pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0102288**
Facility Type	**Industrial**	APS ID	**1021124**
Major / Minor	**Minor**	Authorization ID	**1322801**

NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Casella Waste Management of PA, Inc.**	Facility Name	**McKean County Landfill**
Applicant Address	25 Green Hills Lane	Facility Address	19 Ness Lane
	Rutland, VT 05071		Kane, PA 16735
Applicant Contact	Douglas Dunn, General Manager	Facility Contact	Tim Oknefski, Environmental Manager
Applicant Phone	(814) 778-9931	Facility Phone	(814) 778-9931
Client ID	92710	Site ID	237360
SIC Code	4953	Municipality	Sergeant Township
SIC Description	Trans. & Utilities - Refuse Systems	County	McKean County
Date Application Received	August 3, 2020	EPA Waived?	Yes
Date Application Accepted	August 10, 2020	If No, Reason	-
Purpose of Application	Renewal of the NPDES Permit for an existing discharge from a landfill that discharges treated landfill leachate and uncontaminated stormwater runoff.		

Summary of Review

This facility is subject to ELGs under 40 CFR 445.21 - RCRA Subtitle D Non-Hazardous Waste Landfills.

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

- A. Property Rights
- B. Solids Handling
- C. Modification or Revocation for changes to BAT or BCT

SPECIAL CONDITIONS:

- II. Equivalent Treatment Determination
- III. Chemical Additives
- IV. Requirements Applicable to Stormwater Outfalls

There are no open violations in efacts associated with the subject Client ID (92710) as of 11/19/2021.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	11/19/2021
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	11/22/2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.05
Latitude	41º 39' 47.00"	Longitude	-78º 38' 12.00"
Quad Name	-	Quad Code	-
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.3
Drainage Area	0.79	Yield (cfs/mi^2)	0.028
Q_{7-10} Flow (cfs)	0.022	Q_{7-10} Basis	calculated
Elevation (ft)	1917	Slope (ft/ft)	0.0194
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company - Clarion		
PWS Waters	Clarion River	Flow at Intake (cfs)	90.7
PWS RMI	33.3	Distance from Outfall (mi)	83.0

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.05 MGD of treated Industrial Waste from an existing RCRA Subtitle D Non-Hazardous landfill in Sergeant Township, McKean County.

Treatment for the Rochem landfill leachate consists of:

WQM Permit # 4296201 - Two storage lagoons with impervious liners serving as flow equalization units with aeration.

WQM Permit # 4297201 - A grit chamber, above-ground polyethylene equalization tanks with pH adjustment, multimedia and cartridge filtration, two-stage Reverse Osmosis (Rochem System) filtration, air stripping, chemical addition, and emergency electrical power generation.

1. Streamflow:

The Q_{7-10} low flow at the discharge point was determined by calculating the yield rate at the nearest comparable stream with a gage station:

West Branch Clarion River at Wilcox, PA:	Q_{7-10}:	6.6	cfs	USGS Streamstats
(USGS Gage no. 03028000)	Drainage Area:	63.0	sq. mi.	USGS Streamstats
	Yield Rate:	0.1	cfsm	(calculated)

The Q_{7-10} low flow for the receiving stream at Outfall 001 was determined by using the calculated yieldrate above and the Drainage Area.

Yieldrate:	0.1	cfsm	calculated above
Drainage Area:	0.79	sq. mi.	USGS Streamstats

% of stream allocated: 100% Basis: No nearby discharges

Little Sicily Run:	Q_{7-10}:	0.079	cfs	calculated

2. Wasteflow:

Permitted discharge flow: 0.05 MGD = 0.077 cfs

Runoff flow period: 24 hours Basis Runoff flow for a landfill

Flow will continue to be monitored as authorized under Chapter 92a.61.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Oil and Grease, NH_3-N, $CBOD_5$, NO_2-NO_3, Fluoride, Phenolics, Sulfates, Chlorides, and TDS

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of technology-based limitations under 40 CFR 445.21 for RCRA Subtitle D Non-Hazardous Waste Landfills.

b. Total Suspended Solids

Limits are 27.0 mg/l as a monthly average and 88.0 mg/l as a daily maximum.

Basis: Application of technology-based limitations under 40 CFR 445.21 for RCRA Subtitle D Non-Hazardous Waste Landfills.

c. Oil and Grease

Limits are 15.0 mg/l as a monthly average and 30.0 mg/l as an instantaneous maximum.

Basis: Application of technology-based limitations under 40 CFR 445.21 for RCRA Subtitle D Non-Hazardous Waste Landfills.

d. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 6.6 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background NH_3-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH_3-N limits: 4.9 mg/l (monthly average)
9.8 mg/l (daily maximum)

Result: WQ modeling confirmed that the above technology-based limits for landfill leachate are protective (see Attachment 2). Since the calculated limits are less restrictive than the previous limits, which are being attained, the previous limits will be retained.

e. $CBOD_5$

Median discharge pH to be used: 6.6 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background BOD concentration: 2.0 mg/l

Basis: Default value

BOD_5 limits: 37 mg/l (monthly average)
140 mg/l (daily maximum)

Result: WQ modeling confirmed that the technology-based limits set in 40 CFR 437.42 for Centralized Waste Treatment (CWT) facilities that receive waste from the metals (part A) and organics (part C) subcategories are protective (see Attachment 2). The limits are the same as the previous NPDES Permit and will be retained.

f. NO_2-NO_3, Fluoride, Phenolics, Sulfates, Chlorides, and TDS

Nearest Downstream potable water supply (PWS): Pennsylvania American Water Company - Clarion

Distance downstream from the point of discharge: 83.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

4. Reasonable Potential Analysis:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 by the Department's Toxics Management Spreadsheet (see Attachment 1). The following parameters were modeled for Outfall 001:

Total Phenols, Total Zinc, and p-Chloro-m-Cresol

Result: No WQBELs or monitoring was recommended by the Toxics Management Spreadsheet. The technology-based limitations for Total Zinc, Phenol, a-Terpineol, Benzoic Acid, and p-Cresol under 40 CFR 445.21 for RCRA Subtitle D Non-Hazardous Waste Landfills will be retained.

5. Radiological Monitoring:

Including monitoring requirements for radiological pollutants in this draft renewal permit was considered. The information contained in the Technologically Enhance Naturally Occurring Radioactive Materials (TENORM) Study Report (updated 5/18/2016) which can be found on the DEP's website here (https://www.dep.pa.gov/Business/RadiationProtection/Pages/TENORM.aspx) was also considered. See Section 5 of the Report for the description of the landfill leachate data collected/locations; see also Section 9.1.3 (Landfill Observations); and Section 9.2.3 (Landfill Recommendations).

As of the date of this draft permit, the DEP is developing a statewide strategy to independently collect and analyze samples of leachate for radiological pollutants, including Radium 226 and Radium 228, at landfills across the Commonwealth. The DEP is expected to commence sampling as early as the first quarter of 2022. Accordingly, monitoring for radiological pollutants is not proposed in this draft permit.

6. Antibacksliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

7. Approved Chemical Additives:

Discharge Location	Chemical Name	Purpose	Usage Frequency	Maximum Usage Rate	Units
001	IPA 412	Cleaner	Daily	12	lbs/day
001	Cleaner A	Cleaner	Daily	65.1	lbs/day
001	Cleaner B	Cleaner	Daily	183.0	lbs/day

8. Attachment List:

Attachment 1 - Toxics Management Spreadsheet

Attachment 2 - WQ Modeling Printouts

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
Flow (MGD) Average Monthly	0.01862	0.02111	0.01998	0.01864	0.01511	0.01625	0.00591	0.01230	0.00661	0.01545	0.00078	0.01611
Flow (MGD) Daily Maximum	0.02574	0.03178	0.03284	0.02508	0.02541	0.02637	0.02339	0.02498	0.02695	0.02810	0.01207	0.02484
pH (S.U.) Minimum	6.36	6.3	6.42	6.09	6.08	6.82	6.52	6.28	6.23	6.34	6.51	6.25
pH (S.U.) Maximum	7.89	7.95	7.64	8.49	8.48	8.42	7.44	8.37	8.16	7.99	7.52	7.36
CBOD5 (mg/L) Average Monthly	< 4.23	< 2.26	< 2.11	< 2.14	< 2.07	< 2.11	< 2.14	< 2.14	< 2.07	< 2.11	3.55	< 4.89
CBOD5 (mg/L) Daily Maximum	10.5	< 3	< 2.14	< 2.14	< 2.14	< 2.14	< 2.14	< 2.14	< 2.14	< 2.14	3.55	8.42
TSS (mg/L) Average Monthly	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 4	< 3	< 3	4	< 3
TSS (mg/L) Daily Maximum	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	4.5	< 2.5	9.6	< 2.5	4	3.5	3
Oil and Grease (mg/L) Average Monthly	< 5	< 5	< 5	< 5.2	< 5	< 6.3	< 5.03	< 5.05	< 5.08	< 5.08	< 5	< 5.63
Oil and Grease (mg/L) Instantaneous Maximum	< 5	< 5	< 5	< 5.3	< 5	8.8	< 5.05	< 5.15	< 5.15	< 5.15	< 5	< 6.1
Ammonia (mg/L) Average Monthly	1.5	3.1	2.8	2.9	3.0	2.6	2.4	3.6	3.3	3.5	2.009	4.1
Ammonia (mg/L) Daily Maximum	2.048	3.492	4.416	3.81	4.137	5.99	2.919	4.348	4.117	4.967	2.009	5.305
Total Zinc (mg/L) Average Monthly		< 0.02			< 0.02			< 0.02			< 0.02	
Total Zinc (mg/L) Daily Maximum		< 0.02			< 0.02			< 0.02			< 0.02	
Phenol (mg/L) Average Monthly		< 0.001			< 0.0008			< 0.002			< 0.001	
Phenol (mg/L) Daily Maximum		< 0.00125			< 0.00125			< 0.0025			0.00155	
a-Terpineol (mg/L) Average Monthly		< 0.001			< 0.0006			< 0.002			< 0.001	
a-Terpineol (mg/L) Daily Maximum		< 0.001			< 0.001			< 0.002			< 0.001	

Benzoic Acid (mg/L) Average Monthly		< 0.004			< 0.003			< 0.007			< 0.005	
Benzoic Acid (mg/L) Daily Maximum		< 0.00435			< 0.00435			< 0.0087			0.0058	
p-Cresol (mg/L) Average Monthly		< 0.002			< 0.001			< 0.002			0.007	
p-Cresol (mg/L) Daily Maximum		< 0.00165			< 0.00033			< 0.0033			0.00805	

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	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	Continuous	Measured
BOD5	XXX	XXX	XXX	37.0 Avg Mo	140.0	140	1/week	24-Hr Composite
TSS	XXX	XXX	XXX	27.0 Avg Mo	88.0	88	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0 Avg Mo	XXX	30.0	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	4.6 Avg Mo	9.2	11.5	1/week	24-Hr Composite
Total Zinc	XXX	XXX	XXX	0.11	0.20	0.27	2/quarter*	24-Hr Composite
Phenol	XXX	XXX	XXX	0.015	0.026	0.037	2/quarter*	24-Hr Composite
a-Terpineol	XXX	XXX	XXX	0.016	0.033	0.04	2/quarter*	24-Hr Composite
Benzoic Acid	XXX	XXX	XXX	0.071	0.12	0.17	2/quarter*	24-Hr Composite
p-Cresol	XXX	XXX	XXX	0.014	0.025	0.035	2/quarter*	24-Hr Composite

* - The two quarterly samples may be collected within the same calendar month.

Compliance Sampling Location: at Outfall 001, or any point after the Rochem Treatment System, prior to mixing with any other waters.

Flow is monitor only based on Chapter 92a.61. The limits for Oil and Grease are technology-based on Chapter 95.2. The limits for NH_3-N are water quality-based on Chapter 93.7. The limits for pH, $CBOD_5$, Total Suspended Solids, Total Zinc, Phenol, a-Terpineol, Benzoic Acid, and p-Cresol are technology-based on 40 CFR 445.21 for RCRA Subtitle D Non-Hazardous Waste Landfills.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.00
Latitude	41º 39' 47.00"	Longitude	-78º 38' 12.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		
Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.3
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 002, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 002, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.00
Latitude	41º 39' 42.00"	Longitude	-78º 38' 20.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		

Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.42
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 003, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 003, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.00
Latitude	41º 39' 45.70"	Longitude	-78º 38' 22.70"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		
Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.5
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 004, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 004, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0.00
Latitude	41º 39' 49.40"	Longitude	-78º 38' 24.60"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		
Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.55
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 005, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 005, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0.00
Latitude	41º 39' 52.90"	Longitude	-78º 38' 26.6"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		
Receiving Waters	Little Sicily Run (CWF)	Stream Code	50689
NHD Com ID	102662765	RMI	2.55
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 006, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 006, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0.00
Latitude	41º 39' 0.00"	Longitude	-78º 38' 0.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to the Sevenmile Run (HQ-CWF)	Stream Code	N/A
NHD Com ID	102662619	RMI	N/A
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

The previous NPDES Permit did not include monitoring for this stormwater outfall. The new monitoring is consistent with similar landfill facilities in the region and is authorized under Chapter 92a.61.

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 007, 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	Semi-Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	Report	1/6 months	Grab

Samples taken at the following location: Outfall 007, prior to mixing with any other wastewaters.

Monitoring for pH, COD, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Iron is based on the stormwater monitoring requirements for Appendix C facilities (Landfills and Land Application Sites) from the PAG-03 General Permit under the authority of Chapter 92a.61.

Attachment 1

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **McKean County Landfill** NPDES Permit No.: **PA0102288** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated Landfill Leachate**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.05	100	6.6						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.003									
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L	<	0.02									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L		0.0094									
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

McKean County Landfill, NPDES Permit No. PA0102288, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	050689	2.3	1917	0.79			Yes
End of Reach 1	050689	0	1760	1.25			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	2.3	0.028										100	7		
End of Reach 1	0	0.028													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	2.3														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

McKean County Landfill, NPDES Permit No. PA0102288, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
2.3	0.02		0.02	0.077	0.013	0.349	4.337	12.431	0.066	2.138	0.054
0	0.04		0.035								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
2.3	0.27		0.27	0.077	0.013	0.601	4.337	7.21	0.132	1.069	0.292
0	0.397		0.40								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.054 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.66

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	117.180	120	154	Chem Translator of 0.978 applied
p-Chloro-m-Cresol	0	0		0	160	160	206	

☑ ***CFC*** CCT (min): 0.054 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.66

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	118.139	120	154	Chem Translator of 0.986 applied
p-Chloro-m-Cresol	0	0		0	500	500	643	

☑ ***THH*** CCT (min): 0.054 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.292 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Phenols (Phenolics) (PWS)	N/A	N/A	Discharge Conc < TQL
Total Zinc	N/A	N/A	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc ≤ 25% WQBEL

Attachment 2

WQM 7.0 Effluent Limits (Perennial Model)

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY 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)
0.880	McKean Landfill	PA0102288b	0.050	CBOD5	16.19		
				NH3-N	3.12	6.24	
				Dissolved Oxygen			6.38

Since the results are the same as the inputs from the dry model, the inputs of the dry model are protective (see below).

CBOD5 = 37 mg/l

NH3-N = 4.9 mg/l

DO = 4 mg/l

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.880	0.050	22.474	6.757
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.568	0.382	11.971	0.090
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.02	1.235	1.54	0.847
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.321	27.191	Owens	6
Reach Travel Time (days)			
0.599			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.060	8.30	1.47	7.78
0.120	7.64	1.39	7.88
0.180	7.03	1.33	7.88
0.240	6.47	1.26	7.88
0.300	5.96	1.20	7.88
0.360	5.48	1.14	7.88
0.420	5.05	1.08	7.88
0.480	4.65	1.03	7.88
0.540	4.28	0.98	7.88
0.599	3.94	0.93	7.88

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
17A	50689	LITTLE SICILY RUN	**0.880**	1880.00	0.79	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
McKean Landfill	PA0102288b	0.0500	0.0000	0.0000	0.000	25.00	6.60

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	16.19	2.00	0.00	1.50
Dissolved Oxygen	6.38	8.24	0.00	0.00
NH3-N	3.12	0.00	0.00	0.70

(From Dry Model)

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
17A	50689	LITTLE SICILY RUN	**0.000**	1760.00	1.25	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY 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												
0.880	0.08	0.00	0.08	.0773	0.02583	.382	4.57	11.97	0.09	0.599	22.47	6.76
Q1-10 Flow												
0.880	0.05	0.00	0.05	.0773	0.02583	NA	NA	NA	0.08	0.671	23.02	6.72
Q30-10 Flow												
0.880	0.11	0.00	0.11	.0773	0.02583	NA	NA	NA	0.10	0.546	22.09	6.79

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY 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
0.880	McKean Landfill	15.95	6.24	15.95	6.24	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
0.880	McKean Landfill	1.76	3.12	1.76	3.12	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)		
0.88	McKean Landfill	16.19	16.19	3.12	3.12	6.38	6.38	0	0

WQM 7.0 D.O.Simulation (Dry Model)

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.770	0.050	24.997	6.600
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.533	0.406	3.774	0.124
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
36.98	1.500	4.90	1.028
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
4.002	31.978	Owens	2
Reach Travel Time (days)			
0.438			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.044	34.05	4.68	4.43
0.088	31.35	4.48	4.74
0.131	28.86	4.28	5.01
0.175	26.58	4.09	5.26
0.219	24.47	3.91	5.48
0.263	22.53	3.74	5.69
0.306	20.74	3.57	5.88
0.350	19.10	3.42	6.06
0.394	17.58	3.27	6.23
0.438	16.19	3.12	6.38

Use as Perennial Model inputs

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
17A	50689	LITTLE SICILY RUN	**1.770**	2140.00	0.04	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Dry Stream	PA0102288d	0.0500	0.0000	0.0000	0.000	25.00	6.60

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	37.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	4.90	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
17A	50689	LITTLE SICILY RUN	**0.880**	1880.00	0.79	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
McKean Landfill	PA0102288b	0.0500	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	16.28	2.00	0.00	1.50
Dissolved Oxygen	6.36	8.24	0.00	0.00
NH3-N	3.13	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	D.O.	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Simulation	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	2		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
17A	50689	LITTLE SICILY 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												
1.770	0.00	0.00	0.00	NA	0.05533	.406	1.53	3.77	0.12	0.438	25.00	6.60
Q1-10 Flow												
1.770	0.00	0.00	0.00	NA	0.05533	NA	NA	NA	0.00	0.000	0.00	0.00
Q30-10 Flow												
1.770	0.00	0.00	0.00	NA	0.05533	NA	NA	NA	0.00	0.000	0.00	0.00