pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0090522**
Facility Type	**Industrial**	APS ID	**1025815**
Major / Minor	**Minor**	Authorization ID	**1331406**

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

Applicant and Facility Information

Applicant Name	**Marlborough US Realty Holdings LP**	Facility Name	**Ambridge Landfill**
Applicant Address	PO Box 241	Facility Address	SR 989
	Harrison City, PA 15636-0241		Ambridge, PA 15003-1519
Applicant Contact	Paul Kaye	Facility Contact	Paul Kaye
Applicant Phone	(724) 309-7657	Facility Phone	(724) 309-7657
Client ID	359137	Site ID	243163
SIC Code	4953	Municipality	Ambridge Borough
SIC Description	Trans. & Utilities - Refuse Systems	County	Beaver
Date Application Received	December 21, 2001	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal of Individual NPDES Permit without ELG.

Summary of Review

History:

Per the Beaver County website, the Ambridge Landfill property was purchased by Gabriel Sacco from Ambridge Park on December 1, 1971. The property was then sold to Dressel Associates on January 9, 1995. On April 7, 1995, Marlborough Equity LTD purchased the property. On November 12, 2005, Marlborough US Realty purchased the property for $1.00. Gabriel Sacco has not owned the property since January 9, 1995, but all associated permits remain in his name.

The facility originally was permitted by the Department on October 23, 1978, from Solid Waste. Approved waste streams for disposal at the facility are fly ash, bottom ash, fixated fly ash, SO_2 scrubber sludge, and coal pile runoff sludge. Operations at the facility have ceased since 1988. The facility was entertaining options to reopen and resume waste disposal, but this has stalled, and the Department has not received any correspondence pursuing this option.

Review:

Ambridge Landfill submitted a renewal application of NPDES permit PA0090522, dated December 20, 2001. The facility also submitted a WQM Part II permit application, concurrently, to modify 0478203. Both these permit applications were based on a facility expansion that never approved or constructed. On October 19, 2020, the Department received an updated NPDES Renewal Application along with a Permit Transfer Application for the NPDES Permit and the WQM Part II Permit. The transfer is from Gabriel Sacco to Marlborough US Realty Holdings, LP. The permit transfers (NPDES and WQM Part II) will be executed conjunction with the NPDES Permit renewal. On April 29, 2024, the Department received an updated renewal application for the NPDES Permit. The facility is a Class III Residual Waste Landfill with a SIC Code of 4953 – Refuse Systems. The existing NPDES permit authorizes the discharge of treated leachate and stormwater.

Approve	Deny	Signatures	Date
X		Curtis Holes, P.E. / Environmental Engineer	June 25, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	June 29, 2024

Summary of Review

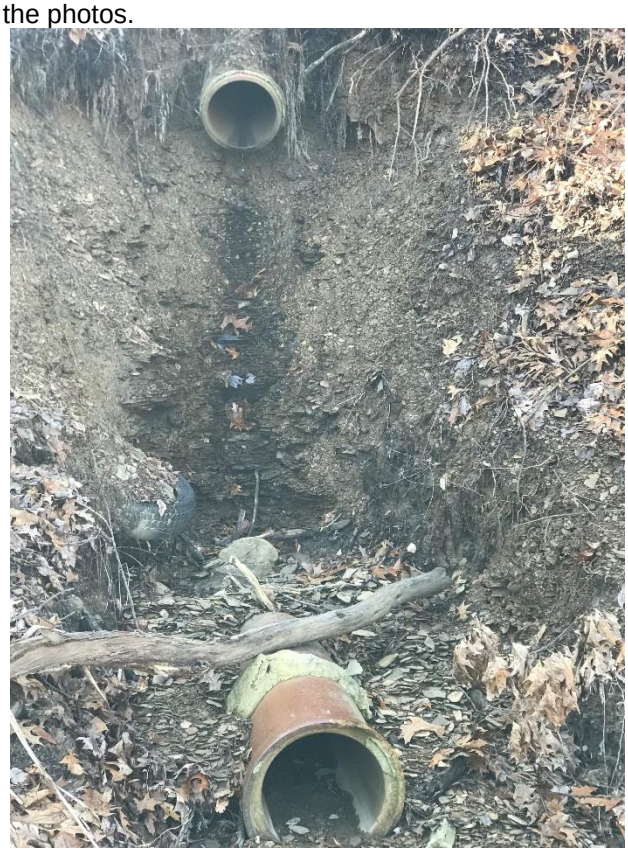
Leachate is collected by 4-inch and 6-inch PVC underdrains located beneath the waste limits. The leachate is conveyed to Pond C for treatment and discharged via Outfall 001. Outfall 001 discharges to a 54-inch diameter storm sewer pipe that ultimately discharges to the Ohio River. If Pond C effluent exceeds the permit limits, the wastewater is treated by a POTW. Pond C is designed with an emergency overflow spillway (Outfall 005), which only discharges during a 25-yr./24-hr storm event or greater storm intensity.

Since the facility has ceased operations since 1988, the entire landfill footprint is under cover and waste is no longer directly exposed to stormwater. All stormwater now should be considered uncontaminated. Uncontaminated stormwater is collected and conveyed via an 18-inch reinforced concrete pipe to Pond A, which discharges via Outfall 003. Pond A's emergency spillway is identified as Outfall 004.

Stormwater from the eastern side of the property sheet flows to a drainage ditch around the perimeter of the landfill, which conveys the storm water to a 15-inch diameter pipe and then ties into the 54-inch storm sewer line ultimately discharging to the Ohio River.

On March 5, 2020 the Department conducted an inspection of the facility to examine existing conditions and collect surface water samples from Outfalls 001 and 002. Below is a summary of the inspection.

- The stormwater pipe on the eastern side of the site (between Outfalls 003 and 001) is in poor condition, as noted in the photos.



  During high precipitation events, stormwater that is to be conveyed along the eastern side of Pond C will discharge to the Pond due to grading issues in this area. The stormwater pipe appears to come from Walter Panek Park. The pipe needs repaired, and the grading needs restored to properly convey the stormwater from this pipe away from Pond C.
- Outfalls 001 and 002 were discharging and appear to be clear. The discharge from Outfall 001 had a sulfur odor (rotten eggs). Samples were collected from both Outfalls 001 and 002 and the results are summarized in Table 1 below.
- The facility is not enrolled in the eDMR system and has not submitted a paper DMR since November 2016.
- The following violations were noted in the Inspection Report: failure to transfer the NPDES permit; failure to submit DMRs through the eDMR system; along with failure to properly maintain the treatment system.

Summary of Review

Table 1 – Inspection Sample Results for Outfalls 001 & 002

Parameter	Outfall 001	Outfall 002
pH (S.U.)	7.35	7.7
Temperature (°C)	10.8	8.3
Cadmium (µg/L)	<10.0	<10.0
Calcium, Total (mg/L)	308.0	104.0
Chromium, Total (µg/L)	<50.0	<50.0
Copper, Total (µg/L)	<10.0	<10.0
Hardness, Total (mg/L)	861	313
Iron, Total (µg/L)	309.0	617.0
Lead, Total (µg/L)	<1.0	<1.0
Magnesium, Total (mg/L)	22.1	12.9
Manganese, Total (µg/L)	558.0	383.0
Tin, Total (µg/L)	<200.0	<200
Zinc, Total (µg/L)	<30.0	53.0

A description of wastewater or stormwater that discharges to each outfall is as follows:

Outfall 001 – Pond C (Treatment Pond) principal spillway discharge.
Outfall 002 – Uncontaminated stormwater from upgradient of the landfill and conveyed under the landfill.
Outfall 003 – Stormwater Pond A principal spillway.
Outfall 004 – Stormwater Pond A emergency spillway.
Outfall 005 – Pond C (Treatment Pond) emergency spillway.

The April 29, 2024 updated renewal application contained the following two changes to the permit are requested by Marlborough.

- It is requested that Outfall 001 be monitored once per quarter instead of the current permit requirement of twice per month to be consistent with Outfall 002's monitoring frequency. All parameter results sampled from this outfall have been under the permitted effluent limits and monitoring results are consistent and anticipated to remain the same as no modifications are being proposed to the closed landfill area.

  Department response to permit modification request – The discharge of Outfall 001 consists of leachate and stormwater. Outfall 002's discharge consists of uncontaminated stormwater from upgradient of the landfill and conveyed under the landfill. The difference in monitoring frequency is due to the difference in discharge constituents. The Department will evaluate the Outfall 001 concentrations to see if the monitoring frequency can be reduced. Outfall 002's monitoring frequency will be evaluated to see if it can be reduced to semi-annually, consistent with General Permit monitoring frequency for uncontaminated stormwater.

- It is requested that Outfall 003 be monitored semiannually instead of the current permit requirement of twice per month. This request is consistent with monitoring frequency requirements in Pennsylvania NPDES General Permit for discharges of stormwater associated with industrial activity (PAG-03). As noted in the 2016 PAG-03 Fact Sheet, the Department decided semiannual monitoring for key pollutants for all sectors was appropriate and sufficient to characterize stormwater associated with industrial activity. Additionally, recent observations of Outfall 003 indicate that Outfall 003 discharge are infrequent, and discharge does not consistently occur during qualifying storm events. As a result, it is difficult to collect stormwater samples at the frequency required by the current permit.

  The Department response to permit modification request - Outfall 003's monitoring frequency will be evaluated to see if it can be reduced to semi-annually, consistent with General Permit monitoring frequency for uncontaminated stormwater.

The client has no open violations.

Summary of Review

The Department has inspected the facility's discharge of few times from March 2020 – January 2024 responding to a citizen complaint of gray/black colored water discharging to the Ohio River. The inspections note violations that have since been resolved.

A Consent Order and Agreement (CO&A) between the Department and Marlborough US Realty Holdings, L.P. was executed on January 31, 2024. Corrective Actions required of the CO&A consist of: updating the original 2001 NPDES Permit renewal and WQM Part II Permit applications; submit eDMR registration; remove accumulated debris and trees growing in Pond C and also submit to the Department an evaluation regarding whether any additional maintenance, restoration, or modifications to Pond C are required; submit a Solid Waste Management Closure Plan for the facility. Semi-annual progress reports are required to describe the actions taken to comply with the CO&A.

It is recommended that a draft permit be published for public comment in response to this application.

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)	0.009
Latitude	40º 36' 19"	Longitude	-80º 13' 18"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Treated Leachate and Stormwater		

Receiving Waters	Ohio River (WWF)	Stream Code	32317
NHD Com ID	99681590	RMI	22.6
Drainage Area	19,600 sq. miles	Yield (cfs/mi^2)	0.3
Q_{7-10} Flow (cfs)	5,880	Q_{7-10} Basis	Streamstats
Elevation (ft)	682	Slope (ft/ft)	0.0001
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Causes/Sources of Impairment	Urban runoff/storm sewers – Siltation; Removal of riparian vegetation – Siltation; Highway/Road/Bridge runoff (Non-Construction Related) - Siltation		

Nearest Downstream Public Water Supply Intake	Center Township Water Authority (3 MGD)		
PWS Waters	Ohio River	Flow at Intake (cfs)	5,880
PWS RMI	14	Distance from Outfall (mi)	~15

Changes Since Last Permit Issuance:

Other Comments: None.

Drainage Area

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.006
Latitude	40º 36' 19"	Longitude	-80º 13' 18"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Stormwater		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.0 (varies)
Latitude	40º 36' 19"	Longitude	-80º 13' 18"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Stormwater (Pond A discharge)		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.0 (varies)
Latitude	40º 36' 19"	Longitude	-80º 13' 12"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Stormwater (Pond A emergency spillway discharge)		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0.0 (varies)
Latitude	40º 36' 19"	Longitude	-80º 13' 18"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Pond C emergency spillway discharge.		

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.01
Latitude	40º 36' 24"	**Longitude**	-80º 13' 10"

Wastewater Description: IW Process Effluent with ELG

Pond C receives leachate which is collected via 4-inch or 6-inch diameter perforated PVC underdrains located beneath the residual waste. In addition, Pond C receives stormwater runoff from portions of the closed landfill. Pond C has an approximate volume of 36,200 cubic feet and discharges via Outfall 001 at an average flowrate of 0.01 million gallons per day (MGD) to the Ohio River (WWF). Pond C was designed with an emergency overflow spillway which is designed to discharge during storm events of 25-year/24-hour or greater intensity via Outfall 005.

Technology-Based Limitations

The primary objective of such Technology-Based Effluent Limitations (TBEL) is to decrease the total pollution load to all streams, while dealing equitably with discharges in each class or category.

Technology-based effluent limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs). The NPDES regulations at Title 40 of the *Code of Federal Regulations* (CFR) 125.3(a) require NPDES permit writers to develop technology-based treatment requirements, consistent with CWA section 301(b), that represent the minimum level of control that must be imposed in a permit.

The Ambridge Landfill is a closed captive landfill with no other industrial activities at the site and not subject to Federal Effluent Limitation Guidelines (ELGs) as SIC Code 4953 is not listed under 40 CFR 445. When a facility is not subject to a Federal ELG, TBELs are then developed on a case-by-case basis using Best Professional Judgement (BPJ).

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant of 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 1 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) and 25 Pa. Code § 95.2(1) as indicated in Table 1 below.

The facility does not use chlorination for treatment of the landfill leachate, and TRC is not present in the discharge therefore, no TRC limits are proposed.

Pursuant to 25 Pa. Code § 95.2(ii) effluent standards for Oil and Grease are indicated in Table 1 below.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts.[1] Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as significant pollutants of concern.

[1] ATSDR, "Toxicological Profile for Perfluoroalkyls". Patrick N. Breysse, Ph.D., CIH Director, National Center for Environmental Health and Agency for Toxic Substances and Disease Registry Centers for Disease Control and Prevention, May 2021.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Marlborough's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA, so there are no PFAS data to evaluate. However, the potential for PFAS to be present can be estimated based on studies of various industries by EPA.

The Ambridge Landfill is a facility that ostensibly operates in one of the industries EPA expects to be a source for PFAS: landfilling.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results in Marlborough's case), then the monitoring may be discontinued.

The previous permit contained effluent limitations on TSS, Oil and Grease, Sulfate, Cadmium, Chromium, Copper, Total Iron, Manganese, Lead, Tin, and Zinc as indicated in Table 1 below.

Table 1: TBELs

Parameter	Monthly Avg.	Daily Max	Units
Flow	Report	Report	MGD
TSS	30.0	60.0	mg/L
Oil and Grease	15.0	20.0	mg/L
Sulfate	Report	Report	mg/L
Cadmium	Report	Report	mg/L
Chromium	Report	Report	mg/L
Copper	Report	Report	mg/L
Total Iron	3.5	7.0	mg/L
Manganese	2.0	4.0	mg/L
Lead	Report	Report	mg/L
Tin	Report	Report	mg/L
pH	6.0	9.0	S.U.
Zinc	Report	Report	mg/L

Integral to the implementation of 25 Pa. Code § 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21,

2010 are exempt. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or a change in the waste stream quality. If there are existing mass or production-based TDS effluent limits, then these are used as the basis for the existing mass loading. The facility is not a new or expanding waste loading of TDS, therefore, the facility is exempt from 25 Pa. Code § 95.10 treatment requirements.

Water Quality-Based Limitations

Toxics Management Analysis

WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water. The Department's Toxics Management Spreadsheet (TMS) was utilized to facilitate calculations necessary for completing a reasonable potential analysis and determine Water Quality-Based Effluent Limitations (WQBELs) for discharges containing toxic pollutant concentrations. TMS combines the functionality of two (2) of the Department's analysis tools, Toxics Screening Analysis Spreadsheet and PENTOXSD water quality model.

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken form the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants, as reported in the permit application or on DMRs, are modeled by the TMS to determine the parameters of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion].

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by TMS. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and contained in the DMRs; data from those sources are used as inputs into the TMS. A summary of TMS Inputs is contained in Table 2 below.

Table 2. TMS Inputs

Parameter	Value
Discharge Inputs	
Facility	Ambridge Landfill
Evaluation Type	Industrial
NPDES Permit No.	PA0090522
Wastewater Description	Landfill Leachate
Outfall ID	001
Design Flow (MGD)	0.01
Hardness ($^{mg}/_{L}$)	1,000
pH (S.U.)	7.6
Partial Mix Factors	Unknown – Calculated by TMS
Complete Mix Times	
$Q_{7\text{-}10}$ (min)	
Q_h (min)	

Table 2. TMS Inputs (cont.)

Stream Inputs	
Receiving Surface Water	Ohio River
Number of Reaches to Model	1
Stream Code	032317
RMI	22.6
Elevation (ft)	688/680*
Drainage Area (mi^2)	19,600
Slope (ft/ft)	
PWS Withdrawal (MGD)	3
Apply Fish Criteria	Yes
Low Flow Yield (cfs/mi^2)	
Flows	
Stream (cfs)	5,880
Tributary (cfs)	N/A
Width (ft)	
Stream Hardness ($^{mg}/_{L}$)	
Stream pH (S.U.)	

***** Denotes discharge location/downstream location values.

The TMS Model does not recommend any WQBELs at Outfall 001. Analysis Report from the TMS run is included in Attachment B.

WQM 7.0 Model

In general, the WQM 7.0 Model is run if the maximum $BOD_5/CBOD_5$ concentrations exceeds 30/25 mg/L respectively in the permit application or the DMRs. The permit application reports $BOD_5/CBOD_5$ concentrations of 5.8/9.4 mg/L respectively, therefore, WQM 7.0 Model is not required to be run.

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 based on 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.

Effluent Limitations and Monitoring Requirements for Outfall 001

Effluent limits applicable at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 3. The applicable limits and monitoring requirements provided below are based on discussions above and those contained in Table 1 of this Fact Sheet.

Table 3. Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Concentration		Units	Basis
	Average Monthly	Daily Maximum		
Flow	Report	Report	MGD	40 CFR 122.44(l)
TSS	30.0	60.0	mg/L	40 CFR 122.44(l)
Oil and Grease	15.0	20.0	mg/L	40 CFR 122.44(l)
Sulfate	Report	Report	mg/L	40 CFR 122.44(l)
Cadmium	Report	Report	mg/L	40 CFR 122.44(l)
Chromium	Report	Report	mg/L	40 CFR 122.44(l)
Copper	Report	Report	mg/L	40 CFR 122.44(l)
Total Iron	3.5	7.0	mg/L	40 CFR 122.44(l)
Manganese	2.0	4.0	mg/L	40 CFR 122.44(l)
Lead	Report	Report	mg/L	40 CFR 122.44(l)
Tin	Report	Report	mg/L	40 CFR 122.44(l)
pH	6.0	9.0 IMAX	S.U.	40 CFR 122.44(l)
Zinc	Report	Report	mg/L	40 CFR 122.44(l)
PFOA	- -	Report	ng/L	25 Pa. Code § 952.a.61(b)
PFOS	- -	Report	ng/L	25 Pa. Code § 952.a.61(b)
HFPO-DA	- -	Report	ng/L	25 Pa. Code § 952.a.61(b)
PFBS	- -	Report	ng/L	25 Pa. Code § 952.a.61(b)

Monitoring Frequency for Outfall 001

Ambridge Landfill is an existing facility with no history of non-compliance with effluent limitations over the past two (2) years according to the DMR data. This meets the requirements contained in the statistical procedures in EPA's guidance, "*Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies*" (April 1996) to conduct a parameter-by-parameter analysis on eligibility for reduced monitoring frequency.

At a minimum, the two (2) most current years of Monthly Average effluent data representative of the current operating conditions for the parameter at the particular outfall will be used to calculate the Long-Term Average discharge rate for use in Tables 1 and 2 of the EPA's guidance document. Table 4 below, is a summary of the referenced Tables.

Table 4: Ratio of Long-Term Effluent Average to Monthly Average Limit

Baseline Monitoring	100-76%	75-66%	65-50%	49-25%	<25%
7/wk.	6/wk.	5/wk.	4/wk.	3/wk.	1/wk.
6/wk.	5/wk.	4/wk.	3/wk.	2/wk.	1/wk.
5/wk.	4/wk.	4/wk.	3/wk.	2/wk.	1/wk.
4/wk.	4/wk.	3/wk.	2/wk.	1/wk.	1/wk.
3/wk.	3/wk.	3/wk.	2/wk.	1/wk.	1/wk.
2/wk.	2/wk.	2/wk.	1/wk.	2/month	1/month
1/wk.	1/wk.	1/wk.	1/wk.	2/month	1/2 months
2/month	2/month	2/month	2/month	2/month	1/qtr.
1/month	1/month	1/month	1/month	1/qtr.	1/6 months

The baseline monitoring of 2/month is consistent with the existing monitoring frequency for Ambridge Landfill Outfall 001 and will be used for the comparison of the parameter-by-parameter analysis. For the analysis, the most current two (2) years of DMR data for Outfall 001 to calculate the Long-Term Average for each parameter to see if the monitoring frequency on a parameter-by-parameter basis can be relaxed. Below is a summary of the performance-based analysis for Outfall 001.

Table 5: Performance-Based Reduction of NPDES Permit Monitoring Frequency Analysis

Parameter	Monthly Average Permit Limit ($^{mg}/_{L}$)	Long-Term Average ($^{mg}/_{L}$)	Ratio Long-Term Average to Monthly Average Limit (%)	Recommended Monitoring Frequency
TSS	30.0	<4	13.3	1/quarter
Oil and Grease	15.0	<5	33.3	2/month
Sulfate	Report	972.8	- -	- -
Cadmium	Report	<0.002	- -	- -
Chromium	Report	<0.005	- -	- -
Copper	Report	<0.005	- -	- -
Total Iron	3.5	0.308	8.8	1/quarter
Manganese	2.0	0.535	26.8	2/month
Lead	Report	<0.010	- -	- -
Tin	Report	<0.1	- -	- -
Zinc	Report	<0.02	- -	- -

The Oil and Grease concentration is historically <5 $^{mg}/_{L}$. With the consistency of the Oil and Grease concentration the monitoring frequency will be changed to 1/quarter. The Manganese concentration is consistently trending down. Over the 2-year evaluation, the Manganese concentration was 1.08 mg/L from the November 2023 DMR to 0.313 mg/L from the March 2024 DMR. The monitoring frequency for Manganese will be changed to 1/quarter due to the consistently trending down concentration and to be consistent with other monitoring frequency of other parameters monitored at Outfall 001. Monitoring requirements are based on the previous permits monitoring requirements for Ambridge Landfill along with recommendations from the Performance-Based Reduction Analysis and displayed in Table 6 below.

Table 6: Monitoring Requirements for Outfall 001

Parameter	Sample Type	Minimum Sample Frequency
Flow	Measured	1/quarter
TSS	Grab	1/quarter
Oil and Grease	Grab	1/quarter
Sulfate	Grab	1/quarter
Cadmium	Grab	1/quarter
Chromium	Grab	1/quarter
Copper	Grab	1/quarter
Total Iron	Grab	1/quarter
Manganese	Grab	1/quarter
Lead	Grab	1/quarter
Tin	Grab	1/quarter
Zinc	Grab	1/quarter
pH	I-S	1/quarter
PFOA	Grab	1/year
PFOS	Grab	1/year
HFPO-DA	Grab	1/year
PFBS	Grab	1/year

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0.0
Latitude 40º 36' 24" **Longitude** -80º 13' 10"
Wastewater Description: Stormwater

Outfall 002 consists of uncontaminated stormwater from upgradient of the landfill and conveyed under the landfill. During the previous permit cycle, the parameters of concern for Outfall 001 were imposed at Outfall 002 with a monitoring frequency of 1/quarter. The monitoring frequency will be changed to 1/6 months to align with minimum sampling frequencies per General Stormwater Permit (PAG-03) guidelines.

Effluent Limitations and Monitoring Requirements for Outfall 002

Effluent limits applicable at Outfall 002 are previously permitted effluent limits, parameters with reasonable potential and the monitoring requirements are summarized in Table 7.

Table 7: Final Effluent limits and monitoring requirements for Outfall 002

Parameter	Daily Maximum	Units	Basis
Flow	Report	MGD	40 CFR 122.44(l)
TSS	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Oil and Grease	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Sulfate	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Cadmium	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Chromium	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Copper	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Total Iron	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Manganese	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Lead	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
Tin	Report	$^{mg}/_{L}$	40 CFR 122.44(l)
pH	Report	S.U.	40 CFR 122.44(l)
Zinc	Report	$^{mg}/_{L}$	40 CFR 122.44(l)

Monitoring requirements are based on minimum sampling frequencies per PAG-03 guidelines and displayed in Table 8 below.

Table 8: Monitoring Requirements for Outfall 002

Parameter	Sample Type	Minimum Sample Frequency
Flow	Measured	1/6 months
TSS	Grab	1/6 months
Oil and Grease	Grab	1/6 months
Sulfate	Grab	1/6 months
Cadmium	Grab	1/6 months
Chromium	Grab	1/6 months
Copper	Grab	1/6 months
Total Iron	Grab	1/6 months
Manganese	Grab	1/6 months
Lead	Grab	1/6 months
Tin	Grab	1/6 months
Zinc	Grab	1/6 months
pH	I-S	1/6 months

Development of Effluent Limitations

Outfall No. 003 **Design Flow (MGD)** 0
Latitude 40º 36' 22" **Longitude** -80º 13' 09"
Wastewater Description: Stormwater

Pond A receives stormwater runoff from a portion of the closed landfill. Pond A has an approximate volume of 163,250 cubic feet and discharges via Outfall 003. Based on historic observations, Pond A only discharges during spring snowmelt. Pond A was also designed with an emergency overflow spillway which was designed to discharge only during storm events of 25-year/24-hour or greater intensity to Outfall 004.

During the previous permit cycle, the parameters of concern for Outfall 001 were imposed at Outfall 003 with a monitoring frequency of 1/quarter. The monitoring frequency will be changed to 1/6 months to align with minimum sampling frequencies per General Stormwater Permit (PAG-03) guidelines.

Effluent Limitations and Monitoring Requirements for Outfall 003

Effluent limits applicable at Outfall 003 are previously permitted effluent limits, parameters with reasonable potential and the monitoring requirements are summarized in Table 9.

Table 9: Final Effluent limits and monitoring requirements for Outfall 003

Parameter	Daily Maximum	Units	Basis
Flow	Report	MGD	40 CFR 122.44(l)
TSS	Report	mg/L	40 CFR 122.44(l)
Oil and Grease	Report	mg/L	40 CFR 122.44(l)
Sulfate	Report	mg/L	40 CFR 122.44(l)
Cadmium	Report	mg/L	40 CFR 122.44(l)
Chromium	Report	mg/L	40 CFR 122.44(l)
Copper	Report	mg/L	40 CFR 122.44(l)
Total Iron	Report	mg/L	40 CFR 122.44(l)
Manganese	Report	mg/L	40 CFR 122.44(l)
Lead	Report	mg/L	40 CFR 122.44(l)
Tin	Report	mg/L	40 CFR 122.44(l)
pH	Report	S.U.	40 CFR 122.44(l)
Zinc	Report	mg/L	40 CFR 122.44(l)

Monitoring requirements are based on minimum sampling frequencies per PAG-03 guidelines and displayed in Table 10 below.

Table 10: Monitoring Requirements for Outfall 003

Parameter	Sample Type	Minimum Sample Frequency
Flow	Measured	1/6 months
TSS	Grab	1/6 months
Oil and Grease	Grab	1/6 months
Sulfate	Grab	1/6 months
Cadmium	Grab	1/6 months
Chromium	Grab	1/6 months
Copper	Grab	1/6 months
Total Iron	Grab	1/6 months
Manganese	Grab	1/6 months
Lead	Grab	1/6 months
Tin	Grab	1/6 months
Zinc	Grab	1/6 months
pH	I-S	1/6 months

Development of Effluent Limitations

Outfall No.	004 & 005	**Design Flow (MGD)**	0
Latitude	40º 36' 22" / 40º 36' 24"	**Longitude**	-80º 13' 09" / -80º 13' 10"
Wastewater Description:	Stormwater		

Pond A receives stormwater runoff from a portion of the closed landfill. Pond A has an approximate volume of 163,250 cubic feet and discharges via Outfall 003. Based of historic observations, Pond A only discharges during spring snowmelt. Pond A is equipped with an emergency overflow spillway which was designed to discharge only during storm events of 25-year/24-hour or greater intensity to Outfall 004.

Pond C receives leachate which is collected via 4-inch or 6-inch diameter perforated PVC underdrains located beneath the residual waste. In addition, Pond C receives stormwater runoff from portions of the closed landfill. Pond C has an approximate volume of 36,200 cubic feet and discharges via Outfall 001 at an average flowrate of 0.01 million gallons per day (MGD) to the Ohio River (WWF). Pond C is equipped with an emergency overflow spillway which is designed to discharge during storm events of 25-year/24-hour or greater intensity via Outfall 005.

NPDES Permit Part B.F. addresses bypassing discharges.

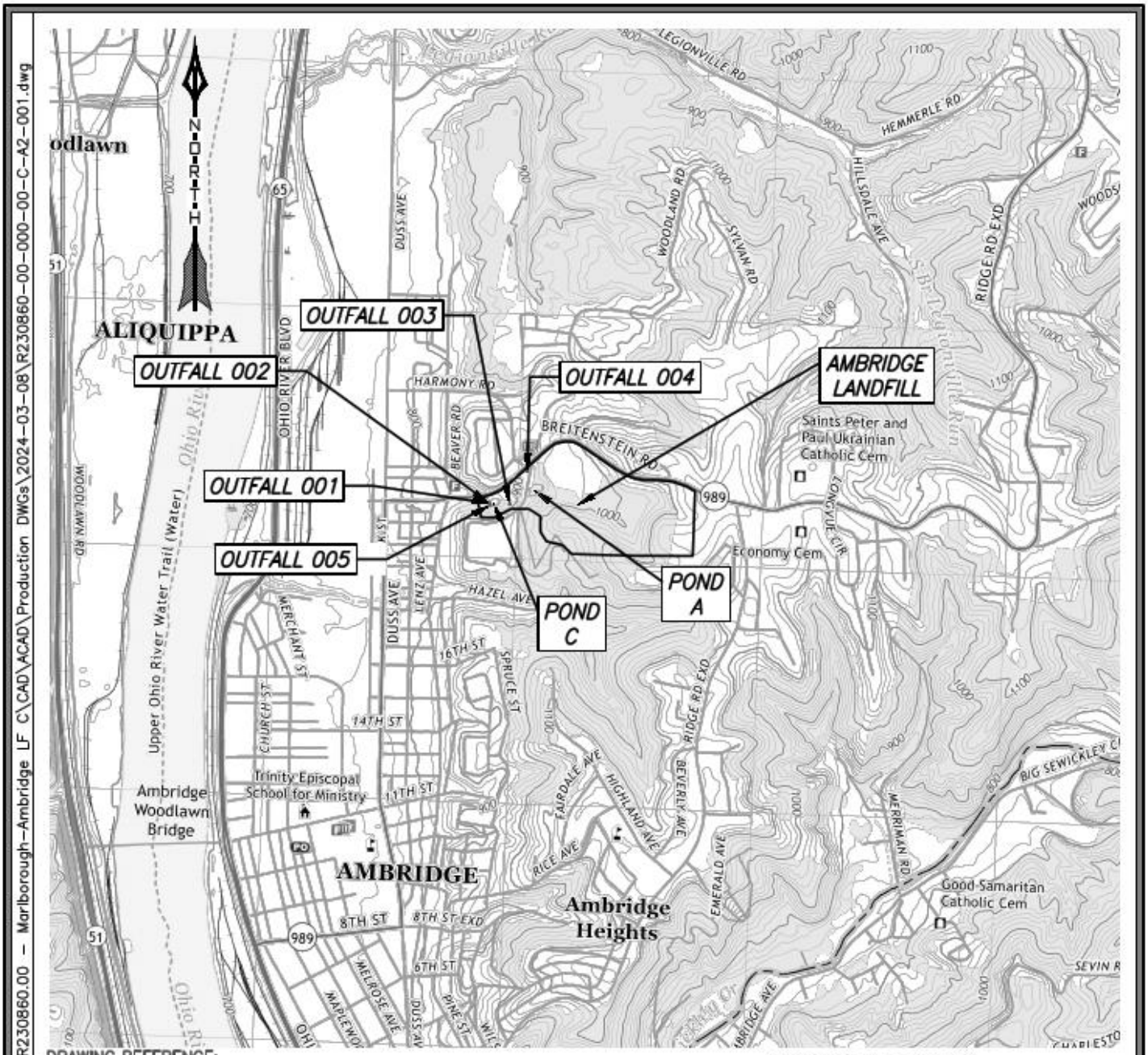
Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5€ for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachment A – Site Plan

Attachment B – StreamStats

Attachment C – TMS Model Output

Attachment A – Site Plan



DRAWING TITLE

FIGURE 1 - SITE LOCATION MAP

PROJECT		DRAWN BY:	ISSUE DATE:
AMBRIDGE LANDFILL **NPDES RENEWAL APPLICATION** **BOROUGH OF AMBRIDGE, BEAVER COUNTY, PA**	gai consultants	**KAPEL**	**01/31/2024**
		CHECKED BY:	SCALE:
		MGESK	**AS SHOWN**
CLIENT		APPROVED BY:	SHEET NO.:
MARLBOROUGH US REALTY HOLDINGS, L.P.		**ESCIULLI**	**1 OF 1**

GAI FILE NUMBER:	GAI DRAWING NUMBER:	© 2024 GAI Consultants
R230860-00-000-00-C-A2-001	**A2-001**	

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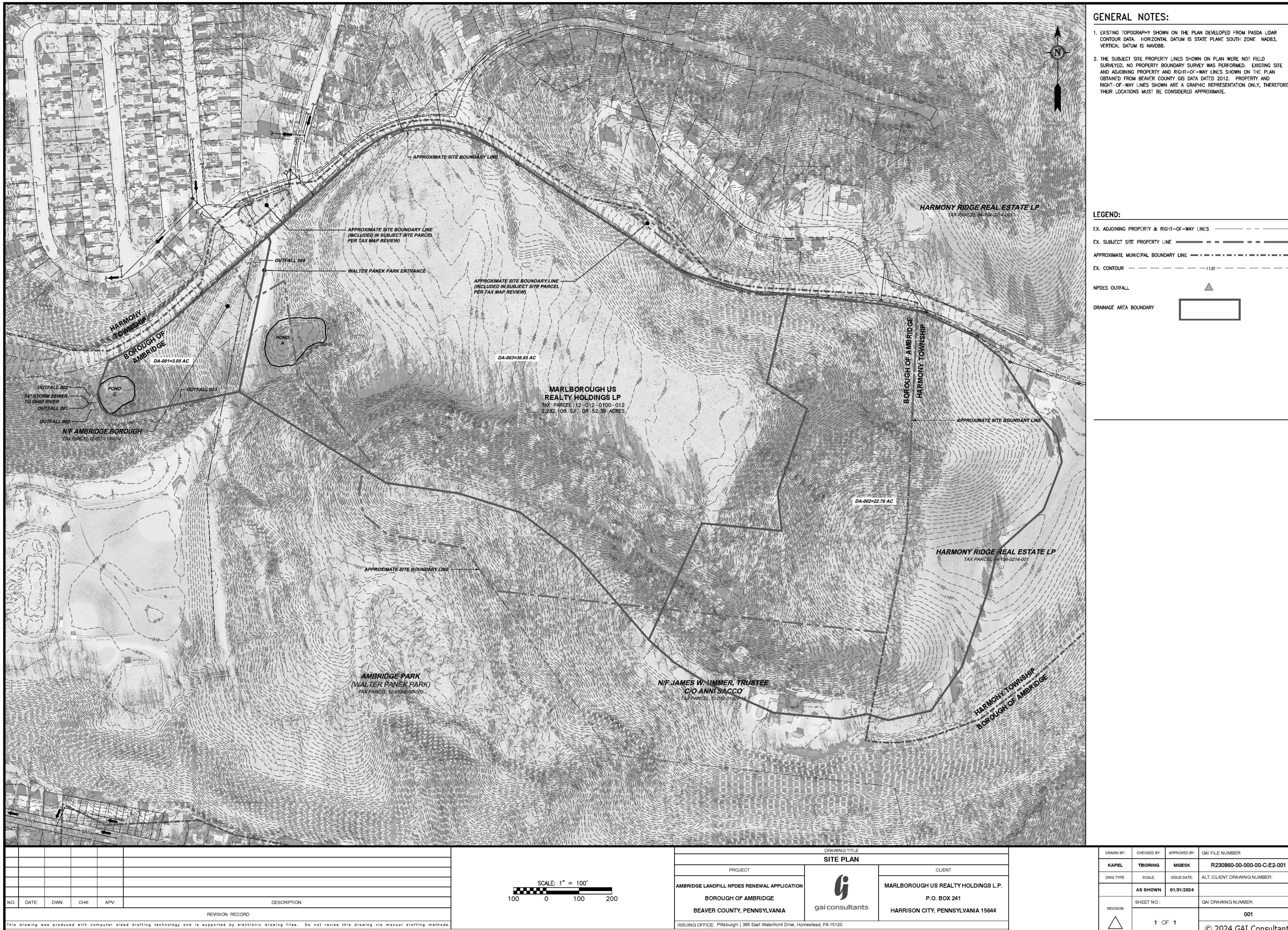
ISSUING OFFICE: Pittsburgh | 385 E. Waterfront Drive, Homestead, PA 15120

PLOTTED ON: 3/8/2024 11:09:27 AM PLOTTED BY: Taylor Boring PLOT FILE: GAI.stb

GAI CAD FILE PATH: \\gaiconsultants.local\BUProj\2023\R230860.00 - Marlborough-Ambridge LF C\CAD\ACAD\Production DWGs\2024-03-08\R230860-00-000-00-C-A2-001.dwg


Sunset Ave
Breitenstein Rd
Solar Dr
Breitenstein Rd
Ambridge Pk Rd


GENERAL NOTES:
1. EXISTING TOPOGRAPHY SHOWN ON THE PLAN DEVELOPED FROM PASDA LIDAR CONTOUR DATA. HORIZONTAL DATUM IS STATE PLANE SOUTH ZONE NAD83, VERTICAL DATUM IS NAVD88.
2. THE SUBJECT SITE PROPERTY LINES SHOWN ON PLAN WERE NOT FIELD SURVEYED, NO PROPERTY BOUNDARY SURVEY WAS PERFORMED. EXISTING SITE AND ADJOINING PROPERTY AND RIGHT-OF-WAY LINES SHOWN ON THE PLAN OBTAINED FROM BEAVER COUNTY GIS DATA DATED 2012. PROPERTY AND RIGHT-OF-WAY LINES SHOWN ARE A GRAPHIC REPRESENTATION ONLY, THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE.
LEGEND:
EX. ADJOINING PROPERTY & RIGHT-OF-WAY LINES
EX. SUBJECT SITE PROPERTY LINE
APPROXIMATE MUNICIPAL BOUNDARY LINE
EX. CONTOUR
NPDES OUTFALL
DRAINAGE AREA BOUNDARY
APPROXIMATE SITE BOUNDARY LINE
WALTER PANEK PARK ENTRANCE
HARMONY TOWNSHIP
BOROUGH OF AMBRIDGE
POND A
POND C
DA-001=3.05 AC
DA-003=36.65 AC
DA-002=22.76 AC
OUTFALL 001
OUTFALL 002
OUTFALL 003
OUTFALL 004
OUTFALL 005
54" STORM SEWER TO OHIO RIVER
MARLBOROUGH US REALTY HOLDINGS LP
HARMONY RIDGE REAL ESTATE LP
N/F AMBRIDGE BOROUGH
AMBRIDGE PARK (WALTER PANEK PARK)
N/F JAMES W. UMMER, TRUSTEE C/O ANNI SACCO
SCALE: 1" = 100'
DRAWING TITLE
SITE PLAN
PROJECT
AMBRIDGE LANDFILL NPDES RENEWAL APPLICATION
BOROUGH OF AMBRIDGE
BEAVER COUNTY, PENNSYLVANIA
CLIENT
MARLBOROUGH US REALTY HOLDINGS L.P.
P.O. BOX 241
HARRISON CITY, PENNSYLVANIA 15644
ISSUING OFFICE: Pittsburgh | 385 East Waterfront Drive, Homestead, PA 15120
DRAWN BY: KAPEL
CHECKED BY: TBORING
APPROVED BY: MGESK
GAI FILE NUMBER: R230860-00-000-00-C-E2-001
SCALE: AS SHOWN
ISSUE DATE: 01/31/2024
SHEET NO.: 1 OF 1
GAI DRAWING NUMBER: 001
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Attachment B – StreamStats

StreamStats Report Amgridge Landfill PA0090522 Outfall 001

Region ID:	PA
Workspace ID:	PA20190821104817654000
Clicked Point (Latitude, Longitude):	40.60362, -80.23603
Time:	2019-08-21 06:48:45 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	19600	square miles
ELEV	Mean Basin Elevation	1670.9	feet
PRECIP	Mean Annual Precipitation	44.5	inches
CARBON	Percentage of area of carbonate rock	0.6	percent
FOREST	Percentage of area covered by forest	72.3	percent
URBAN	Percentage of basin with urban development	4.4	percent
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	1.4	percent

Low-Flow Statistics Parameters[57 Percent (11200 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19600	square miles	2.33	1720
ELEV	Mean Basin Elevation	1670.9	feet	898	2700
PRECIP	Mean Annual Precipitation	44.5	inches	38.7	47.9

Low-Flow Statistics Parameters[42 Percent (8300 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19600	square miles	2.26	1400
ELEV	Mean Basin Elevation	1670.9	feet	1050	2580

Low-Flow Statistics Disclaimers[57 Percent (11200 square miles) Low Flow Region 3]

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

Low-Flow Statistics Flow Report[57 Percent (11200 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2760	ft^3/s

Attachment C – TMS Model Output

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Ambridge LF** NPDES Permit No.: **PA0090522** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **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
0.009	1000	7.6						

					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		2200									
	Chloride (PWS)	mg/L		170									
	Bromide	mg/L		1.4									
	Sulfate (PWS)	mg/L		1430									
	Fluoride (PWS)	mg/L		0.46									
Group 2	Total Aluminum	µg/L		60									
	Total Antimony	µg/L		0.34									
	Total Arsenic	µg/L		45									
	Total Barium	µg/L		38									
	Total Beryllium	µg/L	<	0.12									
	Total Boron	µg/L		480									
	Total Cadmium	µg/L		2.6									
	Total Chromium (III)	µg/L	<	5									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L		0.37									
	Total Copper	mg/L	<	0.005									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		10									
	Dissolved Iron	µg/L		280									
	Total Iron	µg/L		818									
	Total Lead	µg/L	<	10									
	Total Manganese	µg/L		1290									
	Total Mercury	µg/L		0.087									
	Total Nickel	µg/L		0.67									
	Total Phenols (Phenolics) (PWS)	µg/L	<	3.5									
	Total Selenium	µg/L		3.8									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L		0.17									
	Total Zinc	mg/L	<	0.02									
	Total Molybdenum	µg/L		12									
	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	<										
	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 1.4, May 2023

Stream / Surface Water Information

Ambridge LF, NPDES Permit No. PA0090522, 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	032317	22.6	682	19600			Yes
End of Reach 1	032317	14	680	20000		3	Yes

$Q_{7\text{-}10}$

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	22.6	0.1										100	7		
End of Reach 1	14	0.1													

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	22.6														
End of Reach 1	14														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Ambridge LF, NPDES Permit No. PA0090522, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.006 Analysis Hardness (mg/l): 101.02 Analysis pH: 7.00

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	663,372	
Total Antimony	0	0		0	1,100	1,100	972,945	
Total Arsenic	0	0		0	340	340	300,728	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	18,574,405	
Total Boron	0	0		0	8,100	8,100	7,164,413	
Total Cadmium	0	0		0	2.034	2.16	1,906	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	574.507	1,818	1,608,067	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	14,411	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	84,027	
Total Copper	0	0		0	13.568	14.1	12,501	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	65.297	82.7	73,151	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1,457	Chem Translator of 0.85 applied
Total Nickel	0	0		0	472.263	473	418,552	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.273	3.85	3,406	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	57,492	
Total Zinc	0	0		0	118.190	121	106,890	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.043 Analysis Hardness (mg/l): 100.15 Analysis pH: 7.00

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,346,848	
Total Arsenic	0	0		0	150	150	918,305	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	25,100,349	
Total Boron	0	0		0	1,600	1,600	9,795,258	
Total Cadmium	0	0		0	0.246	0.27	1,659	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.204	86.3	528,230	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	63,639	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	116,319	
Total Copper	0	0		0	8.967	9.34	57,184	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.521	3.19	19,514	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	5,546	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.071	52.2	319,741	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	30,544	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	79,586	
Total Zinc	0	0		0	118.286	120	734,434	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): ###### THH PMF: 0.043 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.0368

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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	#########	WQC applied at RMI 14 with a design stream flow of 2000 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 14 with a design stream flow of 2000 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 14 with a design stream flow of 2000 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	10,581,806	WQC applied at RMI 14 with a design stream flow of 2000 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	29,037	THH WQC applied at PWS at RMI 14
Total Arsenic	0	0		0	10	10.0	51,851	THH WQC applied at PWS at RMI 14
Total Barium	0	0		0	2,400	2,400	12,444,252	THH WQC applied at PWS at RMI 14
Total Boron	0	0		0	3,100	3,100	16,073,826	THH WQC applied at PWS at RMI 14
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	1,555,532	THH WQC applied at PWS at RMI 14
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	5,185,105	THH WQC applied at PWS at RMI 14
Total Mercury	0	0		0	0.050	0.05	259	THH WQC applied at PWS at RMI 14
Total Nickel	0	0		0	610	610	3,162,914	THH WQC applied at PWS at RMI 14
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	26,455	WQC applied at RMI 14 with a design stream flow of 2000 cfs
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	1,244	THH WQC applied at PWS at RMI 14
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.061 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

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

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 Dissolved Solids (PWS)	2,645,452	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	1,322,726	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	1,322,726	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	10,582	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	425,194	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	29,037	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	51,851	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	11,905,444	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,592,100	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1,222	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	528,230	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	9,237	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	53,858	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	8.01	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,555,532	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	19,514	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	5,185,105	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	259	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	268,275	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	26,455	µg/L	Discharge Conc < TQL
Total Selenium	30,544	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	2,183	µg/L	Discharge Conc < TQL
Total Thallium	1,244	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	68.5	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS