pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0217743**
Facility Type	**Non-Municipal**	APS ID	**1099812**
Major / Minor	**Minor**	Authorization ID	**1459848**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**M A Hotel Management Inc.**	Facility Name	**Days Inn Donegal STP**
Applicant Address	3620 State Route 31	Facility Address	Days Inn at Donegal
	Donegal, PA 15628-4029		Donegal, PA 15628
Applicant Contact	Aryan Patel	Facility Contact	Same as Applicant
Applicant Phone	(724) 593-7536	Facility Phone	Same as Applicant
Client ID	343175	Site ID	247842
Ch 94 Load Status	Not Overloaded	Municipality	Donegal Township
Connection Status	No Limitations	County	Westmoreland
Date Application Received	October 24, 2023	EPA Waived?	Yes
Date Application Accepted	October 30, 2023	If No, Reason	

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage.

Summary of Review

NPDES Permit PA0217743 was previously issued by DEP on April 19, 2019. The permit renewal application was received on October 24, 2023, which considered on time, permit will be expired in April 30, 2024.

WQM Part II Permit No. 6598403 was issued by DEP on April 3, 1998. The existing treatment process consists of septic tanks, a recirculating sand filter system, chlorination, dechlorination, and post aeration. The sewage treatment plant was designed to treat a daily flow of 0.0051 MGD.

The receiving water is Unnamed Tributary to Minnow Run, which is classified as a Cold Water Fishery (CWF) per CH93 Designated Uses and is located in the State watershed 19-E.

No industrial users are discharging to this facility per the application.

One inspection report was reviewed for this facility within the last permit cycle. No violations were noticed during the last inspection on June 2020. Operations compliance report concluded that the permittee is in compliance, and Operations will keep monitor the DMRs exceedances.

The Act – 14 PL 834 Municipal Notifications were provided by the October 10, 2023 letters and no comments were received.

Approve	Deny	Signatures	Date
X		Hazim Aldalli / Environmental Engineering Specialist	March 21, 2024
x		Mahbuba Iasmin / Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	April 5, 2024

Summary of Review

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)	0.0051
Latitude	40º 6' 19"	Longitude	-79º 22' 52"
Quad Name	Donegal	Quad Code	40079A4
Wastewater Description:	Sewage Effluent		
Receiving Waters	UNT to Minnow Run (CWF)	Stream Code	38365
NHD Com ID	69914655	RMI	0.28
Drainage Area	0.27	Yield (cfs/mi^2)	0.00763
Q_{7-10} Flow (cfs)	0.00206	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1812	Slope (ft/ft)	0.014
Watershed No.	19-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s): Aquatic Life; Recreational		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake	INDIAN CREEK VALLEY WATER AUTH		
PWS Waters	Indian Creek	Flow at Intake (cfs)	3.59
PWS RMI	5.1	Distance from Outfall (mi)	>15.0

Changes Since Last Permit Issuance:

- Q_{7-10} flow, elevation, drainage area, and low flow yield were all updated (see appendix A) to match USGS Stream Stats new data.

- DEP updated its WQM 7.0 criteria for Ammonia-Nitrogen (NH_3-N) in 2019. Limits and conditions of this permit needed to be redeveloped to an adequate level to protect water quality.

- *E. Coli* monitoring requirements will be introduced to this renewal per DEP SOP No. BCW-PMT-033 revised February 5, 2024.

Other Comments: None.

Treatment Facility Summary

Treatment Facility Name: Days Inn Donegal - STP

WQM Permit No.	Issuance Date
6598403 T-1	March 1, 2019
6598403	April 3, 1998

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia Reduction	Septic Tank Sand Filter	Chlorination	0.0042

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0051	8.5	Not Overloaded	Mechanical	Hauled to a municipal STP

Changes Since Last Permit Issuance: None.

Other Comments: None.

Compliance History

Operations Compliance Check Summary Report

Facility: Days Inn Donegal
NPDES Permit No.: PA0217743
Compliance Review Period: 11/2018 – 11/2023

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
3057677	07/06/2020	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
2848871	12/21/2018	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

No violations

Open Violations by Client ID:

No open violations for Client ID 343175

Enforcement Summary:

No enforcements

DMR Violation Summary:

START	END	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE	PERMIT	UNIT	STATISTICAL BASE CODE
08/01/2022	08/31/2022	Concentration 2 Effluent Violation	Ammonia-Nitrogen	4.56	2.0	mg/L	Average Monthly
08/01/2022	08/31/2022	Concentration 3 Effluent Violation	Ammonia-Nitrogen	6.65	4.0	mg/L	Instantaneous Maximum
06/01/2021	06/30/2021	Concentration 2 Effluent Violation	Ammonia-Nitrogen	< 2.93	2.0	mg/L	Average Monthly
06/01/2021	06/30/2021	Concentration 3 Effluent Violation	Ammonia-Nitrogen	5.06	4.0	mg/L	Instantaneous Maximum
08/01/2020	08/31/2020	Concentration 1 Effluent Violation	Dissolved Oxygen	5.5	6.0	mg/L	Instantaneous Minimum

Compliance Status:

Permittee in compliance. CW ops will monitor DMR exceedances

Completed by: John Murphy
Completed date: 11/21/2023

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0051
Latitude 40º 6' 19.00" **Longitude** -79º 22' 52.00"
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)
E. Coli (No./100 ml)	Report	IMAX	-	92a.61
D.O. (mg/L)	4.0	Min	-	BPJ
NH_3-N (mg/L)	25	Average Monthly	-	BPJ
	50	IMAX		
Total N (mg/L)	Report	Average Monthly	-	92a.61
Total P (mg/L)	Report	Average Monthly	-	92a.61

Comments: The existing discharge was evaluated using WQM 7.0 for $CBOD_5$, NH_3-N, and D.O. parameters.

The Total Suspended Solids, pH, and Fecal Coliform parameters are not evaluated using WQM 7.0. The bases for the proposed technology-based limitations are listed in the above table.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached, see Appendices B&C):

Parameter	Limit (mg/L)	SBC	Model
TRC	0.04	Average Monthly	DEP TRC
$CBOD_5$ (May1-Oct 31)	25	Average Monthly	WQM7.0
$CBOD_5$ (Nov 1- Apr 30)	25	Average Monthly	WQM7.0
NH_3-N (May1-Oct 31)	2.6	Average Monthly	WQM7.0
NH_3-N (Nov 1- Apr 30)	4.6	Average Monthly	WQM7.0
Dissolved Oxygen	6.0	Minimum	WQM7.0

Best Professional Judgment (BPJ) Limitations

Comments: WQM 7.0 was used to generate the new WQBEL seasonal limits for Ammonia Nitrogen NH_3-N. These limits are 4.6 mg/L for the cold period and 2.6 mg/L for the warm period, which are less stringent than the current permit limits.

For the Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), the WQM 7.0 model generated a WQBEL AML of 25 mg/L a year around, which shows no change from the current permit limits. Therefore, a year around WQBEL AML of 25 mg/L and an Ins. Max of 50 mg/L with a twice monthly sampling frequency will be imposed for this renewal.

A WQBEL for Dissolved Oxygen D.O. of 6.0 mg/L should be maintained all the time based on DEP's water quality model WQM 7.0 version 1.10 (Appendix C).

Anti-Backsliding

The previously imposed limits for pH Effluent Limitation of (6.0 Minimum, and 9.0 Maximum SIU), Fecal Coliform AML Geo Mean seasonal limits of (200 & 2000 CFU/100 ml), TSS AML, Weekly Average, and Ins. Max of (30, 45, and 60 mg/L), Ammonia-Nitrogen warm period limit of (2.0 mg/L), Ammonia-Nitrogen cold period limit of (4.5 mg/L), and TRC Ins. Max of (0.09 mg/L); will be all unchanged due to Anti-Backsliding as stated in 40 CFR Section 122.44(l).

TN and TP Monitoring

Per SOP (No. BCW-PMT-033: Establishing Effluent Limitations for Individual Sewage Permits):

- Nutrient monitoring is required, at a minimum, 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). Sewage discharges with design flows > 2,000 gpd require monitoring, at a minimum, for Total Nitrogen and Total Phosphorus in new and reissued permits.

The receiving stream (UNT of Minnow Run) is not impaired with nutrients (per PA eMAP and the reviewed eDMRs), therefore advanced treatment requirements for TN, and TP will not be imposed.

Annual monitoring is recommended.

Disinfection

Total Residual Chlorine (TRC) AML limit of 0.04 mg/L was calculated based on the DEP preset values entered in the Department Calculation Sheet (Appendix B) for chlorine stream and discharge demands, which matches with the previous permit limit. A limit of 0.04 mg/L and IMAX of 0.09 mg/L will be set for this renewal.

E. Coli

Pursuant to 25 Pa. code § 92a.61(b) annual monitoring for *E. Coli* will be imposed at Outfall (001) to determine if *E. Coli* will be a pollutant of concern, which is consistent with DEP SOP No. BCW-PMT-033 revised February 5, 2024.

Monitoring Frequency Considerations

The previous permit writer informed the facility manager that the monitoring frequency for pH, TRC, and Dissolved Oxygen (DO) will be applied as a daily requirement during the next permit cycle, as stated in the previous factsheet dated February 26, 2019. Daily monitoring has been imposed for these parameters to provide minimum assurance the facility is being operated properly. An explanation of why increased monitoring frequency is imposed is explained to the permittee in the draft cover letter.

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. The permittee may remain in compliance with the permit by using a No Discharge Indicator (NODI) code on the "Daily Effluent Monitoring" supplemental form to identify the absence of a discharge on a particular day.

The daily monitoring frequencies and other frequencies justified above are consistent with current policy and Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.0051	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.04	XXX	0.09	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001.

Appendix -A- USGS Stream Stats

StreamStats Report

Region ID: PA
Workspace ID: PA20231120174932147000
Clicked Point (Latitude, Longitude): 40.10567, -79.38041
Time: 2023-11-20 12:49:56 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.27	square miles
ELEV	Mean Basin Elevation	1812	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [99.5 Percent (0.271 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.27	square miles	2.26	1400
ELEV	Mean Basin Elevation	1812	feet	1050	2580

Low-Flow Statistics Disclaimers [99.5 Percent (0.271 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Weighted flows were not calculated. Users should be careful to evaluate the applicability of the provided estimates. Percentage of area falls outside where region is undefined. Whole estimates have been provided using available regional equations.

Low-Flow Statistics Flow Report [99.5 Percent (0.271 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00891	ft^3/s
30 Day 2 Year Low Flow	0.0187	ft^3/s
7 Day 10 Year Low Flow	0.00206	ft^3/s
30 Day 10 Year Low Flow	0.00506	ft^3/s
90 Day 10 Year Low Flow	0.0121	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. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.18.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Appendix -B- TRC Calculation

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00206	= Q stream (cfs)	0.5	= CV Daily
0.0051	= 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 Discharg	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.102	1.3.2.iii	WLA cfc = 0.092
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.038	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) = 0.153	

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)**

Appendix –C– WQM 7.0 Modeling – Summer Conditions

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19E	38365	Trib 38365 to Minnow Run	0.280	1812.00	0.27	0.01400	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.008	0.00	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
DaysInn Donegal	PA0217743	0.0051	0.0051	0.0051	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19E	38365	Trib 38365 to Minnow Run	0.001	1766.00	1.57	0.01400	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.113	0.02	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
DaysInn Donegal	PA0217743	0.0000	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	.208	2.08	10	0.02	0.738	20.00	7.00
Q1-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	NA	NA	NA	0.02	0.771	20.00	7.00
Q30-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	NA	NA	NA	0.02	0.709	20.00	7.00

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WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☑
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.280	0.005	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.076	0.208	10.000	0.023
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
20.24	1.445	2.06	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.623	31.850	Owens	6
Reach Travel Time (days)			
0.738			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.074	18.19	1.96	7.58
0.148	16.35	1.86	7.79
0.222	14.69	1.76	7.93
0.295	13.21	1.68	8.05
0.369	11.87	1.59	8.15
0.443	10.67	1.51	8.24
0.517	9.59	1.43	8.24
0.591	8.62	1.36	8.24
0.665	7.75	1.29	8.24
0.738	6.96	1.23	8.24

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.280	DaysInn Donegal	9.67	11.29	9.67	11.29	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.280	DaysInn Donegal	1.92	2.6	1.92	2.6	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.28	DaysInn Donegal	25	25	2.6	2.6	6	6	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.280	DaysInn Donegal	PA0217743	0.005	CBOD5	25		
				NH3-N	2.6	5.2	
				Dissolved Oxygen			6

Appendix –C– WQM 7.0 Modeling – Winter Conditions

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19E	38365	Trib 38365 to Minnow Run	0.280	1812.00	0.27	0.01400	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.015	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
DaysInn Donegal	PA0217743	0.0051	0.0051	0.0051	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19E	38365	Trib 38365 to Minnow Run	0.001	1766.00	1.57	0.01400	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.227	0.02	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
DaysInn Donegal	PA0217743	0.0000	0.0000	0.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	.208	2.08	10	0.02	0.738	12.93	7.00
Q1-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	NA	NA	NA	0.02	0.771	13.57	7.00
Q30-10 Flow												
0.280	0.00	0.00	0.00	.0079	0.01400	NA	NA	NA	0.02	0.709	12.38	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☑
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.280	0.005	12.930	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.076	0.208	10.000	0.023
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
20.24	1.454	3.64	0.406
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.555	26.933	Owens	6
Reach Travel Time (days)			
0.738			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.074	18.73	3.54	8.82
0.148	17.33	3.43	9.21
0.222	16.04	3.33	9.34
0.295	14.84	3.23	9.42
0.369	13.73	3.14	9.50
0.443	12.71	3.04	9.50
0.517	11.76	2.95	9.50
0.591	10.88	2.87	9.50
0.665	10.07	2.78	9.50
0.738	9.32	2.70	9.50

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.280	DaysInn Donegal	15.62	18.23	15.62	18.23	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.280	DaysInn Donegal	3.39	4.6	3.39	4.6	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.28	DaysInn Donegal	25	25	4.6	4.6	5	5	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19E	38365	Trib 38365 to Minnow Run

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.280	DaysInn Donegal	PA0217743	0.005	CBOD5	25		
				NH3-N	4.6	9.2	
				Dissolved Oxygen			5