pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0093211**
Facility Type	**Municipal**	APS ID	**822188**
Major / Minor	**Minor**	Authorization ID	**1281404**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Menallen Township Sewer Authority**	Facility Name	**Buffington STP**
Applicant Address	427 Searights Herbert Road	Facility Address	Tex Lane
	Uniontown, PA 15401-5137		New Salem, PA 15468
Applicant Contact	Mr. Randy Brown	Facility Contact	Same as Applicant
Applicant Phone	(724) 245-7108	Facility Phone	Same as Applicant
Client ID	43759	Site ID	236840
Ch 94 Load Status	Not Overloaded	Municipality	Menallen Township
Connection Status	No Limitations	County	Fayette
Date Application Received	July 23, 2019	EPA Waived?	Yes
Date Application Accepted	July 24, 2019	If No, Reason	

Purpose of Application: Application for a renewal of an existing NPDES Permit for the discharge of treated Sewage.

Summary of Review

The applicant has applied for a renewal of an existing NPDES Permit, Permit No. PA0093211, which was previously issued by the Department on December 4, 2014. That permit expired on December 31, 2019.

The WQM Permit approved construction of a STP with a design flow rate of 0.2 MDG. The existing treatment process consists of a comminutor, primary clarifiers, RBCs, final clarification, and chlorination.

The receiving stream, Dunlap Creek, is classified as a WWF, and is located in State Watershed No. 19-C.

The applicant has complied with Act 14 Notifications and no comments were received.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		William C. Mitchell William C. Mitchell, E.I.T. / Project Manager	April 27, 2020
X		Christopher Kriley Christopher Kriley, P.E. / Environmental Program Manager	April 27, 2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.2
Latitude	39º 55' 39.90"	Longitude	-79º 50' 45.95"
Quad Name	New Salem	Quad Code	1907
Wastewater Description:	Sewage Effluent		
Receiving Waters	Dunlap Creek (WWF)	Stream Code	40140
NHD Com ID	99414066	RMI	13.5
Drainage Area	4.87	Yield (cfs/mi^2)	0.3
Q_{7-10} Flow (cfs)	1.46	Q_{7-10} Basis	Bulletin #12, Station # 03074000
Elevation (ft)		Slope (ft/ft)	0.002
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	CONSTRUCTION, EROSION FROM DERELICT LAND (BARREN LAND), GRAZING IN RIPARIAN OR SHORELINE ZONES,		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake		Newell Municipal Authority	
PWS Waters	Monongahela River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Treatment Facility Summary				
Treatment Facility Name: Buffington STP				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Rotating Biological Contactors	Chlorine	2016 to 2018 Average Annual Flow is 0.12
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.2	340	Not Overloaded	Dewatering	Hauled to Franklin Township WWTP

Changes Since Last Permit Issuance: None

Compliance History

Operations Compliance Check Summary Report

Facility: Buffington_STP

NPDES Permit No.: PA0093211

Compliance Review Period: 04/27/2015 – 04/27/2020

Open Violations by Client Summary

None.

Inspection Summary

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	# OF VIOLATIONS
2679211	10/11/2017	Chapter 94 Inspection	PA Dept of Environmental Protection	No Violations Noted	0
2391980	07/22/2015	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted	0
2372188	05/15/2015	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	0

Violation Summary

No violations in eFACTs.

Enforcement Summary

No enforcement actions.

DMR Violation Summary

Current eDMR user.

Effluent limit violation summary 4/27/2018 – 4/27/2020:

MONITORING END DATE	OUTFALL	PARAMETER	SAMPLE VALUE	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
12/31/2019	001	Total Suspended Solids	81.7	75.1	lbs/day	Weekly Average
12/31/2019	001	Total Suspended Solids	49	45	mg/L	Weekly Average
08/31/2019	001	Total Residual Chlorine (TRC)	0.6	0.5	mg/L	Average Monthly
08/31/2019	001	Ammonia-Nitrogen	19.7	12.8	mg/L	Weekly Average
07/31/2019	001	Fecal Coliform	3300	1000	CFU/100 ml	Instantaneous Maximum
07/31/2019	001	Fecal Coliform	365	200	CFU/100 ml	Geometric Mean

06/30/2019	001	Fecal Coliform	1870	1000	CFU/100 ml	Instantaneous Maximum
02/28/2019	001	Flow	0.231	0.2	MGD	Average Monthly
10/31/2018	001	Total Residual Chlorine (TRC)	0.6	0.5	mg/L	Average Monthly

Compliance Status:

Facility had numerous effluent violations in 2019. Operations will inspect facility soon to evaluate operation and maintenance conditions and ascertain causes of violations.

Completed by: David Roote

Completed date: 4/27/2020

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.2
Latitude 39º 55' 39.90" **Longitude** -79º 50' 45.95"
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)

Comments: The attached TRC_CALC Spreadsheet confirms that a technology-based effluent limitation for TRC is acceptable.

The discharge was previously modeled using WQM6.3 to evaluate the $CBOD_5$, Ammonia Nitrogen and Dissolved Oxygen parameters. Because there have been no changes to the discharge or the receiving stream, the modeling results for those parameters are based on the previously approved pollution report which is attached to this fact sheet. It was unnecessary to remodel those three parameters using the current WQM 7.0 model because the same effluent results are computed for a single discharge scenario. The modeling results show technology based effluent limitations for $CBOD_5$ are appropriate. Total Suspended Solids, pH, Fecal Coliform, are not evaluated using WQM6.3. The basis for those limitations is listed in the above table.

Please note that the December 1992 Fact Sheet has been attached. It contains important information needed for the development of effluent limits.

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nov 1 - Apr 30	25.0	Average Monthly	WQM6.3
Ammonia-Nitrogen May 1 – Oct 31	8.5	Average Monthly	WQM6.3

Best Professional Judgment (BPJ) Limitations

Comments: A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment. This is applied for an activated sludge system.

Anti-Backsliding

N/A

Additional Considerations:

For pH, Dissolved Oxygen (DO), and TRC, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

Nutrient monitoring is required to establish the nutrient load from the waste water treatment facility and the impacts that load may have on the quality of the receiving stream(s). A 1/year monitor and report requirement for Total N & Total P has been added to the permit as per Chapter 92.a.61.

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD5, TSS, and NH_3-N and average weekly mass loading limits be established for CBOD5 and TSS. Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

Please note that changes were made to the Average Monthly & Average Weekly Mass Effluent Limitations for CBOD5, TSS and Ammonia Nitrogen. These changes were necessary to be consisted with rounding guidelines found in Chapter 5.C.2, Rounding-Off Mathematically Values, of the Department's Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001.

For POTWs with design flows greater than 2,000 GPD influent BOD_5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations.

Total Dissolved Solids (TDS) and its Major Constituents

Monitoring is not required for Bromide, Chloride, Sulfate, and TDS, because the effluent concentration of TDS, as reported in the NPDES Permit application, does not exceed 1,000 mg/l.

Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to formation of disinfection byproducts at increased levels in public water systems. As a consequence of actions associated with Triennial Review 13, the Environmental Quality Board has directed DEP to collect additional data. Facilities with design flows greater than or equal to 0.1 mgd are required to report at least one sample analyzed for these parameters with the NPDES Permit renewal application.

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	41.0	60.0	XXX	25.0	38.0	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	50.0	75.0	XXX	30.0	45.0	60	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	41.0	XXX	XXX	25.0	XXX	50	1/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	14.0	XXX	XXX	8.5	XXX	17	1/week	8-Hr Composite

Outfall 001, Continued (from 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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite

Compliance Sampling Location: Outfall # 001

Copy of TRC_CALC

TRC EVALUATION

1.46	**= Q stream (cfs)**	**0.5**	**= CV Daily**
0.2	**= Q discharge (MGD)**	**0.5**	**= CV Hourly**
4	**= no. samples**	**0.995**	**= 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)**
	= % Factor of Safety (FOS)		**=Decay Coefficient (K)**

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 1.517	**1.3.2.iii**	WLA cfc = 1.479
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 0.565	**5.1d**	LTA_cfc = 0.860

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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)**

FACT SHEET/STATEMENT OF BASIS NPDES PA0093211

Prepared by Ray Lattner

Date: December 28, 1992 Outfall 001

Phone: 412-442-4000 (8-636-4000)

(ES) Menallen Township Municipal Authority (MUN) Menallen Township

(AF) Buffington Sewage Treatment Plant (CO) Fayette

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The Menallen Township Municipal Authority has applied for a renewal of NPDES Permit PA0093211. NPDES Permit PA0093211 was first issued on January 23, 1984 and authorized a discharge of 0.2 mgd from the Buffington Sewage Treatment Plant. The existing discharge is to Dunlap Creek, a warm water fishery. The following effluent limitations, which are based on the D.0 model contained in the Wang computer, were imposed in the 1984 NPDES Permit.

	Concentrations (mg/l unless otherwise indicated)			
Discharge Parameter	Average Monthly	Average Weekly	Max. Daily	Instant. Max.
Flow (mgd)	.2			
BOD-5 Day	25	37.5		50
Suspended Solids	30	45		60
Ammonia Nitrogen				
May 1 to Oct 31	6.5	9.7		19.5
Nitrite-Nitrate	25	37.5		50
Dissolved Oxygen	Minimum of 5.0 at all times			

This discharge will be re-evaluated using the Departments Current Modeling Program WQM 6.3.

The first step in the modeling procedure was to determine if there are any other STP discharges in the watershed that may interact with the Buffington STP discharge. A review of the water quality facilities inventory report indicates that the Footedale STP is located approximately 1.89 miles ((10,000 ft.) upstream of the Buffington STP. It was decided to model both of these discharges concurrently since the possibility of interaction between these discharges does exist.

FACT SHEET/STATEMENT OF BASIS NPDES PA0093211

(ES) Menallen Township Municipal Authority (MUN) Menallen Township

(AF) Buffington Sewage Treatment Plant (CO) Fayette

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Results of the Modeling (refer to the attached Pollution Report) indicate that secondary effluent limitations for $CBOD_5$ can be imposed on both discharges. Correspondingly, secondary effluent limitations for TSS will also be imposed on both discharges.

The NH_3-N allocation portion of WQM 6.3 was run in the EMPR Mode to establish if NH_3-N effluent limitations were needed to protect water quality. The program determined the following effluent limitations:

Buffington STP		Monthly Average	Weekly Average	Instant Max.
NH_3-N	(5/1 to 10/31)	8.5	12.8	17.0
	(11/1 to 4/30)	25.0	38.0	50.0

The "winter" NH_3-N Model Allocation indicates that NH_3-N limitations are not necessary for the period of 11/1 to 4/30. "Winter" effluent limitations were not imposed in the previous NPDES permit. It is current policy, however, to impose three (3) times (X) the summer effluent limitations in situations where summer limits are required to protect water quality. The above limitations for the period of 11/1 to 4/30 will therefore be imposed.

It should be noted that the proposed new NH_3-N effluent limitaitons are slightly less restrictive than the previous limitaitions. The previous limits are based on a Q_{7-10} flow of 1.21 cfs. This Q_{7-10} flow is based on a yeild obtained from Redstone Creek at Waltersburg. The Buffington STP discharges directly to Dunlap Creek. A gauging station exists on Dumlap Creek at Allison. It was decided to use the yield from Dunlap Creek to compute a new Q_{7-10} flow of 1.46 cfs. The slight increase in Q_{7-10} flow provided additional assimilative stream capacity which allowed for a slight increase in the NH_3-N discharge concentration.

FACT SHEET/STATEMENT OF BASIS NPDES PA0093211

(ES) Menallen Township Municipal Authority (MUN) Menallen Township

(AF) Buffington Sewage Treatment Plant (CO) Fayette

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The previous NPDES permit imposed nitrate-nitrite limitations. A review of the past Pollution Report indicates no sound basis for these limitations. The nearest potable water supply is the Brownsville Water Company on the Monongahela River. Applying the criteria at this point, enough dilution is provided so that nitrite-nitrate limitations are not required. NO_2-NO_3 limits will not be reimposed.

Modeling indicates that a minimum dissolved oxygen content in the effluent is not required. The requirement that the discharge contain 5.0 mg/l of D.O. will be eliminated from the permit.

The Buffington STP consists of a comminutor, primary clarifiers, rotating biological contactors, final clarification and chlorination.

A review of the DMRs for this facility indicates that it is in compliance with its existing discharge limitations and can achieve the proposed new effluent limitations. In addition, a review of the Departments NPDES Compliance Inspection Reports indicates the plant is operated well and meeting its permit requirements.

RL:mcc

PA0093211

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THE MENALLEN TWP MUNICIPAL AUTHORITY HAS APPLIED FOR A RENEWAL OF NPDES PERMIT PA0093211 NPDES PERMIT PA0093211 AUTHORIZES A DISCHARGE of 0.2 MGD FROM THE BUFFINGTON STP TO DUNLAP CREEK.

A REVIEW OF THE WQF REPORT INDICATES THAT THE FOOTEDALE STP IS LOCATED APPROXIMATELY 1.9 miles UPSTREAM OF BUFFINGTON STP, DUE TO THE POSSIBILITY OF INTERACTION BETWEEN THESE TWO DISCHARGES, THEY WILL BE MODELED CONCURRENTLY USING WQM 6.3

REACH #1 DATA

FROM FOOTEDALE STP DISCHARGE POINT TO TITE BUFFINGTON STP DISCHARGE POINT,

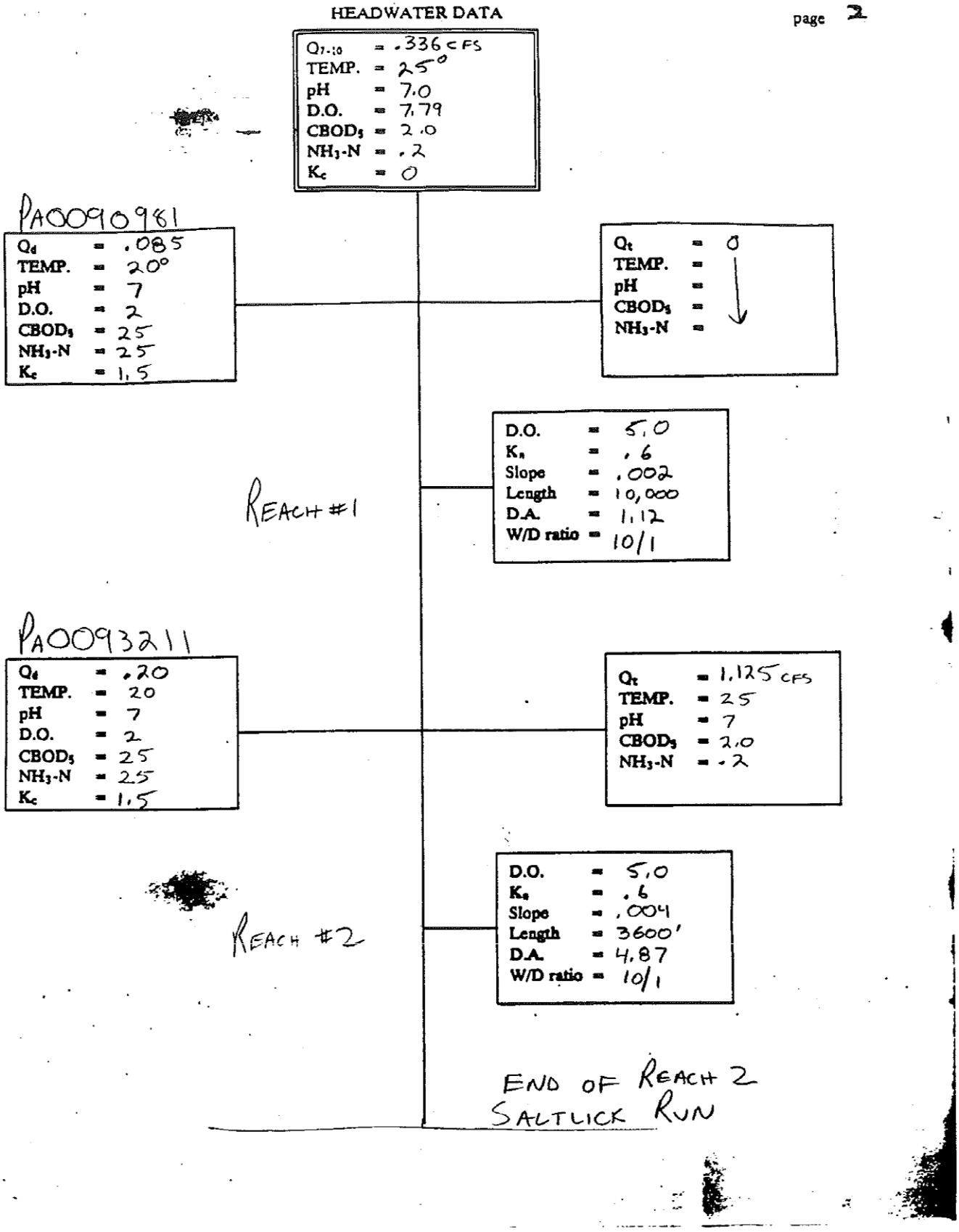
REACH LENGTH = 10,000 ft
ELEVATION DROP = 1000 - 980 = 20 ft
SLOPE = 20'/10,000 = .002 ft/ft

DRAINAGE AREA BETWEEN DISCHARGES = 3.75
INCREMENTAL STREAM FLOW BE = 3.75 x .3 = 1.125

REACH #2 DATA

FROM THE BUFFINGTON STP DISCHARGE TO SALTLICK RUN.

REACH LENGTH = 3600'
ELEVATION DROP = 980 - 965 = 15'
SLOPE = .004 ft/ft


HEADWATER DATA
page 2
Q_{7-10} = .336 CFS
TEMP. = 25°
pH = 7.0
D.O. = 7.79
$CBOD_5$ = 2.0
NH_3-N = .2
K_c = 0
PA0090981
Q_d = .085
TEMP. = 20°
pH = 7
D.O. = 2
$CBOD_5$ = 25
NH_3-N = 25
K_c = 1.5
Q_t = 0
TEMP. =
pH =
$CBOD_5$ =
NH_3-N =
D.O. = 5.0
K_a = .6
Slope = .002
Length = 10,000
D.A. = 1.12
W/D ratio = 10/1
REACH #1
PA0093211
Q_d = .20
TEMP. = 20
pH = 7
D.O. = 2
$CBOD_5$ = 25
NH_3-N = 25
K_c = 1.5
Q_t = 1.125 CFS
TEMP. = 25
pH = 7
$CBOD_5$ = 2.0
NH_3-N = .2
D.O. = 5.0
K_a = .6
Slope = .004
Length = 3600'
D.A. = 4.87
W/D ratio = 10/1
REACH #2
END OF REACH 2
SALTLICK RUN

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE:

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 2

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
HW	.336	25	7	7.54	2	.2
1	0					
2	1.125	25	7	7.54	2	.2

STREAM CHARACTERISTICS

RCH	Q7-10 CFS	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L
1	.34	25	7	7.54	2	.2
2	1.46	25	7	7.54	2	.2

Q 1-10/Q 7-10 = .64
Q30-10/Q 7-10 = 1.36

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE:

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.085	20	7	2	25	25	1.5
2	.2	20	7	2	25	25	1.5

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	2E-03	10000	1.12	10
2	5	.6	4E-03	3600	4.87	10

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	0	0
2	0	0

NH3-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)	
1	.085	5.8	5.53	2	4.7	FOOTEDALE STP PA0090981
2	.2	9.15	8.72	2	4.7	BUFFINGTON STP PA0093211

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: FOOTEDALE BUFFINGTON.WQM6.3

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.085	20.06	20.06	0	0
2	.2	29.1	29.1	0	0

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .085 MGD
TEMP = 23.6 PH = 7
CBOD-5= 8.47 NH3-N= 1.7 D.O. = 5.98
KC'= 1.01 KN= .6 D.O.GOAL = 5
KR= 13.221 (OWENS)
DIS. 1 RCH. 1 TRVL TIME:.933

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.093	7.58	1.58	6.75
.187	6.78	1.47	7.08
.28	6.07	1.36	7.26
.373	5.43	1.26	7.4
.466	4.86	1.17	7.52
.56	4.35	1.09	7.54
.653	3.89	1.01	7.54
.746	3.48	.94	7.54
.84	3.11	.87	7.54
.933	2.79	.81	7.54

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: FOOTEDALE BUFFINGTON.WQM6.3

MULTIPLE DISCHARGE LIMITATIONS

(TOTAL) DISCHARGE = .285 MGD
TEMP = 23.8 PH = 7
CBOD-5= 5.94 NH3-N= 1.74 D.O. = 6.64
KC'= 1.057 KN= .6 D.O.GOAL = 5
KR= 7.933 (TSIVOGLOU)
DIS. 2 RCH. 2 TRVL TIME:.2

TR.TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.02	5.79	1.71	6.6
.04	5.64	1.68	6.57
.06	5.5	1.65	6.55
.08	5.37	1.63	6.54
.1	5.23	1.6	6.54
.12	5.1	1.58	6.54
.14	4.98	1.55	6.55
.16	4.85	1.53	6.57
.18	4.73	1.5	6.59
.2	4.61	1.48	6.61

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	.085	11.1	5.5	25	5.5	2	FOOTEDALE STP PA0090981
2	.2	17.4	8.7	25	8.7	2	BUFFINGTON STP PA 0093211

WINTER

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: FOOTEDALE BUFFINGTON.WQM6.3

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 2

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
HW	.672	5	7	10.5	2	.2
1	0					
2	2.25	5	7	10.5	2	.2

DISCHARGER DATA
Q7-10 DESIGN CONDITIONS

RH	Q MGD	T (C)	PH	DO MG/L	CBOD5 MG/L	NH3-N MG/L	KC
1	.085	15	7	2	25	25	1.5
2	.2	15	7	2	25	25	1.5

WINTER

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: FOOTEDALE BUFFINGTON.WQM6.3

REACH CHARACTERISTICS

RH	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	2E-03	10000	1.12	10
2	5	.6	4E-03	3600	4.87	10

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	0	0
2	0	0

WINTER

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: WINTER FOOTEDALE.WQM6.3

NH3-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.085	25	25	0	0
2	.2	25	25	0	0

NH3-N DISCHARGE ALLOCATIONS AT Q1-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.085	50	50	0	0
2	.2	50	50	0	0

MULTIPLE DISCHARGE ANALYSIS FOR FOOTEDALE STP AND BUFFINGTON STP
FILE: WINTER FOOTEDALE.WQM6.3

WINTER

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	.085	50	25	25	25	2	FOOTDALE STP PA 00909
2	.2	50	25	25	25	2	BUFFINGTON STP PA0093211

FOR NH_3-N EFFLUENT LIMITATIONS
IMPOSE 3X THE SUMMER VALUES
AS CURRENT POLICY DICTATES.