pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254061**
Wastewater Type	**Sewage**	APS ID	**838031**
Facility Type	**SRSTP**	Authorization ID	**1275981**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Scott D & Stacy L Opalewski**	Facility Name	**Opalewski SRSTP**
Applicant Address	130 Chiccarello Drive	Facility Address	130 Chiccarello Drive
	Clinton, PA 15026		Clinton, PA 15026
Applicant Contact	Scott D Opalewski	Facility Contact	Same as Applicant
Applicant Phone	724-899-5052	Facility Phone	Same as Applicant
Client ID	290196	Site ID	717527
SIC Code	8800	Municipality	Hanover Township
SIC Description	Private Households	County	Beaver
Date Application Received	May 10, 2019	WQM Required	Yes
Date Application Accepted	June 10, 2019	WQM App. No.	0409402

Project Description: Application for a renewal of an existing NPDES permit for the discharge of treated sewage.

Summary of Review

The applicant proposed for a renewal of NPDES Permit No. PA0254061, which was previously issued by the Department on October 3, 2014 and expired on October 31, 2019.

The treatment plant is rated at 0.0004 mgd. The exiting treatment process consists of septic tanks, a dosing tank, a subsurface sand filter, and ultraviolet disinfection. It was constructed to eliminate a malfunctioning on-lot system on the permittee's property. Water Quality Management Permit No. 0409402 approved construction of the treatment facility.

The treated effluent discharges to an unnamed tributary of Traverse Creek which is classified as a high quality-cold water fishery located in State Watershed No. 20-D. The discharge does not qualify for a general NPDES permit because the discharge is to high quality waters.

The applicant did not use Electronic Discharge Monitoring Report (eDMR) system and the use of eDMR is not required for SRSTPs under current policy.

The AMR shows the entire system was inspected and cleaned on 04/11/2019, and Mr. Opalewski verified in email that the septic tank was pumped on 04/10/2019.

The applicant has complied with Act 14 Notifications and no comments were received. Since this is a renewal for a single residence, the Department accepted the Act 14 receipts without a copy of the Actual Notification sent.

Approve	Deny	Signatures	Date
X		*Yingmin Xue* Yingmin Xue / Environmental Engineering Specialist	May 15, 2020
X		*Donald J. Leone* Donald J. Leone, P.E. / Environmental Engineer Manager	May 18, 2020

Summary of Review

The previous effluent limitations for this discharge were established using the Department's Water Quality Anti-degradation Implementation Guidance. That guidance requires comparison of non-degrading effluent limitations, Anti-degradation Best Available Combination of Technologies (ABACT) limitations, or Water Quality Based Effluent Limitations (WQBEL's) and the most stringent be imposed. A Social and Economic Justification (SEJ), however was approved, therefore, non-degrading limits were not required. SEJ was granted because the proposed STP replaced an existing on-lot malfunction. WQAM63 confirmed ammonia-nitrogen WQBEL's governed over ABACT ammonia-nitrogen limits, and that a dissolved oxygen limitation is required to meet the dissolved oxygen criterion. The remaining limitations were ABACT based. The modeling results are enclosed. The previous limitations are as follows:

Parameter	Average Monthly	IMAX	Type
CBOD-5 Day			
May 1 to Oct 31	10	20	grab
Nov 1 to Apr 30	20	40	grab
Suspended Solids	20	40	grab
Ammonia Nitrogen			
May 1 to Oct 31	4.0	8.0	grab
Nov 1 to Apr 30	12.0	24.0	grab
Dissolved Oxygen	7.0 mg/l minimum		grab
Fecal Coliform Organisms			
May 1 to Sept 30	200/100 ml	1,000/100 ml	grab
Oct 1 to Apr 30	2,000/100 ml	10,000/100 ml	grab
pH	not less than 6.0 nor greater than 9.0 standard units		grab

To establish the renewal effluent limitations, the previous limits were compared to the effluent limitations required per the SOP-New and Reissuance Individual SFTF NPDES Permits as shown in the table below. The more stringent of those limitations were imposed in the renewal permit.

Parameter	Avg	IMAX	Sample Type	Frequency: SRSTPs
Flow (GPD)	Report	XXX	Estimate	1/year
BOD5 (mg/L)	10	20	Grab	1/year
TSS (mg/L)	10	20	Grab	1/year
Fecal Coliform (No./100 ml)	200 Average		Grab	1/year

For SRSTPs, the SOP – New and Reissuance Individual SFTF NPDES Permits requires a monitoring frequency of 1/year.

For SRSTPs with UV systems, the SOP – New and Reissuance Individual SFTF NPDES Permits states it is not necessary to require UV intensity or transmittance monitoring in the permit.

Sewage discharges with design flows < 2,000 GPD are not required to monitor for Total Nitrogen and Total Phosphorus in new and reissuance permits.

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)	0.0004
Latitude	40º 29' 16"	Longitude	-80º 24' 36"
Quad Name	Burgettstown	Quad Code	1502
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Traverse Creek	Stream Code	33706
NHD Com ID	99686268	RMI	1.90
Drainage Area	0.17 square miles	Yield (cfs/mi^2)	0.00535
Q_{7-10} Flow (cfs)	0.00091	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1100	Slope (ft/ft)	0.0224
Watershed No.	20-D	Chapter 93 Class.	High Quality Waters - Cold Water Fishes (HQ-CWF)
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final, 04/07/2005	Name	Raccoon Creek Watershed

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Raccoon Creek State Park		
PWS Waters	Raccoon Lake	Flow at Intake (cfs)	0.547
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments:

The discharge is to an unnamed tributary of Traverse Creek, which eventually flows into the Raccoon Creek Watershed that has a Final TMDL and is impaired by metals and pH. This sewage discharge is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

Compliance History	
Summary of DMRs:	The lab analytical report sampled on 04/23/2019 shows the system is in compliance.
Summary of Inspections:	There are no open violations by this client ID 290196.

Other Comments:

Since one sample did not indicate a problem, and this is a septic tank with a sand filter system, the Department did not pursue the previous year's monitoring results.

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.

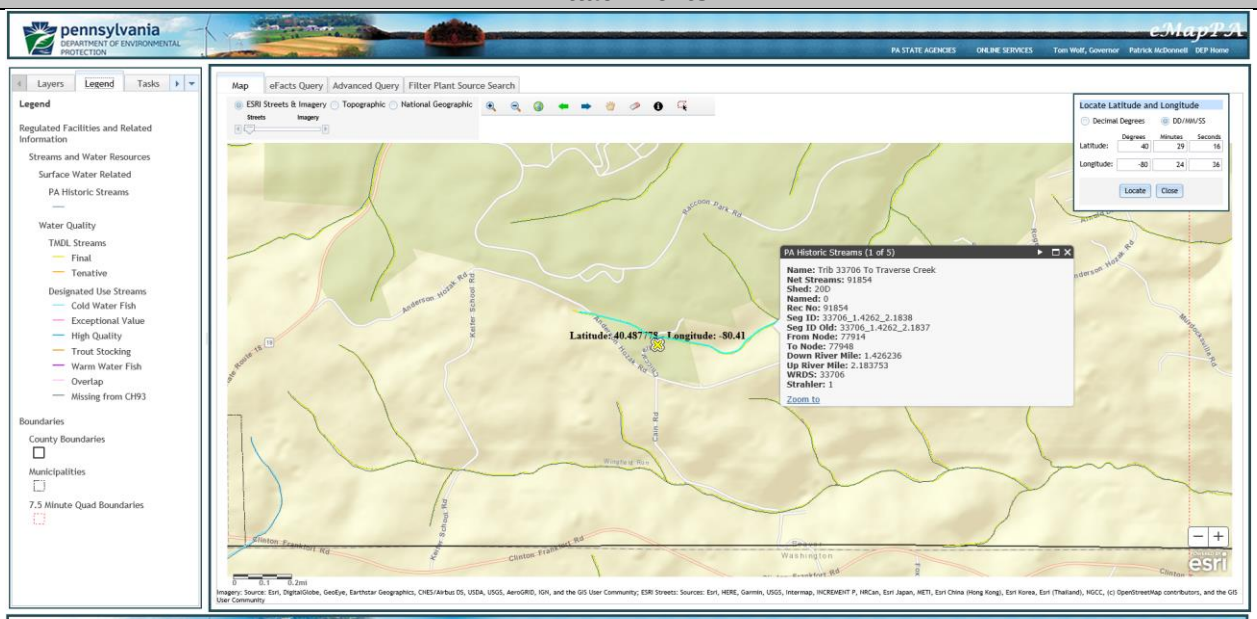
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

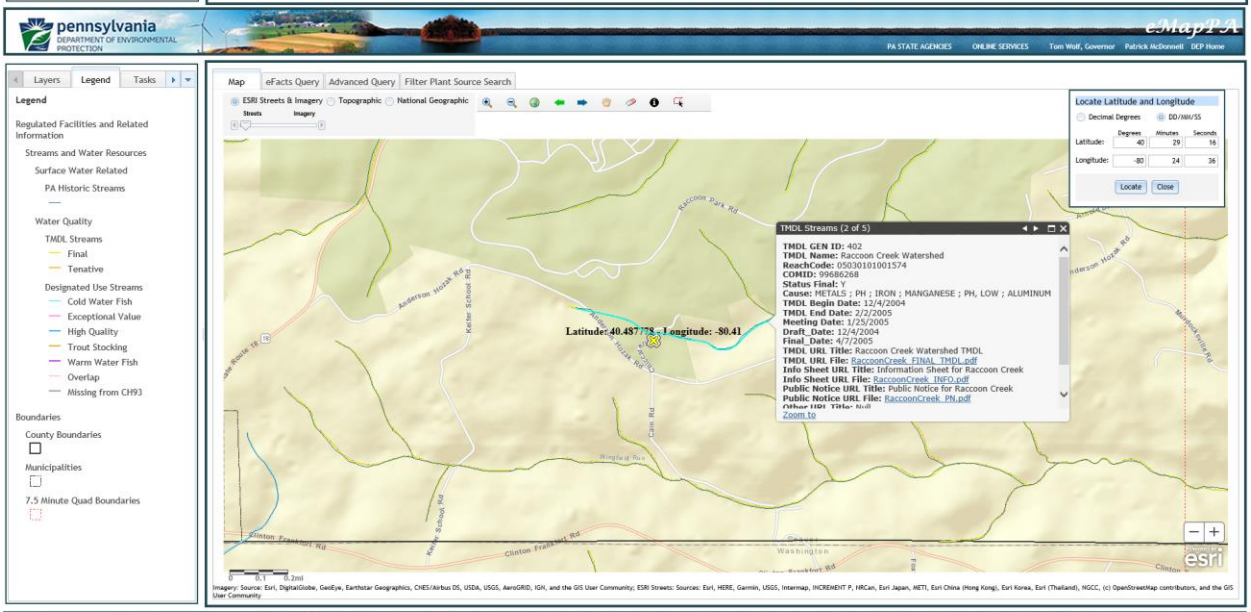
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Flow (GPD)	400 Annl Avg	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/year	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	1/year	Grab
BOD5	XXX	XXX	XXX	10.0	XXX	20.0	1/year	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200	XXX	1000	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	12.0	XXX	XXX	1/year	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.0	XXX	XXX	1/year	Grab

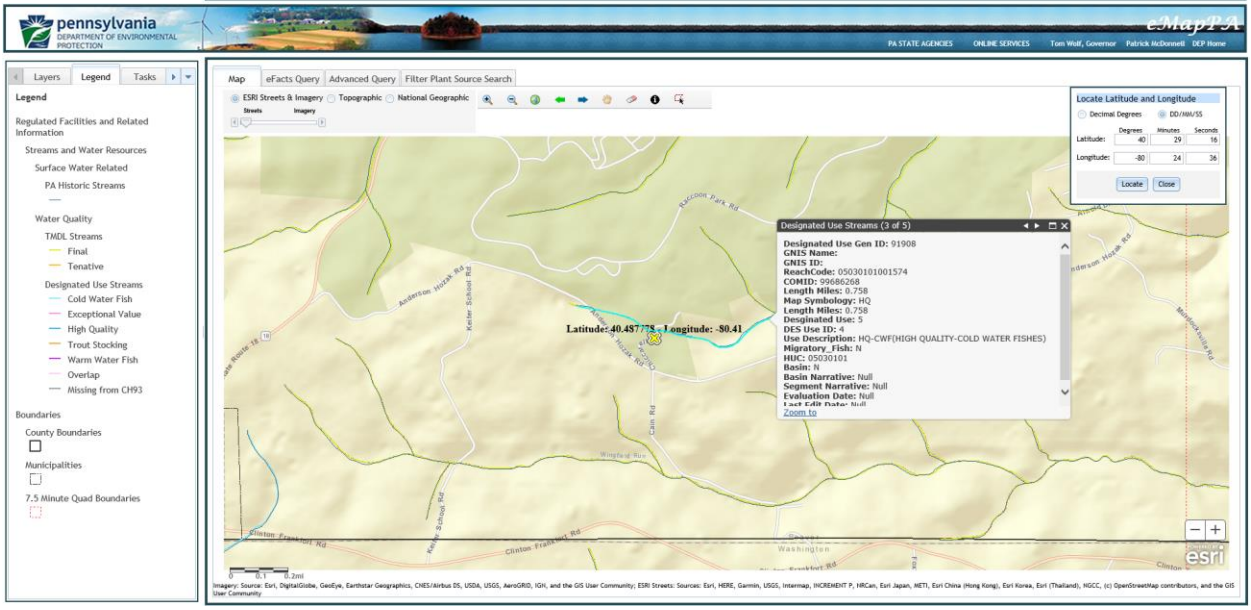
Compliance Sampling Location: Outfall 001

Other Comments: None

Attachments

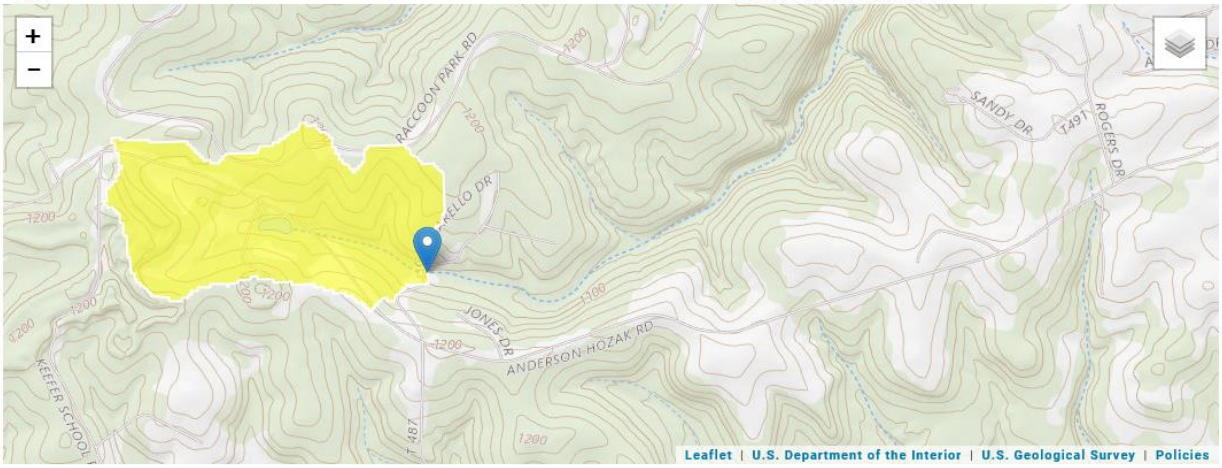






StreamStats Report - Opalewski SRSTP

Region ID:	PA
Workspace ID:	PA20200513180935399000
Clicked Point (Latitude, Longitude):	40.48812, -80.40999
Time:	2020-05-13 14:09:52 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.17	square miles
ELEV	Mean Basin Elevation	1168.8	feet

Low-Flow Statistics Parameters[Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.17	square miles	2.26	1400
ELEV	Mean Basin Elevation	1168.8	feet	1050	2580

Low-Flow Statistics Disclaimers[Low Flow Region 4]

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

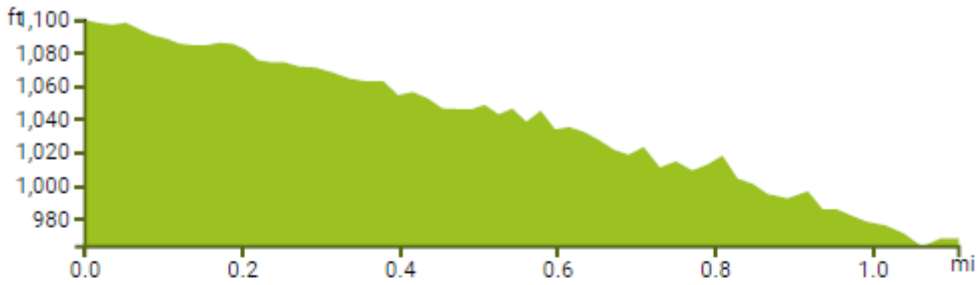
Low-Flow Statistics Flow Report[Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00365	ft^3/s
30 Day 2 Year Low Flow	0.00763	ft^3/s
7 Day 10 Year Low Flow	0.00091	ft^3/s
30 Day 10 Year Low Flow	0.00222	ft^3/s
90 Day 10 Year Low Flow	0.00492	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Elevation profile



Latitude	Longitude	Elevation (ft)	Distance (mi)
40.48810	-80.40997	1100.03	0.00
40.48810	-80.40964	1098.30	0.02
40.48810	-80.40931	1097.32	0.03
40.48810	-80.40898	1098.44	0.05
40.48803	-80.40867	1094.54	0.07
40.48796	-80.40837	1090.90	0.09
40.48789	-80.40806	1089.06	0.10
40.48782	-80.40776	1085.98	0.12
40.48778	-80.40743	1084.99	0.14
40.48774	-80.40711	1084.88	0.15
40.48770	-80.40679	1086.40	0.17
40.48766	-80.40647	1085.67	0.19
40.48754	-80.40622	1082.46	0.20
40.48741	-80.40598	1075.97	0.22
40.48728	-80.40574	1074.82	0.23
40.48729	-80.40538	1074.66	0.25

Latitude	Longitude	Elevation (ft)	Distance (mi)
40.48730	-80.40503	1072.08	0.27
40.48751	-80.40473	1071.42	0.29
40.48772	-80.40443	1068.45	0.31
40.48793	-80.40413	1064.83	0.34
40.48814	-80.40383	1063.14	0.36
40.48835	-80.40353	1063.22	0.38
40.48847	-80.40321	1054.80	0.40
40.48859	-80.40289	1056.74	0.42
40.48871	-80.40258	1052.98	0.43
40.48883	-80.40226	1046.87	0.45
40.48895	-80.40194	1046.50	0.47
40.48908	-80.40165	1046.26	0.49
40.48921	-80.40137	1048.95	0.51
40.48934	-80.40108	1043.26	0.52
40.48947	-80.40079	1046.71	0.54
40.48960	-80.40050	1038.75	0.56
40.48971	-80.40019	1045.38	0.58
40.48982	-80.39987	1034.26	0.60
40.48993	-80.39956	1035.60	0.61
40.49012	-80.39930	1032.65	0.63
40.49031	-80.39904	1027.75	0.65
40.49050	-80.39879	1021.97	0.67
40.49069	-80.39853	1018.93	0.69
40.49088	-80.39827	1023.58	0.71

Latitude	Longitude	Elevation (ft)	Distance (mi)
40.49101	-80.39792	1011.28	0.73
40.49114	-80.39757	1014.97	0.75
40.49127	-80.39722	1009.50	0.77
40.49147	-80.39698	1012.94	0.79
40.49168	-80.39673	1018.40	0.81
40.49188	-80.39649	1004.62	0.83
40.49209	-80.39624	1001.44	0.85
40.49229	-80.39600	995.30	0.87
40.49266	-80.39596	992.68	0.89
40.49303	-80.39593	996.95	0.92
40.49318	-80.39564	986.19	0.94
40.49334	-80.39535	986.06	0.95
40.49354	-80.39511	982.18	0.97
40.49373	-80.39486	978.62	0.99
40.49406	-80.39476	976.47	1.02
40.49439	-80.39466	971.63	1.04
40.49472	-80.39456	963.58	1.06
40.49505	-80.39446	968.52	1.09
40.49538	-80.39437	968.77	1.11

Elevation data provided by: **ESRI Elevation Analysis services**
(https://developers.arcgis.com/rest/elevation/api-reference/profile.htm)

MAP SEGMENT 14

03107700 TRAVERSE CREEK AT RACCOON CREEK STATE PARK, PA.

LOCATION.--Lat 40°30'04", long 80°25'17", Beaver County, at highway bridge 0.2 mi (0.3 km) southeast of Raccoon Creek State Park Headquarters, 1.8 mi (2.9 km) northeast of Frankfort Springs and 3.5 mi (5.6 km) above mouth.

DRAINAGE AREA.--14.6 mi^2 (37.8 km^2).

TRIBUTARY TO.--Raccoon Creek.

LOW-FLOW FREQUENCY.--Estimated average annual minimum discharge for seven consecutive days.

Recurrence interval	2 years	10 years
Discharge	0.1 ft^3/s	0.04 ft^3/s

BASIS OF ESTIMATE.--Correlated with Raccoon Creek at Moffatts Mill using six discharge measurements made in the period 1970-72.

03107800 SERVICE CREEK NEAR SHIPPINGPORT, PA.

LOCATION.--Lat 40°34'12", long 80°24'07", Beaver County, at bridge, 0.6 mi (1.0 km) north of Mechanicsburg, 4 mi (6.4 km) southeast of Shippingport, and 5.8 mi (9.3 km) upstream from mouth.

DRAINAGE AREA.--4.20 mi^2 (10.9 km^2).

TRIBUTARY TO.--Raccoon Creek.

REMARKS.--No flow at times.

03108000 RACCOON CREEK AT MOFFATTS MILL, PA.

LOCATION.--Lat 40°37'40", long 80°20'16", Beaver County, on left bank at downstream side of highway bridge at Moffatts Mill, 1.4 mi (2.2 km) downstream from Guns Run, 4 mi (6.4 km) south of Vanport, and 4.2 mi (6.8 km) upstream from mouth.

DRAINAGE AREA.--178 mi^2 (461 km^2).

AVERAGE DISCHARGE.--31 years, 183 ft^3/s (5.18 m^3/s).

EXTREMES.--1941-72: Maximum discharge, 8,590 ft^3/s (243 m^3/s) Jan. 27, 1952; minimum, 4.5 ft^3/s (0.127 m^3/s) Aug. 24, 25, 1965.

MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW.-- PERIOD: 1943-72

Period of consecutive days	Discharge, in cubic feet per second, for indicated recurrence interval in years					
	2	5	10	20	30	50
7	12	8.7	7.4	6.5	6.0	5.6
14	14	9.3	7.8	6.7	6.2	5.7
30	17	12	9.5	7.9	7.2	6.5
60	23	15	12	10	9.3	8.4
120	35	22	18	14	13	12
183	52	33	26	21	19	17

DURATION OF DAILY FLOW.-- PERIOD: 1942-72

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

percent	2	5	10	20	30	40	50	60	70	80	90	95	98
ft^3/s	1,000	650	450	260	180	120	84	58	42	29	18	14	10

425

```
   FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

              Default Data
 a. Stream Values
    1  Q1-10/Q7-10 ratio.....................: .64
    2  Q30-10/Q7-10 ratio....................: 1.36
    3  Temperature...........................: 20
    4  pH....................................: 7
    5  C-BOD5................................: 2
    6  NH3-N.................................: .1
    7  D.O. Saturation (%)...................: .85
    8  D.O. Goal.............................: 6
    9  Width/Depth ratio.....................: 10
   10  KC...(Headwaters only!)...............: 0
   11  KN....................................: .6
 b. Discharge Values (30-day avgs.)
   12  C-BOD5................................: 10
   13  NH3-N.................................: 5
   14  Effluent D.O..........................: 3
   15  Effluent Temp.........................: 20
   16  KC....................................: .6
   17  Balanced Technology(1=y 0=no).........: 0


  FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

              REACH #  1
      Headwaters and Tributary data

 No. of Reaches :  1

 Rh    Q7-10     T       pH      DO     CBOD5   NH3-N
       (cfs)    (c)     (su)   (mg/l)  (mg/l)  (mg/l)
 --   -------   -----   ----   ------  ------  ------
 HW     0.0005   20      7       7.79    2       .1
  1     0.0000


(WQAM63.EXE)  Release 1.2     05-05-2009     09:06:20
```

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	0	20	7	7.79	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

DISCHARGE # 1
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	0.0004	20	7	3	10	5	.6

(WQAM63.EXE) Release 1.2 05-05-2009 09:08:07

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

REACH # 1
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	7	.6	0.03570	897.6	.2	10

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

REACH # 1
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0

(WQAM63.EXE) Release 1.2 05-05-2009 09:10:07

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	0.0004	5.00	3.91	1	21.7	1.92

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	0.0004	10.00	10.00	0	0	9.67

(WQAM63.EXE) Release 1.2 05-05-2009 09:10:34

```
   FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

 (Total)Discharge =   .0004  MGD
    Temp    =  20      pH         =  7      Width      =     1.19
    CBOD-5  =  6.42    NH3-N      =  2.21   Depth      =     0.12
    D.O.    =   5.14   D.O. Goal  =  7      Velocity   =     0.008
    KC'     =  .482    KN         =  .6     W/D RATIO  =  10
    KR      =  42.938   (OWENS)
            Dis.  1    Rch.  1    Trvl Time: 1.325

               Tr.Tm.    CBOD-5   NH3-N     D.O.
               (Days)    (mg/l)   (mg/l)   (mg/l)
               ------    ------   ------   ------
               0.133     6.03     2.04     7.79
               0.265     5.65     1.88     7.79
               0.398     5.30     1.74     7.79
               0.530     4.98     1.61     7.79
               0.663     4.67     1.48     7.79
               0.795     4.38     1.37     7.79
               0.928     4.11     1.27     7.79
               1.060     3.85     1.17     7.79
               1.193     3.62     1.08     7.79
               1.325     3.39     1.00     7.79

  FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

              REACH #  1
           Reach Characteristics
Rh
     KR   TT
    (/D)  (Days)
-- ----- ------

 1  20    0


(WQAM63.EXE)  Release 1.2      05-05-2009      09:11:24
```

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

D.O. Allocations (Uniform)

DIS #	Q (MGD)	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	0.0004	3.9	3.9	10	10	0	0

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

(Total)Discharge = .0004 MGD

Temp = 20	pH = 7	Width = 1.19
CBOD-5 = 6.42	NH3-N = 2.2	Depth = 0.12
D.O. = 7.35	D.O. Goal = 7	Velocity = 0.008
KC' = .482	KN = .6	W/D RATIO = 10
KR = 20	(USR DEF.)	

Dis. 1 Rch. 1 Trvl Time: 1.325

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.133	6.03	2.03	7.79
0.265	5.65	1.88	7.79
0.398	5.30	1.73	7.79
0.530	4.98	1.60	7.79
0.663	4.67	1.48	7.79
0.795	4.38	1.37	7.79
0.928	4.11	1.26	7.79
1.060	3.85	1.17	7.79
1.193	3.62	1.08	7.79
1.325	3.39	0.99	7.79

(WQAM63.EXE) Release 1.2 05-05-2009 09:13:58

FILE: c:\WQAM63\untitled.wqm
Jericho SRSTF Warm Period

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	30 DAY	DISS. OXYGEN C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	.0004	7.8	3.9	10	3.9	7

Say 8.0 Say 4.0

(WQAM63.EXE) Release 1.2 05-05-2009 09:14:20

```
                Default Data
a. Stream Values
    1  Q1-10/Q7-10 ratio.....................: .64
    2  Q30-10/Q7-10 ratio....................: 1.36
    3  Temperature...........................: 5
    4  pH....................................: 7
    5  C-BOD5................................: 2
    6  NH3-N.................................: .1
    7  D.O. Saturation (%)...................: .85
    8  D.O. Goal.............................: 7
    9  Width/Depth ratio.....................: 10
   10  KC...(Headwaters only!)...............: 0
   11  KN....................................: .6
b. Discharge Values (30-day avgs.)
   12  C-BOD5................................: 20
   13  NH3-N.................................: 12
   14  Effluent D.O..........................: 7
   15  Effluent Temp.........................: 15
   16  KC....................................: 1.2
   17  Balanced Technology(1=y 0=no).........: 0


 FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

              REACH #  1
       Headwaters and Tributary data

No. of Reaches :  1

Rh    Q7-10     T       pH      DO     CBOD5   NH3-N
      (cfs)    (c)     (su)   (mg/l)  (mg/l)  (mg/l)
--   -------  -----    ----   ------  ------  ------
HW    0.0010    5       7      10.82    2       .1
 1    0.0000


(WQAM63.EXE)  Release 1.2     05-05-2009     09:37:56
```

FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	0	5	7	10.82	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

DISCHARGE # 1
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	0.0004	15	7	7	20	12	1.2

(WQAM63.EXE) Release 1.2 05-05-2009 09:38:13

FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

REACH # 1
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	7	.6	0.03570	897.6	.2	10

FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

REACH # 1
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	20	0

(WQAM63.EXE) Release 1.2 05-05-2009 09:38:51

FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	0.0004	12.00	12.00	0	0	4.08

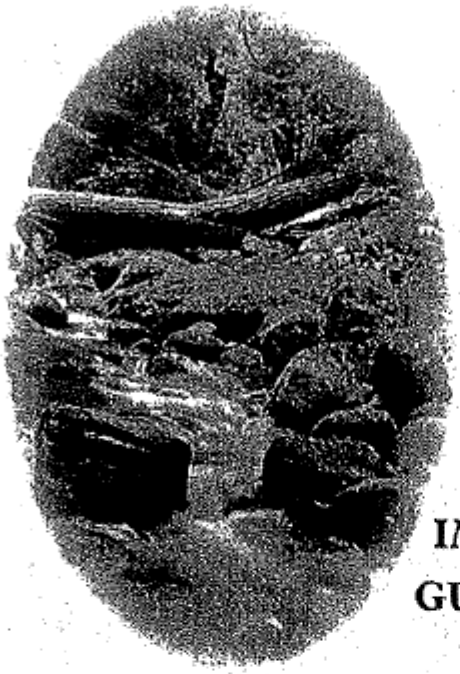
FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	0.0004	24.00	24.00	0	0	20.59

(WQAM63.EXE) Release 1.2 05-05-2009 09:39:05

```
   FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period

 (Total)Discharge =   .0004  MGD
    Temp    =  8.8     pH         =  7      Width      =    1.30
    CBOD-5  =  8.88    NH3-N      =  4.65   Depth      =    0.13
    D.O.    =   9.3599D.O. Goal   =  7      Velocity   =    0.010
    KC'     =  .967    KN         =  .6     W/D RATIO  =  10
    KR      =  20       (USR DEF.)
            Dis.  1    Rch.  1    Trvl Time: 1.077

               Tr.Tm.    CBOD-5   NH3-N    D.O.
               (Days)    (mg/l)   (mg/l)   (mg/l)
               ------    ------   ------   ------
               0.108     8.34     4.52    10.76
               0.215     7.84     4.40    10.82
               0.323     7.37     4.28    10.82
               0.431     6.92     4.17    10.82
               0.539     6.50     4.05    10.82
               0.646     6.11     3.95    10.82
               0.754     5.74     3.84    10.82
               0.862     5.39     3.74    10.82
               0.970     5.07     3.63    10.82
               1.077     4.76     3.54    10.82

  FILE: c:\wqam63\untitled.wqm
Jericho SRSTF Cold Period


      Effluent Limitations Display

DIS    Q    NH3-N TOX.    DISS. OXYGEN
 #          1    30     C-BOD5 NH3-N  EFF.
      MGD   DAY  DAY    30-DAY 30-DAY D.O.
--- ------ ---- ---- ------ ------ ----
 1  .0004   24   12     20     12     7



(WQAM63.EXE)  Release 1.2     05-05-2009     09:39:20
```



WATER QUALITY ANTIDEGRADATION IMPLEMENTATION GUIDANCE

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
For more information, visit DEP directly at www.dep.state.pa.us
or through the PA PowerPort at www.state.pa.us

APPENDIX B

ANTIDEGRADATION BEST AVAILABLE COMBINATION OF TECHNOLOGIES FOR WASTEWATER DISCHARGES

For wastewater discharges to HQ and EV waters the most effective treatment/disposal (T/D) technologies consist of a hierarchy of preferred methods which take technical and economic feasibility as well as expected water quality impacts into consideration. The goal of this hierarchy is to reduce or eliminate surface water discharges and minimize degradation of both surface and groundwater by providing advanced wastewater treatment and/or soil renovation prior to discharge to groundwater. However, for methods which involve a stream discharge, there also exist treatment performance standards defined as ABACT. ABACT in this context refers to treatment and disposal methods designed to help maintain existing water quality. One or more of the following technologies or alternatives suggested by the applicant and agreed upon by DEP should be applied to sewage or selected industrial waste discharges in HQ or EV waters.

A. The most preferred technology for wastewater discharges is to eliminate the discharge through a variety of land application options (including year round spray irrigation, drip irrigation, and land spreading) or extension of existing collection systems to convey wastewater to an existing sewage treatment system outside the HQ or EV watershed. Land application includes the installation of a treatment system providing a minimum of secondary treatment prior to release of the effluent onto the land. Sufficient storage to prevent any stream discharge during wet or cold weather periods when land application is not technically feasible is also required. Year-round spray irrigation or conveyance to an existing treatment plant outside of the watershed is required whenever it is technically feasible and cost effective. SEJ is not required for proposals in HQ watersheds which do not involve a discharge to surface waters. Year-round land application is the preferred alternative because it provides the added advantage of groundwater recharge within the watershed.

An equivalent technology for wastewater discharge is subsurface disposal. This disposal method may consist of either conventional or *alternate* onlot systems or a permitted groundwater discharge system as long as its review and approval is consistent with DEP regulations and policies for the protection of both surface and groundwater. Onlot disposal systems with domestic sewage flows of 10,000 gpd or less are permitted by local sewage enforcement officers under Act 537. For domestic flows of more than 10,000 gpd and industrial wastes, subsurface disposal options are more limited but, where appropriate, can be approved by DEP through issuance of a Water Quality Management (WQM) permit. Since there is no discharge to surface waters, SEJ is not required in HQ waters.

Collection and conveyance of sewage to existing treatment facilities outside the watershed or stream segment is another option because it eliminates the discharge of treated wastes to HQ or EV waters. One possible disadvantage is the export of water out of the basin and potential disruption of the existing hydraulic balance. This will be considered in the context of the evaluation. In this scenario, there is no discharge to surface or groundwaters outside the context of the existing NPDES permit issued to the facility receiving the wastewater and consequently,

there is no need for a new NPDES permit. Depending upon the circumstances, planning (Act 537) approval and/or a WQM permit may be required.

B. Where year-round land application, subsurface disposal, or collection/conveyance outside the basin are not technically or economically feasible, the next preferred treatment/disposal alternative is seasonal and/or partial land application. The chief difference between year-round and seasonal land application is that a stream discharge is permitted for the portion of the year when soils cannot attenuate the wastewater. The advantages lie in the fact that: 1) the discharge occurs during wetter portions of the year (usually November through April) when stream flows and waste assimilation capacities are higher and therefore, the impact of a stream discharge is less significant, and 2) the portion of the effluent that is land applied helps recharge groundwater. Where seasonal land application is employed, minimum wintertime stream discharge requirements are set using the more stringent of ABACT or water quality-based effluent limits (WQBELs). Seasonal land application is required whenever it is technically feasible and cost effective. Seasonal land application requires both an NPDES permit and a WQM permit. Since there will be a stream discharge for at least a portion of the year, SEJ is also required if the discharge would result in degradation of HQ waters. (See Chapter 10.)

Partial land application consists of disposing of a portion of the wastewater effluent onto soils on either a year-round or seasonal basis. Partial land application is required whenever it is technically feasible and cost effective. Generally, permit requirements for the portion of wastewater to be discharged are the same as for a system based on year-round stream discharge. The advantage to partial land application is that it reduces the total annual volume of wastewater discharged to the stream while increasing groundwater recharge. Partial land application requires both an NPDES and WQM permit. Since there is a stream discharge, SEJ is also required if degradation occurs in the receiving stream.

C. The final technology option is the year-round discharge of treated wastes. This technology is only employed when nondischarge alternatives are not environmentally sound and cost-effective. Where this technology is employed, a discharger must provide, as a minimum, the more stringent of ABACT or treatment technology that will achieve water quality-based effluent limitations (WQBELs). WQBELs are developed to assure compliance with water quality criteria at a specific design stream flow. Where the proposed activity/project is socially or economically justified, the appropriate design flow from Chapter 96.4(g) is used. For proposed discharges to HQ waters where the proposed activity is not socially or economically justified, the effluent requirements are established to maintain existing water quality and are calculated using the procedures outlined in Chapter 8.

ABACT requirements, such as those defined below for sewage discharges, are designed to help maintain existing water quality. Requirements for industrial waste discharges will be determined by DEP on a case-by-case basis after review of the proposed activity and its associated pollutants. All treatment/disposal facilities must be enhanced with pollution prevention technologies applied to the raw waste streams as well as water conservation or water reuse technologies designed to minimize the volume of wastewater discharged.

ABACT for municipal, non-municipal, and small flow sewage discharges is defined below. This listing is intended to represent the desired long-term performance level of constructed treatment facilities. It does not represent an exact statement of effluent limitations as they would appear in

a NPDES permit, where DEP may also require short-term effluent limitations as well as other controls or practices such as minimum treatment requirements established by Interstate River Basin Compacts or the EPA Chesapeake Bay Program.

Parameter	*Treatment Process Performance Expectations (mg/l)*		
	≤2,000	*2,000 to 50,000 gpd*	*>50,000*
$CBOD_5$ (May 1, - Oct. 31)	*10*	*10*	*10*
$CBOD_5$ (Nov. 1, - Apr. 30)	*20*	*20*	*10*
Suspended Solids	*20*	*10*	*10*
NH_3-N (May 1 - Oct. 31)	*5.0*	*3.0*	*1.5*
NH_3-N (Nov. 1 - Apr. 30)	*15.0*	*9.0*	*4.5*
Effective Disinfection	*- - - See footnote below - - - **		
Other Parameters as needed	*- - - Determined by the size and characteristics of the proposed discharge, may include - NO_2/NO_3-N, Total Phosphorus, Copper, Lead, Zinc - - -*		

* Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine based systems is encouraged and must be considered.

These values are expressed as average monthly values and represent a higher degree of treatment than conventional BAT. Additional treatment requirements for nutrients may be evaluated if necessary to comply with nutrient removal goals of programs such as those established for the Chesapeake or Delaware Bays. (See Tables B-3 and B-4 for treatment methods). Year-round discharge requires both an NPDES and WQM permit as well as SEJ, if the discharge causes measurable change in an HQ receiving stream. Selected point source control technologies from Tables B-1 and B-2 are appropriate to apply to the year-round discharge of treated wastes.

EV Waters: For wastewater discharges (sewage or selected industrial wastes) to EV waters treatment technologies center on the use of pollution prevention technologies to reduce pollutant loads on treatment systems followed by the use of the soil/geologic matrix to remove some or all of the wastewater constituents as an alternative to surface water discharge. Except in the case of individual onlot sewage systems, land application preceded by varying degrees of advanced chemical, physical, and/or biological treatment will be required for treatment/disposal of wastewaters in EV waters if cost effective. The use of land application minimizes or eliminates surface water discharge and the associated water quality degradation. In addition, these combined technologies offer the highest likelihood of producing an effluent that will not degrade the protected stream. Treatment and discharge of wastewater to EV waters can only be permitted if the maintenance or enhancement of existing surface and groundwater quality can be demonstrated.

Treatment/Disposal Methods: Tables B-1 through B-4 list treatment, land application, and nutrient removal methods that could be combined to provide wastewater management that satisfies the requirements of the Antidegradation Program. A more detailed discussion of various land application methods can be found in DEP's *Manual of Land Application of Treated Sewage and Industrial Wastewater*, DEP ID: 362-2000-009. Technically feasible combinations