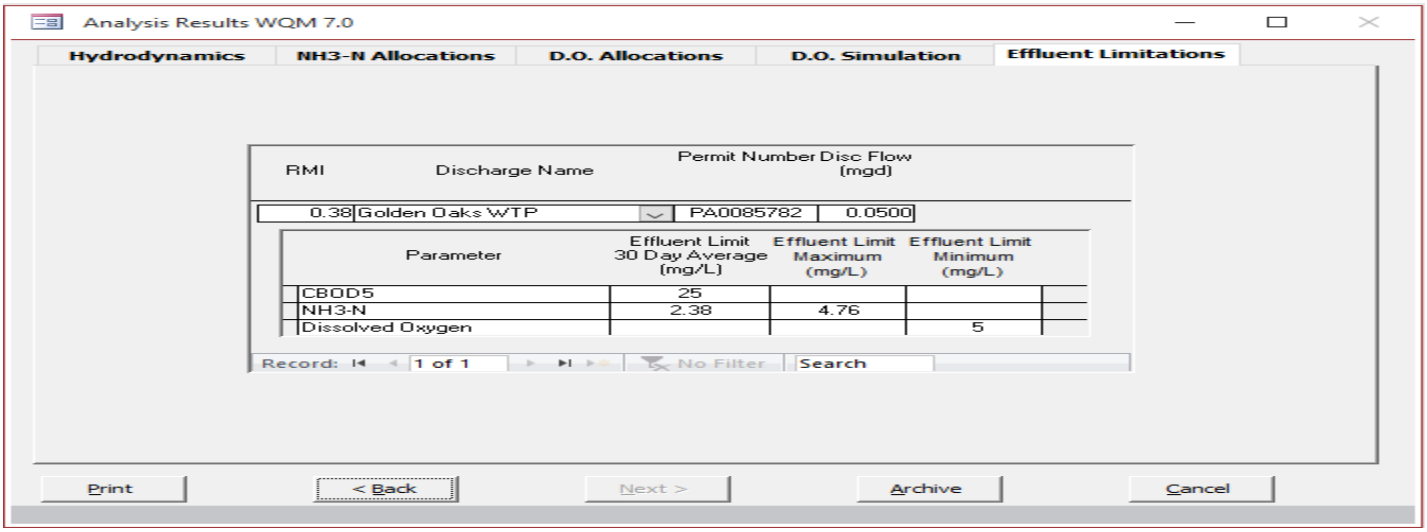
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation	DRBC Regulations
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)	
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)	
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)	
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)	
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)	
Ammonia	20	Average Monthly	-	-	18 CFR Part 410
Total Dissolved Solids (TDS)	1,000 (unless DRBC approves a different limit after a TDS determination)	Average Monthly	-	-	18 CFR Part 410

Water Quality-Based Limitations

Ammonia (NH_3-N):

NH_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20ºC	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)



Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 2.38 (2.4) mg/L as a monthly average and 4.76 (4.8) mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. However, the existing summer limits of 2.4 mg/L monthly average & 4.8 mg/L IMAX are same and will remain in the proposed permit. Per anti-backsliding policy, the existing winter average monthly limit of 7.2 mg/L & IMAX limit of 14.4 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

Summer average monthly mass limit: 2.4 mg/L x 0.05 MGD x 8.34 = 1.0 lbs/day
Winter average monthly mass limit: 7.2 mg/L x 0.05 MGD x 8.34 = 3.0 lbs/day

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. This limit is consistent with the before upgrade permit. Therefore, the limits of 25.0 mg/L monthly average (AML), and 50.0 mg/L instantaneous maximum will remain in the amendment permit. Mass limits are calculated as follows:

Average monthly mass limit: 25.0 mg/L x 0.05 MGD x 8.34 = 10.43 (10.4) lbs/day

Dissolved Oxygen (DO):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

pH:
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(1).

Total Suspended Solids (TSS):
The existing technology-based limits of 30.0 mg/L average monthly, and 60.0 mg/L instantaneous maximum will remain in the amendment permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Mass limits are calculated as follows:

Average monthly mass limit: 30.0 mg/L x 0.05 MGD x 8.34 = 12.51 (12.5) lbs/day

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Influent BOD_5 and TSS Monitoring:
The amendment permit will continue influent BOD_5 and TSS weekly monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

Total Dissolved Solids (TDS):
Additionally, DRBC's regulations, 18 CFR Part 410 Section 3.10.4D.2., state: "Total dissolved solids shall not exceed 1,000 mg/L, or a concentration established by the Commission which is compatible with designated water uses and stream quality objectives, and recognizes the need for reserve capacity to serve future dischargers."

Therefore, the existing TDS limit 1,000.0 mg/L average monthly & 2,000.0 mg/L IMAX will remain in the proposed permit.

And maximum TDS reported in the application from effluent sampling was 1000 mg/l. The TDS baseline is calculated as:

1000 mg/l x 0.050 MGD x 8.34 c.f. = 417 lbs/day

Toxics:
Due to the facility is not to receive industrial or commercial contributions in the renewal application, page 8, then no toxics monitoring, or limit requirement will need to be evaluated in this time of renewal.

Stormwater:

There is no known stormwater outfall associated with this facility.

Total Nitrogen & Total Phosphorus:

To gather data on the impact of nutrients in surface waters, a monitoring requirement for Total Nitrogen and Total Phosphorus will remain in the proposed permit in accordance with the DEP's Standard Operating Procedure for Establishing Effluent Limitations for individual Sewage permits and as authorized by Chapter 92a.61. Because the downstream water, UNT flows into Furnace Creek, has already been identified as impaired for Recreation use due to pathogens, the monitoring frequency included in the renewal permit is one per month, per the Permit Writers' Manual No. 362-0400-001.

Total Residual Chlorine (TRC):

Based on the attached TRC Excel spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.07 mg/L and an instantaneous maximum limit of 0.228 (0.23) mg/L. These limits are the same as in existing permit and will be carried over. The minimum monitoring frequency is 1/day.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0322	= Q stream (cfs)	0.5	= CV Daily
0.05	= 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 =	0.152	1.3.2.iii	WLA cfc =	0.140
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.057	5.1d	LTA_cfc =	0.082

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.070	AFC
		INST MAX LIMIT (mg/l) =	0.228	

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)

WETT:

Minor facilities and facilities without a formal EPA approved pretreatment program are exempted from WETT.

Anti-Backsliding:

The proposed limits are at least as stringent as are in existing permit; therefore, anti-backsliding is not applicable

Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

WQM 7.0:

The following data were used in the attached computer model (WQM 7.0) of the stream:

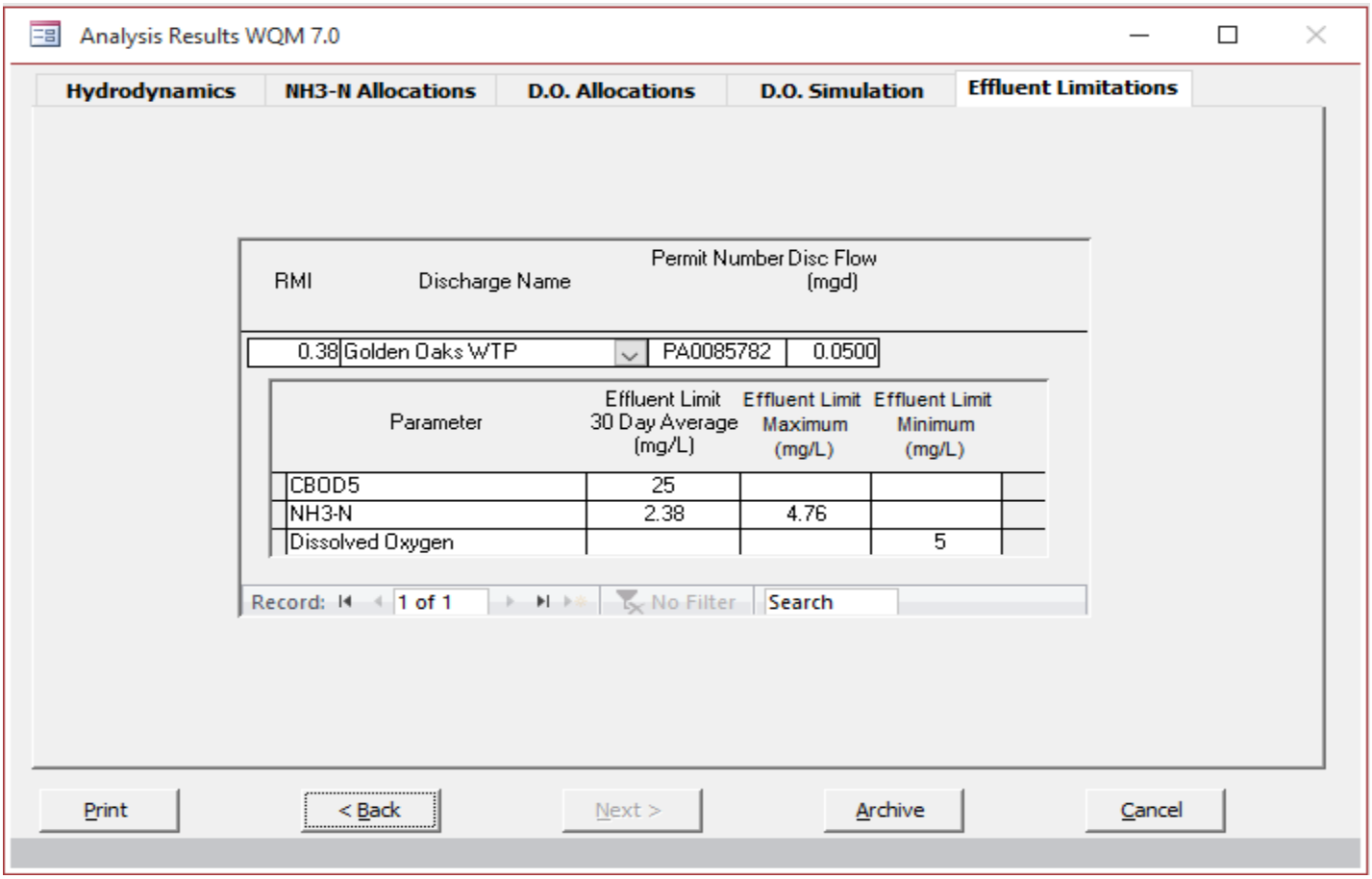
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

Node 1: Outfall 001 UNT to Furnace Creek (1688)

Elevation:	800 ft (USGS National Map Viewer)
Drainage Area:	0.45 mi^2 (USGS PA StreamStats)
River Mile Index:	0.380 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi^2
Discharge Flow:	0.05 MGD

Node 2: At confluence with Unnamed Tributary to Furnace Creek (1688)

Elevation:	776 ft (USGS National Map Viewer)
Drainage Area:	0.46 mi^2 (USGS PA StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi^2
Discharge Flow:	0.0 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03D	16680	FURNACE CREEK

RMI	Name	Permit Number	Disc. Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.360	Golden Oaks WTP	PA0085782	0.050	CBOD5	25		
				NH3-N	2.36	4.76	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03D	16680	FURNACE 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
0.360	Golden Oaks WT	12.06	15.21	12.06	15.21	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
0.360	Golden Oaks WT	1.53	2.36	1.53	2.36	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
0.36	Golden Oaks WTP	25	25	2.36	2.36	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
03D	16680	FURNACE CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.360	0.050	23.553	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
3.697	0.359	10.854	0.078
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
16.34	1.438	1.69	0.920
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.936	26.369	Owens	5
Reach Travel Time (days)			
0.298			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.030	17.44	1.65	6.40
0.060	16.58	1.60	6.64
0.089	15.77	1.56	6.80
0.119	14.99	1.52	6.91
0.149	14.26	1.48	7.00
0.179	13.56	1.44	7.07
0.208	12.89	1.40	7.15
0.238	12.25	1.36	7.21
0.268	11.65	1.32	7.26
0.298	11.08	1.29	7.34

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rptModelSpecs

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	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin: 03D | Stream Code: 1688 | Stream Name: FURNACE CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.380	0.03	0.00	0.03	.077.3	0.01199	.359	3.9	10.85	0.08	0.298	23.55	7.00
Q1-10 Flow												
0.380	0.02	0.00	0.02	.077.3	0.01199	NA	NA	NA	0.07	0.317	23.97	7.00
Q30-10 Flow												
0.380	0.04	0.00	0.04	.077.3	0.01199	NA	NA	NA	0.08	0.262	23.22	7.00

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rptGeneral

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
03D	1688	FURNACE CREEK	0.380	80.00	0.45	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	0.070	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
Golden Oaks WTP	PA0085782	0.0500	0.0500	0.0500	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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rptGeneral

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
03D	1688	FURNACE CREEK	0.380	80.00	0.45	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	0.070	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
Golden Oaks WTP	PA0085782	0.0500	0.0500	0.0500	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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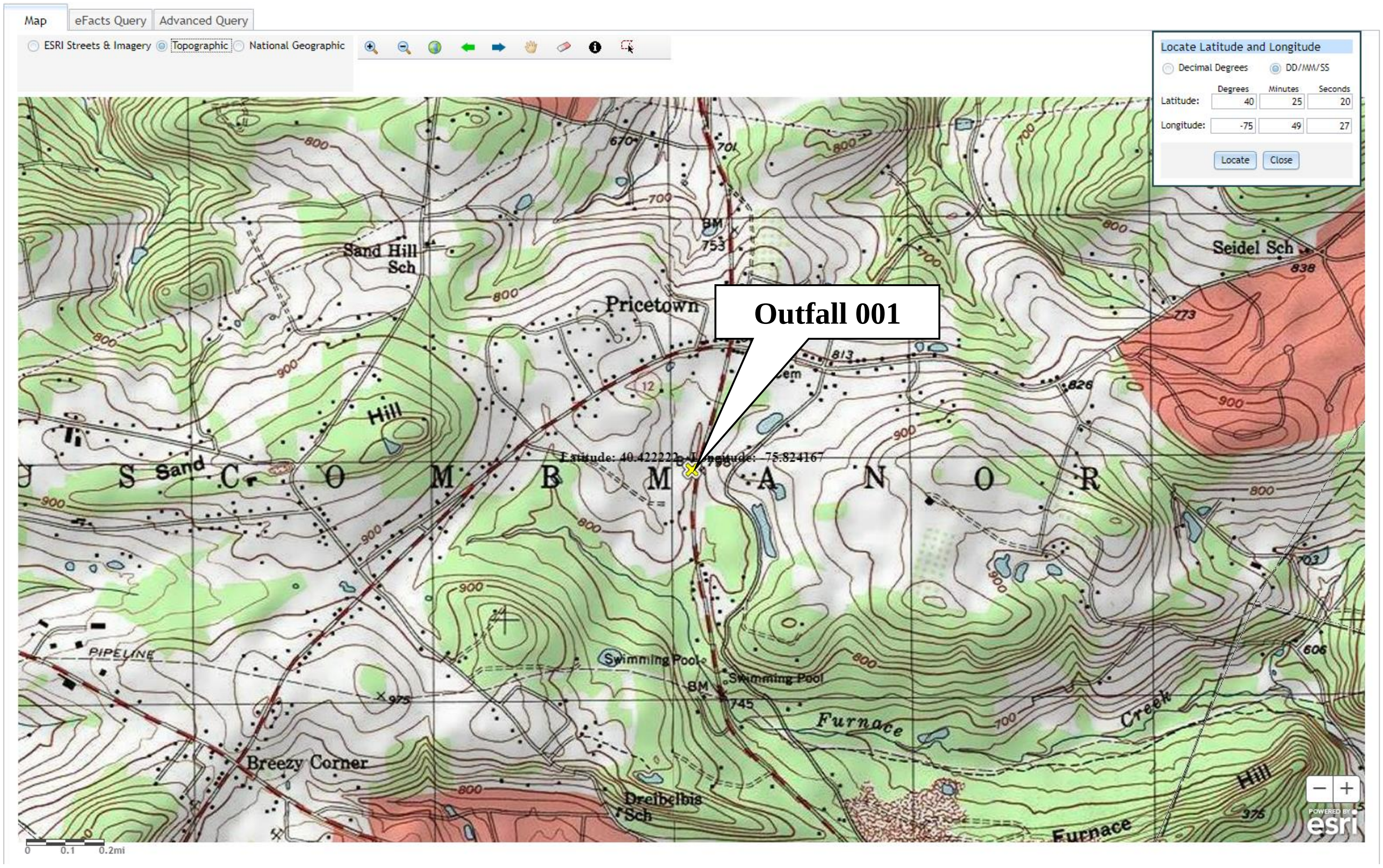
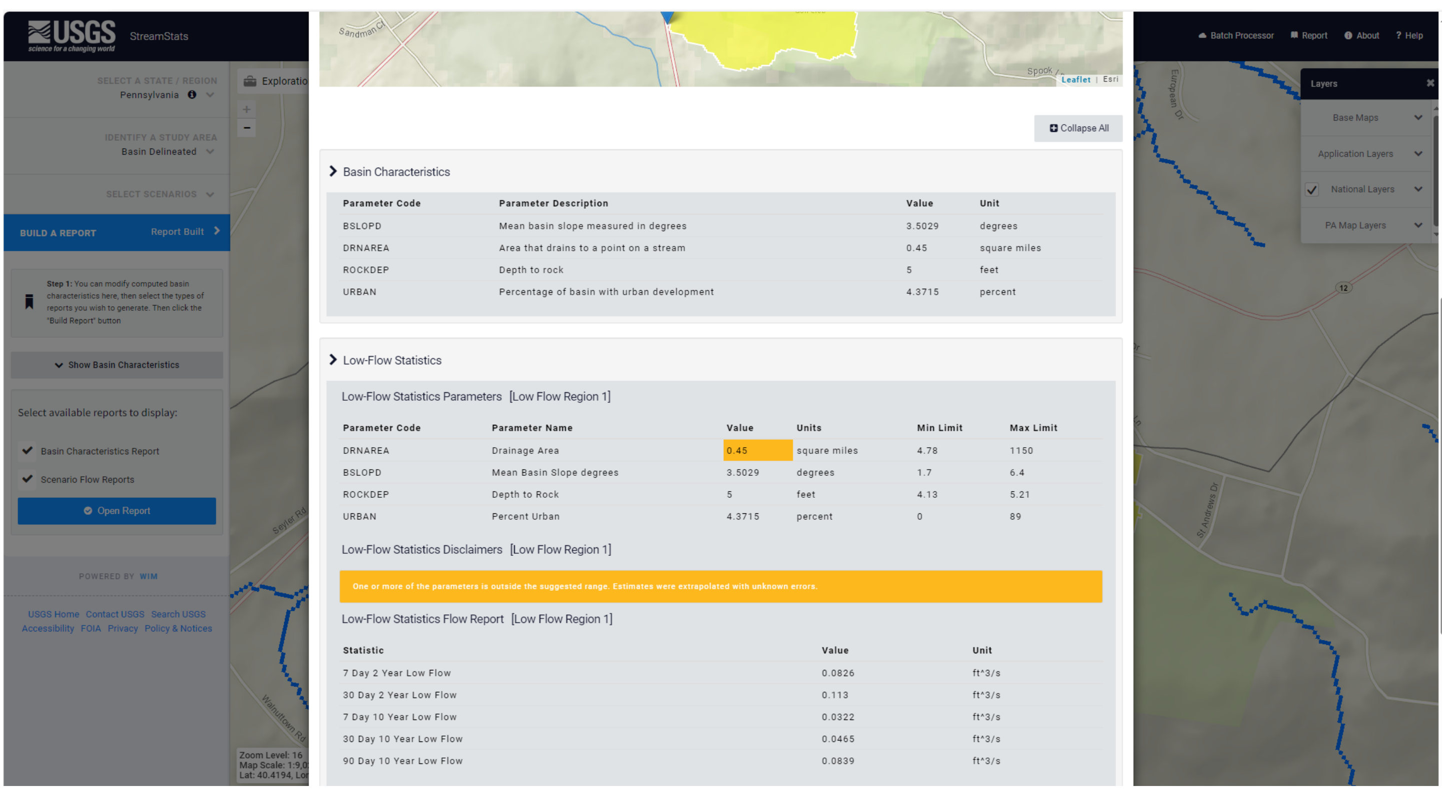




Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	3.5029	degrees
DRNAREA	Area that drains to a point on a stream	0.45	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	4.3715	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

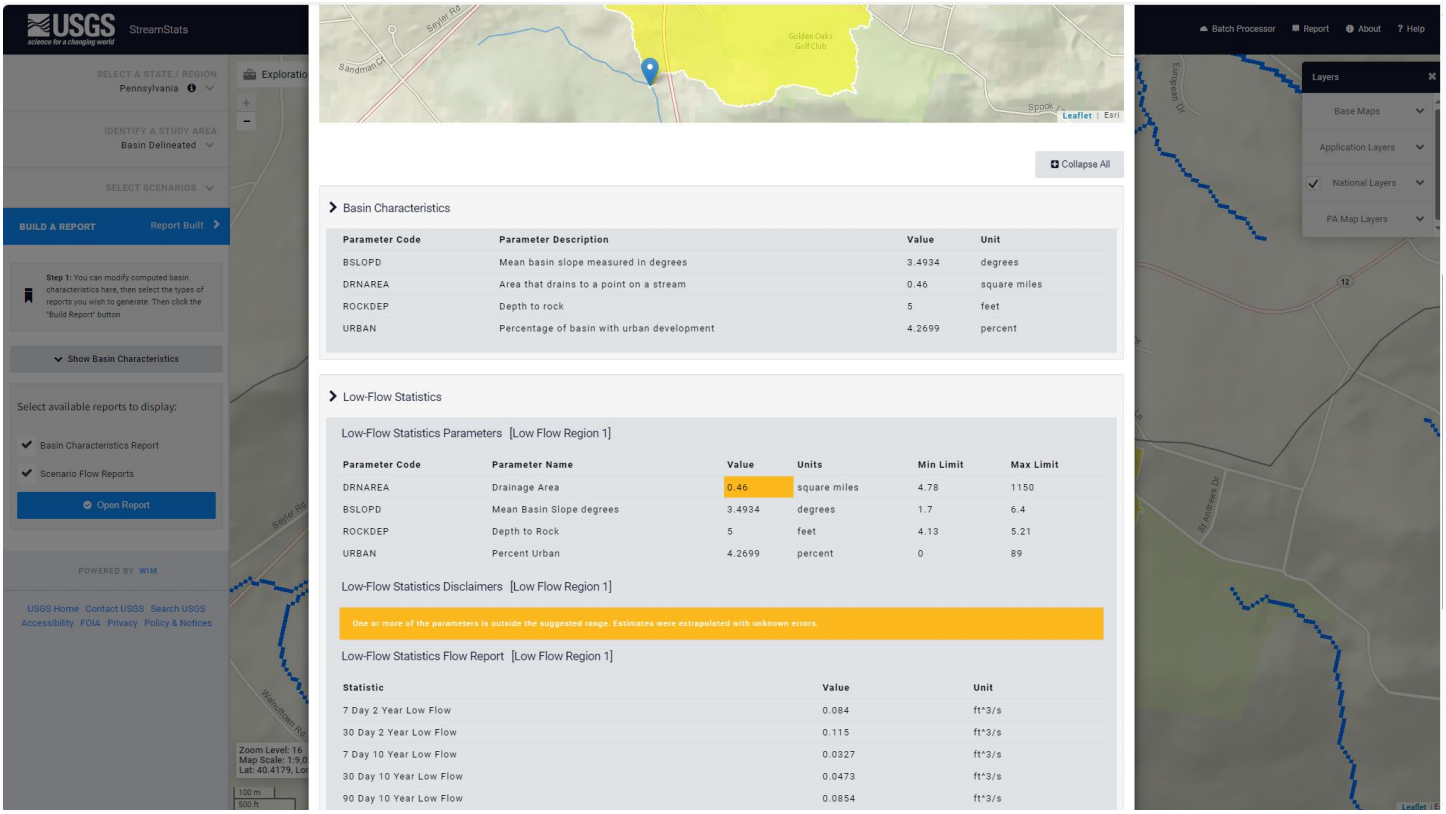
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.45	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.5029	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	4.3715	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0826	ft^3/s
30 Day 2 Year Low Flow	0.113	ft^3/s
7 Day 10 Year Low Flow	0.0322	ft^3/s
30 Day 10 Year Low Flow	0.0465	ft^3/s
90 Day 10 Year Low Flow	0.0839	ft^3/s


USGS StreamStats
science for a changing world
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Seyler Rd
Sandman Ct
Golden Oaks Golf Club
Spook
Leaflet | Esri
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.4934 | degrees
DRNAREA | Area that drains to a point on a stream | 0.46 | square miles
ROCKDEP | Depth to rock | 5 | feet
URBAN | Percentage of basin with urban development | 4.2699 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.46 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 3.4934 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 5 | feet | 4.13 | 5.21
URBAN | Percent Urban | 4.2699 | percent | 0 | 89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 1]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.084 | ft^3/s
30 Day 2 Year Low Flow | 0.115 | ft^3/s
7 Day 10 Year Low Flow | 0.0327 | ft^3/s
30 Day 10 Year Low Flow | 0.0473 | ft^3/s
90 Day 10 Year Low Flow | 0.0854 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
12
St Andrews Dr
European Dr

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	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.07	XXX	0.23	1/day	Grab
$CBOD_5$	10.4	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	12.5	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	1,000.0	XXX	2,000	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	7.2	XXX	14.4	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	2.4	XXX	4.8	2/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

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: BCW-PMT-033
☒	Other: DRBC regulation