

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

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0093076
APS ID 1027574
Authorization ID 1334631

Applicant and Facility Information

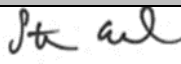

Applicant Name	<u>Jones Estates Brookhaven LLC</u>	Facility Name	<u>Brookhaven Estates MHP</u>
Applicant Address	<u>2310 South Miami Blvd</u> <u>Durham, NC 27703</u>	Facility Address	<u>580 Moore Road</u> <u>Washington, PA 15301-8041</u>
Applicant Contact	<u>Jason Freed</u>	Facility Contact	<u>Thomas Bibby</u>
Applicant Phone	<u>(917) 225-9614</u>	Facility Phone	<u>(724) 366-5184</u>
Client ID	<u>359704</u>	Site ID	<u>250152</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>South Franklin Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Washington</u>
Date Application Received	<u>November 25, 2020</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 25, 2020</u>	If No, Reason	<u></u>
Purpose of Application	<u>Application for renewal and transfer of an NPDES Permit</u>		

Summary of Review

This review is in response to an application received on November 25, 2020. Jones Estates Brookhaven LLC owns and operates the Brookhaven Estates Mobile Home Park in South Franklin Township, Washington County. Sewage generated at the mobile home park is treated with a comminutor, three aeration tanks in series, a settling tank, a sludge holding tank, intermittently dosed sand filters, chlorination and de-chlorination before discharging to an unnamed tributary of Chartiers Creek through outfall 001.

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		 Stephanie Conrad / Environmental Engineering Specialist	February 24, 2021
X		 Christopher Kriley, P.E. / Program Manager	March 16, 2021

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.02
Latitude	40° 6' 18.00"	Longitude	-80° 17' 36.00"
Quad Name		Quad Code	
Wastewater Description:		Sewage Effluent	
Receiving Waters	Unnamed Tributary of Chartiers Creek (WWF)	Stream Code	37155
NHD Com ID		RMI	1.19
Drainage Area	0.24	Yield (cfs/mi ²)	0.034
Q ₇₋₁₀ Flow (cfs)	0.0082	Q ₇₋₁₀ Basis	Chartiers Creek Basin
Elevation (ft)		Slope (ft/ft)	
Watershed No.	20-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final, Final	Name	Chartiers Creek, & Chartiers Creek Watershed
Background/Ambient Data		Data Source	
pH (SU)			
Temperature (°F)			
Hardness (mg/L)			
Other:			
Nearest Downstream Public Water Supply Intake	Western Pennsylvania Water Company		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments:

The discharge is to an UNT to Chartiers Creek, which flows into the Chartiers Creek Watershed that has a Final TMDL and is impaired by PCB and Chlordane. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

The discharge is to an UNT to Chartiers Creek, which flows into the Chartiers 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.

Treatment Facility Summary				
Treatment Facility Name: Brookhaven Estates MHP STP				
WQM Permit No.		Issuance Date		
6374421		12/19/1974		
Waste Type		Degree of Treatment	Process Type	Avg Annual Flow (MGD)
Sewage		Secondary With Ammonia Reduction	Extended Aeration	0.01
Hydraulic Capacity (MGD)		Organic Capacity (lbs/day)	Load Status	Biosolids Treatment
0.02		37	Not Overloaded	Holding Tank

Compliance History	
Summary of DMRs:	Between 2/19/2016 and 2/19/2020 The facility has complied with submittal of Data Management Reports (DMR) through the electronic DMR (eDMR) system. On 6/30/2020 an effluent limit violation was reported for a geometric mean Fecal Coliform of 564 CFU/ 100 mL and an instantaneous maximum of 1920 CFU/ 100 mL. There were no additional effluent limit violations reported.
Summary of Inspections:	The facility received an administration/file review on 9/02/2020 (inspection ID 3080276). The inspection resulted in one notice of violation type 92A.62 for failure to comply with annual fee payment. An administrative order was also enforced on the property on 10/7/2020. Both the Administrative order and Notice of Violation have been closed.

Other Comments: **The Facility has been purchased by Jones Estates since the previous permit became effective. It is unknown if these violations occurred during the ownership of Jones Estates or the previous owner. An Operations Compliance Check Summary Report was conducted on 2/19/2021 and is attached for reference.**

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	.02
Latitude	40° 7' 48.00"	Longitude	-80° 18' 30.00"
Wastewater Description:	Sewage Effluent		

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD ₅	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Other Comments: WQAM6.3 output files confirm that the above Technology-Based CBOD5 Limitation is acceptable.

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nitrogen	2.0	Average Monthly	WQM6.3
Dissolved Oxygen	5.0	Minimum	WQAM6.3
Total Residual Chlorine	0.05	Average Monthly	TRC Spreadsheet

Comments: Brookhaven Estates MHP is one of many facilities discharging to either Chartiers Creek or its tributaries. The possible interactions between six sewage treatment plants were considered through the use of WQAM63. The other five STP's include in the evaluation are:

- Joe Walker Elementary School STP (PA0096121)
- Franklin Manor STP (PA0033294)
- Ridgecrest MHP STP (PA0042820)
- Airways MHP STP (PA0094102)
- Treehaven MHP STP (PA0095834)

The discharge was previously modeled using WQM6.3 to evaluate CBOD₅, Ammonia Nitrogen and Dissolved Oxygen parameters and there has been no changes to the discharge or the receiving stream. Therefore, it is not necessary to remodel these parameters using WQM 7.0, and the existing limitations will be re-imposed.

Total Residual Chlorine was remodeled using recommended in-stream and discharge chlorine demand default values of 0.3 mg/l and 0 mg/l. This modeling resulted in a TRC limit of 0.05 mg/l which is more restrictive than the TRC limit of 0.15mg/l previously imposed on this facility. The more restrictive TRC limit will be imposed upon issuance of the new permit.

Review of historic DMRs determined that the facility already meets the lower effluent limit and therefore a more stringent limit does not impose a significant burden, as a tablet de-chlorinator is in use at this facility.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations:

For pH, Dissolved Oxygen (DO) and Total Residual Chlorine (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 wastewater 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.

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.

Proposed Effluent Limitations and Monitoring Requirements
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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) and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	0.02	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.05	XXX	0.16	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

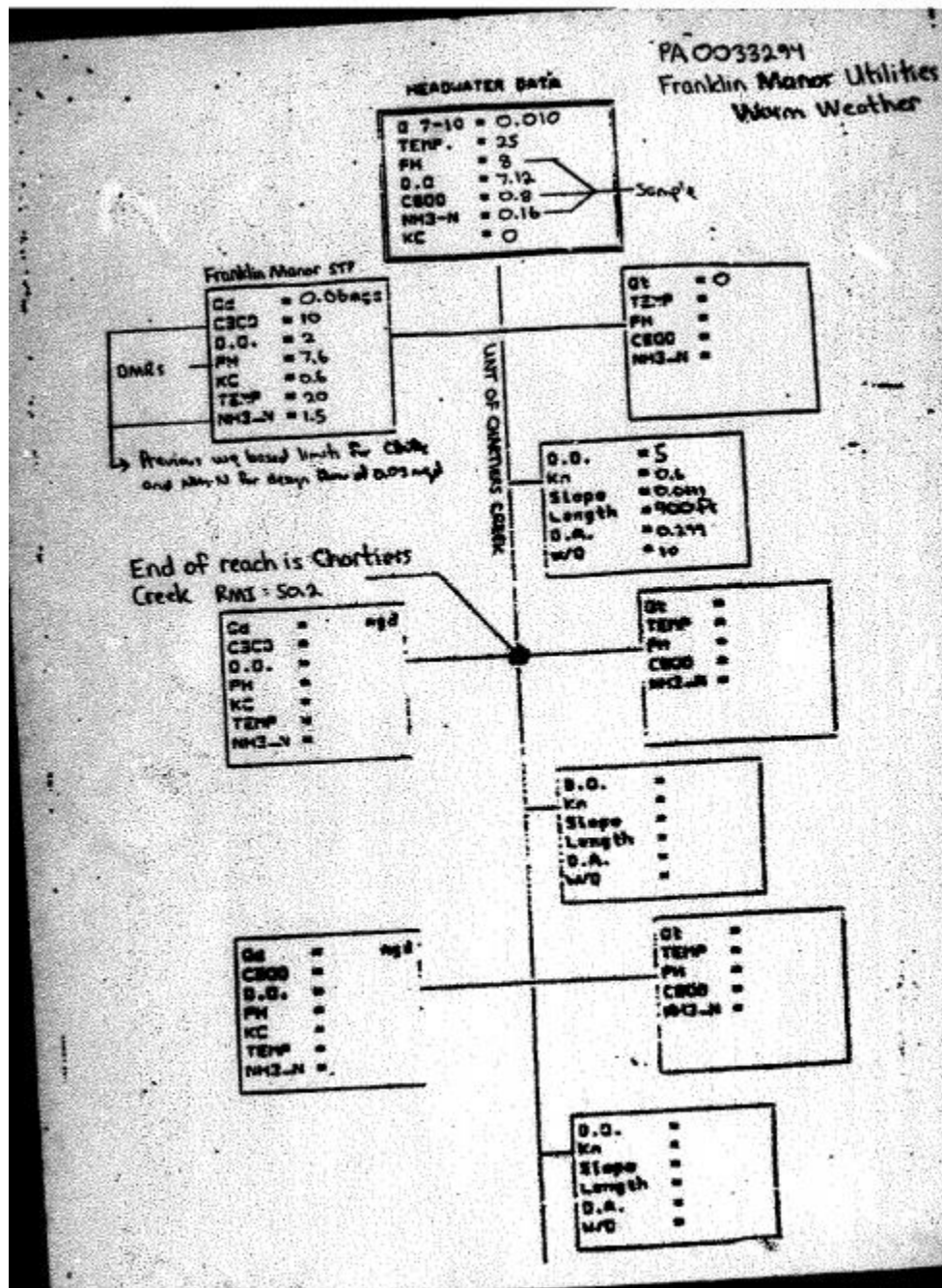
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

 Compliance Sampling Location: Outfall 001

Total Recoverable Chlorine Modeling

TRC_CALC_Jones Estate

TRC EVALUATION				
Input appropriate values in A3:A9 and D3:D9				
0.0082	= Q stream (cfs)	0.5	= CV Daily	
0.02	= 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	1.8.2.iii	WLA afc = 0.104		1.8.2.iii WLA cfc = 0.093
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.039		5.1d LTA_cfc = 0.054
Source	Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT = 1.231		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.047		AFC
		INST MAX LIMIT (mg/l) = 0.155		
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	$1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)$			

Water Quality Based Effluent Limits Modeling

SAMPLE ID: 100000000 FROM COLLECTOR: 8 - 100000000
 ESTABLISHMENT NAME: 100000000 DATE COLLECTED: 7/26/00
 FACILITY: SOUTH FRANKLIN PARKS 100 TIME COLLECTED: 11:40
 GUP PT: 100000000 STREAM CODE: 00000
 RECEIVED INFO: RIVER MILE: 100 0.3
 SAMPLE STATUS: REPORTED SOURCE: 00 TYPE: 00 IS-CODE:
 AIR PLAN: INITIAL: 00 FINAL: 00 HOURS: 100 1

DESCRIPTION	RESULT	UNITS	ANALYST	PC	TEST CODE	REMARK
100 10000	0.0000	100/L	100	100	00010	
100 10000	0.0000	100/L	100	100	00010	
100 10000	12.0000	100/L	100	100	00010	
100 10000	0.1000	100/L	100	100	00010	

25 ft upstream of outfall.
 on unnamed Test Cherokee Creek.

Franklin Manor w/D calculations

$$\text{Total } Q = WF + ISF$$

$$Q_T = 0.06 \text{ mgd} + 0.01 \text{ cfs} \\ = 0.093 \text{ cfs} + 0.01 \text{ cfs} = 0.103 \text{ cfs}$$

width of stream = 2'

No depth data available

$$A = W \times d$$

$$A = 2 \times d$$

$$\text{EPA: } A = \frac{Q}{V} \quad \text{where } V = 2.62 \times Q^{.56} \times S^{.085} \times DA^{-.22} \quad Q = .103 \text{ cfs} \\ = 2.62 \times .103^{.56} \times .001^{.085} \times .299^{-.22} \quad S = .001 \frac{\text{ft}}{\text{ft}} = .001 \\ = 2.62 \times .28 \times 1.40 = 1.30 \\ = 1.34 \text{ mpd} = 0.082 \text{ fps}$$

$$2 \times d = \frac{.103 \text{ cfs}}{.082 \text{ fps}}$$

$$2 \times d = 1.26 \text{ ft}^2$$

$$d = \frac{1.26 \text{ ft}^2}{2 \text{ ft}} = .63 \text{ ft}$$

$$W/D = 2 / .63 = 3.17:1$$

Due to the slope of the reach length, it appears unlikely the above velocity would occur. Calculate nomograph velocity.

From chart: $V = 0.24 \text{ fps}$

$$A = \frac{Q}{V}$$

$$2 \times d = \frac{.103 \text{ cfs}}{.24 \text{ fps}}$$

$$2 \times d = .429 \text{ ft}^2$$

$$d = .429 \text{ ft}^2 / 2 \text{ ft} = .215 \text{ ft}$$

$$\therefore W/D = 2 / .215 = 9.3:1$$

$$\text{time} = \text{dist} / \text{vel} = 900 \text{ ft} / .24 \text{ fps} = 3750 \text{ sec} = .0437 \text{ day}$$

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WQM6.3

DEFAULT DATA

A. STREAM VALUES

1 Q1-10/Q7-10 RATIO.....1 .64
2 Q30-10/Q7-10 RATIO.....1 1.36
3 TEMPERATURE.....1 25
4 PH.....1 8
5 C-BOD5.....1 .8
6 NH3-N.....1 .16
7 D.O. SATURATION (%).....1 .85
8 D.O. GOAL.....1 5
9 WIDTH/DEPTH RATIO.....1 10
10 KC....(HEADWATERS ONLY!).....1 0
11 KN.....1 .6

B. DISCHARGE VALUES (30 DAY AVG)

12 C-BOD5.....1 10
13 NH3-N.....1 1.5
14 EFFLUENT D.O.....1 2
15 EFFLUENT TEMP.....1 20
16 KC.....1 .6
17 BAL. TECHNOLOGY (1=Y 0=N).....1 0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOD5 (MG/L)	NH3-N (MG/L)
1	.01	25	8	7.12	.8	.16
1	0					

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WQM6.3

DISCHARGE DATA
Q7-10 DESIGN CONDITIONS

RM	Q	T	PH	DO	CBOD5	MN3-P	KC
	MGD	(C)		MG/L	MG/L	MG/L	
1	.06	20	7.6	2	10	1.5	.6

REACH CHARACTERISTICS

RM	D.O.	KN	RCH. SL.	RCH. LEN.	DRAIN AREA	M/D
	GOAL (/D)	(/D)	(FT/FT)	(FT.)	(MI^2)	
1	5	.6	.0111	900	.299	9.3

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WQM6.3

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	0	.0434

NH3-N DISCHARGE ALLOCATIONS AT 030-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.06	1.43	1.43	0	0

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WOM6.3

NH3-N DISCHARGE ALLOCATIONS AT 01-10

DIS	Q	IND.	ALL.	CRIT.	PCT.
	(MGD)	CONC.	CONC.	RCH.	RED.
		(MG/L)	(MG/L)		(%)
1	.06	3	3	0	0

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .06 MGD
TEMP = 20.5 PH = 7.6
CBOD-5 = 9.11 NH3-N = 1.31 D.O. = 3.21
KC' = .595 KH = .4 D.O. GOAL = 5
KR = 143.753 (OWENS)
DIS. 1 RCH. 1 TRVL TIME = .043

TR. TH.	CBOD-5	NH3-N	D.O.
(DAYS)	(MG/L)	(MG/L)	(MG/L)
4E-03	9.06	1.3	6.96
9E-03	9.06	1.3	7.12
.013	9.03	1.3	7.12
.017	9.01	1.29	7.12
.022	8.99	1.29	7.12
.026	8.96	1.29	7.12
.03	8.94	1.28	7.12
.035	8.91	1.28	7.12
.039	8.89	1.28	7.12
.043	8.87	1.27	7.12

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WQM6.3

REACH CHARACTERISTICS

PH	KR (/D)	TT (DAYS)
1	20	.0434

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .06 MGD
TEMP = 20.5 PH = 7.6
CBOD-5 = 9.11 NH3-N = 1.28 D.O. = 5.21
KC = .595 KM = .6 D.O. GOAL = 5
KR = 20 (USER DEF.)
DIS. 1 RCH. 1 TRVL TIME: .043

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
4E-03	9.08	1.28	5.48
9E-03	9.04	1.27	5.73
.013	9.03	1.27	5.96
.017	9.01	1.27	6.17
.022	8.99	1.26	6.36
.026	8.96	1.26	6.54
.03	8.94	1.26	6.7
.035	8.91	1.25	6.85
.039	8.89	1.25	6.98
.043	8.87	1.25	7.11

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WGM6.3

D.D. ALLOCATIONS

DIS #	Q (MGD)	NH3-N		CBOD5		CRIT. CONC.	PCT. PERM.
		IND. CONC. (MG/L)	C.M. CONC. (MG/L)	IND. CONC. (MG/L)	CUM. CONC. (MG/L)		
1	.0600	1.400	1.400	10.00	10.0000		

DISCHARGE CHARACTERISTICS

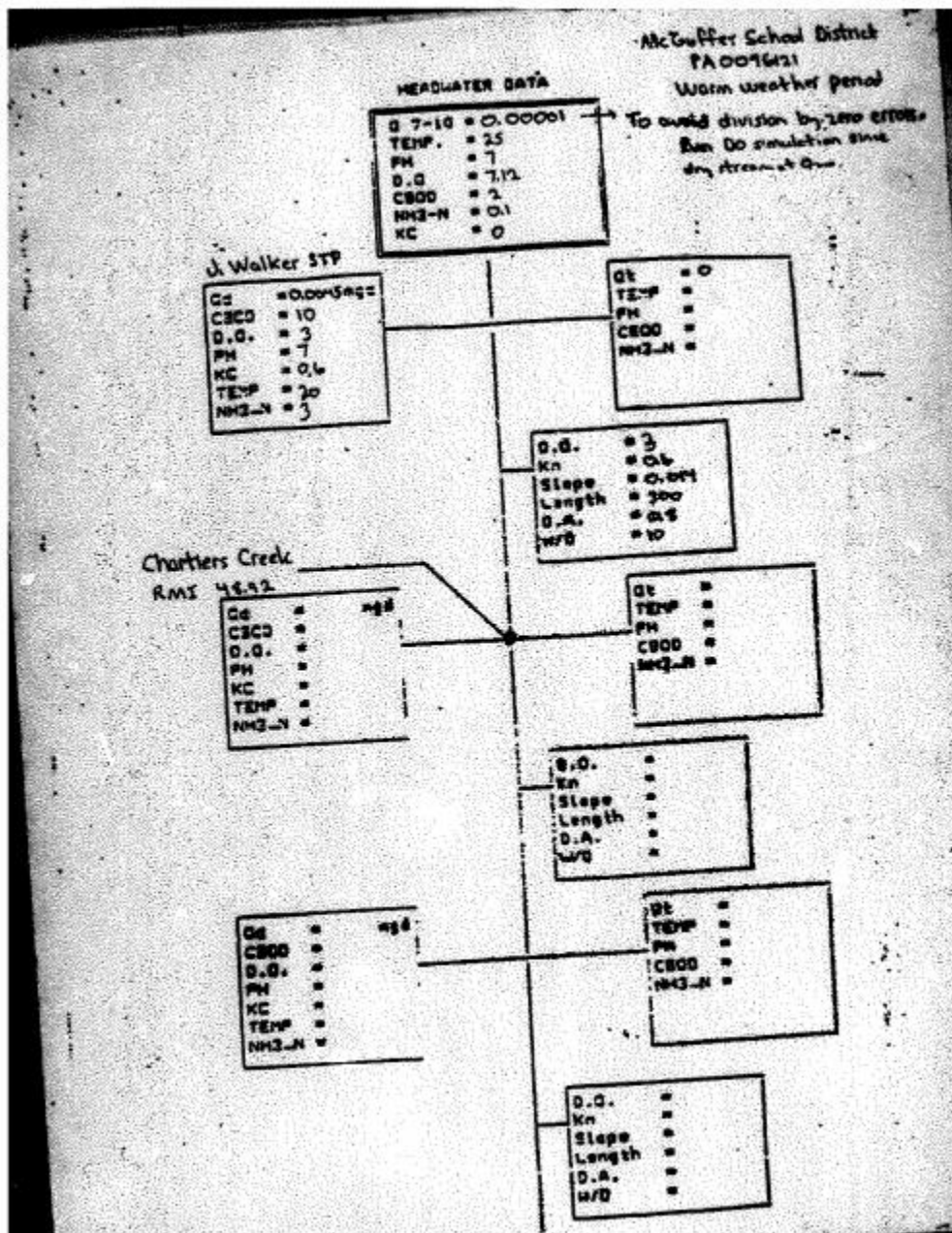
END OF REACH 1

(TOTAL) FLOW-MGD.....1.06
 TEMPERATURE.....120
 PH.....7.6
 DISSOLVED OXYGEN (MG/L).....47.1
 C-BOD5 (MG/L).....19.7
 NH3-N (MG/L).....1.4
 KC (1/DAY).....1.59 9.7 *0.05 *D-58

FRANKLIN MANOR STP WARM PERIOD
FILE: FRANKLIN MANOR STP.WQM6.3

EFFLUENT LIMITATIONS DISPLAY

DIB #	B	NH3-N TOX.		DISS. OXYGEN		EFF. B.O.
		1 DAY	30 DAY	C-BOD5 30-DAY	NH3-N 30-DAY	
1	.06	2.9	1.4	10	1.4	5



JOE WALKER STP
FILE:

DEFAULT DATA

A. STREAM VALUES

1 Q1-10/Q7-10 RATIO.....	.64
2 Q30-10/Q7-10 RATIO.....	1.36
3 TEMPERATURE.....	25
4 PH.....	7
5 C-BOD5.....	2
6 NH3-N.....	.1
7 D.O. SATURATION (%).....	.85
8 D.O. GOAL.....	3
9 WIDTH/DEPTH RATIO.....	10
10 KC... (HEADWATERS ONLY).....	0
11 KN.....	.4

B. DISCHARGE VALUES (30 DAY AVE)

12 C-BOD5.....	10
13 NH3-N.....	2
14 EFFLUENT D.O.....	3
15 EFFLUENT TEMP.....	20
16 KC.....	.6
17 BAL. TECHNOLOGY (1=Y 0=NO).....	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	CBOB5 (MG/L)	NH3-N (MG/L)
RM	1E-05	25	7	7.12	2	.1
1	0					

JDE WALKER STP
FILE:

DISCHARGE DATA
Q7-10 DESIGN CONDITIONS

RH	Q	T	PH	DO	CBOD5	NH3-N	KC
	MGD	(C)		MG/L	MG/L	MG/L	
1	4.5E-03	20.7	3	10	3	.6	

REACH CHARACTERISTICS						
RH	D.O.	K _N	RCH. SL.	RCH. LEN.	DRAIN AREA	M/D
	GDAL	(/D)	(FT/FT)	(FT.)	(MI^2)	
1	3	.6	.014	300	.8	10

JOE WALKER STP
FILE:

REACH CHARACTERISTICS		
RH	KR (/D)	TT (DAYS)
1	0	0

MULTIPLE D.O. PROFILE
(TOTAL) DISCHARGE = 4.5E-03 MGD
TEMP = 20 PH = 7
CBOD-5 = 9.99 NH3-N = 3 D.O. = 3.01
KC = .6 KN = .6 D.O. GOAL = 3
KR = 22.004 (DMENS)
DIS. 1 RCH. 1 TRVL TIME: .233

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.023	9.85	2.95	5.16
.047	9.71	2.91	4.6
.07	9.58	2.87	7.2
.093	9.45	2.83	7.12
.117	9.31	2.79	7.12
.14	9.18	2.75	7.12
.163	9.06	2.72	7.12
.186	8.93	2.68	7.12
.21	8.81	2.64	7.12
.233	8.68	2.6	7.12

JOE WALKER STP
FILE: JOE WALKER STP.WQM6.3

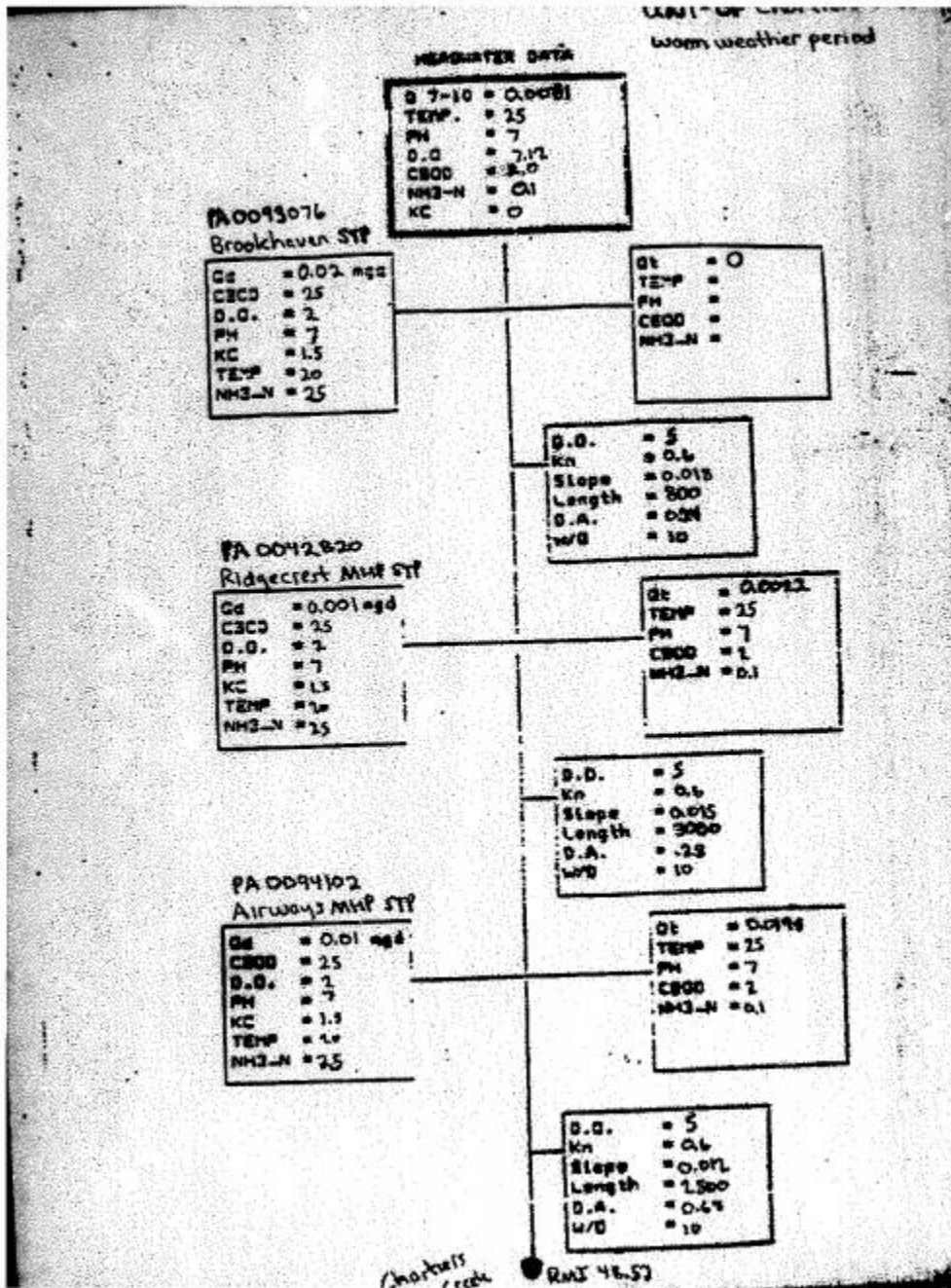
DISCHARGE CHARACTERISTICS

END OF REACH 1

(TOTAL) FLOW-MGD.....15E-03
TEMPERATURE.....120
PH.....17
DISSOLVED OXYGEN (MG/L).....17.1
C-BOD5 (MG/L).....18.7
NH3-N (MG/L).....12.6
KC (1/DAY).....1.59 $8.7 \times 10^{-4} = 0.5\%$

EFFLUENT LIMITATIONS DISPLAY

DIS #	Q MGD	NH3-N TOX.		DISS. OXYGEN		
		1 DAY	30 DAY	C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	4.5E-036	3	10	3	3	



UNNAMED TRIBUTARY NO 2
FILE: UNNAMED TRIBUTARY NO 2.WQM6.3

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.....	5
9	WIDTH/DEPTH RATIO.....	10
10	KC... (HEADWATERS ONLY!).....	0
11	KN.....	.6

B. DISCHARGE VALUES (30 DAY AVG)

12	C-BOD5.....	25
13	NH3-N.....	25
14	EFFLUENT D.O.....	3
15	EFFLUENT TEMP.....	20
16	KC.....	1.5
17	BPL. TECHNOLOGY (1=Y 0=N).....	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 3

RM	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	C-BOD5 (MG/L)	NH3-N (MG/L)
HM	8.1E-025	7	7.12	2	.1	
1	0					
2	2.2E-025	7	7.12	2	.1	
3	.0148	25	7	7.12	2	.1

W/D calculations (winter)

$$\text{Total } Q = WF + ISF$$

$$= 0.093 \text{ cfs} + 0.02 \text{ cfs} = .113 \text{ cfs}$$

From nomograph chart:

$$V = .245 \text{ fps}$$

$$\text{width of stream} = 2', A = 2 \times d$$

$$A = \frac{Q}{V} \rightarrow 2 \times d = \frac{.113 \text{ cfs}}{.245 \text{ fps}}$$

$$2 \times d = .46 \text{ ft}^2$$

$$d = .23 \text{ ft}$$

$$W/D = 2/.23 = 8.7:1$$

$$\text{velocity} = \frac{\text{dist}}{\text{time}} = \frac{900 \text{ ft}}{.245 \text{ fps}} = 3673 \text{ sec} = .0925 \text{ d}$$

FRANKLIN MANOR SFP COLDER PERIOD
FILE:

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.....: 8
5 C-BOD5.....: .8
6 NH3-N.....: .16
7 D.O. SATURATION (%).....: .85
8 D.O. GOAL.....: 5
9 WIDTH/DEPTH RATIO.....: 10
10 KC....(HEADWATERS ONLY).....: 0
11 KN.....: .6

B. DISCHARGE VALUES (30 DAY AVG)

12 C-BOD5.....: 10
13 NH3-N.....: 4
14 EFFLUENT D.O.....: 5
15 EFFLUENT TEMP.....: 15
16 KC.....: .6
17 BAL. TECHNOLOGY(1=Y 0=N).....: 0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10	T	PH	DQ	CBOD5	NH3-N
(CFS)	(C)		(MG/L)	(MG/L)	(MG/L)	
HW	.02	5	8	10.82	.8	.16
1	0					

FRANKLIN MANOR BTP COLDER PERIOD
FILE:

DISCHARGE DATA
Q7-10 DESIGN CONDITIONS

REACH	D.O.	KN	SL.	LEN.	AREA	W/D
	(/D)	(/D)	(FT/FT)	(FT.)	(MI ²)	
1	5	.6	.0111	900	.299	10

REACH CHARACTERISTICS

REACH	D.O.	KN	SL.	LEN.	AREA	W/D
	(/D)	(/D)	(FT/FT)	(FT.)	(MI ²)	
1	5	.6	.0111	900	.299	10

FRANKLIN MANOR STP COLDER PERIOD
FILE:

REACH CHARACTERISTICS

RH	KR (/D)	TT (DAYS)
1	20	.0425

MIS-N DISCHARGE ALLOCATIONS AT Q30-10

DIS	Q (MGD)	IND. CONC. (MG/L)	ALL. CONC. (MG/L)	CRIT. RCH.	PCT. RED. (%)
1	.06	2.85	2.85	0	0

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FRANKLIN MANOR STP COLDER PERIOD
FILE:

NH3-N DISCHARGE ALLOCATIONS AT 01-10

DIS	Q	IND.	ALL.	CRIT.	PCT.
	(MGD)	CONC.	CONC.	ACH.	RED.
		(MG/L)	(MG/L)		(%)
1	.06	8	8	0	0

MULTIPLE DISCHARGE LIMITATIONS

(TOTAL) DISCHARGE = .06 MGD
TEMP = 13.2 PH = 7.6
CBOD-5 = 8.37 NH3-N = 2.37 D.O. = 6.03
KC = .59 KN = .6 D.O. GOAL = 5
KR = 20 (USF DEF.)
DIS. 1 ACH. 1 TRVL TIME = .043

TR. TM.	CBOD-5	NH3-N	D.O.
(DAYS)	(MG/L)	(MG/L)	(MG/L)
4E-03	8.33	2.37	6.36
9E-03	8.34	2.36	6.64
.013	8.32	2.36	6.93
.017	8.31	2.36	7.18
.021	8.29	2.35	7.41
.026	8.28	2.35	7.63
.03	8.26	2.34	7.82
.034	8.25	2.34	8
.038	8.23	2.34	8.17
.043	8.22	2.33	8.32

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FRANKLIN MANOR STP COLDER PERIOD
FILE:

D.O. ALLOCATIONS

DIS #	Q (MGD)	NH ₃ -N		CBOD ₅		CRIT. RCH.	PCT. REM. (PCT)
		IND. CONC. (MG/L)	CUM. CONC. (MG/L)	IND. CONC. (MG/L)	CUM. CONC. (MG/L)		
1	.0600	2.800	2.800	10.00	10.00	0	0

DISCHARGE CHARACTERISTICS

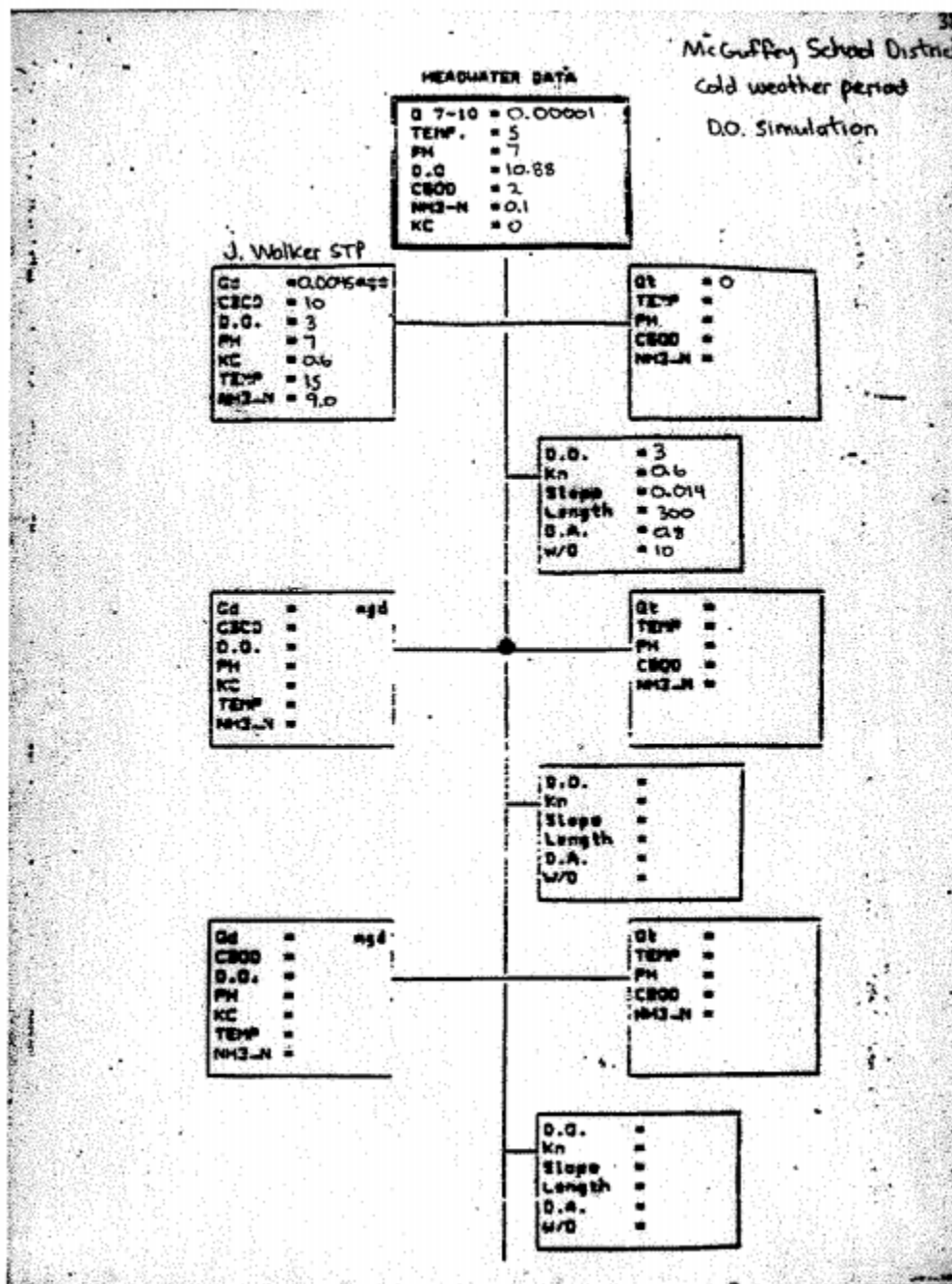
END OF REACH 1

(TOTAL) FLOW-MGD.....:06
TEMPERATURE.....:15
PH.....:7.6
DISSOLVED OXYGEN (MG/L).....:7.8
C-BOD₅ (MG/L).....:9.8
NH₃-N (MG/L).....:12.8
KC (1/DAY).....:1.59

FRANKLIN MANOR STP COLDER PERIOD
FILE:

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	.06	5.7	2.8	10	2.8	5



J WALKER STP COLDER PERIOD
FILE1

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..... 3
9 WIDTH/DEPTH RATIO..... 10
10 KC.... (HEADWATERS ONLY!)..... 0
11 KN..... .6

B. DISCHARGE VALUES (30 DAY AVG)

12 C-BOD5..... 10
13 NH3-N..... 9
14 EFFLUENT D.O..... 3
15 EFFLUENT TEMP..... 15
16 KC..... .6
17 BAL. TECHNOLOGY (1=Y 0=N)..... 0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 1

RH	Q7-10 (CFS)	T (C)	PH	DO (MG/L)	C-BOD5 (MG/L)	NH3-N (MG/L)
HM	1E-05	5	7	10.82	2	.1
1	0					

J WALKER STP COLDER PERIOD
FILE1

DISCHARGE DATA
Q7-10 DESIGN CONDITIONS

RH	Q	T	PH	DO	CBOD5	NH3-N	KC
	MGD	(C)		MG/L	MG/L	MG/L	
1	4.5E-0315	7	3	10	9	.6	

REACH CHARACTERISTICS

RH	D.O.	KN	RCH. SL.	RCH. LEN.	DRAIN AREA	M/D
	GOAL	(/D)	(FT/FT)	(FT.)	(MT^2)	
1	3	.6	.014	300	.8	10

J WALKER STP COLDER PERIOD
FILE:

REACH CHARACTERISTICS

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

MULTIPLE D.O. PROFILE
(TOTAL) DISCHARGE = 4.5E-03 MGD
TEMP = 15 PH = 7
CBOD-5 = 9.99 NH3-N = 8.99 D.O. = 3.01
KC = .6 KN = .6 D.O. GOAL = 3
KR = 22.004 (OWENS)
DIS. 1 RCH. 1 TRVL TIME: .233

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.023	9.88	8.9	5.42
.047	9.77	8.82	6.87
.07	9.66	8.73	7.75
.093	9.55	8.65	8.27
.117	9.45	8.57	8.59
.14	9.34	8.49	8.79
.163	9.24	8.41	8.91
.186	9.14	8.33	8.98
.21	9.04	8.25	9.03
.233	8.94	8.17	9.07

J WALKER STP COLDER PERIOD
FILE:

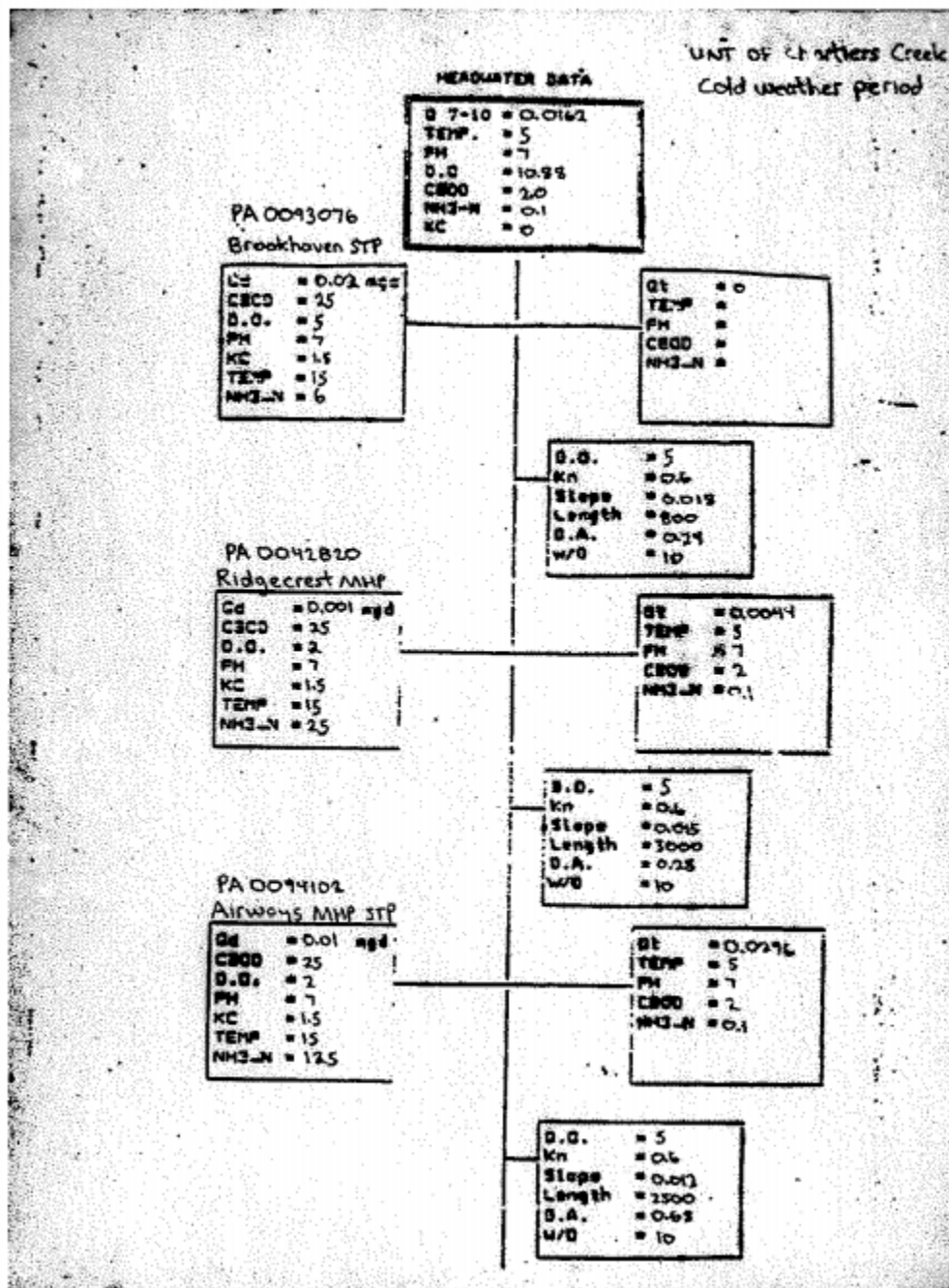
DISCHARGE CHARACTERISTICS

END OF REACH 1

(TOTAL) FLOW-MGD.....15E-03
TEMPERATURE.....15
PH.....17
DISSOLVED OXYGEN (MG/L).....9.1
C-BOD5 (MG/L).....18.9
NH3-N (MG/L).....18.2
KC (1/DAY).....1.59 .54 = 8.1 x .06

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	4.5E-0318	9	10	9	3



UNIT OF CHARTERS CREEK COLD PERIOD
FILE:

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.....	5
9	WIDTH/DEPTH RATIO.....	10
10	KC....(HEADWATERS ONLY!).....	0
11	KN.....	.4

B. DISCHARGE VALUES (30 DAY AVG)

12	C-BOD5.....	25
13	NH3-N.....	25
14	EFFLUENT D.O.....	3
15	EFFLUENT TEMP.....	15
16	KC.....	1.5
17	BAL. TECHNOLOGY (I=Y O=N).....	0

HEADWATERS AND TRIBUTARY DATA

NO. OF REACHES : 3

	RH	Q7-10	T	PH	DO	CBO5	NH3-N
	(CFS)	(C)		(MG/L)	(MG/L)	(MG/L)	
HN	.0162	5	7	10.82	2	.1	
1	0						
2	4.4E-05	7	7	10.82	2	.1	
3	.0296	5	7	10.82	2	.1	

UNIT OF CHARTIERS CREEK COLD PERIOD
FILE:

STREAM CHARACTERISTICS

RCH	Q7-10	T	PH	DO	CROSS	NH3-N
	CFS	(C)		MG/L	MG/L	MG/L
1	.02	5	7	10.82	2	.1
2	.02	5	7	10.82	2	.1
3	.05	5	7	10.82	2	.1

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

DISCHARGE DATA Q7-10 DESIGN CONDITIONS

RCH	Q	T	PH	DO	CROSS	NH3-N	KC
	MGD	(C)		MG/L	MG/L	MG/L	
1	.02	15	7	5	25	4	1.5
2	18-03	15	7	2	25	25	1.5
3	.04	15	7	2	25	13.5	1.5

UNIT OF CHARTERS CREEK COLD PERIOD
FILE:

RH	REACH CHARACTERISTICS					
	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.5	.018	800	.24	10
2	5	.5	.015	3000	.28	10
3	5	.5	.012	2500	.32	10

RH	REACH CHARACTERISTICS	
	KR (/D)	TT (DAYS)
1	0	0
2	0	0
3	0	0

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UNIT OF CHARTIERS CREEK COLD PERIOD
FILE: UNIT CHARTIERS CREEK COLD PERIOD.WQM6.3

NHS-N DISCHARGE ALLOCATIONS AT Q30-10

DIB	Q	IND. CONC.	ALL. CONC.	CRIT. RCH.	PCT. RED.
	(MGD)	(MG/L)	(MG/L)		(%)
1	.02	6	6	0	0
2	1E-03	25	25	0	0
3	.01	13.5	13.5	0	0

NHS-N DISCHARGE ALLOCATIONS AT Q1-10

DIB	Q	IND. CONC.	ALL. CONC.	CRIT. RCH.	PCT. RED.
	(MGD)	(MG/L)	(MG/L)		(%)
1	.02	12	12	0	0
2	1E-03	50	50	0	0
3	.01	27	27	0	0

UNT OF CHARTIERS CREEK COLD PERIOD
FILE1 UNT CHARTIERS CREEK COLD PERIOD.WQM6.3

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .02 MGD
TEMP = 11.6 PH = 7
CBOD-5 = 17.1 NH3-N = 3.97 D.O. = 7
KC = 1.435 KN = .6 D.O. GOAL = 5
KR = 32.661 (DMENS)
DIS. 1 RCH. 1 TRVL TIME: .16

TR. TH. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.016	16.83	3.95	8.2
.032	16.57	3.93	8.91
.048	16.31	3.91	9.34
.064	16.06	3.89	9.6
.08	15.81	3.87	9.76
.096	15.57	3.85	9.86
.112	15.33	3.84	9.92
.128	15.09	3.82	9.96
.144	14.86	3.8	9.99
.16	14.63	3.78	10.02

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .021 MGD
TEMP = 11.1 PH = 7
CBOD-5 = 13.88 NH3-N = 4.09 D.O. = 9.85
KC = 1.383 KN = .6 D.O. GOAL = 5
KR = 30.089 (DMENS)
DIS. 2 RCH. 2 TRVL TIME: .59

TR. TH. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.059	13.15	4.02	10.12
.118	12.45	3.95	10.2
.177	11.79	3.88	10.24
.236	11.16	3.81	10.27
.295	10.57	3.74	10.31
.354	10.01	3.68	10.34
.413	9.48	3.61	10.36
.472	8.98	3.55	10.39
.531	8.5	3.48	10.42
.59	8.05	3.42	10.44

UNIT OF CHARTIERS CREEK COLD PERIOD
FILE: UNT CHARTIERS CREEK COLD PERIOD.WQM6.3

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .031 MGD
TEMP = 9.9 PH = 7
CBOD-5 = 8.9 NH3-N = 4.01 D.O. = 9.22
KC = 1.293 KN = .6 D.O. GOAL = 5
KR = 20.983 (DNEMS)
DIS. 3 RCH. 3 TRVL TIME: .432

TR. TH. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.043	8.57	3.96	10.01
.086	8.29	3.91	10.34
.129	8.01	3.87	10.49
.173	7.73	3.82	10.56
.216	7.47	3.78	10.6
.259	7.21	3.73	10.63
.302	6.96	3.69	10.65
.345	6.72	3.64	10.67
.388	6.49	3.6	10.68
.432	6.27	3.56	10.7

D.O. ALLOCATIONS

DIS #	Q (MGD)	NH3-N		CBOD5		CRIT. RCH.	PCT. REM. (PCT)
		IND. CONC. (MG/L)	CUM. CONC. (MG/L)	IND. CONC. (MG/L)	CUM. CONC. (MG/L)		
1	.0200	6.000	6.000	25.00	25.0000		
2	1E-03	25.00	25.00	25.00	25.0000		
3	.0100	13.50	13.50	25.00	25.0000		

UNT OF CHARTIERS CREEK COLD PERIOD
FILE: UNT CHARTIERS CREEK COLD PERIOD.NDP4.3

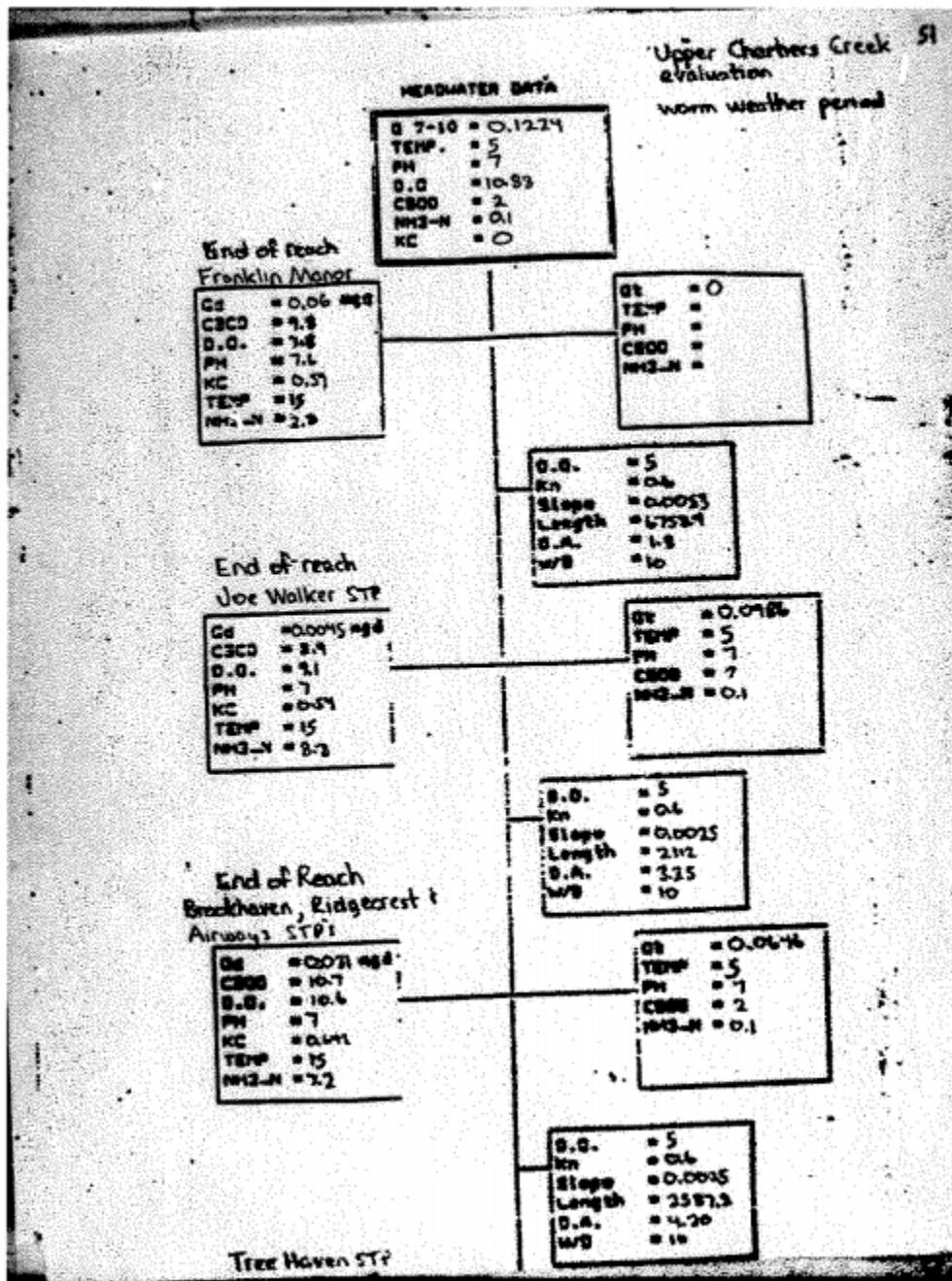
DISCHARGE CHARACTERISTICS

END OF REACH 3

(TOTAL) FLOW-MSD.....1.031
TEMPERATURE.....18
PH.....17
DISSOLVED OXYGEN (MG/L).....10.6
C-BOD5 (MG/L).....10.7
NH3-N (MG/L).....7.2
KC (1/DAY).....1.47

EFFLUENT LIMITATIONS DISPLAY

DIS #	Q MSD	NH3-N TOX.		DISS. OXYGEN		
		1 DAY	30 DAY	C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	.02	12	6	25	6	5
2	1E-03	50	25	25	25	2
3	.01	27	13.5	25	13.5	2





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UPPER CHARTIERS CR COLD WEATHER PERIOD
 FILE: UPPER CHAR CR COLD PERIOD.WDM6.3

STREAM CHARACTERISTICS

RCH	Q7-10	T	PH	DO	CBOD5	NH3-N
	CFS	(C)		MG/L	MG/L	MG/L
1	.12	5	7	10.82	2	.1
2	.22	5	7	10.82	2	.1
3	.29	5	7	10.82	2	.1
4	.39	5	7	10.82	2	.1

R 1-10/8 7-10 = .64
 Q30-10/8 7-10 = 1.36

DISCHARGE DATA
 Q7-10 DESIGN CONDITIONS

RCH	Q	T	PH	DO	CBOD5	NH3-N	KC
	MGD	(C)		MG/L	MG/L	MG/L	
1	.06	15	7.6	7.8	9.8	2.8	.59
2	4.5E-03	15	7	9.1	8.9	8.2	.54
3	.031	15	7	10.6	10.7	7.2	.642
4	.01	15	7	2	25	25	1.5

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UPPER CHARTIERO CR COLD WEATHER PERIOD
FILE: UPPER CHAR CR COLD PERIOD.WQM6.3

RM	REACH CHARACTERISTICS					
	D.O. GOAL	KH (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI ²)	W/D
1	5	.6	5.3E-03	6758.4	1.8	10
2	5	.6	2.5E-03	2112	3.25	10
3	5	.6	2.5E-03	2587.2	4.2	10
4	5	.6	2.5E-03	4276.8	5.77	10

RM	REACH CHARACTERISTICS	
	IR (/D)	TT (DAYS)
1	0	0
2	0	0
3	0	0
4	0	0

UPPER CHARTERS CR COLD WEATHER PERIOD
FILE: UPPER CHAR CR COLD PERIOD.WQM6.3

NH3-N DISCHARGE ALLOCATIONS AT 030-10

DIS	Q	IND. CONC.	ALL. CONC.	CRIT. RCH.	PCT. RED.
	(MGD)	(MG/L)	(MG/L)		(%)
1	.06	2.8	2.8	0	0
2	4.5E-03	8.2	8.2	0	0
3	.031	7.2	7.2	0	0
4	.01	25	25	0	0

NH3-N DISCHARGE ALLOCATIONS AT 01-10

DIS	Q	IND. CONC.	ALL. CONC.	CRIT. RCH.	PCT. RED.
	(MGD)	(MG/L)	(MG/L)		(%)
1	.06	5.6	5.6	0	0
2	4.5E-03	16.4	16.4	0	0
3	.031	14.4	14.4	0	0
4	.01	50	50	0	0

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UPPER CHARTIERS CR. COLD WEATHER PERIOD
FILE: UPPER CHAR CR COLD PERIOD.WQM6.3

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .06 MGD
TEMP = 9.3 PH = 7.2
CBOD-5 = 5.36 NH3-N = 1.26 D.O. = 9.52
KC = 446 KN = .6 D.O. GOAL = 5
KR = 13.053 (OWENS)
DIS 1 RCH. 1 TRVL TIME: .997

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.1	5.22	1.23	10.72
.199	5.08	1.2	10.82
.299	4.94	1.17	10.82
.399	4.81	1.14	10.82
.498	4.68	1.11	10.82
.598	4.56	1.08	10.82
.698	4.43	1.05	10.82
.797	4.31	1.02	10.82
.897	4.2	1	10.82
.997	4.09	.97	10.82

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .0645 MGD
TEMP = 8.1 PH = 7.1
CBOD-5 = 3.55 NH3-N = .84 D.O. = 10.78
KC = .351 KN = .6 D.O. GOAL = 5
KR = 9.483 (OWENS)
DIS. 2 RCH. 2 TRVL TIME: .302

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.03	3.53	.85	10.82
.06	3.51	.85	10.82
.091	3.48	.84	10.82
.121	3.46	.84	10.82
.151	3.44	.83	10.82
.181	3.42	.82	10.82
.211	3.4	.82	10.82
.242	3.38	.81	10.82
.272	3.36	.81	10.82
.302	3.34	.8	10.82

UPPER CHARTIERS CR COLD WEATHER PERIOD
FILE: UPPER CHAR CR COLD PERIOD.WGMA.3

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .0955 MGD
TEMP = 8.4 PH = 7.1
CBOD-5 = 3.95 NH3-N = 1.4 D.O. = 10.8
KC = .399 KN = .6 D.O.60AL = 5
KR = 8.584 (OMENS)
DIS. 3 RCH. 3 TRVL TIME: .331

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.033	3.92	1.39	10.82
.066	3.89	1.38	10.82
.099	3.86	1.37	10.82
.132	3.83	1.36	10.82
.165	3.8	1.35	10.82
.198	3.77	1.34	10.82
.231	3.74	1.33	10.82
.265	3.72	1.32	10.82
.298	3.69	1.31	10.82
.331	3.66	1.29	10.82

MULTIPLE DISCHARGE LIMITATIONS
(TOTAL) DISCHARGE = .1055 MGD
TEMP = 7.9 PH = 7.1
CBOD-5 = 3.93 NH3-N = 1.73 D.O. = 10.57
KC = .511 KN = .6 D.O.60AL = 5
KR = 7.619 (OMENS)
DIS. 4 RCH. 4 TRVL TIME: .51

TR. TM. (DAYS)	CBOD-5 (MG/L)	NH3-N (MG/L)	D.O. (MG/L)
.051	3.88	1.7	10.82
.102	3.82	1.68	10.82
.153	3.76	1.66	10.82
.204	3.71	1.64	10.82
.255	3.65	1.62	10.82
.306	3.6	1.6	10.82
.357	3.54	1.59	10.82
.408	3.49	1.57	10.82
.459	3.44	1.55	10.82
.51	3.39	1.53	10.82

UPPER CHARTERS CR COLD WEATHER PERIOD
FILE: UPPER CHAR CR COLD PERIOD.WG24.3

D.O. ALLOCATIONS

DIS #	Q (MGD)	NH3-N		CBOD5		CRIT. RCH.	PCT. REM. (PCT)
		IND. CONC. (MG/L)	CUM. CONC. (MG/L)	IND. CONC. (MG/L)	CUM. CONC. (MG/L)		
1	.0600	2.800	2.800	9.800	9.800	0	0
2	4.5E-	8.200	8.200	8.900	8.900	0	0
3	.0310	7.200	7.200	10.70	10.70	0	0
4	.0100	25.00	25.00	25.00	25.00	0	0

EFFLUENT LIMITATIONS DISPLAY

DIS #	Q (MGD)	NH3-N TOX.		DISS. OXYGEN		
		1 DAY	30 DAY	C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	.06	5.6	2.8	9.8	2.8	7.8
2	4.5E-03	16.4	8.2	8.9	8.2	9.1
3	.031	14.4	7.2	10.7	7.2	10.6
4	.01	50	25	25	25	2