

December 15, 2022

Kentucky Division of Water, Surface Water Permits Branch 300 Sower Boulevard, 3<sup>rd</sup> Floor Frankfort, KY 40601

### RE: KPDES No. KY0003221 Mill Creek Generating Station, Jefferson County, KY; Permit Reissuance Request Agency Interest # A.I. 2122

The Louisville Gas and Electric Company (LGE) provides this enclosed information to the Kentucky Division of Water (KDOW) for the reissuance of the expiring Mill Creek Generating Station KPDES permit KY0003221. KPDES Form 1, Form C, and an application fee check are enclosed with other related support documents.

Significant process water management changes have been initiated at the Mill Creek Station to comply with Steam-Electric Effluent Limitations Guidelines (ELG) issued by the USEPA. Generally, these changes are required for:

• construction of a biological wastewater treatment system and ancillary Ultrafiltration (UF) for Flue Gas Desulfurization (FGD) process waters.

Also, construction activities to dewater and close-in-place the site Ash Treatment Basin (ATB) were completed in September 2021, satisfying the closure requirements set by the USEPA Coal Combustion Residual (CCR) Rule.

EPA recently issued communications that it will reconsider the 2020 ELG rule with potential changes to limits for FGD wastewater, bottom ash transport water, legacy wastewater, and landfill leachate. However, until such proposed rulemaking is published and finalized, steam-electric utilities must comply with the 2020 ELG rule and its compliance dates. Therefore, LGE is proceeding with ELG rule construction activities under the applicability dates granted in the Mill Creek Generation Station KPDES permit KY0003221 modification with an effective date of November 1, 2021. Bottom ash is managed with a dry, pneumatic conveyance system which has no discharge of Bottom Ash Transport Water (BATW).

LGE is requesting permitting to allow wash waters from LGE distribution electrical vaults to be delivered to Mill Creek Generation Station and discharged into the site Process Pond. The Process Pond discharges through internal Outfall 002 to the high-rate multiport diffuser at external Outfall 025 to the Ohio River.

The KPDES Permit Application Synopsis, provided in **Attachment 1** of this submission, details site information and outfalls listing including categorization of outfalls discharges which contain process flows and many outfalls which consist only of uncontaminated stormwater runoff flows.

Form 1 and the application filing fee (\$7,000.00 check for a major industry) are provided in **Attachment 2** and Attachment 3. The USGS (United States Geological Survey) topographic map for the area including the Mill Creek Plant is provided in **Attachment 4**.

As directed by KPDES staff, Form C (provided in **Attachment 5**) has been prepared using recent 2022 samples including analyses for the Priority Pollutants constituents for KPDES Outfalls 002, 009, 023 and 025. Laboratory analyses supporting chemical information used in preparation of Form C is supplied in Attachment 6. Per KPDES staff direction, DMR analyses results from 2021 and 2022 are provided in **Attachment 7**.

The Plant water balance diagrams (**Attachment 8**) may sometimes include stormwater runoff flows from various site areas. Process flows are calculated as PMAC (Peak Monthly Average Conditions) value to reflect the average daily flow for the combination of 28 days normal operations, 1 day maximum operations and 1 day maintenance operations.

Stormwater Runoff Calculations and Diagrams (**Attachments 9** and **10**) were prepared using current information regarding construction of new wastewater treatment buildings, impoundments removal/refurbishment, CCR landfill and the ultimate stormwater controls-runoff management to be or already installed for all the affected areas. As such, the stormwater runoff calculations for industrial activity areas reflect the plant site conditions expected in-place by end-of-2028 (i.e., appropriate for the KPDES 5-year duration and to reflect end-of-permit-conditions).

The information mentioned above and provided in **Attachment 11**, Construction Projects Work Required for USEPA CCR and for USEPA ELG Federal Rules Compliance, also illustrates details of changes in Plant process equipment, impoundments flows management and combined discharges (besides inclusion of scheduling impacts information previously mentioned).

Provided in **Attachment 12** is the § 316(b) § 122.21(r)(2)-(8) studies report detailing efforts to establish cooling water intake technologies utilized at Mill Creek Generation Station as Best Available Technology (BAT) as established by USEPA. As discussed in the report, LGE expects to retire Mill Creek Unit 1 (and associated once-thru cooling system) in 2024.

Provided in Attachment 13 is the water quality analysis for the AOC electrical vault wash waters.

As directed by, and discussed with KPDES staff, enclosed are:

- 1. Attachment 1: KPDES Permit Application Synopsis;
- 2. Attachment 2: KPDES Form 1;
- 3. Attachment 3: Check to Kentucky State Treasurer for KPDES application filing fee;
- 4. Attachment 4: USGS Topographic Map (noting the facility site and discharge points);
- 5. Attachment 5: KPDES Form C;
- 6. Attachment 6: Sample results for the priority pollutant analysis required for Form C from the contracted commercial laboratory provides priority pollutant analyses performed in 2022 (per KPDES staff guidance);
- 7. Attachment 7: Quarterly Metals Analyses Summarized for 2021 and 2022;

- 8. Attachment 8: Water Balance Diagrams 30-Day Peak Monthly Process and Average Rainfall conditions;
- 9. Attachment 9: Stormwater Runoff Calculations;
- 10. Attachment 10: Stormwater Runoff Diagram(s);
- 11. Attachment 11: Construction Activities Required at Mill Creek Generating Station to Comply with USEPA ELG Rule;
- 12. Attachment 12: Mill Creek Generation Station § 316(b) § 122.21(r)(2)-(8) Information and Factors that Must and May be Considered for the Entrainment BTA Determination
- 13. Attachment 13: Water Quality Analysis for LGE Distribution Electrical Vault Wash Waters

Chemical metal cleaning wastewaters (e.g. boiler chemical cleans) and non-chemical metals cleaning wastes (e.g. air heater wash waters include boiler/SCR/flue gas ductwork washing for maintenance activities, etc.) are shown on the flow diagrams and calculated as though these activities occur once in typical month.

If I may be of assistance or you have any questions concerning the attached information, please feel free to contact me at (502) 627-4144 (or by email at philip.imber@lge-ku.com) or Michael O'Guin at (502)-627-2338 (or by email at michael.o'guin@lge-ku.com).

Sincerely,

DocuSigned by:

Philip Imber FOD3D3A42F7841C... Philip A. Imber Manager Environmental Land & Water Louisville Gas and Electric Company

Enclosures (13)

VENDOR NO: 15166	ENDORSEN	IENT OF ATTACHED CHECK WILL ACKNOWLEDGE PAYMENT IN FULL OF LOUISVILLE GAS & ELECTRIC CO.	ITEMS SET FORTH BELOW	NO: 50180 DATE: 14-Nov-2
INVOICE NUMBER	INVOICE DATE	DESCRIPTION	DISCOUNT	NET AMOUNT
KENTUC111022LG	10-Nov-2022	DO NOT MAIL CHECK - PLEASE SEND CHECK	0.00	7,000.
		Cap.		
TOTALS		Le .	0.00	7.0001
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*		PLEASE DETACH BEFORE PRESENTING CHECK	TION	*
TO THE ORDER OF: KENTUCKY S KENTUCKY DIV ATTN LABORAT	ISION OF WATE	R	****\$7,00	00.00
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KENTUCKY STATE TREASURER KENTUCKY DIVISION OF WATER ATTN LABORATORY CERTIFICATION 200 FAIR OAKS LANE FRANKFORT KY US 40601

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OPENING INSTRUCTIONS

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> September 26, 2022 KPDES No. KY0041971 Trimble County Generating Station Permit Reissuance Request – Supplemental Information, Agency Interest # AI 4054



a PPL company 220 West Main Street Louisville, KY 40202

September 26, 2022

Kentucky Division of Water, Surface Water Permits Branch 300 Sower Boulevard, 3<sup>rd</sup> Floor Frankfort, KY 40601

#### RE: KPDES No. KY0041971 Trimble County Generating Station, Trimble County, KY; Permit Reissuance Request Agency Interest # A.I. 4054

The Louisville Gas and Electric Company (LGE) provides this enclosed information to the Kentucky Division of Water (KDOW) for the reissuance of the expiring Trimble County Generating Station KPDES permit KY0041971. KPDES Form 1, Form C, and an application fee check are enclosed with other related support documents.

Significant process water management and Coal Combustion Residual (CCR) impoundment changes have been initiated at the Trimble County Station to comply with CCR federal regulatory rules and Steam-Electric Effluent Limitations Guidelines (ELG) issued by the USEPA. Generally, these changes are required for:

- dewatering and closure-in-place of the site Bottom Ash Pond (BAP) and dewatering and cleanclosure of the site Gypsum Storage Pond (GSP);
- construction of a dry, CCR Rule compliant landfill (phase I is complete and is expected to have an operating life of ten (10) years);
- and construction of a biological wastewater treatment system and ancillary Ultrafiltration (UF) for Flue Gas Desulfurization (FGD) process waters.

EPA recently issued communications that it will reconsider the 2020 ELG rule with potential changes to limits for FGD wastewater, bottom ash transport water, legacy wastewater, and landfill leachate. However, until such proposed rulemaking is published and finalized, steam-electric utilities must comply with the 2020 ELG rule and its compliance dates. Therefore, LGE is proceeding with ELG rule construction activities under the applicability dates granted in the Trimble County Generation Station KPDES permit KY0041971 modification with an effective date of December 1, 2021. The existing bottom ash handling systems for both Unit 1 and 2 are compliant with the Final ELG Rule and has no discharge of Bottom Ash Transport Water (BATW).

The KPDES Permit Application Synopsis, provided in Attachment 1 of this submission, details site information and outfalls listing including categorization of outfalls discharges which contain process flows and many outfalls which consist only of uncontaminated stormwater runoff flows.

#### September 26, 2022

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KPDES No. KY0041971 Trimble County Generating Station Permit Reissuance Request – Supplemental Information, Agency Interest # AI 4054

- 11. Attachment 11: Construction Activities Required at Trimble County Generating Station to Comply with USEPA CCR Rule and USEPA ELG Rule.
- 12. Attachment 12: Trimble County Generation Station § 316(b) § 122.21(r)(2)-(8) Information and Factors that Must and May be Considered for the Entrainment BTA Determination

Chemical metal cleaning wastewaters (e.g. boiler chemical cleans) and non-chemical metals cleaning wastes (e.g. air heater wash waters include boiler/SCR/flue gas ductwork washing for maintenance activities, etc.) are shown on the flow diagrams and calculated as though these activities occur once in typical month.

If I may be of assistance or you have any questions concerning the attached information, please feel free to contact me at (502) 627-4144 (or by email at philip.imber@lge-ku.com) or Michael O'Guin at (502)-627-2338 (or by email at michael.o'guin@lge-ku.com).

Sincerely,

Philip A. Imber Manager Environmental Land & Water Louisville Gas and Electric Company

Enclosures (12)

# LOUISVILLE GAS AND ELECTRIC COMPANY MILL CREEK GENERATING STATION

**KPDES Permit No. KY0003221 Application Synopsis – 2022 Technical Update** 

Page 1 of 2

Name and Address of Applicant

(Corporate) Louisville Gas and Electric Company P.O. Box 32010 Louisville, Kentucky 40232 c/o Michael O'Guin

(Facility) Mill Creek Generating Station 14660 Dixie Highway Louisville, Kentucky 40272 c/o Cody Gibbons

Description of Applicants' Operation

Fossil fuel fired steam electric power plant for the generation, transmission and distribution of electricity (SIC Code 4911 and NAICS Code 221112). Located on a 626+ acre site along the Ohio River at mile mark 626.0.

Production Capacity of Facility

Generation of electric power is from two fossil fired units with the following nominal generating capacity:

Unit 1 – 355 MW Unit 2 – 355 MW Unit 3 – 463 MW Unit 4 – 544 MW Total 1717 MW Coal-fired Steam Boilers

# LOUISVILLE GAS AND ELECTRIC COMPANY MILL CREEK GENERATING STATION

### **KPDES Permit No. KY0003221 Application Synopsis – 2022 Technical Update**

Page 2 of 2

### **Description of Submitted Outfalls**

Note: See attached flow diagrams and rainfall runoff calculations for flow and acreage information)

Construction to close/cap the Ash Treatment Basin (ATB) CCR impoundment concluded in September 2021. Construction to provide FGD wastewaters treatment have begun and will continue to Q2 2024. This construction is being done for compliance with the USEPA ELG rule.

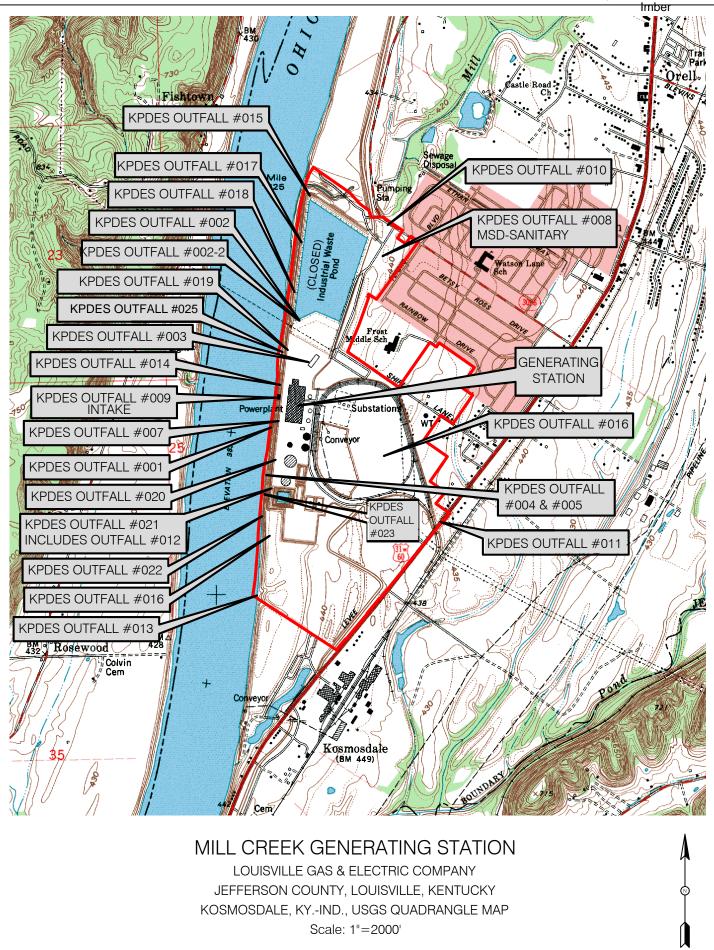
Outfall descriptions are mostly consistent with those described in the Mill Creek Generating Station KPDES permit KY0003221 modification with an effective date of November 1, 2021 with one exception which is as follows:

### **Outfall 002 Existing Description**

Process Water Pond overflow which will consist of treated FGD wastewaters (all process and solids dewatering flows) from Units 1-4, Units 1-4 sumps, landfill stormwater runoff and leachate, boiler chemical metal cleaning wastes (006), water treatment wastewaters, Units 1-4 boiler blowdown and quench waters, natural gas system wastewaters, and stormwater runoff from Area 2.

### **Outfall 002 New Description**

Process Water Pond overflow which will consist of treated FGD wastewaters (all process and solids dewatering flows) from Units 1-4, Units 1-4 sumps, landfill stormwater runoff and leachate, boiler chemical metal cleaning wastes (006), water treatment wastewaters, Units 1-4 boiler blowdown and quench waters, natural gas system wastewaters, **AOC electrical vault wash waters**, and stormwater runoff from Area 2.



Form C	K	ELIMINATI	TUCKY POLLUTION DISCHARG ELIMINATION SYSTEM Permit Application AGENCY USE ON			Division of Water	
NAME OF FACILITY: 1	Mill Cr	eek Generating Station		AGENO	CY USE ONLY		
PERMIT NO.: KY 00032	221			COUN	NTY: Jefferson	1	
I. OUTFALL LOCATION	ON			8			
□ For each outfall, list	the lati	tude and longitude of its location	n to five decimal po	oints.			
OUTFALL NUMBE	R	LATITUDE In Decimal Degrees	LONGITUI In Decimal De		RECI	EIVING WATER (name)	
001		38.05139	85.91278			Ohio River	
002		38.05778	85.91083		In	ternal to #001	
003		38.05556	85.91139		In	ternal to #001	
004		38.04944	85.91306		In	ternal to #023	
005		38.04944	85.91306		In	ternal to #023	
006		38.05639	85.90972		In	Internal to #002	
007		38.05278	85.91250		Ohio River		
008		38.06111	85.90500			MSD Sewer	
009		38.05306	85.91250		Plant Intal	ke Water (Ohio River)	
010	38.06278		85.90500			Mill Creek	
011		38.04583	85.90028		County Road	side Ditch to Pond Creek	
012		38.04778	85.91250		In	ternal to #023	
013		38.04194	85.91250			Ohio River	
014		38.05389	85.91222			Ohio River	
015		38.06472	85.91028			Ohio River	
016		38.04972	85.90444		Valley Villa	age Drain to Ohio River	
017		38.06194	85.91083			Ohio River	
018		38.05944	85.91111			Ohio River	
019		38.05583	85.91167			Ohio River	
020	38.04944		85.91250			Ohio River	
021	38.04778		85.91278			Ohio River	
022		38.04639	85.91278			Ohio River	

023		38.04750	85.91361		Ohio River		
024		38.04778	85.90917		Internal to #002		
025 (Propos	ed)	38.05515	85.91321		Ohio River		
II. FLOWS, SOUP	RCES OF P	OLLUTION, AND TREAT	MENT TECHNOLO	GIES			
A. water balance water balance amount of any For each outfaile. B. wastewater, sa	the effluent, on the line cannot be c sources of w all, provide nitary waste	and treatment units labeled t drawing by showing average letermined (e.g., for certain vater and any collection or tre a description of: (1) all op	o correspond to the m e flows between intak mining activities), pr atment measures. perations contributing prmwater runoff; (2) t	ore detai es, opera ovide a wastewa he avera s if neces			
OUTFALL		SOURCES OF WASTEN	VATER	] ]	<b>FREATMENT DESCRIPTION</b> (from Table C-1)		
NUMBER	Ope	rations Contributing to Flow	Avg/Design Flow (include units)				
	Unit 1 Con	ndenser Cooling Water	225.0 MGD	Disinfe	ection (2-H), Surface Discharge (4-A)		
001 Combined Flows	Unit-1 No	n-Contact Cooling Water	1.0 MGD	Surface Discharge (4-A)			
	Stormwate	er Runoff – Area 1.a-b	0.0211 MGD	Surface Discharge (4-A)			
	Units 1-4	Pyrites Sluice Waters	0.4369 MGD	Settling	g (1-U), Neutralization (2-K)		
	Units 1-4	4 Air Heater Wash Waters	0.1046 MGD	Settling	g (1-U)		
		SUMPS (LOW VOLUME WASTES)					
		Boiler Seal Water Flows Eqpt Washdowns	1.0924 MGD	Settling (1-U), Neutralization (2-K)			
	Units 1-4 Backwash	Service Water Strainer Waters	0.2048 MGD	Settling (1-U)			
	Units 1-4 Quench W	Boiler Blowdown and Vaters	0.583 MGD	Settling (1-U), Neutralization (2-K)			
002 Combined	Stormwate	er Runoff – Areas 2.b	0.0019 MGD	Settling	g (1-U)		
Flows		as System Wastewaters ume Waste)	0.0006 MGD	Settling	g (1-U), Neutralization (2-K)		
	Boiler Wa	ter Treatment Wastewater	0.4577 MGD	Settling	g (1-U), Neutralization (2-K)		
	Boiler Che Waters (0	emical Cleaning Waster 06)	0.0326 MGD	Chemic (2-K)	cal Precipitation (2-C), Neutralization		
	FGD	PROCESS WATERS					
	Filtrate or	sum Solids Dewatering from FGD-PWS Treatment aters (024)	1.5967 MGD		cal Precipitation (2-C), Neutralization Settling (1-U)		
	Stormwate	er Runoff – Areas 2.a	0.1463 MGD	Settling	g (1-U)		
	Stormwate	er Runoff – Areas 2.c	0.0024 MGD	Settling	g (1-U)		
	COAL F	ILE SETTLING BASIN					

	Coal Pile Dust Control & Misc. Eqpt	0.0171 MGD	Settling (1-U), Neutralization (2-K)
	Distribution Electrical Vault Wash Waters	0.0039 MGD	Settling (1-U)
	Stormwater Runoff – Areas 2.d	0.0563 MGD	Settling (1-U)
	Stormwater Runoff – Areas 2.e	0.0355 MGD	Settling (1-U)
	Stormwater Runoff – Areas 2.f	0.0746 MGD	Settling (1-U)
003	Unit 2 Cooling Tower Blowdown (to Once-Thru Cooling Outfall 001)	4.225 MGD	
004	Unit 3 Cooling Tower Blowdown (to discharge diffuser Outfall 023)	3.44 MGD	Discharge Diffuser (4-A)
005	Unit 4 Cooling Tower Blowdown (to discharge diffuser Outfall 023)	3.02 MGD	Discharge Diffuser (4-A)
006	Boiler Chemical-Metal Cleaning Waste Waters (to Process Waters Pond Discharge Outfall #002)	0.0326 MGD	Chemical Precipitation (2-C), Neutralization (2-K), Settling (1-U)
007	Stormwater Runoff – Area 7L	0.0045 MGD	Discharge to Surface Water (4-A)
008	Sanitary Waste (to MSD Sewer)	0.012 MGD	
009	Plant Intake Water	255.23 MGD	
010	Stormwater Runoff (Non- Contaminated) (Area 10B – North Entrance Maintenance Areas)	0.1265 MGD	Discharge to Surface Water (4-A)
011	Stormwater Runoff (Non- Contaminated) (Area 11C, R – East Entry/Parking, Future Landfill)	0.0454 MGD	
	Clearwell Surplus Cooling/Service Waters	0.050 MGD	Settling (1-U), Chemical Precipitation (2-C), Neutralization (2-K), Discharge to Surface Water (4-A)
012 (Combined Flows)	Equipment- Truck Loadout Misc. Washdown	0.0171 MGD	Settling (1-U), Chemical Precipitation (2-C), Neutralization (2-K), Discharge to Surface Water (4-A)
× ,	Stormwater Runoff – Areas 12.a-c	0.0287 MGD	Settling (1-U), Discharge to Surface Water (4 A)
	Stormwater Runoff – Areas 12.d-f	0.0312 MGD	Settling (1-U), Discharge to Surface Water (4 A)
013	Stormwater Runoff (Area 13 – Active Landfill A Runoff)	0.0669 MGD	Discharge to Surface Water (4-A)
014	Stormwater Runoff (Area 14 – Switchyard-Powerhouse NW Side)	0.030 MGD	Discharge to Surface Water (4-A)
015 (Future)	Stormwater Runoff (Non- Contaminated) (Area 15 – Old Ash Treatment Basin NW External Slopes and Closed- Capped Ash Treatment Basin N)	0.0045 MGD	Discharge to Surface Water (4-A)
016	Stormwater Runoff (Non- Contaminated) (Area 16 – Closed Landfill B Runoff)	0.1065 MGD	Discharge to Surface Water (4-A)
017	Stormwater Runoff (Non- Contaminated)	0.0025 MGD	Discharge to Surface Water (4-A)

	(Area 17 – Closed-Capped Ash Treatment Basin West External Slopes)		
018	Stormwater Runoff (Non- Contaminated) (Area 18 – Closed-Capped Ash Treatment Basin SW External Slopes)	0.0015 MGD	Discharge to Surface Water (4-A)
019	Stormwater Runoff (Non- Contaminated) (Area 19 – Riverbank slopes West of Unit 2 Cooling Tower)	0.0017 MGD	Discharge to Surface Water (4-A)
020	Stormwater Runoff (Non- Contaminated) (Area 20 – Riverbank slopes West of Unit 4 Cooling Tower)	0.0016 MGD	Discharge to Surface Water (4-A)
021	Stormwater Runoff (Non- Contaminated) (Area 21 – Riverbank slopes West of Unit 3 Cooling Tower)	0.0012 MGD	Discharge to Surface Water (4-A)
022	Stormwater Runoff (Non- Contaminated) (Area 22 – Yard area SW of Unit 3 Cooling Tower)	0.0018 MGD	Discharge to Surface Water (4-A)
023	Stormwater Runoff (Non- Contaminated) Flow to Diffuser Unit 3 Cooling Tower Blowdown (004) Unit 4 Cooling Tower Blowdown (005) Gypsum Processing Plant Runoff Pond (012)	6.587 MGD	Discharge to Surface Water Discharge Diffuser (4-A)
024	FGD Wastewaters Treatment System Discharge – Regulatory Monitoring Point	1.5967 MGD	Coagulation (2-D), Chemical Precipitation (2- C), Flocculation (1-G), Rapid Sand Filtration (1-R), Pressure Filtration (5-R), Denitrification (3-D), Anaerobic Treatment (3-C), Internal Discharge to 002 Process Pond (4-A)
025	Stormwater Runoff (Non- Contaminated) Flow to Diffuser Process Waters Pond Discharge (002) Unit 2 Cooling Tower Blowdown (003)	9.0449 MGD	Discharge to Surface Water Discharge Diffuser (4-A)

					TRANSI				
II. FLOWS	S, SOURC	ES OF POLL	UTION, AND	TREATMENT	TECHNOLO	GIES (Cor	ntinued)		
C. Except	for stormv	vater runoff, le	aks, or spills, a	are any of the disc	charges describ	ed in Items	II-A or B int	ermittent	or seasonal?
□ Y	es. If yes t	hen complete t	he following t	able.					
N	lo. If no the	en go to Sectio	n III.						
OUTFALL		RATIONS	DAYS PER	MONTHS	FLOW RAT	E (MGD)	TOTAL VO (include u		DURATION
NUMBER		IBUTING TO LOW	WEEK (specify avg.)	<b>PER YEAR</b> (specify avg.)	Long-Term Avg.	Max Daily	Long-Term Avg.	Max Daily	(days)
III. PROD	UCTION								
	n effluent l R 401 – 47		eline promulga	ted by EPA unde	r Section 304 of	of the Clear	n Water Act a	pply to ye	our facility?
```		,	and list the eff	luent limitation g	uideline catego	ory(ies): 40	CFR Part 42	3	
	lo. Go to S	ection IV.							
		ns in the appli FR 401 – 471)	cable effluent	limitations guid	eline expresse	d in terms	of production	n or othe	er measures of
□ Y	es. Compl	ete Item III-C.							
N	lo. Go to S	ection IV.							
				quantity which ropicable effluent l					
		AVERA	AGE DAILY	PRODUCTION			A	Affected	Outfalls
Quantity I	Per Day	Units of I	Measure	Operation,	Product, Mat (specify)	erial, Etc.			numbers)

IV.	IMPROVEMENTS						
A.	upgrading, or operation of discharges described in thi	f wastewate s applicatio	er equipment or praction of the second se	brity to meet any implementation ices or any other environmental p is not limited to, permit conditions s, court orders and grant or loan co	progran s, admir	ns which may	y affect the
	$\Box$ Yes. Complete the fo	llowing tab	le.				
	$\Box$ No. Go to Section IV	-В.					
	INDENTIFICATION OF CONDITION	AFFE	CTED OUTFALLS	BRIEF DESCRIPTION OF PRO	ЕСТ	FINAL COMPLIANCE DATE	
	AGREEMENT, ETC.	No.	Source of Discharge	DRIEF DESCRIPTION OF TROS	JECI	Required	Projected
		-					
B.	environmental projects wh	ich may aff	ect your discharges) y	ing any additional water pollution ou now have under way or which and or planned schedules for constr	you pla		
<b>V.</b> ]	INTAKE AND EFFLUEN	•		*			
A.	Tables A, B, and C of this	section are i	included on senarate s	heets numbered 5-18			
B.	See instructions before pro	ceeding.					
С.	Complete one set of tables Place the outfall number in						
D.	which you know or have r	eason to be	lieve is discharged or	RA Title III, Section 313) listed in may be discharged from any outfare port any analytical data in your p	all. For	every polluta	
		you believ		eport any analytical data in your p	0350551	511	
	POLLUTANT		SOURCE	POLLUTANT		SOURC	E
Hyd	monia & Ammonium Iroxide, Sodium Phosphate asic & tribasic)		edwater System bl & Buffering	Sodium Hypochlorite, Calcium Hypochlorite, Hydrochloric Acid, Sodium BiSulfite	Intake Revers	ng Tower Trea , Cooling Tow se Osmosis (Horination-Pre-	wer and RO) System

Sodium Hydroxide & Sulfuric Acid	Demineralizer Regenerant Chemicals	Phosphoric Acid	RO System Membrane Cleaner			
Aluminum Sulfate	Boiler Water Treatment	Quat-DIMAC Ammonium- Chloride	Cooling System Zebra Mussel Biocide Periodic Treatments			
Sodium Hydroxide	Water Clarification Aid for PWS	Aid for         Ferric Chloride         PWS Coagulant				
Hydrochloric Acid	PWS pH Adjustment	I Adjustment Sodium Hydroxide Closed-Cooling Treatme				
Sodium Bisulfite	ELG Membrane Cleaning/Oxidant Neutralization					
VI. POTENTIAL DISCHAR	GES NOT COVERED BY ANA	LYSIS				
	Table C of this section a substa diate or final product or byproduc		ance which you currently use or			
$\Box$ Yes. List all such pol	llutants in the space provided belo	W.				
□ No. Go to Section V	П.					
VII. BIOLOGICAL TOXICI	TY TESTING DATA					
	or reason to believe that any bio g water in relation to your dischar		toxicity has been made on any of			
Yes. Identify the test(s) and	d describe their purposes below.					
□ No. Go to Section VIII.						
	ng Program Testing was incorpor y test with Ceriodaphnia sp.; y test with fathead minnow	ated into the current KPDES for	Outfall 002 discharge including:			
These tests were performed at le	east annually and indicated full co	mpliance with the KPDES toxicit	y limits.			
VIII. CONTRACT ANALYS	IS INFORMATION					
Form. The analysis must be perf All information reported must be this data must comply with Q4 methods for analytes not address	formed by a laboratory that is cert be based on data collected through A/QC requirements of 40 CFR F	ified in accordance with 401 KAI analysis conducted using 40 CF art 136 and other appropriate Q	R Part 136 methods. In addition, A/QC requirements for standard			
NAME	ADDRESS	TELEPHONE	POLLUTANTS ANALYZED			

IX. CERTIFICATION.				
with a system designed to assu inquiry of the person or persons information submitted is, to the	at this document and all attachment re that qualified personnel properties s who manage the system, or tho best of my knowledge and belief, formation, including the possibility	rly gather and eva se persons directly true, accurate, and	aluate the infor y responsible for d complete. I ar	mation submitted. Based on my or gathering the information, the n aware that there are significant
PRINTED NAME AND TITLE	: Steven Turner Vice President Power Production	on		
SIGNATURE: Steven	B. Furner		DATE: 12-15-2	022
TELEPHONE NO. 502-627-412	140 21	E	EMAIL: Steven	.Turner@lge-ku.com

Return completed application form and attachments to: Division of Water Surface Water Permits Branch 300 Sower Boulevard, 3<sup>rd</sup> Floor Frankfort, KY 40601

Direct questions to: Surface Water Permits Branch at (502) 564-3410.

V. INTAKE A	ND EFFLUEN	T CHARAC	TERISTICS (Co	ontinued fro	m Section V. IN	TAKE AN	D EFFLU	ENT CHARAC	FERIST	ICS)		
PART A.	See instructions Complete one s	s before proce set of tables for	IN THE UNSHA eeding. or each outfall. Pl s of at least one a	ace the outfa	ll number in the	space provi	ded on eacl	n table.				
TABLE APage 1 of 1	OUTFALL NO	UTFALL NO. 001										
			2. E	FFLUENT	3. UNIT (specify if bl			NTAKE tional)				
1. POLLUTANT	a. Maximum I	Daily Value	b. Maximum 3 Value (if av		c. Long-Term A (if availa)		d.	a.	b.	a. Long-Term Value	Avg.	b.
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
1. Biochemical Oxygen Demand (BOD) <sub>5</sub>	<3.0							mg/L				
2. Chemical Oxygen Demand (COD)	<50							mg/L				
3. Total Organic Carbon (TOC)	3.5							mg/L				
4. Total Suspended Solids (TSS)	15							mg/L				
5. Ammonia (as N)	<.50							mg/L				
6. Flow (MGD)	134.8	3	VALU	Έ	VALU			MGD		VALUE		
7. Temperature (winter)	27.1		VALU	'E	VALU	3		°C		VALUE		
8. Temperature (summer)			VALUE		VALUE			°C		VALUE		
9. pH	MINIMUM 7.1	MAXIMUM 7.1	MINIMUM	MAXIMUM				STANDARD U	JNITS			

V. INTAKE	AND EFF	LUENT	CHARACTERI	STICS	(Continued)										
PART B.	<ul> <li>PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY OF TABLE B. See instructions before proceeding. Complete one set of tables for each outfall. Place the outfall number in the space provided on each table.</li> <li>In column "2. MARK X", place an "X" in either the <b>Believed Present</b> column (2.a) for each pollutant you know or have reason to believe is present; or place an "X" in the <b>Believed Absent</b> column (2.b) for each pollutant you believe to be absent. If you mark the <b>Believed Present</b> column for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.</li> </ul>												the		
TABLE BPage 1 of 2	OUTFA	LL NO. (	001												
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNIT	S		NTAKE tional)		
POLLUTANT and CAS NO.	a.	b.	a. Maximum Dail	y Value	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availab)		d. a.		a.	b.	a. Long-Term Value		b.
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses	
1. Bromide (24959-67-9)			<0.50					-		mg/L					
2. Chloride			38							mg/L					
3. Chlorine, Total Residual			0.27							mg/L					
4. Color			15							CU					
5. E.coli			>2419.6							MPN/100mL					
6. Fluoride (16984-48-8)			<.50							mg/L					
7. Hardness (CaCO <sub>3</sub> )			160							mg/L					
8.Nitrate–Nitrite (as N)			1.0							mg/L					
9. Nitrogen, Total Organic (as N)			<1.0							mg/L					
10. Oil and Grease			<5.3							mg/L					
11. Phosphorous (as P), Total (7723-14-0)			<0.20							mg/L					
12. Radioactivity														-	
(1) Alpha, Total			4.88+/-1.42							pCi/L					
(2) Beta, Total			3.52 +/-1.59							pCi/L					

(3) Radium, Total	1.08 +/-0.744				pCi/L		
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Page 2 of 2	UUIFA	<b>LL NO.</b> (	101											
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNITS	<b>S</b>		NTAKE otional)	
POLLUTANT and CAS NO.	a.	b.	a. Maximum I Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availabl		d.		b.	a. Long-Term Value		b.
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	a. Concentration	D. Mass	(1) Concentration	(2) Mass	No of Analyse
(4) Radium, 226, Total			0.365 +/-0.253	11435	concentration	1111055	concentration	111035		pCi/L		concentration	11435	
(5) Strontium-90, Total			0.994 +/-1.04							pCi/L				
(6) Uranium			.000412							mg/L				
										·				
13. Sulfate (asSO <sub>4</sub> ) (14808-79-8)			73							mg/L				
14. Sulfide (as S)			<0.20							mg/L				
15. Sulfite (asSO4) (14286-46-3)			<2.0							mg/L				
16. Surfactants			<0.50							mg/L				
17.Aluminum,Total (7429-90)			91							ug/L				
18. Barium, Total (7440-39-3)			42							ug/L				
19. Boron, Total (7440-42-8)			<0.50							mg/L				
20. Cobalt, Total (7440-48-4)			<0.50							ug/L				
21. Iron, Total (7439-89-6)			160							ug/L				
22. Magnesium, Total (7439-96-4)			14							mg/L				
23. Molybdenum, Total (7439-98-7)			<0.50							ug/L				
24. Manganese, Total (7439-96-6)			66							ug/L				
25. Tin, Total (7440-31-5)			<0.0010							mg/L				
26. Titanium, Total (7440-32-6)			<0.030							mg/L				

V. INTAKE ANI	D EFFLUE	ENT CHA	ARACTE	RISTICS (Co	ontinue	d)									
	See instr	uctions be	efore proc	E IN THE UNS ceeding. for each outfall					ided on	each table					
PART C.	you muss Mark "X If you ar Believed Mark "X If you m pollutant	t test for. " in the <b>T</b> e not requ <b>Present</b> : in the <b>B</b> ark either . Note that	<b>Cesting R</b> nired to m column for elieved A the <b>Testi</b> at there ar	equired colum ark this colum or each polluta bsent column	in for al n ( <u>secor</u> nt you l for each or <b>Belie</b> o this pa	l such GC/MS adary industrie now or have r h pollutant you <b>ved Present</b> ca art; please revi	fraction s, nonpr eason to believe olumns	as that apply to rocess wastew believe is pre- to be absent. for any polluta	) your in <u>ater outf</u> esent. ant, you	dustry and falls, and r must prov	I for ALL toxi ton-required G	c metals SC/MS f	hich of the GC s, cyanides, and <u>ractions</u> ), marl st one analysis ch outfall.	d total p c "X" in	phenols. 1 the
TABLE C Page 1 of 8	OUTFA	LL NO.	001										5 1	NTAKE	
1.	2.	MARK "X					FLUENI	c. Long-Tern	- A va		4. UNIT	s	(of	otional)	
POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		Value (if availab	_	d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS													
1M. Antimony, Total (7440-36-0)				<0.50							ug/L				
2M. Arsenic, Total (7440-38-2)				0.86							ug/L				
3M. Beryllium, Total (7440-41-7)				<1.0							ug/L				
4M. Cadmium, Total (7440-43-9)				<0.50							ug/L				
5M. Chromium, Total (7440-43-9)				0.60							ug/L				
6M. Copper, Total (7550-50-8)				<5.0							ug/L				
7M. Lead, Total (7439-92-1)				<0.50							ug/L				
8M. Mercury, Total (7439-97-6)				<0.500							ng/L				
9M. Nickel, Total (7440-02-0)				2.2							ug/L				

10M. Selenium,															
Total (7782-49-2)				<0.50							ug/L				
11M. Silver, Total				<0.10											
(7440-28-0)				<0.10							ug/L				
TABLE C Page 2 of 8	OUTFA	LL NO. (	001												
1.	2.	MARK "X	<b>"</b>			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
r. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a. Concentration	b. Mass	a. Long-Term Value	n Avg.	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	WIASS	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE A	AND TOTAL	PHENOLS	continued	-	_	-	_	-	_	-	-	_	-	_	-
12M Thallium, Total (7440-28-0)				<0.50							ug/L				
13M. Zinc, Total (7440-66-6)				<10							ug/L				
14M. Cyanide, Total (57-12-5)				<0.010							mg/L				
15M. Phenols, Total				<0.010							mg/L				
DIOXIN	-														
2,3,7,8 Tetra-				DESCRIBE RE	SULTS:										
chlorodibenzo-P-															
Dioxin															
(1784-01-6)															
GC/MS FRACTION -	VOLATILE (	COMPOUN	DS												
1V. Acrolein (107-02-8)				<0.0022							mg/L				
2V. Acrylonitrile (107-13-1)				<0.0019							mg/L				
3V. Benzene (71-43-2)				<0.00015							mg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)			Х								mg/L				
5V. Bromoform (75-25-2)				<0.0050							mg/L				
6V. Carbon Tetrachloride (56-23-5)				<0.00025							mg/L				
7V. Chlorobenzene (108-90-7)				<0.00026							mg/L				
8V. Chlorodibromomethane (124-48-1) KPDES Form C, DE				<0.00024				18			mg/L			sed 3/2	

	1	r	r			L	1	1		1					
9V. Chloroethane (74-00-3)				< 0.00022							mg/L				
10V. 2- Chloroethylvinyl Ether (110-75-8)				<0.00019							mg/L				
11V. Chloroform (67-66-3)				<0.00026							mg/L				
TABLE C Page 3 of 8	OUTFA	LL NO. (	001					·							
	2.	MARK "X				3. EF	FLUENI	[			4. UNIT	5		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	ed			<u> </u>	-	-	÷	-		-		-
12V. Dichloro- bromomethane (75-71-8)				<0.00021							mg/L				
13V. Dichloro- difluoromethane (75-71-8)			х								mg/L				
14V. 1,1- Dichloroethane (75-34-3)				<0.00025							mg/L				
15V. 1,2- Dichloroethane (107-06-2)				<0.00038							mg/L				
16V. 1,1- Dichlorethylene (75-35-4)				<0.00023							mg/L				
17V. 1,2- Dichloropropane (78-87-5)				<0.00019							mg/L				
18V. 1,3- Dichloropropylene (452-75-6)				<0.00026							mg/L				
19V. Ethylbenzene (100-41-4)				<0.0025							mg/L				
20V. Methyl Bromide (74-83-9)				<0.00029							mg/L				
21V. Methyl Chloride (74-87-3)				<0.00024							mg/L				
22V. Methylene Chloride (75-00-2)				<0.010							mg/L				
23V. 1,1,2,2- Tetrachloroethane (79-34-5)				<0.0032							mg/L				

19

		-													
24V. Tetra- chloroethylene (127-18-4)				<0.00026							mg/L				
25V. Toluene (108-88-3)				<0.00030							mg/L				
26V. 1,2-Trans- Dichloroethylene (156-60-5)				<0.00022							mg/L				
27V. 1,1,1- Trichloroethane (71-55-6)				<0.00023							mg/L				
TABLE C Page 4 of 8	OUTFA	LL NO. (	001												
	2.	MARK "X	"			3. EF	FLUENT				4. UNITS	5		NTAKE tional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab	-	d. No. of	a. Concentration	b. Mass	a. Long-Term Value		b. No of
(II available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	IVIASS	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - V	OLATILE (	COMPOUN	DS continue	d											
28V. 1,1,2- Trichloroethane (79-00-5)				<0.00026							mg/L				
29V. Tri- chloroethylene (79-01-6)				<0.00026							mg/L				
30V. Trichloro- fluoromethane (75-69-4)				<0.00027							mg/L				
31V. Vinyl Chloride (75-01-4)				<0.00026							mg/L				
GC/MS FRACTION - A	ACID COMP	OUNDS	I	ſ					1	Γ	1				
1A. 2-Chlorophenol (95-57-8)				< 0.012							mg/L				
2A. 2,4- Dichlorophenol (120-83-2)				<0.012							mg/L				
3A. 2,4- Dimethylphenol (105-67-9)				<0.012							mg/L				
4A. 4,6-Dinitro- O-Cresol (534-52-1)				<0.031							mg/L				
5A. 2,4-Dinitrophenol (51-28-5)				<0.062							mg/L				
6A. 2-Nitrophenol (88-75-5)				< 0.012							mg/L				

7A. 4-Nitrophenol (100-02-7)		<0.062				mg/L		
8A. P-Chloro-M- Cresol (59-50-7)		<0.025				mg/L		
9A. Pentachloro- phenol (87-88-5)		< 0.062				mg/L		
10A. Phenol (108-05-2)		<0.012				mg/L		
11A. 2,4,6-Trichloro- phenol (88-06-2)		< 0.012				mg/L		

TABLE C Page 5 of 8	OUTFA	LL NO.	001												
	2.	MARK "X	<b>"</b>			3. EI	FLUENT	]			4. UNIT	S		NTAKE otional)	
1. POLLUTANT and CAS NO. (f amileble)	a. Testing	b. Believed	c. Believed	a. Maximum Value	•	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab	U	d. No. of	a. Concentration	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COMI	POUNDS												
1B. Acenaphthene (83-32-9)				<0.012							mg/L				
2B. Acenaphtylene (208-96-8)				<0.012							mg/L				
3B. Anthracene (120-12-7)				< 0.012							mg/L				
4B. Benzidine (92-87-5)				< 0.062							mg/L				
5B . Benzo (a) Anthracene (56-55-3)				<0.012							mg/L				
6B. Benzo (a) Pyrene (50-32-8)				< 0.012							mg/L				
7B. 3,4-Benzo- fluoranthene (205-99-2)				<0.012							mg/L				
8BBenzo (ghi) perylene (191-24-2)				<0.012							mg/L				
9BBenzo (k)- fluoranthene (207-08-9)				<0.012							mg/L				
10B. Bis (2-chloroethoxy) Methane (111-91-1)				<0.012							mg/L				
11B. Bis (2- chloroethel) Ether (111-44-4)				<0.012							mg/L				
12B. Bis (2-chloroisopropyl)- Ether (102-80-1)				<0.012							mg/L				
13B. Bis (2-ethyl- hexyl) Phthalate (117-81-7)				<0.012							mg/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)				<0.012							mg/L				
15B. Butyl Benzyl Phthalate (85-68-7)				< 0.012							mg/L				
16B. 2-Chloro- Naphthalene (7005-72-3)				<0.012							mg/L				

17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)				<0.012							mg/L				
TABLE C Page 6 of 8	OUTFA	LL NO. (	001												
	2.	MARK "X	"			3. EF	FLUENI				4. UNIT	s		NTAKE ptional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab	U	d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COMP	POUNDS co	ntinued	_	-	_		-	_	-	-	-	-	
18B. Chrysene				< 0.012							mg/L				
(218-01-9)				<0.012							iiig/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)				<0.012							mg/L				
20B. 1,2-Dichloro- benzene (95-50-1)				<0.00030							mg/L				
21B. 1,3-Dichloro-				< 0.00024							mg/L				
Benzene (541-73-1)											8				
22B. 1,4-Dichloro- benzene (106-46-7)				<0.00028							mg/L				
23B. 3,3-Dichloro- benzidene (91-94-1)				< 0.062							mg/L				
24B. Diethyl Phthalate (84-66-2)				<0.012							mg/L				
25B. Dimethyl Phthalate (131-11-3)				<0.012							mg/L				
26B. Di-N-Butyl Phthalate (84-74-2)				< 0.012							mg/L				
27B. 2,4-Dinitro- toluene (121-14-2)				< 0.012							mg/L				
28B. 2,6-Dinitro- toluene (606-20-2)				< 0.012							mg/L				
29B. Di-N-Octyl Phthalate (117-84-0)				< 0.012							mg/L				
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)			Х								mg/L				
31B. Fluoranthene (208-44-0)				<0.012							mg/L				
32B. Fluorene (86-73-7)				<0.012							mg/L				
33B. Hexachloro- benzene (118-71-1)				<0.012							mg/L				
34B. Hexachloro- butadiene (87-68-3)				<0.012							mg/L				

**Business Use** 

35B. Hexachloro-								
cyclopentadiene		< 0.012				mg/L		
(77-47-4)								

TABLE C Page 7 of 8	OUTFA	LL NO. (	001												
-	2.	MARK "X	"			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	•	b. Maximum 3 Avg. Value (if av	ailable)	c. Long-Term Value (if availab	le)	d. No. of	a. Concentration	b. Mass	a. Long-Term Value	-	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Iviass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	POUNDS co	ntinued											
36B. Hexachloro- ethane (67-72-1)				< 0.012							mg/L				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)				<0.012							mg/L				
38B. Isophorone (78-59-1)				<0.012							mg/L				
39B. Napthalene (91-20-3)				<0.012							mg/L				
40B. Nitrobenzene (98-95-3)				<0.012							mg/L				
41B. N-Nitro- sodimethylamine (62-75-9)				<0.012							mg/L				
42B. N-Nitrosodi- N-Propylamine (621-64-7)				<0.012							mg/L				
43B. N-Nitro- sodiphenylamine (86-30-6)				<0.012							mg/L				
44B. Phenanthrene (85-01-8)				<0.012							mg/L				
45B. Pyrene (129-00-0)				<0.012							mg/L				
46B. 1,2,4-Trichloro- benzene (120-82-1)				<0.012							mg/L				

V. INTAKE A	AND EFFLUEN	T CHARAC	TERISTICS (Co	ontinued from	m Section V. IN	TAKE AN	D EFFLU	ENT CHARACT	FERISTI	(CS)		
PART A.	See instructions Complete one s	s before proce set of tables for	IN THE UNSHA eeding. or each outfall. Pl of at least one an	ace the outfa	ll number in the	space provi	ided on eacl	n table.				
TABLE A Page 1 of 1	OUTFALL NO	<b>D.</b> 002A						-		-		
			2. E	FFLUENT				3. UNIT (specify if bl			NTAKE tional)	
1. POLLUTANT	a. Maximum I	Daily Value	b. Maximum 3 Value (if av		c. Long-Term A (if availa		d.	a.	b.	a. Long-Term Value		b.
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
1. Biochemical Oxygen Demand (BOD) <sub>5</sub>	<3.0							mg/L				
2. Chemical Oxygen Demand (COD)	<50							mg/L				
3. Total Organic Carbon (TOC)	2.8							mg/L				
4. Total Suspended Solids (TSS)	14							mg/L				
5. Ammonia (as N)	0.63							mg/L				
6. Flow (MGD)	7.79	)	VALU	Е	VALUI	E		MGD		VALUE		
7. Temperature (winter)			VALU	Е	VALUI	E		°C		VALUE		
8. Temperature (summer)	18.0	)	VALU	E	VALUI	1		°C		VALUE		
9. pH	MINIMUM 7.5	MAXIMUM 7.5	MINIMUM	MAXIMUM				STANDARD U	JNITS			

V. INTAKE A			CHARACTERI			NORT								
	See instru	actions befo	R TYPE IN THE Upre proceeding. tables for each ou					ı each tabl	e.					
PART B.	Believed If you ma	Absent co ark the Beli	K X", place an "X lumn (2.b) for each <b>eved Present</b> colu for each outfall. Se	n pollutar mn for ai	nt you believe to b ny pollutant, you r	e absent. nust prov	vide the results of a	at least one	-		elieve is	present; or place a	an "X" in	the
TABLE B Page 1 of 2	OUTFA	LL NO. (	002A				-							
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNIT	S		NTAKE tional)	
POLLUTANT and CAS NO.	a.	b. Believed	a. Maximum Dail	y Value	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availab)		d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Believed Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
1. Bromide (24959-67-9)			1.8					-	_	mg/L				
2. Chloride			240							mg/L				
<ol> <li>Chlorine, Total Residual</li> </ol>			0.08							mg/L				
4. Color			10							CU				
5. E.coli			85.7							MPN/100mL				
6. Fluoride (16984-48-8)			1.4							mg/L				
7. Hardness (CaCO <sub>3</sub> )			640							mg/L				
8.Nitrate–Nitrite (as N)			1.6							mg/L				
9. Nitrogen, Total Organic (as N)			<1.0							mg/L				
10. Oil and Grease			<5.3							mg/L				
11. Phosphorous (as P), Total (7723-14-0)			<0.10							mg/L				
12. Radioactivity														
(1) Alpha, Total			16 +/-3.42							pCi/L				
(2) Beta, Total			15 +/-2.57							pCi/L				

(3) Radium, Total	0.54 +/-0.556			pCi/L		
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TABLE BPage 2 of 2	OUTFALL NO. 002A													
1.     2       POLLUTANT     and CAS NO.       (if available)     Beli	2. MA	RK "X"			3. El	FFLUEN	4. UNITS		5. INTAKE (optional)					
	a.	b.	a. Maximum Daily Value		b. Maximum 30-Day Avg. Value (if available)		c. Long-Term Avg. Value (if available)		d.	a.	b.	a. Long-Term Avg. Value		b.
	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
(4) Radium, 226, Total			0.368 +/-0.254							pCi/L				
(5) Strontium-90, Total			0.264 +/-1.08							pCi/L				
(6) Uranium			0.0195							mg/L				
										·				
13. Sulfate (asSO <sub>4</sub> ) (14808-79-8)			260							mg/L				
14. Sulfide (as S)			<0.20							mg/L				
15. Sulfite (asSO4) (14286-46-3)			<2.0							mg/L				
16. Surfactants			<0.50							mg/L				
17.Aluminum,Total (7429-90)			84							ug/L				
18. Barium, Total (7440-39-3)			91							ug/L				
19. Boron, Total (7440-42-8)			8.8							mg/L				
20. Cobalt, Total (7440-48-4)			3.5							ug/L				
21. Iron, Total (7439-89-6)			410							ug/L				
22. Magnesium, Total (7439-96-4)			87							mg/L				
23. Molybdenum, Total (7439-98-7)			8.3							ug/L				
24. Manganese, Total (7439-96-6)			940							ug/L				
25. Tin, Total (7440-31-5)			<0.0010							mg/L				
26. Titanium, Total (7440-32-6)			<0.030							mg/L				

V. INTAKE ANI	D EFFLUE	ENT CHA	ARACTE	RISTICS (Co	ontinue	d)									
	PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY OF TABLE C. See instructions before proceeding. Complete one set of tables for each outfall. Place the outfall number in the space provided on each table.														
PART C.	you musi Mark "X If you ar <b>Believed</b> Mark "X If you m pollutant	t test for. " in the <b>T</b> e not requ <b>Present</b> : in the <b>B</b> ark either . Note that	<b>Cesting R</b> irred to m column for <b>elieved A</b> the <b>Testi</b> at there ar	equired colum ark this colum or each polluta bsent column ing Required o	nn for al n ( <u>secon</u> nt you l for each or <b>Belie</b> o this pa	ains process w l such GC/MS <u>ndary industrie</u> know or have r h pollutant you <b>ved Present</b> co art; please revi hirements	fraction s, nonp eason to believe olumns	ns that apply to rocess wastew o believe is pre- e to be absent. for any polluta	) your in <u>ater outf</u> esent. ant, you	dustry and falls, and r	I for ALL toxi ton-required G	c metals iC/MS f	s, cyanides, and <u>ractions</u> ), marl st one analysis	d total p k "X" in	henols. 1 the
TABLE C Page 1 of 8	OUTFA	LL NO.	002A										5 1		
1. POLLUTANT and CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)			
		b. Believed		a. Maximum Daily Value		b. Maximum 30-Day Avg. Value (if available)		Value (if available)		d. No. of	a.	b.	a. Long-Term Avg. Value		b. No of
		Present		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS	-	-	_	-	-	-	-	-			-	-	
1M. Antimony, Total (7440-36-0)				<0.50							ug/L				
2M. Arsenic, Total (7440-38-2)				3.1							ug/L				
3M. Beryllium, Total (7440-41-7)				<1.0							ug/L				
4M. Cadmium, Total (7440-43-9)				2.6							ug/L				
5M. Chromium, Total (7440-43-9)				3.1							ug/L				
6M. Copper, Total (7550-50-8)				10							ug/L				
7M. Lead, Total (7439-92-1)				<0.50							ug/L				
8M. Mercury, Total (7439-97-6)				<0.500							ng/L				ļ
9M. Nickel, Total (7440-02-0)				21							ug/L				

10M. Selenium,															
Total (7782-49-2)				11							ug/L				
11M. Silver, Total (7440-28-0)				<0.10							ug/L				
TABLE CPage 2 of 8	OUTFA	LL NO.	002A												
_	2.	MARK "X				3. EF	FFLUENI	[			4. UNIT	S		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	•	b. Maximum 3 Avg. Value (if av	vailable)	c. Long-Term Value (if availab		d. No. of	a. Concentration	b. Mass	a. Long-Term Value		b. No of
(II available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	IVIASS	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE A	AND TOTAL	PHENOLS	continued	_	_	-	-	_	-	_	_	-	_	-	-
12M Thallium, Total (7440-28-0)				11							ug/L				
13M. Zinc, Total (7440-66-6)				36							ug/L				
14M. Cyanide, Total (57-12-5)				0.011							mg/L				
15M. Phenols, Total				<0.010							mg/L				
DIOXIN								•							
2,3,7,8 Tetra-				DESCRIBE RE	SULTS:										
chlorodibenzo-P-															
Dioxin															
(1784-01-6)															
GC/MS FRACTION -	VOLATILE (	COMPOUN	DS												
1V. Acrolein (107-02-8)				<0.0022							mg/L				
2V. Acrylonitrile (107-13-1)				< 0.0019							mg/L				
3V. Benzene (71-43-2)				<0.00015							mg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)			Х								mg/L				
5V. Bromoform (75-25-2)				<0.00025							mg/L				
6V. Carbon Tetrachloride (56-23-5)				<0.00025							mg/L				
7V. Chlorobenzene (108-90-7)				<0.00026							mg/L				
8V. Chlorodibromomethane (124-48-1) KPDES Form C, DE				<0.00024				31			mg/L			sed 3/2	

		1	1						1						<del></del>
9V. Chloroethane (74-00-3)				< 0.00022							mg/L				
10V. 2- Chloroethylvinyl Ether (110-75-8)				<0.00019							mg/L				
11V. Chloroform (67-66-3)				<0.00026							mg/L				
TABLE C Page 3 of 8	OUTFA	LL NO.	002A	·									·		
1 ugo 0 01 0	2.	. MARK "X	("			3. EF	FLUENT	]			4. UNIT	s		NTAKE	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value	otional) 1 Avg.	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	ed		-	-	-	-	-	-	-	=	-	
12V. Dichloro- bromomethane (75-71-8)				<0.00021							mg/L				
13V. Dichloro- difluoromethane (75-71-8)			X								mg/L				
14V. 1,1- Dichloroethane (75-34-3)				<0.00025							mg/L				
15V. 1,2- Dichloroethane (107-06-2)				<0.00038							mg/L				
16V. 1,1- Dichlorethylene (75-35-4)				<0.00023							mg/L				
17V. 1,2- Dichloropropane (78-87-5)				<0.00019							mg/L				
18V. 1,3- Dichloropropylene (452-75-6)				<0.00026							mg/L				
19V. Ethylbenzene (100-41-4)				<0.00025							mg/L				
20V. Methyl Bromide (74-83-9)				<0.00029							mg/L				
21V. Methyl Chloride (74-87-3)				<0.00024							mg/L				
22V. Methylene Chloride (75-00-2)				<0.010							mg/L				
23V. 1,1,2,2- Tetrachloroethane (79-34-5)				<0.00032							mg/L				

24V. Tetra- chloroethylene (127-18-4)				<0.00026							mg/L				
25V. Toluene (108-88-3)				<0.00030							mg/L				
26V. 1,2-Trans- Dichloroethylene (156-60-5)				<0.00022							mg/L				
27V. 1,1,1- Trichloroethane (71-55-6)				<0.00023							mg/L				
TABLE CPage 4 of 8	OUTFA	LL NO.	002A			·									
4	2.	MARK "X	"			3. EF	FLUENT				4. UNIT	S		NTAKE ptional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	<b>OLATILE</b>	COMPOUN	DS continue	ed											
28V. 1,1,2- Trichloroethane (79-00-5)				<0.00026							mg/L				
29V. Tri- chloroethylene (79-01-6)				<0.00026							mg/L				
30V. Trichloro- fluoromethane (75-69-4)				<0.00027							mg/L				
(75-09-4) 31V. Vinyl Chloride (75-01-4)				<0.00026							mg/L				
GC/MS FRACTION - A	ACID COMP	OUNDS													
1A. 2-Chlorophenol (95-57-8)				<0.011							mg/L				
2A. 2,4- Dichlorophenol (120-83-2)				<0.011							mg/L				
3A. 2,4- Dimethylphenol (105-67-9)				<0.011							mg/L				
4A. 4,6-Dinitro- O-Cresol (534-52-1)				<0.028							mg/L				
5A. 2,4-Dinitrophenol (51-28-5)				<0.056							mg/L				
6A. 2-Nitrophenol (88-75-5)				<0.011							mg/L				<u> </u>
7A. 4-Nitrophenol (100-02-7)				<0.056							mg/L				

8A. P-Chloro-M- Cresol (59-50-7)		<0.022				mg/L		
9A. Pentachloro- phenol (87-88-5)		< 0.056				mg/L		
10A. Phenol (108-05-2)		<0.011				mg/L		
11A. 2,4,6-Trichloro- phenol (88-06-2)		<0.011				mg/L		

TABLE C Page 5 of 8	OUTFA	LL NO.	002A												
	2.	MARK "X	<b>"</b>			3. EF	FLUENT	]			4. UNIT	S		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	-	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab	U	d. No. of	a. Concentration	b. Mass	a. Long-Tern Value	· · · · · · · · · · · · · · · · · · ·	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	WIASS	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	POUNDS												
1B. Acenaphthene (83-32-9)				<0.011							mg/L				
2B. Acenaphtylene (208-96-8)				<0.011							mg/L				
3B. Anthracene (120-12-7)				<0.011							mg/L				
4B. Benzidine (92-87-5)				<0.056							mg/L				
5B . Benzo (a) Anthracene (56-55-3)				<0.011							mg/L				
6B. Benzo (a) Pyrene (50-32-8)				<0.011							mg/L				
7B. 3,4-Benzo- fluoranthene (205-99-2)				<0.011							mg/L				
8BBenzo (ghi) perylene (191-24-2)				<0.011							mg/L				
9BBenzo (k)- fluoranthene (207-08-9)				<0.011							mg/L				
10B. Bis (2-chloroethoxy) Methane (111-91-1)				<0.011							mg/L				
11B. Bis (2- chloroethel) Ether (111-44-4)				<0.011							mg/L				
12B. Bis (2-chloroisopropyl)- Ether (102-80-1)				<0.011							mg/L				
13B. Bis (2-ethyl- hexyl) Phthalate (117-81-7)				<0.011							mg/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)				<0.011							mg/L				
15B. Butyl Benzyl Phthalate (85-68-7)				<0.011							mg/L				
16B. 2-Chloro- Naphthalene (7005-72-3)				<0.011							mg/L				

17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)				<0.011							mg/L				
TABLE C Page 6 of 8	OUTFA	LL NO. (	002A												
	2.	MARK "X				3. EF	FLUENT				4. UNIT	s		NTAKE ptional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	- POUNDS co	ntinued		_	_	-	=	-	-	=	-	-	-
18B. Chrysene				-0.011							α				
(218-01-9)				< 0.011							mg/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)				<0.011							mg/L				
20B. 1,2-Dichloro- benzene (95-50-1)				<0.00030							mg/L				
21B. 1,3-Dichloro-				< 0.00024							mg/L				
Benzene (541-73-1)				<0.00024							ing/L				
22B. 1,4-Dichloro- benzene (106-46-7)				<0.00028							mg/L				
23B. 3,3-Dichloro- benzidene (91-94-1)				< 0.056							mg/L				
24B. Diethyl Phthalate (84-66-2)				<0.011							mg/L				
25B. Dimethyl Phthalate (131-11-3)				<0.011							mg/L				
26B. Di-N-Butyl Phthalate (84-74-2)				<0.011							mg/L				
27B. 2,4-Dinitro- toluene (121-14-2)				<0.011							mg/L				
28B. 2,6-Dinitro- toluene (606-20-2)				<0.011							mg/L				
29B. Di-N-Octyl Phthalate (117-84-0)				<0.011							mg/L				
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)			Х								mg/L				
31B. Fluoranthene (208-44-0)				<0.011							mg/L				
32B. Fluorene (86-73-7)				<0.011							mg/L				
33B. Hexachloro- benzene (118-71-1)				<0.011							mg/L				
34B. Hexachloro- butadiene (87-68-3)				<0.011							mg/L				

**Business Use** 

35B. Hexachloro-								
cyclopentadiene		< 0.011				mg/L		
(77-47-4)								

TABLE C Page 7 of 8	OUTFA	LL NO. (	002A												
1	2.	MARK "X	"			3. EF	FLUENT				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a. Concentration	b. Mass	a. Long-Tern Value	n Avg.	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	WIASS	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	POUNDS co	ntinued											
36B. Hexachloro- ethane (67-72-1)				<0.011							mg/L				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)				<0.011							mg/L				
38B. Isophorone (78-59-1)				<0.011							mg/L				
39B. Napthalene (91-20-3)				< 0.011							mg/L				
40B. Nitrobenzene (98-95-3)				<0.011							mg/L				
41B. N-Nitro- sodimethylamine (62-75-9)				<0.011							mg/L				
42B. N-Nitrosodi- N-Propylamine (621-64-7)				<0.011							mg/L				
43B. N-Nitro- sodiphenylamine (86-30-6)				<0.011							mg/L				
44B. Phenanthrene (85-01-8)				<0.011							mg/L				
45B. Pyrene (129-00-0)				<0.011							mg/L				
46B. 1,2,4-Trichloro- benzene (120-82-1)				<0.011							mg/L				

V. INTAKE A	AND EFFLUEN	T CHARAC	TERISTICS (Co	ontinued fro	m Section V. IN	TAKE AN	D EFFLU	ENT CHARACT	TERISTI	(CS)		
PART A.	See instructions Complete one s	s before proce set of tables for	IN THE UNSHA eeding. or each outfall. Pl s of at least one as	ace the outfa	ll number in the	space provi	ided on eacl	n table.				
TABLE A Page 1 of 1	OUTFALL NO	<b>D.</b> 009		•								
			2. E	FFLUENT				3. UNIT (specify if bl			TAKE tional)	
1. POLLUTANT	a. Maximum I	Daily Value	b. Maximum 3 Value (if av		c. Long-Term A (if availa		d.	a.	b.	a. Long-Term Value		b.
1022011111	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
1. Biochemical Oxygen Demand (BOD) <sub>5</sub>	<3.0							mg/L				
2. Chemical Oxygen Demand (COD)	<50							mg/L				
3. Total Organic Carbon (TOC)	3.1							mg/L				
4. Total Suspended Solids (TSS)	18							mg/L				
5. Ammonia (as N)	<0.50							mg/L				
6. Flow (MGD)	28.8	3	VALU	E	VALUI	Ξ		MGD		VALUE		
7. Temperature (winter)			VALU	E	VALU	3		°C		VALUE		
8. Temperature (summer)	20.6	; ;	VALU	E	VALUI	Ξ		°C		VALUE		
9. pH	MINIMUM 6.9	MAXIMUM 6.9	MINIMUM	MAXIMUM				STANDARD U	INITS			

V. INTAKE	AND EFF	LUENT	CHARACTERI	STICS	(Continued)									
	See instru	uctions befo	R TYPE IN THE U ore proceeding. tables for each ou					n each tabl	e.					
PART B.	Believed If you ma	Absent co ark the Beli	K X", place an "X lumn (2.b) for each eved Present colu for each outfall. Se	h pollutar mn for a	nt you believe to b ny pollutant, you 1	e absent. nust prov	vide the results of a	at least one	-		elieve is	present; or place a	ın "X" in	the
TABLE B Page 1 of 2	OUTFA	LL NO. (	009											
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNIT	S		NTAKE tional)	
POLLUTANT and CAS NO.	a. Believed	b. Believed	a. Maximum Dai	-	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availab)		d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
(if available)	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
1. Bromide (24959-67-9)			<0.50							mg/L				
2. Chloride			32							mg/L				
<ol> <li>Chlorine, Total Residual</li> </ol>			0.03							mg/L				
4. Color			10							CU				
5. E.coli			1553.1							MPN/100mL				
6. Fluoride (16984-48-8)			<0.50							mg/L				
7. Hardness (CaCO <sub>3</sub> )			160							mg/L				
8.Nitrate–Nitrite (as N)			1.1							mg/L				
9. Nitrogen, Total Organic (as N)			<1.0							mg/L				
10. Oil and Grease			<5.3							mg/L				
11. Phosphorous (as P), Total (7723-14-0)			<0.10							mg/L				
12. Radioactivity			•			•						•		
(1) Alpha, Total			-0.268 +/-1.07							pCi/L				
(2) Beta, Total			2.05 +/-1.32							pCi/L				

(3) Radium, Total	0.769 +/-0.388			pCi/L			
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TABLE BPage 2 of 2	OUTFA	LL NO. (	)09											
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNITS	S		NTAKE otional)	
POLLUTANT and CAS NO.	a. Believed	b. Baliarad	a. Maximum I Value	-	b. Maximum 3 Avg. Value (if av	0-Day ailable)	c. Long-Term Av (if availabl		d.	a.	b.	a. Long-Term Value	Avg.	b. No of
(if available)	Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
(4) Radium, 226, Total			0.456 +/-0.246							pCi/L				
(5) Strontium-90, Total			1.49 +/-1.13							pCi/L				
(6) Uranium			0.000414							mg/L				
	-	_							-	-			-	_
13. Sulfate (asSO <sub>4</sub> ) (14808-79-8)			68							mg/L				
14. Sulfide (as S)			<0.20							mg/L				
15. Sulfite (asSO4) (14286-46-3)			<2.0							mg/L				
16. Surfactants			<0.50							mg/L				
17.Aluminum,Total (7429-90)			99							ug/L				
18. Barium, Total (7440-39-3)			53							ug/L				
19. Boron, Total (7440-42-8)			0.10							mg/L				
20. Cobalt, Total (7440-48-4)			<0.50							ug/L				
21. Iron, Total (7439-89-6)			250							ug/L				
22. Magnesium, Total (7439-96-4)			13							mg/L				
23. Molybdenum, Total (7439-98-7)			2.8							ug/L				
24. Manganese, Total (7439-96-6)			67							ug/L				
25. Tin, Total (7440-31-5)			<0.0010							mg/L				
26. Titanium, Total (7440-32-6)			<0.030							mg/L				

V. INTAKE ANI	D EFFLUE	ENT CHA	ARACTE	CRISTICS (Co	ontinue	d)									
PART C.	See instr Complete If you are you muss Mark "X If you are <b>Believed</b> Mark "X If you muss	uctions be e one set t est for. " in the <b>T</b> e not requ l <b>Present</b> : in the <b>B</b> ark either	efore proc of tables i ry industr Cesting R uired to m column f elieved A the Testi	for each outfall y and this outf equired colum ark this colum or each polluta .bsent column	l. Place all cont in for al n ( <u>secon</u> int you l for each or <b>Belie</b>	the outfall num ains process w l such GC/MS adary industrie know or have r h pollutant you <b>ved Present</b> co	nber in t astewati fraction s, nonp eason to believe olumns	the space prove er, refer to the ns that apply to rocess wastewn o believe is pre- to be absent. for any polluta	instruct your ir ater out esent. ant, you	ions (Tabl idustry and falls, and r must prov	e C-2) to deter I for ALL toxi ton-required G ide the result o	c metal C/MS f	which of the GC s, cyanides, an <u>fractions</u> ), marl st one analysis ch outfall.	d total p k "X" in	phenols. 1 the
TABLE C Page 1 of 8	See the i		ns for add	itional details a											
	2.	MARK "X	("			3. EF	FLUENI	2			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab	U	d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS											1	r	
1M. Antimony, Total (7440-36-0)				<0.50							ug/L				
2M. Arsenic, Total (7440-38-2)				1.4							ug/L				
3M. Beryllium, Total (7440-41-7)				<1.0							ug/L				
4M. Cadmium, Total (7440-43-9)				<0.50							ug/L				
5M. Chromium, Total (7440-43-9)				3.4							ug/L				
6M. Copper, Total (7550-50-8)				<5.0							ug/L				
7M. Lead, Total (7439-92-1)				<0.50							ug/L				
8M. Mercury, Total (7439-97-6)				<0.500							ng/L				
9M. Nickel, Total (7440-02-0)				1.9							ug/L				

10M. Selenium,															
Total (7782-49-2)				0.99							ug/L				
11M. Silver, Total (7440-28-0)				<0.10							ug/L				
TABLE CPage 2 of 8	OUTFA	LL NO.	009												
	2.	MARK "X	"			3. EI	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
(II available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS	continued	-		-	-	-	-	-	-		-	_	-
12M Thallium, Total (7440-28-0)				<0.50							ug/L				
13M. Zinc, Total (7440-66-6)				15							ug/L				
14M. Cyanide, Total (57-12-5)				<0.010							mg/L				
15M. Phenols, Total				<0.010							mg/L				
DIOXIN															
2,3,7,8 Tetra-				DESCRIBE RE	SULTS:										
chlorodibenzo-P-															
Dioxin (1784-01-6)															
GC/MS FRACTION -	VOLATILE (	COMPOUN	DS												
1V. Acrolein (107-02-8)				<0.0022							mg/L				
2V. Acrylonitrile (107-13-1)				<0.0019							mg/L				
3V. Benzene (71-43-2)				<0.00015							mg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)			Х								mg/L				
5V. Bromoform (75-25-2)				<0.00025							mg/L				
6V. Carbon Tetrachloride (56-23-5)				<0.00025							mg/L				
7V. Chlorobenzene (108-90-7)				<0.00026							mg/L				
8V. Chlorodibromomethane				< 0.00024							mg/L				

	T	T	T				1		r –	1					
9V. Chloroethane (74-00-3)				< 0.00022							mg/L				
10V. 2- Chloroethylvinyl Ether (110-75-8)				<0.00019							mg/L				
11V. Chloroform (67-66-3)				<0.00026							mg/L				
TABLE C Page 3 of 8	OUTFA	LL NO.	009	·				·							
	2.	. MARK "X	<b>(</b> "			3. EF	FLUEN	ſ			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	ed	_	_	_	-	-		-	-	-	-	_
12V. Dichloro- bromomethane (75-71-8)				<0.0050							mg/L				
13V. Dichloro- difluoromethane (75-71-8)			х								mg/L				
14V. 1,1- Dichloroethane (75-34-3)				<0.00025							mg/L				
15V. 1,2- Dichloroethane (107-06-2)				<0.00038							mg/L				
16V. 1,1- Dichlorethylene (75-35-4)				<0.00023							mg/L				
17V. 1,2- Dichloropropane (78-87-5)				<0.00019							mg/L				
18V. 1,3- Dichloropropylene (452-75-6)				<0.00026							mg/L				
19V. Ethylbenzene (100-41-4)				<0.00025							mg/L				
20V. Methyl Bromide (74-83-9)				<0.00029							mg/L				
21V. Methyl Chloride (74-87-3)				<0.00024							mg/L				
22V. Methylene Chloride (75-00-2)				<0.010							mg/L				
23V. 1,1,2,2- Tetrachloroethane (79-34-5)				<0.00032							mg/L				

24V. Tetra- chloroethylene (127-18-4)				<0.00026							mg/L				
25V. Toluene (108-88-3)				<0.00030							mg/L				
26V. 1,2-Trans- Dichloroethylene (156-60-5)				<0.00022							mg/L				
27V. 1,1,1- Trichloroethane (71-55-6)				<0.00023							mg/L				
TABLE CPage 4 of 8	OUTFA	LL NO.	009	I	1	I	1	I		I	1	1	I		
-	2.	MARK "X	"			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av	80-Day vailable)	c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	d											
28V. 1,1,2- Trichloroethane				<0.00026							mg/L				
(79-00-5) 29V. Tri- chloroethylene				<0.00026							mg/L				
(79-01-6) 30V. Trichloro- fluoromethane				<0.00027							mg/L				 
(75-69-4) 31V. Vinyl Chloride				<0.00027							mg/L				
(75-01-4)				<0.00020							IIIg/L				
GC/MS FRACTION - A	ACID COMP	OUNDS	1	1	1	1	1	1			1	1	1		
1A. 2-Chlorophenol (95-57-8)				<0.010							mg/L				
2A. 2,4- Dichlorophenol (120-83-2)				<0.010							mg/L				
3A. 2,4- Dimethylphenol (105-67-9)				<0.010							mg/L				
4A. 4,6-Dinitro- O-Cresol (534-52-1)				<0.026							mg/L				
5A. 2,4-Dinitrophenol (51-28-5)				< 0.052							mg/L				
6A. 2-Nitrophenol (88-75-5)				<0.010							mg/L				
7A. 4-Nitrophenol (100-02-7)				<0.052							mg/L				

8A. P-Chloro-M- Cresol (59-50-7)		<0.021				mg/L		
9A. Pentachloro- phenol (87-88-5)		< 0.052				mg/L		
10A. Phenol (108-05-2)		<0.010				mg/L		
11A. 2,4,6-Trichloro- phenol (88-06-2)		<0.010				mg/L		

TABLE C Page 5 of 8	OUTFA	LL NO. (	009												
	2.	MARK "X	."			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - I	BASE/NEUT	RAL COMI	POUNDS												
1B. Acenaphthene (83-32-9)				<0.010							mg/L				
2B. Acenaphtylene (208-96-8)				<0.010							mg/L				
3B. Anthracene (120-12-7)				<0.010							mg/L				
4B. Benzidine (92-87-5)				<0.052							mg/L				
5B . Benzo (a) Anthracene (56-55-3)				<0.010							mg/L				
6B. Benzo (a) Pyrene (50-32-8)				<0.010							mg/L				
7B. 3,4-Benzo- fluoranthene (205-99-2)				<0.010							mg/L				
8BBenzo (ghi) perylene (191-24-2)				< 0.010							mg/L				
9BBenzo (k)- fluoranthene (207-08-9)				<0.010							mg/L				
10B. Bis (2-chloroethoxy) Methane (111-91-1)				<0.010							mg/L				
11B. Bis (2- chloroethel) Ether (111-44-4)				<0.010							mg/L				
12B. Bis (2-chloroisopropyl)- Ether (102-80-1)				<0.010							mg/L				
13B. Bis (2-ethyl- hexyl) Phthalate (117-81-7)				<0.010							mg/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)				<0.010							mg/L				
15B. Butyl Benzyl Phthalate (85-68-7)				<0.010							mg/L				
16B. 2-Chloro- Naphthalene (7005-72-3)				<0.010							mg/L				

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17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)				<0.010							mg/L				
TABLE C Page 6 of 8	OUTFA	LL NO. (	009												
	2.	MARK "X	<b>"</b>			3. EF	FLUENT				4. UNIT	S		NTAKE ptional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum 1 Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab	U	d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COME	OUNDS co	ntinued	-	-	_	-	-	_	_	-	_	-	_
18B. Chrysene				< 0.010							mal				
(218-01-9)				<0.010							mg/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)				<0.010							mg/L				
20B. 1,2-Dichloro- benzene (95-50-1)				<0.00030							mg/L				
21B. 1,3-Dichloro-				< 0.00024							mg/L				
Benzene (541-73-1) 22B. 1,4-Dichloro-															
benzene (106-46-7)				< 0.00028							mg/L				
23B. 3,3-Dichloro- benzidene (91-94-1)				< 0.052							mg/L				
24B. Diethyl Phthalate (84-66-2)				<0.010							mg/L				
25B. Dimethyl Phthalate (131-11-3)				<0.010							mg/L				
26B. Di-N-Butyl Phthalate (84-74-2)				< 0.010							mg/L				
27B. 2,4-Dinitro- toluene (121-14-2)				<0.010							mg/L				
28B. 2,6-Dinitro- toluene (606-20-2)				<0.010							mg/L				
29B. Di-N-Octyl Phthalate (117-84-0)				<0.010							mg/L				
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)			Х								mg/L				
31B. Fluoranthene (208-44-0)				<0.010							mg/L				
32B. Fluorene (86-73-7)				<0.010							mg/L				
33B. Hexachloro- benzene (118-71-1)				<0.010							mg/L				
34B. Hexachloro- butadiene (87-68-3)				<0.010							mg/L				

35B. Hexachloro-								
cyclopentadiene		< 0.010				mg/L		
(//-4/-4)								

TABLE C Page 7 of 8	OUTFA	LL NO. (	009												
	2.	MARK "X	."			3. EF	FLUENT				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value		b. Maximum 3 Avg. Value (if av	ailable)	c. Long-Term Value (if availab	le)	d. No. of	a. Concentration	b. Mass	a. Long-Term Value		b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	WIASS	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COMI	POUNDS co	ntinued											
36B. Hexachloro- ethane (67-72-1)				<0.010							mg/L				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)				<0.010							mg/L				
38B. Isophorone (78-59-1)				<0.010							mg/L				
39B. Napthalene (91-20-3)				<0.010							mg/L				
40B. Nitrobenzene (98-95-3)				<0.010							mg/L				
41B. N-Nitro- sodimethylamine (62-75-9)				<0.010							mg/L				
42B. N-Nitrosodi- N-Propylamine (621-64-7)				<0.010							mg/L				
43B. N-Nitro- sodiphenylamine (86-30-6)				<0.010							mg/L				
44B. Phenanthrene (85-01-8)				<0.010							mg/L				
45B. Pyrene (129-00-0)				<0.010							mg/L				
46B. 1,2,4-Trichloro- benzene (120-82-1)				<0.010							mg/L				

V. INTAKE A	ND EFFLUEN	T CHARAC	TERISTICS (Co	ontinued fro	m Section V. IN	TAKE AN	D EFFLUI	ENT CHARAC	FERISTI	ICS)		
PART A.	See instructions Complete one s	s before proce set of tables for	IN THE UNSHA eeding. or each outfall. Pl s of at least one at	ace the outfa	ll number in the	space provi	ded on eacl	n table.				
TABLE APage 1 of 1	OUTFALL NO	<b>D.</b> 023										
			2. E	FFLUENT				3. UNIT (specify if bl			NTAKE tional)	
1. POLLUTANT	a. Maximum I	•	b. Maximum 3 Value (if av	ailable)	c. Long-Term A (if availal	ole)	d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
1. Biochemical Oxygen Demand (BOD) <sub>5</sub>	<3.0							mg/L				
2. Chemical Oxygen Demand (COD)	<50							mg/L				
3. Total Organic Carbon (TOC)	6.0							mg/L				
4. Total Suspended Solids (TSS)	32							mg/L				
5. Ammonia (as N)	<0.50							mg/L				
6. Flow (MGD)	1.824	1	VALU	Е	VALUE	2		MGD		VALUE		
7. Temperature (winter)			VALU	Е	VALUE	3		°C		VALUE		
8. Temperature (summer)	26.4		VALU	Е	VALUE	2		°C		VALUE		
9. pH	MINIMUM <b>8.6</b>	MAXIMUM <b>8.6</b>	MINIMUM	MAXIMUM				STANDARD U	JNITS			

	PLEASE	PRINT OF	R TYPE IN THE U	INSHAD	ED AREAS ONL	Y OF T	ABLEB							
	See instru	actions befo	tables for each ou					n each tabl	e.					
PART B.	<b>Believed</b> If you ma	Absent co ark the Beli	K X", place an "X lumn (2.b) for eacl <b>eved Present</b> colu for each outfall. Se	n pollutar mn for ai	nt you believe to b ny pollutant, you 1	e absent. nust prov	vide the results of a	at least one	-		elieve is	present; or place a	ın "X" in	the
TABLE B Page 1 of 2	OUTFA	LL NO. (	023											
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNITS	5		NTAKE (tional)	
POLLUTANT and CAS NO.	a.	b.	a. Maximum Dail	y Value	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availabl		d.	a.	b.	a. Long-Term Value		b.
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
1. Bromide (24959-67-9)			0.88							mg/L		-		
2. Chloride			96							mg/L				
<ol> <li>Chlorine, Total Residual</li> </ol>			0.12							mg/L				
4. Color			20							CU				
5. E.coli			146.7							MPN/100mL				
6. Fluoride (16984-48-8)			<0.50							mg/L				
7. Hardness (CaCO <sub>3</sub> )			410							mg/L				
8.Nitrate–Nitrite (as N)			3.0							mg/L				
9. Nitrogen, Total Organic (as N)			1.2							mg/L				
10. Oil and Grease			<5.4							mg/L				
11. Phosphorous (as P), Total (7723-14-0)			0.51							mg/L				
12. Radioactivity										•				
(1) Alpha, Total			0.423 +/-1.38							pCi/L				
(2) Beta, Total			9.61 +/-1.84							pCi/L				

(3) Radium, Total 1.87 +	/ +/-0.654		pCi/L
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TABLE BPage 2 of 2	OUTFA	LL NO. (	)23											
1.	2. MA	RK "X"			3. El	FFLUEN	Г			4. UNITS	5		NTAKE (ional)	
POLLUTANT and CAS NO.	a.	b.	a. Maximum I Value	Daily	b. Maximum 3 Avg. Value (if av	0-Day ailable)	c. Long-Term Av (if availabl		d.	a.	b.	a. Long-Term Value		b.
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyse
(4) Radium, 226, Total			0.891 +/-0.324							pCi/L				
(5) Strontium-90, Total			-0.606 +/-0.62							pCi/L				
(6) Uranium			0.00105							mg/L				
13. Sulfate (asSO <sub>4</sub> ) (14808-79-8)			180							mg/L				
14. Sulfide (as S)			<0.20							mg/L				
15. Sulfite (asSO4) (14286-46-3)			<2.0							mg/L				
16. Surfactants			<0.50							mg/L				
17.Aluminum,Total (7429-90)			250							ug/L				
18. Barium, Total (7440-39-3)			100							ug/L				
19. Boron, Total (7440-42-8)			<0.50							mg/L				
20. Cobalt, Total (7440-48-4)			<0.50							ug/L				
21. Iron, Total (7439-89-6)			450							ug/L				
22. Magnesium, Total (7439-96-4)			33							mg/L				
23. Molybdenum, Total (7439-98-7)			7.7							ug/L				
24. Manganese, Total (7439-96-6)			93							ug/L				
25. Tin, Total (7440-31-5)			<0.0010							mg/L				
26. Titanium, Total (7440-32-6)			<0.030							mg/L				

V. INTAKE AN	D EFFLUE	NT CHA	ARACTE	RISTICS (Co	ontinue	d)									
PART C.	See instr Complete If you are you must Mark "X If you are <b>Believed</b> Mark "X If you may pollutant	uctions be e one set t est for. " in the <b>T</b> e not requ <b>Present</b> : in the <b>B</b> ark either . Note that	efore proc of tables f ry industr <b>Cesting Ro</b> tired to m column for <b>elieved A</b> the <b>Testi</b> at there ar	eeeding. for each outfall y and this outf equired colum ark this colum or each polluta bsent column ng Required o	I. Place all cont in for al n ( <u>secon</u> nt you l for eacl or <b>Belie</b> o this pa	l such GC/MS adary industrie now or have r n pollutant you ved Present co art; please revi	nber in t astewate fraction s, nonpr eason to believe olumns	he space prove er, refer to the as that apply to cocess wastewe believe is pre- to be absent. for any polluta	instruct o your in ater outf esent. ant, you	ions (Tabl dustry and <u>calls, and r</u> must prov	e C-2) to deter d for ALL toxi non-required G ide the result o	c metal GC/MS f	hich of the GC s, cyanides, and <u>ractions</u> ), marl st one analysis ch outfall.	d total p c "X" in	phenols. 1 the
TABLE C Page 1 of 8	OUTFA				ind requ	incinents									
_	2.	MARK "X				3. EF	FLUENI	•			4. UNIT	S		NTAKE (ional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Tern Value (if availab	U	d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS													
1M. Antimony, Total (7440-36-0)				0.61							ug/L				
2M. Arsenic, Total (7440-38-2)				2.1							ug/L				
3M. Beryllium, Total (7440-41-7)				<1.0							ug/L				
4M. Cadmium, Total (7440-43-9)				<0.50							ug/L				
5M. Chromium, Total (7440-43-9)				0.83							ug/L				
6M. Copper, Total (7550-50-8)				120							ug/L				
7M. Lead, Total (7439-92-1)				0.92							ug/L				
8M. Mercury, Total (7439-97-6)				<0.500							ng/L				
9M. Nickel, Total (7440-02-0)				14							ug/L				

10M. Selenium,															
Total (7782-49-2)				1.3							ug/L				
11M. Silver, Total (7440-28-0)				<0.10							ug/L				
TABLE CPage 2 of 8	OUTFA	LL NO. (	023												
	2.	MARK "X	"			3. EI	FLUENI				4. UNIT	S		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS	continued	_	_	-	_	_	-	-	_	-	_	-	-
12M Thallium, Total (7440-28-0)				<0.50							ug/L				
13M. Zinc, Total (7440-66-6)				<10							ug/L				
14M. Cyanide, Total (57-12-5)				<0.010							mg/L				
15M. Phenols, Total				<0.010							mg/L				
DIOXIN															
2,3,7,8 Tetra- chlorodibenzo-P- Dioxin (1784-01-6)				DESCRIBE RE	SULTS:										
GC/MS FRACTION -	VOLATILE	COMPOUN	DS												
1V. Acrolein (107-02-8)				<0.0022							mg/L				
2V. Acrylonitrile (107-13-1)				<0.0019							mg/L				
3V. Benzene (71-43-2)				<0.00015							mg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)			Х								mg/L				
5V. Bromoform (75-25-2)				< 0.00025							mg/L				
6V. Carbon Tetrachloride (56-23-5)				<0.00025							mg/L				
7V. Chlorobenzene (108-90-7)				<0.00026							mg/L				
8V. Chlorodibromomethane (124-48-1)				<0.00024							mg/L				

AVI. (11) 1			1	1				1	1	1					1
9V. Chloroethane (74-00-3)				< 0.00022							mg/L				
10V. 2- Chloroethylvinyl Ether (110-75-8)				<0.00019							mg/L				
11V. Chloroform (67-66-3)				<0.00026							mg/L				
TABLE C	OUTFA	LL NO. (	023						•						
Page 3 of 8															
1	2.	MARK "X	"			3. EF	FLUENI	?			4. UNIT	S		NTAKE ptional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value	n Avg.	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	- ed	-	-	<u>-</u>	<u>-</u>			-	<u>-</u>	-	-	
12V. Dichloro-															
bromomethane				< 0.00021							mg/L				
(75-71-8)											-				
13V. Dichloro-											<i>a</i>				
difluoromethane (75-71-8)			Х								mg/L				
14V. 1,1-															
Dichloroethane				< 0.00025							mg/L				
(75-34-3)															
15V. 1,2-											_				
Dichloroethane				< 0.00038							mg/L				
(107-06-2) 16V. 1,1-															
Dichlorethylene				< 0.00023							mg/L				
(75-35-4)											Ũ				
17V. 1,2- Dichloropropane				0.00010							~				
(78-87-5)				< 0.00019							mg/L				
(78-87-3) 18V. 1.3-															
Dichloropropylene				<0.00026							mg/L				
(452-75-6)											6				
19V. Ethylbenzene (100-41-4)				<0.00025							mg/L				
20V. Methyl				<0.00029							mg/L				
Bromide (74-83-9)				<0.00029							IIIg/L				
21V. Methyl Chloride (74-87-3)				<0.00024							mg/L				
22V. Methylene Chloride (75-00-2)				< 0.010							mg/L				
23V. 1,1,2,2- Tetrachloroethane (79-34-5)				<0.00032							mg/L				

	1	1	<b>r</b>	T	1	1		r						1	
24V. Tetra- chloroethylene (127-18-4)				<0.00026							mg/L				
25V. Toluene (108-88-3)				<0.00030							mg/L				
26V. 1,2-Trans- Dichloroethylene (156-60-5)				<0.00022							mg/L				
27V. 1,1,1- Trichloroethane (71-55-6)				<0.00023							mg/L				
TABLE C Page 4 of 8	OUTFA	LL NO.	023	<u> </u>	I		I		I	I		I	1	I	<u></u>
	2.	MARK "X	"			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a	80-Day vailable)	c. Long-Term Value (if availab	U	d. No. of	a.	b.	a. Long-Term Value	· · · · · ·	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	DS continue	ed											
28V. 1,1,2- Trichloroethane				<0.00026							mg/L				
(79-00-5) 29V. Tri-															
chloroethylene (79-01-6)				<0.00026							mg/L				
30V. Trichloro- fluoromethane (75-69-4)				<0.00027							mg/L				
31V. Vinyl Chloride (75-01-4)				<0.00026							mg/L				
GC/MS FRACTION - A	ACID COMP	OUNDS	•	•	•		•	•	•		•	•		•	
1A. 2-Chlorophenol (95-57-8)				<0.011							mg/L				
2A. 2,4- Dichlorophenol (120-83-2)				<0.011							mg/L				
3A. 2,4- Dimethylphenol (105-67-9)				<0.011							mg/L				
4A. 4,6-Dinitro- O-Cresol (534-52-1)				<0.027							mg/L				
5A. 2,4-Dinitrophenol (51-28-5)				<0.054							mg/L				
6A. 2-Nitrophenol (88-75-5)				<0.011							mg/L				
7A. 4-Nitrophenol (100-02-7)				<0.054							mg/L				

8A. P-Chloro-M- Cresol (59-50-7)		<0.022				mg/L		
9A. Pentachloro- phenol (87-88-5)		< 0.054				mg/L		
10A. Phenol (108-05-2)		<0.011				mg/L		
11A. 2,4,6-Trichloro- phenol (88-06-2)		<0.011				mg/L		

TABLE C Page 5 of 8	OUTFA	LL NO. (	023												
	2.	MARK "X	.,,			3. EF	FLUENI	[			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab	U	d. No. of	a. Concentration	b.	a. Long-Tern Value	n Avg.	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	POUNDS												
1B. Acenaphthene (83-32-9)				<0.011							mg/L				
2B. Acenaphtylene (208-96-8)				<0.011							mg/L				
3B. Anthracene (120-12-7)				<0.011							mg/L				
4B. Benzidine (92-87-5)				< 0.054							mg/L				
5B . Benzo (a) Anthracene (56-55-3)				<0.011							mg/L				
6B. Benzo (a) Pyrene (50-32-8)				<0.011							mg/L				
7B. 3,4-Benzo- fluoranthene (205-99-2)				<0.011							mg/L				
8BBenzo (ghi) perylene (191-24-2)				<0.011							mg/L				
9BBenzo (k)- fluoranthene (207-08-9)				<0.011							mg/L				
10B. Bis (2-chloroethoxy) Methane (111-91-1)				<0.011							mg/L				
11B. Bis (2- chloroethel) Ether (111-44-4)				<0.011							mg/L				
12B. Bis (2-chloroisopropyl)- Ether (102-80-1)				<0.011							mg/L				
13B. Bis (2-ethyl- hexyl) Phthalate (117-81-7)				<0.011							mg/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)				<0.011							mg/L				
15B. Butyl Benzyl Phthalate (85-68-7)				<0.011							mg/L				
16B. 2-Chloro- Naphthalene (7005-72-3)				<0.011							mg/L				

17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)				<0.011							mg/L				
TABLE C Page 6 of 8	OUTFA	LL NO. (	023												
	2.	MARK "X	<b>?</b> "			3. EF	FLUENT	[			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab	U	d. No. of	a.	b.	a. Long-Tern Value	· · · · · · · · · · · · · · · · · · ·	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COMI	POUNDS co	ntinued	_	-	_	-	-	_	-	-	=	-	
18B. Chrysene (218-01-9)				< 0.011							mg/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)				<0.011							mg/L				
20B. 1,2-Dichloro- benzene (95-50-1)				<0.00030							mg/L				
21B. 1,3-Dichloro- Benzene (541-73-1)				<0.00024							mg/L				
22B. 1,4-Dichloro- benzene (106-46-7)				<0.00028							mg/L				
23B. 3,3-Dichloro- benzidene (91-94-1)				<0.054							mg/L				
24B. Diethyl Phthalate (84-66-2)				<0.011							mg/L				
25B. Dimethyl Phthalate (131-11-3)				<0.011							mg/L				
26B. Di-N-Butyl Phthalate (84-74-2)				<0.011							mg/L				
27B. 2,4-Dinitro- toluene (121-14-2)				<0.011							mg/L				
28B. 2,6-Dinitro- toluene (606-20-2)				<0.011							mg/L				
29B. Di-N-Octyl Phthalate (117-84-0)				<0.011							mg/L				
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)			х								mg/L				
31B. Fluoranthene (208-44-0)				<0.011							mg/L				
32B. Fluorene (86-73-7)				<0.011							mg/L				
33B. Hexachloro- benzene (118-71-1)				<0.011							mg/L				
34B. Hexachloro- butadiene (87-68-3)				<0.011							mg/L				

35B. Hexachloro-								
cyclopentadiene		< 0.011				mg/L		
(77-47-4)								

TABLE C Page 7 of 8	OUTFA	LL NO. (	023												
1	2.	MARK "X	"			3. EF	FLUENT	,			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value		b. Maximum 3 Avg. Value (if av	vailable)	c. Long-Term Value (if availab	le)	d. No. of	a. Concentration	b. Mass	a. Long-Term Value		b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	wiass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - 1	BASE/NEUT	RAL COMI	POUNDS co	ntinued											
36B. Hexachloro- ethane (67-72-1)				<0.011							mg/L				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)				<0.011							mg/L				
38B. Isophorone (78-59-1)				<0.011							mg/L				
39B. Napthalene (91-20-3)				<0.011							mg/L				
40B. Nitrobenzene (98-95-3)				<0.011							mg/L				
41B. N-Nitro- sodimethylamine (62-75-9)				<0.011							mg/L				
42B. N-Nitrosodi- N-Propylamine (621-64-7)				<0.011							mg/L				
43B. N-Nitro- sodiphenylamine (86-30-6)				<0.011							mg/L				
44B. Phenanthrene (85-01-8)				<0.011							mg/L				
45B. Pyrene (129-00-0)				<0.011							mg/L				
46B. 1,2,4-Trichloro- benzene (120-82-1)				<0.011							mg/L				

V. INTAKE A	ND EFFLUEN	T CHARAC	TERISTICS (Co	ontinued fro	m Section V. IN	TAKE AN	D EFFLUI	ENT CHARAC	FERISTI	[CS ]		
PART A.	See instruction Complete one s	s before proce set of tables fo	IN THE UNSHA eeding. or each outfall. Pl s of at least one an	ace the outfa	ll number in the	space provi	ded on eacl	ı table.				
TABLE APage 1 of 1	OUTFALL N	<b>0.</b> 025										
			2. E	FFLUENT				3. UNIT (specify if bl			NTAKE tional)	
1. POLLUTANT	a. Maximum I	Daily Value	b. Maximum 3 Value (if av	ailable)	c. Long-Term A (if availal		d. No. of	a.	b.	a. Long-Term Value	Avg.	b. No of
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
1. Biochemical Oxygen Demand (BOD) <sub>5</sub>	<3.0							mg/L				
2. Chemical Oxygen Demand (COD)	<50							mg/L				
3. Total Organic Carbon (TOC)	3.3							mg/L				
4. Total Suspended Solids (TSS)	18							mg/L				
5. Ammonia (as N)	0.68							mg/L				
6. Flow (MGD)	8.34	Ļ	VALU	Е	VALU	Ξ		MGD		VALUE		
7. Temperature (winter)			VALU	Е	VALU	Ē		°C		VALUE		
8. Temperature (summer)	20.1	[	VALU	Е	VALUI	E		°C		VALUE		
9. pH	MINIMUM <b>8.0</b>	MAXIMUM 8.0	MINIMUM	MAXIMUM				STANDARD U	JNITS			

V. INTAKE A			CHARACTERI											
	See instru	actions befo	R TYPE IN THE Upre proceeding. tables for each ou					ı each tabl	e.					
PART B.	Believed If you ma	Absent co ark the Beli	K X", place an "X lumn (2.b) for each eved <b>Present</b> colu for each outfall. Se	h pollutar mn for a	nt you believe to b ny pollutant, you 1	e absent. nust prov	vide the results of a	at least one	-		elieve is	present; or place a	an "X" in	the
TABLE B Page 1 of 2	OUTFA	LL NO. (	)25				-							
1.	2. MA	RK "X"			3. E	FFLUEN	Г			4. UNIT	S		NTAKE tional)	
POLLUTANT and CAS NO.	a.	b.	a. Maximum Dai	y Value	b. Maximum 3 Avg. Value (if av		c. Long-Term Av (if availab)		d.	a.	b.	a. Long-Term Value		b. No of
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
1. Bromide (24959-67-9)	_		1.5	-						mg/L				
2. Chloride			190							mg/L				
3. Chlorine, Total Residual			0.02							mg/L				
4. Color			15							CU				
5. E.coli			93.3							MPN/100mL				
6. Fluoride (16984-48-8)			1.1							mg/L				
7. Hardness (CaCO <sub>3</sub> )			560							mg/L				
8.Nitrate–Nitrite (as N)			1.7							mg/L				
9. Nitrogen, Total Organic (as N)			<1.0							mg/L				
10. Oil and Grease			<5.0							mg/L				
11. Phosphorous (as P), Total (7723-14-0)			0.12							mg/L				
12. Radioactivity						-								
(1) Alpha, Total			6.9 +/-2.22							pCi/L				
(2) Beta, Total			6.38 +/-1.58							pCi/L				

(3) Radium, Total 1.28 +/-0.57			pCi/L	
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Page 2 of 2	2. MA	RK "X"			3. El	FFLUEN	г			4. UNITS	S		NTAKE	
1. POLLUTANT and CAS NO.	a.	b.	a. Maximum I Value	Daily	b. Maximum 3 Avg. Value (if av	0-Day	c. Long-Term Av (if availabl		d.	a.	b.	op) a. Long-Term Value	tional) Avg.	b.
(if available)	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	No. of Analyses	Concentration	Mass	(1) Concentration	(2) Mass	No of Analyses
(4) Radium, 226, Total			1.01 +/-0.319							pCi/L				
(5) Strontium-90, Total			0.014 +/-0.55							pCi/L				
(6) Uranium			0.0102							mg/L				
13. Sulfate (asSO <sub>4</sub> ) (14808-79-8)			230							mg/L				
14. Sulfide (as S)			<0.20							mg/L				
15. Sulfite (asSO4) (14286-46-3)			<2.0							mg/L				
16. Surfactants			<0.50							mg/L				
17.Aluminum,Total (7429-90)			190							ug/L				
18. Barium, Total (7440-39-3)			99							ug/L				
19. Boron, Total (7440-42-8)			5.7							mg/L				
20. Cobalt, Total (7440-48-4)			3.2							ug/L				
21. Iron, Total (7439-89-6)			520							ug/L				
22. Magnesium, Total (7439-96-4)			73							mg/L				
23. Molybdenum, Total (7439-98-7)			8.3							ug/L				
24. Manganese, Total (7439-96-6)			720							ug/L				
25. Tin, Total (7440-31-5)			<0.0010							mg/L				
26. Titanium, Total (7440-32-6)			<0.030							mg/L				

V. INTAKE AN	D EFFLUE	ENT CHA	ARACTE	RISTICS (Co	ontinue	d)									
PART C.	See instr Complete If you are you must Mark "X If you are <b>Believed</b> Mark "X If you ma	uctions be e one set e a prima t test for. " in the <b>T</b> e not requ l <b>Present</b> : in the <b>B</b> ark either	efore proc of tables f ry industr <b>Cesting R</b> d uired to m column fe <b>elieved A</b> the <b>Testi</b>	eeding. for each outfall y and this outf equired colum ark this colum or each polluta bsent column ng Required o	l. Place all cont in for al n ( <u>secon</u> int you l for each or <b>Belie</b>	D AREAS ON the outfall nun ains process w l such GC/MS ndary industrie know or have r h pollutant you ved Present co art; please revi	nber in t astewate fraction s, nonpr eason to believe olumns	the space prove er, refer to the ns that apply to rocess wastewn o believe is pre- to be absent. for any polluta	instruct o your in ater outf esent. ant, you	ions (Tabl idustry and falls, and r must prov	e C-2) to deter d for ALL toxi con-required G ide the result o	c metal GC/MS f	s, cyanides, an <u>ractions</u> ), marl st one analysis	d total p k "X" in	phenols. 1 the
TABLE C	See the in		ns for add	itional details a											
Page 1 of 8	2	MARK "X	.,,			3. FI	FLUENT	۲			4. UNIT	s		NTAKE	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a	80-Day	c. Long-Tern Value (if availab	d. No. of	a.	b.	or a. Long-Term Value	otional) 1 Avg.	b. No of	
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS	1	ſ	1	r	1	1		r			r		. <u> </u>
1M. Antimony, Total (7440-36-0)				<0.50							ug/L				
2M. Arsenic, Total (7440-38-2)				2.3							ug/L				
3M. Beryllium, Total (7440-41-7)				<1.0							ug/L				
4M. Cadmium, Total (7440-43-9)				2.2							ug/L				
5M. Chromium, Total (7440-43-9)				3.7							ug/L				
6M. Copper, Total (7550-50-8)				32							ug/L				
7M. Lead, Total (7439-92-1)				<0.50							ug/L				
8M. Mercury, Total (7439-97-6)				<0.500							ng/L				
9M. Nickel, Total (7440-02-0)				21							ug/L				

10M. Selenium,												1			
Total (7782-49-2)				10							ug/L				
11M. Silver, Total (7440-28-0)				<0.10							ug/L				
TABLE CPage 2 of 8	OUTFA	LL NO. (	025												
_	2.	MARK "X				3. EI	FLUENT				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value		b. No of
(II available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
METALS, CYANIDE	AND TOTAL	PHENOLS	continued		-	-	-		-					-	-
12M Thallium, Total (7440-28-0)				9.6							ug/L				
13M. Zinc, Total (7440-66-6)				31							ug/L				
14M. Cyanide, Total (57-12-5)				<0.010							mg/L				
15M. Phenols, Total				<0.010							mg/L				
DIOXIN															
2,3,7,8 Tetra-				DESCRIBE RE	SULTS:										
chlorodibenzo-P-															
Dioxin (1784-01-6)															
GC/MS FRACTION -	VOLATILE (	COMPOUN	DS												
1V. Acrolein (107-02-8)				<0.0022							mg/L				
2V. Acrylonitrile (107-13-1)				<0.0019							mg/L				
3V. Benzene (71-43-2)				<0.00015							mg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)			Х								mg/L				
5V. Bromoform (75-25-2)				<0.00025							mg/L				
6V. Carbon Tetrachloride (56-23-5)				<0.00025							mg/L				
7V. Chlorobenzene (108-90-7)				<0.00026							mg/L				
8V. Chlorodibromomethane (124-48-1)				<0.00024							mg/L				

9V. Chloroethane			1				1		1	1		1		1	1
(74-00-3)				< 0.00022							mg/L				
10V. 2- Chloroethylvinyl Ether (110-75-8)				<0.00019							mg/L				
11V. Chloroform (67-66-3)				<0.00026							mg/L				
TABLE C Page 3 of 8	OUTFA	LL NO. (	025					·							
Tuge 5 01 0	2.	. MARK "X	"			3. EI	FLUENT	2			4. UNIT	s		NTAKE	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a	0-Day	c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value	otional) Avg.	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	VOLATILE	COMPOUN	_ DS continue	ed		-	_	-	-	-	-	=	-	-	
12V. Dichloro- bromomethane (75-71-8)				<0.00021							mg/L				
13V. Dichloro- difluoromethane (75-71-8)			х								mg/L				
14V. 1,1- Dichloroethane (75-34-3)				<0.00023							mg/L				
15V. 1,2- Dichloroethane (107-06-2)				<0.00038							mg/L				
16V. 1,1- Dichlorethylene (75-35-4)				<0.00023							mg/L				
17V. 1,2- Dichloropropane (78-87-5)				<0.00019							mg/L				
18V. 1,3- Dichloropropylene (452-75-6)				<0.00026							mg/L				
19V. Ethylbenzene (100-41-4)				<0.00025							mg/L				
20V. Methyl Bromide (74-83-9)				<0.00029							mg/L				
21V. Methyl Chloride (74-87-3)				<0.00024							mg/L				
22V. Methylene Chloride (75-00-2)				<0.010							mg/L				
23V. 1,1,2,2- Tetrachloroethane (79-34-5)				<0.00032							mg/L				

24V. Tetra- chloroethylene (127-18-4)				<0.00026							mg/L				
25V. Toluene (108-88-3)				<0.00030							mg/L				
26V. 1,2-Trans- Dichloroethylene (156-60-5)				<0.00022							mg/L				
27V. 1,1,1- Trichloroethane (71-55-6)				<0.00023							mg/L				
TABLE C Page 4 of 8	OUTFA	LL NO. (	025		I		I		L			I	1	I	<u> </u>
	2.	MARK "X	("			3. EF	FLUENT	•			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a	80-Day vailable)	c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Term Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	OLATILE	COMPOUN	DS continue	ed											
28V. 1,1,2- Trichloroethane				<0.00026							mg/L				
(79-00-5) 29V. Tri-															
chloroethylene (79-01-6)				<0.00026							mg/L				
30V. Trichloro- fluoromethane				<0.00027							mg/L				
(75-69-4) 31V. Vinyl Chloride (75-01-4)				<0.00026							mg/L				
(75-01-4) GC/MS FRACTION – A															<u>i                                     </u>
1A. 2-Chlorophenol		OUNDS													<u> </u>
(95-57-8)				<0.010							mg/L				
2A. 2,4- Dichlorophenol (120-83-2)				<0.010							mg/L				
3A. 2,4- Dimethylphenol (105-67-9)				<0.010							mg/L				
4A. 4,6-Dinitro- O-Cresol (534-52-1)				<0.026							mg/L				
5A. 2,4-Dinitrophenol (51-28-5)				<0.051							mg/L				
6A. 2-Nitrophenol (88-75-5)				<0.010							mg/L				
7A. 4-Nitrophenol (100-02-7)				<0.051							mg/L				

8A. P-Chloro-M- Cresol (59-50-7)		<0.020				mg/L		
9A. Pentachloro- phenol (87-88-5)		< 0.051				mg/L		
10A. Phenol (108-05-2)		< 0.010				mg/L		
11A. 2,4,6-Trichloro- phenol (88-06-2)		<0.010				mg/L		

TABLE C Page 5 of 8	OUTFA	LL NO. (	)25												
	2.	MARK "X	"			3. EF	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if a		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value		b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION - I	BASE/NEUT	RAL COMI	POUNDS												
1B. Acenaphthene (83-32-9)				<0.010							mg/L				
2B. Acenaphtylene (208-96-8)				<0.010							mg/L				
3B. Anthracene (120-12-7)				<0.010							mg/L				
4B. Benzidine (92-87-5)				<0.051							mg/L				
5B . Benzo (a) Anthracene (56-55-3)				<0.010							mg/L				
6B. Benzo (a) Pyrene (50-32-8)				<0.010							mg/L				
7B. 3,4-Benzo- fluoranthene (205-99-2)				<0.010							mg/L				
8BBenzo (ghi) perylene (191-24-2)				< 0.010							mg/L				
9BBenzo (k)- fluoranthene (207-08-9)				<0.010							mg/L				
10B. Bis (2-chloroethoxy) Methane (111-91-1)				<0.010							mg/L				
11B. Bis (2- chloroethel) Ether (111-44-4)				<0.010							mg/L				
12B. Bis (2-chloroisopropyl)- Ether (102-80-1)				<0.010							mg/L				
13B. Bis (2-ethyl- hexyl) Phthalate (117-81-7)				<0.010							mg/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)				<0.010							mg/L				
15B. Butyl Benzyl Phthalate (85-68-7)				<0.010							mg/L				
16B. 2-Chloro- Naphthalene (7005-72-3)				<0.010							mg/L				

17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)				<0.010							mg/L				
TABLE C Page 6 of 8	OUTFA	LL NO. (	025												
	2.	MARK "X	"			3. EI	FLUENI				4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO.	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a.	b.	a. Long-Tern Value	· · · · ·	b. No of
(if available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	Mass	(1) Concentration	(2) Mass	Analyse
GC/MS FRACTION - I	BASE/NEUT	RAL COMI	POUNDS co	ntinued	_	-	_	-	-	-	-	_	=	-	-
18B. Chrysene				< 0.010							mg/L				
(218-01-9) 19B. Dibenzo (a,h)															
Anthracene (53-70-3)				<0.010							mg/L				
20B. 1,2-Dichloro- benzene (95-50-1)				<0.00030							mg/L				
21B. 1,3-Dichloro-				< 0.00024							mg/L				
Benzene (541-73-1)				<0.00024							ling/L				
22B. 1,4-Dichloro- benzene (106-46-7)				<0.00028							mg/L				
23B. 3,3-Dichloro- benzidene (91-94-1)				< 0.051							mg/L				
24B. Diethyl Phthalate (84-66-2)				< 0.010							mg/L				
25B. Dimethyl Phthalate (131-11-3)				<0.010							mg/L				
26B. Di-N-Butyl Phthalate (84-74-2)				< 0.010							mg/L				
27B. 2,4-Dinitro- toluene (121-14-2)				< 0.010							mg/L				
28B. 2,6-Dinitro- toluene (606-20-2)				< 0.010							mg/L				
29B. Di-N-Octyl Phthalate (117-84-0)				<0.010							mg/L				
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)			х								mg/L				
31B. Fluoranthene (208-44-0)				< 0.010							mg/L				
32B. Fluorene (86-73-7)				<0.010							mg/L				
33B. Hexachloro- benzene (118-71-1)				<0.010							mg/L				
34B. Hexachloro- butadiene (87-68-3)				<0.010							mg/L				1

35B. Hexachloro-								
cyclopentadiene		< 0.010				mg/L		
(77-47-4)								

TABLE C Page 7 of 8	OUTFA	LL NO. (	)25												
1	2.	MARK "X	"			3. EF	FLUENT	,			4. UNIT	s		NTAKE otional)	
1. POLLUTANT and CAS NO. (if available)	a. Testing	b. Believed	c. Believed	a. Maximum Value	Daily	b. Maximum 3 Avg. Value (if av		c. Long-Term Value (if availab		d. No. of	a. Concentration	b. Mass	a. Long-Term Value	n Avg.	b. No of
(ii available)	Required	Present	Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	Analyses	Concentration	wiass	(1) Concentration	(2) Mass	Analyses
GC/MS FRACTION -	BASE/NEUT	RAL COMI	POUNDS co	ntinued											
36B. Hexachloro- ethane (67-72-1)				<0.010							mg/L				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)				<0.010							mg/L				
38B. Isophorone (78-59-1)				<0.010							mg/L				
39B. Napthalene (91-20-3)				< 0.010							mg/L				
40B. Nitrobenzene (98-95-3)				< 0.010							mg/L				
41B. N-Nitro- sodimethylamine (62-75-9)				<0.010							mg/L				
42B. N-Nitrosodi- N-Propylamine (621-64-7)				<0.010							mg/L				
43B. N-Nitro- sodiphenylamine (86-30-6)				<0.010							mg/L				
44B. Phenanthrene (85-01-8)				<0.010							mg/L				
45B. Pyrene (129-00-0)				<0.010							mg/L				
46B. 1,2,4-Trichloro- benzene (120-82-1)				<0.010							mg/L				

## **KPDES FORM C – INSTRUCTIONS**

Listed below are explanations of select Form C questions. If further information is needed concerning any questions, please contact the Division of Water, at (502) 564-3410.

#### Section I: Outfall Location

Use the map you provided for Item II of Form 1 to determine the latitude and longitude of each of your outfalls and the name of the receiving water.

#### Section II: Flows, Sources of Pollution, and Treatment Technologies

- A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and storm water runoff. Group similar operations into a single unit and label to correspond to the more detailed listing in Item II.B. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. Use actual measurements whenever available. Otherwise, use your best estimate.
- B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). Estimate the flow contributed by each source if no data are available. For storm water, use any reasonable measure of duration, volume, or frequency. For each treatment unit, indicate its size, flow rate, and retention time; and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order. Select the proper code from Table C-1 to fill in the treatment code for each treatment unit. Insert "XX" for the treatment code if no code corresponds to a treatment unit you have listed.

If the permit application is for a privately-owned treatment works, you must also identify all of your contributors in an attached listing.

C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for shutdowns for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharge. Base your answers on actual data whenever available, otherwise, provide your best estimate. Report the highest daily for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measured during days when discharge occurred within the last year in the "Long Term Average" columns.

#### Section III: Production

- A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by a BPT, BCT, or BAT guideline. If you are unsure whether you are covered by a promulgated effluent guideline, check with the Department for Environmental Protection, Division of Water. You must check "yes" if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operation, you may check "no."
- B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitation is expressed as mass of pollutant per operational parameter, for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one that limits the concentration of pollutants.
- C. This item must be completed only if you check "yes" to Item III.B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurements used in the applicable effluent guidelines. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation. But these figures may not be based on design capacity or on predictions of future increases in operation.

If you have two or more substantially identical outfalls, request permission from the Division of Water to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted, identify on a separate sheet attached to the application form the outfall tested, and describe why the outfalls not tested are substantially identical to the tested outfall.

#### Section IV: Improvements

A. If you check "yes" to this question, complete all parts of the chart or attach a copy of any previous submission you have made to the Department for Environmental Protection containing the same information.

#### Section V: Intake and Effluent Characteristics

This item requires you to collect and report data on the pollutants discharged for each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

#### GENERAL INSTRUCTIONS

In the "Mark X" columns of Parts B and C mark only one box per pollutant. Part D requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. See specific instruction on the form and below for Parts A through D.

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believed Present" but "X" in that "Intake" column.

#### REPORTING

All levels must be reported as concentration and as total mass. Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Parts B and C).

	CONCENTRATIONS		MASS
ppm	parts per million	lbs.	Pounds
mg/l	milligrams per liter	ton	Tons (english tons)
ppb	parts per billion	mg	Milligrams
μg/l	micrograms per liter	g	Grams
		kg	Kilograms
		Т	Tonnes (metric tons)
		MGD	Million Gallons Per Day

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "Number of Analyses" columns (columns 2-a and 2-d, Part A, and columns 3-a and 3-d, Parts B and C).

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period. For grab samples, the daily value is the arithmetic

or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24-hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long-Term Average Values" columns (column 2-c, Part A, and column 3-c, Parts B and C). Also report the total number of daily values under the "Number of Analyses" columns (column 2-d, Part A, and column 3-d, Parts B and C). Determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30-Day Values" columns (2-b, Part A, and column 3-b, Parts B and C).

#### SAMPLING

The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact the Department for Environmental Protection or appropriate regional office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets.

#### ANALYSIS

Use test methods promulgated in 40 CFR Part 136; however, if none have been promulgated for a particular pollutant, use any suitable methods for measuring the level of the pollutant in your discharge provided that you submit a description of the methods or a reference to a published method. Your description should include the sample holding times, preservation techniques, and the quality control measures used.

#### **REPORTING OF INTAKE DATA**

You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, effluent limitations adjusted by subtracting the average level of the pollutant(s) present in your intake water. 401 KAR 5:065, Section 3(7), allows net limitations only in certain circumstances. To demonstrate your eligibility, report the average of the results of analysis on your intake water in the "Intake" columns (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

- 1. A statement that the intake and discharge are from the same water body (Otherwise, you are not eligible for net limitations);
- 2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater (Your limitations will be adjusted only to the extent that the pollutant is not removed);
- 3. When applicable (for example, when the pollutant represents a class of compounds), a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. (Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.)

#### SPECIFIC INSTRUCTIONS

A. This part must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Division of Water may waive the requirements to test for one or more of these pollutants upon a determination that testing for the pollutant(s) is not appropriate for your effluents.

Use grab samples for pH and temperature. Use composite samples for all pollutants in this part. See discussion in General Instructions to Item V for definitions of the columns in Part A. The "Long-Term

Average Values" column (column 2-c) and "Maximum 30-Day Values" column (column 2-b) are not compulsory but should be filled out if data are available.

B. This part must be completed by all applicants for all outfalls including those containing only noncontact cooling water or storm runoff.

Use composite samples for all pollutants you analyze in this part, except use grab samples for residual chlorine, oil and grease, fecal coliform, and E.coli. The "Long-Term Average Values" column (column 3-b) are not compulsory but should be filled out if data are available.

C. Table C-2 lists the 34 "primary" industry categories in the left-hand column. For each outfall, if any of your processes which contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (column 2-a) and test for: (A) all of the toxic metals, cyanide, and total phenols; and (B) the organic toxic pollutants contained in the gas chromatography/mass spectrometry (GC/MS) fractions indicated in Table C-2 as applicable to your category, unless you qualify as a small business (see below). The organic toxic pollutants are listed by GC/MS fractions on pages V-4 through V-10 in Part V-C. For example, the Organic Chemical industry has an "X" in all four fractions; therefore, applicants in this category must test for all organic toxic pollutants in Part V-C. If you are applying for a permit for a privately owned treatment works, determine your testing contributors. The industry category you use for testing requirements is not used to categorize you for any other purpose.

For all other cases (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), you must mark "X" in either the "Believed Present" column (column 2-b) or the "Believed Absent" column (column 2-c) for each pollutant, and test for those you believe present (those marked "X" in column 2-b). If you qualify as a small business (see below) you are exempt from testing for the organic toxic pollutants listed on page V-4 through V-10 in Part C. For pollutants in intake water, see discussion in General Instructions to this item. The "Long-Term Average Values" column (column 3-c) and "Maximum 30-Day Values" column (column 3-b) are not compulsory but should be filled out if data are available.

Use grab samples for total phenols and cyanide. Use composite samples for all other pollutants in this part.

Mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

- A. 2,4,5-trichlorophenoxy acetic acid (2,4,5-T);
- B. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5,-TP);
- C. 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon);
- D. 0, 0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel);
- E. 2,4,5-trichlorophenol (TCP); or
- F. Hexachlorophene (HCP)

If you mark "Testing Required" or "Believed Present" you must perform a screening analysis for dioxins, using gas chromotography with an electron capture detector. A TCDD standard for quantification is not required. Describe the results of this analysis in the space provided, for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." You may be required to perform a quantitative analysis if you report a positive result.

The Engineering and Analysis Division of EPA has collected and analyzed samples from some facilities for the pollutants listed in Part C in the course of its BAT guidelines development program. If your effluents were sampled and analyzed as part of this program in the last three years, you may use this data to answer Part C. This may be done provided that no process change or change in raw materials, process or operating practices has occurred since the samples were taken which would make the analyses unrepresentative of your current discharge.

#### **Small Business Exemption**

If you qualify as a "small business," under 401 KAR 5:060, Section 2(8) you are exempt from the reporting requirements for the organic toxic pollutants listed on pages 9 through 18 in Part C. If your facility is a coal mine with a probable total annual production of less than 100,000 tons, you may submit past production data or estimated future production (such as a schedule of estimated total production under 30 CFR Section 795.14(c)) instead of conducting analyses for the organic toxic pollutants. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than \$100,000 per year (in second quarter 1980 dollars), you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants.

The production or sales data must be for the facility that is the source of the discharge. The data should not be limited to production or sales for the process or processes that contribute to the discharge, unless those are the only processes of your facility. For sales data, in situations involving intra-corporate transfers of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product prices deflator (second quarter of 1980 = 100). This index is available in "National Income and Product Accounts of the United States" (U.S. Department of Commerce, Bureau of Economic Analysis).

D. List any pollutants in Table C-3 that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it also.

**NOTE:** Under 40 CFR 117.12(a)(2), certain discharges of hazardous substances (listed in Table C-3 of these instructions) may be exempted from the requirements of Section 311 of the Clean Water Act (33 USC Section 1321), which establishes reporting requirements, civil penalties, and liability for cleanup costs for spills of oil and hazardous substances. A discharge of a particular substance may be exempted if the origin, source, and amount of the discharged substance are identified in the KPDES permit application or in the permit, if the permit contains a requirement for treatment of the discharge, and if the treatment is in place. To apply for an exclusion of the discharge of any hazardous substance from the requirement of Section 311, attach additional sheets of paper to your form, setting forth the following information:

- A. the substance and the amount of each substance which may be discharged;
- B. the origin and source of the discharge of the substance;
- C. the treatment which is provided or to be provided for the discharge by:
  - 1. an on-site treatment system separate from any treatment system treating your normal discharge;
  - 2. a treatment system designed to treat your normal discharge and which is additionally capable of treating the amount of the substance identified under paragraph 1 above; or
  - 3. any combination of the above.

See 40 CFR Section 117.12(a)(2) and (c), published on August 29, 1979, or contact the Division of Water for further information on exclusions from Section 311.

#### Section VI. Potential Discharges Not covered by Analysis

- A. You may not claim this information as confidential. However, you do not have to distinguish between use of production of the pollutants or list the amounts. Under KPDES regulations, your permit will contain limits to control all pollutants you report in answer to this question, as well as pollutants reported in Item V and VI.B at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to the Department for Environmental Protection if you begin or expect to begin to use or manufacture any toxic pollutant as an immediate or final product or byproduct which you did not report here. Your permit may be modified at that time if necessary to control that pollutant.
- B. Consider only those variations which may result in the concentrations of pollutants in effluents which exceed twice the maximum values you reported in Item V. These variations may be part of your routing operations, or part of your regular cleaning cycles.

Under KPDES regulations, your permit will contain limits to control any pollutant that you report in this item at levels exceeding the technology-based limits appropriate to your facility. Your permit will also

require you to report to the Department for Environmental Protection if you know or have reason to believe that any toxic pollutant two times the maximum values reported in Item V-C or in this item. Your permit may be modified at that time if necessary to control the pollutant.

Do not consider variations that are the result of bypasses or upsets. Increased levels of pollutants that are discharged as a result of bypasses or upsets are regulated separately under KPDES regulations.

C. Variation exemptions to be described here include:

Changes in raw or intermediate materials Changes in process equipment or materials; Changes in product lines; Significant chemical reactions among pollutants in waste streams; and Significant variation in removal efficiencies of pollution control equipment.

You may indicate other types of variations as well, except those that are the result of bypasses or upsets. You may be required to further investigate or document variations you report here.

Base your prediction on expected levels of these pollutants upon your knowledge of your processes, raw materials, past and projected product ranges, etc., or upon any testing of your effluent which indicates the range of variability that can be expected over the next five years.

**EXAMPLE:** Outfall 001 discharges water used to clean six 500-gallon tanks. These tanks are used for formulation of dispersions of synthetic resins in water (adhesives). Use of toxic pollutants which can be expected in the next 5 years is:

- 1. copper acetate inhibitor, 1/2 lb. per tank;
- 2. dibutyl phthalate, 50 lbs. per tank;
- 3. toluene, 5 lbs. per tank; and
- 4. antimony oxide, 1 lb. per tank.

Based on normal cleaning, an average of 1% and a maximum of 3% of the contents of each tank is collected and discharged once every two weeks in the 150 gallons of water used for cleaning. Treatment (pH adjustment, flocculation, filtration) removes 85% of metals and 50% of organic compounds.

#### Section IX: Certification

The permit application must be signed as follows:

- **Corporation:** by a principal executive officer of at least the level of vice president.
- **Partnership or sole proprietorship:** by a general partner or the proprietor respectively.
- Municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.

# TABLE C-1CODES FOR TREATMENT UNITS(For use with Form C, Item II, Part B)

#### PHYSICAL TREATMENT PROCESSES

1-A Ammonia Stripping	1-M Grit Removal
1-B Dialysis	1-N Microstraining
1-C Diatomaceous Earth Filtration	1-O Mixing
1-D Distillation	1-P Moving Bed Filters
1-E Electrodialysis	1-Q Multimedia Filtration
1-F Evaporation	1-R Rapid Sand Filtration
1-G Flocculation	1-S Reverse Osmosis (Hyperfiltration)
1-H Flotation	1-T Screening
1-I Foam Fractionation	1-U Sedimentation (Settling)
1-J Freezing	1-V Slow Sand Filtration
1-K Gas-Phase Separation	1-W Solvent Extraction
1-L Grinding (Comminutors)	1-X Sorption

#### CHEMICAL TREATMENT PROCESSES

2-A	Carbon Adsorption	2-G	Disinfection (Ozone)
2-B	Chemical Oxidation	2-Н	Disinfection (Other)
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-К	Neutralization
2-F	Disinfection (Chlorine)	2-L	Reduction

#### **BIOLOGICAL TREATMENT PROCESSES**

3-А	Activated Sludge	3-Е	Pre-Aeration
3-В	Aerated Lagoons	3-F	Spray Irrigation/Land Application
3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-Н	Trickling Filtration

#### **OTHER PROCESSES**

4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection

#### SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A	Aerobic Digestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-0	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-Н	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Wet Oxidation
5-L	Gravity Thickening		

### TABLE C-2

## TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS BY INDUSTRY CATEGORY<sup>\*</sup> (For use with Form C, Item V, Part C)

### **GC/MS FRACTION<sup>1</sup>**

INDUSTRY CATEGORY	Volatile	Acid	Base/Neutral 1	Pesticide
Adhesives and sealants	X	х	х	-
Aluminum forming	x	х	Х	-
Auto and other laundries	x	х	Х	х
Battery manufacturing	x	-	х	-
Coal mining	*	-*	-*	-*
Coil coating	x	х	х	-
Copper forming	X	х	х	-
Electric and electronic compounds	X	х	х	х
Electroplating	X	х	х	-
Explosives manufacturing		х	х	-
Foundries	x	х	х	-
Gum and wood chemicals	x	х	х	-
Inorganic chemicals manufacturing	X	х	х	-
Iron and steel manufacturing	X	х	х	-
Leather tanning and finishing	x	х	х	-*
Mechanical products manufacturing	X	х	х	-
Nonferrous metals manufacturing	X	х	х	х
Ore mining	X	х	х	х
Organic chemicals manufacturing	X	х	Х	х
Paint and ink formulation	x	х	Х	-*
Pesticides	X	х	х	х
Petroleum refining	X	-	-	-
Pharmaceutical preparation	X	х	х	-
hotographic equipment and supplies	X	х	Х	-*
Plastic and synthetic materials manufacturing	x	х	Х	х
Plastic processing	X	-	-	-
Porcelain enameling	*	-*	_*	-*
Printing and publishing	X	х	Х	х
Pulp and paperboard mills	X	х	Х	х
Rubber Processing	X	х	Х	-
Soap and detergent manufacturing	x	х	Х	-
Steam electric power plants	x	х	Х	-
Textile mills	x	х	Х	х
Timber products processing	X	х	х	х

\*See note at conclusion of 40 CFR Part 122, Appendix D (1983) for explanation of effect of suspensions on testing requirements for primary industry categories. See Note 1 at 46 FR 2045, Jan. 8, 1981; Note 2 at 46 FR22585, Apr. 20, 1981; and Note 3 at FR 35090, July 1, 1981.

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- <sup>1</sup> The pollutants in each fraction are listed in item V-C.
- x = Testing required.
- = Testing not required.

#### TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT (For use with Form C, Item V, Part D)

UI.	use with rorm C, hem V, I art D
	TOXIC POLLUTANT

	OLL
Λ.	hastas

	Asbestos						
	HAZARDOUS SUBSTANCES						
1.	Acetaldehyde	35.	Ammonium thiocyanate	69.	Calcium chromate		
2.	Acetic Acid	36.	Ammonium thiosulfate	70.	Calcium cyanide		
3.	Acetic anhydride	37.	Amyl acetate	71.	Calcium dodecylbenzenesulfonate		
4.	Acetone cyanohydrin	38.	Aniline	72.	Calcium hypochlorite		
5.	Acetyl bromide	39.	Antimony pentachloride	73.	Captan		
6.	Acetyl chloride	40.	Antimony potassium tartrate	74.	Carbaryl		
7.	Acrolein	41.	Antimony tribromide	75.	Carbofuran		
8.	Acrylonitrile	42.	Antimony trichloride	76.	Carbon disulfide		
9.	Adipic acid	43.	Antimony trifluoride	77.	Carbon tetrachloride		
10.	Aldrin	44.	Antimony trioxide	78.	Chlordane		
11.	Allyl alcohol	45.	Arsenic disulfide	79.	Chlorine		
12.	Allyl chloride	46.	Arsenic pentoxide	80.	Chlorobenzene		
13.	Aluminum sulfate	47.	Arsenic trichloride	81.	Chloroform		
14.	Ammonia	48.	Arsenic trioxide	82.	Chloropyrifos		
15.	Ammonium acetate	49.	Arsenic trisulfide	83.	Chlorosulfonic acid		
16.	Ammonium benzoate	50.	Barium cyanide	84.	Chromic acetate		
17.	Ammonium bicarbonate	51.	Benzene	85.	Chromic acid		
18.	Ammonium bichromate	52.	Benzoic acid	86.	Chromic sulfate		
19.	Ammonium bifluoride	53.	Benzonitrile	87.	Chromous chloride		
20.	Ammonium bisulfite	54.	Benzoyl chloride	88.	Cobaltous bromide		
21.	Ammonium carbamate	55.	Benzyl chloride	89.	Cobaltous formate		
22.	Ammonium carbonate	56.	Beryllium chloride	90.	Cobaltous sulfamate		
23.	Ammonium chloride	57.	Beryllium fluoride	91.	Coumaphos		
24.	Ammonium chromate	58.	Beryllium nitrate	92.	Cresol		
25.	Ammonium citrate	59.	Butylacetate	93.	Crotonaldehyde		
26.	Ammonium fluoroborate	60.	n-Butylphthalate	94.	Cupric acetate		
27.	Ammonium fluoride	61.	Butylamine	95.	Cupric acetoarsenite		
28.	Ammonium hydroxide	62.	Butyric acid	96.	Cupric chloride		
29.	Ammonium oxalate	63.	Cadmium acetate	97.	Cupric nitrate		
30.	Ammonium silicofluoride	64.	Cadmium bromide	98.	Cupric oxalate		
31.	Ammonium sulfamate	65.	Cadmium chloride	99.	Cupric sulfate		
32.	Ammonium sulfide	66.	Cadmium arsenate	100.	Cupric sulfate ammoniated		
33.	Ammonium sulfite	67.	Calcium arsenite	101.	Cupric tartrate		

### HAZARDOUS SUBSTANCES (continued)

103.	Cyclohexane	134.	Ethylene dichloride	165.	Lead iodide
104.	2,4-D acid (2,4-Dichlorophenoxyacetic acid)	135.	Ethylene diaminetetracetic acid (EDTA)	166.	Lead nitrate
105.	2,4-D esters (2,4- Dichlorophenoxyacetic acid esters)	136.	Ferric ammonium citrate	167.	Lead stearate
106.	DDT	137.	Ferric ammonium oxalate	168.	Lead sulfate
107.	Diazinon	138.	Ferric chloride	169.	Lead sulfide
108.	Dicamba	139.	Ferric fluoride	170.	Lead thiocyanate
109.	Dichlobenil	140.	Ferric nitrate	171.	Lindane
110.	Dichlone	141.	Ferric sulfate	172.	Lithium chromate
111.	Dichlorobenzene	142.	Ferrous ammonium sulfate	173.	Malathion
112.	Dichloropropane	143.	Ferrous chloride	174.	Maleic acid
113.	Dichloropropene	144.	Ferrous sulfate	175.	Maleic anhydride
114.	Dichloropropene- dichloropropane mix	145.	Formaldehyde	176.	Mercaptodimethur
115.	2,2-Dichloropropionic acid	146.	Formic acid	177.	Mercuric cyanide
116.	Dichlorvos	147.	Fumaric acid	178.	Mercuric nitrate
117.	Dieldrin	148.	Furfural	179.	Mercuric sulfate
118.	Diethylamine	149.	Guthion	180.	Mercuric thiocyanate
119.	Dimethylamine	150.	Heptachlor	181.	Mercurous nitrate
120.	Dinitrobenzene	151.	Hexachlorocyclopentadiene	182.	Methoxychlor
121.	Dinitrophenol	152.	Hydrochloric acid	183.	Methyl mercaptan
122.	Dinitrotoluene	153.	Hydrofluoric acid	184.	Methyl methacrylate
123.	Diquat	154.	Hydrogen cyanide	185.	Methyl parathion
124.	Disulfoton	155.	Hydrogen sulfite	186.	Mevinphos
125.	Diuron	156.	Isoprene	187.	Mexacarbate
126.	Dodecylbenzesulfonic acid	157.	Isopropanolamine dodecylbenzenesulfonate	188.	Monoethylamine
127.	Endosulfan	158.	Kelthane	189.	Monomethylamine
128.	Endrin	159.	Kepone	190.	Naled
129.	Epichlorohydrin	160.	Lead acetate	191.	Naphthalene
130.	Ethion	161.	Lead arsenate	192.	Naphthenic acid
131.	Ethylbenzene	162.	Lead chloride	193.	Nickel ammonium sulfate
132.	Ethylenediamine	163.	Lead fluoborate	194.	Nickel chloride
133.	Ethylene dibromide	164.	Lead fluorite	195.	Nickel hydroxide

		ΠΑ	ZARDOUS SUBSTANCES (con	unueu)	
196.	Nickel nitrate	221.	Propargite	246.	Sodium phosphate (tribasic)
197.	Nickel sulfate	222.	Propionic acid	247.	Sodium selenite
198.	Nitric acid	223.	Propionic anhydride	248.	Strontium choromate
199.	Nitrobenzene	224.	Propylene oxide	249.	Strychnine
200.	Nitrogen dioxide	225.	Pyrethrins	250.	Styrene
201.	Nitrophenol	226.	Quinoline	251.	Sulfuric acid
202.	Nitrotoluene	227.	Resorcinol	252.	Sulfur monochloride
203.	Paraformaldehyde	228.	Selenium oxide	253.	2,4,5-T acid (2,4,5-Trichlorophenoxy acetic acid)
204.	Parathion	229.	Silver nitrate	254.	2,4,5-T amines (2,4,5-Trichlorophenoxy acetic acid amines)
205.	Pentachlorophenol	230.	Sodium	255.	2,4,5-T esters (2,4,5-Trichlorophenoxy acetic acid esters)
206.	Phenol	231.	Sodium arsenate	256.	2,4,5-salts (2,4,5-Trichlorophenoxy acetic acid salts)
207.	Phosgene	232.	Sodium arsenite	257.	2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid)
208.	Phosphoric acid	233.	Sodium bichromate	258.	2,4,5-TP acid esters (2,4,5- Trichlorophenoxy propanoic acid esters)
209.	Phosphorus	234.	Sodium bifluoride	259.	TDE (Tetrachlorodiphenyl ethane)
210.	Phosphorus oxychloride	235.	Sodium bisulfite	260.	Tetraethyl lead
211.	Phosphorus pentasulfide	236.	Sodium chromate	261.	Tetraethyl pyrophosphate
212.	Phosphorus trichloride	237.	Sodium cyanide	262.	Thallium sulfate
213.	Polychlorinated biphenyls (PCB)	238.	Sodium dodecylbenzenesulfonate	263.	Toluene
214.	Potassium arsenate	239.	Sodium fluoride	264.	Toxaphene
215.	Potassium arsenite	240.	Sodium hydrosulfide	265.	Trichlorofon
216.	Potassium bichromate	241.	Sodium hydroxide	266.	Trichloroethylene
217.	Potassium chromate	242.	Sodium hypochlorite	267.	Trichlorophenol
218.	Potassium cyanide	243.	Sodium methylate	268.	Triethanolamine dodecylbenzenesulfonate
219.	Potassium hydroxide	244.	Sodium nitrate	269.	Triethylamine
220.	Potassium permanganate	245.	Sodium phosphate (dibasic)	270.	Trimethylamine
271.	Uranyl acetate	280.	Zinc ammonium chloride	289.	Zinc nitrate
272.	Uranyl nitrate	281.	Zinc borate	290.	Zinc phenolsulfonate
273.	Vanadium pentoxide	282.	Zinc bromide	291.	Zinc phosphate
274.	Vanadyl sulfate	283.	Zinc carbonate	292.	Zinc silicofluoride
275.	Vinyl acetate	284.	Zinc chloride	293.	Zinc sulfate
276.	Vinylidene chloride	285.	Zinc cyanide	294.	Zirconium nitrate
277.	Xylene	286.	Zinc fluoride	295.	Zirconium potassium fluoride
278.	Xylenol	287.	Zinc formate	296.	Zirconium sulfate
279.	Zinc acetate	288.	Zinc hydrosulfonate	297.	Zirconium tetrachloride

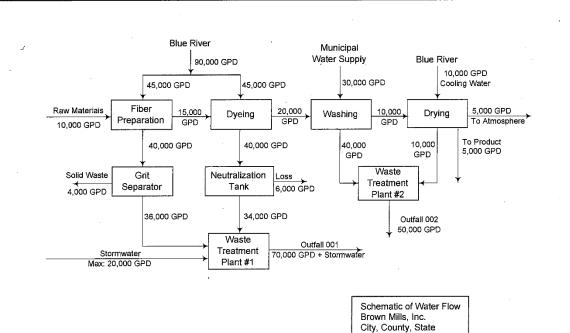
### HAZARDOUS SUBSTANCES (continued)

DEP 7032C Instructions

Revised 03/2018

#### EXAMPLE







## Microbac Laboratories, Inc., Louisville

## CERTIFICATE OF ANALYSIS L2I1199

Project Description

Form C - KPDES Renewal - Mill Creek

Michael O'Guin

LG&E - KU ENERGY LLC.

820 West Broadway

Louisville, KY 40202

Customer Relationship Specialist JOAN HEINSOHN

Tuesday, November 15, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Louisville. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

3323 Gilmore Industrial Blvd | Louisville, KY 40213 | 502.962.6400 p | www.microbac.com

For:

## 

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202

#### Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Outfall 001	L2I1199-01	Wastewater	Grab		10/21/22 10:18	09/30/22 11:03
HG LL Blank -Outfall 001	L2I1199-02	Wastewater	Grab		10/21/22 10:26	09/30/22 11:03
Outfall 002A	L2I1199-03	Wastewater	Grab		09/30/22 09:35	09/30/22 11:03
HG LL Blank -Outfall 002A	L2I1199-04	Wastewater	Grab		09/30/22 09:40	09/30/22 11:03
Outfall 023	L2I1199-05	Wastewater	Grab		10/21/22 10:38	09/30/22 11:03
LL HG Blank -Outfall 023	L2I1199-06	Wastewater	Grab		10/21/22 10:45	09/30/22 11:03
Outfall 025	L2I1199-07	Wastewater	Grab		09/30/22 09:55	09/30/22 11:03
LL HG Blank -Outfall 025	L2I1199-08	Wastewater	Grab		09/30/22 10:00	09/30/22 11:03
Outfall 009 (River Intake)	L2I1199-09	Wastewater	Grab		09/30/22 09:20	09/30/22 11:03
HG LL Blank -Outfall 009 (River Intake)	L2I1199-10	Wastewater	Grab		09/30/22 09:25	09/30/22 11:03
Outfall 002A Rads Only	L2I1199-11	Wastewater	Grab		10/21/22 09:56	09/30/22 11:03
Outfall 025 Rads Only	L2I1199-12	Wastewater	Grab		10/21/22 10:02	09/30/22 11:03
Outfall 009 Rads Only	L2I1199-13	Wastewater	Grab		10/21/22 09:47	09/30/22 11:03
HG LL Sample -Outfall 009 (River Intake)	L2I1199-14	Wastewater	Grab		10/21/22 09:45	09/30/22 11:03

Project Name: Form C - KPDES Renewal - Mill Creek Project / PO Number: 1104203 Received: 09/30/2022

Received: 09/30/2022 Reported: 11/15/2022

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

L2I1199

#### **Analytical Testing Parameters**

Client Sample ID:Outfall 001Sample Matrix:WastewaterLab Sample ID:L2l1199-01						ollected By: ollection Da			
	Analyses P	erformed by:	Microbac La	boratories,	Inc Chio	cagoland			
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 420.4, Rv. 1 (1993) Phenolics, Total Recoverable	<0.010		0.0060	0.010	mg/L	В	10/28/22 1310	10/28/22 1512	2 ABG
Metals Total by CVAF	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 1631E									
Mercury	<5.00		2.31	5.00	ng/L		10/28/22 1520	10/31/22 1058	3 JNH
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 200.8, Rv. 5.4 (1994)							-	-	-
Boron	<0.50		0.40	0.50	mg/L		10/27/22 0633	10/28/22 1212	2 JNH
Tin	<0.0010		0.0005	0.0010	mg/L		10/27/22 0633	10/27/22 1648	
Titanium	<0.030		0.0037	0.030	mg/L		10/27/22 0633	10/27/22 1648	
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 624.1									
1,1,1-Trichloroethane	<0.00023		0.00023	0.0050	mg/L			10/27/22 1849	) JLN
1,1,2,2-Tetrachloroethane	<0.00032		0.00032	0.0050	mg/L			10/27/22 1849	) JLN
1,1,2-Trichloroethane	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
1,1-Dichloroethane	<0.00025		0.00025	0.0050	mg/L			10/27/22 1849	) JLN
1,1-Dichloroethene	<0.00023		0.00023	0.0050	mg/L			10/27/22 1849	) JLN
1,2-Dichlorobenzene	<0.00030		0.00030	0.010	mg/L			10/27/22 1849	) JLN
1,2-Dichloroethane	<0.00038		0.00038	0.0050	mg/L			10/27/22 1849	) JLN
1,2-Dichloropropane	<0.00019		0.00019	0.0050	mg/L			10/27/22 1849	) JLN
1,3-Dichlorobenzene	<0.00024		0.00024	0.010	mg/L			10/27/22 1849	) JLN
1,4-Dichlorobenzene	<0.00028		0.00028	0.010	mg/L			10/27/22 1849	) JLN
2-Chloroethyl vinyl ether	<0.00019		0.00019	0.010	mg/L	Q11		10/27/22 1849	) JLN
Benzene	<0.00015		0.00015	0.0050	mg/L			10/27/22 1849	) JLN
Dichlorobromomethane	<0.00021		0.00021	0.0050	mg/L			10/27/22 1849	) JLN
Bromoform	<0.00025		0.00025	0.0050	mg/L			10/27/22 1849	) JLN
Bromomethane	<0.00029		0.00029	0.010	mg/L			10/27/22 1849	) JLN
Carbon tetrachloride	<0.00025		0.00025	0.0050	mg/L			10/27/22 1849	) JLN
Chlorobenzene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
Chloroethane	<0.00022		0.00022	0.010	mg/L			10/27/22 1849	) JLN
Chloroform	<0.00026		0.00026	0.0020	mg/L			10/27/22 1849	) JLN
Chloromethane	<0.00024		0.00024	0.010	mg/L			10/27/22 1849	) JLN
cis-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
Dibromochloromethane	<0.00024		0.00024	0.0050	mg/L			10/27/22 1849	) JLN
Ethylbenzene	<0.00025		0.00025	0.0050	mg/L			10/27/22 1849	) JLN
Methylene chloride	<0.010		0.010	0.010	mg/L			10/27/22 1849	

Microbac Laboratories, Inc.

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## Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

Sample Matrix:WastewaterLab Sample ID:L2I1199-01						llected By: llection Date:	Wayne M 10/21/202		
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Tetrachloroethene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
Toluene	<0.00030		0.00030	0.0050	mg/L			10/27/22 1849	) JLN
trans-1,2-Dichloroethene	<0.00022		0.00022	0.0050	mg/L			10/27/22 1849	) JLN
trans-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
Trichloroethene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1849	) JLN
Trichlorofluoromethane	<0.00027		0.00027	0.010	mg/L			10/27/22 1849	) JLN
Vinyl chloride	<0.00026		0.00026	0.0020	mg/L			10/27/22 1849	) JLN
Acrolein	<0.0022		0.0022	0.10	mg/L	Q10		10/27/22 1849	) JLN
Acrylonitrile	<0.0019		0.0019	0.10	mg/L	Q10		10/27/22 1849	) JLN
Surrogate: 1,2-Dichloroethane-D4	101			74.5-132	% Rec			10/27/22 1849	
Surrogate: 4-Bromofluorobenzene	91.7			nit: 80-120	% Rec			10/27/22 1849	
Surrogate: Dibromofluoromethane	100			nit: 80-120	% Rec			10/27/22 1849	
-									
Surrogate: Toluene-D8	100		Lim	iit: 80-120	% Rec			10/27/22 1849	) JLN
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 625.1									
1,2,4-Trichlorobenzene	<0.012		0.00074	0.012	mg/L	<b>Q3</b> 1	0/27/22 1202	10/29/22 0108	CLR
1,2,4-Trichlorobenzene	< 0.012		0.00069	0.012	mg/L		11/03/22 1353	11/04/22 0507	
2,2'-oxybis(1-chloropropane)	< 0.012		0.00085	0.012	mg/L		0/27/22 1202	10/29/22 0108	
2,4,5-Trichlorophenol	< 0.012		0.00095	0.012	mg/L		0/27/22 1202	10/29/22 0108	
2,4,6-Trichlorophenol	< 0.012		0.00092	0.012	mg/L		0/27/22 1202	10/29/22 0108	
2,4-Dichlorophenol	< 0.012		0.00076	0.012	mg/L		0/27/22 1202	10/29/22 0108	
2,4-Dimethylphenol	< 0.012		0.00085	0.012	mg/L		0/27/22 1202	10/29/22 0108	
2,4-Dinitrophenol	< 0.062		0.00038	0.062	mg/L		0/27/22 1202	10/29/22 0108	
2,4-Dinitrotoluene	< 0.012		0.00055	0.012	mg/L		11/03/22 1353	11/04/22 0507	
2,4-Dinitrotoluene	< 0.012		0.00059	0.012	mg/L		10/27/22 1202	10/29/22 0108	
2,6-Dichlorophenol	< 0.012		0.00089	0.012	mg/L		10/27/22 1202	10/29/22 0108	
2,6-Dinitrotoluene	< 0.012		0.00071	0.012	mg/L		10/27/22 1202	10/29/22 0100	
2-Chloronaphthalene	< 0.012		0.00089	0.012	mg/L		10/27/22 1202	10/29/22 0100	
2-Chlorophenol	<0.012		0.00090	0.012	mg/L		10/27/22 1202	10/29/22 0100	
2-Chlorophenol	<0.012		0.00085	0.012	mg/L		11/03/22 1353	11/04/22 0507	
2-Methylnaphthalene	<0.012		0.00086	0.012	mg/L		10/27/22 1202	10/29/22 0108	
2-Methylphenol	<0.012		0.00095	0.012	mg/L		10/27/22 1202	10/29/22 0100	
2-Nitroaniline	<0.012		0.00061	0.012	mg/L		10/27/22 1202	10/29/22 0100	
2-Nitrophenol	<0.012		0.0001	0.012	mg/L		10/27/22 1202	10/29/22 0100	
3,3'-Dichlorobenzidine	<0.012		0.0011	0.062	mg/L		10/27/22 1202	10/29/22 0108	
3/4-Methylphenol	<0.002		0.0010	0.002	mg/L		10/27/22 1202		
3-Nitroaniline	<0.012		0.0010	0.012	mg/L		10/27/22 1202	10/29/22 0108	
	<0.012		0.00042		-		10/27/22 1202	10/29/22 0108	
4,6-Dinitro-2-methylphenol			0.00042	0.031	mg/L			10/29/22 0108	
4-Bromophenyl phenyl ether	<0.012			0.012	mg/L		10/27/22 1202	10/29/22 0108	
1 Chloro 3 methylphonel	~0 0.05							10/00/00 0400	
4-Chloro-3-methylphenol 4-Chloroaniline	<0.025 <0.012		0.00095 0.00086	0.025 0.012	mg/L mg/L		10/27/22 1202 10/27/22 1202	10/29/22 0108 10/29/22 0108	

## Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

Client Sample ID:Outfall 001Sample Matrix:WastewaterLab Sample ID:L2I1199-01					ollected By: ollection Date	Wayne M a: 10/21/202		
Semivolatile Organic Compounds by GCMS	Result	Limit(s) MDL	. RL	Units	Note	Prepared	Analyzed	Analyst
4-Nitroaniline	<0.012	0.0012	0.012	mg/L	Y	10/27/22 1202	10/29/22 0108	CLR
4-Nitrophenol	<0.062	0.0010	0.062	mg/L		10/27/22 1202	10/29/22 0108	CLR
Acenaphthene	<0.012	0.000015	0.012	mg/L	Q	10/27/22 1202	10/29/22 0108	CLR
Acenaphthylene	<0.012	0.0000038	0.012	mg/L		10/27/22 1202	10/29/22 0108	CLR
Acetophenone	<0.012	0.0010		mg/L	Y	10/27/22 1202	10/29/22 0108	CLR
Aniline	<0.012	0.0019		mg/L	Y	10/27/22 1202	10/29/22 0108	
Anthracene	<0.012	0.000088	0.012	mg/L		10/27/22 1202	10/29/22 0108	
Benzidine	< 0.062	0.025		mg/L		10/27/22 1202	10/29/22 0108	
Benzo[a]anthracene	< 0.012	0.0000050		mg/L		10/27/22 1202	10/29/22 0108	
Benzo[a]pyrene	< 0.012	0.0000075		mg/L		10/27/22 1202	10/29/22 0108	
Benzo[b]fluoranthene	< 0.012	0.0000071		mg/L	H2	11/03/22 1353	11/04/22 0507	
Benzo[b]fluoranthene	< 0.012	0.0000075		mg/L	Q3	10/27/22 1202	10/29/22 0108	
Benzo[g,h,i]perylene	<0.012	0.0000062		mg/L	QJ	10/27/22 1202	10/29/22 0100	
Benzo[k]fluoranthene	<0.012	0.0000088		mg/L		10/27/22 1202	10/29/22 0100	
Benzoic acid	<0.062	0.00062		mg/L	Y	10/27/22 1202	10/29/22 0100	
Benzyl alcohol	<0.002	0.00083		mg/L	Ŷ	10/27/22 1202	10/29/22 0100	
Bis(2-chloroethoxy)methane	<0.012	0.0003			I	10/27/22 1202	10/29/22 0108	
Bis(2-chloroethyl)ether	<0.012	0.00096		mg/L	Q	10/27/22 1202	10/29/22 0100	
( ),	<0.012	0.00050		mg/L	Q	10/27/22 1202		
Bis(2-ethylhexyl)phthalate	<0.012	0.0013		mg/L			10/29/22 0108	
Butyl benzyl phthalate	<0.012	0.00090		mg/L	V	10/27/22 1202	10/29/22 0108	
Carbazole	<0.012			mg/L	Y	10/27/22 1202	10/29/22 0108	
		0.0000075		mg/L		10/27/22 1202	10/29/22 0108	
Dibenz[a,h]anthracene	<0.012	0.0000075		mg/L	V	10/27/22 1202	10/29/22 0108	
Dibenzofuran	< 0.012	0.00085		mg/L	Y	10/27/22 1202	10/29/22 0108	
Diethyl phthalate	< 0.012	0.0016		mg/L		10/27/22 1202	10/29/22 0108	
Dimethyl phthalate	< 0.012	0.00085		mg/L		10/27/22 1202	10/29/22 0108	
Di-n-butyl phthalate	< 0.012	0.0010		mg/L		10/27/22 1202	10/29/22 0108	
Di-n-octyl phthalate	<0.012	88000.0		mg/L		10/27/22 1202	10/29/22 0108	
Fluoranthene	< 0.012	0.0000062		mg/L		10/27/22 1202	10/29/22 0108	
Fluorene	<0.012	0.000050		mg/L		10/27/22 1202	10/29/22 0108	
Hexachlorobenzene	<0.012	0.0012		mg/L		10/27/22 1202	10/29/22 0108	
Hexachlorobutadiene	<0.012	0.0012		mg/L		10/27/22 1202	10/29/22 0108	
Hexachlorocyclopentadiene	<0.012	0.00050		mg/L		10/27/22 1202	10/29/22 0108	
Hexachloroethane	<0.012	0.0012		mg/L		10/27/22 1202	10/29/22 0108	
Indeno[1,2,3cd]pyrene	<0.012	0.0000050		mg/L		10/27/22 1202	10/29/22 0108	CLR
Isophorone	<0.012	0.0010		mg/L		10/27/22 1202	10/29/22 0108	CLR
Naphthalene	<0.012	0.0000075	0.012	mg/L		10/27/22 1202	10/29/22 0108	CLR
Nitrobenzene	<0.012	0.00099		mg/L		10/27/22 1202	10/29/22 0108	
N-Nitrosodimethylamine	<0.012	0.0011		mg/L		10/27/22 1202	10/29/22 0108	CLR
N-Nitrosodi-n-propylamine	<0.012	0.0012		mg/L	H2	11/03/22 1353	11/04/22 0507	CLR
N-Nitrosodi-n-propylamine	<0.012	0.0012	0.012	mg/L	Q3	10/27/22 1202	10/29/22 0108	CLR
N-Nitrosodiphenylamine	<0.012	0.00090	0.012	mg/L		10/27/22 1202	10/29/22 0108	CLR
Pentachlorophenol	<0.062	0.00039	0.062	mg/L		10/27/22 1202	10/29/22 0108	CLR
Phenanthrene	<0.012	0.000088	0.012	mg/L		10/27/22 1202	10/29/22 0108	CLR
Phenol	<0.012	0.00046	0.012	mg/L		10/27/22 1202	10/29/22 0108	CLR

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID:	Outfall 001									
Sample Matrix:	Wastewater					Co	llected By:	Wayne M	ills	
Lab Sample ID:	L2I1199-01					Co	llection Date	e: 10/21/202	22 10:18	
Semivolatile Organic Compounds by GCM		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Pyrene		<0.012		0.0000059	0.012	mg/L	H2	11/03/22 1353	11/04/22 0507	' CLR
Pyrene		<0.012		0.0000062	0.012	mg/L	Q3	10/27/22 1202	10/29/22 0108	CLR
Pyridine		<0.012		0.0016	0.012	mg/L	Y	10/27/22 1202	10/29/22 0108	3 CLR
Surrogate: 2,4,6-Tr	ibromophenol	55.7		Limit:	47.8-138	% Rec		10/27/22 1202	10/29/22 0108	3 CLR
Surrogate: 2-Fluoro	obiphenyl	33.9		Lim	it: 10-110	% Rec		10/27/22 1202	10/29/22 0108	CLR
Surrogate: 2-Fluoro	ophenol	21.0		Lim	it: 10-110	% Rec		10/27/22 1202	10/29/22 0108	CLR
Surrogate: Nitrober	nzene-d5	29.3		Lim	it: 10-110	% Rec		10/27/22 1202	10/29/22 0108	CLR
Surrogate: Phenol-	d5	18.7		Limi	t: 10-60.8	% Rec		10/27/22 1202	10/29/22 0108	B CLR
Surrogate: Terpher	nyl-d14	50.1		Limit:	16.8-110	% Rec		10/27/22 1202	10/29/22 0108	B CLR

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Field Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: HACH 8167									
Chlorine, Total Residual	0.27		0.02	0.02	mg/L			10/21/22 1018	LWM
Method: NA									
Flow by Measurement & Calc.	134.8			0	MGD			10/21/22 1018	LWM
Method: SM 2550 B-2010									
Temperature	27.1		1.0	1.0	°C			10/21/22 1018	LWM
Method: SM 4500-H+ B-2011									
pH (at 25°C)	7.1		1.0	1.0	S.U.			10/21/22 1018	LWM
Microbiology	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 9223 B (Colilert-18)-1997									
E. coli	>2419.6		0.0	1.0	MPN/100mL		10/21/22 1615	10/22/22 1336	NWW
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation									
Total Organic Nitrogen	<1.0		0.53	1.0	mg/L		10/24/22 1229	10/25/22 1322	SSL
Method: EPA 1664B									
Oil & Grease	<5.3		3.0	5.3	mg/L			10/24/22 1048	RMT
Method: EPA 351.2, Rv. 2 (1993)									
Nitrogen, Total Kjeldahl	<1.0		0.53	1.0	mg/L		10/24/22 1012	10/25/22 1322	SSL
Method: EPA 365.1, Rv. 2 (1993)									
Phosphorus	<0.20		0.088	0.20	mg/L		10/24/22 1136	10/25/22 1619	SSL

Method: SM 2120 B-2011

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Outfall 00 Sample Matrix: Wastewat					Co	ollected By:	Wayne M	lills	
Lab Sample ID: L2I1199-0	01				Co	ollection Da	te: 10/21/202	22 10:18	
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
pH at Color	7			1	S.U.			10/21/22 1753	NWW
Color, Pt-Co	15		0	5	CU			10/21/22 1753	NWW
Method: SM 4500-CN <sup>-</sup> E-2011									
Cyanide	<0.010		0.0035	0.010	mg/L	M1a	10/25/22 1026	10/26/22 1426	SSL
Method: SM 4500-NH3 G-2011									
Nitrogen, Ammonia	<0.50		0.11	0.50	mg/L		10/24/22 1229	10/24/22 1814	SSL
Method: SM 4500-S2 D-2011									
Sulfide	<0.20		0.12	0.20	mg/L			10/26/22 1623	NWW
Method: SM 4500-SO3 <sup>-</sup> B-2011									
Sulfite	<2.0		1.1	2.0	mg/L	H1		10/27/22 1613	NWW
Method: SM 5210 B-2011									
BOD, 5 Day	<3.0		3.0	3.0	mg/L		10/21/22 1649	10/26/22 1907	SZH
Method: SM 5220 D-2011									
COD	<50		24	50	mg/L	M1a	10/25/22 1121	10/25/22 1321	SZH
Method: SM 5310 C-2011	۵ <i>-</i>		0.50	1.0					
Carbon, Total Organic	3.5		0.50	1.0	mg/L		10/25/22 1541	10/25/22 2001	SSL
Method: SM 5540 C-2011	-0.50		0.45	0.50					
MBAS (as LAS MW 340)	<0.50		0.15	0.50	mg/L			10/21/22 1445	SSL
Method: USGS I-3765-85	45		_	-					
Solids, Total Suspended	15		5	5	mg/L		10/24/22 1504	10/25/22 0938	DKB
Metals Total by ICP	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1994	L)								
Calcium	42		0.026	0.20	mg/L		10/24/22 1100	10/28/22 0047	SSL
Magnesium	14		0.054	0.20	mg/L		10/24/22 1100	10/28/22 0047	SSL
Method: SM 2340 B-2011									
Hardness, Total as CaCO3	160		0.22	0.82	mg/L		10/24/22 1100	10/28/22 0047	SSL
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5.4 (1994			00				10/04/00 0000	40/00/00 1000	0.01
Aluminum	91 <0.50		30	75	ug/L		10/24/22 0936	10/26/22 1600	
Antimony	<0.50		0.22	0.50	ug/L		10/24/22 0936	10/24/22 1653	
Arsenic	0.86		0.27	0.50	ug/L		10/24/22 0936	10/24/22 1653	
Beryllium	<1.0		0.53	1.0	ug/L		10/24/22 0936	10/24/22 1653	
Cadmium	<0.50		0.28	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Outfall Sample Matrix: Wastey					Cr	ollected By:	Wayne N	lills	
Lab Sample ID: L2I1199						ollection Da			
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Chromium	0.60		0.22	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Copper	<5.0		1.1	5.0	ug/L		10/24/22 0936	10/24/22 1653	SSL
Iron	160		24	50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Lead	<0.50		0.33	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Molybdenum	6.1		0.20	2.0	ug/L		10/24/22 0936	10/24/22 1653	SSL
Nickel	2.2		0.69	1.0	ug/L		10/24/22 0936	10/24/22 1653	SSL
Selenium	<0.50		0.45	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Silver	<0.10		0.012	0.10	ug/L		10/24/22 0936	10/24/22 1653	SSL
Thallium	<0.50		0.28	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Zinc	<10		6.2	10	ug/L		10/24/22 0936	10/24/22 1653	SSL
Barium	42		0.30	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Cobalt	<0.50		0.23	0.50	ug/L		10/24/22 0936	10/24/22 1653	SSL
Manganese	66		0.19	0.50	ug/L		10/24/22 0936	10/24/22 1653	8 SSL
Anions by IC	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 300.0, Rv. 2.1 (19	193)						•		
Bromide	< 0.50		0.017	0.50	mg/L		10/21/22 1701	10/21/22 2211	NWW
Chloride	38		0.018	0.50	mg/L	B2	10/21/22 1701	10/21/22 2211	
Fluoride	< 0.50		0.045	0.50	mg/L		10/21/22 1701	10/21/22 2211	
Nitrogen, Nitrate + Nitrite	1.0		0.12	0.15	mg/L		10/21/22 1701	10/21/22 2211	
Sulfate	73		0.026	0.50	mg/L	B2	10/21/22 1701	10/21/22 2211	
		Analyses Perf	ormed by: C	El Laborat	ories II C				
Radiochemistry	Result		Limit(s)		Units	Note	Prepared	Analyzed	Analys
Method: Calculation		••							
Radium-226+228 Sum	1.01	+/-0.553		1.01	pCi/L		11/01/22 0000	11/14/22 0000	) NXL
Method: EPA 900.0/SW846 931	10								
ALPHA	0.488	+/-1.42		3	pCi/L	U	11/01/22 0000	11/07/22 0000	) KP1
BETA	3.52	+/-1.59		4	pCi/L		11/01/22 0000	11/07/22 0000	) KP1
Method: EPA 903.1 Modified									
Radium-226	0.365	+/-0.253		1	pCi/L		11/01/22 0000	11/13/22 0000	) LXP
Method: EPA 904.0/SW846 932				4			11/01/02 225-		
Radium-228	0.643	+/-0.491		1	pCi/L	U	11/01/22 0000	11/07/22 0000	) JE1

Method: EPA 905.0 Modified/DOE RP501 Rev. 1 Modified Strontium-90 2 0.994 +/-1.04 pCi/L U 11/01/22 0000 11/04/22 0000 KH1 Uranium Result Limit(s) MDL RL Units Note Prepared Analyzed Analyst

Method: EPA 200.8

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## Microbac Laboratories, Inc., Louisville

## CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID:	Outfall 001									
Sample Matrix:	Wastewater					Co	llected By:	Wayne Mi	lls	
Lab Sample ID:	L2I1199-01					Co	llection Date	10/21/202	2 10:18	
Uranium		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Uranium		0.000412		0.000067	0.0002	mg/L		11/01/22 0000	11/03/22 0000	PRB
Client Sample ID:	HG LL Blank -C	Dutfall 001								
Sample Matrix:	Wastewater					Co	llected By:	Wayne Mi	lls	
Lab Sample ID:	L2I1199-02					Co	llection Date	10/21/202	2 10:26	
		Analyses Pe	erformed by:	Microbac La	boratories,	Inc Chic	agoland			
Metals Total by CVAF		Analyses Pe Result	erformed by: Limit(s)	Microbac La MDL	boratories, <b>RL</b>	Inc Chic Units	agoland Note	Prepared	Analyzed	Analys
Metals Total by CVAF Method: EPA 1631E		,	,		,		0	Prepared	Analyzed	Analys

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Sample Matrix: Lab Sample ID:	Outfall 002A Wastewater L2I1199-03					Co	ollected By: ollection Da			
		-	erformed by:				-			
Inorganics Total		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 420.4, Rv Phenolics, Total Recov		<0.010		0.0060	0.010	mg/L		10/13/22 1104	10/13/22 1719	ABG
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<5.00		2.31	5.00	ng/L		10/11/22 1002	10/12/22 1020	JNH
Metals Total by ICPMS		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv	. 5.4 (1994)									
Boron		8.8		2.0	2.5	mg/L	Q8	10/05/22 0607	10/07/22 1515	JNH
Tin		<0.0010		0.0005	0.0010	mg/L		10/05/22 0607	10/06/22 1647	JNH
Titanium		<0.030		0.0037	0.030	mg/L		10/05/22 0607	10/06/22 1647	JNH
Semivolatile Organic Compounds by GCMS		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1										
1,2,4-Trichlorobenzen	9	<0.011		0.00066	0.011	mg/L	Q	10/06/22 0652	10/15/22 0005	CLR
2,2'-oxybis(1-chloropr		<0.011		0.00076	0.011	mg/L		10/06/22 0652	10/15/22 0005	
2,4,5-Trichlorophenol	. ,	<0.011		0.00084	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	
2,4,6-Trichlorophenol		<0.011		0.00082	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,4-Dichlorophenol		<0.011		0.00068	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,4-Dimethylphenol		<0.011		0.00076	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,4-Dinitrophenol		<0.056		0.00033	0.056	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,4-Dinitrotoluene		<0.011		0.00052	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,6-Dichlorophenol		<0.011		0.00079	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2,6-Dinitrotoluene		<0.011		0.00063	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2-Chloronaphthalene		<0.011		0.00079	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
2-Chlorophenol		<0.011		0.00077	0.011	mg/L	H2	10/20/22 1644	10/24/22 2112	CLR
2-Chlorophenol		<0.011		0.00080	0.011	mg/L	Q3	10/06/22 0652	10/15/22 0005	CLR
2-Methylnaphthalene		<0.011		0.00077	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
2-Methylphenol		<0.011		0.00084	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
2-Nitroaniline		<0.011		0.00054	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
2-Nitrophenol		<0.011		0.0010	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
3,3'-Dichlorobenzidine	•	<0.056		0.0014	0.056	mg/L		10/06/22 0652	10/15/22 0005	CLR
3/4-Methylphenol		<0.011		0.00092	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
3-Nitroaniline		<0.011		0.00089	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
4,6-Dinitro-2-methylph	enol	<0.028		0.00038	0.028	mg/L		10/06/22 0652	10/15/22 0005	CLR
4-Bromophenyl pheny	lether	<0.011		0.00074	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
4-Chloro-3-methylpher	lor	<0.022		0.00084	0.022	mg/L		10/06/22 0652	10/15/22 0005	CLR
4-Chloroaniline		<0.011		0.00077	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
4-Chlorophenyl pheny	lether	<0.011		0.00077	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
4-Nitroaniline		<0.011		0.0011	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR

## Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

Client Sample ID:Outfall 002ASample Matrix:WastewaterLab Sample ID:L2I1199-03					Ilected By:	Xavier Bu 09/30/202		
Semivolatile Organic Compounds by GCMS	Result	Limit(s) MDL	RL	Units	Note	Prepared	Analyzed	Analyst
4-Nitrophenol	<0.056	0.00092	0.056	mg/L		10/06/22 0652	10/15/22 0005	CLR
Acenaphthene	<0.011	0.000013	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
Acenaphthylene	<0.011	0.0000033	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
Acetophenone	<0.011	0.00089	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
Aniline	<0.011	0.0017	0.011	mg/L	Y	10/06/22 0652	10/15/22 0005	CLR
Anthracene	<0.011	0.000078	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
Benzidine	<0.056	0.022	0.056	mg/L		10/06/22 0652	10/15/22 0005	CLR
Benzo[a]anthracene	<0.011	0.0000044	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
Benzo[a]pyrene	<0.011	0.0000067	0.011	mg/L		10/06/22 0652	10/15/22 0005	CLR
Benzo[b]fluoranthene	<0.011	0.0000067	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Benzo[g,h,i]perylene	<0.011	0.0000056	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Benzo[k]fluoranthene	<0.011	0.0000078	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Benzoic acid	< 0.056	0.00056	0.056	mg/L		10/06/22 0652	10/15/22 0005	
Benzyl alcohol	<0.011	0.00073	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Bis(2-chloroethoxy)methane	<0.011	0.00094	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Bis(2-chloroethyl)ether	<0.011	0.00086	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Bis(2-ethylhexyl)phthalate	<0.011	0.0013	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Butyl benzyl phthalate	<0.011	0.0010	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Carbazole	<0.011	0.00080	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Chrysene	<0.011	0.0000067	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Dibenz[a,h]anthracene	<0.011	0.0000067	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Dibenzofuran	<0.011	0.00076	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Diethyl phthalate	<0.011	0.0014	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Dimethyl phthalate	<0.011	0.00076	0.011	mg/L		10/06/22 0652	10/15/22 0005	
• •	<0.011	0.00091	0.011	mg/L		10/06/22 0652		
Di-n-butyl phthalate Di-n-octyl phthalate	<0.011	0.00078	0.011	mg/L		10/06/22 0652	10/15/22 0005 10/15/22 0005	
Fluoranthene	<0.011	0.0000056	0.011	mg/L		10/06/22 0652		
	<0.011	0.0000044	0.011	•			10/15/22 0005	
Fluorene	<0.011	0.000044	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Hexachlorobenzene		0.0011		mg/L		10/06/22 0652	10/15/22 0005	
	<0.011 <0.011	0.0011	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Hexachlorocyclopentadiene			0.011	mg/L		10/06/22 0652	10/15/22 0005	
Hexachloroethane	<0.011	0.0011	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Indeno[1,2,3cd]pyrene	<0.011	0.0000044	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Isophorone	<0.011	0.00089	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Naphthalene	< 0.011	0.0000067	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Nitrobenzene	< 0.011	0.00088	0.011	mg/L		10/06/22 0652	10/15/22 0005	
N-Nitrosodimethylamine	<0.011	0.0010	0.011	mg/L		10/06/22 0652	10/15/22 0005	
N-Nitrosodi-n-propylamine	< 0.011	0.0011	0.011	mg/L		10/06/22 0652	10/15/22 0005	
N-Nitrosodiphenylamine	<0.011	0.00080	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Pentachlorophenol	< 0.056	0.00034	0.056	mg/L		10/06/22 0652	10/15/22 0005	
Phenanthrene	<0.011	0.0000078	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Phenol	<0.011	0.00041	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Pyrene	<0.011	0.0000056	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Pyridine	<0.011	0.0014	0.011	mg/L		10/06/22 0652	10/15/22 0005	
Surrogate: 2,4,6-Tribromophenol	58.6	Limit:	47.8-138	% Rec		10/06/22 0652	10/15/22 0005	CLR

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## Microbac Laboratories, Inc., Louisville

## CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Outfall 002A Sample Matrix: Wastewater					Co	llected By:	Xavier Bu	illock	
Lab Sample ID: L2I1199-03					Co	llection Da	te: 09/30/202	22 9:35	
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Surrogate: 2-Fluorobiphenyl	40.8		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0005	5 CLR
Surrogate: 2-Fluorophenol	24.1		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0005	5 CLR
Surrogate: Nitrobenzene-d5	37.3		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0005	5 CLR
Surrogate: Phenol-d5	21.3		Lim	it: 10-60.8	% Rec		10/06/22 0652	10/15/22 0005	5 CLR
Surrogate: Terphenyl-d14	46.8		Limit	: 16.8-110	% Rec		10/06/22 0652	10/15/22 0005	5 CLR
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 624.1									
1,1,1-Trichloroethane	<0.00023		0.00023	0.0050	mg/L			10/12/22 1911	JBS
1,1,2,2-Tetrachloroethane	<0.00032		0.00032	0.0050	mg/L			10/12/22 1911	JBS
1,1,2-Trichloroethane	<0.00026		0.00026	0.0050	mg/L			10/12/22 1911	JBS
1,1-Dichloroethane	<0.00025		0.00025	0.0050	mg/L			10/12/22 1911	JBS
1,1-Dichloroethene	<0.00023		0.00023	0.0050	mg/L			10/12/22 1911	JBS
1,2-Dichlorobenzene	<0.00030		0.00030	0.010	mg/L			10/12/22 1911	JBS
1,2-Dichloroethane	<0.00038		0.00038	0.0050	mg/L			10/12/22 1911	JBS
1,2-Dichloropropane	<0.00019		0.00019	0.0050	mg/L			10/12/22 1911	JBS
1,3-Dichlorobenzene	<0.00024		0.00024	0.010	mg/L			10/12/22 1911	JBS
1,4-Dichlorobenzene	<0.00028		0.00028	0.010	mg/L			10/12/22 1911	JBS
2-Chloroethyl vinyl ether	<0.00019		0.00019	0.010	mg/L	Q11		10/12/22 1911	JBS
Benzene	<0.00015		0.00015	0.0050	mg/L			10/12/22 1911	JBS
Dichlorobromomethane	<0.00021		0.00021	0.0050	mg/L			10/12/22 1911	JBS
Bromoform	<0.00025		0.00025	0.0050	mg/L			10/12/22 1911	JBS
Bromomethane	<0.00029		0.00029	0.010	mg/L			10/12/22 1911	JBS
Carbon tetrachloride	<0.00025		0.00025	0.0050	mg/L			10/12/22 1911	JBS
Chlorobenzene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1911	
Chloroethane	<0.00022		0.00022	0.010	mg/L			10/12/22 1911	
Chloroform	<0.00026		0.00026	0.0020	mg/L			10/12/22 1911	
Chloromethane	<0.00024		0.00024	0.010	mg/L			10/12/22 1911	
cis-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1911	
Dibromochloromethane	<0.00024		0.00024	0.0050	mg/L			10/12/22 1911	
Ethylbenzene	<0.00025		0.00025	0.0050	mg/L			10/12/22 1911	
Methylene chloride	<0.010		0.010	0.010	mg/L			10/12/22 1911	
Tetrachloroethene	< 0.00026		0.00026	0.0050	mg/L			10/12/22 1911	
Toluene	<0.00030		0.00030	0.0050	mg/L			10/12/22 1911	
trans-1,2-Dichloroethene	<0.00022		0.00022	0.0050	mg/L			10/12/22 1911	
trans-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1911	
Trichloroethene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1911	
Trichlorofluoromethane	<0.00027		0.00027	0.010	mg/L			10/12/22 1911	
Vinyl chloride	<0.00026		0.00026	0.0020	mg/L	040		10/12/22 1911	
Acrolein	< 0.0022		0.0022	0.10	mg/L	Q10		10/12/22 1911	
Acrylonitrile Surrogate: 1,2-Dichloroethane-D4	<0.0019 111		0.0019	0.10 74.5-132 :	mg/L % Rec	Q10, Q2		10/12/22 1911 10/12/22 1911	

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID:Outfall 002ASample Matrix:WastewaterLab Sample ID:L2I1199-03						llected By: llection Date	Xavier Bu 09/30/202		
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Surrogate: 4-Bromofluorobenzene	90.1		Limi	it: 80-120	% Rec			10/12/22 191	I JBS
Surrogate: Dibromofluoromethane	101		Limi	it: 80-120	% Rec			10/12/22 191 <sup>2</sup>	I JBS
Surrogate: Toluene-D8	99.5		Limi	it: 80-120	% Rec			10/12/22 191	I JBS
	Analyses	Performed by	: Microbac L	aboratori	es, Inc., Lou	iisville			
Field Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: HACH 8167									
Chlorine, Total Residual	0.08		0.02	0.02	mg/L			09/30/22 093	5 XDB
Method: NA									
Flow by Measurement & Calc.	7.79			0	MGD			09/30/22 093	5 XDB
Method: SM 2550 B-2010 Temperature	18.0		1.0	1.0	°C			09/30/22 0935	5 XDB
Method: SM 4500-H+ B-2011 pH (at 25°C)	7.5		1.0	1.0	S.U.			09/30/22 0935	5 XDB
Microbiology	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 9223 B (Colilert-18)-1997 E. coli	85.7		0.0	1.0	MPN/100mL		09/30/22 1652	10/01/22 1112	2 NWW
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation									
Total Organic Nitrogen	<1.0		0.53	1.0	mg/L		10/05/22 1205	10/06/22 1958	3 SSL
Method: EPA 1664B Oil & Grease	<5.3		3.0	5.3	ma/l			10/03/22 165 <sup>,</sup>	1 RMT
	~5.5		5.0	5.5	mg/L			10/03/22 105	
Method: EPA 351.2, Rv. 2 (1993) Nitrogen, Total Kjeldahl	1.4		0.53	1.0	mg/L		10/05/22 1040	10/06/22 1526	6 SSL
Method: EPA 365.1, Rv. 2 (1993)									
Phosphorus	<0.10		0.044	0.10	mg/L		10/03/22 1346	10/04/22 1548	3 SSL
Method: SM 2120 B-2011									
pH at Color	8			1	S.U.		09/30/22 1539	09/30/22 1544	1 NWW
Color, Pt-Co	10		0	5	CU		09/30/22 1539	09/30/22 1544	1 NWW
Method: SM 4500-CN <sup>-</sup> E-2011	0.011		0.0005	0.040	···· ·· //		40/44/00 4050	40/44/20 4000	
Cyanide	0.011		0.0035	0.010	mg/L		10/11/22 1059	10/11/22 1929	) SSL

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Sample Matrix: Waste	all 002A rewater 199-03					ollected By: ollection Da			
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 4500-NH3 G-201	11								
Nitrogen, Ammonia	0.63		0.11	0.50	mg/L		10/05/22 1205	10/06/22 1958	SSL
Method: SM 4500-S2 <sup>-</sup> D-2011	1								
Sulfide	<0.20		0.12	0.20	mg/L			10/05/22 1700	NWW
Method: SM 4500-SO3 <sup>-</sup> B-20									
Sulfite	<2.0		1.1	2.0	mg/L	H1		10/07/22 1500	NWW
Method: SM 5210 B-2011									
BOD, 5 Day	<3.0		3.0	3.0	mg/L		09/30/22 1331	10/05/22 1311	SZH
Method: SM 5220 D-2011									
COD	<50		24	50	mg/L		10/04/22 1349	10/04/22 1549	SZH
Method: SM 5310 C-2011			0.50	4.0					
Carbon, Total Organic	2.8		0.50	1.0	mg/L		10/13/22 1529	10/14/22 0211	SSL
Method: SM 5540 C-2011	-0.50		0.45	0 50					
MBAS (as LAS MW 340)	<0.50		0.15	0.50	mg/L			09/30/22 1834	NWW
Method: USGS I-3765-85			-	-				10/05/00 1500	DIC
Solids, Total Suspended	14		5	5	mg/L		10/05/22 1346	10/05/22 1500	DKB
Metals Total by ICP	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4 (1	1004)								
	1994)								SSL
Calcium	1334)		0.26	2.0	mg/L		10/12/22 1206	10/14/22 1333	
			0.26 0.054	2.0 0.20	mg/L mg/L		10/12/22 1206 10/12/22 1206	10/14/22 1333 10/12/22 2254	SSL
Calcium Magnesium Method: SM 2340 B-2011	110 87		0.054	0.20	mg/L		10/12/22 1206	10/12/22 2254	
Calcium Magnesium	110				-				
Calcium Magnesium <b>Method: SM 2340 B-2011</b> Hardness, Total as CaCO3	110 87	Limit(s)	0.054	0.20	mg/L	Note	10/12/22 1206 10/12/22 1206	10/12/22 2254 10/14/22 1333	SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS	110 87 640 <b>Result</b>	Limit(s)	0.054 0.65	0.20 5.0	mg/L mg/L	Note	10/12/22 1206	10/12/22 2254	
Calcium Magnesium <b>Method: SM 2340 B-2011</b> Hardness, Total as CaCO3	110 87 640 <b>Result</b>	Limit(s)	0.054 0.65	0.20 5.0	mg/L mg/L Units	Note	10/12/22 1206 10/12/22 1206	10/12/22 2254 10/14/22 1333	SSL Analyst
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1	110 87 640 <u>Result</u> 1994)	Limit(s)	0.054 0.65 MDL	0.20 5.0 <b>RL</b>	mg/L mg/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b>	10/12/22 2254 10/14/22 1333 Analyzed	SSL Analyst
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum	110 87 640 <b>Result</b> 1994)	Limit(s)	0.054 0.65 MDL 20	0.20 5.0 <b>RL</b> 50	mg/L mg/L Units ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915	SSL Analyst SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic	110 87 640 <b>Result</b> 1994) 84 <0.50	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22	0.20 5.0 <b>RL</b> 50 0.50	mg/L mg/L Units ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53	0.20 5.0 <b>RL</b> 50 0.50 0.50	mg/L mg/L Units ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic Beryllium	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1 <1.0 2.6	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53 0.28	0.20 5.0 <b>RL</b> 50 0.50 0.50 1.0	mg/L mg/L Units ug/L ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic Beryllium Cadmium Chromium	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1 <1.0	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53 0.28 0.22	0.20 5.0 <b>RL</b> 50 0.50 0.50 1.0 0.50	mg/L mg/L Units ug/L ug/L ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL SSL SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic Beryllium Cadmium	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1 <1.0 2.6 3.1	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53 0.28 0.22 1.1	0.20 5.0 <b>RL</b> 50 0.50 0.50 1.0 0.50 0.50 0.50	mg/L mg/L Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915	Analyst
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic Beryllium Cadmium Chromium Copper	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1 <1.0 2.6 3.1 10	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53 0.28 0.22 1.1 24	0.20 5.0 <b>RL</b> 50 0.50 0.50 1.0 0.50 0.50 0.50 5.0 50	mg/L mg/L Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL SSL SSL SSL SSL
Calcium Magnesium Method: SM 2340 B-2011 Hardness, Total as CaCO3 Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 (1 Aluminum Antimony Arsenic Beryllium Cadmium Chromium Copper Iron	110 87 640 <b>Result</b> 1994) 84 <0.50 3.1 <1.0 2.6 3.1 10 410	Limit(s)	0.054 0.65 <b>MDL</b> 20 0.22 0.27 0.53 0.28 0.22 1.1	0.20 5.0 <b>RL</b> 50 0.50 0.50 0.50 1.0 0.50 0.50 0.50 5.0	mg/L mg/L Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Note	10/12/22 1206 10/12/22 1206 <b>Prepared</b> 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/12/22 2254 10/14/22 1333 <b>Analyzed</b> 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915 10/14/22 1915	SSL Analyst SSL SSL SSL SSL SSL SSL SSL SSL

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID:	Outfall 002A									
Sample Matrix:	Wastewater					Co	llected By:	Xavier Bu	Illock	
Lab Sample ID:	L2I1199-03					Co	llection Da	nte: 09/30/202	22 9:35	
Metals Total by ICPM	S	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Selenium		11		0.45	0.50	ug/L		10/07/22 1359	10/14/22 1915	SSL
Silver		<0.10		0.012	0.10	ug/L		10/07/22 1359	10/14/22 1915	SSL
Thallium		11		0.28	0.50	ug/L		10/07/22 1359	10/14/22 1915	SSL
Zinc		36		6.2	10	ug/L		10/07/22 1359	10/14/22 1915	SSL
Barium		91		0.30	0.50	ug/L		10/07/22 1359	10/14/22 1915	SSL
Cobalt		3.5		0.23	0.50	ug/L		10/07/22 1359	10/14/22 1915	SSL
Manganese		940		3.8	10	ug/L		10/07/22 1359	10/17/22 1547	SSL
Anions by IC		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, R	v. 2.1 (1993)									
Bromide		1.8		0.017	0.50	mg/L		10/05/22 1810	10/06/22 0353	NWW
Chloride		240		0.090	2.5	mg/L		10/05/22 1810	10/06/22 0946	NWW
Fluoride		1.4		0.045	0.50	mg/L		10/05/22 1810	10/06/22 0353	NWW
Nitrogen, Nitrate + Ni	trite	1.6		0.16	0.75	mg/L		10/05/22 1805	10/06/22 0759	NWW
Sulfate		260		0.13	2.5	mg/L	B2	10/05/22 1810	10/06/22 0946	NWW

Client Sample ID:	HG LL Blank -Ou	Itfall 002A								
Sample Matrix:	Wastewater					Co	llected By:	Xavier Bul	lock	
Lab Sample ID:	L2I1199-04					Co	llection Date	e: 09/30/202	2 9:40	
		Analyses P	erformed by: N	Microbac Lal	poratories,	Inc Chic	agoland			
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<0.500		0.231	0.500	ng/L		10/11/22 1002	10/12/22 102	23 JNH

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### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Sample Matrix: Lab Sample ID:	Outfall 023 Wastewater L2I1199-05					Co	llected By:			
		-	erformed by:				-	Duous and	<b>A</b>	A
Inorganics Total	, 1 (1003)	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 420.4, Rv Phenolics, Total Recov		<0.010		0.0060	0.010	mg/L	В	10/28/22 1310	10/28/22 1513	B ABG
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<5.00		2.31	5.00	ng/L		10/28/22 1520	10/31/22 1102	JNH
Metals Total by ICPMS	i	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv	v. 5.4 (1994)									
Boron	- ·	<0.50		0.40	0.50	mg/L		10/27/22 0633	10/28/22 1226	5 JNH
Tin		<0.0010		0.0005	0.0010	mg/L		10/27/22 0633	10/27/22 1702	2 JNH
Titanium		<0.030		0.0037	0.030	mg/L		10/27/22 0633	10/27/22 1702	2 JNH
Volatile Organic Comp by GCMS	ounds	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 624.1										
1,1,1-Trichloroethane		<0.00023		0.00023	0.0050	mg/L			10/27/22 1911	JLN
1,1,2,2-Tetrachloroeth	ane	<0.00032		0.00032	0.0050	mg/L			10/27/22 1911	
1,1,2-Trichloroethane		<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	JLN
1,1-Dichloroethane		<0.00025		0.00025	0.0050	mg/L			10/27/22 1911	JLN
1,1-Dichloroethene		<0.00023		0.00023	0.0050	mg/L			10/27/22 1911	JLN
1,2-Dichlorobenzene		<0.00030		0.00030	0.010	mg/L			10/27/22 1911	JLN
1,2-Dichloroethane		<0.00038		0.00038	0.0050	mg/L			10/27/22 1911	JLN
1,2-Dichloropropane		<0.00019		0.00019	0.0050	mg/L			10/27/22 1911	JLN
1,3-Dichlorobenzene		<0.00024		0.00024	0.010	mg/L			10/27/22 1911	JLN
1,4-Dichlorobenzene		<0.00028		0.00028	0.010	mg/L			10/27/22 1911	JLN
2-Chloroethyl vinyl eth	ier	<0.00019		0.00019	0.010	mg/L	Q11		10/27/22 1911	JLN
Benzene		<0.00015		0.00015	0.0050	mg/L			10/27/22 1911	JLN
Dichlorobromomethan	е	<0.00021		0.00021	0.0050	mg/L			10/27/22 1911	JLN
Bromoform		<0.00025		0.00025	0.0050	mg/L			10/27/22 1911	JLN
Bromomethane		<0.00029		0.00029	0.010	mg/L			10/27/22 1911	JLN
Carbon tetrachloride		<0.00025		0.00025	0.0050	mg/L			10/27/22 1911	JLN
Chlorobenzene		<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	JLN
Chloroethane		<0.00022		0.00022	0.010	mg/L			10/27/22 1911	JLN
Chloroform		<0.00026		0.00026	0.0020	mg/L			10/27/22 1911	JLN
Chloromethane		<0.00024		0.00024	0.010	mg/L			10/27/22 1911	JLN
cis-1,3-Dichloroproper		<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	JLN
Dibromochloromethan	e	<0.00024		0.00024	0.0050	mg/L			10/27/22 1911	JLN
Ethylbenzene		<0.00025		0.00025	0.0050	mg/L			10/27/22 1911	JLN
Methylene chloride		<0.010		0.010	0.010	mg/L			10/27/22 1911	JLN
Tetrachloroethene		<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	
Toluene		<0.00030		0.00030	0.0050	mg/L			10/27/22 1911	JLN

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### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID:Outfall 023Sample Matrix:WastewaterLab Sample ID:L2I1199-05						ollected By: ollection Dat	Wayne M e: 10/21/202		
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
trans-1,2-Dichloroethene	<0.00022		0.00022	0.0050	mg/L			10/27/22 1911	I JLN
trans-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	I JLN
Trichloroethene	<0.00026		0.00026	0.0050	mg/L			10/27/22 1911	I JLN
Trichlorofluoromethane	<0.00027		0.00027	0.010	mg/L			10/27/22 1911	I JLN
Vinyl chloride	<0.00026		0.00026	0.0020	mg/L			10/27/22 1911	I JLN
Acrolein	<0.0022		0.0022	0.10	mg/L	Q10		10/27/22 1911	I JLN
Acrylonitrile	<0.0019		0.0019	0.10	mg/L	Q10		10/27/22 1911	I JLN
Surrogate: 1,2-Dichloroethane-D4	99.8		Limit:	74.5-132	% Rec			10/27/22 1911	I JLN
Surrogate: 4-Bromofluorobenzene	92.6		Lim	it: 80-120	% Rec			10/27/22 1911	
Surrogate: Dibromofluoromethane	100			it: 80-120	% Rec			10/27/22 1911	
Surrogate: Toluene-D8	100			it: 80-120	% Rec			10/27/22 1911	
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 625.1									
1,2,4-Trichlorobenzene	<0.011		0.00063	0.011	mg/L	A7, Q3	10/27/22 1202	10/29/22 0132	2 CLR
2,2'-oxybis(1-chloropropane)	<0.011		0.00073	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2,4,5-Trichlorophenol	<0.011		0.00082	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	
2,4,6-Trichlorophenol	<0.011		0.00080	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2,4-Dichlorophenol	<0.011		0.00066	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2,4-Dimethylphenol	<0.011		0.00073	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2,4-Dinitrophenol	< 0.054		0.00032	0.054	mg/L		10/27/22 1202	10/29/22 0132	
2,4-Dinitrotoluene	<0.011		0.00051	0.011	mg/L	A7, Q3	10/27/22 1202	10/29/22 0132	
2,6-Dichlorophenol	<0.011		0.00076	0.011	mg/L	, <b></b> , <b></b> ,	10/27/22 1202	10/29/22 0132	
2,6-Dinitrotoluene	<0.011		0.00061	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2-Chloronaphthalene	<0.011		0.00076	0.011	mg/L		10/27/22 1202	10/29/22 0132	
2-Chlorophenol	<0.011		0.00077	0.011	mg/L	A7, Q3	10/27/22 1202	10/29/22 0132	
2-Methylnaphthalene	<0.011		0.00074	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	
2-Methylphenol	<0.011		0.00082	0.011	mg/L	Ŷ	10/27/22 1202	10/29/22 0132	
2-Nitroaniline	<0.011		0.00053	0.011	mg/L	Ŷ	10/27/22 1202	10/29/22 0132	
2-Nitrophenol	<0.011		0.00098	0.011	mg/L	•	10/27/22 1202	10/29/22 0132	
3,3´-Dichlorobenzidine	< 0.054		0.0014	0.054	mg/L		10/27/22 1202	10/29/22 0132	
3/4-Methylphenol	<0.011		0.00089	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	
3-Nitroaniline	<0.011		0.00086	0.011	mg/L	Ŷ	10/27/22 1202	10/29/22 0132	
4,6-Dinitro-2-methylphenol	< 0.027		0.00037	0.027	mg/L	•	10/27/22 1202	10/29/22 0132	
4-Bromophenyl phenyl ether	<0.027		0.00072	0.027	mg/L		10/27/22 1202	10/29/22 0132	
4-Chloro-3-methylphenol	<0.022		0.00082	0.022	mg/L		10/27/22 1202	10/29/22 0132	
4-Chloroaniline	<0.011		0.00074	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	
4-Chlorophenyl phenyl ether	<0.011		0.00074	0.011	mg/L	•	10/27/22 1202	10/29/22 0132	
4-Nitroaniline	<0.011		0.00014	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	
4-Nitrophenol	<0.011		0.00089	0.054	mg/L	•	10/27/22 1202	10/29/22 0132	
Acenaphthene	<0.034		0.000013	0.011	mg/L	Q	10/27/22 1202	10/29/22 0132	
			5.555010	0.011	····· () (	~			
Acenaphthylene	<0.011		0.0000032	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR

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### Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

Client Sample ID:Outfall 023Sample Matrix:WastewaterLab Sample ID:L2I1199-05						ollected By: ollection Date	Wayne M 10/21/202		
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Aniline	<0.011		0.0016	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	2 CLR
Anthracene	<0.011		0.0000075	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzidine	<0.054		0.022	0.054	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzo[a]anthracene	<0.011		0.0000043	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzo[a]pyrene	<0.011		0.0000065	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzo[b]fluoranthene	<0.011		0.0000065	0.011	mg/L	A7, Q3	10/27/22 1202	10/29/22 0132	2 CLR
Benzo[g,h,i]perylene	<0.011		0.0000054	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzo[k]fluoranthene	<0.011		0.0000075	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Benzoic acid	<0.054		0.00054	0.054	mg/L	Y	10/27/22 1202	10/29/22 0132	2 CLR
Benzyl alcohol	<0.011		0.00071	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	2 CLR
Bis(2-chloroethoxy)methane	<0.011		0.00091	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Bis(2-chloroethyl)ether	<0.011		0.00083	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Bis(2-ethylhexyl)phthalate	<0.011		0.0013	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Butyl benzyl phthalate	<0.011		0.00098	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Carbazole	<0.011		0.00077	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Chrysene	< 0.011		0.0000065	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Dibenz[a,h]anthracene	<0.011		0.0000065	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Dibenzofuran	<0.011		0.00073	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Diethyl phthalate	<0.011		0.0014	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Dimethyl phthalate	<0.011		0.00073	0.011	mg/L		10/27/22 1202	10/29/22 0132	
• •	<0.011		0.00088	0.011			10/27/22 1202	10/29/22 0132	
Di-n-butyl phthalate	<0.011		0.00075	0.011	mg/L		10/27/22 1202		
Di-n-octyl phthalate	<0.011		0.000075	0.011	mg/L			10/29/22 0132	
Fluoranthene			0.00000034		mg/L		10/27/22 1202	10/29/22 0132	
Fluorene	<0.011			0.011	mg/L		10/27/22 1202	10/29/22 0132	
Hexachlorobenzene	< 0.011		0.0010	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Hexachlorobutadiene	< 0.011		0.0010	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Hexachlorocyclopentadiene	<0.011		0.00043	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Hexachloroethane	<0.011		0.0011	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Indeno[1,2,3cd]pyrene	<0.011		0.0000043	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Isophorone	<0.011		0.00086	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Naphthalene	<0.011		0.0000065	0.011	mg/L		10/27/22 1202	10/29/22 0132	
Nitrobenzene	<0.011		0.00085	0.011	mg/L		10/27/22 1202	10/29/22 0132	
N-Nitrosodimethylamine	<0.011		0.00098	0.011	mg/L		10/27/22 1202	10/29/22 0132	
N-Nitrosodi-n-propylamine	<0.011		0.0011	0.011	mg/L	-	10/27/22 1202	10/29/22 0132	
N-Nitrosodiphenylamine	<0.011		0.00077	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Pentachlorophenol	<0.054		0.00033	0.054	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Phenanthrene	<0.011		0.0000075	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Phenol	<0.011		0.00040	0.011	mg/L		10/27/22 1202	10/29/22 0132	2 CLR
Pyrene	<0.011		0.0000054	0.011	mg/L	A7, Q3	10/27/22 1202	10/29/22 0132	2 CLR
Pyridine	<0.011		0.0014	0.011	mg/L	Y	10/27/22 1202	10/29/22 0132	2 CLR
Surrogate: 2,4,6-Tribromophenol	60.4		Limit:	47.8-138	% Rec		10/27/22 1202	10/29/22 0132	2 CLR
Surrogate: 2-Fluorobiphenyl	44.6		Lim	it: 10-110	% Rec		10/27/22 1202	10/29/22 0132	2 CLR
Surrogate: 2-Fluorophenol	28.0		Lim	it: 10-110	% Rec		10/27/22 1202	10/29/22 0132	2 CLR
Surrogate: Nitrobenzene-d5	41.1			it: 10-110	% Rec		10/27/22 1202	10/29/22 0132	

### Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID:	Outfall 023									
Sample Matrix:	Wastewater					Co	llected By:	Wayne M	lills	
Lab Sample ID:	L2I1199-05					Co	llection Date	: 10/21/202	22 10:38	
Semivolatile Organic		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Compounds by GCM	S									
Surrogate: Phenol-	d5	23.8		Limit:	10-60.8	% Rec		10/27/22 1202	10/29/22 0132	2 CLR
Surrogate: Terphen	iyl-d14	53.1		Limit: 1	6.8-110	% Rec		10/27/22 1202	10/29/22 0132	2 CLR

#### Analyses Performed by: Microbac Laboratories, Inc., Louisville

	-	Fenomed by							
Field Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: HACH 8167									
Chlorine, Total Residual	0.12		0.02	0.02	mg/L			10/21/22 1038	B LWM
Method: NA									
Flow by Measurement & Calc.	1.824			0	MGD			10/21/22 1038	B LWM
Method: SM 2550 B-2010									
Temperature	26.4		1.0	1.0	°C			10/21/22 1038	B LWM
Method: SM 4500-H+ B-2011									
pH (at 25°C)	8.6		1.0	1.0	S.U.			10/21/22 1038	B LWM
Microbiology	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 9223 B (Colilert-18)-1997									
E. coli	146.7		0.0	1.0	MPN/100mL		10/21/22 1615	10/22/22 1330	6 NWW
	D If	1.1			11.24	Nete	Durand	A	
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation									
Total Organic Nitrogen	1.2		0.53	1.0	mg/L		10/24/22 1229	10/25/22 1324	4 SSL
Method: EPA 1664B									
Oil & Grease	<5.4		3.1	5.4	mg/L			10/24/22 1048	3 RMT
Method: EPA 351.2, Rv. 2 (1993)									
Nitrogen, Total Kjeldahl	1.2		0.53	1.0	mg/L		10/24/22 1012	10/25/22 1324	4 SSL
Method: EPA 365.1, Rv. 2 (1993)									
Phosphorus	0.51		0.088	0.20	mg/L		10/24/22 1136	10/25/22 162	1 SSL
Method: SM 2120 B-2011									
pH at Color	9			1	S.U.			10/21/22 175	3 NWW
Color, Pt-Co	20		0	5	CU			10/21/22 1753	3 NWW
Method: SM 4500-CN <sup>-</sup> E-2011									
Cyanide	<0.010		0.0035	0.010	mg/L		10/25/22 1026	10/26/22 1428	3 SSL

Method: SM 4500-NH3 G-2011

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Sample Matrix: W	utfall 023 /astewater 2I1199-05						ollected By: ollection Date	Wayne M e: 10/21/202		
Inorganics Total		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Nitrogen, Ammonia		<0.50		0.11	0.50	mg/L		10/24/22 1229	10/24/22 1817	SSL
Method: SM 4500-S2 D-2 Sulfide	2011	<0.20		0.12	0.20	mg/L			10/26/22 1623	NWW
Method: SM 4500-SO3 <sup>-</sup> E Sulfite	3-2011	<2.0		1.1	2.0	mg/L	H1		10/27/22 1613	NWW
Method: SM 5210 B-2011 BOD, 5 Day		<3.0		3.0	3.0	mg/L		10/21/22 1649	10/26/22 1909	SZH
Method: SM 5220 D-2011 COD		<50		24	50	mg/L		10/25/22 1121	10/25/22 1321	SZH
Method: SM 5310 C-2011 Carbon, Total Organic		6.0		0.50	1.0	mg/L		10/25/22 1541	10/25/22 2023	SSL
Method: SM 5540 C-2011 MBAS (as LAS MW 340)	,	<0.50		0.15	0.50	mg/L			10/21/22 1445	SSL
Method: USGS I-3765-85 Solids, Total Suspended		32		5	5	mg/L		10/24/22 1504	10/25/22 0938	DKB
Metals Total by ICP		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4	.4 (1994)									
Calcium	. ,	110		0.26	2.0	mg/L		10/24/22 1100	10/31/22 1913	SSL
Magnesium		33		0.054	0.20	mg/L		10/24/22 1100	10/28/22 0052	SSL
Method: SM 2340 B-2011 Hardness, Total as CaCC	03	410		0.65	5.0	mg/L		10/24/22 1100	10/31/22 1913	SSL
						5				
Metals Total by ICPMS		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5	.4 (1994)									
Aluminum		250		60	150	ug/L		10/24/22 0936	10/26/22 1608	
Antimony		0.61		0.22	0.50	ug/L		10/24/22 0936	10/24/22 1657	
Arsenic		2.1		0.27	0.50	ug/L		10/24/22 0936	10/24/22 1657	
Beryllium		<1.0		0.53	1.0	ug/L		10/24/22 0936	10/24/22 1657	
Cadmium		<0.50		0.28	0.50	ug/L		10/24/22 0936	10/24/22 1657	
Chromium		0.83		0.22	0.50	ug/L		10/24/22 0936	10/24/22 1657	SSL
					05	ua/l		10/24/22 0936	10/26/22 1604	SSL
Copper		120		5.5	25	ug/L				
Copper Iron		120 450		24	25 50	ug/L		10/24/22 0936	10/24/22 1657	
										SSL
Iron		450		24	50	ug/L		10/24/22 0936	10/24/22 1657	SSL SSL
Iron Lead		450 0.92		24 0.33	50 0.50	ug/L ug/L		10/24/22 0936 10/24/22 0936	10/24/22 1657 10/24/22 1657	SSL SSL SSL

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID: Outfall 023									
Sample Matrix: Wastewater					Co	llected By	: Wayne M	ills	
Lab Sample ID: L2I1199-05					Co	llection Da	ate: 10/21/202	22 10:38	
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Silver	<0.10		0.012	0.10	ug/L		10/24/22 0936	10/24/22 1657	SSL
Thallium	<0.50		0.28	0.50	ug/L		10/24/22 0936	10/24/22 1657	SSL
Zinc	<10		6.2	10	ug/L		10/24/22 0936	10/24/22 1657	SSL
Barium	100		0.30	0.50	ug/L		10/24/22 0936	10/24/22 1657	SSL
Cobalt	0.71		0.23	0.50	ug/L		10/24/22 0936	10/24/22 1657	SSL
Manganese	93		0.19	0.50	ug/L		10/24/22 0936	10/24/22 1657	SSL
Anions by IC	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1 (1993)									
Bromide	0.88		0.017	0.50	mg/L		10/21/22 1701	10/21/22 2226	NWW
Chloride	96		0.018	0.50	mg/L	B2	10/21/22 1701	10/21/22 2226	NWW
Fluoride	<0.50		0.045	0.50	mg/L		10/21/22 1701	10/21/22 2226	NWW
Nitrogen, Nitrate + Nitrite	3.0		0.12	0.15	mg/L		10/21/22 1701	10/21/22 2226	NWW
Sulfate	180		0.10	2.0	mg/L	B2	10/21/22 1701	10/22/22 0421	NWW

		Analyses Perfo	ormed by:	GEL Laborato	ories, LLC				
Radiochemistry	Result	UNC	Limit(s)	MDA	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation									
Radium-226+228 Sum	1.87	+/-0.654		1.87	pCi/L		11/01/22 0000	11/14/22 0000	) NXL
Method: EPA 900.0/SW846 9310									
ALPHA	0.423	+/-1.38		3	pCi/L	U	11/01/22 0000	11/07/22 0000	) KP1
ВЕТА	9.61	+/-1.84		4	pCi/L		11/01/22 0000	11/07/22 0000	) KP1
Method: EPA 903.1 Modified									
Radium-226	0.891	+/-0.324		1	pCi/L		11/01/22 0000	11/13/22 0000	) LXP
Method: EPA 904.0/SW846 9320 Mc	odified								
Radium-228	0.975	+/-0.568		1	pCi/L		11/01/22 0000	11/07/22 0000	) JE1
Method: EPA 905.0 Modified/DOE F	RP501 Rev. 1 Mo	dified							
Strontium-90	-0.606	+/-0.62		2	pCi/L	U	11/01/22 0000	11/07/22 0000	) KH1
Uranium	Result	Limit(s)	MD	L RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8									
Uranium	0.00105		0.00006	7 0.0002	mg/L		11/01/22 0000	11/03/22 0000	) PRB

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID:	LL HG Blank -Ou	utfall 023								
Sample Matrix:	Wastewater					Co	llected By:	Wayne Mi	lls	
Lab Sample ID:	L2I1199-06					Co	llection Date	: 10/21/202	2 10:45	
		Analyses Po	erformed by: N	licrobac Lat	ooratories,	Inc Chic	agoland			
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<0.500		0.231	0.500	ng/L		10/28/22 1520	10/31/22 110	5 JNH

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### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Sample Matrix: Lab Sample ID:	Outfall 025 Wastewater L2I1199-07					Co	ollected By: ollection Da			
		-	erformed by:				•			
Inorganics Total		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 420.4, RV Phenolics, Total Recov		<0.010		0.0060	0.010	mg/L		10/13/22 1104	10/13/22 1720	ABG
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<5.00		2.31	5.00	ng/L		10/11/22 1002	10/12/22 1025	JNH
Metals Total by ICPMS		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv	v. 5.4 (1994)									
Boron	. ,	5.7		2.0	2.5	mg/L	Q8	10/05/22 0607	10/07/22 1520	JNH
Tin		<0.0010		0.0005	0.0010	mg/L		10/05/22 0607	10/06/22 1651	JNH
Titanium		<0.030		0.0037	0.030	mg/L		10/05/22 0607	10/06/22 1651	JNH
Semivolatile Organic Compounds by GCMS		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1										
1,2,4-Trichlorobenzen	<u>م</u>	<0.010		0.00060	0.010	mg/L	Q	10/06/22 0652	10/15/22 0029	CLR
2,2'-oxybis(1-chloropr		<0.010		0.00069	0.010	mg/L	-	10/06/22 0652	10/15/22 0029	
2,4,5-Trichlorophenol	00000	<0.010		0.00078	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	
2,4,6-Trichlorophenol		<0.010		0.00076	0.010	mg/L	-	10/06/22 0652	10/15/22 0029	
2,4-Dichlorophenol		<0.010		0.00062	0.010	mg/L		10/06/22 0652	10/15/22 0029	
2,4-Dimethylphenol		<0.010		0.00069	0.010	mg/L		10/06/22 0652	10/15/22 0029	
2,4-Dinitrophenol		<0.051		0.00031	0.051	mg/L		10/06/22 0652	10/15/22 0029	
2,4-Dinitrotoluene		<0.010		0.00048	0.010	mg/L		10/06/22 0652	10/15/22 0029	
2,6-Dichlorophenol		<0.010		0.00072	0.010	mg/L		10/06/22 0652	10/15/22 0029	
2,6-Dinitrotoluene		<0.010		0.00058	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
2-Chloronaphthalene		<0.010		0.00072	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
2-Chlorophenol		<0.010		0.00073	0.010	mg/L	Q3	10/06/22 0652	10/15/22 0029	CLR
2-Chlorophenol		<0.010		0.00073	0.010	mg/L	H2	10/20/22 1644	10/24/22 2136	CLR
2-Methylnaphthalene		<0.010		0.00070	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
2-Methylphenol		<0.010		0.00078	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
2-Nitroaniline		<0.010		0.00050	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
2-Nitrophenol		<0.010		0.00093	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
3,3'-Dichlorobenzidine	9	<0.051		0.0013	0.051	mg/L		10/06/22 0652	10/15/22 0029	CLR
3/4-Methylphenol		<0.010		0.00085	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
3-Nitroaniline		<0.010		0.00082	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
4,6-Dinitro-2-methylph	enol	<0.026		0.00035	0.026	mg/L		10/06/22 0652	10/15/22 0029	CLR
4-Bromophenyl pheny	l ether	<0.010		0.00068	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
4-Chloro-3-methylphe	nol	<0.020		0.00078	0.020	mg/L		10/06/22 0652	10/15/22 0029	CLR
4-Chloroaniline		<0.010		0.00070	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
4-Chlorophenyl pheny	l ether	<0.010		0.00070	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
4-Nitroaniline		<0.010		0.0010	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR

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## Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2I1199

Client Sample ID:Outfall 025Sample Matrix:WastewaterLab Sample ID:L211199-07					llected By: llection Date	Xavier Bu 09/30/202		
Semivolatile Organic Compounds by GCMS	Result	Limit(s) MDL	RL	Units	Note	Prepared	Analyzed	Analyst
4-Nitrophenol	<0.051	0.00085	0.051	mg/L		10/06/22 0652	10/15/22 0029	CLR
Acenaphthene	<0.010	0.000012	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Acenaphthylene	<0.010	0.0000031	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Acetophenone	<0.010	0.00082	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
Aniline	<0.010	0.0015	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
Anthracene	<0.010	0.0000071	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzidine	<0.051	0.020	0.051	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzo[a]anthracene	<0.010	0.0000041	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzo[a]pyrene	<0.010	0.0000061	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzo[b]fluoranthene	<0.010	0.0000061	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzo[g,h,i]perylene	<0.010	0.0000051	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzo[k]fluoranthene	<0.010	0.0000071	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Benzoic acid	<0.051	0.00051	0.051	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
Benzyl alcohol	<0.010	0.00067	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	CLR
Bis(2-chloroethoxy)methane	<0.010	0.00087	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Bis(2-chloroethyl)ether	<0.010	0.00079	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Bis(2-ethylhexyl)phthalate	<0.010	0.0012	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Butyl benzyl phthalate	<0.010	0.00093	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Carbazole	<0.010	0.00073	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Chrysene	<0.010	0.0000061	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Dibenz[a,h]anthracene	<0.010	0.0000061	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Dibenzofuran	<0.010	0.00069	0.010	mg/L	Y	10/06/22 0652	10/15/22 0029	
Diethyl phthalate	<0.010	0.0013	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Dimethyl phthalate	<0.010	0.00069	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Di-n-butyl phthalate	<0.010	0.00084	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Di-n-octyl phthalate	<0.010	0.00071	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Fluoranthene	<0.010	0.0000051	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Fluorene	<0.010	0.0000041	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Hexachlorobenzene	<0.010	0.00098	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Hexachlorobutadiene	<0.010	0.00098	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Hexachlorocyclopentadiene	<0.010	0.00041	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Hexachloroethane	<0.010	0.0010	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Indeno[1,2,3cd]pyrene	<0.010	0.0000041	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Isophorone	<0.010	0.00082	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Naphthalene	<0.010	0.0000061	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
Nitrobenzene	<0.010	0.00081	0.010	mg/L		10/06/22 0652	10/15/22 0029	CLR
N-Nitrosodimethylamine	<0.010	0.00093	0.010	mg/L		10/06/22 0652	10/15/22 0029	
N-Nitrosodi-n-propylamine	<0.010	0.0010	0.010	mg/L		10/06/22 0652	10/15/22 0029	
N-Nitrosodiphenylamine	<0.010	0.00073	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Pentachlorophenol	<0.051	0.00032	0.051	mg/L		10/06/22 0652	10/15/22 0029	
Phenanthrene	<0.010	0.0000071	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Phenol	<0.010	0.00038	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Pyrene	<0.010	0.0000051	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Pyridine	<0.010	0.0013	0.010	mg/L		10/06/22 0652	10/15/22 0029	
Surrogate: 2,4,6-Tribromophenol	53.6		47.8-138	% Rec		10/06/22 0652	10/15/22 0029	

### Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID: Outfall 025 Sample Matrix: Wastewater						llected By:			
Lab Sample ID: L2I1199-07 Semivolatile Organic	Result	Limit(s)	MDL	RL	Co Units	Ilection Da	Prepared	Analyzed	Analyst
Compounds by GCMS	Nesult	Lilliu(S)		NL.	Units	NOLE	Fiepaieu	Analyzeu	Analysi
Surrogate: 2-Fluorobiphenyl	38.0		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0029	CLR
Surrogate: 2-Fluorophenol	22.0		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0029	) CLR
Surrogate: Nitrobenzene-d5	34.2		Lin	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0029	) CLR
Surrogate: Phenol-d5	18.9			it: 10-60.8	% Rec		10/06/22 0652	10/15/22 0029	
Surrogate: Terphenyl-d14	49.4			: 16.8-110	% Rec		10/06/22 0652	10/15/22 0029	
	-0		Linit	. 10.0 110	/01100		10/00/22 0002	10,10,22 0020	, OEIX
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 624.1									
1,1,1-Trichloroethane	<0.00023		0.00023	0.0050	mg/L			10/12/22 1933	B JBS
1,1,2,2-Tetrachloroethane	<0.00032		0.00032	0.0050	mg/L			10/12/22 1933	B JBS
1,1,2-Trichloroethane	<0.00026		0.00026	0.0050	mg/L			10/12/22 1933	3 JBS
1,1-Dichloroethane	<0.00025		0.00025	0.0050	mg/L			10/12/22 1933	B JBS
1,1-Dichloroethene	<0.00023		0.00023	0.0050	mg/L			10/12/22 1933	3 JBS
1,2-Dichlorobenzene	<0.00030		0.00030	0.010	mg/L			10/12/22 1933	3 JBS
1,2-Dichloroethane	<0.00038		0.00038	0.0050	mg/L			10/12/22 1933	B JBS
1,2-Dichloropropane	<0.00019		0.00019	0.0050	mg/L			10/12/22 1933	3 JBS
1,3-Dichlorobenzene	<0.00024		0.00024	0.010	mg/L			10/12/22 1933	3 JBS
1,4-Dichlorobenzene	<0.00028		0.00028	0.010	mg/L			10/12/22 1933	3 JBS
2-Chloroethyl vinyl ether	<0.00019		0.00019	0.010	mg/L	Q11		10/12/22 1933	3 JBS
Benzene	<0.00015		0.00015	0.0050	mg/L			10/12/22 1933	3 JBS
Dichlorobromomethane	<0.00021		0.00021	0.0050	mg/L			10/12/22 1933	3 JBS
Bromoform	<0.00025		0.00025	0.0050	mg/L			10/12/22 1933	3 JBS
Bromomethane	<0.00029		0.00029	0.010	mg/L			10/12/22 1933	
Carbon tetrachloride	<0.00025		0.00025	0.0050	mg/L			10/12/22 1933	
Chlorobenzene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1933	
Chloroethane	<0.00022		0.00022	0.010	mg/L			10/12/22 1933	
Chloroform	<0.00026		0.00026	0.0020	mg/L			10/12/22 1933	
Chloromethane	<0.00024		0.00024	0.010	mg/L			10/12/22 1933	
cis-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1933	
Dibromochloromethane	< 0.00024		0.00024	0.0050	mg/L			10/12/22 1933	
Ethylbenzene	<0.00025		0.00025	0.0050	mg/L			10/12/22 1933	
Methylene chloride	<0.010		0.010	0.010	mg/L			10/12/22 1933	
Tetrachloroethene	<0.00026		0.00026	0.0050	mg/L			10/12/22 1933	
Toluene	<0.00030		0.00030	0.0050	mg/L			10/12/22 1933	
trans-1,2-Dichloroethene	<0.00022		0.00022	0.0050	mg/L			10/12/22 1933	
trans-1,3-Dichloropropene	<0.00026 <0.00026		0.00026 0.00026	0.0050	mg/L			10/12/22 1933	
Trichloroethene Trichlorofluoromethane	<0.00026 <0.00027		0.00026	0.0050	mg/L			10/12/22 1933	
Vinyl chloride	<0.00027 <0.00026		0.00027	0.010 0.0020	mg/L mg/l			10/12/22 1933	
,	<0.00028		0.00028	0.0020	mg/L	040		10/12/22 1933	
Acrolein	<0.0022 <0.0019		0.0022	0.10	mg/L	Q10		10/12/22 1933	
Acrylonitrile Surrogate: 1,2-Dichloroethane-D4	<0.0019 112			0.10 : 74.5-132	mg/L % Rec	Q10, Q2		10/12/22 1933 10/12/22 1933	

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID:Outfall 025Sample Matrix:WastewaterLab Sample ID:L2I1199-07						llected By: llection Date:	Xavier Bu 09/30/20		
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Surrogate: 4-Bromofluorobenzene	90.3		Limi	t: 80-120	% Rec			10/12/22 1933	JBS
Surrogate: Dibromofluoromethane	101		Limi	t: 80-120	% Rec			10/12/22 1933	B JBS
Surrogate: Toluene-D8	98.5		Limi	t: 80-120	% Rec			10/12/22 1933	3 JBS
	Analyses	Performed by:	: Microbac L	aboratori	es, Inc., Lou	iisville			
Field Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: HACH 8167									
Chlorine, Total Residual	0.02		0.02	0.02	mg/L			09/30/22 0955	5 XDB
Method: NA									
Flow by Measurement & Calc.	8.34			0	MGD			09/30/22 0955	5 XDB
Method: SM 2550 B-2010									
Temperature	20.1		1.0	1.0	°C			09/30/22 0955	5 XDB
Method: SM 4500-H+ B-2011									
pH (at 25°C)	8.0		1.0	1.0	S.U.			09/30/22 0955	5 XDB
Microbiology	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 9223 B (Colilert-18)-1997									
E. coli	93.3		0.0	1.0	MPN/100mL	. (	09/30/22 1652	10/01/22 1112	NWW
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation							•		
Total Organic Nitrogen	<1.0		0.53	1.0	mg/L		10/05/22 1205	10/06/22 2000	) SSL
Method: EPA 1664B									
Oil & Grease	<5.0		2.8	5.0	mg/L			10/03/22 1651	RMT
Method: EPA 351.2, Rv. 2 (1993)	4.0								
Nitrogen, Total Kjeldahl	1.2		0.53	1.0	mg/L		10/05/22 1040	10/06/22 1528	3 SSL
Method: EPA 365.1, Rv. 2 (1993)									
Phosphorus	0.12		0.044	0.10	mg/L		10/03/22 1346	10/04/22 1550	) SSL
Method: SM 2120 B-2011	<u>^</u>			,	0.11				
pH at Color	8 15		0	1 5	S.U. CU		09/30/22 1539	09/30/22 1544	
Color, Pt-Co	15		0	C	CU	(	09/30/22 1539	09/30/22 1544	I NWW
Method: SM 4500-CN <sup>-</sup> E-2011 Cyanide	<0.010		0.0035	0.010	mg/L		10/11/22 1059	10/11/22 1936	SSL
Cyaniue	~0.010		0.0035	0.010	iiig/L		10/11/22 1039	10/11/22 1930	, 33L

Microbac Laboratories, Inc.

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Sample Matrix: Was	all 025 tewater 199-07					llected By: llection Da	Xavier Bu te: 09/30/202		
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 4500-NH3 G-20	11								
Nitrogen, Ammonia	0.68		0.11	0.50	mg/L		10/05/22 1205	10/06/22 2000	SSL
Method: SM 4500-S2 <sup>-</sup> D-201	11								
Sulfide	<0.20		0.12	0.20	mg/L			10/05/22 1700	NWW
Method: SM 4500-SO3 B-2									
Sulfite	<2.0		1.1	2.0	mg/L	H1		10/07/22 1500	NWW
Method: SM 5210 B-2011									
BOD, 5 Day	<3.0		3.0	3.0	mg/L		09/30/22 1331	10/05/22 1313	SZH
Method: SM 5220 D-2011 COD	<50		24	50	mc/l		10/04/22 4340	10/04/00 4540	0711
COD	<50		24	50	mg/L		10/04/22 1349	10/04/22 1549	SZH
Method: SM 5310 C-2011	2.2		0.50	1.0	ma/l		10/12/22 1520	10/14/00 0004	601
Carbon, Total Organic	3.3		0.50	1.0	mg/L		10/13/22 1529	10/14/22 0234	SSL
Method: SM 5540 C-2011 MBAS (as LAS MW 340)	<0.50		0.15	0.50	ma/l			09/30/22 1834	NWW
MBAS (as LAS MW 340)	<0.50		0.15	0.50	mg/L			09/30/22 1834	
Method: USGS I-3765-85			_	_					
Solids, Total Suspended	18		5	5	mg/L		10/05/22 1346	10/05/22 1500	DKB
Metals Total by ICP	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4	(1994)								
Calcium	100		0.26	2.0	mg/L		10/12/22 1206	10/14/22 1338	SSL
Magnesium	73		0.054	0.20	mg/L		10/12/22 1206	10/12/22 2319	SSL
Method: SM 2340 B-2011									
Hardness, Total as CaCO3	560		0.05						001
	500		0.65	5.0	mg/L		10/12/22 1206	10/14/22 1338	SSL
Metals Total by ICPMS	Result	Limit(s)	0.65 MDL	5.0 RL	mg/L Units	Note	10/12/22 1206 Prepared	10/14/22 1338 Analyzed	
Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4	Result	Limit(s)			-	Note			Analyst
Metals Total by ICPMS Method: EPA 200.8, Rv. 5.4 Aluminum	Result	Limit(s)			-	Note			Analyst
Method: EPA 200.8, Rv. 5.4	Result (1994)	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst SSL
Method: EPA 200.8, Rv. 5.4 Aluminum	<b>Result</b> (1994) 190	Limit(s)	<b>MDL</b> 40	<b>RL</b> 100	Units ug/L	Note	<b>Prepared</b>	Analyzed	Analyst SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony	<b>Result</b> (1994) 190 <0.50	Limit(s)	<b>MDL</b> 40 0.22	<b>RL</b> 100 0.50	Units ug/L ug/L	Note	<b>Prepared</b> 10/07/22 1359 10/07/22 1359	Analyzed 10/17/22 1555 10/14/22 1919	Analyst SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic	<b>Result</b> (1994) 190 <0.50 2.3	Limit(s)	MDL 40 0.22 0.27	RL 100 0.50 0.50	Units ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed 10/17/22 1555 10/14/22 1919 10/14/22 1919	Analyst SSL SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic Beryllium	Result           (1994)           190           <0.50	Limit(s)	MDL 40 0.22 0.27 0.53	RL 100 0.50 0.50 1.0	Units ug/L ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed 10/17/22 1555 10/14/22 1919 10/14/22 1919 10/14/22 1919	Analyst SSL SSL SSL SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic Beryllium Cadmium	Result           (1994)           190           <0.50	Limit(s)	MDL 40 0.22 0.27 0.53 0.28	RL 100 0.50 0.50 1.0 0.50	Units ug/L ug/L ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed 10/17/22 1555 10/14/22 1919 10/14/22 1919 10/14/22 1919 10/14/22 1919	Analyst SSL SSL SSL SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic Beryllium Cadmium Chromium	Result           (1994)           190           <0.50	Limit(s)	MDL 40 0.22 0.27 0.53 0.28 0.22	RL 100 0.50 0.50 1.0 0.50 0.50	Units ug/L ug/L ug/L ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed 10/17/22 1555 10/14/22 1919 10/14/22 1919 10/14/22 1919 10/14/22 1919 10/14/22 1919	Analyst SSL SSL SSL SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic Beryllium Cadmium Chromium Copper	Result           (1994)           190           <0.50	Limit(s)	MDL 40 0.22 0.27 0.53 0.28 0.22 1.1	RL 100 0.50 0.50 1.0 0.50 0.50 0.50 5.0	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed	Analyst SSL SSL SSL SSL SSL SSL SSL
Method: EPA 200.8, Rv. 5.4 Aluminum Antimony Arsenic Beryllium Cadmium Chromium Copper Iron	Result           (1994)           190           <0.50	Limit(s)	MDL 40 0.22 0.27 0.53 0.28 0.22 1.1 24	RL 100 0.50 0.50 1.0 0.50 0.50 0.50 5.0	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Note	Prepared 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	Analyzed	Analyst SSL SSL SSL SSL SSL SSL SSL SSL

### Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

	Collected By:Xavier BullockCollection Date:09/30/20229:55
imit(s) MDL	) MDL RL Units Note Prepared Analyzed Anal
0.45	0.45 0.50 ug/L 10/07/22 1359 10/14/22 1919 SS
0.012	0.012 0.10 ug/L 10/07/22 1359 10/14/22 1919 SS
0.28	0.28 0.50 ug/L 10/07/22 1359 10/14/22 1919 SS
6.2	6.2 10 ug/L 10/07/22 1359 10/14/22 1919 SS
0.30	0.30 0.50 ug/L 10/07/22 1359 10/14/22 1919 SS
0.23	0.23 0.50 ug/L 10/07/22 1359 10/14/22 1919 SS
3.8	3.8 10 ug/L 10/07/22 1359 10/17/22 1551 SS
imit(s) MDL	) MDL RL Units Note Prepared Analyzed Anal
0.017	0.017 0.50 mg/L 10/05/22 1810 10/06/22 0408 NW
0.090	0.090 2.5 mg/L 10/05/22 1810 10/06/22 1002 NW
0.045	0.045 0.50 mg/L 10/05/22 1810 10/06/22 0408 NW
0.16	0.16 0.75 mg/L 10/05/22 1805 10/06/22 0814 NW
0.13	0.13 2.5 mg/L B2 10/05/22 1810 10/06/22 1002 NW

Client Sample ID:	LL HG Blank -Ou	tfall 025								
Sample Matrix:	Wastewater					Co	llected By:	Xavier Bu	llock	
Lab Sample ID:	L2I1199-08					Co	llection Date	e: 09/30/202	2 10:00	
		Analyses Po	erformed by: N	Microbac Lal	poratories,	Inc Chic	agoland			
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<0.500		0.231	0.500	ng/L		10/11/22 1002	10/12/22 102	7 JNH

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### CERTIFICATE OF ANALYSIS

#### L2I1199

Client Sample ID: Outfall Sample Matrix: Wastew Lab Sample ID: L211199	9-09				Co	ollected By: ollection Da			
	-	erformed by:				-	_		
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 420.4, Rv. 1 (1993 Phenolics, Total Recoverable	<b>&gt;)</b> <0.010		0.0060	0.010	mg/L		10/13/22 1104	10/13/22 1722	2 ABG
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5.4 (19	94)								
Boron	0.10		0.040	0.050	mg/L	Q8	10/05/22 0607	10/07/22 1524	4 JNH
Tin	<0.0010		0.0005	0.0010	mg/L		10/05/22 0607	10/06/22 1656	3 JNH
Titanium	<0.030		0.0037	0.030	mg/L		10/05/22 0607	10/06/22 1656	3 JNH
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
1,2,4-Trichlorobenzene	<0.010		0.00061	0.010	mg/L	Q	10/06/22 0652	10/15/22 0053	3 CLR
2,2'-oxybis(1-chloropropane)	<0.010		0.00070	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,4,5-Trichlorophenol	<0.010		0.00078	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
2,4,6-Trichlorophenol	<0.010		0.00076	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,4-Dichlorophenol	<0.010		0.00063	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,4-Dimethylphenol	<0.010		0.00070	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,4-Dinitrophenol	<0.052		0.00031	0.052	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,4-Dinitrotoluene	<0.010		0.00048	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,6-Dichlorophenol	<0.010		0.00073	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2,6-Dinitrotoluene	<0.010		0.00059	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2-Chloronaphthalene	<0.010		0.00073	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
2-Chlorophenol	<0.011		0.00076	0.011	mg/L	H2	10/20/22 1644	10/24/22 2159	) CLR
2-Chlorophenol	<0.010		0.00074	0.010	mg/L	Q3	10/06/22 0652	10/15/22 0053	3 CLR
2-Methylnaphthalene	<0.010		0.00071	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
2-Methylphenol	<0.010		0.00078	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
2-Nitroaniline	<0.010		0.00051	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
2-Nitrophenol	<0.010		0.00094	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
3,3'-Dichlorobenzidine	<0.052		0.0013	0.052	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
3/4-Methylphenol	<0.010		0.00086	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
3-Nitroaniline	<0.010		0.00082	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
4,6-Dinitro-2-methylphenol	<0.026		0.00035	0.026	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
4-Bromophenyl phenyl ether	<0.010		0.00069	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
4-Chloro-3-methylphenol	<0.021		0.00078	0.021	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
4-Chloroaniline	<0.010		0.00071	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
4-Chlorophenyl phenyl ether	<0.010		0.00071	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
4-Nitroaniline	<0.010		0.0010	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
4-Nitrophenol	<0.052		0.00086	0.052	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Acenaphthene	<0.010		0.000012	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Acenaphthylene	<0.010		0.0000031	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Acetophenone	<0.010		0.00082	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	
Aniline	<0.010		0.0015	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR

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CERTIFICATE OF ANALYSIS

L2I1199

Client Sample ID:Outfall 009 (RSample Matrix:WastewaterLab Sample ID:L2I1199-09	iver intake)					llected By:	Xavier Bu 09/30/202		
Semivolatile Organic	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Compounds by GCMS	<0.010		0.0000072	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Anthracene Benzidine	<0.010		0.0000072	0.010	-				
	<0.052		0.021	0.052	mg/L		10/06/22 0652	10/15/22 005	
Benzo[a]anthracene			0.0000041		mg/L		10/06/22 0652	10/15/22 005	
Benzo[a]pyrene	< 0.010			0.010	mg/L		10/06/22 0652	10/15/22 005	
Benzo[b]fluoranthene	< 0.010		0.0000062	0.010	mg/L		10/06/22 0652	10/15/22 005	
Benzo[g,h,i]perylene	< 0.010		0.0000052	0.010	mg/L		10/06/22 0652	10/15/22 005	
Benzo[k]fluoranthene	< 0.010		0.0000072	0.010	mg/L		10/06/22 0652	10/15/22 005	
Benzoic acid	< 0.052		0.00052	0.052	mg/L		10/06/22 0652	10/15/22 005	
Benzyl alcohol	<0.010		0.00068	0.010	mg/L		10/06/22 0652	10/15/22 0053	
Bis(2-chloroethoxy)methane	<0.010		0.00088	0.010	mg/L		10/06/22 0652	10/15/22 0053	
Bis(2-chloroethyl)ether	<0.010		0.00079	0.010	mg/L		10/06/22 0652	10/15/22 0053	
Bis(2-ethylhexyl)phthalate	<0.010		0.0012	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Butyl benzyl phthalate	<0.010		0.00094	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Carbazole	<0.010		0.00074	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
Chrysene	<0.010		0.0000062	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Dibenz[a,h]anthracene	<0.010		0.0000062	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Dibenzofuran	<0.010		0.00070	0.010	mg/L	Y	10/06/22 0652	10/15/22 0053	3 CLR
Diethyl phthalate	<0.010		0.0013	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Dimethyl phthalate	<0.010		0.00070	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Di-n-butyl phthalate	<0.010		0.00085	0.010	mg/L		10/06/22 0652	10/15/22 0053	3 CLR
Di-n-octyl phthalate	<0.010		0.00072	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Fluoranthene	<0.010		0.0000052	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Fluorene	<0.010		0.0000041	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Hexachlorobenzene	<0.010		0.00099	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Hexachlorobutadiene	<0.010		0.00099	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Hexachlorocyclopentadiene	<0.010		0.00041	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Hexachloroethane	<0.010		0.0010	0.010	mg/L		10/06/22 0652	10/15/22 005	3 CLR
Indeno[1,2,3cd]pyrene	<0.010		0.0000041	0.010	mg/L		10/06/22 0652	10/15/22 005	
Isophorone	<0.010		0.00082	0.010	mg/L		10/06/22 0652	10/15/22 005	
Naphthalene	<0.010		0.0000062	0.010	mg/L		10/06/22 0652	10/15/22 005	
Nitrobenzene	<0.010		0.00081	0.010	mg/L		10/06/22 0652	10/15/22 005	
N-Nitrosodimethylamine	<0.010		0.00094	0.010	mg/L		10/06/22 0652	10/15/22 005	
N-Nitrosodi-n-propylamine	< 0.010		0.0010	0.010	mg/L		10/06/22 0652	10/15/22 005	
N-Nitrosodiphenylamine	< 0.010		0.00074	0.010	mg/L		10/06/22 0652	10/15/22 005	
Pentachlorophenol	< 0.052		0.00032	0.052	mg/L		10/06/22 0652	10/15/22 005	
Phenanthrene	<0.032		0.0000072	0.032	mg/L		10/06/22 0652	10/15/22 005	
Phenol	<0.010		0.00038	0.010	mg/L		10/06/22 0652	10/15/22 005	
	<0.010		0.000052	0.010	-		10/06/22 0652	10/15/22 005	
Pyrene					mg/L				
Pyridine	<0.010		0.0013	0.010	mg/L % Roc		10/06/22 0652	10/15/22 005	
Surrogate: 2,4,6-Tribromophenol	43.3			47.8-138	% Rec		10/06/22 0652	10/15/22 005	
Surrogate: 2-Fluorobiphenyl	42.9			nit: 10-110	% Rec		10/06/22 0652	10/15/22 0053	
Surrogate: 2-Fluorophenol	16.0		Lim	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0053	3 CLR
Surrogate: Nitrobenzene-d5	35.0		Lim	nit: 10-110	% Rec		10/06/22 0652	10/15/22 0053	3 CLR
Surrogate: Phenol-d5	16.6		Limi	t: 10-60.8	% Rec		10/06/22 0652	10/15/22 0053	3 CLR

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID: Outfall 00 Sample Matrix: Wastewa Lab Sample ID: L2I1199-						ollected By: ollection Da			
Semivolatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Surrogate: Terphenyl-d14	60.0		Limit	: 16.8-110	% Rec		10/06/22 0652	10/15/22 0053	3 CLR
Volatile Organic Compounds by GCMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 624.1									
1,1,1-Trichloroethane	<0.00023		0.00023	0.0050	mg/L			10/13/22 1146	B JBS
1,1,2,2-Tetrachloroethane	<0.00032		0.00032	0.0050	mg/L			10/13/22 1146	B JBS
1,1,2-Trichloroethane	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	B JBS
1,1-Dichloroethane	<0.00025		0.00025	0.0050	mg/L			10/13/22 1146	B JBS
1,1-Dichloroethene	<0.00023		0.00023	0.0050	mg/L			10/13/22 1146	B JBS
1,2-Dichlorobenzene	<0.00030		0.00030	0.010	mg/L			10/13/22 1146	B JBS
1,2-Dichloroethane	<0.00038		0.00038	0.0050	mg/L			10/13/22 1146	B JBS
1,2-Dichloropropane	<0.00019		0.00019	0.0050	mg/L			10/13/22 1146	B JBS
1,3-Dichlorobenzene	<0.00024		0.00024	0.010	mg/L			10/13/22 1146	B JBS
1,4-Dichlorobenzene	<0.00028		0.00028	0.010	mg/L			10/13/22 1146	) JBS
2-Chloroethyl vinyl ether	<0.00019		0.00019	0.010	mg/L	Q11		10/13/22 1146	B JBS
Benzene	<0.00015		0.00015	0.0050	mg/L			10/13/22 1146	) JBS
Dichlorobromomethane	<0.00021		0.00021	0.0050	mg/L			10/13/22 1146	B JBS
Bromoform	<0.00025		0.00025	0.0050	mg/L			10/13/22 1146	) JBS
Bromomethane	<0.00029		0.00029	0.010	mg/L			10/13/22 1146	B JBS
Carbon tetrachloride	<0.00025		0.00025	0.0050	mg/L			10/13/22 1146	) JBS
Chlorobenzene	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	) JBS
Chloroethane	<0.00022		0.00022	0.010	mg/L			10/13/22 1146	B JBS
Chloroform	<0.00026		0.00026	0.0020	mg/L			10/13/22 1146	) JBS
Chloromethane	<0.00024		0.00024	0.010	mg/L			10/13/22 1146	) JBS
cis-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	B JBS
Dibromochloromethane	<0.00024		0.00024	0.0050	mg/L			10/13/22 1146	B JBS
Ethylbenzene	<0.00025		0.00025	0.0050	mg/L			10/13/22 1146	B JBS
Methylene chloride	<0.010		0.010	0.010	mg/L			10/13/22 1146	B JBS
Tetrachloroethene	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	B JBS
Toluene	<0.00030		0.00030	0.0050	mg/L			10/13/22 1146	) JBS
trans-1,2-Dichloroethene	<0.00022		0.00022	0.0050	mg/L			10/13/22 1146	B JBS
trans-1,3-Dichloropropene	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	) JBS
Trichloroethene	<0.00026		0.00026	0.0050	mg/L			10/13/22 1146	) JBS
Trichlorofluoromethane	<0.00027		0.00027	0.010	mg/L			10/13/22 1146	3 JBS
Vinyl chloride	<0.00026		0.00026	0.0020	mg/L			10/13/22 1146	) JBS
Acrolein	<0.0022		0.0022	0.10	mg/L	Q10		10/13/22 1146	) JBS
Acrylonitrile	<0.0019		0.0019	0.10	mg/L	Q, Q10		10/13/22 1146	
Surrogate: 1,2-Dichloroethane	e-D4 118			: 74.5-132	% Rec			10/13/22 1146	
Surrogate: 4-Bromofluorobenz				nit: 80-120	% Rec			10/13/22 1146	) JBS
Surrogate: Dibromofluorometh				nit: 80-120	% Rec			10/13/22 1146	
Surrogate: Toluene-D8	106			nit: 80-120	% Rec			10/13/22 1140	
Surroyale. Toluene-Do	100		LIII	m. 00-120	10 1100			10/13/22 1140	, 100

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID:Outfall 009 (RiSample Matrix:WastewaterLab Sample ID:L2I1199-09	,				Coll	ected By: ection Dat	Xavier Bu e: 09/30/202		
		Performed by				sville			
Field Parameters	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: HACH 8167 Chlorine, Total Residual	0.03		0.02	0.02	mg/L			09/30/22 0920	) XDB
Method: NA Flow by Measurement & Calc.	28.8			0	MGD			09/30/22 0920	) XDB
Method: SM 2550 B-2010									
Temperature	20.6		1.0	1.0	°C			09/30/22 0920	) XDB
<b>Method: SM 4500-H+ B-2011</b> pH (at 25°C)	6.9		1.0	1.0	S.U.			09/30/22 0920	) XDB
Microbiology	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 9223 B (Colilert-18)-1997 E. coli	1553.1		0.0	1.0	MPN/100mL		09/30/22 1652	10/01/22 1112	NWW
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation									
Total Organic Nitrogen	<1.0		0.53	1.0	mg/L		10/05/22 1205	10/06/22 2003	SSL
Method: EPA 1664B									
Oil & Grease	<5.3		3.0	5.3	mg/L			10/03/22 1651	RMT
Method: EPA 351.2, Rv. 2 (1993)									
Nitrogen, Total Kjeldahl	<1.0		0.53	1.0	mg/L		10/05/22 1040	10/06/22 1530	) SSL
Method: EPA 365.1, Rv. 2 (1993)									
Phosphorus	<0.10		0.044	0.10	mg/L		10/03/22 1346	10/04/22 1551	SSL
Method: SM 2120 B-2011									
pH at Color Color, Pt-Co	8 10		0	1 5	S.U. CU		09/30/22 1539	09/30/22 1544	
C0101, F1-C0	10		0	5	0		09/30/22 1539	09/30/22 1544	
Method: SM 4500-CN <sup>-</sup> E-2011 Cyanide	<0.010		0.0035	0.010	mg/L		10/11/22 1059	10/11/22 1938	SSL
Method: SM 4500-NH3 G-2011 Nitrogen, Ammonia	<0.50		0.11	0.50	mg/L		10/05/22 1205	10/06/22 2003	SSL
Method: SM 4500-S2 <sup>-</sup> D-2011 Sulfide	<0.20		0.12	0.20	mg/L			10/05/22 1700	) NWW
Method: SM 4500-SO3 <sup>-</sup> B-2011 Sulfite	<2.0		1.1	2.0	mg/L	H1		10/07/22 1500	) NWW
		Microh	ac Laborato	orioo Ino					

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## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Sample Matrix: V	Dutfall 009 (River Intake) Vastewater 211199-09					llected By:	Xavier Bu 9: 09/30/202		
Inorganics Total	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: SM 5210 B-2011	I								
BOD, 5 Day	<3.0		3.0	3.0	mg/L		09/30/22 1331	10/05/22 1318	SZH
Method: SM 5220 D-2011									
COD	<50		24	50	mg/L		10/04/22 1349	10/04/22 1549	SZH
Method: SM 5310 C-2011			0.50	4.0					
Carbon, Total Organic	3.1		0.50	1.0	mg/L		10/13/22 1529	10/14/22 0256	SSL
Method: SM 5540 C-2011									
MBAS (as LAS MW 340)	) <0.50		0.15	0.50	mg/L			09/30/22 1834	NWW
Method: USGS I-3765-85									
Solids, Total Suspended	18		5	5	mg/L		10/05/22 1346	10/05/22 1500	DKB
Metals Total by ICP	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4	1.4 (1994)								
Calcium	42		0.026	0.20	mg/L		10/14/22 1112	10/14/22 1841	SSL
Magnesium	13		0.054	0.20	mg/L		10/14/22 1112	10/14/22 1841	SSL
Method: SM 2340 B-2011	l								
Hardness, Total as CaCo	O3 160		0.22	0.82	mg/L		10/14/22 1112	10/14/22 1841	SSL
Metals Total by ICPMS	Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8, Rv. 5	5.4 (1994)								
Aluminum	99		20				10/07/22 1359	10/14/22 1924	001
Antimony			20	50	ug/L		TOTOTILE TOOO	10/14/22 1024	- SSL
7 unumony	<0.50		0.22	50 0.50	ug/L ug/L		10/07/22 1359	10/14/22 1924	
Arsenic	<0.50 1.4				•				SSL
•			0.22	0.50	ug/L		10/07/22 1359	10/14/22 1924	SSL SSL
Arsenic	1.4		0.22 0.27	0.50 0.50	ug/L ug/L		10/07/22 1359 10/07/22 1359	10/14/22 1924 10/14/22 1924	SSL SSL SSL
Arsenic Beryllium	1.4 <1.0		0.22 0.27 0.53	0.50 0.50 1.0	ug/L ug/L ug/L		10/07/22 1359 10/07/22 1359 10/07/22 1359	10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium	1.4 <1.0 <0.50		0.22 0.27 0.53 0.28	0.50 0.50 1.0 0.50	ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium Chromium	1.4 <1.0 <0.50 3.4		0.22 0.27 0.53 0.28 0.22	0.50 0.50 1.0 0.50 0.50	ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium Chromium Copper	1.4 <1.0 <0.50 3.4 <5.0		0.22 0.27 0.53 0.28 0.22 1.1	0.50 0.50 1.0 0.50 0.50 5.0	ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium Chromium Copper Iron	1.4 <1.0 <0.50 3.4 <5.0 250		0.22 0.27 0.53 0.28 0.22 1.1 24	0.50 0.50 1.0 0.50 0.50 5.0 50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium Chromium Copper Iron Lead	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33	0.50 0.50 1.0 0.50 0.50 5.0 50 0.50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	SSL SSL SSL SSL SSL SSL SSL SSL SSL SSL
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20	0.50 0.50 1.0 0.50 0.50 5.0 50 0.50 2.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924	<ul> <li>SSL</li> </ul>
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum Nickel	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8 1.9		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20 0.69	0.50 0.50 1.0 0.50 5.0 50 0.50 2.0 1.0	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359 10/07/22 1359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/17/22 1607	<ul> <li>SSL</li> </ul>
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum Nickel Selenium	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8 1.9 0.99		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20 0.69 0.45 0.012	0.50 0.50 1.0 0.50 5.0 5.0 0.50 2.0 1.0 0.50 0.50 0.10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/17/22 1607 10/14/22 1924	<ul> <li>SSL</li> </ul>
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum Nickel Selenium Silver Thallium	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8 1.9 0.99 <0.10 <0.50		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20 0.69 0.45 0.012 0.28	0.50 0.50 1.0 0.50 5.0 5.0 5.0 0.50 2.0 1.0 0.50 0.10 0.50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/14/22 1924 10/17/22 1607 10/14/22 1924 10/14/22 1924	<ul> <li>SSL</li> </ul>
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum Nickel Selenium Silver Thallium Zinc	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8 1.9 0.99 <0.10 <0.50 15		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20 0.69 0.45 0.012 0.28 6.2	0.50 0.50 1.0 0.50 5.0 5.0 5.0 5.0 2.0 1.0 0.50 0.10 0.50 10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359           10/07/22         1359	10/14/22 1924 10/14/22 1924	<ul> <li>SSL</li> </ul>
Arsenic Beryllium Cadmium Chromium Copper Iron Lead Molybdenum Nickel Selenium Silver Thallium	1.4 <1.0 <0.50 3.4 <5.0 250 <0.50 2.8 1.9 0.99 <0.10 <0.50		0.22 0.27 0.53 0.28 0.22 1.1 24 0.33 0.20 0.69 0.45 0.012 0.28	0.50 0.50 1.0 0.50 5.0 5.0 5.0 0.50 2.0 1.0 0.50 0.10 0.50	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		10/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/22135910/07/221359	10/14/22 1924 10/14/22 1924	<ul> <li>SSL</li> </ul>

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID:	Outfall 009 (Rive	er Intake)								
Sample Matrix:	Wastewater					Co	llected By:	Xavier Bu	Illock	
Lab Sample ID:	L2I1199-09	L2I1199-09					<b>Collection Date:</b> 09/30/2022 9:20			
Anions by IC		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analys
Method: EPA 300.0, R	v. 2.1 (1993)									
Bromide		<0.50		0.017	0.50	mg/L		10/05/22 1810	10/06/22 0424	1 NWW
Chloride		32		0.018	0.50	mg/L	B2	10/05/22 1810	10/06/22 0424	NWW
Fluoride		<0.50		0.045	0.50	mg/L		10/05/22 1810	10/06/22 0424	1 NWW
Nitrogen, Nitrate + Ni	trite	1.1		0.16	0.75	mg/L		10/05/22 1805	10/06/22 0830	NWW
Sulfate		68		0.026	0.50	mg/L	B2	10/05/22 1810	10/06/22 0424	1 NWW
Client Sample ID:	HG LL Blank -Ou	utfall 009 (River	Intake)							
Sample Matrix:	Wastewater					Co	llected By:	Xavier Bu	Illock	
Lab Sample ID:	L2I1199-10					Co	llection Da	te: 09/30/202	22 9:25	
		Analyses Po	erformed by: N	/licrobac Lab	oratories,	Inc Chic	agoland			
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<0.500		0.231	0.500	ng/L		10/11/22 1002	10/12/22 1030	) JNH

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID:	Outfall 002A Ra	ds Only								
Sample Matrix:	Wastewater						ected By:			
Lab Sample ID:	L2I1199-11					Coll	ection Da	ite: 10/21/202	22 9:56	
			Analyses Perfo	ormed by:	GEL Laborat	ories, LLC				
Radiochemistry		Result	UNC	Limit(s)	MDA	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation										
Radium-226+228 Su	m	0.54	+/-0.556		0.54	pCi/L		11/01/22 0000	11/14/22 0000	NXL
Method: EPA 900.0/S	W846 9310									
ALPHA		16	+/-3.42		3	pCi/L		11/01/22 0000	11/07/22 0000	KP1
BETA		15	+/-2.57		4	pCi/L		11/01/22 0000	11/07/22 0000	KP1
Method: EPA 903.1 M	odified									
Radium-226		0.368	+/-0.254		1	pCi/L		11/01/22 0000	11/13/22 0000	LXP
Method: EPA 904.0/S	W846 9320 Modifi	ed								
Radium-228		0.172	+/-0.495		1	pCi/L	U	11/01/22 0000	11/07/22 0000	JE1
Method: EPA 905.0 M	odified/DOE RP50	01 Rev. 1 Mo	dified							
Strontium-90		0.264	+/-1.08		2	pCi/L	U	11/01/22 0000	11/04/22 0000	KH1
Uranium		Result	Limit(s)	MD	L RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8										
Uranium		0.0195		0.00006	7 0.0002	mg/L		11/01/22 0000	11/03/22 0000	PRB

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

Client Sample ID:	Outfall 025 Rads	s Only								
Sample Matrix:	Wastewater					Col	lected By:	Wayne M	ills	
Lab Sample ID:	L2I1199-12					Col	lection Da	te: 10/21/202	2 10:02	
			Analyses Perfo	ormed by:	GEL Laborate	ories, LLC				
Radiochemistry		Result	UNC	Limit(s)	MDA	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation										
Radium-226+228 Su	m	1.28	+/-0.572		1.28	pCi/L		11/01/22 0000	11/14/22 0000	NXL
Method: EPA 900.0/S	W846 9310									
ALPHA		6.9	+/-2.22		3	pCi/L		11/01/22 0000	11/07/22 0000	KP1
BETA		6.38	+/-1.58		4	pCi/L		11/01/22 0000	11/07/22 0000	KP1
Method: EPA 903.1 M	odified									
Radium-226		1.01	+/-0.319		1	pCi/L		11/01/22 0000	11/13/22 0000	LXP
Method: EPA 904.0/S	W846 9320 Modifi	ed								
Radium-228		0.279	+/-0.474		1	pCi/L	U	11/01/22 0000	11/07/22 0000	JE1
Method: EPA 905.0 M	odified/DOE RP50	1 Rev. 1 Mo	dified							
Strontium-90		0.014	+/-0.55		2	pCi/L	U	11/01/22 0000	11/07/22 0000	KH1
Uranium		Result	Limit(s)	MD	L RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8										
Uranium		0.0102		0.00006	7 0.0002	mg/L		11/01/22 0000	11/03/22 0000	PRB

### Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

Client Sample ID: Sample Matrix: Lab Sample ID:	Outfall 009 Rads Wastewater L2I1199-13	s Only					llected By: llection Date	Wayne M 10/21/202		
			Analyses Perfo	ormed by:	GEL Laborate	ories, LLC				
Radiochemistry		Result	UNC	Limit(s)	MDA	Units	Note	Prepared	Analyzed	Analyst
Method: Calculation Radium-226+228 Sur	n	0.769	+/-0.388		0.769	pCi/L		11/01/22 0000	11/14/22 0000	NXL
Method: EPA 900.0/SV	V846 9310									
ALPHA		-0.268	+/-1.07		3	pCi/L	U	11/01/22 0000	11/07/22 0000	KP1
BETA		2.05	+/-1.32		4	pCi/L		11/01/22 0000	11/07/22 0000	KP1
Method: EPA 903.1 Mo	odified									
Radium-226		0.456	+/-0.246		1	pCi/L		11/01/22 0000	11/13/22 0000	LXP
Method: EPA 904.0/SV	V846 9320 Modifi	ed								
Radium-228		0.313	+/-0.3		1	pCi/L	U	11/01/22 0000	11/07/22 0000	JE1
Method: EPA 905.0 Mc	odified/DOE RP50	)1 Rev. 1 Mo	dified							
Strontium-90		1.49	+/-1.13		2	pCi/L	U	11/01/22 0000	11/04/22 0000	KH1
Uranium		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8										
Uranium		0.000414		0.000067	0.0002	mg/L		11/01/22 0000	11/03/22 0000	PRB
Client Sample ID:	HG LL Sample -		Pivor Intako)							
Sample Matrix:	Wastewater		inter intake)			Co	llected By:	Wayne M	ills	
Lab Sample ID:	L2I1199-14						llection Date			
		Analyses	Performed by	Microbac	Laboratories,	Inc Chica	agoland			
Metals Total by CVAF		Result	Limit(s)	MDL	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 1631E										
Mercury		<5.00		2.31	5.00	ng/L		10/28/22 1520	10/31/22 1107	JNH

Results in **bold** have exceeded a limit defined for this project. Limits are provided for reference but as regulatory limits change frequently, Microbac Laboratories, Inc. advises the recipient of this report to confirm such limits and units of concentration with the appropriate Federal, state or local authorities before acting on the data.

## Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

### L2I1199

### Definitions

Indons	
°C:	Degrees Celsius
A7:	Insufficient sample.
B:	Analyte found in the blank at or above the method acceptance criteria.
B2:	The analyte value in the Method Blank is between the MDL and the Reporting Limit.
CU:	Color Unit
H1:	Sample received outside of holding time for these analytes.
H2:	Initial analysis was within holding time. Reanalysis was past holding time.
M1a:	Matrix Spike recovery outside Control Limits due to sample matrix interference; biased high.
MDL:	Minimum Detection Limit
mg/L:	Milligrams per Liter
MGD:	Millions Of Gallons per Day
MPN/100mL	Most Probable Number per 100 Milliliters
ng/L:	Nanograms per Liter
pCi/L:	Picocuries per Liter
Q:	One or more quality control criteria failed.
Q10:	Analysis of acrolein and/or acrylonitrile was performed from a sample that was field preserved to pH < 2, which is less
Q11:	than the pH range of 4-5 specified in the test method and required for NPDES compliance per 40CFR Part 136. Analysis of 2-chloroethyl vinyl ether was performed from a sample that was field preserved to pH < 2 with HCI. Acid
QTI.	preservation is not allowed for this parameter by the test method or for NPDES compliance per 40CFR Part 136.
Q2:	LCS recovery is above acceptance limits. However there is no impact on the reported value.
Q3:	LCS recovery is below acceptance limits. The reported value is estimated.
Q8:	CCV recovery is below acceptance limits. The reported value is estimated.
RL:	Reporting Limit
S.U.:	Standard Units
S2:	Surrogate recovery is below acceptance limits.
U:	Result not detected above the detection limit
ug/L:	Micrograms per Liter
ug/mL:	Micrograms per Milliliter
Y:	This analyte is not on the laboratory's current scope of accreditation.

#### **Cooler Receipt Log**

Cooler ID: Default Cooler	Temp:	1.8°C		
Cooler Inspection Checklist				
Ice Present or not required?		Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?		Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?		Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?		Yes	Sample type identified on COC?	Yes
Correct type of Containers Received		Yes	Correct number of containers listed on COC?	Yes
Containers Intact?		Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?		Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?		Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?		Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?		Yes		

### Microbac Laboratories, Inc., Louisville

### CERTIFICATE OF ANALYSIS

L2I1199

#### Project Requested Certification(s)

Microbac Laboratories, Inc Chicagoland	
410.10	A2LA ISO/IEC 17025 Env.Testing
E-10397	Kansas Dept Health & Env. NELAP
90147	Kentucky Drinking Water Laboratory Certification Program
108202	Kentucky UST-Energy and Environment Cabinet
90147	Kentucky Wastewater Laboratory Certification Program

#### **Report Comments**

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <<u>https://www.microbac.com/standard-terms-conditions></u>.

Reviewed and Approved By:

JOAN HEINSOHN Customer Relationship Specialist Reported: 11/15/2022 11:24



Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1041(中)INSOHN

### Chain of Custody





#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

Sampled Date & Time: <u>M/A</u>

#### Client Sample ID: Outfall 001

Lab Sample ID: L2I1199-01

Grab

Type:

<u>Analysis</u>	Method	Field Results/Comments			Hold Time
1631EHg	EPA 1631E				14 days
200.7 Hardness CALC PKG	varies	li dan se digi u da se du hanangan sera du penguna yang ngang ngang da penguna du pengang ngang serang du peng Ngang digi u da se du penguna kanang serang seran			180 days
200.8 Ag	EPA 200.8, Rv. 5.4 (1994)			$\sim$	180 days
200.8 AI	EPA 200.8, Rv. 5.4 (1994)	an a few a characht an a' characht a' characht a' characht a thair a' ann an Anna an Anna ann ann an Anna an An	Townson and the second s		180 days
200.8 As	EPA 200.8, Rv. 5.4 (1994)		$\sim$		180 days
200.8 B	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Ba	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Be	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Cd	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Co	EPA 200.8, Rv. 5.4 (1994)		ander an andere and the first of sold and a little bird of the sold and a sold and a sold and a sold and a sold		180 days
200.8 Cr	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Cu	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Fe	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Mn	EPA 200.8, Rv. 5.4 (1994)	en 2014 2014 Frankrigens i komman die 65 vol fan die Brunges de Kontres en Namme aus Manadaran (Konor-och			180 days
200,8 Mo	EPA 200.8, Ry. 5.4 (1994)				180 days
200.8 Ni	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Pb	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Sb	EPA 200.8, Rv. 5.4 (1994)	-9110-0210-912219190-071-44-4-29-061-40-091-920-92924-2015-1710-0710-0710-9710-9710-9710-9710-9710			180 days
200.8 Se	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Sn 🦯	EPA 200.8, Rv. 5.4 (1994)	al anna a' suite an suite an ann an an an an an ann an an an an a	anda selari mandranan dan sena dan sena perana		180 days
200.8 Ti	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 TI	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 U	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Zn	EPA 200.8, Rv. 5.4 (1994)	on galled fragelishes werden general bener legter begeneren generalisten og de seneral og seneral og			180 days
BOD5 SM5210-B	SM 5210 B-2011				2 days
Bromide E300.0	EPA 300.0, Rv. 2.1 (1993)		ny taong sayahasa da mada nagalang papang papang sa ang sa an		28 days
Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167	Instrument:	Result:	Unit:	
CN Total SM4500-CN-E	SM 4500-CN E-2011				14 days
COD SM5220-D	SM 5220 D-2011				28 days

Page 1 of 13

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Case No. 2022-00402 Attachment 3 to Response to JI11a@ucointactioJOAN (HE)NSOHN

Chain of Custody



-15'

Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

Color True pH SM2120-B PKG	varies				2 days
E coli MPN 18hr SM9223B-Colilert	SM 9223 B (Colilert-18)-19				8 hrs
FLOW BY MEASUREMENT & CALC MGD	NA	Instrument:	Result:	Unit:	
Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI				180 days
GROSS BETA	*** DEFAULT SPECIFIC MI	en e			180 days
HEM-OG E1664B	EPA 1664B				28 days
HOLD - SEE JOAN	NA	Change hourly labor \$			365 days
MBAS SM5540-C	SM 5540 C-2011				2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)	ana ang ang ang ang ang ang ang ang ang			28 days
Nitrogen Organic E351.2 SM4500-NH3 G CALC PKG	varies				28 days
PH, FIELD	SM 4500-H+ B-2011	Instrument:	Result:	Unit:	
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)				28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)				28 days
RADIUM 226	*** DEFAULT SPECIFIC MI				180 days
RADIUM 228	*** DEFAULT SPECIFIC MI	ann an tha bhair ann an ann an thair an thair ann an ann an an an ann ann an an ann an a			180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI				365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)	a na militar da na seconda en da mandera de conserva en la seconda de conserva en la seconda de la seconda de En la militar de la mandera de la militar			28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011				7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011				0.00 mins
SVOC - 625	EPA 625				7 days
TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010	Instrument:	Result:	Unit:	
TOC SM5310-C	SM 5310 C-2011				28 days
TSS USGS I-3765	USGS I-3765-85				7 days
VOC/-624	EPA 624.1			•	14 days



Case No. 2022-00402 Attachment 3 to Response to JIபுகும்சேர்ங்கல் பகல் (http://www.source.org/actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-actional-acti

Chain of Custody



Designator

Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

		<u>Container(s)</u> 1L-Bottle HDPE 1L-Bottle Glass Amber 500ml-Bottle NM Glass Amber-Ultra 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	Designator A C C E G I	Container(s) 300ml-DO Bottle 1L-Bottle Glass Amber 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	<u>Designator</u> B D F H J
		250ml-Bottle HDPE-HNO3	ĸ	250ml-Bottle HDPE-HNO3	LN
		250ml-Bottle Glass Amber-H2SO4 250ml-Bottle HDPE-H2SO4	M	1L-Bottle Glass Amber-H2SO4 40ml-Vial Amber-H2SO4	P
	and the second	40ml-Vial Amber-H2SO4	Q	120ml-Bottle LDPE-Sterile, Na2S2O	
	and the second	40ml-Vial-HCL	S	40ml-Vial-HCL	Т
		40ml-Vial-HCL	U	40ml-Vial-HCL	V
		250ml-Bottle HDPE-NaOH	W	250ml-Bottle HDPE-ZnAc NaOH	х
Client Sample ID: Lab Sample ID: Matrix: Type:	HG LL Blank -Outf L2I1199-02 Wastewater Grab	all 001	Samplee	d Date & Time: <u>///A</u>	
<u>Analysis</u> 1631E Hg	<u>Method</u> EPA 163		ults/Comme	unts	<u>Hold Time</u> 14 days

<u>Container(s)</u> <u>Designator</u> <u>Container(s)</u> 500ml-Bottle NM Glass Amber-Ultra C A

Lab Sample ID: Matrix: Type:	: Outfall 002A L2I1199-03 Wastewater Grab		( Sampled Date & Time:	7-30-22 9:35
Analysis		Method	Field Results/Comments	Hold Time
1631E Hg		EPA 1631E		14 days
200.7 Hardness CA	LC PKG	varies		180 days
200.8 Ag		EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Al		EPA 200.8, Rv. 5.4 (1994)	urun (1999) deb Agrikan (1994) dari da	180 days
200.8 As		EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 B		EPA 200.8, Rv. 5.4 (1994)	in fan de service de la se La service de la service de	180 days
200.8 Ba		EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Be		EPA 200.8, Rv. 5.4 (1994)	and for any and the formation of the state of the state of the second state of the second of the state of th	180 days



Case No. 2022-00402 Attachment 3 to Response to JI

Chain of Custody



Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19 <sup>:</sup> Instrument: <u>(</u> ) 00.0, Rv. 2.1 (1993) FAULT SPECIFIC MI FAULT SPECIFIC MI 564B Change hourly labor S 40 C-2011 00.0, Rv. 2.1 (1993)	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>7.79</u> Unit: <u>MGD</u> 28 days 180 days 28 days 180 days
8167       Instrument: (1)         00-CN <sup>-</sup> E-2011       20 D-2011         23 B (Colilert-18)-19:       Instrument: (1)         23 B (Colilert-18)-19:       Instrument: (1)         00.0, Rv. 2.1 (1993)       Instrument: (1)         FAULT SPECIFIC MI       FAULT SPECIFIC MI         564B       Change hourly labor S         40 C-2011       00.0, Rv. 2.1 (1993)         00-H+ B-2011       Instrument: (2)	1-73 Result: 0.08 Unit: Mg/L 14 days 28 days 2 days 8 hrs 5 CMT Result: 7.79 Unit: M&D 28 days 180 days 180 days 28 days
8167       Instrument:       (	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>5201</u> Result: <u>7.79</u> Unit: <u>MGD</u> 28 days 180 days 180 days 28 days
8167       Instrument:         00-CN <sup>-</sup> E-2011       20 D-2011         20 D-2011       Instrument:         23 B (Colilert-18)-19:       Instrument:         00.0, Rv. 2.1 (1993)       Instrument:         FAULT SPECIFIC MI       FAULT SPECIFIC MI         564B       Change hourly labor \$         40 C-2011       Change hourly labor \$	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>i201</u> Result: <u>7.79</u> Unit: <u>MGD</u> 28 days 180 days 180 days 28 days
8167       Instrument:	<u>1-77</u> Result: 0.08 Unit: Mg/L 14 days 28 days 2 days 8 hrs 5201 Result: 7.79 Unit: M&D 28 days 180 days 180 days 28 days
8167 Instrument: <u>(1</u> 00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19: Instrument: <u>(1</u> 00.0, Rv. 2.1 (1993) FAULT SPECIFIC MI FAULT SPECIFIC MI 564B	<u>1-77</u> Result: 0.08 Unit: Mg/L 14 days 28 days 2 days 8 hrs 5201 Result: 7.79 Unit: MGD 28 days 180 days 180 days 28 days 365 days
8167 Instrument: <u>(</u> 00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19: Instrument: <u>(</u> 00.0, Rv. 2.1 (1993) FAULT SPECIFIC MI FAULT SPECIFIC MI	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs 520+ Result: <u>7.79</u> Unit: <u>M&amp;D</u> 28 days 180 days 180 days 28 days 28 days
8167 Instrument: <u>(</u> 00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19 Instrument: <u>(</u> ) 00.0, Rv. 2.1 (1993) FAULT SPECIFIC MI	<u>1-73</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>5201</u> Result: <u>7.79</u> Unit: <u>M&amp;D</u> 28 days 180 days 180 days
8167 Instrument: <u>(</u> 00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19: Instrument: <u>(</u> ) 00.0, Rv. 2.1 (1993)	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>7.79</u> Unit: <u>MGD</u> 28 days 180 days
8167 Instrument: 00-CN <sup></sup> E-2011 20 D-2011 23 B (Colilert-18)-19: Instrument:	<u>1-73</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs <u>52N+</u> Result: <u>7.79</u> Unit: <u>MGD</u> 28 days
8167 Instrument: <u>(</u> 00-CN <sup>-</sup> E-2011 20 D-2011 23 B (Colilert-18)-19!	<u>1-73</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days 8 hrs
8167 Instrument: 00-CN <sup></sup> E-2011 20 D-2011	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days 2 days
8167 Instrument:	<u>[-73]</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days 28 days
8167 Instrument:	<u>1-77</u> Result: <u>0.08</u> Unit: <u>Mg/L</u> 14 days
8167 Instrument:	1-23 Result: 0.08 Unit: Mg/L
1111 BW / 111MM 1	
	28 days
	28 days
	2 days
	180 days
	180 days
	180 days
	180 days
	180 days
	180 days
	180 days
	180 days 180 days
	180 days
	180 days
	180 days
	180 days
	180 days
0.8, Rv. 5.4 (1994)	180 days
	0.8, Rv. 5.4 (1994)

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Case No. 2022-00402 Attachment 3 to Response to JI-1200 Contract of DAN (HE)NSOHN

**Chain of Custody** 



Microbac Laboratories, Inc., Louisville

#### Project Name: Form C - KPDES Renewal - Mill LG&E - KU ENERGY LLC. Creek Michael O'Guin Project/PO Number: 1104203 820 West Broadway Tenatively Scheduled: 9/29/2022 Louisville, KY 40202 Route: PAD - Specified Date Phone: 5024498815 michael.o'guin@lge-ku.com 180 days \*\*\* DEFAULT SPECIFIC MI RADIUM 226 180 days \*\*\* DEFAULT SPECIFIC MI RADIUM 228 365 days \*\*\* DEFAULT SPECIFIC MI Strontium-90 E905.0 28 days EPA 300.0, Rv. 2.1 (1993) Sulfate SO4 E300.0 7 days SM 4500-S2 D-2011 Sulfide S2 SM4500-S2-D 0.00 mins SM 4500-SO3 B-2011 Sulfite SO3 SM4500-SO3-B 7 davs EPA 625 SVOC - 625 \_ Result: <u>(9</u>.0 Instrument: P - 9Unit: SM 2550 B-2010 TEMPERATURE AT PH READING, ° C - FIELD 28 days SM 5310 C-2011 **TOC SM5310-C** 7 days USGS I-3765-85 **TSS USGS I-3765** 14 days EPA 624.1 VOC - 624 Designator Container(s) Designator Container(s) в 1L-Bottle Glass Amber 1L-Bottle HDPE А D С 1L-Bottle Glass Amber 300ml-DO Bottle F 1L-Bottle HDPE-HNO3 Е 500ml-Bottle NM Glass Amber-Ultra C Н 1L-Bottle HDPE-HNO3 G 1L-Bottle HDPE-HNO3 J 1 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 250ml-Bottle HDPE-HNO3 L К 250ml-Bottle HDPE-HNO3 Ν 1L-Bottle Glass Amber-H2SO4 250ml-Bottle Glass Amber-H2SO4 Μ Ρ 40ml-Vial Amber-H2SO4 0 250ml-Bottle HDPE-H2SO4 120ml-Bottle LDPE-Sterile, Na2S2O3 R Q 40ml-Vial Amber-H2SO4 40ml-Vial-HCL Т s 40ml-Vial-HCL V U 40ml-Vial-HCL 40ml-Vial-HCL Х 250ml-Bottle HDPE-ZnAc NaOH w 250ml-Bottle HDPE-NaOH Client Sample ID: HG LL Blank -Outfall 002A Sampled Date & Time: 9-30-22 9:40 L2I1199-04 Lab Sample ID: Wastewater Matrix: Grab Type: **Field Results/Comments**

Analysis 1631E Hg

Method EPA 1631E

**Hold Time** 14 days Designator

Container(s) 500ml-Bottle NM Glass Amber-Ultra C А

Microbac Laboratories, Inc.

Designator Container(s)

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Case No. 2022-00402 Attachment 3 to Response to JI-LiabuGenitadttoJのAM (HE)NSOHN

Chain of Custody



Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

#### Client Sample ID: Outfall 023

Lab Sample ID: L2I1199-05 Matrix: Wastewater

Type:

Grab

Sampled Date & Time: MA

**Field Results/Comments Hold Time** Method Analysis EPA 1631E 14 days 1631E Hg 180 days 200.7 Hardness CALC PKG varies EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Ag 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 AI 180 days 200.8 As EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 B 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Ba EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Be 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Cd 180 days 200.8 Co EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Cr 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Cu EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Fe 180 days EPA 200.8, Rv. 5,4 (1994) 200.8 Mn EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Mo EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Ni 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Pb EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Sb 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Se 180 days 200.8 Sn EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 Ti EPA 200.8, Rv. 5.4 (1994) 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 TI EPA 200.8, Rv. 5.4 (1994) 180 days 200.8 U 180 days EPA 200.8, Rv. 5.4 (1994) 200.8 Zn 2 days BØD5 SM5210-B SM 5210 B-2011 28 days Bromide E300.0 EPA 300.0, Rv. 2.1 (1993) 28 days EPA 300.0, Rv. 2.1 (1993) Chloride E300.0 CHLORINE, TOTAL HACH 8167 Instrument: Result: Unit: **RESIDUAL-FIELD** 14 days CN Total SM4500-CN-E SM 4500-CN E-2011 28 days SM 5220 D-2011 COD SM5220-D

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Case No. 2022-00402 Attachment 3 to Response to JI

Chain of Custody

Microbac Laboratories, Inc., Louisville



#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

Color True pH SM2120-B PKG	varies				2 days
E coli MPN 18hr	SM 9223 B (Colilert-18)-19	and an an international distance of the state of the stat	and and a second se		8 hrs
SM9223B-Colilert FLOW BY MEASUREMENT & CALC MGD	NA	Instrument:	Result:	Unit:	4
Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI			/	180 days
GROSS BETA	*** DEFAULT SPECIFIC MI				180 days
HEM-OG E1664B	EPA 1664B				28 days
HOLD - SEE JOAN	NA	Change hourly labor \$			365 days
MBAS SM5540-C	SM 5540 C-2011	/			2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)	and a second			28 days
Nitrogen Organic E351.2 SM4500-NH3 G CALC PKG	varies				28 days
PH, FIELD	SM 4500-H+ B-2011	Instrument:	Result:	Unit:	
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)				28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)				28 days
RADIUM 226	*** DEFAULT SPECIFIC MI				180 days
RADIUM 228	*** DEFAULT SPECIFIC MI				180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI				365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
Sulfide S2 SM4500-S2-D	/SM 4500-S2 D-2011				7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011				0.00 mins
SVOC - 625	EPA 625				7 days
TEMPERATURE AT PH READING, ° C - FIĘŁD	SM 2550 B-2010	Instrument:	Result:	Unit:	-
TOC SM5310-C	SM 5310 C-2011				28 days
TSS USGS J-3765	USGS I-3765-85				7 days
VOC - 624	EPA 624.1				14 days



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Chain of Custody



Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

Container(s)	Designator	<u>Container(s)</u>	<u>Designator</u>
1L-Bottle HDPE	A	1L-Bottle Glass Amber	В
1L-Bottle Glass Amber	С	300ml-DO Bottle	D
500ml-Bottle NM Glass Amber-Ultra	C E	1L-Bottle HDPE-HNO3	F
1L-Bottle HDPE-HNO3	G	1L-Bottle HDPE-HNO3	Н
1L-Bottle HDPE-HNO3	I	1L-Bottle HDPE-HNO3	J
250ml-Bottle HDPE-HNO3	к	250ml-Bottle HDPE-HNO3	L
250ml-Bottle Glass Amber-H2SO4	М	1L-Bottle Glass Amber-H2SO4	N
250ml-Bottle HDPE-H2SO4	0	40ml-Vial Amber-H2SO4	Р
40ml-Vial Amber-H2SO4	Q	120ml-Bottle LDPE-Sterile, Na2S2C	)3R
40ml-Vial-HCL	S	40ml-Vial-HCL	Т
40ml-Vial-HCL	U	40ml-Vial-HCL	V
250ml-Bottle HDPE-NaOH	W	250ml-Bottle HDPE-ZnAc NaOH	Х

### Client Sample ID: LL HG Blank -Outfall 023

Lab Sample ID: Matrix: Type:	L2I1199-06 Wastewater Grab	Sampled Date & Time:/	
<u>Analysis</u> 1631E Hg		<u>Field Results/Comments</u> ontainer(s) <u>Designator Container(s)</u> 00ml-Bottle NM Glass Amber-Ultra C A	<u>Hold Time</u> 14 days <u>Designator</u>

Lab Sample ID: Matrix:	L2I1199- Wastewa		Sampled Date & Time:	-30-22 9:55	
Туре:	Grab				
Analysis		Method	Field Results/Comments	<u>Hold Time</u>	
1631E Hg		EPA 1631E		14 days	
200.7 Hardness CA	LC PKG	varies	n internet in ander in den ander ander en	180 days	
200.8 Ag		EPA 200.8, Rv. 5.4 (1994)		180 days	
200.8 Al		EPA 200.8, Rv. 5.4 (1994)	an a	180 days	
200.8 As		EPA 200.8, Rv. 5.4 (1994)		180 days	
200.8 B		EPA 200.8, Rv. 5.4 (1994)		180 days	
200.8 Ba		EPA 200.8, Rv. 5.4 (1994)		180 days	
200.8 Be		EPA 200.8, Rv. 5.4 (1994)		180 days	



Case No. 2022-00402 Attachment 3 to Response to JIL

Chain of Custody



Microbac Laboratories, Inc., Louisville

#### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

### Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

200.8 Cd 200.8 Co	EPA 200.8, Rv. 5.4 (1994)		er en en la sectión en la constante de la section de la
	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cr	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cu	EPA 200.8, Rv. 5.4 (1994)	y fefetingen seinen konstruktion in eine seinen seinen seinen seinen seinen seinen konstruktion seine konstruktion seinen s	180 days
200.8 Fe	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mn	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mo	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ni	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Pb	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Sb	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Se	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Sn	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ti	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Tl	EPA 200.8, Rv. 5.4 (1994)	en of standard and a standard of the standard standard standard and a standard standard standard standard stand In 1999 with the standard of the standard standard standard standard standard standard standard standard standard	180 days
200.8 U	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Zn	EPA 200.8, Rv. 5.4 (1994)	nickych i przy w przy przy grzy grzy w przy sa przy przy przy przy przy przy przy przy	180 days
BOD5 SM5210-B	SM 5210 B-2011		2 days
Bromide E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167	Instrument: <u>((-23</u> Result: <u>0.02</u> u	<u> </u>
CN Total SM4500-CN-E	SM 4500-CN E-2011		14 days
COD SM5220-D	SM 5220 D-2011		28 days
Color True pH SM2120-B PKG	varies		2 days
E coli MPN 18hr SM9223B-Colilert	SM 9223 B (Colilert-18)-19	Instrument: Client Result: 8.34	8 hrs منه M(حD
FLOW BY MEASUREMENT &	NA	Instrument: $\underline{\langle 1 2 c \cdot 1 \rangle}$ Result: $\underline{\langle 1 2 \cdot 1 \rangle}$	Jnit. 1400 2
CALC MGD Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI		180 days
GROSS BETA	*** DEFAULT SPECIFIC MI		180 days
HEM-OG E1664B	EPA 1664B		28 days
HOLD - SEE JOAN	NA	Change hourly labor \$	365 days
MBAS SM5540-C	SM 5540 C-2011		2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)		28 days
Nitrogen Organic E351.2	varies		28 days
SM4500-NH3 G CALC PKG PH, FIELD	SM 4500-H+ B-2011	Instrument: $P-99$ Result: $9.05$ (	energy and a state state of a strategy of the state state and a state of the state of the state of the state of
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)		28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)		28 days

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Case No. 2022-00402 Attachment 3 to Response to JILL வுருள்ளல் வர்கில் பிருகில் காக 145 of 2027

## Chain of Custody



Microbac Laboratories, Inc., Louisville

LG&E - KU ENERGY LLC.		Project Na Creek	me: Form C - KPDES Renewa	al - Mill
Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com		Tenatively	Number: 1104203 Scheduled: 9/29/2022 ) - Specified Date	
RADIUM 226	*** DEFAULT SPECIFIC MI			180 days
RADIUM 228	*** DEFAULT SPECIFIC MI			180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI			365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)			28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011			7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011			0.00 mins
	EPA 625	~		7 days
SVOC - 625 TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010 Instru	ment: <u>P-                                   </u>	9 Result: 20 · [ Unit: 4	
TOC SM5310-C	SM 5310 C-2011			28 days
TSS USGS I-3765	USGS I-3765-85			7 days
VOC - 624	EPA 624.1			14 days
V00 011	<u>Container(s)</u>	Designator	Container(s)	Designator
	1L-Bottle HDPE	A	1L-Bottle Glass Amber	В
	1L-Bottle Glass Amber	С	300ml-DO Bottle	D
	500ml-Bottle NM Glass Amber-Ult	ra C E	1L-Bottle HDPE-HNO3	F
	1L-Bottle HDPE-HNO3	G	1L-Bottle HDPE-HNO3	н
	1L-Bottle HDPE-HNO3	I	1L-Bottle HDPE-HNO3	J
	250ml-Bottle HDPE-HNO3	к	250ml-Bottle HDPE-HNO3	L
	250ml-Bottle Glass Amber-H2SO4		1L-Bottle Glass Amber-H2SO4	N P
	250ml-Bottle HDPE-H2SO4	0	40ml-Vial Amber-H2SO4	
	40ml-Vial Amber-H2SO4	Q	120mi-Bottle LDPE-Sterile, Na2S2C	Т
	40ml-Vial-HCL	S	40ml-Vial-HCL 40ml-Vial-HCL	v
	40ml-Vial-HCL	U	250ml-Bottle HDPE-ZnAc NaOH	x
	250ml-Bottle HDPE-NaOH	W		
Client Sample ID: LL HG E				
Lab Sample ID: L2I1199 <sup>,</sup>	-08		d Date & Time: $9-30-7$	00:00 55
Matrix: Wastew	ater	Sample	d Date & Time:()0-	
Type: Grab				
Analysis	Method Field Re	sults/Comm	<u>ents</u>	<u>Hold Time</u>
1631E Hg	EPA 1631E			14 days
105 TE TIY	<u>Container(s)</u> 500ml-Bottle NM Glass Amber-U		<u>r</u> <u>Container(s)</u>	<u>Designator</u>



Case No. 2022-00402 Attachment 3 to Response to JI128 Costinacto JOAN (HE)NSOHN

Chain of Custody



Microbac Laboratories, Inc., Louisville

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

## Client Sample ID: Outfall 009 (River Intake)

Grab

L2I1199-09 Lab Sample ID: Wastewater Matrix:

Type:

Sampled Date & Time: <u>9-30-22</u> 9:20

Analysis	Method	Field Results/Comments	Hold Time
1631E Hg	EPA 1631E		14 days
200.7 Hardness CALC PKG	varies		180 days
200.8 Ag	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Al	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 As	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 B	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ba	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Be	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cd	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Co	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cr	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cu	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Fe	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mn	EPA 200.8, Rv. 5.4 (1994)		180 days
an and a second seco	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mo	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ni	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Pb	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Sb	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Se	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Sn	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ti	EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 TI	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 U			180 days
200.8 Zn	EPA 200.8, Rv. 5.4 (1994)		2 days
BOD5 SM5210-B	SM 5210 B-2011		28 days
Bromide E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)	Instrument: $\underline{C} = 23$ Result: $\underline{0.03}$	Unit: Mg/L
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167		V
CN Total SM4500-CN-E	SM 4500-CN E-2011		14 days
COD SM5220-D	SM 5220 D-2011		28 days

### Microbac Laboratories, Inc.

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Case No. 2022-00402 Attachment 3 to Response to JILa Constinution Avid ANI (HE)NSOHN

Chain of Custody



Microbac Laboratories, Inc., Louisville

LG&E - KU ENERGY LLC.		Project Name: Form C - KPDES Renewal - Mill Creek
Michael O'Guin 820 West Broadway		Project/PO Number: 1104203
Louisville, KY 40202		Tenatively Scheduled: 9/29/2022
Phone: 5024498815		Route: PAD - Specified Date
michael.o'guin@lge-ku.com		
Color True pH SM2120-B PKG	varies	2 days
E coli MPN 18hr	SM 9223 B (Colilert-18)-19	8 hrs
SM9223B-Colilert	<u></u>	Instrument: Client Result: 28.6 Unit: MGD
FLOW BY MEASUREMENT & CALC MGD	NA	
Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)	28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI	180 days
GROSS BETA	*** DEFAULT SPECIFIC MI	180 days
HEM-OG E1664B	EPA 1664B	28 days
HOLD - SEE JOAN	NA	Change hourly labor \$ 365 days
MBAS SM5540-C	SM 5540 C-2011	2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)	28 days
Nitrogen Organic E351.2	varies	28 days
SM4500-NH3 G CALC PKG PH, FIELD	SM 4500-H+ B-2011	Instrument: $\underline{P-99}$ Result: $\underline{b\cdot 91}$ Unit: $\underline{50}$
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)	28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)	28 days
RADIUM 226	*** DEFAULT SPECIFIC MI	180 days
RADIUM 228	*** DEFAULT SPECIFIC MI	180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI	365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)	28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011	7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011	0.00 mins
SVOC - 625	EPA 625	- 00: 701 ° <sup>7 days</sup>
TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010	Instrument: <u>P-99</u> Result: <u>20.6</u> Unit: <u>C</u>
TOC SM5310-C	SM 5310 C-2011	28 days
TSS USGS I-3765	USGS I-3765-85	7 days
VOC - 624	EPA 624.1	14 days





Case No. 2022-00402

Microbac Laboratories, Inc., Louisville

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/29/2022 Route: PAD - Specified Date

monaci.o gun egg			Decianator	Container( <u>s)</u>	Designator
		ainer(s)	<u>Designator</u> A	300ml-DO Bottle	B
		ttle HDPE	c	1L-Bottle Glass Amber	D
		ttle Glass Amber		1L-Bottle HDPE-HNO3	F
		-Bottle NM Glass Amber-Ultra (	, L G	1L-Bottle HDPE-HNO3	Н
		ttle HDPE-HNO3	G I	1L-Bottle HDPE-HNO3	J
		ttle HDPE-HNO3 I-Bottle HDPE-HNO3	ĸ	250ml-Bottle HDPE-HNO3	L
		I-Bottle Glass Amber-H2SO4	M	1L-Bottle Glass Amber-H2SO4	N
		I-Bottle HDPE-H2SO4	· 0	40ml-Vial Amber-H2SO4	Р
		Vial Amber-H2SO4	Q	120ml-Bottle LDPE-Sterile, Na2S2O	3 R
		Vial-HCL	S	40ml-Vial-HCL	т
		Vial-HCL	U	40ml-Vial-HCL	V
		i-Bottle HDPE-NaOH	W	250ml-Bottle HDPE-ZnAc NaOH	х
Lab Sample ID:	L211199-10		Sample	d Date & Time: 9-30-2	2 9:25
Lab Sample ID: Matrix:				d Date & Time: <u>9-30-2</u>	
Lab Sample ID: Matrix:	L2I1199-10 Wastewater	<u>Field Resu</u>			<u>Hold Tim</u>
Lab Sample ID: Matrix: Type: <u>Analysis</u>	L2I1199-10 Wastewater Grab	<u>Field Resu</u>			<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u>	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E	<u>Field Resu</u> tainer(s)		<u>ents</u>	<u>Hold Tim</u>
Lab Sample ID: Matrix: Type: <u>Analysis</u>	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u>		Its/Commo	<u>ents</u>	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s)	Its/Commo	<u>ents</u> <u>Container(s)</u>	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22	Its/Commo Designator C A Receive	ents Container(s) ed by	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	t <u>ainer(s)</u> nl-Bottle NM Glass Amber-Ultra  Date/Time:	Its/Commo Designator C A Receive Printed	ents <u>Container(s)</u> ad by: Name: Tawa HarnSak	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22	Its/Commo Designator C A Receive	ents <u>Container(s)</u> ad by: Name: Tawa HarnSak	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished Printed Name:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22 (1:03	Its/Commo Designator C A Receive Printed	ents Container(s) ed by: Name: Jaan Hamsah	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished Printed Name:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22 (1:03 Date/Time:	Its/Commo Designator C A Receive Printed Printed	ents <u>Container(s)</u> ed by: Name: Jaan Hamsah ed by: Name:	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished Printed Name: Relinquished by: Printed Name:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22 (1:03	Its/Commo Designator C A Receive Printed Receive Printed	ents <u>Container(s)</u> ad by Name: Jacon HamSak ad by: Name: ed by:	<u>Hold Tim</u> 14 day
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Sampled/Relinquished Printed Name: Relinquished by: Relinquished by:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m by: <u>XXX</u> <u>Sec</u> <u>Bullock</u>	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22 (1:03 Date/Time: Date/Time:	Its/Commo Designator C A Printed Printed Receive Printed Printed	ents <u>Container(s)</u> ad by: Name: Job Mame: ad by: Name:	Hold Tim 14 day Designator
1631E Hg Sampled/Relinquished Printed Name: Relinquished by: Printed Name: Relinquished by: Printed Name:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E <u>Cont</u> 500m by: <u>XXX</u> <u>Sec</u> <u>Bullock</u>	tainer(s) nl-Bottle NM Glass Amber-Ultra Date/Time: 9-30-22 (1:03 Date/Time:	Its/Commo Designator C A Printed Printed Receive Printed Printed	ents <u>Container(s)</u> ad by: Name: Job Mame: ad by: Name:	Hold Tim 14 day Designator

### Notes:

Home Facility: Louisville

icing is per outfall for anlaytical cost. Labor charge per hour will vary based upon time in the field for each facility. Mercury 1631E cost is for a Sample and a Blank

			Attachment 3 to Respo	Case No. 202 Inse to JI-1 Question No. 1.	101(f-h)
		Chain (	of Custody	Page 14 Lab Contact: JOAN	NHENNSOHN
			ories, Inc., Louisville		L2I1199
			ones, mc., Louisville	TA	T 13 days
LG&E - KU ENER	GY LLC.		Project Name:	Form C - KPDES Renew	
Michael O'Guin			Creek		a) - Willi
820 West Broadwa	v		Project/PO Nun	nber: 1104203	
Louisville, KY 4020	•		•	duled: 9/30/2022	
Phone: 502449881			Route: PAD - S	pecified Date	
michael.o'guin@lge	е-ки.com			·····	
Client Sample ID:	Outfall 001				
Lab Sample ID:	L211199-01			$\left(a \right) \left(a \right)$	Ta 10
Matrix:	Wastewater		Sampled Date	e & Time: <u> </u> ] - 2   - 2	
Туре:	Grab				
Analysis			Field Results/Comments		Hold Time
1631E Hg 200.7 Ca		EPA 1631E EPA 200.7, Rv. 4.4 (1994)			14 days 180 days
200.7 Hardness CAL		arles			
200.7 Mg	contraction to an a state of the state of the second	EPA 200.7, Rv. 4.4 (1994)	na menera veri veri na se en antis interna en antis en a constructiones en antis en antis en antis en antis en 1919 Mener en activitationes en antis en antis en activitationes en activitationes en antis en antis en activit		180 days
200.8 Ag 200.8 Al	a principal de la construction de la serie	EPA 200(8, Rv. 5,4 (1994) EPA 200,8, Rv. 5,4 (1994)			180 days 180 days
200.8 As		PA 200.8, Rv. 5.4 (1994)			180 days
200.8 B	NUMBER OF STREET, STREE	EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Ba 200.8 Be		EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Cd		EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days 180 days
200.8 Co	and the state of the second	EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Cr	다 하는 것을 감각하는 것 것 같은 것 같이 같다.	PA 200.8, RV. 5.4 (1994)			180 days
200.8 Cu 200 8 Fe	and a second state of the	EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days 180 days
200.8 Mn		EPA 200.8, Rv. 5.4 (1994)			180 days
200,8 Mo	anna sastarstar annara	EPA 200.8, Rv: 5.4 (1994)			180 days
200.8 Ni 200.8 Pb		EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Sb		EPA 200.8, Rv. 5.4 (1994)			180 days 180 days
200.8\Se	E E	PA 200.8, Rv. 5.4 (1994)			180 days
200.8 Sn	a series de la fait de la serie de la s	EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 TT 200.8 TI	al na sur di maren sur sur di sur	EPA 200(8, Rv. 5;4 (1994) EPA 200,8, Rv. 5,4 (1994)			180 days 180 days
200,8 U	en e	PA 200.8, Rv. 5.4 (1994)			180 days
200.8 Zn	the first was the reason to the second second	EPA 200.8, Rv. 5.4 (1994)			180 days
624.1 VOC Ammonia SM4500-N		EPA 624.1 SM 4500-NH3 G-2011			14 days 28 days
BOD5 SM5210-B	A NATURAL CONTRACTOR OF A DAMAGE AND A	SM 5210 B-2011			2'days
Bromide E300.0		EPA 300.0, Rv. 2.1 (1993)			28 days
Chloride E300.0		EPA 300.0, Rv. 2.1 (1993)			28 days

Microbac Laboratories, Inc.

Page 1 of 15



Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 150 of 307 Lab Contact: JOAN HENSOHN

Microbac Laboratories, Inc., Louisville



Case No. 2022-00402

LG&E - KU ENERGY LLC.		Project Name: I Creek	Form C - KPDES Renewal -	Mill
Michael O'Guin		e, our		
820 West Broadway		Project/PO Num	ıber: 1104203	
Louisville, KY 40202		Tenatively Scheo	duled: 9/30/2022	
Phone: 5024498815		Route: PAD - Sp	pecified Date	
michael.o'guin@lge-ku.com				
CN Total SM4500-CN-E	SM 4500-CN <sup>-</sup> E-2011	המולי או היו היו היו היו היה היה היה היה היה הי	ייינט איז	14 days
COD SM5220-D	SM 5220 D-2011			28 days
Color True pH SM2120-B PKG	varies			2 days
Color True SM2120-B	SM 2120 B-2011			2 days
E coli MPN 18hr SM9223B-Colilert	SM 9223 B (Colliert-18)-19		כאינייבי ברגיים ברגיים באריקונטי להיי בי להנו בי בינון בי בינון בי בינון בי בינון ביו בינון בינון בי	8 hrs
Fluoride:E300.0	EPA 300.0, RV 2.1 (1993)			. 28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI			180 days
GROSS BETA	*** DEFAULT SPECIFIC MI			180 days
Hardness Calc. (sub-analysis)	SM 2340 B-2011			180 days
HEM-OG E1664B	EPA 1664B			28 days
MBAS SM5540-C	SM 5540 C-2011			2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)			28 days
Nitrogen Organic Analyte for Calc	NAMES AND ADDRESS AND ADDRESS A			28 days
Nitrogen Organic E351.2 SM4500-NH3 G CALC PKG	varies			28 days
pH for Color SM2120-B	SM 2120 B-2011	an la fan la gan an la gan la gan la gan an la gan an la gan An la fan la gan an la gan la gan an la gan an la gan an la g	ייז של אין	2 days
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)			28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)			28 days
RADIUM 226	*** DEFAULT SPECIFIC MI	n en en en de la contra despois de la contra de la contra En la contra de la c		180 days
RADIUM 228	*** DEFAULT SPECIFIC MI			180 days
-Strontlum-90 E905.0	*** DEFAULT SPECIFIC MI			365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)		ייני לא מערכי היא האיז איז איז איז איז איז איז איז איז איז	28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011			7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011	ander aleman (1) Sauren (1) Wester (1) wijster ale gaar van Schwenzie. Schalt eine faal van aander	rada na	Na Maraka Barta Maraka Mara
SVOC625	EPA 625			7 days
TKN E351.2	EPA 351.2, Rv. 2 (1993)	ia any fantané inana mang sang nang sai na sai na sa		28 days
TOC SM5310-C	SM 5310 C-2011			28 days
TSS USGS I-3765	USGS I-3765-85	~1.73	A	7 days
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167	Instrument: <u>CI- 23</u>	$\mathbf{Y}$	
FLOW BY MEASUREMENT &	NA	Instrument: (I:Cnt	Result: 134.8 Unit: Mb	·D
CALC MGD	ON JENA UN P 0044	Instrument: <u>P-99</u>	Result: 7.10 Unit: 50	
PH, FIELD	SM 4500-H# B-2011	Instrument: $p - 99$	Result: $27.1$ Unit: <u>°C</u>	
TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010	1		·
		Container(s)		Designator
		No Container		А

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			Attachment 3 to I	Response to JI-1 Question N	2022-00402 lo. 1.101(f-h) e 151 of 307
		) Chain	of Custody	Lab Contact: J	e 151 of 307 OAN HENSOHN
Gameric			tories, Inc., Louisv		
		MICIODAC LADOIA	ilones, mc., Louisv	liic	L211133
					n anna 1 - MATH
LG&E - KU ENERG	GY LLC.		Project N Creek	ame: Form C - KPDES Re	newai - Willi
Michael O'Guin 820 West Broadwa			Project/P(	0 Number: 1104203	
Louisville, KY 4020	-		•	Scheduled: 9/30/2022	
Phone: 502449881			•	D - Specified Date	
michael.o'guin@lge	e-ku.com				
Client Sample ID:	HG LL Bla	nk -Outfall 001	400		
Lab Sample ID:	L211199-02				
Matrix:	Wastewate	er.	Sample	d Date & Time: <u>10-21-</u>	.22 10:26
Туре:	Grab				
Analysis		Method	Field Results/Comme	<u>ents</u>	Hold Time
1631E Hg		EPA 1631E			14 days
			<u>Container(s)</u> No Container		<u>Designator</u> A
Client Sample ID:	Outfall 002	2A			anna a sea air an tha ann a thu ann an thu ann ann an an thu ann an an thu ann an thu ann an thu ann an thu ann
Lab Sample ID:	L211199-03				
Matrix:	Wastewate		Sample	d Date & Time:	· · · · · · · · · · · · · · · · · · ·
Туре:	Grab				
<u>Analysis</u>		Method	Field Results/Comm	<u>ents</u>	Hold Time
1631E Hg		EPA 1631E			14 days
200.7 Ca 200.7 Hardness CAL	.C PKG	EPA 200.7, Rv. 4.4 (1994) varies			180 days 180 days
200\7 Mg		EPA 200 7, Rv. 4.4 (1994)			180 days
200.8 Ag	an and a line of the state of t	EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Al		EPA 200.8, RV. 5,4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days 180 days
200.8 As 200.8 B		EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Ba		EPA 200.8, Rv. 5,4 (1994)			180 days
200.8 Be		EPA 200.8, Rv. 5.4 (1994)			180 days
200.8 Cd 200.8 Co		EPA 200,8, Rv. 5.4 (1994) EPA 200,8, Rv. 5.4 (1994)	a an tao amin'		180 days 180 days
200.8 Cr		EPA 200.8, Rv. 5.4 (1994)		<u>krali kralje na pučku z seme</u>	180 days
200:8 Cu	/	EPA 200;8, Rv. 5.4 (1994)			180 days
200.8 Fe		EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days 180 days
200.8 Mn	7	EPA 200.8, Rv. 5.4 (1994) EPA 200.8, Rv. 5.4 (1994)			180 days
200,8 Ni		EPA 200.8, Rv. 5.4 (1994)			1/80 <sup>°</sup> days
200.8 Pb		EPA 200.8, Rv. 5.4 (1994)	ana any amin'ny fisiana amin'ny tanàna amin'ny kaodim-paositra dia kaominina dia kaominina dia kaominina dia ka		180 days 180 days
20018 Sbr 200.8 Se		EPA 200.8, Rv. 5.4 (1994)	ale and the second state of the second s		180 days
		EPA 200.8, Rv. 5.4 (1994)			100 0033
			bac Laboratories, Inc.		Page 3 of 15



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Case No. 2022-00402

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Attachment 3 to Response to JI-1 Question No. 1.101(f-h)

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

200.8 Sn	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 Ti	EPA 200.8, Rv. 5.4 (1994)				180 days
200.8 TI	EPA 200.8, Rv. 5.4 (1994)				/180 days
200.8 Zn	EPA 200.8, Rv. 5.4 (1994)				180 days
624.1 VOC	EPA 624.1				14 days
Ammonia SM4500-NH3-G	SM 4500-NH3 G-2011		/	/	28 days
BOD5 SM5210-B	SM 5210 B-2011				2 days
Bromide E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
CN Total SM4500-CN-E	SM 4500-CN E-2011			a substantial of the data state of the first state	14 days
COD SM5220-D	SM 5220 D-2011	[			28 days
Color True pH SM2120-B PKG	varies			and where constraining a sheet carbon backward of	2 days
Color True SM2120-B	SM 2120 B-2011				2.days
E coli MPN 18hr	SM 9223 B (Colilert-18)-19				8 hrs
SM9223B-Colilert Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
Hardness Calc. (sub-analysis)	SM 2340 B-2011	<u>en en e</u>		150 March 1997 Ann an Ann	180 days
HEM-OG E1664B	EPA 1664B				28 days
MBAS SM5540-C	SM 5540 C-2011			-147 Natal Performant	2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)				28 days
Nitrogen Organic Analyte for Calc			alah ang kasarang ka		28 days
Nitrogen Organic E351.2	varies				28 days
SM4500-NH3 G CALC PKG				- Supervision	
pH for Color SM2120-B	SM 2120 B-2011				2 days
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)				28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)				28 days
Sulfate SO4 E300.0	EPA 800.0, Rv. 2.1 (1993)				28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011				7 days
Sulfite SO3 SM4500-SO3-B	/SM 4500-SO3 B-2011				0.00 mins
SVOC - 625	EPA 625				7 days 28 days
TKN E351.2	EPA 351.2, Rv. 2 (1993)				28 days 28 days
TOC SM5310-C	SM 5310 C-2011				Zo days 7 days
TSS USGS I-3765	USGS 1-3765-85	la ale in a si	Popult	i initi	( days
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167	Instrument:	Result:	Unit:	
FLOW BY MEASUREMENT &	NA	Instrument:	Result:	Unit:	
CALCMGD	SM 4500-H+ B-2011	Instrument:	Result:	Unit:	
PH, FIELD	SM 4500-H+ B-2011 SM 2550 B-2010	Instrument	Result	Unit:	
READING, C. FIELD					

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Case No. 2022-00402

Microbac Laboratories, Inc., Louisville



## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Attachment 3 to Response to JI-1 Question No. 1.101(f-h)

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

<u> </u>		Container(s)	Designato
-		1L-Bottle HDPE	) A
		1L-Bottle Glass Amber	В
		300ml-DO Bottle	c
		1L-Bottle Glass Amber	a
		500ml-Bottle NM Glass Amber-Ultra Clean	E
		250ml-Bottle HDPE-HNO3	F
		250ml-Bottle HDPE-HNO3	G
		250ml-Bottle HDPE-HNØ3	н
		250ml-Bottle HDPE-HNO3	1
		250ml-Bottle HDPE-HNO3	L.
		250ml-Bottle HDPE-HNO3	к
		250ml-Bottle HDPE-HNO3	L
		250ml-Bottle Glass Amber-H2SO4	M
	· · · · · · · · · · · · · · · · · · ·	1L-Bottle Glass Amber-H2SO4	N
		250ml-Bottle HDPE-H2SO4	0
		40ml-Vial Amber-H2SO4	Р
		40ml-Vial Amber-H2SO4	Q
		120ml-Bottle LDPE-Sterile, Na2S2O3	R
		40ml-Vial-HCL	S
		40ml-Vial-HCL	T
		40mi-Vial-HCL	
		40ml-Vial-HCL	· V
		250ml-Bottle HDPE-NaOH 250ml-Bottle HDPE-ZnAc NaOH	W <sup>2</sup> X
Client Sample ID	): HG LL Blank -Outfall 002A		
Lab Sample ID:	L211199-04		$\geq$
Matrix:	Wastewater	Sampled Date & Time:	
Туре:	Grab		
Analysis	Method	Field Results/Comments	Hold Time
631E Hg	EPA 1631E		14 days
		Container(s)	Designate
		500ml-Bottle NM Glass Amber-Ultra Clean	A
Client Sample II	D: Outfall 023		•
Lab Sample ID:	L211199-05		
Matrix:	Wastewater	Sampled Date & Time: 16-21	-22 10:38
Туре:	Grab		
	Λ	/icrobac Laboratories, Inc.	Page 5 of 1
		ouisville, KY 40213   502.962.6400 p   www.microbac.c	



Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 154 of 307 Lab Contact: JOAN HEIMESOHN

L211199

Case No. 2022-00402

Microbac Laboratories, Inc., Louisville

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

Analysis	Method	Field Results/Comments	<u>Hold Time</u>
1631E Hg	EPA 1631E		14 days
200.7 Ca	EPA 200.7, Rv. 4.4 (1994)		180 days
200.7 Hardness CALC PKG	varies		180 days
200.7 Mg	EPA 200.7, Rv. 4.4 (1994)		180 days
200.8 Ag	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 AI	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 As	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 B	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ba	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Be	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cd	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Co	EPA 200.8, Rv. 5.4 (1994)		180 days
200;8 Cr	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Cu	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Fe	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mn	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Mo	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ni	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Pb	EPA 200.8, Rv. 5.4 (1994)		180 days
200,8 Sb	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Se	EPA.200.8, Rv. 5.4 (1994)		180 days
200.8 Sn	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Ti	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 TI	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 U	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 Zn	EPA 200.8, Rv. 5.4 (1994)		180 days
624.1 VOC	EPA 624.1		14 days
Ammonia SM4500-NH3-G	SM 4500-NH3 G-2011		28 days
BOD5 SM5210-B	SM 5210 B-2011		2 days
Bromide E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
CN Total SM4500-CN-E	SM 4500-CN E-2011		14 days
COD SM5220-D	SM 5220 D-2011		28 days
Color True pH SM2120-B PKG	varies		2 days
-Color True SM2120-B	SM 2120 B-2011		2 days
E coli MPN 18hr SM9223B-Colilert	SM 9223 B (Colilert-18)-19		8 hrs

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Microbac Laboratories, Inc., Louisville

Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 155 of 307 Lab Contact: JOAN HEINESOHN

Case No. 2022-00402

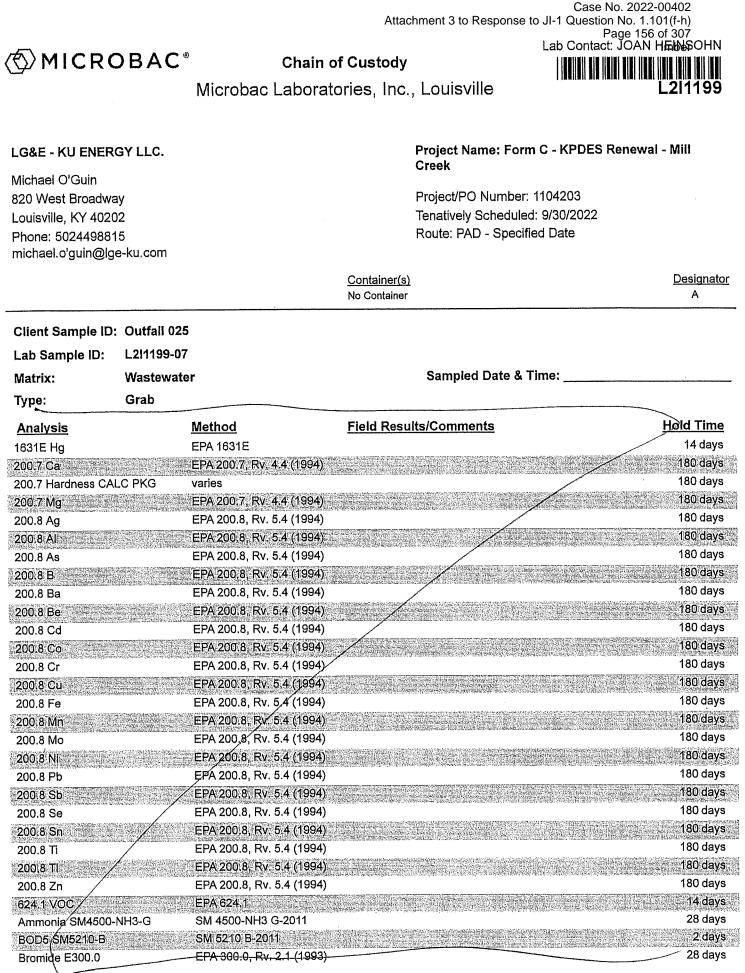
L2I1199

LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

Eluoride E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI		180 days
GROSS BETA	*** DEFAULT SPECIFIC MI		180 days
Hardness Calc, (sub-analysis)	SM 2340 B-2011		180 days
HEM-OG E1664B	EPA 1664B		28 days
MBAS SM5540-C	SM 5540 C-2011		2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)		28 days
Nitrogen Organic Analyte for Calo		In the first of the Mandel II. and Andread Mandel and Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew In the Andrew	28 days
Nitrogen Organic E351.2 SM4500-NH3 G CALC PKG	varies		28 days
pH for Color SM2120-B	SM 2120 B-2011		2 days
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)		28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)		28 days
RADIUM 226	*** DEFAULT SPECIFIC MI		180 days
RADIUM 228	*** DEFAULT SPECIFIC MI		180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI		365 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011		7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011		
SVOC - 625	EPA 625		7 days
TKN E351.2	EPA 351.2, Rv. 2 (1993)		28 days
TOC SM5310-C	SM 5310 C-2011		28 days
TSS USGS I-3765	USGS 1-3765-85		7 days
CHLORINE, TOTAL	HACH 8167	Instrument: <u>CI-23</u> Result: <u>OrI2</u> Unit: <u>M</u>	<u>16</u>
RESIDUAL-FIELD	NA	Instrument: CICOL Result: 1.824 Unit: MI	<u>-D</u>
CALC MGD		-	
PH, FIELD	SM 4500-H+ B-2011		
TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010	Instrument: $P - 99$ Result: 26.4 Unit: $\circ$ C	
READING, OFFICED		<u>Container(s)</u>	Designator
		No Container	A
Client Sample ID: LL HG B	ank -Outfall 023		
Lab Sample ID: L2I1199-0	)6	. 1107	10:45
Matrix: Wastewa	ter	Sampled Date & Time: 10-21-22	10.77
Type: Grab			
Analysis	Method	Field Results/Comments	Hold Time
1631E Hg	EPA 1631E		14 days
a na na manganga katang kaka katang na na mangang na katang katang na mangang na na Na na	Microha	c Laboratories, Inc.	Page 7 of 15
			-



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Microbac Laboratories, Inc., Louisville



2010/06/02/07/2020

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Case No. 2022-00402

### LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Attachment 3 to Response to JI-1 Question No. 1.101(f-h)

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

Chloride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
CN Total SM4500-CN-E	SM 4500-CN E-2011				14 days
COD SM5220-D	SM 5220 D-2011				28 days
Color True pH SM2120-B PKG	varies		n ann a na mhairtean dh' ann ann ann an ann ann ann ann ann ann		2 dáys
Color True SM2120-B	SM 2120 B-2011				.2.days
E coli MPN 18hr SM9223B-Colilert	SM 9223 B (Colilert-18)-19				8 hrs
Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
Hardness Calc. (sub-analysis)	SM 2340 B-2011	ana ana amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o amin'ny faritr'o a		وراستها و المحمد الم	180 days
HEM-OG E1664B	EPA 1664B				28 days
MBAS SM5540-C	SM 5540 C-2011				2 days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)				28 days
Nitrogen Organic Analyte for Calc	Calculation				28 days
Nitrogen Organic E351.2 SM4500 NH3 G CALC PKG	varies				-28 days
pH for Color SM2120-B	SM 2120 B-2011				2 days
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)				28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)				28 days
Sulfate SO4 E300.0	EPA 300 Ø, Rv. 2.1 (1993)				28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011				7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SO3 B-2011				0.00 mins
SVOC - 625	EPA 625	en felder og her ander en			7 days
TKN E351.2	EPA 351.2, Rv. 2 (1993)				28 days
TOC SM5310-C	SM 5310 C-2011				28 days
TSS USGS 1-3765	USGS  -3765-85				7 days
CHLORINE, TOTAL RESIDUAL-FIELD	HACH 8167	Instrument:	Result:	Unit:	
FLOW BY MEASUREMENT & CALC MOD	<u>NA</u>	Instrument	Result:	<u> </u>	
PH, FIELD	SM 4500-H+ B-2011	Instrument:	Result:	<u> </u>	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10
TEMPERATURE AT PH READING. C-FIELD	SM 2550 B-2010	Instrument:	Result:	Unit:	



Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 158 of 307 Lab Contact: JOAN HENSOHN

L211199

Microbac Laboratories, Inc., Louisville

LG&E - KU ENERG	Y LLC.	Project Name: Form C - KPDES Renewa Creek	I - MIU
Michael O'Guin			
820 West Broadway	1	Project/PO Number: 1104203	
Louisville, KX-40202		Tenatively Scheduled: 9/30/2022	`
Phone: 5024498815		Route: PAD - Specified Date	
michael.o'guin@lge	-Ku.com		
		Container(s)	Designator
		1L-Bottle HDPE	А
		1L-Bottle Glass Amber	В
		1L-Bottle Glass Amber	С
		300mi-DO Bottle	D
		500ml-Bottle NM Glass Amber-Ultra Clean	E
		250ml-Bottle_HDPE-HNO3	F
		250ml-Bottle HDPE-HNO3	G
		250mi-Bottle HDPE-HNO3	н
		250mi-Bottle HDPE-HNO3	i
		250ml-Bottle HDPE-HNO3	J
		250ml-Bottle HDPE-HNO3	к
		250ml-Bottle HDPE-HNO3	L
		250ml-Bottle Glass Amber-H2SO4	м
		1L-Bottle Glass Amber-H2SO4	N
		250ml-Bottle HDPE-H2SO4	0
		40ml-Vial Amber-H2SO4	Р
		40ml-Vial Amber-H2SO4	Q
		120ml-Bottle LDPE-Sterile, Na2S2O3	R
		40ml-Vial-HCL	S
		40mi-Vial-HCI	J
		40ml-Vial-HCL	Ú
		40ml-Vial-HCL	V
		250ml-Bottle HDPE-NaOH	W
		250ml-Bottle HDPE-ZnAc NaOH	X
Client Sample ID:	LL-HG Blank -Outfall 025	,	• • • •
Lab Sample ID:	L211199-08		
Lab Sample ID.			
Matrix:	Wastewater	Sampled Date & Time:	
Туре:	Grab		
Analysis	Method	Field Results/Comments	<u>Hold Time</u>
1631E Hg	EPA 1631E		14 days
10012119		Container(s)	Designator
$\langle$		500ml-Bottle NM Glass Amber-Ultra Clean	A
Client Sample ID	Outfall 009 (River Intake)		
Lab Sample ID:	L211199-09		
-		Sampled Date & Time: <u>N/A</u>	~
Matrix:	Wastewater		
Туре:	Grab		
		Microbac Laboratories, Inc.	Page 10 of 15
3	323 Gilmore Industrial Blvo	d   Louisville, KY 40213   502.962.6400 p   www.microbac.com _	



Microbac Laboratories, Inc., Louisville



Case No. 2022-00402

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Attachment 3 to Response to JI-1 Question No. 1.101(f-h)

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

High         EPA 1631E         Cancel - Bottle broke upon arrival from FeGEx to GOL         14.95%s           200.7 Ca         EPA 200.7, Rv. 4.4 (1984)         180 days         180 days           200.7 Mg         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Au         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Au         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1984)         180 days         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1984)         180 days         200.8 days           200.8 N         EPA 200.8, Rv. 5	Analysis	Method	Field Results/Comments	Hold Time
200.7 Hardness CALC PKC         Varies         180 days           200.7 Mg         EPA 200.7, Rv. 4.4 (1994)         180 days           200.8 Ag         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Al         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 As         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days <td>1631E Hg</td> <td>EPA 1631E</td> <td>Cancel - Bottle broke upon arrival from FedEx to CGL</td> <td>THE LOW AND DEPENDENCE OF MERICAL STREET, STREE</td>	1631E Hg	EPA 1631E	Cancel - Bottle broke upon arrival from FedEx to CGL	THE LOW AND DEPENDENCE OF MERICAL STREET, STREE
200.7 Mg         EPA 200.7, Rv. 4.4 (1994)         180 days           200.8 Ag         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ad         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 As         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days	200.7 Ca	EPA 200.7, Rv. 4.4 (1994)		180 days
ZOD B Ag         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 AI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 AS         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 M         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days <td>200.7 Hardness CALC PKG</td> <td>varies</td> <td></td> <td>180 days</td>	200.7 Hardness CALC PKG	varies		180 days
200.8 AI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 As         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days     <	200.7 Mg	EPA 200.7, Rv. 4.4 (1994)		180 days
200 6 As         EPA 200 8, Rv 5.4 (1994)         180 days           200.8 B         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv 5.4 (1994)         180 days	200.8 Ag	EPA 200.8, Rv. 5.4 (1994)		180 days
200.8 B         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ba         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ca         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Fe         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ma         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days     <	200.8 Al	EPA 200.8, Rv. 5.4 (1994)		
200.8 Ba         EPA 200.3, RV. 5.4 (1994)         180 days           200.8 Be         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, RV. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, RV. 5.4 (1994)         180 days	200.8 As	EPA 200.8, Rv. 5.4 (1994)		nanananan'ny kaodim-paositra dia kaodim-paositra dia kaodim-paositra dia kaodim-paositra dia kaodim-paositra di
200.8 Be         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cd         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ma         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ma         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 B	EPA 200.8, Rv. 5.4 (1994)		
2003 Cd         EPA 2003; RV: 5.4 (1994)         180 days           200.8 Co         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Cr         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Cu         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Cu         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Cu         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Mn         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Mn         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Mn         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Ni         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Ni         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Sb         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Sb         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Sn         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Sn         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Ti         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Ti         EPA 200.8; RV: 5.4 (1994)         180 days           200.8 Ti         EPA 200.8; RV: 5.4 (1994)         180 days	-200.8 Ba	EPA 200.8, Rv. 5.4 (1994)		CONTRACTOR OF CHARMENT AND A STREET
200.8 Co         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cr         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ku         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 N         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 Be	EPA 200.8, Rv. 5.4 (1994)		-
200.8 Cr         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Fe         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sh         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 Cd	EPA 200.8, Rv. 5.4 (1994)		
200.8 Cu         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Fe         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 Co	EPA 200.8, Rv. 5.4 (1994)		where the second s
2008 Fe         EPA 2008, Rv. 5.4 (1994)         180 days           200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Th         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8.Cr	EPA 200.8, Rv. 5.4 (1994)		n managementer verster sterkeligt in der sterkeligt
200.8 Mn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ni         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Pb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 Cu			
200.8 Mo         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 NI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 NI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days	200,8 Fe	EPA 200.8, Rv. 5.4 (1994)		
200.8 NI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Pb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days	200.8 Mn			
200.8 Pb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sc         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         24 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Choride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           COD SM5220-D         SM 520 D-2011         28 days           Color True pH SM21Z0-B PKG         varies         2 days	200.8 Mo	EPA 200.8, Rv. 5.4 (1994)		
200.8 Sb         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         28 days           Choride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Choride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           CoD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM21/20-B PKG         varies         2 days           Color True SM21/20-B SM 2120 B-2011         2 days         2 days           Color True SM21/20-B PKG         SM 9223 B (Colliert-18)-19/         Shvis <td>200.8 NI</td> <td>The second second</td> <td></td> <td>and the second second</td>	200.8 NI	The second		and the second
200.8 Se         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-Gi         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           Color True pH SM21/20-B PKG         varles         2 days           Color True pH SM21/20-B         SM 2120 B-2011         2 days <td>200.8 Pb</td> <td>the second second second and a second se</td> <td></td> <td></td>	200.8 Pb	the second second second and a second se		
200.8 Sn         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 200.8, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3.G         SM 4500-NH3.G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           Color True pH SM2120-B PKG         varies         2 days           Color True pH SM2120-B PKG         Varies         2 days <tr< td=""><td>200.8 Sb</td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td>The second second</td></tr<>	200.8 Sb	· · · · · · · · · · · · · · · · · · ·		The second
200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Ti         EPA 200.9, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.9, Rv. 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN. Total SM4500-CN-E         SM 4500-CN E-2011         14 days           COD SM5220-D         SM 520 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM-9223 B (Colliert-18)-198         SM-9223 B (Colliert-18)-198	200.8 Se			用的现在分词的过去式和过去分词的复数形式
200.8 TI         EPA 200.8, Rv. 5.4 (1994)         180 days           200.8 Zn         EPA 200.8 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011.         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM21Z0-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         28 days           SM-9223 B (Colliert-18)-19/         SM-9223 B (Colliert-18)-19/         24 days	200.8 Sn			
200.8 Zn         EPA 200.8 Rv: 5.4 (1994)         180 days           624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Choride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Choride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CoD SM5220-D         SM 4500-CNT E-2011         14 days           Color True pH SM21Z0-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           E coli MPN 18br         SM 9223 B (Colliert-18)-19i         Shrcs	200.8 Ti			
624.1 VOC         EPA 624.1         14 days           Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           SM-9223 B (Colliert-18)-19!         SM-9223 B (Colliert-18)-19!	200.8 TI		anan ya wana manan manan manan manan manan kata kata kata kata kata kata kata	The second se
Ammonia SM4500-NH3-G         SM 4500-NH3 G-2011         28 days           BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN TE-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           SM 9223 B (Colliert-18)-19         SM:9223 B (Colliert-18)-19         8 Ms	200.8 Zn			
BOD5 SM5210-B         SM 5210 B-2011         2 days           Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CNI Total SM4500-CN-E         SM 4500-CNT E-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM-9223 B (Colliert-18)-19         8 hrs	624.1 VOC			and the second
Bromide E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN TE-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM-9223 B (Colliert-18)-19         8 hcs	Ammonia SM4500-NH3-G			SAMPLES STOLEND STRATE CONTRACTOR OF AN
Chloride E300.0         EPA 300.0, Rv. 2.1 (1993)         28 days           CN Total SM4500-CN-E         SM 4500-CN E-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2'days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll/MPN 18hr         SM 9223 B (Colliert-18)-19         8 hrs	BOD5 SM5210-B	/	ער איז	
CN: Total SM4500-CN-E         SM-4500-CNT E-2011         14 days           COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B PKG         varies         2 days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM-9223 B (Colliert-18)-19         8 hcs	Bromide E300.0	when a farmer was investigated in the science of the state of the science of the science of the		and the second of the second
COD SM5220-D         SM 5220 D-2011         28 days           Color True pH SM2120-B         PKG         varies         2'days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM-9223 B (Colliert-18)-19         SM-9223 B				
Color True pH SM2120-B PKG         varies         2'days           Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM 9223 B (Colliert-18)-19         2 hrs           SM9223B-Colliert         5 hrs         5 hrs		-There exists a province of the second state of the second state of the second state of the second state of the		
Color True SM2120-B         SM 2120 B-2011         2 days           E coll MPN 18hr         SM-9223 B (Colliert-18)-19         8 hcs           SM9223B-Collect         8 hcs         8 hcs		en ander sin en anderen eiser strende strende strende in strende anderen strende anderen anderen in strende and		
E coll MPN 18hr SM-9223 B (Colliert-18)-19 SM9223B-Collert	And the second secon			SACTOR AND A DATA SACTOR SACTOR SACTOR
SM9223B-Collert	1			
Fluoride E300.0 EPA 300.0, Rv. 2.1 (1993) 28 days	SM9223B-Colifert			
	Fluoride E300.0	EPA 300.0, Rv. 2.1 (1993)		28 days

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Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 160 of 307 Lab Contact: JOAN HENSOHN

Case No. 2022-00402

Microbac Laboratories, Inc., Louisville



## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

Hardness Calc, (sub-analysis)	SM 2340 B-2011				<u>180 days</u>
HEM-OG E1664B	EPA 1664B	an fallen i selek mellen en en fallenen mellen fallen i senen men en e			28 days
MBAS SM5540-C	SM 5540 C-2011				2.days
Nitrate Nitrite E300.0 CALC	EPA 300.0, Rv. 2.1 (1993)	n of anti-staff from the second of the second staff of the beam of the second staff of the			28 days
Nitrogen Organic Analyte for Cal	c Calculation				28 days
Nitrogen Organic E351.2 SM4500-NH3 G CALC PKG	varies				28 days
pH for Color SM2120-B	SM 2120 B-2011				2 days
Phenolics E420.4	EPA 420.4, Rv. 1 (1993)				28 days
Phos Total E365.1	EPA 365.1, Rv. 2 (1993)				28 days
Sulfate SO4 E300.0	EPA 300.0, Rv. 2.1 (1993)				28 days
Sulfide S2 SM4500-S2-D	SM 4500-S2 D-2011				7 days
Sulfite SO3 SM4500-SO3-B	SM 4500-SØ3 B-2011				0.00 mins
SVOC - 625	EPA.625				7 days
TKN E351.2	EPA 351.2, Rv. 2 (1993)				28 days
TOC SM5310-C	SM 5310 C-2011				28 days
TSS USGS I-3765	USGS I-3765-85				7 days
CHLORINE, TOTAL	HACH 8167	ing instrument:	Result:	Unit:	
FLOW BY MEASUREMENT & CALC MGD	NA	Instrument:	Result:	Unit:	
PH, FJELD	SM 4500-H+ B-2011	Instrument:	Result:	Unit:	
TEMPERATURE AT PH READING, ° C - FIELD	SM 2550 B-2010	Instrument:	Result:	Unit:	

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Lab Contact: J

Attachment 3 to Response to JI-1 Question No. 1.101(f-h)

Microbac Laboratories, Inc., Louisville



Case No. 2022-00402

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

		Container(s)	Designator
		1L-Bottle HDPE	A
		300ml-DO Bottle	B
		1L-Bottle Glass Amber	, C
		1L-Bottle Glass Amber	D
		500ml-Bottle NM Glass Amber-Ultra Clean	E
		250ml-Bottle HDPE-HNO3	F
		250ml-Bottle HDPE-HNO3	G
		250ml-Bottle HDPE-HNO3	Н
		250ml-Bottle HDPE-HNO3	. I
		250ml-Bottle HDPE-HNO3	J K
		250ml-Bottle HDPE-HNO3	ĸ
		250ml-Bottle HDPE-HNO3	L
		250ml-Bottle Glass Amber-H2SO4	M
		1L-Bottle Glass Amber-H2SO4 250ml-Bottle HDPE-H2SO4	N
		40ml-Vial Amber-H2SO4	P
		40ml-Vial Amber-H2SO4 40ml-Vial Amber-H2SO4	F Q
		120ml-Bottle LDPE-Sterile, Na2S2O3	R
		40ml-Vial-HCL	S
		40ml-Vial-HCL	T
		40ml-Vial-HCL	U
		40ml-Vial-HCL	V
		250ml-Bottle HDPE-NaOH	W
Client Sample ID	: HG LL Blank -Outfall 009 (Rive	250ml-Bottle HDPE-ZnAc NaOH	x //A
Lab Sample ID: Matrix:	L2I1199-10 Wastewater	r Intoko)	N/A -21-22-9:45
Lab Sample ID: Matrix: Type:	L2I1199-10 Wastewater Grab	r Intake) Sampled Date & Time: <u>+</u> Ó	illett gills
Lab Sample ID: Matrix: Type: <u>Analysis</u>	L2I1199-10 Wastewater Grab <u>Method</u>	r Intake)	Hold Time
Lab Sample ID: Matrix: Type:	L2I1199-10 Wastewater Grab	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u>	<u>Hold Time</u> 14 days
.ab Sample ID: Matrix: ſype: <u>Analysis</u>	L2I1199-10 Wastewater Grab <u>Method</u>	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u>	Hold Time 14.days
.ab Sample ID: //atrix: ſype: <u>Analysis</u>	L2I1199-10 Wastewater Grab <u>Method</u>	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u>	<u>Hold Time</u> 14.days
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg	L2I1199-10 Wastewater Grab <u>Method</u>	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u>	Hold Time 14 days Designate A
.ab Sample ID: Matrix: Type: <u>Analysis</u> 631E Hg Client Sample ID	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u> 500ml-Bottle NM Glass Amber-Ultra Clean	<u>Hold Time</u> 14 days <u>Designate</u> A 9:5
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Client Sample ID Lab Sample ID:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E : Outfall 002A Rads Only	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u> 500ml-Bottle NM Glass Amber-Ultra Clean	<u>Hold Time</u> 14 days <u>Designate</u> A 9:5
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg 1631E Hg Client Sample ID Lab Sample ID: Matrix:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E : Outfall 002A Rads Only L2I1199-11	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u>	$\frac{Hold Time}{14 days}$ $\frac{Designato}{A}$ $\frac{9:5}{1-21-22}$
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg	L2I1199-10 Wastewater Grab EPA 1631E : Outfall 002A Rads Only L2I1199-11 Wastewater Grab	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u> 500ml-Bottle NM Glass Amber-Ultra Clean	<u>Hold Time</u> 14 days <u>Designato</u> A 9:5
Lab Sample ID: Matrix: Type: <u>Analysis</u> 1631E Hg Client Sample ID Lab Sample ID: Matrix: Type:	L2I1199-10 Wastewater Grab <u>Method</u> EPA 1631E : Outfall 002A Rads Only L2I1199-11 Wastewater Grab	r Intake) Sampled Date & Time: <u>+</u> <u>Field Results/Comments</u> <u>Container(s)</u> 500ml-Bottle NM Glass Amber-Ultra Clean Sampled Date & Time: <u>10</u>	$\frac{Hold Time}{14 days}$ $\frac{Hold Time}{14 days}$ $\frac{Designato}{A}$ $9:5$ $-21-22 \qquad 9:4$ $(y \neq 0)$ $Fage 13 of 1$



Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 162 of 307 Lab Contact: JOAN HENSOHN

Microbac Laboratories, Inc., Louisville

## .211199

## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com

## Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

<u>Analysis</u>	<u>Method</u>	Field Results/Comments	<u>Hold Time</u>
200.8 U	EPA 200.8, Rv. 5.4 (1994)		180 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI		180 days
GROSS BETA	*** DEFAULT SPECIFIC MI	(1992) APOR 1929, ANNA PARAMANANANANANANANANANANANANANANANANANAN	180 days
RADIUM 226	*** DEFAULT SPECIFIC MI		180 days
RADIUM 228	*** DEFAULT SPECIFIC MI	NEEREERE EE GEWERDERE EEN EEN WERKEN VERKEN VERKEN VERKEN DE	180 days
Strontium-90 E905.0	) *** DEFAULT SPECIFIC MI		365 days
n an ann an a	<u>a na la sun sun sun sun sun sun sun sun sun sun</u>	<u>Container(s)</u>	Designato
		1L-Bottle HDPE-HNO3	А
		1L-Bottle HDPE-HNO3	В
		1L-Bottle HDPE-HNO3	С
		1L-Bottle HDPE-HNO3	D
		1L-Bottle HDPE-HNO3	E
Client Sample ID	: Outfall 025 Rads Only		
Lab Sample ID:	L2I1199-12		10,00
Matrix:	Wastewater	Sampled Date & Time: 10-21-22	10:02
Туре:	Grab		
<u>Analysis</u>	Method	Field Results/Comments	<u>Hold Time</u>
<u>Analysis</u> 200.8 U	<u>Method</u> EPA 200.8, Rv. 5.4 (1994)	Field Results/Comments	<u>Hold Time</u> 180 days
		Field Results/Comments	
200.8 U	EPA 200.8, Rv. 5.4 (1994)	Field Results/Comments	180 days
200.8 U GROSS ALPHA	EPA 200.8, Rv. 5.4 (1994)	Field Results/Comments	180 days 180 days 180 days
200.8 U GROSS ALPHA GROSS BETA	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	Field Results/Comments	180 days 180 days 180 days
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	Field Results/Comments	180 days 180 days 180 days 180 days
200.8 U GROSSIALPHA GROSS BETA RADIUM 226	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI		180 days 180 days 180 days 180 days 180 days 365 days
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	Field Results/Comments <u>Container(s)</u> 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 180 days 365 days
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	<u>Container(s)</u>	180 days 180 days 180 days 180 days 180 days 365 days <u>Designato</u>
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	<u>Container(s)</u> 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 180 days 365 days <u>Designato</u> A
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	<u>Container(s)</u> 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 180 days 365 days <u>Designato</u> A B
200.8 U GROSSIALPHA GROSS BETA RADIUM 226 RADIUM 228	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	<u>Container(s)</u> 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 180 days 365 days <u>Designato</u> A B C
200.8 U GROSS ALPHA GROSS BETA RADIUM 226 RADIUM 228 Strontlum-90 E905.	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI	<u>Container(s)</u> 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 180 days 365 days <u>Designato</u> A B C D
200.8 U GROSS ALPHA GROSS BETA RADIUM 226 RADIUM 228 Strontlum-90 E905.	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI 0 *** DEFAULT SPECIFIC MI	<u>Container(s)</u> 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 365 days <u>Designato</u> A B C D E
200.8 U GROSS ALPHA GROSS BETA RADIUM 226 RADIUM 228 Strontlum-90 E905.	EPA 200.8, Rv. 5.4 (1994) *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI *** DEFAULT SPECIFIC MI 0. *** DEFAULT SPECIFIC MI 2. Outfall 009 Rads Only	<u>Container(s)</u> 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3 1L-Bottle HDPE-HNO3	180 days 180 days 180 days 180 days 365 days <u>Designato</u> A B C D E

Microbac Laboratories, Inc.

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Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 163 of 307 Lab Contact: JOAN HEDASSOHN

Microbac Laboratories, Inc., Louisville



## LG&E - KU ENERGY LLC.

Michael O'Guin 820 West Broadway Louisville, KY 40202 Phone: 5024498815 michael.o'guin@lge-ku.com Project Name: Form C - KPDES Renewal - Mill Creek

Project/PO Number: 1104203 Tenatively Scheduled: 9/30/2022 Route: PAD - Specified Date

<u>Analysis</u>	Method	Field Results/Comments	<u>Hold Time</u>
200.8 U	EPA 200.8, Rv. 5.4 (1994)		180 days
GROSS ALPHA	*** DEFAULT SPECIFIC MI		180 days
GROSS BETA	*** DEFAULT SPECIFIC MI		180 days
RADIUM 226	*** DEFAULT SPECIFIC MI		180 days
RADIUM 228	*** DEFAULT SPECIFIC MI		180 days
Strontium-90 E905.0	*** DEFAULT SPECIFIC MI		365 days
		Container(s)	Designator
		1L-Bottle HDPE-HNO3	А
		1L-Bottle HDPE-HNO3	В
		1L-Bottle HDPE-HNO3	С
		1L-Bottle HDPE-HNO3	D
		1L-Bottle HDPE-HNO3	E
			•••••••••••••••••••••••••••••••••••••••

Client Sample ID: HG LL Sample -Outfall 009 (River Intake)

Lab Sample ID:	L2I1199-14				CUIC
Matrix:	Wastewater		Sampled Date &	Time: 10-21-22	7.45
Туре:	Grab				
<u>Analysis</u>	Method	<b>Field Results</b>	Comments		<u>Hold Time</u>
1631E Hg	EPA 1631E				14 days
	$\bigcirc$	Container(s)			<u>Designator</u>
	$\square$		Glass Amber-Ultra 🅅	lean	A
Sampled/Relinquished	by: Mr. h. Jullo	Date/Time: 10-21-22	Received by?		
Printed Name: Wayne N		710-20-20272:4	Printed Name:	Join Nrinsohn	Λ
Relinquished by:		Date/Time:	Received by:		•
Printed Name:		_	Printed Name:		
Relinquished by:		Date/Time:	Received by:		
Printed Name:		-	Printed Name:		
As Received at Labo	pratory: On Ice: Yes/ No Temp: 2	<u>、</u> 」。C Thermomete	r10: 6-24A (	Custody Seal: Yes / No / N	A
				Total Containers: 91.00	
appropriately accred	ies may be unable to perform a portior dited laboratory. By signing this docurr sted and agree with this arrangement.	n of the requested testing nent you are acknowledg	g in which case we ging that you have .	will subcontract the analys been informed by Microbac	is to an that testing
Notes:					

#### Home Facility: Louisville

icing is per outfall for anlaytical cost. Labor charge per hour will vary based upon time in the field for each facility. Mercury 1631E cost is for a Sample and a Blank. HgLL sample #9 broke in shipping. need to resample.

Microbac Laboratories, Inc.

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### Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 164 of 307 Imber

Outfall	Discharge#	Effluent Characteristic	Report Value	Permit	Unit Code	Units	2021-01	2021-02	2021-03	2021-04	2021-05	2021-06	2021-07	2021-08	2021-09	2021-10	2021-11	2021-12
001	001-1	Temperature	Concentrations - Monthly Average	Limit Report	15	°E	86.9	74.9	51.4	75.9	82.7	77.0	87.4	104.8	97.9	83.2	79.7	72.3
001	001-1	Temperature	Concentrations - Monthly Average	110	15	°F	95.1	95.4	73.4	84.0	90.9	86.0	107.9	104.8	102.9	100.6	102	90.9
001	001-1	pH	Concentrations - Minimum	6.0	12	SU	7.6	7.7	7.6	7.7	7.6	7.6	7.6	7.7	7.5	7.6	7.7	7.79
001	001-1	рН	Concentrations - Maximum	9.0	12	SU	7.8	7.8	8.1	7.9	7.8	7.7	8.0	7.9	7.7	7.8	7.9	7.92
001	001-1	Hardness (as mg/I CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	200	190	160	160	190	180	200.0	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Hardness (as mg/l CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	200	190	160	160	190	180	200.0	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Arsenic Total Recoverable Arsenic	Concentrations - Monthly Average Concentrations - Daily Maximum	0.306	19 19	mg/l mg/l	0.003	0.002	0.003	0.001	0.002	0.002	0.001	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A
001	001-1	Total Recoverable Iron	Concentrations - Monthly Average	Report	19	mg/l	7.06	NODI-9	#N/A									
001	001-1	Total Recoverable Iron	Concentrations - Daily Maximum	Report	19	mg/l	7.06	NODI-9	#N/A									
001	001-1	Total Recoverable Selenium	Concentrations - Monthly Average	0.056	19	mg/l	0.005	0.005	0.005	0.005	0.01	0.01	0.005	NODI-9	NODI-9	NODI-9	NODI-9	#N/A
001	001-1	Total Recoverable Selenium	Concentrations - Daily Maximum	Report	19 19	mg/l	0.005	0.005	0.005	0.005	0.01 0.002	0.01	0.005	NODI-9	NODI-9	NODI-9	NODI-9	#N/A #N/A
001	001-1	Total Recoverable Thallium Total Recoverable Thallium	Concentrations - Monthly Average Concentrations - Daily Maximum	0.0085 Report	19	mg/l mg/l	0.001	0.001	0.001	0.001	0.002	0.001	0.001	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A
001	001-1	Total Recoverable Beryllium	Concentrations - Monthly Average	0.141	19	mg/l	0.002	0.002	0.003	0.002	0.002	0.002	0.002	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Beryllium	Concentrations - Daily Maximum	Report	19	mg/l	0.002	0.002	0.003	0.002	0.002	0.002	0.002	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Boron	Concentrations - Monthly Average	Report	19	mg/l	1.07	0.942	0.448	0.489	0.547	0.472	0.77	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Boron	Concentrations - Daily Maximum	Report	19	mg/l	1.07	0.942	0.448	0.489	0.547	0.472	0.77	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Nickel Total Recoverable Nickel	Concentrations - Monthly Average Concentrations - Daily Maximum	0.759	19	mg/l	0.013	0.011	0.011 0.011	0.005	0.01	0.01	0.005	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A
001	001-1	Total Recoverable Silver	Concentrations - Daily Maximum	Report	19	mg/l mg/l	0.005	0.005	0.001	0.005	0.01	0.001	0.005	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A	#N/A #N/A
001	001-1	Total Recoverable Silver	Concentrations - Daily Maximum	0.011	19	mg/l	0.005	0.005	0.005	0.005	0.01	0.005	0.005	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Zinc	Concentrations - Monthly Average	0.194	19	mg/l	0.037	0.022	0.04	0.02	0.022	0.043	0.02	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Zinc	Concentrations - Daily Maximum	0.194	19	mg/l	0.037	0.022	0.04	0.02	0.022	0.043	0.02	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1 001-1	Total Recoverable Cadmium Total Recoverable Cadmium	Concentrations - Monthly Average Concentrations - Daily Maximum	0.004	19 19	mg/l mg/l	0.001	0.001	0.001	0.001	0.002	0.001	0.001	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A
001	001-1	Total Recoverable Lead	Concentrations - Monthly Average	0.057	19	mg/l	0.001	0.001	0.001	0.001	0.002	0.001	0.001	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Lead	Concentrations - Daily Maximum	0.178	19	mg/l	0.001	0.003	0.008	0.003	0.002	0.001	0.002	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Chromium	Concentrations - Monthly Average	3.53	19	mg/l	0.008	0.011	0.006	0.003	0.002	0.002	0.002	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Chromium	Concentrations - Daily Maximum	Report	19	mg/l	0.008	0.011	0.006	0.003	0.002	0.002	0.002	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1 001-1	Total Recoverable Copper Total Recoverable Copper	Concentrations - Monthly Average Concentrations - Daily Maximum	0.024	19 19	mg/l mg/l	0.024	0.018	0.013	0.009	0.007	0.009	0.012	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A
001	001-1	Total Recoverable Selenium (Fish	Concentrations - Maximum	8.6	69	mg/kg	NODI-9	#N/A										
001	001-1	Tissue) Total Recoverable Antimony	Concentrations - Monthly Average	0.198	19	dry wt mg/l	0.005	0.005	0.005	0.005	0.01	0.005	0.005	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Antimony	Concentrations - Daily Maximum	Report	19	mg/l	0.005	0.005	0.005	0.005	0.01	0.005	0.005	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Residual Oxidants Total Residual Oxidants	Concentrations - Monthly Average Concentrations - Daily Maximum	Report	19 19	mg/l	0.11	0.1	0.04	0.08	0.09	0.09	0.1	0.1	0.1	0.08	0.07	0.05
001	001-1	Flow	Loadings - Monthly Average	0.2 Report	03	mg/l MGD	0.12 233.5603	0.12 210.925	0.09 126.23	233.084	0.1 224.3181	0.1 148.9913	0.11 172.7355	0.1 231.3981	0.11 232.1837	0.1 197.7823	0.08 203.7903	164.85
001	001-1	Flow	Loadings - Daily Maximum	Report	03	MGD	237.57	236.64	234.56	237.21	240.36	223.08	238.02	233.08	237.89	239.03	241.11	228.38
001	001-1	Total Residual Chlorine	Concentrations - Monthly Average	0.011	19	mg/l	NODI-9											
001	001-1	Total Residual Chlorine	Concentrations - Daily Maximum	0.019	19	mg/l	NODI-9											
001	001-1	Free Available Chlorine Free Available Chlorine	Concentrations - Monthly Average Concentrations - Daily Maximum	0.2	19 19	mg/l mg/l	NODI-9 NODI-9											
001	001-1	Time of Oxidant Addition	Concentrations - Daily Maximum	120	5B	Min/day	60	60	60	60	60	60	60	60	60	60	60	60
001	001-1	Acute WET	Concentrations - Maximum	1.00	73	TUA	1.0	1.0	1.0	NODI-9	1.0	1.0	NODI-9	#N/A	#N/A	#N/A	#N/A	#N/A
001	001-1	Total Recoverable Mercury	Concentrations - Monthly Average	0.000051	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	NODI-9	NODI-9	NODI-9	#N/A	#N/A
001	001-1	Total Recoverable Mercury	Concentrations - Daily Maximum	0.0014	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	NODI-9	NODI-9	NODI-9	#N/A	#N/A
001	001-2	Chronic WET	Concentrations - Maximum	11.84	73	TUc	#N/A	#N/A	2.962									
002	002-1	Total Suspended Solids	Concentrations - Monthly Average	30.0	19	mg/l	18.0	6.0	7.0	12.0	17.0	10.0	6.0	6.0	10.0	6.0	11	26
002	002-1	Total Suspended Solids Oil & Grease	Concentrations - Daily Maximum Concentrations - Monthly Average	97.9	19 19	mg/l mg/l	32.0 NODI-B	7.0 NODI-B	8.0 NODI-B	13.0 3.0	20.0 NODI-B	12.0 NODI-B	8.0 NODI-B	8.0 NODI-B	14.0 NODI-B	6.0 NODI-B	12 NODI-B	27 NODI-B
002	002-1	Oil & Grease	Concentrations - Daily Maximum	19.3	19	mg/l	NODI-B	NODI-B	NODI-B	5.1	NODI-B							
002	002-1	Flow	Loadings - Monthly Average	Report	03	MGD	3.259	4.7447	4.77	3.8929	4.4616	4.4767	3.6206	3.0329	3.7894	6.47033	3.3028	3.39
002	002-1	Flow	Loadings - Daily Maximum	Report	03	MGD	6.18	11.35	6.18	6.18	7.79	4.7	6.18	4.7	9.51	9.51	11.52	11.35
002A 002A	002A-1 002A-1	pH	Concentrations - Minimum	6.0	12 12	SU	NODI-C											
002A 002A	002A-1 002A-1	pH Total Suspended Solids	Concentrations - Maximum Concentrations - Monthly Average	9.0 30.0	12	SU mg/l	NODI-C NODI-C											
002A	002A-1	Total Suspended Solids	Concentrations - Monthly Average	97.9	19	mg/l	NODI-C											
002A	002A-1	Oil & Grease	Concentrations - Monthly Average	14.5	19	mg/l	NODI-C											
002A	002A-1	Oil & Grease	Concentrations - Daily Maximum	19.3	19	mg/l	NODI-C											
002A 002A	002A-1 002A-1	Total Recoverable Iron	Concentrations - Monthly Average	Report	19	mg/l	NODI-C											
002A 002A	002A-1 002A-1	Total Recoverable Iron Total Recoverable Selenium	Concentrations - Daily Maximum Concentrations - Monthly Average	Report 0.056	19 19	mg/l mg/l	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C
002A	002A-1	Total Recoverable Selenium	Concentrations - Monthly Average	Report	19	mg/l	NODI-C											
002A	002A-1	Total Recoverable Selenium (Fish Tissue)	Concentrations - Maximum	8.6	69	mg/kg drv wt	NODI-C											
002A	002A-1	Flow	Loadings - Monthly Average	Report	03	MGD	NODI-C											
002A	002A-1	Flow	Loadings - Daily Maximum	Report	03	MGD	NODI-C											
002A	002A-1	Total Recoverable Mercury	Concentrations - Monthly Average	0.000051	19	mg/l	NODI-C											
002A 002A	002A-1	Total Recoverable Mercury	Concentrations - Daily Maximum	0.0014	19	mg/l	NODI-C											
	002A-2	Acute WET	Concentrations - Maximum	1.00	73	TUA	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C

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NODI-C<br>NODI-C<br>80.7<br>86.4<br>257.2<br>#N/A<br>#N/A<br>MODI-9<br>NODI-9<br>NODI-9<br>NODI-9<br>6.0<br>6.0<br>NODI-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NODI-C<br>NODI-C<br>80.4<br>83.5<br>257.2<br>257.2<br>1.671<br>1.671<br>NODI-9<br>NODI-9<br>NODI-9<br>NODI-9<br>9.0<br>9.0<br>9.0<br>NODI-B                                                                  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                                                                                                         | NODI-C<br>NODI-C<br>59.8<br>62.2<br>233.8<br>257.2<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>0.0<br>2.0<br>NODI-B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NODI-C<br>NODI-C<br>53.7<br>53.1<br>214.4<br>271.6<br>0.846<br>0.846<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>#N/A<br>6<br>6<br>NODI-B                                                                                                                                        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            | NODI-C           NODI-C           S3.4           53.8           173.68           257.2           7.547           NODI-9           NODI-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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257.4           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           6.0           6.0           NODI-8           NODI-8           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NODI-C<br>NODI-C<br>80.4<br>83.5<br>257.2<br>257.2<br>257.2<br>257.2<br>1.671<br>1.671<br>NODI-9<br>NODI-9<br>NODI-9<br>9.0<br>9.0<br>NODI-9<br>9.0<br>NODI-8<br>NODI-B                                                                                                                                       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    257.2           #N/A           NODI-9           NODI-9           NODI-9           NODI-9           8.0           8.0           NODI-B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                                                                                                                                                                                                                                                                                                                                                                                                     | NODI-C           NODI-C           NODI-C           51.7           53.1           214.4           271.6           0.846           0.846           0.846           NA           #N/A           #N/A           6           6           NODI-B           MOD-B           #N/A                                                                                                                                                                                                                                                                                                                                         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Maximum<br>Concentrations - Minimum<br>Concentrations - Minimum<br>Concentrations - Maximum<br>Concentrations - Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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        46.2           49.0           257.2           257.2           257.2           #N/A           #NOI-9           NODI-9           NODI-8           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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 #N/A           #N/A           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NODI-C           NODI-C           NODI-C           59.8           62.2           233.8           257.2           #N/A                                                                                                                                                                                                                                                                | NODI-C           NODI-C           NODI-C           S1.7           53.1           214.4           271.6           0.846           #N/A           #N/A           #N/A           MODI-C           NODI-B           #N/A           #N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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                                                                                     | NODI-C           NODI-C           NODI-C           S8.8           173.68           257.2           7.547           NODI-9           NODI-8           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           1.671           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                      | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A                                                                                                                                                                                                                                                                                              | NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7      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                                                                                                                                                                           | NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9           NODI-9           6.0           6.0           6.0           NODI-8           NODI-8           NODI-9           NOD-9           NOD-18           NODI-9           NOD-9                                                                                                                                     | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           1.671           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-8           NODI-9                                                                                                  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              | NODI-C           NODI-C           NODI-C           51.7           53.1           214.4           271.6           0.846           0.846           0.846           NA           #N/A           #N/A           NODI-B           NODI-B           #N/A           #N/A           #N/A           #N/A           #N/A           #N/A                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 006           006           009           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                          | NODI-C           NODI-C           NODI-C           S8.0           173.68           257.2           7.547           7.547           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                         | NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           259.6           #N/A           #N/A           #NOI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9           NODI-9           6.0           6.0           6.0           NODI-9                                                                                                                                                                                                                     | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           1.671           NODI-9                                                                                                                                                                                                                                                                                                                                                           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77.1           237.4           257.2           #N/A           NODI-9                                                                                                                                                                                                                                                                               | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A                                                                                                                                                                                     | NODI-C           NODI-C           NODI-C           51.7           53.1           214.4           271.6           0.846           0.846           0.846           0.846           NA           #N/A           #N/A           MOD-B           #N/A                                                                                                                        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 NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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       NODI-C           NODI-C           81.6           85.4           183.4           259.6           #N/A           #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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         257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9           NODI-9           6.0           6.0           6.0           NODI-8           NODI-8           NODI-9           NOD-9           NOD-18           NODI-9           NOD-9                                                                                                                                     | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           1.671           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9                                                                                                                                                                                                                                                                               | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A                                                                                                                                                                                                                                  | NODI-C           NODI-C           NODI-C           51.7           53.1           214.4           271.6           0.846           0.846           0.846           NA           #N/A           #N/A           NODI-B           NODI-B           #N/A           #N/A           #N/A           #N/A           #N/A           #N/A                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 006           006           009           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                                                                                                                                                | NODI-C           NODI-C           NODI-C           S8.0           173.68           257.2           7.547           7.547           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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  51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           6           6           6           NODI-B           #N/A           #N/A           #N/A           #N/A           #N/A                                                                                                                                                                 |
| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                                                                                                    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Maximum<br>Concentrations - Monthly Average<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum                                                                                                                                                                                                                                                                                                                                                                                                             | 1.0           Report           Report           110           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           Report           24.0           Report           Report           Report           8.6                                                                                                                                                    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          NODI-C           74.2           73.6           182.32           257.2           3.6165           3.6165           NODI-9                                                                                                                                                                            | NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                                                                      | NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           #N/A           #N/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           
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| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                                                                                      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Report           100           800           100           800           9.0           30           67           9           12           Report           24.0           Report           24.0           Report           8.6           Report           8.6           Report           Report           8.6           Report           Report                                                                                                                                                                                                                                                               | 19           03           03           15           15           03           19           19           15           15           15           15           15           15           12           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NODI-C           NODI-C           NODI-C           40.2           49.0           257.2           257.2           257.2           #N/A           #N/A           NODI-9           NODI-14                                                                                                                                                                                                                              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         271.6           #N/A           MODI-9           NODI-9           NODI-9 <td>NODI-C           NODI-C           NODI-C           NODI-C           Solar           201-2           233.9           257.6           #N/A           MODI-9           NODI-9           NODI-9<!--</td--><td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           N</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           1183.4           259.6           #N/A           #N/A           NODI-9           NODI-14           14</td><td>NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           257.2           NODI-9           NOB-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.7           3.3.1           271.6           0.846           #N/A           #N/A</td></td> | NODI-C           NODI-C           NODI-C           NODI-C           Solar           201-2           233.9           257.6           #N/A           MODI-9           NODI-9           NODI-9 </td <td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           N</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           1183.4           259.6           #N/A           #N/A           NODI-9           NODI-14           14</td> <td>NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           257.2           NODI-9           NOB-9</td> <td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           MODI-9           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td> <td>NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.7           3.3.1           271.6           0.846           #N/A           #N/A</td>                                                                                                                                            | NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           NODI-12           N | NODI-C           NODI-C           NODI-C           NODI-C           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| 006           009           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                              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        Temperature         Flow         Flow         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         PH         PH         Total Suspended Solids         Total Suspended Solids         Oil & Grease         Oil & Grease         Oil & Grease         Oil & Grease         Total Recoverable Selenium         Total Recoverable Copper         Total Recoverable Copper         Total Recoverable Selenium         Flow         Flow         Flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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                                                                                                                                                                                                                                                                   | 1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           Report           Report           8.6           Report           Report | 19           03           03           15           15           03           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           03           03           03                                                                                                                                                                                       | mg/l           MGD           MGD           MGD           °F           MGD           MGD           mg/l           mg/l           regin           SU           SU           SU           mg/l           MGD           MGD           MGD           MGD           MGD           MGD                                                                                                                                                                                                                                                                                                                                                                                                                   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      #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NODI-C           NODI-C           NODI-C           NODI-C           Solar           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               
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#N/A           #N/A           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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          NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9                                                                   | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A                                                                                                                                                                                     | NODI-C           NODI-C           NODI-C           S1.7           53.1           214.4           271.6           0.846           0.846           0.846           mN/A           #N/A                                                                                                                                                                                                                                                                                                        |
| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012 <td>006-1           006-1           006-1           006-1           006-1           009-1           009-1           009-1           009-1           009-1           009-1           009-2           009-2           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1</td> <td>Total Iron         Flow         Flow         Temperature         Flow         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         PH         PH         PH         Oil &amp; Grease         Oil &amp; Grease         Oil &amp; Grease         Oil &amp; Grease         Oil Recoverable Selenium         Total Recoverable Mercury         Total Recoverable Mercury</td> <td>Concentrations - Daily Maximum<br/>Loadings - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Monthly Average<br/>Concentrations - Monthly Average<br/>Concentrations - Monthly Average<br/>Concentrations - Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Monthly Average<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum</td> <td>1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           Report           8.6           Report           Report           8.6           Report           Report           8.6           Report           Report           Report           0.00051</td> <td>19           03           03           15           15           03           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19</td> <td>mg/l           MGD           MGD           MGD           °F           °F           MGD           mg/l           mg/l           °F           SU           mg/l           mg/l      <t< td=""><td>NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9           NOD-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           74.2           73.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td></t<><td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           WN/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           233.8           233.4           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.6           0.846           0.846           0.846           NODI-S           #N/A           #N/A</td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 006-1           006-1           006-1           006-1           006-1           009-1           009-1           009-1           009-1           009-1           009-1           009-2           009-2           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1                                                 | Total Iron         Flow         Flow         Temperature         Flow         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         PH         PH         PH         Oil & Grease         Oil & Grease         Oil & Grease         Oil & Grease         Oil Recoverable Selenium         Total Recoverable Mercury         Total Recoverable Mercury                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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- Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Monthly Average<br>Concentrations - Monthly Average<br>Concentrations - Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum | 1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           Report           8.6           Report           Report           8.6           Report           Report           8.6           Report           Report           Report           0.00051                                                                                                                                                                                                                                                      | 19           03           03           15           15           03           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19                                                                                                                                   | mg/l           MGD           MGD           MGD           °F           °F           MGD           mg/l           mg/l           °F           SU           mg/l           mg/l <t< td=""><td>NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9           NOD-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           74.2           73.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td></t<> <td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           WN/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           233.8           233.4           #N/A           #N/A</td> <td>NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.6           0.846           0.846           0.846           NODI-S           #N/A           #N/A</td> | NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9 | NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           WN/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9 | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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S1.7           53.1           271.6           271.6           0.846           0.846           0.846           NODI-S           #N/A                                                                                                                                                                                             |
| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012 <td>006-1           006-1           006-1           006-1           006-1           009-1           009-1           009-1           009-1           009-1           009-1           009-2           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-2</td> <td>Total iron         Flow         Flow         Temperature         Temperature         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         Temperature         PH         pH         Oil &amp; Grease         Oil Recoverable Selenium         Total Recoverable Selenium         Total Recoverable Selenium      <tr< td=""><td>Concentrations - Daily Maximum<br/>Loadings - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum</td><td>1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report           Report</td><td>19           03           15           15           03           03           15           15           15           15           17           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19</td><td>mg/l           MGD           MGD           %F           %F           %F           %F           %F           %GD           MGD           mg/l           MGD           mg/l           mg/l  </td><td>NODI-C           NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           NODI-C           42.8           46.4           233.8           257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           58.8           173.68           257.2           7.547           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           Solar           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-S           100</td><td>NODI-C           NODI-C           NODI-C           NODI-C           Start           201-2           233.9           257.6           #N/A           #N/A           NODI-9           NODI-9<td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9&lt;</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           133.4           259.6           #N/A           MODI-9           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td></td></td></td></td></tr<></td> | 006-1           006-1           006-1           006-1           006-1           009-1           009-1           009-1           009-1           009-1           009-1           009-2           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-1           012-2 | Total iron         Flow         Flow         Temperature         Temperature         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         Temperature         PH         pH         Oil & Grease         Oil Recoverable Selenium         Total Recoverable Selenium         Total Recoverable Selenium <tr< td=""><td>Concentrations - Daily Maximum<br/>Loadings - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Monthly Average<br/>Loadings - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum<br/>Concentrations - Daily Maximum</td><td>1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report           Report</td><td>19           03           15           15           03           03           15           15           15           15           17           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19</td><td>mg/l           MGD           MGD           %F           %F           %F           %F           %F           %GD           MGD           mg/l           MGD           mg/l           mg/l  </td><td>NODI-C           NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           NODI-C           42.8           46.4           233.8           257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           58.8           173.68           257.2           7.547           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           Solar           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-S           100</td><td>NODI-C           NODI-C           NODI-C           NODI-C           Start           201-2           233.9           257.6           #N/A           #N/A           NODI-9           NODI-9<td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9&lt;</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           133.4           259.6           #N/A           MODI-9           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td></td></td></td></td></tr<> | Concentrations - Daily Maximum<br>Loadings - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum                                                                       | 1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report           Report           Report           8.6           Report            | 19           03           15           15           03           03           15           15           15           15           17           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19                                                                               | mg/l           MGD           MGD           %F           %F           %F           %F           %F           %GD           MGD           mg/l           MGD           mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NODI-C           NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           257.2           #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NODI-C           NODI-C           NODI-C           NODI-C           NODI-C           42.8           46.4           233.8           257.2           #N/A           #N/A           #N/A           NODI-9           NODI-9  | NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           58.8           173.68           257.2           7.547           NODI-9           NODI-9 <td>NODI-C           NODI-C           NODI-C           NODI-C           Solar           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-S           100</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           Start           201-2           233.9           257.6           #N/A           #N/A           NODI-9           NODI-9<td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9&lt;</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           133.4           259.6           #N/A           MODI-9           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td></td></td></td> | NODI-C           NODI-C           NODI-C           NODI-C           Solar           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-C           1000-S           100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NODI-C           NODI-C           NODI-C           NODI-C           Start           201-2           233.9           257.6           #N/A           #N/A           NODI-9           NODI-9 <td>NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9&lt;</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           133.4           259.6           #N/A           MODI-9           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td></td></td> | NODI-C           NODI-C           74.2           79.6           182.32           257.2           3.6165           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9< | NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           133.4           259.6           #N/A           MODI-9           NODI-9           NODI-9 <td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td><td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td></td> | NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.7           80.7           86.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           80.7           NODI-9           NODI-9           NODI-8           NODI-9                       | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           257.2           257.2           1.671           NODI-9           NODI-9 <td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A           #N/A</td> <td>NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A           #N/A</td> | NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           #W/A           NODI-9           NODI-9 | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           257.2           #N/A                                                             | NODI-C           NODI-C           NODI-C           S1.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           51.7           6           NODI-B           #N/A                                               |
| 006           006           009           009           009           009           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012           012                                                                                                                                                                                                                                                                                                                                                                              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        Temperature         Flow         Flow         Flow         Total Recoverable Metals         Total Recoverable Metals         Temperature         PH         PH         PH         Oil & Grease         Oil & Grease         Oil & Grease         Oil & Grease         Oil Recoverable Selenium         Total Recoverable Mercury         Total Recoverable Mercury                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Concentrations - Daily Maximum<br>Loadings - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Loadings - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Monthly Average<br>Concentrations - Monthly Average<br>Concentrations - Maximum<br>Concentrations - Daily Maximum<br>Concentrations - Monthly Average<br>Concentrations - Daily Maximum<br>Concentrations - Daily Maximum | 1.0           Report           Report           Report           110           Report           Report           Report           Report           Report           100           6.0           9.0           30           67           9           12           Report           24.0           Report           Report           8.6           Report       
   Report           8.6           Report           Report           8.6           Report           Report           Report           0.00051                                                                                                                                                                                                                                                      | 19           03           03           15           15           03           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19                                                                                                                                   | mg/l           MGD           MGD           MGD           °F           °F           MGD           mg/l           mg/l           °F           SU           mg/l           mg/l <t< td=""><td>NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9<td>NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9           NOD-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           74.2           73.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9</td><td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td></td></t<> <td>NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           WN/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           233.8           233.4           #N/A           #N/A</td> <td>NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.6           0.846           0.846           0.846           NODI-C           NNA           #N/A           #N/A</td>           | NODI-C           NODI-C           NODI-C           46.2           49.0           257.2           257.2           #N/A           MODI-9           NODI-9           NODI-9 <td>NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9           NOD-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           74.2           73.6           182.32           257.2           3.6165           3.6165           NODI-9           NODI-9</td> <td>NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9</td> | NODI-C           NODI-C           NODI-C           NODI-C           A0DI-C           A           46.4           233.8           257.2           #N/A           MODI-9           NODI-9           NODI-9 | NODI-C           NODI-C           NODI-C           NODI-C           S8.4           53.4           53.4           53.4           53.4           57.2           7.547           7.547           NODI-9           NODI-9           NOD-9           NOD-9           NOD-9           NOD-9           NOD-8           NOD-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NODI-C           NODI-C           NODI-C           NODI-C           1.7           65.2           260.8           271.6           #N/A           #N/A           #N/A           MODI-9           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NODI-C           NODI-C           NODI-C           NODI-C           68.4           70.7           233.9           257.6           #N/A           #N/A           #N/A           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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                        | NODI-C           NODI-C           NODI-C           NODI-C           81.6           85.4           183.4           183.4           183.4           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NODI-C           NODI-C           NODI-C           NODI-C           80.7           86.4           257.2           257.2           257.2           257.2           WN/A           #N/A           MODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-9           NODI-8           NODI-9           NODI-9 | NODI-C           NODI-C           NODI-C           80.4           83.5           257.2           1.671           NODI-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NODI-C           NODI-C           NODI-C           NODI-C           72.9           77.1           237.4           257.2           #N/A           NODI-9                                                  | NODI-C           NODI-C           NODI-C           S9.8           62.2           233.8           233.8           233.4           #N/A               | NODI-C           NODI-C           NODI-C           S1.7           53.1           271.6           271.6           0.846           0.846           0.846           NODI-C           NNA           #N/A                                                                                                                                                                                                                                                          |

#### Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 166 of 307 Imber

012	012.2				12		401/0	401/0	NODLC	4441/4	441/4	NODLC	#81/8	#N1 / A	NODI 2	4441/4	#51/A	
013	013-2	pH nH	Concentrations - Minimum Concentrations - Maximum	6.0 9.0	12	SU SU	#N/A #N/A	#N/A #N/A	NODI-C NODI-C	#N/A #N/A	#N/A #N/A	NODI-C NODI-C	#N/A #N/A	#N/A #N/A	NODI-3 NODI-3	#N/A #N/A	#N/A #N/A	NODI-C NODI-C
013	013-2	Total Suspended Solids	Concentrations - Maximum Concentrations - Monthly Average	30	12	su mg/l	#N/A #N/A	#N/A #N/A	NODI-C	#N/A #N/A	#N/A #N/A	NODI-C	#N/A #N/A	#N/A #N/A	NODI-3	#N/A #N/A	#N/A #N/A	NODI-C
013	013-2	Total Suspended Solids	Concentrations - Daily Maximum	60	19	mg/l	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-3	#N/A	#N/A #N/A	NODI-C
013		Oil & Grease	Concentrations - Monthly Average	10	19	mg/l	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-3	#N/A	#N/A	NODI-C
013	013-2	Oil & Grease	Concentrations - Daily Maximum	15	19	mg/l	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-3	#N/A	#N/A	NODI-C
013	013-2	Flow	Loadings - Monthly Average	Report	03	MGD	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-3	#N/A	#N/A	NODI-C
013	013-2	Flow	Loadings - Daily Maximum	Report	03	MGD	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-3	#N/A	#N/A	NODI-C
015	015-2	pН	Concentrations - Minimum	Report	12	SU	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	7.69	#N/A	#N/A	7.32
015	015-2	pH	Concentrations - Maximum	Report	12	SU	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	7.69	#N/A	#N/A	7.32
015	015-2	Total Suspended Solids	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	77	#N/A	#N/A	9
015	015-2	Total Suspended Solids	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	77	#N/A	#N/A	9
015	015-2	Hardness (as mg/I CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	1000	#N/A	#N/A	330
015	015-2	Hardness (as mg/I CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	1000	#N/A	#N/A	330
015	015-2	Total Recoverable Arsenic	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.002	#N/A	#N/A	0.001
015	015-2	Total Recoverable Arsenic	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.002	#N/A	#N/A	0.001
015	015-2	Total Recoverable Nickel	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.012	#N/A	#N/A	0.005
015	015-2	Total Recoverable Nickel	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.012	#N/A	#N/A	0.005
015	015-2	Total Recoverable Silver	Concentrations - Monthly Average	Report	19	mg/l	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A	#N/A	NODI-9 NODI-9	#N/A	#N/A #N/A	0.005	#N/A #N/A	#N/A	0.005
015	015-2	Total Recoverable Silver	Concentrations - Daily Maximum	Report	19	mg/l	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.005	#N/A #N/A	#N/A #N/A	0.005
015	015-2	Total Recoverable Zinc	Concentrations - Monthly Average	Report	19 19	mg/l	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.015	#N/A #N/A	#N/A #N/A	0.01
015	015-2	Total Recoverable Zinc Total Recoverable Cadmium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A #N/A	#N/A #N/A	NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.013	#N/A #N/A	#N/A #N/A	0.001
015	015-2	Total Recoverable Cadmium	Concentrations - Monthly Average Concentrations - Daily Maximum	Report Report	19	mg/l	#N/A #N/A	#N/A #N/A	NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.001	#N/A #N/A	#N/A #N/A	0.001
015	015-2	Total Recoverable Cadmium	Concentrations - Daily Maximum Concentrations - Monthly Average	Report	19	mg/l mg/l	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.001	#N/A #N/A	#N/A #N/A	0.001
015	015-2	Total Recoverable Lead	Concentrations - Monthly Average	Report	19	mg/I mg/I	#N/A #N/A	#N/A #N/A	NODI-9	#N/A #N/A	#N/A #N/A	NODI-9 NODI-9	#N/A #N/A	#N/A #N/A	0.002	#N/A #N/A	#N/A #N/A	0.001
015	015-2	Total Recoverable Chromium	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A #N/A	NODI-9	#N/A	#N/A	0.002	#N/A	#N/A #N/A	0.001
015	015-2	Total Recoverable Chromium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A #N/A	#N/A #N/A	NODI-9	#N/A	#N/A	0.004	#N/A	#N/A #N/A	0.002
015	015-2	Total Recoverable Copper	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.005	#N/A	#N/A	0.002
015	015-2	Total Recoverable Copper	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.005	#N/A	#N/A	0.002
015	015-2	Flow	Loadings - Monthly Average	Report	03	MGD	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	1.63	#N/A	#N/A	0.107
015	015-2	Flow	Loadings - Daily Maximum	Report	03	MGD	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	1.63	#N/A	#N/A	0.107
015	015-2	Total Recoverable Mercury	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.000005	#N/A	#N/A	0.000005
015	015-2	Total Recoverable Mercury	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	0.000005	#N/A	#N/A	0.000005
023	023-1	Temperature	Concentrations - Monthly Average	Report	15	°F	76.2	72.8	79.2	80.3	82.0	84.6	89.4	93.1	88.4	83.4	75.2	51.5
023	023-1	Temperature	Concentrations - Daily Maximum	110	15	°F	79.0	77.8	85.8	84.5	87.1	92.1	90.8	98.9	90.4	89.2	80.6	63.9
023	023-1	pH	Concentrations - Minimum	6.0	12	SU	8.5	8.5	8.4	8.4	8.5	8.6	8.6	8.6	8.5	8.5	8.6	8.24
023	023-1	pH	Concentrations - Maximum	9.0	12	SU	8.6	8.7	8.7	8.7	8.7	8.8	8.7	8.7	8.7	8.7	8.8	8.64
023	023-1	Hardness (as mg/l CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	270	280	1620	220	230	280	220	290	250	320	340	240
023	023-1	Hardness (as mg/l CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	270	280	1620	220	230	280	220	290	250	320	340	240
023	023-1	Total Recoverable Iron	Concentrations - Monthly Average	Report	19	mg/l	11.93	0.521	17.5	5.18	2.92	1.34	2.35	0.831	2.45	0.436	4.64	0.436
023	023-1	Total Recoverable Iron	Concentrations - Daily Maximum	Report	19	mg/l	11.93	0.521	17.5	5.18	2.92	1.34	2.35	0.831	2.45	0.436	4.64	0.436
023	023-1	Total Recoverable Copper	Concentrations - Monthly Average	Report	19	mg/l	0.459	0.059	0.31	0.238	0.197	0.167	0.12	0.148	0.163	0.058	0.302	0.058
023	023-1	Total Recoverable Copper	Concentrations - Daily Maximum	Report	19	mg/l	0.459	0.059	0.31	0.238	0.197	0.167	0.12	0.148	0.163	0.058	0.302	0.058
023	023-1	Flow	Loadings - Monthly Average	Report	03	MGD	5.5328	4.795	5.93	6.019	7.7252	9.072	10.1375	8.3257	10.2586	5.31	4.4585	6.494
023	023-1	Flow	Loadings - Daily Maximum	Report	03	MGD	6.13	6.6	10.07	7.57	9.55	12.1	12.78	13.417	12.43	7.04	6.207	8.16
023	023-1	Total Recoverable Mercury	Concentrations - Monthly Average	0.000051	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005
023	023-1	Total Recoverable Mercury	Concentrations - Daily Maximum	0.0014	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005
023	023-2	Total Recoverable Selenium	Concentrations - Monthly Average	24.0	19	mg/l	#N/A #N/A	#N/A #N/A	0.01	#N/A #N/A	#N/A #N/A	0.01	#N/A #N/A	#N/A #N/A	0.01	#N/A #N/A	#N/A #N/A	0.01
023	023-2	Total Recoverable Selenium	Concentrations - Daily Maximum	Report	19	mg/l	#IN/A	#N/A	0.01	#N/A	#N/A	0.01	#N/A	#N/A	0.01	#N/A	#N/A	0.01
023	023-2	Total Recoverable Selenium (Fish Tissue)	Concentrations - Maximum	8.6	69	mg/kg	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9
023	023-2	Acute Toxicity		+		dry wt					#N/A	1.0	#N/A	#N/A	1.0			1.0
023	023-2	ALULE TOXICILY		1 00	72				10	#NI/A		1.0		#IN/A	1.0			1.0
U/3	022.4	Total Deserve value 7in a	Concentrations - Maximum	1.00	73	TU <sub>A</sub>	#N/A	#N/A	1.0	#N/A		4NI / A		401/0		#N/A	#N/A	0.071
	023-4	Total Recoverable Zinc	Concentrations - Monthly Average	0.278	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A #N/A	#N/A	#N/A #N/A	#N/A	#N/A	#N/A	0.071
023	023-4	Total Recoverable Zinc	Concentrations - Monthly Average Concentrations - Daily Maximum	0.278 0.278	19 19	mg/l mg/l	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	#N/A	#N/A #N/A	#N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A	0.071
023 023	023-4 023-4	Total Recoverable Zinc Total Recoverable Chromium	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average	0.278 0.278 0.2	19 19 19	mg/I mg/I mg/I	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A	#N/A #N/A #N/A	#N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	0.071 0.011
023 023 023	023-4 023-4 023-4	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum	0.278 0.278 0.2 0.2 0.2	19 19 19 19	mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	0.071 0.011 0.011
023 023 023 023	023-4 023-4	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average	0.278 0.278 0.2 0.2 0.2 0.019	19 19 19	mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A	#N/A #N/A #N/A	#N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	#N/A #N/A #N/A	0.071
023 023 023 023 023 023	023-4 023-4 023-4 023-4	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine Total Residual Chlorine	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Monthly Average	0.278 0.278 0.2 0.2 0.2 0.019 0.019	19 19 19 19 19 19	mg/l mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	0.071 0.011 0.011 0
023 023 023 023 023 023 023 024	023-4 023-4 023-4 023-4 023-4 023-4 024-1	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine Total Residual Chlorine Total Recoverable Arsenic	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average	0.278 0.278 0.2 0.2 0.019 0.019 0.008	19 19 19 19 19 19 19 19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	0.071 0.011 0.011 0 0 #N/A
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023 023 023 023 023 023 024 024 024 024	023-4 023-4 023-4 023-4 023-4 023-4 023-4 024-1	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine Total Residual Chlorine Total Recoverable Arsenic Total Recoverable Arsenic	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Daily Maximum	0.278 0.278 0.2 0.2 0.019 0.019 0.008 0.011	19 19 19 19 19 19 19 19 19 19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	#N/A #N/A #N/A #N/A #N/A #N/A #N/A	0.071 0.011 0.011 0 4N/A #N/A
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023         023           023         023           023         023           024         024           024         024           024         024           024         024           024         024           024         024	023-4 023-4 023-4 023-4 024-1 024-1 024-1 024-1 024-1 024-1 024-1	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine Total Residual Chlorine Total Recoverable Arsenic Total Recoverable Arsenic Total Recoverable Selenium Total Recoverable Selenium	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Monthly Average	0.278 0.278 0.2 0.2 0.019 0.019 0.008 0.011 0.012 0.023	19 19 19 19 19 19 19 19 19 19 19 03 03	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	HN/A HN/A HN/A HN/A HN/A HN/A HN/A HN/A	0.071 0.011 0 0 #N/A #N/A #N/A #N/A #N/A									
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023           023           023           023           023           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           024           025	023-4 023-4 023-4 023-4 023-4 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 024-1 025-1	Total Recoverable Zinc Total Recoverable Chromium Total Recoverable Chromium Total Residual Chlorine Total Residual Chlorine Total Recoverable Arsenic Total Recoverable Arsenic Total Recoverable Selenium Flow Flow Total Recoverable Selenium Flow Total Recoverable Mercury Total Recoverable Mercury Total Recoverable Mercury Nitrate/nitrite as N Temperature	Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Daily Maximum Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Daily Maximum Loadings - Monthly Average Loadings - Monthly Average Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Monthly Average Concentrations - Daily Maximum Concentrations - Daily Maximum	0.278 0.278 0.2 0.2 0.019 0.0019 0.0019 0.0012 0.0023 Report 0.000356 0.000788 4.4 1.7.0 Report	19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19           19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	#N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	0.071 0.011 0.011 0 0 #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A										
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### Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 167 of 307 Imber

| 025 | 025-1 | Flow                                        | Loadings - Daily Maximum         | Report   | 03 | MGD             | #N/A | 3.36 | 5.84    |
|-----|-------|---------------------------------------------|----------------------------------|----------|----|-----------------|------|------|------|------|------|------|------|------|------|------|------|---------|
| 025 | 025-2 | Hardness (as mg/l CaCO3)                    | Concentrations - Monthly Average | Report   | 19 | mg/l            | #N/A | 1140    |
| 025 | 025-2 | Hardness (as mg/l CaCO3)                    | Concentrations - Daily Maximum   | Report   | 19 | mg/l            | #N/A | 1140    |
| 025 | 025-2 | Total Recoverable Iron                      | Concentrations - Monthly Average | Report   | 19 | mg/l            | #N/A | 0.456   |
| 025 | 025-2 | Total Recoverable Iron                      | Concentrations - Daily Maximum   | Report   | 19 | mg/l            | #N/A | 0.456   |
| 025 | 025-2 | Total Recoverable Selenium                  | Concentrations - Monthly Average | 0.628    | 19 | mg/l            | #N/A | 0.011   |
| 025 | 025-2 | Total Recoverable Selenium                  | Concentrations - Daily Maximum   | Report   | 19 | mg/l            | #N/A | 0.011   |
| 025 | 025-2 | Total Recoverable Copper                    | Concentrations - Monthly Average | 0.315    | 19 | mg/l            | #N/A | 0.016   |
| 025 | 025-2 | Total Recoverable Copper                    | Concentrations - Daily Maximum   | 0.315    | 19 | mg/l            | #N/A | 0.016   |
| 025 | 025-2 | Total Recoverable Selenium (Fish<br>Tissue) | Concentrations - Maximum         | 8.6      | 69 | mg/kg<br>dry wt | #N/A | NODI-9  |
| 025 | 025-2 | Acute Toxicity                              | Concentrations - Maximum         | 1.00     | 73 | TUA             | #N/A | 1.0     |
| 025 | 025-2 | Total Recoverable Mercury                   | Concentrations - Monthly Average | 0.000051 | 19 | mg/l            | #N/A | 0.00001 |
| 025 | 025-2 | Total Recoverable Mercury                   | Concentrations - Daily Maximum   | 0.0014   | 19 | mg/l            | #N/A | 0.00001 |

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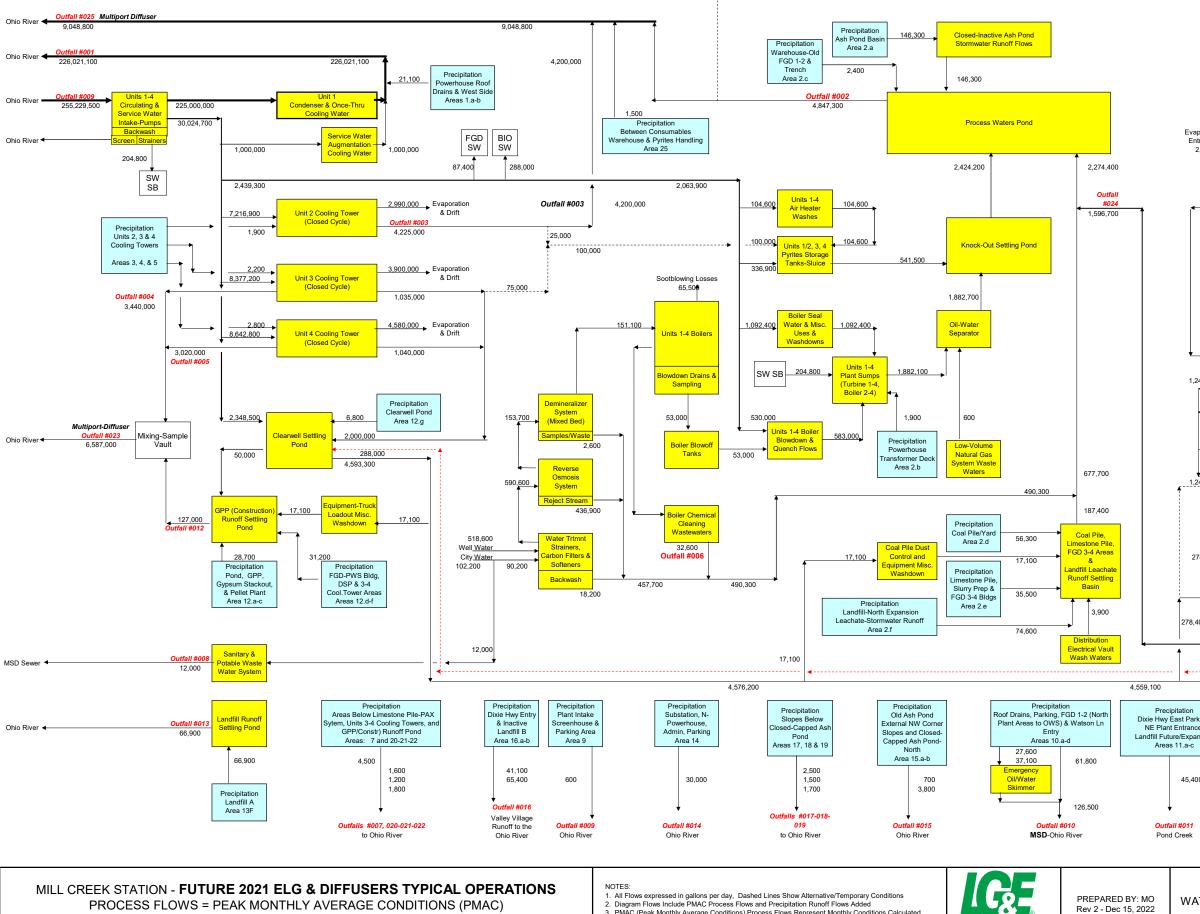
Outfall	Discharge#	Effluent Characteristic	Report Value	Permit Limit	Unit Code	Units	2022-01	2022-02	2022-03	2022-04	2022-05	2022-06	2022-07	2022-08	2022-09	2022-10	2022-11	2022-12
001	001-1	Temperature	Concentrations - Monthly Average	Report	15	°F	58.3	66.8	78.5	86.4	79.7	90.6	87.8					
001	001-1	Temperature	Concentrations - Daily Maximum	110	15	°F	68.6	79.1	85.3	97.2	104.5	108.9	95.9					
001	001-1	pH	Concentrations - Minimum	6.0	12	SU	7.5	7.3	7.8	7.7	7.7	7.7	7.6					-
001	001-1	рН	Concentrations - Maximum	9.0	12	SU	7.8	7.8	8.2	7.8	7.7	7.8	7.9					
001	001-1	Total Residual Oxidants	Concentrations - Monthly Average	Report	19	mg/l	0.09	0.1	0.09	0.1	0.12	0.1	0.13					
001	001-1	Total Residual Oxidants	Concentrations - Daily Maximum	0.2	19	mg/l	0.11	0.11	0.11	0.11	0.12	0.11	0.13					<u> </u>
001	001-1	Flow	Loadings - Monthly Average	Report	03	MGD	214.8403	195.5832	132.7161	133.7	203.25	161.4483	106.8216					<u> </u>
001	001-1	Flow Total Residual Chlorine	Loadings - Daily Maximum Concentrations - Monthly Average	Report 0.011	19	MGD mg/l	228.38 NODI-9	228.38 NODI-9	134.78 NODI-9	134.78 NODI-9	228.38 NODI-9	228.38 NODI-9	228.38 NODI-9					<u> </u>
001	001-1	Total Residual Chlorine	Concentrations - Daily Maximum	0.011	19	mg/l	NODI-9											
001	001-1	Free Available Chlorine	Concentrations - Monthly Average	0.2	19	mg/l	NODI-9											
001	001-1	Free Available Chlorine	Concentrations - Daily Maximum	0.5	19	mg/l	NODI-9											
001	001-1	Time of Oxidant Addition	Concentrations - Daily Maximum	120	5B	Min/day	60	60	30	30	60	60	60					<u> </u>
001	001-2	Chronic WET	Concentrations - Maximum	11.84	73	TUc	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A		#N/A	#N/A	
002	002-1	Total Suspended Solids	Concentrations - Monthly Average	30.0	19	mg/l	11.0	13.0	14.0	10.0	13.0	10.0	6.0					<u> </u>
002	002-1	Total Suspended Solids	Concentrations - Daily Maximum	97.9	19	mg/l	13.0	13.0	14.0	16.0	14.0	11.0	7.0					──
002	002-1 002-1	Oil & Grease Oil & Grease	Concentrations - Monthly Average Concentrations - Daily Maximum	14.5 19.3	19 19	mg/l mg/l	NODI-B NODI-B					<u> </u>						
002	002-1	Flow	Loadings - Monthly Average	Report	03	MGD	3.7163	2.5583	3.3381	4.6657	4.2345	5.836	4.0428					
002	002-1	Flow	Loadings - Daily Maximum	Report	03	MGD	13.3	4.7	4.7	7.79	7.79	9.51	7.79					
002A	002A-1	pH	Concentrations - Minimum	6.0	12	SU	NODI-C											
002A	002A-1	pH	Concentrations - Maximum	9.0	12	SU	NODI-C											
002A	002A-1	Total Suspended Solids	Concentrations - Monthly Average	30.0	19	mg/l	NODI-C					<u> </u>						
002A	002A-1	Total Suspended Solids	Concentrations - Daily Maximum	97.9	19	mg/l	NODI-C					──						
002A 002A	002A-1 002A-1	Oil & Grease Oil & Grease	Concentrations - Monthly Average Concentrations - Daily Maximum	14.5 19.3	19 19	mg/l mg/l	NODI-C NODI-C					<u> </u>						
002A 002A	002A-1 002A-1	Total Recoverable Iron	Concentrations - Daily Maximum Concentrations - Monthly Average	19.3 Report	19	mg/I mg/I	NODI-C NODI-C	NODI-C NODI-C	NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C NODI-C	NODI-C					<u> </u>
002A	002A-1	Total Recoverable Iron	Concentrations - Daily Maximum	Report	19	mg/l	NODI-C					-						
002A	002A-1	Total Recoverable Selenium	Concentrations - Monthly Average	0.056	19	mg/l	NODI-C											
002A	002A-1	Total Recoverable Selenium	Concentrations - Daily Maximum	Report	19	mg/l	NODI-C											
002A	002A-1	Total Recoverable Selenium (Fish Tissue)	Concentrations - Maximum	8.6	69	mg/kg dry wt	NODI-C											
002A	002A-1	Flow	Loadings - Monthly Average	Report	03	MGD	NODI-C					<u> </u>						
002A	002A-1	Flow	Loadings - Daily Maximum	Report	03	MGD	NODI-C					<u> </u>						
002A 002A	002A-1 002A-1	Total Recoverable Mercury Total Recoverable Mercury	Concentrations - Monthly Average Concentrations - Daily Maximum	0.000051 0.0014	19 19	mg/l	NODI-C NODI-C					<u> </u>						
002A 002A	002A-1 002A-2	Acute WET	Concentrations - Daily Maximum	1.00	73	mg/l TU₄	#N/A	#N/A	NODI-C	#N/A	#N/A	NODI-C NODI-C	NODI-C	#N/A		#N/A	#N/A	
002A	002-1	Total Residual Oxidants	Concentrations - Monthly Average	Report	19	mg/l	0	0	0	0	NODI-C	0	0	NODI-C		#N/A	#N/A	-
003	003-1	Total Residual Oxidants	Concentrations - Daily Maximum	0.2	19	mg/l	0	0	0	0	NODI-C	0	0	NODI-C				
003	003-1	Flow	Loadings - Monthly Average	Report	03	MGD	1.1322	1.085	1.7018	2.2272	NODI-C	1.9718	2.637	NODI-C				
003	003-1	Flow	Loadings - Daily Maximum	Report	03	MGD	1.188	1.125	3.79	2.756	NODI-C	5.05	4.037	NODI-C				
003	003-1	Total Residual Chlorine	Concentrations - Monthly Average	Report	19	mg/l	NODI-9	NODI-9	NODI-9	NODI-9	NODI-C	NODI-9	NODI-9	NODI-C				
003	003-1	Total Residual Chlorine	Concentrations - Daily Maximum	0.2	19	mg/l	NODI-9	NODI-9	NODI-9	NODI-9	NODI-C	NODI-9	NODI-9	NODI-C				<u> </u>
003	003-1	Free Available Chlorine	Concentrations - Monthly Average	0.2	19 19	mg/l	NODI-9	NODI-9	NODI-9	NODI-9	NODI-C	NODI-9	NODI-9	NODI-C				<u> </u>
003	003-1 003-1	Free Available Chlorine Time of Oxidant Addition	Concentrations - Daily Maximum Concentrations - Daily Maximum	0.5	19 5B	mg/l Min/dav	NODI-9 0	NODI-9 0	NODI-9 0	NODI-9 0	NODI-C NODI-C	NODI-9 0	NODI-9 0	NODI-C NODI-C				<u> </u>
003	003-4	Priority Pollutants	Concentrations - Maximum	NDA	73	TU₄	#N/A	#N/A	#N/A	#N/A	-							
003	003-4	Total Recoverable Chromium	Concentrations - Monthly Average	0.2	19	mg/l	#N/A	#N/A	#N/A	#N/A								
003	003-4	Total Recoverable Chromium	Concentrations - Daily Maximum	0.2	19	mg/l	#N/A	#N/A	#N/A	#N/A	1							
003	003-4	Total Recoverable Zinc	Concentrations - Monthly Average	1.0	19	mg/l	#N/A	#N/A	#N/A	#N/A								
003	003-4	Total Recoverable Zinc	Concentrations - Daily Maximum	1.0	19	mg/l	#N/A	#N/A	#N/A	#N/A								
004	004-1	Total Residual Oxidants	Concentrations - Monthly Average	Report	19	mg/l	0	0	0	0	0	0	0					<b> </b>
004	004-1 004-1	Total Residual Oxidants Flow	Concentrations - Daily Maximum	0.2 Roport	19 03	mg/l MGD	0 1.166	0 4.754	0 2.3022	0 3.3495	0 4.3515	0 5.1132	0 4.8842					<u> </u>
004	004-1	Flow	Loadings - Monthly Average Loadings - Daily Maximum	Report Report	03	MGD	1.166	4.754	4.33	3.3495	4.3515	6.99	4.8842					1
004	004-1	Total Residual Chlorine	Concentrations - Monthly Average	Report	19	mg/l	NODI-9	4.754 NODI-9	4.35 NODI-9	5.14 NODI-9	NODI-9	NODI-9	NODI-9					1
004	004-1	Total Residual Chlorine	Concentrations - Daily Maximum	0.2	19	mg/l	NODI-9											
004	004-1	Free Available Chlorine	Concentrations - Monthly Average	0.2	19	mg/l	NODI-9											
004	004-1	Free Available Chlorine	Concentrations - Daily Maximum	0.5	19	mg/l	NODI-9					$\perp$						
004	004-1	Time of Oxidant Addition	Concentrations - Daily Maximum	120	5B	Min/day	0	0	0	0	0	0	0					<b> </b>
004	004-4	Priority Pollutants	Concentrations - Daily Maximum	NDA	73	TUA	#N/A	#N/A	#N/A	#N/A	──							
005	005-1 005-1	Total Residual Oxidants	Concentrations - Monthly Average	Report	19 19	mg/l	0	0	0	0	0	0	0					<u> </u>
005	005-1	Total Residual Oxidants Flow	Concentrations - Daily Maximum Loadings - Monthly Average	0.2 Report	03	mg/l MGD	2.3	0 1.575	2.82	3.3	3.4	0 3.26	2.875					<u> </u>
005	005-1	Flow	Loadings - Daily Maximum	Report	03	MGD	4	2	3.7	3.3	3.4	4.1	3.8					1
005	005-1	Total Residual Chlorine	Concentrations - Monthly Average	Report	19	mg/l	NODI-9					1						
005	005-1	Total Residual Chlorine	Concentrations - Daily Maximum	0.2	19	mg/l	NODI-9					1						
005	005-1	Free Available Chlorine	Concentrations - Monthly Average	0.2	19	mg/l	NODI-9											
005	005-1	Free Available Chlorine	Concentrations - Daily Maximum	0.5	19	mg/l	NODI-9					<u> </u>						
		Time of Oxidant Addition	Concentrations - Daily Maximum	120	5B	Min/day	0	0	0	0	0	0	0	1				1
005	005-1 005-4	Priority Pollutants	Concentrations - Daily Maximum	NDA	73	TU₄	#N/A	#N/A	#N/A	#N/A								

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006	006-1	pH	Concentrations - Minimum	6.0	12	SU	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>└───</b>		
006	006-1	pH	Concentrations - Maximum	9.0	12	SU	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>├───</b>		<u> </u>
006	006-1	Total Copper	Concentrations - Monthly Average	1.0	19	mg/l	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		t — —		<b> </b>
006	006-1	Total Copper	Concentrations - Daily Maximum	1.0	19	mg/l	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>└──</b>		<u> </u>
006	006-1	Total Iron	Concentrations - Monthly Average	1.0	19	mg/l	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>├──</b>		<u> </u>
006	006-1	Total Iron	Concentrations - Daily Maximum	1.0	19	mg/l	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>├──</b>		<u> </u>
006		Flow	Loadings - Monthly Average	Report	03	MGD	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>├──</b>		<b></b>
	006-1	Flow	Loadings - Daily Maximum	Report	03	MGD	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C	NODI-C		<b>├──</b>		
009	009-1	Temperature	Concentrations - Monthly Average	Report	15	°F	49.1	44.1	49.8	57.1	66	77.2	83.5		<b>└──</b>		<u> </u>
009	009-1	Temperature	Concentrations - Daily Maximum	110	15	°F	52.6	48.5	55.9	60.7	69.3	79.8	85.9				
009	009-1	Flow	Loadings - Monthly Average	Report	03	MGD	257.2	233.8	164.06	163.6	146.6	225.52	134				
009	009-1	Flow	Loadings - Daily Maximum	Report	03	MGD	257.2	257.2	165.9	163.6	257.2	271.6	271.6				
009	009-2	Total Recoverable Metals	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	7.38	#N/A	#N/A	0.864	#N/A	#N/A	#N/A	#N/A	
009	009-2	Total Recoverable Metals	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	7.38	#N/A	#N/A	0.864	#N/A	#N/A	#N/A	#N/A	
012	012-1	Total Suspended Solids	Concentrations - Monthly Average	30	19	mg/l	19.0	11.0	16.0	4.0	17.0	8.0	4.0				
012	012-1	Total Suspended Solids	Concentrations - Daily Maximum	67	19	mg/l	19.0	11.0	16.0	4.0	17.0	8.0	4.0				
012	012-1	Oil & Grease	Concentrations - Monthly Average	9	19	mg/l	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B				
012	012-1	Oil & Grease	Concentrations - Daily Maximum	12	19	mg/l	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B	NODI-B				
012	012-1	Flow	Loadings - Monthly Average	Report	03	MGD	1.67	2.28	1.34	1.05	2.58	2.75	2.18		i l		
012	012-1	Flow	Loadings - Daily Maximum	Report	03	MGD	1.67	2.28	1.34	1.05	2.58	2.75	2.18				
013	013-2	рН	Concentrations - Minimum	6.0	12	SU	#N/A	#N/A	8.7	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	
013	013-2	рН	Concentrations - Maximum	9.0	12	SU	#N/A	#N/A	8.7	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	<u> </u>
013	013-2	Total Suspended Solids	Concentrations - Monthly Average	30	19	mg/l	#N/A	#N/A	15	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	<u> </u>
013	013-2	Total Suspended Solids	Concentrations - Daily Maximum	60	19	mg/l	#N/A	#N/A	15	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	<u> </u>
013	013-2	Oil & Grease	Concentrations - Monthly Average	10	19	mg/l	#N/A	#N/A	NODI-B	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	$\square$
013	013-2	Oil & Grease	Concentrations - Daily Maximum	15	19	mg/l	#N/A	#N/A	NODI-B	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	
013	013-2	Flow	Loadings - Monthly Average	Report	03	MGD	#N/A	#N/A	57.17	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	
013	013-2	Flow	Loadings - Daily Maximum	Report	03	MGD	#N/A	#N/A	57.17	#N/A	#N/A	NODI-C	#N/A	#N/A	#N/A	#N/A	$\vdash$
015	015-2	рН	Concentrations - Minimum	Report	12	SU	#N/A	#N/A	7.8	#N/A	#N/A	7.6	#N/A	#N/A	#N/A	#N/A	
015	015-2	рН	Concentrations - Maximum	Report	12	SU	#N/A	#N/A	7.8	#N/A	#N/A	7.6	#N/A	#N/A	#N/A	#N/A	$\square$
015	015-2	Total Suspended Solids	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	4	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Suspended Solids	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	4	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	
015	015-2	Hardness (as mg/l CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	550	#N/A	#N/A	650	#N/A	#N/A	#N/A	#N/A	
015	015-2	Hardness (as mg/l CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	550	#N/A	#N/A	650	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Arsenic	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Arsenic	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Nickel	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.012	#N/A	#N/A	0.012	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Nickel	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.012	#N/A	#N/A	0.012	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Silver	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.005	#N/A	#N/A	0.005	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Silver	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.005	#N/A	#N/A	0.005	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Zinc	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.01	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Zinc	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.01	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Cadmium	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Cadmium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Lead	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Lead	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Chromium	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.002	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Chromium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.001	#N/A	#N/A	0.002	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Copper	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.002	#N/A	#N/A	0.003	#N/A	#N/A	#N/A	#N/A	
015	015-2	Total Recoverable Copper	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.002	#N/A	#N/A	0.003	#N/A	#N/A	#N/A	#N/A	1
015	015-2	Flow	Loadings - Monthly Average	Report	03	MGD	#N/A	#N/A	2.64	#N/A	#N/A	0.1442	#N/A	#N/A	#N/A	#N/A	1
015	015-2	Flow	Loadings - Daily Maximum	Report	03	MGD	#N/A	#N/A	2.64	#N/A	#N/A	0.1442	#N/A	#N/A	#N/A	#N/A	1
015	015-2	Total Recoverable Mercury	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	0.000005	#N/A	#N/A	0.000005	#N/A	#N/A	#N/A	#N/A	1
015	015-2	Total Recoverable Mercury	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.000005	#N/A	#N/A	0.000005	#N/A	#N/A	#N/A	#N/A	<u> </u>
023	023-1	Temperature	Concentrations - Monthly Average	Report	15	°F	64.6	61.3	78.3	80.2	85.2	88.5	92.1	4		+	
023	023-1	Temperature	Concentrations - Daily Maximum	110	15	°F	69.9	81	81.4	83.1	89.3	93.7	98.1		/	+	
023															i — — — — — — — — — — — — — — — — — — —		+
	023-1	pH	Concentrations - Minimum	6.0	12	SU	8.3	8.1	8.5	8.5	8.5	8.5	7.2		<b>├───</b>		+
023	023-1	pH	Concentrations - Maximum	9.0	12	SU "	8.7	8.5	8.6	8.7	8.6	8.7	8.7		<b>└───</b>		<del> </del>
023	023-1	Hardness (as mg/I CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	220	210	210	240	250	220	240		<b>└───</b>	+	<del> </del>
023	023-1	Hardness (as mg/I CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	220	210	210	240	250	220	240		<b>├───</b>	+	+
023	023-1	Total Recoverable Iron	Concentrations - Monthly Average	Report	19	mg/l	5.96	2	6.5	1.36	1.22	1.42	1.08		<b>└───</b>	+	<del> </del>
023	023-1	Total Recoverable Iron	Concentrations - Daily Maximum	Report	19	mg/l	5.96 0.153	2	6.5 0.184	1.36 0.104	1.22 0.102	1.42 0.082	1.08		<b>├───</b>		<u> </u>
		Total Recoverable Copper	Concentrations - Monthly Average	Report	19	mg/l									i−−−−−	+	<del> </del>
023	023-1	Total Recoverable Copper	Concentrations - Daily Maximum	Report	19	mg/l	0.153	0.182	0.184	0.104	0.102	0.082	0.1		<b>├───</b>		<del> </del>
023	023-1	Flow	Loadings - Monthly Average	Report	03	MGD	4.8775	5.1192	7.5244	7.2002	9.4965	9.9452	10.341		<b>├───</b>		<del> </del>
023	023-1	Flow	Loadings - Daily Maximum	Report	03	MGD	6.011	7.597	10.842	8.79	13.14	13.32	11.94		<b>├───</b>	+	<del> </del>
023	023-1	Total Recoverable Mercury	Concentrations - Monthly Average	0.000051	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005		<b>┌───</b> ┤────		<u> </u>
023	023-1	Total Recoverable Mercury	Concentrations - Daily Maximum	0.0014	19	mg/l	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005		<b>└───</b>		l
023	023-2	Total Recoverable Selenium	Concentrations - Monthly Average	24.0	19	mg/l	#N/A	#N/A	0.005	#N/A	#N/A	0.005	#N/A	#N/A	#N/A	#N/A	
023	023-2	Total Recoverable Selenium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.005	#N/A	#N/A	0.005	#N/A	#N/A	#N/A	#N/A	L
		Total Recoverable Selenium (Fish Tissue)	Concentrations - Maximum	8.6	69	mg/kg	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A	#N/A	#N/A	
023	023-7			0.0		dry wt		1			i						
023	023-2							+	-								
023 023 023	023-2	Acute Toxicity	Concentrations - Maximum	1.00 0.278	73 19	TUA	#N/A #N/A	#N/A #N/A	1.0 #N/A	#N/A #N/A	#N/A #N/A	1.0 #N/A	#N/A #N/A	#N/A #N/A	#N/A #N/A #N/A	#N/A #N/A	

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023	023-4	Total Recoverable Zinc	Concentrations - Daily Maximum	0.278	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
023	023-4	Total Recoverable Chromium	Concentrations - Monthly Average	0.2	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
023	023-4	Total Recoverable Chromium	Concentrations - Daily Maximum	0.2	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
023	023-4	Total Residual Chlorine	Concentrations - Monthly Average	0.019	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
023	023-4	Total Residual Chlorine	Concentrations - Daily Maximum	0.019	19	mg/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
025	025-1	Temperature	Concentrations - Monthly Average	Report	15	°F	50.2	49.5	59.5	70	73.5	82.7	84.2					
025	025-1	Temperature	Concentrations - Daily Maximum	110	15	°F	50.5	58.9	60.7	73.1	76.3	84.6	86.2					
025	025-1	pH	Concentrations - Minimum	6.0	12	SU	8.2	8.1	8.1	8	8	8.3	7.2					
025	025-1	pH	Concentrations - Maximum	9.0	12	SU	8.2	8.2	8.2	8.2	8	8.3	8.3					
025	025-1	Flow	Loadings - Monthly Average	Report	03	MGD	5.269	4.46	4.55	6.991	5.575	8.46	6.215					
025	025-1	Flow	Loadings - Daily Maximum	Report	03	MGD	7.27	5.57	5.88	8.16	7.79	10.74	6.66					
025	025-2	Hardness (as mg/I CaCO3)	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	1345	#N/A	#N/A	2700	#N/A	#N/A		#N/A	#N/A	
025	025-2	Hardness (as mg/I CaCO3)	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	1480	#N/A	#N/A	2700	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Iron	Concentrations - Monthly Average	Report	19	mg/l	#N/A	#N/A	3.69	#N/A	#N/A	0.865	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Iron	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	3.69	#N/A	#N/A	0.865	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Selenium	Concentrations - Monthly Average	0.628	19	mg/l	#N/A	#N/A	0.009	#N/A	#N/A	0.028	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Selenium	Concentrations - Daily Maximum	Report	19	mg/l	#N/A	#N/A	0.009	#N/A	#N/A	0.028	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Copper	Concentrations - Monthly Average	0.315	19	mg/l	#N/A	#N/A	0.069	#N/A	#N/A	0.044	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Copper	Concentrations - Daily Maximum	0.315	19	mg/l	#N/A	#N/A	0.069	#N/A	#N/A	0.044	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Selenium (Fish Tissue)	Concentrations - Maximum	8.6	69	mg/kg dry wt	#N/A	#N/A	NODI-9	#N/A	#N/A	NODI-9	#N/A	#N/A		#N/A	#N/A	
025	025-2	Acute Toxicity	Concentrations - Maximum	1.00	73	TUA	#N/A	#N/A	1.0	#N/A	#N/A	0.0	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Mercury	Concentrations - Monthly Average	0.000051	19	mg/l	#N/A	#N/A	0.000006	#N/A	#N/A	0.000005	#N/A	#N/A		#N/A	#N/A	
025	025-2	Total Recoverable Mercury	Concentrations - Daily Maximum	0.0014	19	mg/l	#N/A	#N/A	0.000006	#N/A	#N/A	0.000005	#N/A	#N/A		#N/A	#N/A	



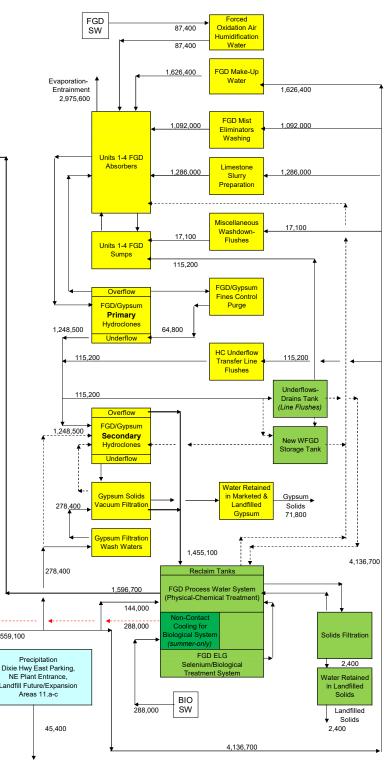
PRECIPITATION = AVERAGE (Annual Rainfall / 365 days)

Process Water Pond Emergency or Maintenance Activities Overflow

PMAC (Peak Monthly Average Conditions) Process Flows Represent Monthly Conditions Calculated as a Daily Average Flows = 28 days Normal Operations + 1 Day Maximum + 1 Day Maintenance

Ohio River

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Outfall #011 Pond Creek

a PPL company

MILL CREEK GENERATION STATION WATER BALANCE DIAGRAM - ELG+DIFFUSERS OPERATIONS PMAC CONDITIONS AND AVERAGE PRECIPITATION KPDES PERMIT KY0003221

### Louisville Gas & Electric Co MILL CREEK GENERATING STATION

#### **Rainfall Runoff Calculations**

#### Data

Area Coefficient for Rainfall Runoff 10 Year 24 Hour Rainfall Annual Average Rainfall

# Acres Cr 45

March 8, 2021

inch/24 hours 43 56 inch/year

Runoff Equations:

#### 1-Day Flow

(#Acres)(43560 ft2)/Acre)(Cr)(4.1 in/day)(1 ft/12 inch)(7.48 gal/ft3)(1MG/1000000 gal) MGD = (# Acres) x (Cr) x 0.1221858

30-Day Flow:

(#Acres)(43560 ft2)/Acre)(Cr)(43.56 in/yr)(1 ft/12 inch)(7.48 gal/ft3)(1MG/1000000 gal) MGD = (# Acres) x (Cr) x 0.003240434

Definition of Runoff Coefficients:

Vegetated Areas (without slope considerations) Gypsum & Loose Gravel (substations, rail beds, dam face, rock-faced slopes, etc.) Packed Surfaces (Coal, Bare Soil, Packed Gravel [Roads, Parking Areas, etc.]) Impervious Surface (Pavement, Roofs, Cooling Tower Direct Precip) Basin Surfaces

#### Louisville Gas & Electric Co MILL CREEK GENERATING STATION

#### **KPDES OUTFALLS DESCRIPTION** Internal/External Outfall Location Once-Thru Cooling Water & Process Water Pond(s) Discharge to Ohio River Ohio River Discharge Structure 001 External 002 Process Water Pond(s) Discharge (Internal Outfall #002 to Outfall #001) NEW: Process Water Ponds Discharge to Outfall 001 Pond Discharge into Outfall 001 Interna EXISTING: Ash Pond Discharge to Outfall 001 Pond Discharge into Ash Pond Internal 003 Unit 2 Cooling Tower Blowdown Internal Outfall to NEW: Cooling Tower Blowdown Discharge to Outfall 001 Internal Pipe Discharge into Outfall 001 EXISTING: Cooling Tower Blowdown Discharge to Ash Pond Internal Pipe Discharge into Ash Pond 004 Unit 3 Cooling Tower Blowdown External to Ohio River External Pipe Discharge to Ohio River 005 Unit 4 Cooling Tower Blowdown External to Ohio River External Pipe Discharge to Ohio River 006 Runoff Area not designated (Boiler Chemical Cleaning Wastewaters) Internal na or 006=Frac Tanks 007 Non-Contact Runoff - Plant West Powerhouse Roof/Downhill Slopes Runoff to Ohio River External Ditch to Ohio River 008 Runoff Area not designated (MSD Sanitary Connection) External Sewer Manhole 009 Plant River Water Intake External Intake Screenhouse Stormpipe-Ditch to Mill Creek & Non-Contact Runoff -North Plant Maint/Parking/Entry Road Areas to Mill Creek 010 External MSD Pumping Station Stormpipe-Ditch Adjacent/Under 011 Non-Contact Runoff- East Entry/Parking/Future Landfill Areas to Pond Creek External 31W (Dixie Hwy) Construction Runoff Settling Pond Discharge to Ohio River Pond Discharge to Ohio River 012 External 013 Active Landfill A Settling Basin Discharge to Ohio River External Pond Discharge to Ohio River Non-Contact Runoff - Switchyard/Powerhouse NW Side to Ohio River Stormpipe-Ditch to Ohio River 014 External 015 Non-Contact Runoff - Closed Ash Treatment Basin NW External Slopes to Ohio River External Ditch to Ohio River Storm CatchBasin into Pipe to Ohio 016 Non-Contact Runoff - Closed Landfill B to Valley Village Cutoff to Ohio River External River Non-Contact Runoff - Closed Ash Treatment Basin West External Slopes to Ohio River Ditch to Ohio River 017 External 018 Non-Contact Runoff - Process Pond NW External Slopes to Ohio River Ditch to Ohio River External Non-Contact Runoff - Riverbank Slopes West of Unit 2 CT to Ohio River Ditch to Ohio River 019 External 020 Non-Contact Runoff - Riverbank Slopes West of Unit 4 CT to Ohio River External Ditch to Ohio River 021 Non-Contact Runoff - Riverbank Slopes West of Unit 3 CT to Ohio River External Ditch to Ohio River 022 Non-Contact Runoff - Yard Area SW of Unit 3 CT to Ohio River External Ditch to Ohio River



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### Plant Property Areas - Rainfall Runoff Calculations

(Arranged by Outfalls - Reflects Construction Changes Completed by 2022) **AREA** Outfall 001 - Once-Thru Cooling Water & Process Water Pond(s)/Ash Pond Discharge to Ohio River 1 1.a Powerhouse Roof Drains (incl Old Admin Bldg) Powerhouse West Side/Below-Transformers/Deck Area Runoff 1.b Outfall 002 - Process Water Pond(s)/Ash Pond Discharge to Outfall #001 (#002-1) & Direct Discharge #002-2 to Ohio River 2 Process Water Ponds (Previous Ash Pond Areas) 2.a Powerhouse West SideTransformer Deck Area (concrete) 2.b New Warehouse (old Unit 1-2 FGD/Equipment) Runoff Areas 2.c Coal Yard/Pile Areas 2.d Limestone Pile, Slurry Prep & FGD Areas Drainage 2.e 2.f Landfill - North Expansion --- (Pre-Expansion Landfill Areas Runoff Continue to Outfall 013) 3 Outfall 003 - Unit 2 Cooling Tower Blowdown (includes Tower Precipitation) 4 Outfall 004 - Unit 3 Cooling Tower Blowdown (includes Tower Precipitation) Outfall 005 - Unit 4 Cooling Tower Blowdown (includes Tower Precipitation) 5 Outfall 006 - Boiler Chemical Cleaning Wastes - Runoff Area not designated 6 7 Outfall 007 - Non-Process Runoff - Plant Powerhouse West Roof Runoff to Ohio River Outfall 008 - Facility Sanitary Wastewaters to Louisville MSD - Runoff Area not designated 8 Outfall 009 - Plant Intake - Screenhouse/Parking 9 Outfall 010 - Non-Process Runoff -North Plant Maintenance/Parking/Entry Road Areas to Mill Creek 10 10.a Drainage to Parking Lot Oil-Water Skimmer 10.b Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Skimmer (Discharges Combine) 10.c Watson Lane Entrance Roadway Areas **Frost School Property** 10.d Outfall 011 - Non-Process Runoff- East (Dixie Hwy) Entrances, Contractor Parking & Railroad Wye Areas to Pond Creek 11 11.a **Dixie Highway Plant Entrance Road Areas** 11.b Railroad Wve Area 11.c **Dixie Highway Construction Entrance Areas** Outfall 012 - GPP Runoff Pond (Old Construction Runoff Pond) Discharge to Ohio River 12 Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate 12.a Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackout 12.b 12.c Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas 12.d 12.e Cooling Towers 3-4 Areas (excl structures footprint) 12.f FGD-PWS Buildings, Tanks, and Adjacent Areas Clearwell 12.a Outfall 013 - Active Landfill A Settling Basin Discharge to Ohio River 13 Outfall 014 - Non-Process Runoff - Switchyard/Powerhouse NW Side to Ohio River 14 Outfall 015 - Non-Process Runoff - Closed-Capped North Ash Pond & Ash Pond NorthWest External Slopes to Ohio River 15 15.a Vegetated Areas Including Lower Access Roads North Closed-Capped (Old) Ash Pond Runoff to Outfall 015 15.b 16 Outfall 016 - Valley Village Cutoff Entrance Road Woods, Fields and Rail-Loop Covered Landfill Runoff to Ohio River Dixie Highway Plant Entrance Road Areas (from Receiving Warehouse Highpoint to Woods/Frost-School Highpoint Areas) 16.a Covered Landfill Areas within (Old/Closed) Railroad Inner Loop 16.b 17 Outfall 017 - Uncontaminated Runoff - Closed Ash Pond West External Slopes to Ohio River Outfall 018 - Uncontaminated Runoff - Process Pond NW External Slopes to Ohio River 18 19 Outfall 019 - Uncontaminated Runoff - Riverbank Slopes West of Unit 2 CT to Ohio River 20 Outfall 020 - Uncontaminated Runoff - Riverbank Slopes West of Unit 4 CT to Ohio River 21 Outfall 021 - Uncontaminated Runoff - Riverbank Slopes West of Unit 3 CT to Ohio River 22 Outfall 022 - Uncontaminated Runoff - Yard Area SW of Unit 3 CT to Ohio River 23 Non-Point, Non-Process Area Runoff - North Slopes of Ash Pond Outside Floodwall to MSD Ditch to Ohio River 24 Non-Point, Non-Process Area Runoff - Riverbanks below West Slopes of ATB to Screenhouse Areas Runoff to Ohio River 25 Outfall 025 Non-Process Area Runoff - Closed/Capped Ashpond Hardscape Area Stormwater Runoff to Diffuser to Ohio River 26 Non-Point, Non-Process Area Runoff - Riverbanks Below West Slopes from Screenhouse to Coal Barge Unloader Areas Non-Point, Non-Process Area Runoff - Dixie Highway West Roadside Areas to Aesthetic Berm to Pond Creek 27 TOTAL SITE PROPERTY

Pre-Frost Property Total Site

626.0 acres 584.8 acres

Area #	Source	Runoff Description	Cr	# Acres	1-Day Max (MGD)	Average) (MGD)	74 of 307 Imbei
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#### Outfall 001 - Once-Thru Cooling Water & Process Water Pond(s)/Ash Pond Discharge to Ohio River

Flows to Once-Thru Cooling Return to River Outfall #001

1

2

	·	Total AREA	1	acres	9.51		
1.a	Powerhouse Roof Drains (incl Old Admin Bldg)						
1	Roof Area	Impervious Surface		0.85	4.91	0.5102	0.0135
1.b	Powerhouse West Side/Below-Transformers/Deck Area Runoff						
1	Grass-Field & Gravel Areas	Vegetated Area		0.25	2.60	0.0795	0.0021
2	Transformer (Unit 1-2 Main Aux) Pad with Manual Stormwater Drains to Area Below	Impervious Surface		0.85	0.03	0.0036	0.0001
3	Unit 2 Cooling Tower SW Access Area, Maintenance Bldg/Consumables Warehouse Access Areas, Ash Pond Office Area	Impervious Surface		0.85	1.57	0.1627	0.0043
4	Maintenance Bldg/Consumables Warehouse Buildings Roofs	Impervious Surface		0.85	0.39	0.0406	0.0011
	Area SUBTOTAL				9.51	0.2864	0.0076

#### Outfall 002 - Process Water Pond(s)/Ash Pond Discharge to Outfall #001 (#002-1) & Direct Discharge #002-2 to Ohio River

#### Flows to Process Water Pond(s)/Ash Pond Outfall #002 187.57 Total AREA 2 acres Process Water Ponds (Previous Ash Pond Areas) 2.a 0.0817 0.0022 Knock-out Pond ---Basin Surface Basin Surface 1 1.0 0.67 KO Pond --- Perimeter Road and Inner Slope Areas 2 Impervious Surface 0.85 0.82 0.0851 0.0023 Process Water Pond ---Basin Surface 0.0594 2.2399 3 Basin Surface 1.0 18.33 Process Water Pond --- Perimeter Road and Inner Slopes 0.85 10.70 0.0295 4 Impervious Surface 1.1116 Closed-Capped Ash Pond Runoff into Process Water Pond Area 0.25 40.50 0.0328 5 Vegetated Area 1.2372 Unit 2 Cooling Tower Chemical Bldg, Adjacent Areas and Closed-Capped Ash 6 Pond (Paved) Areas 0.85 7.34 0.7626 0.0202 Impervious Surface Area SUBTOTAL 78.37 5.5181 0.1463 Powerhouse West SideTransformer Deck Area (concrete) 2.b Concrete Deck, bermed, runoff drains into plant sumps to Process Pond Impervious Surface 0.85 0.70 0.0727 0.0019 New Warehouse (old Unit 1-2 FGD/Equipment) Runoff Areas 2.c 1 Drainage Ditch to Process Water Pond Basin Surface 10 0.22 0.0268 0.0007 2 New Warehouse (Old FGD 1-2 Absorbers/Equipment) Drainage Area Impervious Surface 0.62 0.0641 0.0017 0.85 Area SUBTOTAL 0.84 0.0909 0.0024 2.d **Coal Yard/Pile Areas** Pond Surface (Combined Coal+Limestone Runoff Pond) Basin Surface 1.0 1.68 0.2047 0.0054 2 Coal Pile Coal Pile Storage Area Packed Surface 14 97 0 9145 0.0243 0.5 а Impervious Surface b Buildings & Roofs 0.85 2.02 0.2097 0.0056 Railroad Portion within Coal Yard Areas Packed Surface 0.5 2 67 0 1630 0.0043 c d Coal Yard Flat Access Areas Packed Surface 0.5 5.71 0.3486 0.0092 Pond Inward Slopes toward Rail-Loop Landfill (to Substation) 9.25 0.2824 е Vegetated Area 0.25 0.0075 Area SUBTOTAL 36.28 2.1230 0.0563 Limestone Pile, Slurry Prep & FGD Areas Drainage Limestone Pile, Slurry Prep & FGD Areas Drainage 2.e 1 0.0478 Limestone Slurry Tanks Basin Surface 0.39 0.0013 а Limestone Slurry Eqpt/Vac.Truck Buildings Roofs & Adj Roadways 0.85 0.1705 0.0045 b Impervious Surface 1.64 2 Limestone Pile, Slurry Prep & FGD Areas Drainage Limestone Pile Storage Packed Surface 0.39 0.0236 0.0006 0.5 Limestone Pile Adjacent Roadways (incl Lab/Annex/east 1/2 roofs) Impervious Surface 0.1723 0.0046 b 0.85 1.66 Limestone Slurry Prep Building Roofs 0.85 0.52 0.0541 Impervious Surface 0.0014 С Unit 3 ESPs, PJFFs, FGDs and Chimney Impervious Surface 3.11 0.3228 0.0086 d 0.85

Area SUBTOTAL

Impervious Surface

Impervious Surface

Packed Surface

0.85

0.85

0.5

4.94

0.25

0.15

13.05

0.5133

0.0257

0.0092

1.3392

0.0136

0.0007

0.0002

0.0355

Landfill - North Expansion --- (Pre-Expansion Landfill Areas Runoff Continue to Outfall 013) 2.f

Unit 4 ESPs, PJFFs, FGDs and Chimney

Ammonia Storage/Eqpt Buildings & Adj Pavement/Parking

Gravel/Drainage Area South of Ammonia Storage Areas

е f

g

1	Collection Basin-North Pond #2 -Stormwater & Leachate					
а	Pond Surface	Basin Surface	1	4.65	0.5685	0.0151
b	Pond Inward Slopes (2105-2016 Contours-Status)	Packed Surface	0.5	4.92	0.3006	0.0080
с	Parking Lot	Packed Surface	0.5	4.43	0.2706	0.0072
d	Landfill Sloped Areas to Pond	Vegetated Area	0.25	21.20	0.6474	0.0172
е	Below Landfill Areas to Pond (perimeter areas along entrance road, pond andtowardDixie Hwy)	Vegetated Area	0.25	6.13	0.1873	0.0050
2	Sediment Basin-Northwest Pond #3 (future)					
а	Pond Surface	Basin Surface	1	0.90	0.1095	0.0029
b	Pond Inward Slopes	Packed Surface	0.5	1.20	0.0735	0.0020
с	Landfill Sloped Areas to Pond	Vegetated Area	0.25	10.33	0.3154	0.0084
d	Below Landfill Areas to Pond (north pavement, gravel & coalyard office building areas)	Packed Surface	0.5	1.76	0.1073	0.0028
3	Fly Ash Silos Areas					
а	Fly Ash Silos- Truck Loadout Roadway Drainage	Impervious Surface	0.85	0.30	0.0307	0.0008
b	PJFF-PAC/Fly Ash Silos- Truck Loadout Washdown Areas Drainage	Impervious Surface	0.85	1.07	0.1114	0.0030
с	PJFF-PAC/Fly Ash Silos- Truck Loadout Washdown Areas Drainage	Packed Surface	0.5	1.46	0.0890	0.0024
	Area SUBTOTAL			58.34	2.8113	0.0746

Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) Page 175 of 307 Imber

Imber

Area #		Sauraa	Dunoff Deci-ti	0-	# ^	1 Day Ma	Daily
Area #		Source	Runoff Description	Cr	# Acres	1-Day Max	(Annual Average)
						(MGD)	(MGD)
Outfall	003 ·	- Unit 2 Cooling Tower Blowdown (includes Tower Precipitation	n)				
				1	1 1		
3	a.	Unit 2 Cooling Tower Deck & Basin-Pumps (within Process Pond Drainage)	Impervious Surface	0.85	0.68	0.0707	0.0019
Outfall	004 ·	- Unit 3 Cooling Tower Blowdown (includes Tower Precipitation	n)				
4	а	Unit 3 Cooling Tower Deck & Basin-Pumps (within Runoff to #012 CR-Pond)	Impervious Surface	0.85	0.81	0.0845	0.0022
			I I				
Outfall	005 ·	- Unit 4 Cooling Tower Blowdown (includes Tower Precipitation	n)				
				0.05		0.4040	
5	а	Unit 4 Cooling Tower Deck & Basin-Pumps (within Runoff to #012 CR-Pond)	Impervious Surface	0.85	1.00	0.1042	0.0028
Outfall	<mark>006</mark> ·	- Boiler Chemical Cleaning Wastes - Runoff Area not designa	ated				
Outfall	007 ·	- Non-Process Runoff - Plant Powerhouse West Roof Runoff	to Ohio River				
7		Plant West-side Powerhouse Roof & Downhill Slopes Runoff to River	· (Below Old Annex/Sta.La	b Area)			
	a	Gravel Area downhill and/or flat from Powerhouse/Old Lab-Annex Buildings	Packed Surface	0.5	1.48	0.0901	0.0024
	b c	Transformer Pad (Manual Stormwater Drains to slopes below) Vegetated Slopes & Gravel Drive Downhill to Riverbank	Impervious Surface Vegetated Area	0.85	0.05	0.0048	0.0001
		Area SUBTOTAL	5		3.91	0.1679	0.0045
Outfall	<mark>008</mark> ·	<ul> <li>Facility Sanitary Wastewaters to Louisville MSD - Runoff Ar</li> </ul>	rea not designated				
Outfall	009 ·	- Plant Intake - Screenhouse/Parking					
9		Plant Intake Screenhouse-Pumphouse/Parking					
5	a.	River Intake-Sreenhouse Building Roof Drains	Impervious Surface	0.85	0.20	0.0208	0.0006
	b.	Gravel Roadway & Parking Areas (Roadside)	Packed Surface	0.5	0.06	0.0035	0.0001
		Area SUBTOTAL			0.26	0.0243	0.0006
Outfall	010	- Non-Process Runoff -North Plant Maintenance/Parking/Ent	ry Road Areas to Mill (	Creek			
	<mark>010</mark> ·	- Non-Process Runoff -North Plant Maintenance/Parking/Enti	-				
Outfall	<mark>010 ·</mark>	- Non-Process Runoff -North Plant Maintenance/Parking/Enti North Plant Maintenance Areas, Employee Parking & Plant Entrance	Road Areas (from Watson	Lane)	50.00		
10		North Plant Maintenance Areas, Employee Parking & Plant Entrance	-	Lane)	90.97		
		North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer	Road Areas (from Watson	Lane)	90.97		
10	a	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings	Road Areas (from Watson Total AREA 10	Lane) acres		0 7329	
10	<b>a</b> 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water	Road Areas (from Watson Total AREA 10	Lane) acres	7.06	0.7329	0.0194
10	a	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer	Road Areas (from Watson Total AREA 10	Lane) acres		0.7329	
10	<b>a</b> 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer	Road Areas (from Watson Total AREA 10	Lane) acres	7.06		0.0194
10	<b>a</b> 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface	Lane) acres 0.85 0.85	7.06	0.2502	0.0194
10	<b>a</b> 1 2 3 4	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface Packed Surface Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25	7.06 2.41 0.26 0.62	0.2502 0.0158 0.0189	0.0194 0.0066 0.0004 0.0005
10	<b>a</b> 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface	Lane) acres 0.85 0.85 0.5	7.06 2.41 0.26	0.2502	0.0194 0.0066 0.0004
10	<b>a</b> 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Area SUBTOTAL Drainage from Areas that Combine into Discharge from Parking Lot Oil-Wate	Road Areas (from Watson         Total AREA       10         Impervious Surface	Lane) acres 0.85 0.85 0.5 0.25 0.25	7.06 2.41 0.26 0.62 0.78	0.2502 0.0158 0.0189 0.0239	0.0194 0.0066 0.0004 0.0005 0.0006
10	a 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Tranage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25 ombine)	7.06 2.41 0.26 0.62 0.78 11.13	0.2502 0.0158 0.0189 0.0239 1.0418	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276
10	a 1 2 3 4 5 0 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Vegetated Area         Packed Surface	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.25	7.06 2.41 0.26 0.62 0.78 11.13	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276
10	a 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25 ombine)	7.06 2.41 0.26 0.62 0.78 11.13	0.2502 0.0158 0.0189 0.0239 1.0418	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276
10	a 1 2 3 4 5 0 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Coll-Water Skimmer Railroad Portion from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Area         Vegetated Area         Packed Surface         Vegetated Area         Vegetated Area         Vegetated Area	acres           0.85           0.85           0.5           0.25           ombine)           0.5           0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023
10	a 1 2 3 4 5 0 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Area         Vegetated Area         Vegetated Area         Impervious Surface         Impervious Surface         Impervious Surface         Vegetated Area         Impervious Surface         Impervious Surface	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037
10	a 1 2 3 4 5 0 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Area         Vegetated Area         Packed Surface         Vegetated Area         Vegetated Area         Vegetated Area	acres           0.85           0.85           0.5           0.25           ombine)           0.5           0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010
10	a 1 2 3 4 5 0 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Area         Vegetated Area         Vegetated Area         Impervious Surface         Impervious Surface         Impervious Surface         Vegetated Area         Impervious Surface         Impervious Surface	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037
10	a 1 2 3 4 5 5 0 1 2 3 3 4 4 4	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Chara Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       Impervious Surface         Impervious Surface       Packed Surface         Vegetated Area       Vegetated Area         Vegetated Area       Packed Surface         Vegetated Area       Impervious Surface	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 3 4 2 3 4 1 2 3 4 1 2 3 4 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation to Vater Skimmer Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek Mates Alance Entrance Roadway Areas Employee Parking Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Area       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371 0.0010
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10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 3 4 2 3 4 1 2 3 4 1 2 3 4 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Coult Water Skimmer Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek Mates Lane Entrance Roadway Areas Employee Parking Runoff to Wetland to Mill Creek North Plant Entrance Road Pavement Runoff to Ditches to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Area       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371 0.0010
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 2 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Texture Plant Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint twith Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek Fields Westward between Ash Pond/Floodwall and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek Fields Eastward between Wetland and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Ater Skimmer (Discharges Cr       10         Packed Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.2	7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22           6.55           0.90           1.58           10.53           19.11	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216 0.5836	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371 0.0010 0.0371 0.0025 0.0044 0.0085 0.0155
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 2 3 4 2 3 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Texture Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Vagetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint twith Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek Fields Westward between Ash Pond/Floodwall and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek Fields Eastward between Wetland and Watson Lane Entrance Road with Runoff to Wetland and Watson Lane Entrance Road with	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Surface       10         Vegetated Area       10         Negetated Area       10         Vegetated Area       10         Vegetated Area       10         Impervious Surface       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Vegetated Area       10         Vegetated Area       10 <t< td=""><td>Lane) acres acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.85 0.25 0.85 0.25 0.85 0.25</td><td>7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22           <b>6.55</b>           0.90           1.58           10.53</td><td>0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216</td><td>0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371 0.0010 0.0371</td></t<>	Lane) acres acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.85 0.25 0.85 0.25 0.85 0.25	7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22 <b>6.55</b> 0.90           1.58           10.53	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216	0.0194 0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0037 0.0010 0.0371 0.0010 0.0371

# 10.d Frost School Property Vegetated Area 0.25 41.18 1.2579 0.0334

Case No. 2022-00402 Attachment 3 to Response to JI-1 Question No. 1.101(f-h) of 307 øgi€ Imber Area # Source Runoff Description Cr # Acres 1-Day Max (Annual Average) (MGD) (MGD) Outfall 011 - Non-Process Runoff- East (Dixie Hwy) Entrances, Contractor Parking & Railroad Wye Areas to Pond Creek 11 East Plant Entrance Roads (from Dixie Hwy) Areas, Contractor/Parking & Railroad Wye Runoff Areas Total AREA 11 acres 34.84 11.a **Dixie Highway Plant Entrance Road Areas** Railroad Portion from/along West/North Side of Roadway from Dixie Hwy (US-31W) to Shipping/Receiving Warehouse Highpoint Area Grass Fields between Railroad & Plant Entrance Road from Dixie Hwy to 0.0765 0.0020 Packed Surface 0.5 1.25 1 Shipping/Receiving Highpoint Area 2 Vegetated Area 0.25 6.35 0.1940 0.0051 Plant Entrance Road from Dixie Hwy (US-31W) to Shipping/Receiving Warehouse Highpoint Area Impervious Surface 0.85 0.94 0.0974 0.0026 3 Receiving Warehouse Building Roof & Adjacent Paved Area Grass Fields between Plant Entrance Road & North Property Border from Dixie Hwy to Shipping/Receiving Highpoint Area Impervious Surface 0.85 0.82 0.0849 0.0023 4 5 Vegetated Area 0.25 5.49 0.1677 0.0044 Area SUBTOTAL 14.85 0.0165 0.6204 Railroad Wye Area 11.b Railroad Portion between Railroad Wye Area and Landfill Packed Surface 0.5 0.50 0.0303 0.0008 1 2 Railroad Wye Area 0.5 0.2967 0.0079 Packed Surface 4.86 Area SUBTOTAL 5.35 0.3270 0.0087 **Dixie Highway Construction Entrance Areas** 11.c Railroad Tracks Portion along Contractor Entrance Road Portion of Railroad Wye Packed Surface 0.5 0.73 0 0446 0.0012 1 Grass Slopes Between Consruction Entrance Road and Contractor Parking Lot to High 0 0035 Point Near Coalvard Offices 0.25 4 32 0 1321 2 Vegetated Area Construction Entrance (North) and Contractor Parking to Highpoint Near Coalyard Offices Parking Area Packed Surface 9.58 0.5855 0.0155 3 0.5 Area SUBTOTAL 14.64 0.7621 0.0202 Outfall 012 - GPP Runoff Pond (Old Construction Runoff Pond) Discharge to Ohio River GPP Runoff Pond (Old Construction Runoff Pond) Areas 12 Total AREA 12 31.09 acres 12.a Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate 2.15 0.2627 0.0070 1 Pond Surface Basin Surface 1 2 Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Vegetated Area 0.25 1.49 0.0454 0.0012 Coal Unloader Belt Buildings 3 Impervious Surface 0.85 0.25 0.0256 0.0007 4 Roadway Pavement East of Construction Runoff Pond Impervious Surface 0.85 0.32 0.0333 0.0009 Area SUBTOTAL 4.20 0.3670 0.0097 12.b Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackout GPP Building Roofs Impervious Surface 0.85 0.37 0.0389 0.0010 Gypsum Slurry Tanks & Pavement Adjacent Impervious Surface 0.85 1.30 0.1351 0.0036 2 3 GPP Gypsum Stackout Piles/Pavement Impervious Surface 0.85 2 25 0 2334 0.0062 Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor 4 Packed Surface 0.5 3.21 0 1961 0.0052 New GPP Building/Pavement Area 5 Impervious Surface 0.85 2.18 0.2260 0.0060 Area SUBTOTAL 9.31 0.6035 0.0160 12.c Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Impervious Surface 0.85 1.10 0.1147 0.0030 12.d Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Packed Surface 0.5 2.58 0.1579 0.0042 Buildings (to North) Roofs & Paved Roadway 2 Impervious Surface 0.85 0.45 0.0468 0.0012 Area SUBTOTAL 3.03 0.2047 0.0054 12.e Cooling Towers 3-4 Areas (excl structures footprint) 1 Cooling Towers 3-4 Pavement Perimeter Roads (north/east/south) Impervious Surface 0.85 1.18 0.1229 0.0033 Cooling Towers 3-4 Gravel Areas Adjacent 2 Packed Surface 0.5 2.67 0.1632 0.0043 Chemical Building Roof 3 Impervious Surface 0.85 0.15 0.0152 0.0004 Area SUBTOTAL 0.3013 0.0080 4.00 12.f FGD-PWS Buildings, Tanks, and Adjacent Areas New FGD-PWS Building 0.85 0.1079 0.0029 1 Impervious Surface 1.04 Flat Paved Areas (in Old Pond Footprint After Excavated and Filled) Impervious Surface 2 0.85 4.47 0.4642 0.0123 3 Paved Roadway Along E-Pond from Coalyard Offices to DSP Impervious Surface 0.5 1.26 0.0768 0.0020 Yard Auxiliary (GPP) Transformers and Fenced Gravel Area 0.0217 4 Packed Surface 0.5 0.35 0.0006 Area SUBTOTAL 7.12 0.6705 0.0178 12.g Clearwell 1.86 Clearwell Pond Surface Basin Surface 0.2273 0.0060 Packed Surface Clearwell Pond Inward Slopes 0.46 0.0282 0.0007 2 0.5 0.2555 Area SUBTOTAL 2.32 0.0068

Area # Source Runoff Description Cr # Ar	res 1-Day Max (MGD)	(Annual Average) (MGD)
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## Outfall 013 - Active Landfill A Settling Basin Discharge to Ohio River

13	Landfill Settling Pond #1 (Original Construction, SW Corner) - Runoff	Areas				
а	Landfill Runoff Pond #1 Surface	Basin Surface	1	0.77	0.0935	0.0025
b	Pond-to-Crest Inward Slopes	Vegetated Area	0.25	1.82	0.0555	0.0015
С	South Collector Area Channel (Along/to South Property Line)	Vegetated Area	0.25	4.90	0.1497	0.0040
d	Aesthetic Berm-to-Active Landfill Area (Drains to South Collector Area Channel)	Vegetated Area	0.25	2.49	0.0760	0.0020
е	Primary Landfill (both Active & Covered) Vegetated Areas Draining to Runoff Pond #1 and/through South Collector Area Channel	Vegetated Area	0.25	56.97	1.7401	0.0461
f	Finished/Covered/Vegetated Primary Landfill Areas Draining to Riverbank to Ohio River extending to Outfall #013	Vegetated Area	0.25	13.36	0.4081	0.0108
	Area SUBTOTAL			80.30	2.5229	0.0669

#### Outfall 014 - Non-Process Runoff - Switchyard/Powerhouse NW Side to Ohio River

Ļ	Storm Sewer to Ohio River from Substation Areas, Units 1-2, Water T	reatment and Admin Bu	uildings-Parking			
а	Substation/Switchyard	Packed Surface	0.5	9.56	0.5838	0.0155
b	Railroad Portion along Plant Substation Eastward toward Units 1-2 Areas	Packed Surface	0.5	0.62	0.0377	0.0010
с	Roadway/Parking (Triangular) Area Between Railroad Tracks Adj. Substation to FGD Purge Ditch from Units 1-2 Old FGD Eqpt Area	Impervious Surface	0.85	0.79	0.0816	0.0022
d	Units 1-2 ESPs and Old Administration Building Roadway-Parking Pavement Areas (including Old Chimney)	Impervious Surface	0.85	1.99	0.2065	0.0055
е	New Administration Building, Water Treatment and Units 1-2 Absorbent Silos Buildings-Pavement Areas	Impervious Surface	0.85	2.12	0.2206	0.0059
	Area SUBTOTAL			15.07	1.1302	0.0300

#### Outfall 015 - Non-Process Runoff - Closed-Capped North Ash Pond & Ash Pond NorthWest External Slopes to Ohio River

## 15 Northwest Closed Ash Pond External Slopes and Riverbank Non-Process Runoff to Ohio River Total AREA 15 acres

	TOTALANCA	10	20/03	0.04		
15.a a Vegetated Areas Including Lower Access Roads	Vegetated Area		0.25	0.91	0.0277	0.0007
15.b b North Closed-Capped (Old) Ash Pond Runoff to Outfall 015	Vegetated Area		0.25	4.63	0.1415	0.0038
Area SI	IBTOTAL			5.54	0.1691	0.0045

### Outfall 016 - Valley Village Cutoff Entrance Road Woods, Fields and Rail-Loop Covered Landfill Runoff to Ohio River

#### 16 Dixie Highway Main Entrance Areas

	Total AREA	16	acres	96.88
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5 54

	Railroad Portion along Northeast Rail-Loop toward Entrance Road and Valley					
1	Village Stormpipe Inlet	Packed Surface	0.5	1.47	0.0901	0.002
2	Grass Slopes Between Entrance Road and Rail Loop	Vegetated Area	0.25	4.69	0.1433	0.003
3	Plant Entrance Roadway Pavement	Impervious Surface	0.85	0.63	0.0657	0.001
4	Woods adjacent Frost Middle School and Fields North/adjacent Roadway	Vegetated Area	0.25	40.97	1.2516	0.033
	Area SUBTOTAL			47.77	1.5507	0.041
.b	Covered Landfill Areas within (Old/Closed) Railroad Inner Loop					
1	Maintenance Laydown Areas	Packed Surface	0.5	31.56	1.9283	0.051
2	Vegetated Fields	Vegetated Area	0.25	17.55	0.5360	0.014

Outfall 017 - Uncontaminated Runoff - Closed Ash Pond West External Slopes to Ohio River										
	Closded Ash Treatment Basin West External Slopes to Lower Access Road									
17 a	from NW Property Corner to Outfall #002-2 (to Ohio River)	Vegetated Area	0.25	3.02	0.0924	0.0025				

# Outfall 018 - Uncontaminated Runoff - Process Pond NW External Slopes to Ohio River 18 a Process Pond NW External Slopes to Lower Access Road from Channel of Outfall #002-2 below Ash Pond Office Area (to Ohio River) Vegetated Area 0.25 1.88 0.0575 0.0015

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Area #	<mark>19 -</mark>	Source Uncontaminated Runoff - Riverbank Slopes West of Unit 2 (	Runoff Description	Cr	# Acres	1-Day Max (MGD)	(Annual (Annual Average) (MGD)			
19	a	Ash Treatment Basin West Slopes to Lower Access Road below Ash Sluice/Sumps Piperack and Access Road to Ash Pond Office Area	Vegetated Area	0.25	2.13	0.0650	0.0017			
Outfall 020 - Uncontaminated Runoff - Riverbank Slopes West of Unit 4 CT to Ohio River										
20	a	Riverbank Slopes West of Unit 4 Cooling Tower	Vegetated Area	0.25	1.99	0.0607	0.0016			
Outfall 021 - Uncontaminated Runoff - Riverbank Slopes West of Unit 3 CT to Ohio River										
21	a	Riverbank Slopes West of Unit 3 Cooling Tower	Vegetated Area	0.25	1.53	0.0468	0.0012			
Outfall 022 - Uncontaminated Runoff - Yard Area SW of Unit 3 CT to Ohio River										
22	а	Yard Areas SouthWest of Unit 3 Cooling Tower	Vegetated Area	0.25	2.21	0.0675	0.0018			
Non-Point, Non-Process Area Runoff - North Slopes of Ash Pond Outside Floodwall to MSD Ditch to Ohio River										
23	a	Undeveloped Areas South & East of North Slopes of ATB Outside Floodwall to MSD Ditch (no discharge ditch)	Vegetated Area	0.25	15.03	0.4592	0.0122			
Non-Point, Non-Process Area Runoff - Riverbanks below West Slopes-Ash Pond to Screenhouse Areas Runoff to Ohio River										
24	а	Undeveloped Riverbanks Areas Below West Slopes of Ash Pond to Screenhouse	Vegetated Area	0.25	16.68	0.5094	0.0135			
Outtall 0	<mark>25  </mark>	Non-Process Area Runoff - Closed/Capped Ashpond Hardsc	ape Area Stormwater I	Runoff to D	ittuser to		er			
25	а	Closed/Capped Ashpond Hardscape Area Stormwater Runoff to Diffuser	Impervious Surface	0.85	0.54	0.0563	0.0015			
Non-Poi	nt, I	Non-Process Area Runoff - Riverbanks Below West Slopes fr	om Outfall 001 Gypsu	m Barge Lo	ader Ar	eas				
26	a a	Undeveloped Riverbanks Areas Below West Slopes from Screenhouse to Outfall #013 Areas (including Coal Barge Unloading Area)	Vegetated Area	0.25	16.96	0.5181	0.0137			
Non-Point, Non-Process Area Runoff - Dixie Highway West Roadside Areas to Aesthetic Berm to Construction Entrance										
27	a a	Undeveloped Areas Dixie Highway West Roadside Areas to Aesthetic Berm to Construction Entrance	Vegetated Area	0.25	6.10	0.1865	0.0049			

TOTAL SITE PROPERTY

626.0 acres

### Louisville Gas & Electric Co MILL CREEK GENERATING STATION

#### **Rainfall Runoff Calculations**

#### Data

Area Coefficient for Rainfall Runoff 10 Year 24 Hour Rainfall Annual Average Rainfall

# Acres Cr 45

inch/24 hours 43 56 inch/year

Runoff Equations:

#### 1-Day Flow

(#Acres)(43560 ft2)/Acre)(Cr)(4.1 in/day)(1 ft/12 inch)(7.48 gal/ft3)(1MG/1000000 gal) MGD = (# Acres) x (Cr) x 0.1221858

30-Day Flow:

(#Acres)(43560 ft2)/Acre)(Cr)(43.56 in/yr)(1 ft/12 inch)(7.48 gal/ft3)(1MG/1000000 gal) MGD = (# Acres) x (Cr) x 0.003240434

Definition of Runoff Coefficients:

Vegetated Areas (without slope considerations) Gypsum & Loose Gravel (substations, rail beds, dam face, rock-faced slopes, etc.) Packed Surfaces (Coal, Bare Soil, Packed Gravel [Roads, Parking Areas, etc.]) Impervious Surface (Pavement, Roofs, Cooling Tower Direct Precip) Basin Surfaces

#### Louisville Gas & Electric Co MILL CREEK GENERATING STATION

#### **KPDES OUTFALLS DESCRIPTION** Internal/External Outfall Location Once-Thru Cooling Water & Process Water Pond(s) Discharge to Ohio River Ohio River Discharge Structure 001 External 002 Process Water Pond(s) Discharge (Internal Outfall #002 to Outfall #001) NEW: Process Water Ponds Discharge to Outfall 001 Pond Discharge into Outfall 001 Interna EXISTING: Ash Pond Discharge to Outfall 001 Pond Discharge into Ash Pond Internal 003 Unit 2 Cooling Tower Blowdown Internal Outfall to NEW: Cooling Tower Blowdown Discharge to Outfall 001 Internal Pipe Discharge into Outfall 001 EXISTING: Cooling Tower Blowdown Discharge to Ash Pond Internal Pipe Discharge into Ash Pond 004 Unit 3 Cooling Tower Blowdown External to Ohio River External Pipe Discharge to Ohio River 005 Unit 4 Cooling Tower Blowdown External to Ohio River External Pipe Discharge to Ohio River 006 Runoff Area not designated (Boiler Chemical Cleaning Wastewaters) Internal na or 006=Frac Tanks 007 Non-Contact Runoff - Plant West Powerhouse Roof/Downhill Slopes Runoff to Ohio River External Ditch to Ohio River 008 Runoff Area not designated (MSD Sanitary Connection) External Sewer Manhole 009 Plant River Water Intake External Intake Screenhouse Stormpipe-Ditch to Mill Creek & Non-Contact Runoff -North Plant Maint/Parking/Entry Road Areas to Mill Creek 010 External MSD Pumping Station Stormpipe-Ditch Adjacent/Under 011 Non-Contact Runoff- East Entry/Parking/Future Landfill Areas to Pond Creek External 31W (Dixie Hwy) Construction Runoff Settling Pond Discharge to Ohio River Pond Discharge to Ohio River 012 External 013 Active Landfill A Settling Basin Discharge to Ohio River External Pond Discharge to Ohio River Non-Contact Runoff - Switchyard/Powerhouse NW Side to Ohio River Stormpipe-Ditch to Ohio River 014 External 015 Non-Contact Runoff - Closed Ash Treatment Basin NW External Slopes to Ohio River External Ditch to Ohio River Storm CatchBasin into Pipe to Ohio 016 Non-Contact Runoff - Closed Landfill B to Valley Village Cutoff to Ohio River External River Non-Contact Runoff - Closed Ash Treatment Basin West External Slopes to Ohio River Ditch to Ohio River 017 External 018 Non-Contact Runoff - Process Pond NW External Slopes to Ohio River Ditch to Ohio River External Non-Contact Runoff - Riverbank Slopes West of Unit 2 CT to Ohio River Ditch to Ohio River 019 External 020 Non-Contact Runoff - Riverbank Slopes West of Unit 4 CT to Ohio River External Ditch to Ohio River 021 Non-Contact Runoff - Riverbank Slopes West of Unit 3 CT to Ohio River External Ditch to Ohio River 022 Non-Contact Runoff - Yard Area SW of Unit 3 CT to Ohio River External Ditch to Ohio River



March 8, 2021

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#### Plant Property Areas - Rainfall Runoff Calculations

(Arranged by Outfalls - Reflects Construction Changes Completed by 2022) **AREA** Outfall 001 - Once-Thru Cooling Water & Process Water Pond(s)/Ash Pond Discharge to Ohio River 1 1.a Powerhouse Roof Drains (incl Old Admin Bldg) Powerhouse West Side/Below-Transformers/Deck Area Runoff 1.b Outfall 002 - Process Water Pond(s)/Ash Pond Discharge to Outfall #001 (#002-1) & Direct Discharge #002-2 to Ohio River 2 Process Water Ponds (Previous Ash Pond Areas) 2.a Powerhouse West SideTransformer Deck Area (concrete) 2.b New Warehouse (old Unit 1-2 FGD/Equipment) Runoff Areas 2.c Coal Yard/Pile Areas 2.d Limestone Pile, Slurry Prep & FGD Areas Drainage 2.e 2.f Landfill - North Expansion --- (Pre-Expansion Landfill Areas Runoff Continue to Outfall 013) 3 Outfall 003 - Unit 2 Cooling Tower Blowdown (includes Tower Precipitation) 4 Outfall 004 - Unit 3 Cooling Tower Blowdown (includes Tower Precipitation) Outfall 005 - Unit 4 Cooling Tower Blowdown (includes Tower Precipitation) 5 Outfall 006 - Boiler Chemical Cleaning Wastes - Runoff Area not designated 6 7 Outfall 007 - Non-Process Runoff - Plant Powerhouse West Roof Runoff to Ohio River Outfall 008 - Facility Sanitary Wastewaters to Louisville MSD - Runoff Area not designated 8 Outfall 009 - Plant Intake - Screenhouse/Parking 9 Outfall 010 - Non-Process Runoff -North Plant Maintenance/Parking/Entry Road Areas to Mill Creek 10 10.a Drainage to Parking Lot Oil-Water Skimmer 10.b Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Skimmer (Discharges Combine) 10.c Watson Lane Entrance Roadway Areas **Frost School Property** 10.d Outfall 011 - Non-Process Runoff- East (Dixie Hwy) Entrances, Contractor Parking & Railroad Wye Areas to Pond Creek 11 11.a **Dixie Highway Plant Entrance Road Areas** 11.b Railroad Wve Area 11.c **Dixie Highway Construction Entrance Areas** Outfall 012 - GPP Runoff Pond (Old Construction Runoff Pond) Discharge to Ohio River 12 Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate 12.a Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackout 12.b 12.c Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas 12.d 12.e Cooling Towers 3-4 Areas (excl structures footprint) 12.f FGD-PWS Buildings, Tanks, and Adjacent Areas Clearwell 12.a Outfall 013 - Active Landfill A Settling Basin Discharge to Ohio River 13 Outfall 014 - Non-Process Runoff - Switchyard/Powerhouse NW Side to Ohio River 14 Outfall 015 - Non-Process Runoff - Closed-Capped North Ash Pond & Ash Pond NorthWest External Slopes to Ohio River 15 15.a Vegetated Areas Including Lower Access Roads North Closed-Capped (Old) Ash Pond Runoff to Outfall 015 15.b 16 Outfall 016 - Valley Village Cutoff Entrance Road Woods, Fields and Rail-Loop Covered Landfill Runoff to Ohio River Dixie Highway Plant Entrance Road Areas (from Receiving Warehouse Highpoint to Woods/Frost-School Highpoint Areas) 16.a Covered Landfill Areas within (Old/Closed) Railroad Inner Loop 16.b 17 Outfall 017 - Uncontaminated Runoff - Closed Ash Pond West External Slopes to Ohio River Outfall 018 - Uncontaminated Runoff - Process Pond NW External Slopes to Ohio River 18 19 Outfall 019 - Uncontaminated Runoff - Riverbank Slopes West of Unit 2 CT to Ohio River 20 Outfall 020 - Uncontaminated Runoff - Riverbank Slopes West of Unit 4 CT to Ohio River 21 Outfall 021 - Uncontaminated Runoff - Riverbank Slopes West of Unit 3 CT to Ohio River 22 Outfall 022 - Uncontaminated Runoff - Yard Area SW of Unit 3 CT to Ohio River 23 Non-Point, Non-Process Area Runoff - North Slopes of Ash Pond Outside Floodwall to MSD Ditch to Ohio River 24 Non-Point, Non-Process Area Runoff - Riverbanks below West Slopes of ATB to Screenhouse Areas Runoff to Ohio River 25 Outfall 025 Non-Process Area Runoff - Closed/Capped Ashpond Hardscape Area Stormwater Runoff to Diffuser to Ohio River 26 Non-Point, Non-Process Area Runoff - Riverbanks Below West Slopes from Screenhouse to Coal Barge Unloader Areas Non-Point, Non-Process Area Runoff - Dixie Highway West Roadside Areas to Aesthetic Berm to Pond Creek 27 TOTAL SITE PROPERTY 626.0 acres

Pre-Frost Property Total Site

584.8

acres

Aı	rea #	Source	Runoff Description	Cr	# Acres	1-Day Max (MGD)	Page	82 of 307 Imbei
								_

#### Outfall 001 - Once-Thru Cooling Water & Process Water Pond(s)/Ash Pond Discharge to Ohio River

Flows to Once-Thru Cooling Return to River Outfall #001

1

		Total AREA	1	acres	9.51		
1.a	Powerhouse Roof Drains (incl Old Admin Bldg)					•	
1	Roof Area	Impervious Surface		0.85	4.91	0.5102	0.0135
1.b	Powerhouse West Side/Below-Transformers/Deck Area Runoff						
1	Grass-Field & Gravel Areas	Vegetated Area		0.25	2.60	0.0795	0.0021
2	Transformer (Unit 1-2 Main Aux) Pad with Manual Stormwater Drains to Area Below	Impervious Surface		0.85	0.03	0.0036	0.0001
3	Unit 2 Cooling Tower SW Access Area, Maintenance Bldg/Consumables Warehouse Access Areas, Ash Pond Office Area	Impervious Surface		0.85	1.57	0.1627	0.0043
4	Maintenance Bldg/Consumables Warehouse Buildings Roofs	Impervious Surface		0.85	0.39	0.0406	0.0011
	Area SUBTOTAL				9.51	0.2864	0.0076

#### Outfall 002 - Process Water Pond(s)/Ash Pond Discharge to Outfall #001 (#002-1) & Direct Discharge #002-2 to Ohio River

#### 2 Flows to Process Water Pond(s)/Ash Pond Outfall #002 187.57 Total AREA 2 acres Process Water Ponds (Previous Ash Pond Areas) 2.a 0.0817 0.0022 Knock-out Pond ---Basin Surface Basin Surface 1 1.0 0.67 KO Pond --- Perimeter Road and Inner Slope Areas 2 Impervious Surface 0.85 0.82 0.0851 0.0023 Process Water Pond ---Basin Surface 0.0594 3 Basin Surface 1.0 18.33 2.2399 Process Water Pond --- Perimeter Road and Inner Slopes 0.85 10.70 0.0295 4 Impervious Surface 1.1116 Closed-Capped Ash Pond Runoff into Process Water Pond Area 0.25 40.50 0.0328 5 Vegetated Area 1.2372 Unit 2 Cooling Tower Chemical Bldg, Adjacent Areas and Closed-Capped Ash 6 Pond (Paved) Areas 0.85 7.34 0.7626 0.0202 Impervious Surface Area SUBTOTAL 78.37 5.5181 0.1463 Powerhouse West SideTransformer Deck Area (concrete) 2.b Concrete Deck, bermed, runoff drains into plant sumps to Process Pond Impervious Surface 0.85 0.70 0.0727 0.0019 1 New Warehouse (old Unit 1-2 FGD/Equipment) Runoff Areas 2.c 1 Drainage Ditch to Process Water Pond Basin Surface 10 0.22 0.0268 0.0007 2 New Warehouse (Old FGD 1-2 Absorbers/Equipment) Drainage Area Impervious Surface 0.62 0.0641 0.0017 0.85 Area SUBTOTAL 0.84 0.0909 0.0024 2.d **Coal Yard/Pile Areas** Pond Surface (Combined Coal+Limestone Runoff Pond) Basin Surface 1.0 1.68 0.2047 0.0054 2 Coal Pile Coal Pile Storage Area Packed Surface 14 97 0 9145 0.0243 0.5 а Buildings & Roofs b Impervious Surface 0.85 2.02 0.2097 0.0056 Railroad Portion within Coal Yard Areas Packed Surface 0.5 2 67 0 1630 0.0043 c d Coal Yard Flat Access Areas Packed Surface 0.5 5.71 0.3486 0.0092 Pond Inward Slopes toward Rail-Loop Landfill (to Substation) 9.25 0.2824 е Vegetated Area 0.25 0.0075 Area SUBTOTAL 36.28 2.1230 0.0563 Limestone Pile, Slurry Prep & FGD Areas Drainage Limestone Pile, Slurry Prep & FGD Areas Drainage 2.e 1 0.0478 Limestone Slurry Tanks Basin Surface 0.39 0.0013 а Limestone Slurry Eqpt/Vac.Truck Buildings Roofs & Adj Roadways 0.85 0.1705 0.0045 b 1.64 Impervious Surface 2 Limestone Pile, Slurry Prep & FGD Areas Drainage Limestone Pile Storage Packed Surface 0.39 0.0236 0.5 0.0006 Limestone Pile Adjacent Roadways (incl Lab/Annex/east 1/2 roofs) Impervious Surface 0.1723 0.0046 b 0.85 1.66 Limestone Slurry Prep Building Roofs 0.85 0.52 0.0541 Impervious Surface 0.0014 С

0.15 0.0092 13.05 1.3392

0.3228

0.5133

0.0257

0.0086

0.0136

0.0007

0.0002

0.0355

3.11

4.94

0.25

0.85

0.85

0.85

0.5

#### Landfill - North Expansion --- (Pre-Expansion Landfill Areas Runoff Continue to Outfall 013) 2.f

Unit 3 ESPs, PJFFs, FGDs and Chimney

Unit 4 ESPs, PJFFs, FGDs and Chimney

Ammonia Storage/Eqpt Buildings & Adj Pavement/Parking

Gravel/Drainage Area South of Ammonia Storage Areas

d

е

f

g

1	Collection Basin-North Pond #2 -Stormwater & Leachate					
а	Pond Surface	Basin Surface	1	4.65	0.5685	0.0151
b	Pond Inward Slopes (2105-2016 Contours-Status)	Packed Surface	0.5	4.92	0.3006	0.0080
с	Parking Lot	Packed Surface	0.5	4.43	0.2706	0.0072
d	Landfill Sloped Areas to Pond	Vegetated Area	0.25	21.20	0.6474	0.0172
е	Below Landfill Areas to Pond (perimeter areas along entrance road, pond andtowardDixie Hwy)	Vegetated Area	0.25	6.13	0.1873	0.0050
2	Sediment Basin-Northwest Pond #3 (future)					
а	Pond Surface	Basin Surface	1	0.90	0.1095	0.0029
b	Pond Inward Slopes	Packed Surface	0.5	1.20	0.0735	0.0020
с	Landfill Sloped Areas to Pond	Vegetated Area	0.25	10.33	0.3154	0.0084
d	Below Landfill Areas to Pond (north pavement, gravel & coalyard office building areas)	Packed Surface	0.5	1.76	0.1073	0.0028
3	Fly Ash Silos Areas					
а	Fly Ash Silos- Truck Loadout Roadway Drainage	Impervious Surface	0.85	0.30	0.0307	0.0008
b	PJFF-PAC/Fly Ash Silos- Truck Loadout Washdown Areas Drainage	Impervious Surface	0.85	1.07	0.1114	0.0030
с	PJFF-PAC/Fly Ash Silos- Truck Loadout Washdown Areas Drainage	Packed Surface	0.5	1.46	0.0890	0.0024
	Area SUBTOTAL	58.34	2.8113	0.0746		

Impervious Surface

Impervious Surface

Impervious Surface

Packed Surface

Area SUBTOTAL

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A		0	D ((D ) )	0.7		4.5.14	Daily
Area #		Source	Runoff Description	Cr	# Acres	1-Day Max	(Annual Average)
						(MGD)	(MGD)
Outfall	003	- Unit 2 Cooling Tower Blowdown (includes Tower Precipitation	n)				
<u>o attair</u>			<i>"</i>				
3	a.	Unit 2 Cooling Tower Deck & Basin-Pumps (within Process Pond Drainage)	Impervious Surface	0.85	0.68	0.0707	0.0019
Outfall	<mark>004</mark> ·	- Unit 3 Cooling Tower Blowdown (includes Tower Precipitation	n)				
4	а	Unit 3 Cooling Tower Deck & Basin-Pumps (within Runoff to #012 CR-Pond)	Impervious Surface	0.85	0.81	0.0845	0.0022
·	u		Importious surface	0.00	0.01	0.0010	0.0022
Outfall	005	- Unit 4 Cooling Tower Blowdown (includes Tower Precipitation	n)				
Outian	000		<i>יו</i>				
5	а	Unit 4 Cooling Tower Deck & Basin-Pumps (within Runoff to #012 CR-Pond)	Impervious Surface	0.85	1.00	0.1042	0.0028
Outfall	<mark>006</mark> ·	<ul> <li>Boiler Chemical Cleaning Wastes - Runoff Area not designation</li> </ul>	ated				
Outfall	007 ·	- Non-Process Runoff - Plant Powerhouse West Roof Runoff	to Ohio River				
7		Plant West-side Powerhouse Roof & Downhill Slopes Runoff to River		b Area)			
	a ⊾	Gravel Area downhill and/or flat from Powerhouse/Old Lab-Annex Buildings	Packed Surface Impervious Surface	0.5	1.48 0.05	0.0901 0.0048	0.0024
	b c	Transformer Pad (Manual Stormwater Drains to slopes below) Vegetated Slopes & Gravel Drive Downhill to Riverbank	Vegetated Area	0.85	2.39	0.0048	0.0001
		Area SUBTOTAL	5		3.91	0.1679	0.0045
Outfall	<mark>008</mark> ·	- Facility Sanitary Wastewaters to Louisville MSD - <i>Runoff Ar</i>	rea not designated				
Outfall	009 ·	- Plant Intake - Screenhouse/Parking					
9		Plant Intake Screenhouse-Pumphouse/Parking					
	a.	River Intake-Sreenhouse Building Roof Drains	Impervious Surface	0.85	0.20	0.0208	0.0006
	b.	Gravel Roadway & Parking Areas (Roadside)	Packed Surface	0.5	0.06	0.0035	0.0001
		Area SUBTOTAL			0.26	0.0243	0.0006
Outfall	010	- Non-Process Runoff -North Plant Maintenance/Parking/Ent	ry Road Areas to Mill C	reek			
	<mark>010 ·</mark>	- Non-Process Runoff -North Plant Maintenance/Parking/Ent	ry Road Areas to Mill C	reek			
Outfall 10	<mark>010</mark> ·	- Non-Process Runoff -North Plant Maintenance/Parking/Enti North Plant Maintenance Areas, Employee Parking & Plant Entrance	Road Areas (from Watson	Lane)			
10		North Plant Maintenance Areas, Employee Parking & Plant Entrance	•		90.97		
			Road Areas (from Watson	Lane)	90.97		
10	a	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings	Road Areas (from Watson Total AREA 10	Lane) acres			
10		North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer	Road Areas (from Watson	Lane)	90.97	0.7329	0.0194
10	a	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer	Road Areas (from Watson Total AREA 10	Lane) acres		0.7329	0.0194
10	<b>a</b> 1	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer	Road Areas (from Watson Total AREA 10	Lane) acres	7.06		
10	<b>a</b> 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance,	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface Packed Surface	Lane) acres 0.85 0.85 0.5	7.06 2.41 0.26	0.2502	0.0066
10	<b>a</b> 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface	Lane) acres 0.85 0.85	7.06	0.2502	0.0066
10	<b>a</b> 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface Packed Surface	Lane) acres 0.85 0.85 0.5	7.06 2.41 0.26 0.62 0.78	0.2502 0.0158 0.0189 0.0239	0.0066 0.0004 0.0005 0.0006
10	<b>a</b> 1 2 3 4	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface Packed Surface Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25	7.06 2.41 0.26 0.62	0.2502 0.0158 0.0189	0.0066 0.0004 0.0005
10	<b>a</b> 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Area SUBTOTAL Drainage from Areas that Combine into Discharge from Parking Lot Oil-Wate	Road Areas (from Watson         Total AREA       10         Impervious Surface       Impervious Surface         Packed Surface       Vegetated Area         Vegetated Area       Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25	7.06 2.41 0.26 0.62 0.78	0.2502 0.0158 0.0189 0.0239	0.0066 0.0004 0.0005 0.0006
10 10.a	<b>a</b> 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland	Road Areas (from Watson         Total AREA       10         Impervious Surface       Impervious Surface         Packed Surface       Vegetated Area         Vegetated Area       Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25	7.06 2.41 0.26 0.62 0.78	0.2502 0.0158 0.0189 0.0239	0.0066 0.0004 0.0005 0.0006
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10 10.a	a 1 2 3 4 5	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Chara SuBTOTAL Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Readway to Dixie Hwy (including pavement & gravel parking areas) from	Road Areas (from Watson Total AREA 10 Impervious Surface Impervious Surface Packed Surface Vegetated Area Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25	7.06 2.41 0.26 0.62 0.78 11.13	0.2502 0.0158 0.0189 0.0239 1.0418	0.0066 0.0004 0.0005 0.0006 0.0276
10 10.a	a 1 2 3 4 5 0 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Coll-Water Skimmer Railroad Portion from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Surface         Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023
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10 10.a	a 1 2 3 4 5 0 1 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface         Impervious Surface         Packed Surface         Vegetated Area         Vegetated Area         Packed Surface         Packed Surface         Vegetated Area	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010
10 10.a	a 1 2 3 4 5 0 1 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Area       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Surface       10         Packed Surface       10         Vegetated Area       10         Impervious Surface       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25 0.85	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer <b>Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water</b> Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Area       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Surface       10         Packed Surface       10         Vegetated Area       10         Impervious Surface       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.5 0.25 0.25 0.25 0.5 0.5 0.5 0.25 0.85	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010
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10 10.: 10.9	a 1 2 3 4 5 0 0 0 1 2 3 3 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Drainage from Areas that Combine into Discharge from Parking Lot Oil-Water Rairoad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek Mates SubBTOTAL Matson Lane Entrance Roadway Areas Employee Parking Runoff to Wetland to Mill Creek North Plant Entrance Road Pavement Runoff to Ditches to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Packed Surface       10         Packed Area       10         Negetated Area       10         Vegetated Area       10	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.2	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.0371
10 10.: 10.9	a 1 2 3 4 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint with Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Ater Skimmer (Discharges Cor       10         Packed Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.85 0.25 0.85 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55 0.90	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.0371
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 2 3 4 2 3 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Texture Darking Lot Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Daranage from Areas that Combine into Discharge from Parking Lot Oil-Wate Raifroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint twith Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek Fields Westward between Ash Pond/Floodwall and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek Fields Eastward between Wetland and Watson Lane Entrance Road with Runoff to Wetland and Watson Lane Entrance Road with Runoff to Wetland and Watson Lane Entrance Road with	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Negetated Area       10         Packed Surface       10         Packed Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Impervious Surface       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Vegetated Area       10         Vegetated Area       10 <t< td=""><td>Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.5 0.25 0.85 0.25 0.85 0.25</td><td>7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22           <b>6.55</b>           0.90           1.58           10.53</td><td>0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216</td><td>0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.0371 0.0025 0.0044 0.0085</td></t<>	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.5 0.25 0.85 0.25 0.85 0.25	7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22 <b>6.55</b> 0.90           1.58           10.53	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.0371 0.0025 0.0044 0.0085
10 10.: 10.9	a 1 2 3 4 5 5 0 1 2 3 4 2 2	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Texture Plant Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Vegetated Slopes from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint twith Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek Fields Westward between Ash Pond/Floodwall and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek Fields Eastward between Wetland and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Ater Skimmer (Discharges Cor       10         Packed Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.85 0.25	7.06 2.41 0.26 0.62 0.78 11.13 1.14 2.84 1.35 1.22 6.55 0.90 1.58 10.53 19.11	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216 0.5836	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0010 0.00371 0.0010 0.0371 0.0025 0.0044 0.0085 0.0155
10 10.: 10.9	a 1 2 3 4 5 0 1 2 3 4 2 3 4 2 3	North Plant Maintenance Areas, Employee Parking & Plant Entrance Drainage to Parking Lot Oil-Water Skimmer Unit 1-2 FGD, Garage Maintenance, and Environmental Storage Buildings including Adjacent Pavement Areas Runoff to Parking Lot Oil-Water Skimmer Security Building and Employee Parking Lot Pavement to Parking Lot Oil-Water Skimmer Railroad Portion from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation, Vehicle Maintenance, Environmental Storage Building Runoff to Oil-Water Skimmer Vegetated Slopes from/along Plant Substation Texture Darking Lot Oil-Water Skimmer Vegetated Slopes from/along Plant Entry Road and FGD Purge Ditch Runoff to Oil-Water Skimmer Daranage from Areas that Combine into Discharge from Parking Lot Oil-Wate Raifroad Portion from/along Plant Substation Eastward to Woods Highpoint Area Adjacent School Property and Runoff Toward Wetland Roadway to Dixie Hwy (including pavement & gravel parking areas) from Woods Highpoint Area Adjacent School Property to Employee Parking Lot with Runoff Toward Wetland Vegetated/Fields East-North of Employee Parking Lot, and along road to Dixie Hwy to Woods/School Highpoint twith Runoff to Wetland to Mill Creek Employee Parking Runoff to Wetland to Mill Creek Fields Westward between Ash Pond/Floodwall and Watson Lane Entrance Road with Runoff to Wetland to Mill Creek Fields Eastward between Wetland and Watson Lane Entrance Road with Runoff to Wetland and Watson Lane Entrance Road with Runoff to Wetland and Watson Lane Entrance Road with	Road Areas (from Watson         Total AREA       10         Impervious Surface       10         Impervious Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Negetated Area       10         Packed Surface       10         Packed Surface       10         Packed Surface       10         Vegetated Area       10         Vegetated Area       10         Impervious Surface       10         Impervious Surface       10         Vegetated Area       10         Impervious Surface       10         Vegetated Area       10         Vegetated Area       10         Vegetated Area       10 <td>Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.5 0.25 0.85 0.25 0.85 0.25</td> <td>7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22           <b>6.55</b>           0.90           1.58           10.53</td> <td>0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216</td> <td>0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.00371 0.0025 0.0044 0.0085</td>	Lane) acres 0.85 0.85 0.25 0.25 0.25 0.25 0.25 0.5 0.25 0.85 0.25 0.85 0.25	7.06           2.41           0.26           0.62           0.78           11.13           1.14           2.84           1.35           1.22 <b>6.55</b> 0.90           1.58           10.53	0.2502 0.0158 0.0189 0.0239 1.0418 0.0698 0.0866 0.1400 0.0373 1.3995 0.0937 0.1643 0.3216	0.0066 0.0004 0.0005 0.0006 0.0276 0.0019 0.0023 0.0023 0.0037 0.0010 0.00371 0.0025 0.0044 0.0085

#### 10.d Frost School Property 1 Frost School Property Vegetated Area 0.25 41.18 1.2579 0.0334

a #		Source	Attachment 3	Cr		1-Day Max	Page 185 (Annual
						(MGD)	Average) (MGD)
all 01	11 -	Non-Process Runoff- East (Dixie Hwy) Entrances, Contracto	or Parking & Railroad	<mark>d Wye Areas</mark>	to Pond	Creek	
11		East Plant Entrance Roads (from Dixie Hwy) Areas, Contractor/Parkin	<u> </u>				
11.a		Dixie Highway Plant Entrance Road Areas	Total AREA	11 acres	34.84		
	1	Railroad Portion from/along West/North Side of Roadway from Dixie Hwy (US- 31W) to Shipping/Receiving Warehouse Highpoint Area	Packed Surface	0.5	1.25	0.0765	0.0020
	2	Grass Fields between Railroad & Plant Entrance Road from Dixie Hwy to Shipping/Receiving Highpoint Area	Vegetated Area	0.25	6.35	0.1940	0.0051
	3	Plant Entrance Road from Dixie Hwy (US-31W) to Shipping/Receiving Warehouse Highpoint Area	Impervious Surface	0.85	0.94	0.0974	0.0026
	4	Receiving Warehouse Building Roof & Adjacent Paved Area Grass Fields between Plant Entrance Road & North Property Border from Dixie Hwy to	Impervious Surface	0.85	0.82	0.0849	0.0023
	5	Shipping/Receiving Highpoint Area	Vegetated Area	0.25	5.49	0.1677	0.0044
		Area SUBTOTAL			14.85	0.6204	0.0165
11.b		Railroad Wye Area Railroad Wye Area and Landfill	Packed Surface	0.5	0.50	0.0303	0.0008
	1 2	Railroad Wye Area	Packed Surface	0.5	4.86	0.0303	0.0008
		Area SUBTOTAL			5.35	0.3270	0.0087
11.c		Dixie Highway Construction Entrance Areas					
	1	Railroad Tracks Portion along Contractor Entrance Road Portion of Railroad Wye	Packed Surface	0.5	0.73	0.0446	0.0012
	2	Grass Slopes Between Consruction Entrance Road and Contractor Parking Lot to High Point Near Coalyard Offices	Vegetated Area	0.25	4.32	0.1321	0.0035
		Construction Entrance (North) and Contractor Parking to Highpoint Near Coalyard					
	3	Offices Parking Area Area SUBTOTAL	Packed Surface	0.5	9.58 14.64	0.5855 0.7621	0.0155
12		GPP Runoff Pond (Old Construction Runoff Pond) Areas	Total AREA	12 acres	31.09		
	1	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate				0.2627	0.0070
	1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings	Total AREA Basin Surface Vegetated Area	12 acres 1 0.25	31.09 2.15 1.49	0.2627 0.0454	0.0070 0.0012
	2 3	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings	Basin Surface Vegetated Area Impervious Surface	1 0.25 0.85	2.15 1.49 0.25	0.0454 0.0256	0.0012 0.0007
	2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings	Basin Surface Vegetated Area	1 0.25	2.15 1.49	0.0454	0.0012
12.a	2 3	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL	Basin Surface Vegetated Area Impervious Surface Impervious Surface	1 0.25 0.85	2.15 1.49 0.25 0.32	0.0454 0.0256 0.0333	0.0012 0.0007 0.0009
	2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs	Basin Surface Vegetated Area Impervious Surface Impervious Surface It	1 0.25 0.85 0.85 0.85	2.15 1.49 0.25 0.32 4.20	0.0454 0.0256 0.0333 0.3670 0.0389	0.0012 0.0007 0.0009 0.0097
12.a	2 3 4 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent	Basin Surface Vegetated Area Impervious Surface Impervious Surface It Impervious Surface Impervious Surface	1 0.25 0.85 0.85 0.85	2.15 1.49 0.25 0.32 4.20	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351	0.0012 0.0007 0.0009 0.0097 0.0010 0.0010
12.a	2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs	Basin Surface Vegetated Area Impervious Surface Impervious Surface It	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334	0.0012 0.0007 0.0009 0.0097
12.a	2 3 4 1 2 3	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement	Basin Surface Vegetated Area Impervious Surface Impervious Surface It Impervious Surface Impervious Surface Impervious Surface	1 0.25 0.85 0.85 0.85	2.15 1.49 0.25 0.32 4.20	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351	0.0012 0.0007 0.0009 0.0097 0.0010 0.0010 0.0036 0.0062
12.a	2 3 4 1 2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.5	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062
12.a	2 3 4 1 2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.5	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0052 0.0060
12.a 12.b	2 3 4 1 2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.5	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0052 0.0060
12.a 12.b 12.c	2 3 4 1 2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062
12.a 12.b	2 3 4 1 2 3 4	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs GPP Gypsum Slackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062
2.a 2.b	2 3 4 1 2 3 4 5	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0060 0.0160
12.a 2.b	2 3 4 1 2 3 4 5	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond)	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062 0.0160 0.0160 0.0030
2.a  2.b  2.c	2 3 4 1 2 3 4 5 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint)	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1147 0.1579 0.0468 0.2047	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0060 0.0160 0.0160 0.0030 0.0042 0.0012 0.0054
2.a  2.b  2.c	2 3 4 1 2 3 4 5 1 2 1	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Pavement Perimeter Roads (north/east/south)	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0054 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055
2.a 2.b 2.c 2.d	2 3 4 1 2 3 4 5 1 2 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint)	Basin Surface Vegetated Area Impervious Surface Antipotential Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0060 0.0052 0.0060 0.0060 0.0160 0.0012 0.0030 0.0012 0.0054
2.a  2.b  2.c	2 3 4 1 2 3 4 5 1 2 1	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Pavement Perimeter Roads (north/east/south) Cooling Towers 3-4 Gravel Areas Adjacent	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0062 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0052 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0054 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0053 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055 0.0055
12.a 12.b 12.c	2 3 4 1 2 3 4 5 1 2 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Gravel Areas Adjacent Chemical Building Roof Area SUBTOTAL FGD-PWS Buildings, Tanks, and Adjacent Areas	Basin Surface Vegetated Area Impervious Surface Imp	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67 0.15 4.00	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632 0.0152 0.3013	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0060 0.0160 0.0160 0.0012 0.0042 0.0012 0.0042 0.0012 0.0054 0.0054 0.0054
12.a 2.b 12.c 12.d	2 3 4 1 2 3 4 5 1 2 1 2 3 1 2 3	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Areas (excl structures footprint) Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Gravel Areas Adjacent Chemical Building Roof	Basin Surface Vegetated Area Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67 0.15 4.00	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632 0.0152 0.3013 0.1079	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0052 0.0060 0.0160 0.0060 0.0160 0.0042 0.0054 0.0054 0.0054 0.0033 0.0043 0.0043 0.0043 0.0043 0.0004 0.0004 0.0004 0.0004 0.0004 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.0005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0
12.a 12.b 12.c 12.d	2 3 4 1 2 3 4 5 1 2 1 2 3 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Gravel Areas Adjacent Chemical Building Roof Area SUBTOTAL FGD-PWS Building, Tanks, and Adjacent Areas New FGD-PWS Building Flat Paved Areas (in Old Pond Footprint After Excavated and Filled)	Basin Surface         Vegetated Area         Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67 0.15 4.00 1.04 4.47	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632 0.0152 0.3013 0.1079 0.4642	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0060 0.0160 0.0160 0.0160 0.0030 0.0042 0.0012 0.0054 0.0033 0.0043 0.0043 0.0043 0.0043 0.0043 0.0004 0.0029 0.0123
12.a 2.b 12.c 12.d	2 3 4 1 2 3 4 5 1 2 1 2 3 1 2 3	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Gravel Areas Adjacent Chemical Building Roof Area SUBTOTAL FGD-PWS Building, Tanks, and Adjacent Areas New FGD-PWS Building Flat Paved Areas (in Old Pond Footprint After Excavated and Filled) Paved Roadway Along E-Pond from Coalyard Offices to DSP	Basin Surface Vegetated Area Impervious Surface Impervious Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface Packed Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67 0.15 4.00 1.04 4.47 1.26	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1351 0.2260 0.6035 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632 0.0152 0.3013 0.1079 0.4642 0.0768	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0062 0.0062 0.0060 0.0160 0.0160 0.0030 0.0033 0.0043 0.0043 0.0004 0.0004 0.00080 0.0029 0.0123 0.0020
12.a 12.b 12.c 12.d	2 3 4 1 2 3 4 5 1 2 1 2 3 1 2	Construction/GPP Runoff Basin-North Pond #2 -Stormwater & Leachate Pond Surface Pond Inward Slopes Areas to Coal Unloader Belt/Buildings Coal Unloader Belt Buildings Roadway Pavement East of Construction Runoff Pond Area SUBTOTAL Gypsum Processing Plant Building/Roof(s), Slurry Feedtanks, and Piles Stackou GPP Building Roofs Gypsum Slurry Tanks & Pavement Adjacent GPP Gypsum Stackout Piles/Pavement Unpaved Area between Landfill, Gypsum Stackout and Coal Conveyor New GPP Building/Pavement Area Area SUBTOTAL Gypsum Pelletizing Plant, Storage/Trucking Building & Office Areas Building Roofs & North/adjacent Gravel Areas toward Construction Runoff Pond Maintenance Laydown (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) & Adjacent Areas Flat Gravel Area (Old DSP Surge Pond) Buildings (to North) Roofs & Paved Roadway Area SUBTOTAL Cooling Towers 3-4 Areas (excl structures footprint) Cooling Towers 3-4 Gravel Areas Adjacent Chemical Building Roof Area SUBTOTAL FGD-PWS Building, Tanks, and Adjacent Areas New FGD-PWS Building Flat Paved Areas (in Old Pond Footprint After Excavated and Filled)	Basin Surface         Vegetated Area         Impervious Surface	1 0.25 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.8	2.15 1.49 0.25 0.32 4.20 0.37 1.30 2.25 3.21 2.18 9.31 1.10 2.58 0.45 3.03 1.18 2.67 0.15 4.00 1.04 4.47	0.0454 0.0256 0.0333 0.3670 0.0389 0.1351 0.2334 0.1961 0.2260 0.6035 0.1147 0.1579 0.0468 0.2047 0.1229 0.1632 0.0152 0.3013 0.1079 0.4642	0.0012 0.0007 0.0009 0.0097 0.0010 0.0036 0.0062 0.0062 0.0062 0.0060 0.0160 0.0160 0.0160 0.0030 0.0042 0.0012 0.0054 0.0033 0.0043 0.0043 0.0043 0.0043 0.0043 0.0004 0.0029 0.0123
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Area # Source Runoff Description Cr # Acres 1-Day Max (Annu Average (MGD) (MGD)	age)
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### Outfall 013 - Active Landfill A Settling Basin Discharge to Ohio River

	andfill Settling Pond #1 (Original Construction, SW Corner) - Runoff Landfill Runoff Pond #1 Surface	Basin Surface	4	0.77	0.0935	0.0005
a			1	0.77		0.0025
b	Pond-to-Crest Inward Slopes	Vegetated Area	0.25	1.82	0.0555	0.0015
c 🗌	South Collector Area Channel (Along/to South Property Line)	Vegetated Area	0.25	4.90	0.1497	0.0040
d	Aesthetic Berm-to-Active Landfill Area (Drains to South Collector Area Channel)	Vegetated Area	0.25	2.49	0.0760	0.0020
e	Primary Landfill (both Active & Covered) Vegetated Areas Draining to Runoff Pond #1 and/through South Collector Area Channel	Vegetated Area	0.25	56.97	1.7401	0.0461
f	Finished/Covered/Vegetated Primary Landfill Areas Draining to Riverbank to Ohio River extending to Outfall #013	Vegetated Area	0.25	13.36	0.4081	0.0108
	Area SUBTOTAL	80.30	2.5229	0.0669		

#### Outfall 014 - Non-Process Runoff - Switchyard/Powerhouse NW Side to Ohio River

4	Storm Sewer to Ohio River from Substation Areas, Units 1-2, Water T	reatment and Admin Bu	uildings-Parking	3		
а	Substation/Switchyard	Packed Surface	0.5	9.56	0.5838	0.0155
b	Railroad Portion along Plant Substation Eastward toward Units 1-2 Areas	Packed Surface	0.5	0.62	0.0377	0.0010
с	Roadway/Parking (Triangular) Area Between Railroad Tracks Adj. Substation to FGD Purge Ditch from Units 1-2 Old FGD Eqpt Area	Impervious Surface	0.85	0.79	0.0816	0.0022
d	Units 1-2 ESPs and Old Administration Building Roadway-Parking Pavement Areas (including Old Chimney)	Impervious Surface	0.85	1.99	0.2065	0.0055
е	New Administration Building, Water Treatment and Units 1-2 Absorbent Silos Buildings-Pavement Areas	Impervious Surface	0.85	2.12	0.2206	0.0059
	Area SUBTOTAL	15.07	1.1302	0.0300		

#### Outfall 015 - Non-Process Runoff - Closed-Capped North Ash Pond & Ash Pond NorthWest External Slopes to Ohio River

# 15 Northwest Closed Ash Pond External Slopes and Riverbank Non-Process Runoff to Ohio River

		TOTALANEA	15	80/03	0.04		
15.a a Ve	egetated Areas Including Lower Access Roads	Vegetated Area		0.25	0.91	0.0277	0.0007
15.b b No	orth Closed-Capped (Old) Ash Pond Runoff to Outfall 015	Vegetated Area		0.25	4.63	0.1415	0.0038
	Area SUBTOTAL					0.1691	0.0045

#### Outfall 016 - Valley Village Cutoff Entrance Road Woods, Fields and Rail-Loop Covered Landfill Runoff to Ohio River

#### 16 Dixie Highway Main Entrance Areas

Total AREA	16	acres	96.88

6.a	Dixie Highway Plant Entrance Road Areas (from Receiving Warehous	se Highpoint to Woods/Fre	ost-School H	ighpoint A	reas)	
1	Railroad Portion along Northeast Rail-Loop toward Entrance Road and Valley Village Stormpipe Inlet	Packed Surface	0.5	1.47	0.0901	0.002
2	Grass Slopes Between Entrance Road and Rail Loop	Vegetated Area	0.25	4.69	0.1433	0.003
3	Plant Entrance Roadway Pavement	Impervious Surface	0.85	0.63	0.0657	0.001
4	Woods adjacent Frost Middle School and Fields North/adjacent Roadway	Vegetated Area	0.25	40.97	1.2516	0.033
	Area SUBTOTAL	47.77	1.5507	0.041		
6.b	Covered Landfill Areas within (Old/Closed) Railroad Inner Loop					
1	Maintenance Laydown Areas	Packed Surface	0.5	31.56	1.9283	0.051
2	Vegetated Fields	Vegetated Area	0.25	17.55	0.5360	0.014
	Area SUBTOTAL	49.11	2.4644	0.065		

Outfall 017 - Uncontaminated Runoff - Closed Ash Pond West External Slopes to Ohio River										
	Closded Ash Treatment Basin West External Slopes to Lower Access Road									
17 a	from NW Property Corner to Outfall #002-2 (to Ohio River)	Vegetated Area		0.25	3.02	0.0924		0.0025		

Outfall 018 - Uncontaminated Runoff - Process Pond NW External Slopes to Ohio River								
								1
		Process Pond NW External Slopes to Lower Access Road from Channel of						
18	а	Outfall #002-2 below Ash Pond Office Area (to Ohio River)	Vegetated Area		0.25	1.88	0.0575	0.0015

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Area #		Source	Runoff Description	Cr	# Acres	1-Day Max (MGD)	Pagik 18 (Annual Averaœ) (MGD)
Outfall 0	19 -	Uncontaminated Runoff - Riverbank Slopes West of Unit 2 (	CT to Ohio River				
19	а	Ash Treatment Basin West Slopes to Lower Access Road below Ash Sluice/Sumps Piperack and Access Road to Ash Pond Office Area	Vegetated Area	0.25	2.13	0.0650	0.0017
Outfall 0	20 -	Uncontaminated Runoff - Riverbank Slopes West of Unit 4 (	CT to Ohio River				
20	a	Riverbank Slopes West of Unit 4 Cooling Tower	Vegetated Area	0.25	1.99	0.0607	0.0016
Outfall 0	21 -	Uncontaminated Runoff - Riverbank Slopes West of Unit 3 (	CT to Ohio River				
21	а	Riverbank Slopes West of Unit 3 Cooling Tower	Vegetated Area	0.25	1.53	0.0468	0.0012
Outfall 0	22 -	Uncontaminated Runoff - Yard Area SW of Unit 3 CT to Ohio	o River				
22	a	Yard Areas SouthWest of Unit 3 Cooling Tower	Vegetated Area	0.25	2.21	0.0675	0.0018
Non-Poi	nt, I	Non-Process Area Runoff - North Slopes of Ash Pond Outsid	e Floodwall to MSD D	itch to Ohic	River		
23	a	Undeveloped Areas South & East of North Slopes of ATB Outside Floodwall to MSD Ditch (no discharge ditch)	Vegetated Area	0.25	15.03	0.4592	0.0122
Non-Poi	nt, I	Non-Process Area Runoff - Riverbanks below West Slopes-A	sh Pond to Screenhou	use Areas R	unoff to	Ohio Rive	r
24	a	Undeveloped Riverbanks Areas Below West Slopes of Ash Pond to Screenhouse	Vegetated Area	0.25	16.68	0.5094	0.0135
Outfall 0	25	Non-Process Area Runott - Closed/Capped Ashpond Hardsc	ape Area Stormwater I	Runott to D	ittuser t		er
25	a	Closed/Capped Ashpond Hardscape Area Stormwater Runoff to Diffuser	Impervious Surface	0.85	0.54	0.0563	0.0015
Non-Poi	nt, l	Non-Process Area Runoff - Riverbanks Below West Slopes fr	om Outfall 001 Gypsu	m Barge Lo	ader Ar	eas	
26	a a	Undeveloped Riverbanks Areas Below West Slopes from Screenhouse to Outfall #013 Areas (including Coal Barge Unloading Area)	Vegetated Area	0.25	16.96	0.5181	0.0137
Non-Poi	nt, I	Non-Process Area Runoff - Dixie Highway West Roadside Ar	eas to Aesthetic Berm	to Constru	ction Er	itrance	
27	a a	Undeveloped Areas Dixie Highway West Roadside Areas to Aesthetic Berm to Construction Entrance	Vegetated Area	0.25	6.10	0.1865	0.0049

TOTAL SITE PROPERTY

626.0 acres

# LG&E-Mill Creek Station – KPDES Permit Renewal Information Construction Projects Work Required for ELG Federal Rule Compliance

Rev December 15, 2022

### SUMMARY

To update the renewal of the Louisville Gas & Electric Company (LG&E) Mill Creek Generating Station (Plant) KPDES permit, this description of construction activities provides technical and scheduling information to support retaining applicability dates for KPDES permit conditions to meet Federal Effluent Limitations Guidelines (ELG) regulations. EPA recently issued communications that it will reconsider the 2020 ELG rule with potential changes to limits for FGD wastewater, bottom ash transport water, legacy wastewater, and landfill leachate. However, until such proposed rulemaking is published and finalized, steam-electric utilities must comply with the 2020 ELG rule and its compliance dates. Therefore, LGE is proceeding with ELG rule construction activities under the applicability dates granted in the Mill Creek Generation Station KPDES permit KY0003221 modification with an effective date of November 1, 2021. Mill Creek utilizes a dry pneumatic bottom ash conveying system and has no discharge of Bottom Ash Transport Water (BATW).

Therefore, to comply with the ELG Rule, LG&E is continuing activities to:

• construct a biological wastewater treatment system and ancillary Ultrafiltration (UF) for Flue Gas Desulfurization (FGD) process waters.

Specifically at the Mill Creek Plant, construction of new biological wastewater treatment facilities for FGD (Flue Gas Desulfurization) systems wastewaters and other plant process waters require:

- Construction of a biological treatment system building to house tanks, chemical storage, equipment, electrical components, controls, etc.;
- procurement and installation of a sophisticated, modular biological treatment system which includes multiple biological fluidized bed reactors and ancillary pumps, piping, valving, electrical, and controls as well as a large Ultrafiltration system;
- A complex design to retrofit new equipment with the existing physical-chemical wastewater treatment facility;
- Complex construction scheduling sequencing to construct while units operate and install tie-ins when outages are scheduled;

With the intent to reduce the discharge of wastewater contaminants as expeditiously and economically as possible, the description and schedule provided here are accelerated and represent a current best-estimate, but it must be recognized that construction activities are still in the early stages and all-weather construction activities may have a profound effect upon the final completion date. Accordingly, LG&E-Mill Creek will contact KDOW-KPDES staff to provide updated information if the actual schedule significantly deviates from that provided here including if adjustment in ELG applicability dates are required.

## LG&E-Mill Creek Station – KPDES Permit Renewal Information Construction Projects Work Required for ELG Federal Rule Compliance

Rev December 15, 2022

### CONSTRUCTION ACTIVITIES DESCRIPTION

Construction activities for the following projects are currently underway.

### Flue Gas Desulfurization Wastewater (FGDWW) Project

For the FGDWW project, discreet steps of the engineering-procurement-installation contract include multiple overlapping phases which are not specifically sequential but highly interdependent so that delays of any step likely lead to delays of completing the entire project.

For the FGDWW specific-activities, these phases and general expected durations include:

- Detailed engineering: beginning May 2021
- Procurement: beginning Q3 2021
- Construction -multi-discipline and multi-trades: beginning Q4 2021
- Mechanical startup, troubleshooting and testing: beginning Q2 2023
- Commercial completion and performance test: beginning Q1 2024
- Plant testing and optimization: Q2 Q4 2024
- Applicability Date: January 1, 2025

### **Construction – FGDWW**

Engineering and procurement activities, associated with changes or impacts of the finalized ELG Rule, are already underway for the Flue Gas Desulfurization Wastewater (FGDWW) treatment system.

### **FGDWW System Design**

Specifically, the Mill Creek Station existing FGDWW treatment system will be modified by constructing a new selenium/biological treatment system (ELG System) to post-treat the existing physical-chemical equipment flows. Included in the ELG System are outdoor bioreactors, sump and a new building housing additional process equipment, electrical switchgear, control panels, laboratory and chemical storage tanks. The solids from the ELG System will be integrated into the existing FGDWW solids flows for management in existing onsite CCR storage facility.

Treated effluent flows will continue to be discharged through internal Outfall 024 and combined with other plant process flows to the Process Pond to internal Outfall 002 to the high-rate multiport diffuser at external outfall 025 to the Ohio River.

# LG&E-Mill Creek Station – KPDES Permit Renewal Information Construction Projects Work Required for ELG Federal Rule Compliance

Rev December 15, 2022

# Mill Creek § 316(b) § 122.21(r)(2)-(8) Information and Factors that Must and May be Considered for the Entrainment BTA Determination

Final Report, September 2022



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# ACKNOWLEDGMENTS

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# ACRONYMS

AIF – Actual Intake Flow **AOI-** Area of Influence **BPJ** – Best Professional Judgement BTA - Best Technology Available CCRS – Closed-cycle Recirculating System CFS - Cubic Feet Per Second CWA – Clean Water Act CWIS - Cooling Water Intake Structure **DIF-** Design Intake Flow EPA - United States Environmental Protection Agency **EPRI** – Electric Power Research Institute GPM- Gallons per Minute KDEP - Kentucky Department for Environmental Protection KDFWR - Kentucky Department of Fish and Wildlife Resources KSNPC - Kentucky State Nature Preserves Commission LG&E – Louisville Gas and Electric Company MGD - Million Gallons Per Day mORFIn - Modified Ohio River Fish Index NGVD- National Geodetic Vertical Datum NPDES – National Pollutant Discharge Elimination System O & M – Operation and Maintenance **ORSANCO-** Ohio River Valley Sanitation Commission ORM – Ohio River Mile **PSI-** Pounds per Square inch **RFLP** - Restriction Fragment Length Polymorphisms **RM-** River Mile T&E – Threatened and Endangered USACE- United States Army Corps of Engineers USFWS - United States Fish and Wildlife Service

YOY - Young of the Year

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# **EXECUTIVE SUMMARY**

This document is submitted in compliance with U.S. Environmental Protection Agency (EPA) final § 316(b) regulations (Rule) for existing facilities that became effective on October 14, 2014. The Mill Creek Generating Station (Mill Creek) is owned by Louisville Gas and Electric Company (LG&E). Mill Creek is covered by the Rule that requires all facilities using >2 MGD to use best technology available (BTA) for entrainment and impingement. All facilities are required to submit the § 122.21(r)(2) and (3) information and applicable provisions of the (r)(4) through (8) information for impingement that includes:

- (r)(2) Source Water Physical Data
- (r)(3) Cooling Water Intake Structure Data
- (r)(4) Source Water Baseline Biological Characterization Data
- (r)(5) Cooling Water System Data
- (r)(6) Chosen Method of Compliance with the Impingement Mortality Standard
- (r)(7) Entrainment Performance Studies
- (r)(8) Operational Status

The BTA determination for entrainment is based on information provided to the National Pollutant Discharge Elimination System (NPDES) permitting authority, the Kentucky Department of Environmental Protection (KDEP) for Mill Creek. The BTA determination for entrainment is made on a site-specific basis. At a minimum, all facilities using >125 MGD actual intake flow (AIF) are required to submit entrainment information that includes the § 122.21(r)(9)-(12) information as follows:

(r)(9) – Entrainment Characterization Study

(r)(10) – Comprehensive Technical Feasibility and Cost Evaluation Study

(r)(11) – Benefits Valuation Study

(r)(12) – Non-water Quality Environmental and Other Impacts Study

The § 122.21(r)(10) - (12) information must be peer reviewed as required at § 122.21(r)(13) of the Rule.

While Mill Creek's AIF currently exceeds 125 MGD, the Rule has a provision at

§122.21(r)(1)(ii)(G) that states: "If the owner or operator of an existing facility plans to retire the facility after the current permit expires but within one permit cycle, then the Director may waive the requirements of paragraphs (r)(7), (9), (10), (11), (12), and (13) of this section pending a signed certification statement from the owner or operator of the facility specifying the last operating date of the facility. LG&E is planning to retire Unit 1 (the only once-through unit at Mill Creek) no later than the end of 2024. LG&E has already informed the public service commission that it plans to retire the Mill Creek once-through condenser cooled unit (Unit 1 during the next permit cycle and therefore qualifies for the exemption from having to submit the entrainment BTA determination. Unit 2 (a closed-cycle unit) will also be retired by the end of 2028. LG&E is still required to submit the § 122.21(r)(2) through (8) information and that information is provided in this document. **Flow Reductions -** The planned retirement of Unit 1 by 2024 will reduce the station's current DIF from 285.7 MGD to 59.0 MGD. This will result in a 79% reduction from the current DIF. The three remaining units at Mill Creek, Units 2, 3 and 4, use closed-cycle recirculating systems (CCRS) that meets the definition of CCRS at § 125.92 of the Rule. CCRS for these units reduces flow by approximately 93% when compared to similar units if they were designed for once-through cooling. Actual flow reductions are expected to be greater because the annual peak monthly average make-up water flow for Units 2 through 4 is less than the design make-up water flow.

Additional reductions in the DIF will occur after 2028 with the retirement of Unit 2.

**Federally Protected Species** – Potential risks to federally protected species are discussed in Section 4.6 of this document. No federally protected species have been collected in any of the entrainment or impingement samples during the course of Mill Creek's entrainment characterization studies. Currently, there is a low risk of entrainment, impingement or designated critical habitat impacts as a result of current operations. As noted above any risk will be reduced by the 79% reduction in cooling water flow with the retirement of Unit 1. This includes elimination of any impacts as a result of the Unit 1 thermal discharge downstream of the facility.

### Conclusion

As a result of retiring Unit 1, the only once-through cooled unit, the Mill Creek DIF will be reduced by 79% by the end of 2024. The remaining three units, Units 2, 3 and 4 already have closed-cycle recirculating systems as defined at § 125.92. These units will meet the impingement mortality and entrainment standards of the Rule and continued operation does not pose a significant risk to federally protected species.

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# **1 INTRODUCTION**

## 1.1 General § 316(b) Rule Overview

The U.S. Environmental Protection Agency (EPA) issued final § 316(b) regulations (Rule) for existing facilities that became effective on October 14, 2014. These regulations require all facilities using >2 MGD to use best technology available (BTA) for entrainment and impingement. All facilities are required to submit the § 122.21(r)(2) and (3) information and applicable provisions of the (r)(4) through (8) information for impingement that includes:

- (r)(2) Source Water Physical Data
- (r)(3) Cooling Water Intake Structure Data
- (r)(4) Source Water Baseline Biological Characterization Data
- (r)(5) Cooling Water System Data
- (r)(6) Chosen Method of Compliance with the Impingement Mortality Standard
- (r)(7) Entrainment Performance Studies
- (r)(8) Operational Status

The BTA determination for entrainment is based on information provided to the National Pollutant Discharge Elimination System (NPDES) permitting authority, Kentucky Division of Environmental Protection (KDEP) for Mill Creek. The BTA determination for entrainment is made on a site-specific basis. At a minimum, all facilities using >125 MGD actual intake flow (AIF) are required to submit entrainment information that includes the § 122.21(r)(9)-(12) information as follows:

(r)(9) – Entrainment Characterization Study

(r)(10) – Comprehensive Technical Feasibility and Cost Evaluation Study

(r)(11) – Benefits Valuation Study

(r)(12) – Non-water Quality Environmental and Other Impacts Study

The § 122.21(r)(10) - (12) information must be peer reviewed as required at § 122.21(r)(13) of the Rule.

The Rule includes a number of potential exemptions that include:

- a *de minimis* exemption for low levels of impingement,
- a provision for less stringent standards for low capacity utilization,
- an exemption for some or all of the §122.21(r) information for facilities that withdraw cooling water from manmade lakes and reservoirs and have stocked or managed fisheries,
- an exemption from use of technologies at nuclear facilities that conflict with federal nuclear safety requirements, and
- an exemption from submitting entrainment information for facilities retiring in the current or next NPDES permit cycle.

#### Introduction

The Rule provides broad discretionary authority to KDEP to deny exemptions or even impose additional requirements, especially if federally protected threatened or endangered species or their designated critical habitat are at risk.

### 1.2 Compliance Approach for Mill Creek

While Mill Creek's AIF currently exceeds 125 MGD, the Rule has a provision at §122.21(r)(1)(ii)(G) that states: "If the owner or operator of an existing facility plans to retire the facility after the current permit expires but within one permit cycle, then the Director may waive the requirements of paragraphs (r)(7), (9), (10), (11), (12), and (13) of this section pending a signed certification statement from the owner or operator of the facility specifying the last operating date of the facility. LG&E is planning to retire Unit 1 (the once through cooled unit) at Mill Creek no later than the end of 2024 and it will also retire Unit 2, a closed-cycle unit by the end of 2028. Thus, the facility is exempted from having to provide the entrainment information. In this document LG&E is providing the \$ 122.21(r)(2) through (8) information for Mill Creek's once-through cooled Unit (Units 1) as well as the closed-cycle cooled units (Units 2, 3 and 4). In Chapter 6, LG&E plans to use BTA for Impingement through retiring Unit 1 and 2 and the continued use of closed-cycle recirculating systems (CCRS) as BTA for Units 3 and 4. This compliance approach is allowed under the provision at 122.21(r)(1)(ii)(G) of the Rule. LG&E recognizes that KDEP is still required to make an entrainment BTA determination based on factors that must and may be considered as required at §125.98(f) of the Rule. However, LG&E provides information in Chapter 9 and the executive summary to assist KDEP in making the determination relative to those factors.

### 1.3 Report Organization

The report is organized such that the \$ 122.21(r)(2) through (8) information is presented in Chapters 2 through 8 of this report respectively. Chapter 9 provides information to KDEP to inform the entrainment BTA determination that is based on factors that must and may be considered in making that determination. Chapter 10 provides a list of references used in this document. A high quality flow line diagram is provided as Appendix A.

The entrainment characterization study (r)(9), reports on use of CCRS and fine-mesh screens (r)(10), information and information on the non-water quality and (r)(12), other environmental impact were also completed for Mill Creek. These reports were drafted prior to the LG&E decision to retire Units 1 and 2 and no longer required for Mill Creek. They are therefore not included in this submittal.

# 2 § 122.21(R)(2) SOURCE WATERBODY PHYSICAL DATA

The Rule at § 122.21(r)(2) requires LG&E to provide the following source waterbody physical data for Mill Creek:

(i) A narrative description and scaled drawings showing the physical configuration of all source water bodies used by your facility, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports your determination of the water body type where each cooling water intake structure is located:

(ii) Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods you used to conduct any physical studies to determine your intake's area of influence within the waterbody and the results of such studies; and

### (iii) Locational maps.

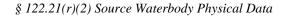
The following physical data are being provided to characterize the source waterbody in the vicinity of Mill Creek. This information is used, in part, to evaluate the various measures that LG&E are required to consider to meet the BTA requirements of the Rule. The following sections describe the Ohio River's dimensions, key physical and chemical characteristics, and provides the figures and maps required under 40 CFR 122.21(r)(2).

## 2.1 Narrative Description of Source Waterbody

The Ohio River is nearly 1,000 miles long, flowing from the confluence of the Allegheny and the Monongahela Rivers in Pittsburgh, Pennsylvania to where it joins the Mississippi River in Cairo, Illinois. The drainage area of the Ohio River and approximate location of Mill Creek is shown on Figure 2-1. The Ohio River is divided into a series of pools by 20 locks and dams. These locks and dams were installed to improve navigation and control flooding on the river and are managed by the U.S. Army Corps of Engineers (USACE).

Mill Creek is located on the eastern shore of the Ohio River in Louisville, Kentucky at River Mile (RM) 625.8 within the Cannelton Pool. This pool is 113.9 miles long, extending from the McAlpine Locks and Dam (RM 606.8) downstream to the Cannelton Locks and Dam (RM 720.7), as shown on Figure 2-2. The pool has a gradient drop of 0.3 feet per mile (ft/mi.) and averages 1,674 feet wide and 32 feet deep (ORSANCO 2020a).

Major inflows into the Cannelton Pool include the Salt River, Big Indian Creek, Sinking Creek and Blue River (ORSANCO 2020a). The Salt River, the closest tributary to Mill Creek, discharges into the Ohio River at RM 629.8, 4.0 miles downstream of the station.



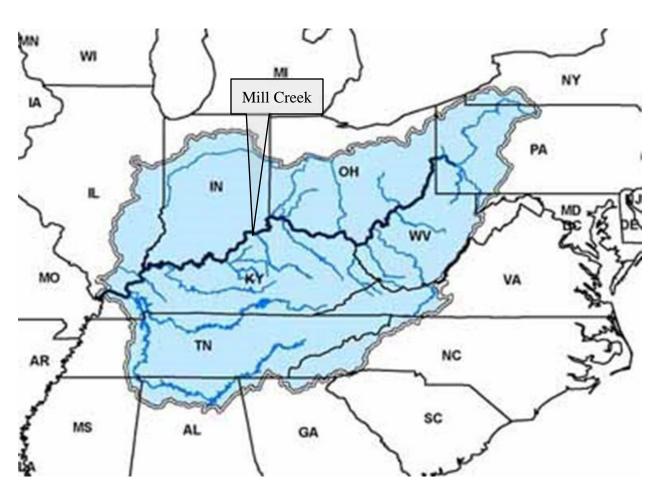


Figure 2-1 Ohio River Watershed (ORSANCO 2020b)

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§ 122.21(r)(2) Source Waterbody Physical Data

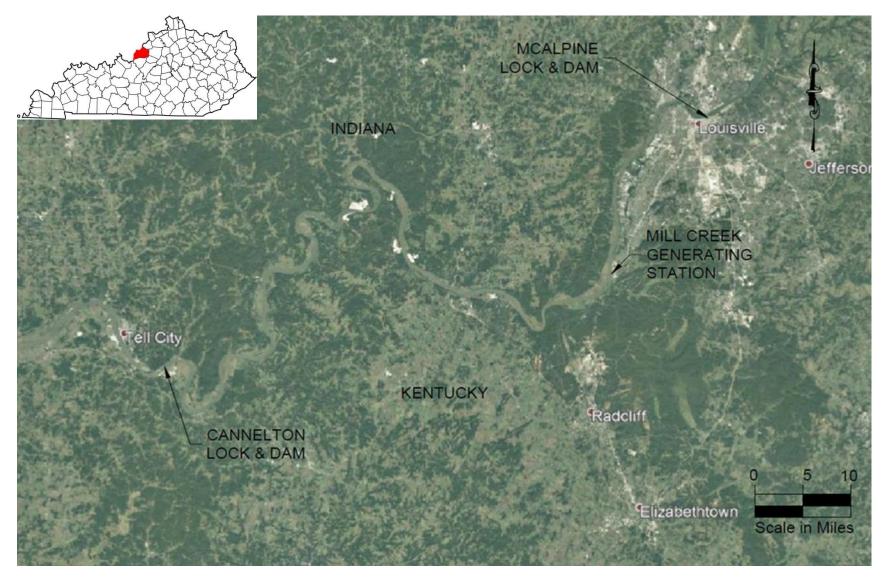


Figure 2-2 Locational Map of Mill Creek

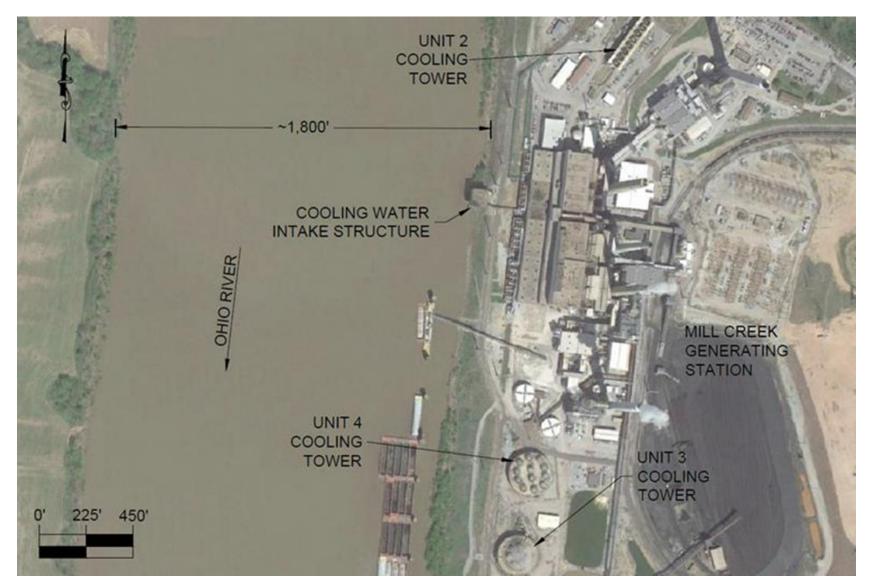
§ 122.21(r)(2) Source Waterbody Physical Data

### 2.2 Aerial Dimensions

Mill Creek is located on the eastern shore of the Ohio River at RM 625.8. The river near the CWIS is approximately 1,800 ft wide and flows in a southerly direction, as shown in Figure 2-3.

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§ 122.21(r)(2) Source Waterbody Physical Data



**Figure 2-3 Site Configuration of Mill Creek** 

## 2.3 Depths

Limited information is available on the water levels and river bathymetry in the Cannelton Pool near Mill Creek. The normal pool level in the Cannelton Pool is El. 383.0 ft. Water level information within the pool was obtained from USGS Gage #03294600 for the Ohio River at Kosmosdale, KY, which is located at approximately RM 627, 1.2 river miles downstream of Mill Creek (USGS 2022a). For the period of record from January 1, 2002 through December 31, 2021, water levels at this site ranged from a low of El. 380.34 ft which occurred on July 27, 2011, to a high on February 26, 2018 of El. 435.48 ft with an average surface elevation of 391.95 ft. The 50% exceedance water level during this period was El. 388.51 ft. Assuming a pool gradient of 0.3 ft/mile during low water, the low water level at Mill Creek would be El. 380.7 ft. All elevations are given in NGVD29. The stage duration curve for this period is provided in Figure 2-4. The average monthly water level for this period is provided in Table 2-1.

Historic design information from Mill Creek indicates both a normal and low water elevation of 383.0 ft. This water level is consistent with the project pool elevation but is not expected to be a good representation of low water levels at the site. A water level of El. 375.0 ft., approximately 5.7 ft below the estimated lowest water level recorded during the period of record, was assumed for the design low water level at Mill Creek. This low water level is consistent with the design low water level at Cane Run, located 9.2 river miles upstream of Mill Creek, and provides a conservatively low estimate of low water at the site. A river level of El. 375.0 ft is therefore used for velocity calculations and technology designs throughout the 122.21(r) studies. This water level may not however be indicative of the lowest water level that the station can operate.

Bathymetric data is not available for the Ohio River near Mill Creek. The only information on water depths is provided in the navigation chart for the Ohio River near Mill Creek (Figure 2-5). The white sections of river in the navigation chart indicate a water depth of 9 ft or more at the project pool (El. 383.0 ft), and the blue sections represent water depths less than 9 ft at the project pool.

Month	Average Surface Elevation (ft) (2002-2021)
January	397.76
February	396.15
March	399.93
April	398.94
May	395.86
June	390.3
July	387.31
August	384.6
September	386.05
October	385.14
November	389.32
December	394.75

# Table 2-1 Water Surface Elevations

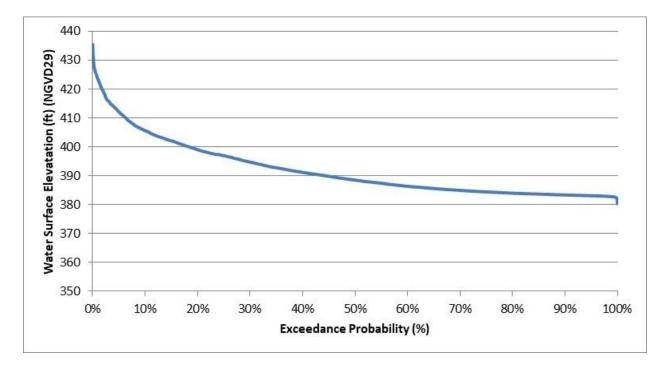


Figure 2-4 Stage Duration Curve for USGS Gage #03294600 (2002-2021)

### § 122.21(r)(2) Source Waterbody Physical Data

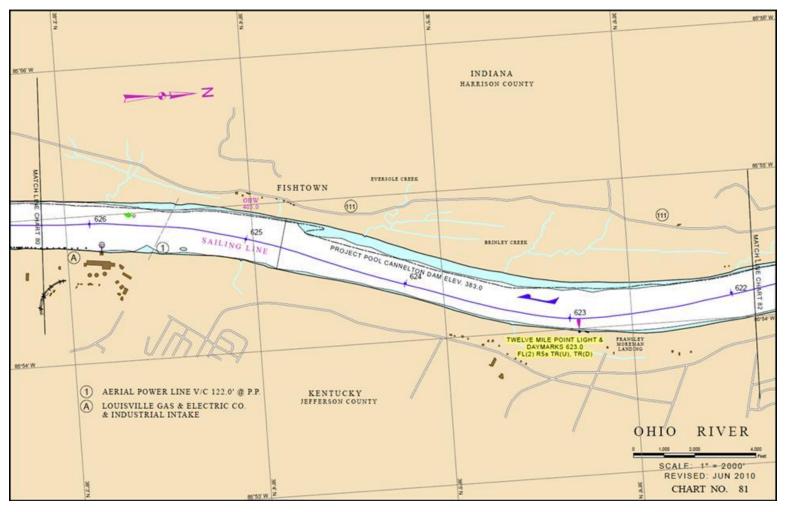


Figure 2-5 Ohio River Navigation Chart for Mill Creek and Surrounding River (USACE 2010)

## 2.4 Flows

River flows in the Ohio River near Mill Creek are based on river flows recorded from USGS Gage #03294500 for the Ohio River at Louisville, KY (USGS 2022b). River flows at this site have been recorded since January 1, 1928, however only information from the last 20 calendar years on record (2002-2021) were used for this report. EPRI limited the data to the last 20 years, because this period is expected to be a good representation of existing land use, water use and climactic conditions on the Ohio River. For the period of record daily mean flows ranged from a high of 720,000 cubic feet per second (cfs) measured February 26, 2018 to the low of 877 cfs measured in September 21, 2010. The average mean river flow was approximately 141,638 cfs and the median flow (50% exceedance) was 104,000 cfs. The average annual flows for the period of record are provided in Table 2-2. The flows in this stretch of the river follow seasonal trends with higher flows occurring in the late winter and lower flows in the late summer as shown in Table 2-3 and Figure 2-6.

Year	Mean Annual Flow (cfs)
2002	120,600
2003	177,000
2004	178,700
2005	121,700
2006	123,500
2007	117,000
2008	136,700
2009	116,600
2010	108,300
2011	188,300
2012	108,400
2013	139,300
2014	131,100
2015	151,100
2016	112,100
2017	137,300
2018	210,600
2019	172,800
2020	158,800
2021	123,000*

# Table 2-2Mean Annual Flow as Measured From USGS Gage #03294500 for the<br/>Ohio River at Louisville, KY (Annual Years 2002-2021)

\* Daily average flows used to estimate the flows during September-December 2021

# Table 2-3 Average Monthly Ohio River Flows as Measured at Louisville, KY (January 1, 2002 Through December 31, 2021) (USGS Gage #03294500)

Month	Monthly Average Flow (cfs)
January	200,013
February	214,400
March	252,915
April	216,858
May	184,246
June	111,550
July	77,036
August	48,256
September	60,015
October	59,450
November	111,247
December	173,128

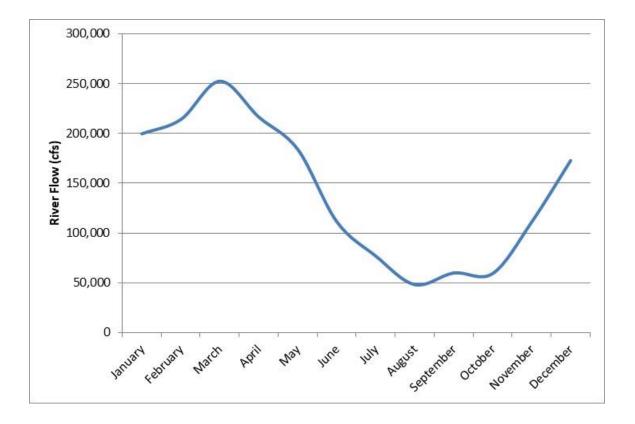


Figure 2-6 Average Monthly Ohio River Flows as Measured at Louisville, KY (2002 through 2021) (USGS Gage #03294500)

#### 2.5 Salinity

The Ohio River is characterized as freshwater and therefore has very low salinity (i.e., <1 ppt).

#### 2.6 Temperature

Monthly average water temperatures for the Ohio River are available from ORSANCO (ORSANCO 2020c). River temperatures measured at Newburgh Lock and Dam are available for the months of May through October through 2017. Daily average water temperatures for the Ohio River from the McAlpine Lock and Dam to Cairo, IL are available from 1995 to 2003. The daily data set, while older is presented in this analysis because it includes all twelve months. During this time the daily river water temperature ranged from 38.8°F to 83.0°F with an average daily temperature of 61.2°F (Table 2-4). The seasonal change in water temperature is shown on Figure 2-7.

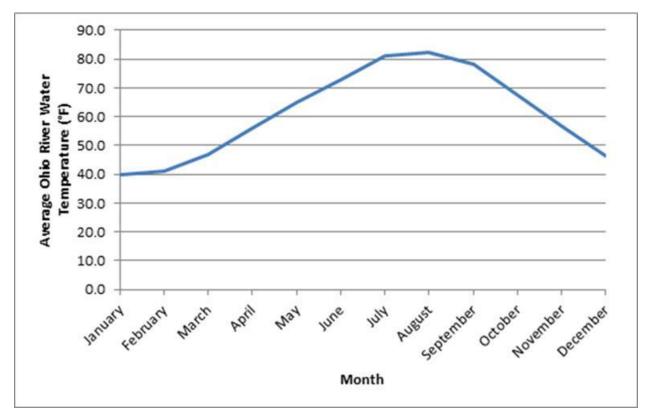


Figure 2-7 Average Ohio River Water Temperatures in Degrees Fahrenheit for McAlpine L&D to Cairo, IL (1995-2003)

## Table 2-4Average Monthly Ohio River Temperatures in Degrees Fahrenheit for<br/>McAlpine L&D to Cairo, IL (1995-2003)

Month	Monthly River Temperatures (°F)
January	40.0
February	41.2
March	46.9
April	55.9
May	64.9
June	73.0
July	81.2
August	82.4
September	78.3
October	67.5
November	56.7
December	46.4
Average	61.2

#### 2.7 Area of Influence

The area of influence (AOI) of a CWIS represents the portion of the source waterbody that is affected by the CWIS cooling water withdrawal (i.e., area in the source waterbody where organisms are potentially subject to entrainment or impingement by the CWIS). This information is needed to indicate the potential area of adverse environmental impact on the source waterbody and to appropriateness of any design or technologies proposed by the applicant. The AOI differs depending on whether it is considered for impingement or entrainment. From an impingement standpoint, the AOI can be defined as the area where a healthy fish may not be able to swim against and escape the intake flow. The AOI from an entrainment standpoint is the chance of a particle within the source waterbody becoming entrained. This area can vary depending on the number of cooling water pumps in operation.

Accurately defining the AOI at the CWIS requires a detailed understanding of the intake and the surrounding waterbody environment. Simple desktop models using available information can however provide sufficient AOI estimates for the purpose of designing entrainment and/or source waterbody studies and evaluating fish protection technologies and/or operational measures.

#### 2.7.1 Impingement AOI

A desktop model was used to estimate the impingement area of influence (AOI) for Mill Creek's CWIS. The first step in determining the impingement AOI is to define the approximate area within the 0.5 foot per second (ft/sec) velocity contour. EPA considers this velocity to be a *de minimis* value for impingement. That is, a fish can swim freely in a flow at this velocity and avoid impingement. Several basic and common assumptions were made for Mill Creek to define the approximate AOI using simplified calculations. These assumptions are:

- The maximum AOI occurs at the minimum design water level;
- The maximum AOI occurs when the station is operating at its maximum design intake flow (DIF) (442.0 cfs), which includes the once-through cooling water flow;
- Due to the absence of detailed bottom bathymetry of the river in front of the CWIS, the inverts were assumed to be horizontal and level with the invert of the CWIS (El. 364.0 ft);
- All of the currents in the area are a direct result of the Mill Creek withdrawal; and
- The flow field extends the full depth of the water column;
- The flow per unit area increase towards the center of the CWIS resulting in an elliptical AOI.

The geometry of the intake, the adjacent shoreline, the bottom bathymetry, and design intake flow were based on information presented in  $\frac{122.21(r)(2)}{(3)}$ .

All four units at Mill Creek share the same CWIS, therefore, the simplified estimate of the AOI uses a DIF of 442.0 cfs, which includes both once-though cooling water and make-up water flow for the closed-cycle units. This DIF was divided by 0.5 fps to calculate the effective flow area necessary to achieve a 0.5 fps velocity (884 ft<sup>2</sup>). With a minimum water depth of 11 ft, the 0.5 fps velocity contour will be approximately 80.4 ft long. This length along with the length of the

intake was used to solve the Ramanujan equation for the radius of an ellipse along the minor axis. The Ramanujan equation is provided below.

$$p \approx \pi \left[ 3(a+b) - \sqrt{(3a+b)(a+3b)} \right]$$

p= perimeter of ellipse (twice the effective flow length)

a= radius of ellipse along the long axis (half of the intake or intake bay width)

b= radius of ellipse along the short axis (maximum distance of the velocity contour)

The results of this analysis indicate that the 0.5 fps contour extends out a maximum of 16.9 ft from the face of CWIS at the design low water level (El. 375.0 ft) as shown on Figure 2-8. At the lowest recorded river level (El. 380.7), the impingement AOI is expected to extend out a maximum of 9.5 ft from the face of the CWIS when operating at the DIF.

Unit 1, the once-though unit at Mill Creek, is slated to be retired by the end of 2024. Once Unit 1 is retired, the four long-shaft pumps that provide make-up water for the three closed-cycle units will be the only pumps withdrawing water from the Ohio River. This will reduce the Mill Creek DIF to 91.4 cfs, a 79% flow reduction. Under this operating scenario, the 0.5 ft/sec contour would extend 2.3 ft into the river assuming flow is limited to only one trash rack opening and a low water level of El. 375.0 ft as shown on Figure 2-8. At the lowest recorded river level of El. 380.7 ft, the impingement AOI occurs within the CWIS. After 2028, the DIF may be lower than what is estimated here, because one or more of the long-shaft pumps may be retired as part of the Unit 2 retirement.

#### 2.7.2 Entrainment AOI

The AOI from an entrainment standpoint is the area in the river within which a suspended particle is likely to become drawn into the Mill Creek CWIS along with the cooling water. In the Rule preamble (see Footnote 48) EPA states that

"Entrainment is generally considered to be proportional to flow and therefore a reduction in flow results in a proportional reduction in entrainment, as EPA assumes for purposes of national rulemaking that entrainable organisms are uniformly distributed throughout the source water".

A simple desktop model was used to determine the AOI for entrainment at the Mill Creek CWIS. Accurately defining the AOI for entrainment at CWIS(s) requires an understanding of both intake and river flows. The following basic and common assumptions were made for Mill Creek to define the approximate entrainment AOI using simplified calculations.

- The design intake flow of the Mill Creek CWIS is 442.0 cfs.
- The maximum AOI occurs at the lowest daily mean river flow as recorded in Louisville, KY (877 cfs occurring on September 21, 2010).
- The river near the CWIS has a width of 1,800 feet with a uniform bottom
- The flow in the Ohio River is uniform throughout the river cross section.

Localized flows and currents were not considered in this simplified model but could potentially effect entrainment.

During the lowest recorded flow conditions, the Mill Creek CWIS could withdraw up to 50% of the Ohio River flow. Based on the river geometry assumptions, the AOI for entrainment would extend approximately 907 ft out from the face of the CWIS during the extreme low river flow conditions. During average daily mean river flow conditions from 2002 to 2021 (141,638 cfs), the Mill Creek CWIS could withdraw up to approximately 0.31% of the Ohio River flow resulting in an entrainment AOI extending approximately 6 ft from the face of the CWIS.

The percent of the river flow withdrawn based on the average monthly river flows from 2002-2021, and the estimated distance the entrainment AOI extends out into the river under the existing DIF are provided in Table 2-5. The main spawning and larval recruitment period for the Ohio River at Mill Creek extends from mid-April through mid-August. From April through August, Mill Creek could withdraw up to 0.35% of the average monthly river flow (127,589 cfs) resulting in an affected entrainment AOI extending approximately 6 ft from the face of the CWIS.

With the retirement of Unit 1 during the next permit cycle, the Mill Creek DIF will drop from 442.0 cfs to 91.4 cfs. During extreme low flow conditions and Mill Creek operating at the new DIF, the station could withdraw up to 10% of the river flow, with an entrainment AOI extending up to 188 ft from the CWIS. If operating at its DIF, Mill Creek would withdraw less than 0.1% of both the average annual river flow and the average monthly river flow during the entrainment season. The entrainment AOI under these conditions extend approximately 1 ft out from the CWIS. The entrainment AOI would be reduced further if one or more long-shaft pumps are retired in conjunction with the Unit 2 retirement. The percent of the river flow withdrawn and the estimated distance the entrainment AOI extends out into the river, for the average monthly river flow from 2002-2021 and assuming Mill Creek is operating at its future DIF are provided in Table 2-6.

Table 2-5 Percent of the Ohio River Withdrawn Through the Mill Creek CWIS at
the Existing Design Intake Flow (442.0 cfs) Based on Average Monthly Ohio River
Flows as Measured at Louisville, KY (January 1, 2002 through January 31, 2021)

Month	Mean Monthly Ohio River Flow (cfs)	Design Intake Flow (cfs)	Percent of River Withdrawn	Distance AOI Extends Into the River (ft)
January	200,013	442.0	0.22%	4
February	214,400	442.0	0.21%	4
March	252,915	442.0	0.17%	3
April	216,858	442.0	0.20%	4
May	184,246	442.0	0.24%	4
June	111,550	442.0	0.40%	7
July	77,036	442.0	0.57%	10
August	48,256	442.0	0.92%	16
September	60,015	442.0	0.74%	13
October	59,450	442.0	0.74%	13
November	111,247	442.0	0.40%	7
December	173,128	442.0	0.26%	5

Table 2-6 Percent of the Ohio River Withdrawn Through the Mill Creek CWIS at the Future Design Intake Flow (91.4 cfs) Based on Average Monthly Ohio River Flows as Measured at Louisville, KY (January 1, 2002 through January 31, 2021)

Month	Mean Monthly Ohio River Flow (cfs)	Design Intake Flow (cfs)	Percent of River Withdrawn	Distance AOI Extends Into the River (ft)
January	200,013	91.4	0.05%	1
February	214,400	91.4	0.04%	1
March	252,915	91.4	0.04%	1
April	216,858	91.4	0.04%	1
May	184,246	91.4	0.05%	1
June	111,550	91.4	0.08%	1
July	77,036	91.4	0.12%	2
August	48,256	91.4	0.19%	3
September	60,015	91.4	0.15%	3
October	59,450	91.4	0.15%	3
November	111,247	91.4	0.08%	1
December	173,128	91.4	0.05%	1



Figure 2-8 Area of Influence for Impingement for Mill Creek at a Low Water Elevation of 375.0 ft

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## 3 § 122.21(R)(3) COOLING WATER INTAKE STRUCTURE DATA

The Rule at § 122.21(r)(3) requires LG&E to provide the following cooling water intake information for Mill Creek:

(*i*) A narrative description of the configuration of each of your cooling water intake structures and where it is located in the water body and in the water column;

(*ii*) Latitude and longitude in degrees, minutes and seconds for each of your cooling water structures;

(iii) A narrative description of the operation of each of your cooling water intake structures, including design intake flows, daily hours of operation number of days of the year in operation and seasonal changes, if applicable;

(*iv*) A flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges; and

(v) Engineering drawings of the cooling water intake structure.

The following CWIS data are being provided to characterize the Mill Creek CWIS and evaluate the potential for impingement and entrainment of aquatic organisms.

#### 3.1 CWIS Configuration

Mill Creek is a steam electric generating station with four coal-fired units located on the eastern shore of the Ohio River at River Mile (RM) 625.8, in Louisville, Jefferson County, Kentucky (KY). This is approximately 15 miles southwest of downtown Louisville, KY and 9.2 miles downstream from the Cane Run Generating Station. The Mill Creek CWIS is located at latitude 38°03'11.2" and longitude 85°54'44.0". The Mill Creek CWIS provides circulating water to the Unit 1 once-through cooling water system, and make-up water to three units' (Units 2, 3, and 4) with CCRS.

The shoreline CWIS includes a skimmer wall, trash racks, a baffle wall and four traveling water screens that are used to keep fish and debris out of the circulating and make-up water systems. The CWIS has a total width of approximately 70 ft, a top deck elevation of 462.0 ft and is divided into four intake bays, two for Unit 1 and two for Units 2, 3, and 4. The overall arrangement of the Mill Creek site and CWIS is shown in Figure 3-1. Plan and section views of the CWIS are provided in Figure 3-3 and Figure 3-4 respectively.

The skimmer wall is located at the face of the CWIS. This skimmer wall extends 2 ft below the normal water level to El. 381.0 ft. There are two openings in the skimmer wall, each 17 ft high by 14 ft wide. Trash racks span the total width and height of both openings. The trash racks have 3 inch by 0.375 inch bars spaced 4 inches on center.

The CWIS, downstream of the skimmer wall, is divided into four screen bays; each 11.3 ft wide. A baffle wall, located at the face of each screen bay extends down to El. 373.2 ft. The floor under the baffle wall is at El. 365.2 ft providing an 8 ft high by 11.3 ft wide opening.

Traveling water screens are located downstream of the baffle wall openings. The centerline of the traveling water screens is located 5.75 ft downstream of the baffle walls. These screens are 10 ft wide and equipped with 0.375 (3/8) inch square stainless-steel mesh. The screens extend from the invert of the CWIS (El. 364.0 ft) to above the top deck (El. 462.0 ft). The screens rotate at either 2.5 ft/min or 10/ft min, depending on river and debris conditions. Typically, one screen is rotated at a time for one hour. Once all four screens are rotated, there is a two-hour period before the sequence starts again. All the screens may be operated simultaneously during periods of heavy debris loading. The screens are inspected every week and any damaged baskets are corrected at that time. Debris loading on the screens typically consists of sticks and leaves and is heaviest during the spring and fall. The debris is washed off the screens using a high-pressure front spray wash. An open debris trough conveys screen wash water back to the river at the south (downstream) side of the screen house. Large debris is collected and removed from the screens for disposal. The traveling water screens are on a four-year overhaul cycle with one screen being completed each year.

The Unit 1 circulating water pumps are located downstream of traveling water screens in the two southernmost (downstream) bays. Typically, both circulating water pumps are operated when the unit is operating, however one pump can be taken out of service during cold weather. Operating with only one circulating water pump puts station reliability at risk and is only conducted to facilitate maintenance. Operating only one pump results in a flow of 206.2 cfs (92,600 gpm, 133.3 MGD). The combined flow rate with both pumps operating is 350.7 cfs, (157,400 gpm, 226.7 MGD). The difference between the flow rate through each pump with one and two pumps operating is a result of increased backpressure on the circulating water pumps associated with the increased flow. The two circulating water pumps will be retired by the end of 2024 in conjunction with the Unit 1 retirement. The Unit 1 circulating water is discharged back to the Ohio River approximately 577 ft downstream of the CWIS.

Four, long-shaft service water pumps are located in the other two bays. These pumps are used to provide service water and auxiliary make-up water to the three closed-cycle units. Two pumps are located in the northernmost bay and have a combined flow of 44.6 cfs (20,000 gpm, 28.8 MGD); the two other pumps are located in the other screen bay and have a combined flow of 46.8 cfs, (21,000 gpm, 30.2 MGD). These pumps will remain in service beyond the retirement of Unit 1, however there is potential that one or more of these pumps can be retired in conjunction with the retirement of Unit 2, by the end of 2028. Cooling tower blow down for Units 2, 3, and 4 is discharged back to the Ohio River through the same discharge structure as Unit 1.

The maximum combined DIF through the CWIS is 442.0 cfs (198,400 gpm, 285.7 MGD) with Unit 1 operating. After Unit 1 is retired the new Mill Creek DIF will be 91.4 cfs (41,000 gpm, 59.0 MGD), when all four long-shaft pumps are operating. This represents a 79% reduction in the design flow.

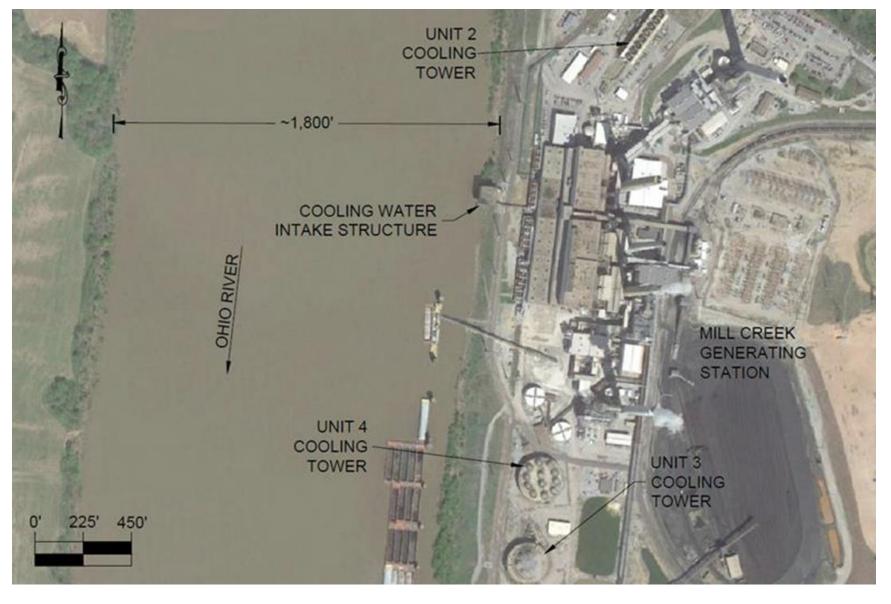


Figure 3-1 Mill Creek Site Configuration



Figure 3-2 Mill Creek CWIS Configuration

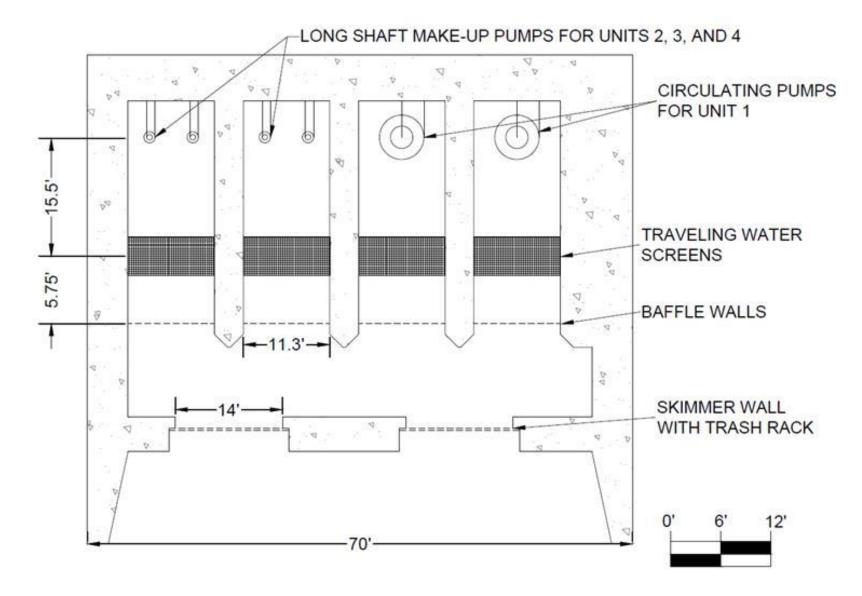


Figure 3-3 Mill Creek CWIS - Plan View

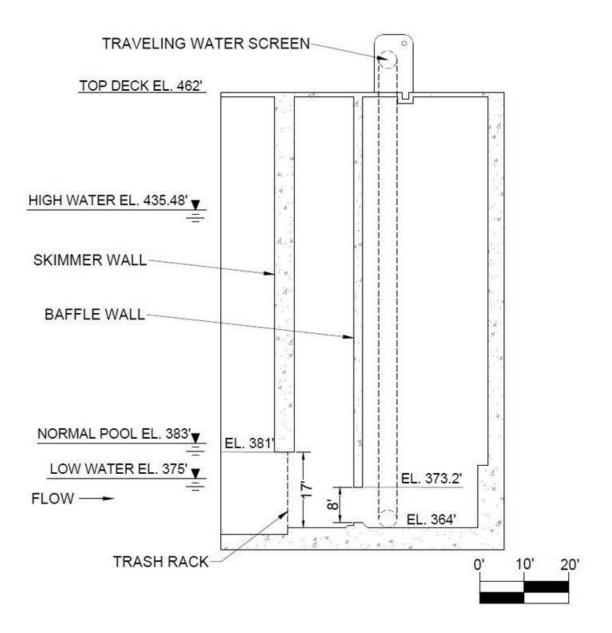


Figure 3-4 Mill Creek CWIS - Section View

#### 3.2 CWIS Operation and Intake Flows

There are two circulating water pumps for Unit 1, and a total of four long-shaft service water pumps located downstream of the traveling water screens. The circulating water pump flow for Unit 1 is 206.2 cfs (92,600 gpm, 133.3 MGD), when one pump is operating. Two pump operation, which is how the unit is normally operated, results in the total circulating water flow rate for Unit 1 of 350.7 cfs (157,400 gpm, 226.7 MGD). The difference between the flow rate through each pump with one and two pumps operating is a result of increased backpressure on the circulating pumps associated with the increased flow. These two circulating water pumps will no longer operate after Unit 1 is retired.

The two long-shaft service water pumps that are located in the northernmost bay have a combined flow of 44.6 cfs (20,000 gpm, 28.8 MGD); the two other long-shaft pumps are located in the adjacent screen bay and have a combined flow of 46.8 cfs (21,000 gpm, 30.2MGD). The combined design intake flow (DIF) of the four long-shaft pumps is 91.4 cfs (41,000 gpm, 59.0 MGD). The total DIF with all six pumps operating is 442.0 cfs (198,400 gpm, 285.7 MGD).

Pump capacities and the design intake flow for the Mill Creek station are listed in Table 3-1. Typically, both circulating water pumps are operated when the unit is operating, however one pump can be taken out of service during cold weather. Operating with only one circulating water pump puts station reliability at risk and is only conducted to facilitate maintenance. Two or three long-shaft service water pumps are usually operated depending on the service and make-up water needs for the Units 2, 3, and 4 cooling towers. Starting in 2020, Mill Creek was able to reduce the total average daily river intake flow of the station by 1.9%. The majority of the flow reduction is a result of the conversion of the Units 1, 2, 3, and 4 fly and bottom ash sluicing system to dry handling, and gypsum wash water reductions. A small portion of this reduction was also a result of reduced flows to the Units 2, 3, and 4 cooling system remain constant and were not reduced by these improvements. The flow through the Unit 1 pumps will be reduced to zero by the end of 2024, when Unit 1 is retired.

The annual pump hours of operation and estimated withdrawal rate for each long shaft service water pump over the last 5 years (2017-2021) are provided in Table 3-2. The operation of the Unit 1 circulating water pumps is not included in Table 3-2 or subsequent tables in this section to provide a better representation of the withdrawal rate once Unit 1 is retired. The annual average daily long shaft service water flow, annual hours of operation, and the percent of future maximum design intake flow for the Mill Creek facility based on the last 5 years of operating data (2017-2021) are provided in Table 3-3. As shown in Table 3-3 Mill Creek would have withdrawn an average of 58.5% of its future DIF during the last 5 years. The average monthly daily intake flow, number of days per month and total monthly and annual withdrawal for the Mill Creek long shaft service water pumps over the past 5 years (2017-2021) is provided in Table 3-4.

Pump Description	DIF (gpm)	DIF (MGD)	DIF (cfs)
Unit 1 Circulating Water Pump A	78,700 <sup>1</sup>	113.3 <sup>1</sup>	175.3 <sup>1</sup>
Unit 1 Circulating Water Pump B	78,700 <sup>1</sup>	113.3 <sup>1</sup>	175.3 <sup>1</sup>
Long-Shaft Service Water Pump 1	10,000	14.4	22.3
Long-Shaft Service Water Pump 2	10,000	14.4	22.3
Long-Shaft Service Water Pump 3	10,500	15.1	23.4
Long-Shaft Service Water Pump 4	10,500	15.1	23.4
Mill Creek Total DIF (Pre-Unit 1 Retirement)	198,400 <sup>2</sup>	285.7 <sup>2</sup>	<b>442.0</b> <sup>2</sup>
Mill Creek Total DIF (Post-Unit 1 Retirement)	41,000	59.0	91.4

Table 3-1 Pump Capacities and Design Intake Flow for the Mill Creek CWIS

1. DIF of each circulating water pump increases to 206.3 cfs (92,600 gpm, 133.3 MGD) when only one circulating water pumps is operating.

2. Based on the design flow with two circulating water pumps operating.

## Table 3-2Annual Pump Hours of Operation and Estimated Annual Intake Flow for<br/>the Mill Creek Long Shaft Service Water Pumps (LSSWP) (2017-2021)

Pump	LSSWP #1	LSSWP #2	LSSWP #3	LSSWP #4
	2017			
Pump Hours of Operation	5,628	4,714	6,374	6,342
Estimated Actual Annual Intake Flows (Millions of Gallons)	3,377	2,828	4,015	3,995
Maximum Annual Design Intake Flow (Millions of Gallons)	5,256	5,256	5,519	5,519
Percent of Maximum Design Intake Flow	64.2%	53.8%	72.8%	72.4%
	2018			
Pump Hours of Operation	6,103	4,781	6,725	3,899
Estimated Actual Annual Intake Flows (Millions of Gallons)	3,662	2,869	4,237	2,456
Maximum Annual Design Intake Flow (Millions of Gallons)	5,256	5,256	5,519	5,519
Percent of Maximum Design Intake Flow	69.7%	54.6%	76.8%	44.5%
	2019			
Pump Hours of Operation	6,829	7,088	6,591	2,338
Estimated Actual Annual Intake Flows (Millions of Gallons)	4,097	4,253	4,152	1,473
Maximum Annual Design Intake Flow (Millions of Gallons)	5,256	5,256	5,519	5,519
Percent of Maximum Design Intake Flow	78.0%	80.9%	75.2%	26.7%

Pump	LSSWP #1	LSSWP #2	LSSWP #3	LSSWP #4
	2020			
Pump Hours of Operation	5,618	4,993	1,975	4,374
Estimated Actual Annual Intake Flows (Millions of Gallons)	3,371	2,996	1,244	2,756
Maximum Annual Design Intake Flow (Millions of Gallons)	5,270	5,270	5,519	5,519
Percent of Maximum Design Intake Flow	64.0%	56.8%	22.5%	49.9%
	2021			
Pump Hours of Operation	5,075	3,928	5,095	4,151
Estimated Actual Annual Intake Flows (Millions of Gallons)	3,045	2,357	3,210	2,615
Maximum Annual Design Intake Flow (Millions of Gallons)	5,256	5,256	5,519	5,519
Percent of Maximum Design Intake Flow	57.9%	44.8%	58.2%	47.4%
	2017-2021			
Pump Hours of Operation	29,252	25,505	26,760	21,104
Estimated Actual Annual Intake Flows (Millions of Gallons)	17,551	15,303	16,859	13,296
Maximum Annual Design Intake Flow (Millions of Gallons)	26,294	26,294	27,594	27,594
Percent of Maximum Design Intake Flow	66.7%	58.2%	61.1%	48.2%

#### Table 3-2 (Continued)

			<b>P</b> <sup>5</sup> ( <b>2</b> 01) <b>2</b>	)		
Year	2016	2017	2018	2019	2020	5 Year Average
Total Pump Hours of Operation	23,056	21,509	22,846	16,960	18,250	20,524
Average Daily Intake Flow (MGD)	38.9	36.2	38.3	28.3	30.8	35
Design Intake Flow Post Unit 1 Retirement (MGD)	59	59	59	59	59	59
Percent of Maximum Design Intake Flow	66.0%	61.4%	64.9%	48.0%	52.1%	58.5%

# Table 3-3 Estimated Actual Annual Intake Flow for the Mill Creek Long ShaftService Water Pumps (2017-2021)

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly Total
						2017							
Daily Average Intake Flow (MGD)	30.3	37.4	33.2	38.2	44.4	44.5	44.3	43.0	36.4	44.6	39.7	31.2	38.9
Days Per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Intake Flow (Millions of Gallons)	939	1,046	1,031	1,146	1,377	1,336	1,375	1,333	1,092	1,384	1191	967	14,215
						2018							
Daily Average Intake Flow (MGD)	37.5	32.0	32.8	26.0	44.6	48.4	48.5	36.7	39.8	29.0	30.2	28.9	36.2
Days Per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Intake Flow (Millions of Gallons)	1,162	897	1,016	780	1,382	1,453	1,504	1,138	1,195	898	906	895	13,224
						2019							
Daily Average Intake Flow (MGD)	29.7	29.5	38.6	36.1	41.5	43.7	44.2	40.7	36.5	44.5	41.7	32.0	38.3
Days Per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Intake Flow (Millions of Gallons)	920	827	1,198	1,084	1,288	1,311	1,370	1,261	1,094	1,380	1,250	992	13,976

#### Table 3-4 Estimated Actual Monthly Intake Flow for Mill Creek Long Shaft Service Water Pumps (2017-2021)

					Table .	<u>3-4 (Con</u>	tinued)						
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly Total
						2020							
Daily Average Intake Flow (MGD)	29.4	29.8	30.1	29.7	18.8	29.1	30.4	31.4	23.9	28.8	29.6	28.8	28.3
Days Per Month	31	29	31	30	31	30	31	31	30	31	30	31	366
Intake Flow (Millions of Gallons)	911	865	933	892	584	873	943	974	717	893	887	893	10,367
						2021							
Daily Average Intake Flow (MGD)	31.8	36.4	25.3	38.5	29.8	29.2	26.6	31.0	24.1	33.1	29.8	33.9	30.8
Days Per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Intake Flow (Millions of Gallons)	987	1,018	783	1,155	922	877	825	962	723	1,027	895	1,052	11,227
						2017-2021							
Daily Average Intake Flow (MGD)	31.7	33.2	32.0	33.7	35.8	39.0	38.8	36.6	32.1	36.0	34.2	31.0	34.5
Days Per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Monthly Average Intake Flow (Millions of Gallons)	984	931	992	1,011	1,111	1,170	1,203	1,134	964	1,117	1,026	960	12,602

#### Table 3-4 (Continued)

#### 3.3 Flow Distribution and Water Balance Diagrams

The water balance diagram for the Mill Creek circulating water system is shown below in Figure 3-5. This diagram is based on the current flow conditions with Unit 1 operating. After Unit 1 is retired by the end of 2024, the new Mill Creek DIF will be 91.4 cfs (41,000 gpm, 59.0 MGD), with all four long-shaft pumps operating. This will represent a 79% reduction in the design flow. A higher quality version of the water balance diagram is provided as a separate PDF that is attached to this submittal (Appendix A).

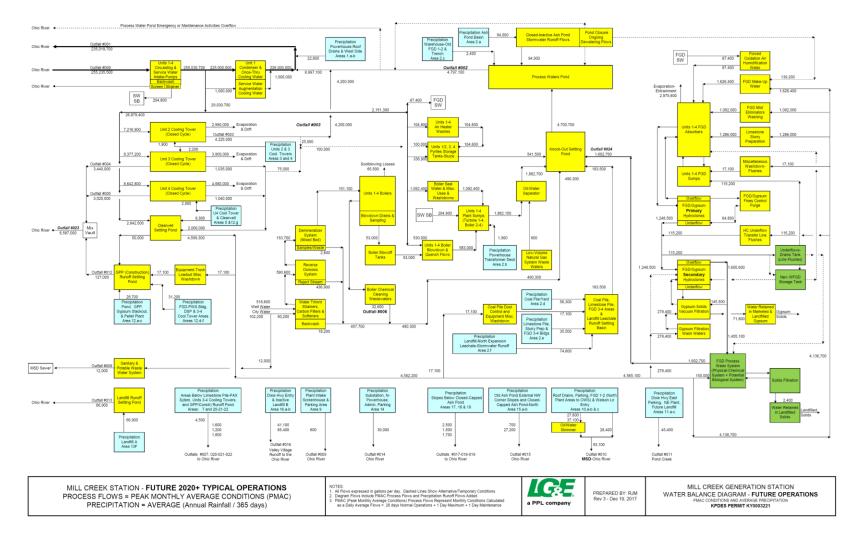


Figure 3-5 Water Balance Diagram for the Mill Creek Circulating Water System

### 4 § 122.21(R)(4) SOURCE WATER BASELINE BIOLOGICAL CHARACTERIZATION DATA

This section includes the source water baseline biological characterization data for Mill Creek Generating Station (Mill Creek Station), required at 122.21(r)(4) of the Rule. Since there are twelve subsections for this information, the requirement for each subsection will be stated followed by information responsive to the required information.

Source water baseline biological characterization data. This information is required to characterize the biological community in the vicinity of the cooling water intake structure and to characterize the operation of the cooling water intake structures. The Director may also use this information in subsequent permit renewal proceedings to determine if your Design and Construction Technology Plan as required in § 125.86(b)(4) or § 125.136(b)(3) of this chapter should be revised. This supporting information must include existing data (if they are available). However, you may supplement the data using newly conducted field studies if you choose to do so. The information you submit must include:

#### 4.1 Missing Data

(i) A list of the data in paragraphs (r)(4)(ii) through (vi) of this section that are not available and efforts made to identify sources of the data.

Except for information describing the source water crayfish community near Mill Creek Station, data required in paragraphs (r)(4)(ii) through (r)(4)(vi) were available. However, other information and the site-specific impingement study at a nearby facility was used to determine that crayfish are not susceptible to entrainment and have limited susceptibility to impingement.

#### 4.2 List of Relevant Taxa in the Vicinity of the CWIS

(ii) A list of species (or relevant taxa) for all life stages and their relative abundance in the vicinity of the cooling water intake structure.

#### 4.2.1 Shellfish

A mussel survey was conducted immediately upstream and downstream of Mill Creek Station in 2012 by Ecological Specialists, Inc. (ESI 2012). In addition, EPRI (2012) identified five freshwater mussel surveys conducted from 1994 to 2007 upstream of Mill Creek Station (Ohio River Miles [ORM] 613.5 to 623.5), and EPRI (2018) contained one survey that was conducted along the Indiana shoreline from 0.5 miles upstream of the facility to 1.8 miles downstream of the facility in 2017 (LEC 2017). These data are summarized in Table 4-1.

		<b>1994</b> <sup>(a)</sup>	19	96 <sup>(b)</sup>	20	2001 <sup>(b)</sup> 2002 <sup>(c)</sup>		2007 <sup>(d)</sup>	20	)12 <sup>(e)</sup>	<b>2017</b> <sup>(f)</sup>		Comb	ined <sup>(g)</sup>	
Scientific Name <sup>(h)</sup>	Common Name	Р	No.	%	No.	%	No.	%	Р	No.	%	No.	%	No.	%
Actinonaias ligamentina	Mucket											1	0.1	1	0.0
Amblema plicata	Threeridge	✓	19	13.9	2	11.8	12	46.2	✓	61	38.9	96	5.6	190	9.2
Cyclonaias nodulata	Wartyback		1	0.7	1	5.9			✓	1	0.6	20	1.2	23	1.1
Cyclonaias pustulosa	Pimpleback		14	10.2	2	11.8			$\checkmark$	26	16.6	373	21.6	415	20.1
Cyclonaias tuberculata	Purple Wartyback											2	0.1	2	0.1
Ellipsaria lineolata	Butterfly	~	35	25.5					✓	3	1.9	134	7.8	172	8.3
Elliptio crassidens	Elephantear	~	3	2.2								21	1.2	24	1.2
Fusconaia flava	Wabash Pigtoe		2	1.5	1	5.9	2	7.7	✓	2	1.3	18	1.0	25	1.2
Lampsilis cardium	Plain Pocketbook	~	1	0.7						3	1.9	11	0.6	15	0.7
Lampsilis ovata	Pocketbook											17	1.0	17	0.8
Leptodea fragilis	Fragile Papershell						1	3.8		1	0.6	2	0.1	4	0.2
Ligumia recta	Black Sandshell		9	6.6	2	11.8	1	3.8	✓	2	1.3	42	2.4	56	2.7
Megalonaias nervosa	Washboard	$\checkmark$	16	11.7	1	5.9	2	7.7	✓	1	0.6	29	1.7	49	2.4
Obliquaria reflexa	Threehorn Wartyback	$\checkmark$	22	16.1	6	35.3	5	19.2	✓	24	15.3	77	4.5	134	6.5
Pleurobema cordatum	Ohio Pigtoe						1	3.8				12	0.7	13	0.6
Potamilus alatus	Pink Heelsplitter				1	5.9	1	3.8	✓	24	15.3	13	0.8	39	1.9
Quadrula quadrula	Mapleleaf		3	2.2						1	0.6	4	0.2	8	0.4
Reginaia ebenus	Ebonyshell	✓	4	2.9	1	5.9			✓	1	0.6	696	40.3	702	34.0
Theliderma metanevra	Monkeyface	$\checkmark$	4	2.9					✓	7	4.5	159	9.2	170	8.2
Tritogonia verrucosa	Pistolgrip		4	2.9					✓					4	0.2
Truncilla donaciformis	Fawnsfoot						1	3.8						1	0.0
	Total No. Individuals		137	100.0	17	100.0	26	100.0		15 7	100.0	1,727	100.0	2,064	100.0
	No. Species per Survey	8	14		9		9		12		14	1	9		
	Total Species							21							

#### Table 4-1 Summary of historical live mussel collections near the Mill Creek Station (EPRI 2012, 2018; ESI 2012; LEC 2017)

(a) ORM 613.5 to 617.4; (b) ORM 615.5 to 617.7; (c) near ORM 616.8; (d) ORM 610.3 to 616.7 and ORM 617.5 to 623.5; (e) ORM 625.2 to 626.4; and (f) ORM 625.3-627.6 (Rosebud Mussel Bed). (g) Represents data from only the five surveys that had count information. (h) Naming convention follows Williams et al. (2017). Note: P=✓ denotes present, No.=number collected, % = relative abundance, "--" indicates none collected, and 0.0 denotes values less than 0.05. Among those seven surveys, 21 mussel species were reported (Table 4-1). Threeridge (*Amblema plicata*), Washboard (*Megalonaias nervosa*), and Threehorn Wartyback (*Obliquaria reflexa*) were observed during each survey, while Mucket (*Actinonaias ligamentina*), Purple Wartyback (*Cyclonaias tuberculata*), Pocketbook (*Lampsilis ovata*), and Fawnsfoot (*Truncilla donaciformis*) were collected during only one survey. Ebonyshell (*Reginaia ebenus*, 34.0%) and Pimpleback (*Cyclonaias pustulosa*, 20.1%) were the most abundant species observed during the five years for which count data were available.

Information describing the source water crayfish community near Mill Creek Station was not identified. However, crayfish were a target organism during an impingement study at a nearby facility on Cannelton Pool (see Section 4.3.1), but were not identified to species (i.e., they were recorded only as "crayfish").

#### 4.2.2 Fish

Adult and juvenile fish studies in the immediate vicinity of Mill Creek Station have not been conducted in recent years. However, to obtain more recent data, surveys conducted by the Ohio River Ecological Research Program (ORERP), which was administered by the Electric Power Research Institute (e.g., EPRI 2019) were used These surveys consist of annual adult fish electrofishing and seining investigations in Cannelton Pool near LGE-KU's Cane Run Plant at ORM 616.8, approximately nine miles upstream of Mill Creek Station. Seasonal electrofishing and seining surveys conducted at the Cane Run Plant from 2014 through 2018 provided the basis of the compiled list of fish species. The ORERP results were supplemented with electrofishing data collected by the Ohio River Valley Water Sanitation Commission (ORSANCO) from ORM 616.6 to ORM 630.1 in July 2016 (http://www.orsanco.org/data/fish-population/).

The list of adult and juvenile fish compiled from the ORERP and ORSANCO data comprises of 59 species and three hybrids, representing 15 fish families (Table 4-2). Families with the most species were the carps and minnows (18 species), sunfishes (12), and suckers (10). Twenty-eight species and hybrid striper were encountered each year. Six of those common species accounted for 93.4% of the six-year total: Emerald Shiner (53.7%), Channel Shiner (26.4%), Gizzard Shad (5.8%), River Shiner (4.0%), Sauger (1.8%), and Freshwater Drum (1.7%).

# Table 4-2 Number and relative abundance of fish collected by electrofishing and seiningnear Mill Creek Station (ORMs 614.3 to 630.1) during the ORERP and by ORSANCO,2014–2018 (EPRI 2016, 2017a, 2019, 2020a,b)

SPECIES	2014	2014 <sup>(a)</sup> 2015 <sup>(a)</sup>			2016 <sup>(a,b)</sup> 2017 <sup>(a)</sup>				2018		YEARS COMBINED	
	No.	8	No. %	1	No. %	No.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	No.	8	No.	8	
CHESTNUT LAMPREY	1	0.0									1	0.0
PADDLEFISH			1	0.0							1	0.0
<i>Lepisosteus</i> sp.									2	0.0	2	0.0
LONGNOSE GAR	23	0.2	16	0.1	47	0.4	18	0.3	10	0.1	114	0.2
SHORTNOSE GAR							1	0.0			1	0.0
SKIPJACK HERRING	7	0.1	2	0.0	2	0.0	6	0.1	4	0.0	21	0.0
GIZZARD SHAD	739	6.5	382	2.4	915	7.2	667	9.3	511	5.9	3,214	5.8
THREADFIN SHAD	2	0.0			1	0.0	2	0.0	1	0.0	6	0.0
MOONEYE	1	0.0	6	0.0	5	0.0					12	0.0
COMMON CARP	1	0.0	12	0.1	2	0.0	6	0.1	6	0.1	27	0.0
SILVER CARP			1	0.0	1	0.0	5	0.1	1	0.0	8	0.0
BIGHEAD CARP									1	0.0	1	0.0

#### § 122.21(r)(4) Source Water Baseline Biological Characterization Data

			I (	abic	T-2 (C	onun	ucu)					
SPECIES	2014	<b>4</b> (a)	2015	(a)	2016	a,b)	201	7 <sup>(a)</sup>	2018	3 <sup>(a)</sup>	YEAR COMB:	
	No.	8	No.	8	No. 9	s N	No. %	Nc	). %	Nc	<b>.</b> %	
GOLDEN SHINER	1	0.0								0.0	1	0.0
Notropis sp. STRIPED SHINER		0.0							3	0.0	1	0.0 0.0
CHANNEL SHINER	2,293	20.3	5,134	32.4	3,466	27.4	2,042	28.4	1,759	20.3	14,694	26.4
CHANNEL/MIMIC SHINER									838	9.7	838	1.5
ROSYFACE SHINER					1	0.0					1	0.0
SPOTFIN SHINER	8	0.1	106	0.7	63	0.5	22	0.3	26	0.3	225	0.4
EMERALD SHINER	7,191	63.7	8,138	51.3	6,791	53.7	3,596	50.0	4,196	48.4	29,912	53.7
GHOST SHINER					1	0.0	1	0.0	2	0.0	4	0.0
SAND SHINER	1	0.0									1	0.0
RIVER SHINER	216	1.9	1,014	6.4	293	2.3	187	2.6	511	5.9	2,221	4.0
SHOAL CHUB									6	0.1	6	0.0
SILVER CHUB RIVER CHUB	49	0.4	22 10	0.1	31	0.2	13	0.2	13	0.1	128 10	0.2
CENTRAL STONEROLLER	1	0.0									10	0.0
BLUNTNOSE MINNOW	2	0.0	6	0.0	3	0.0	1	0.0	1	0.0	13	0.0
BULLHEAD MINNOW	2	0.0	12	0.1	21	0.2	17	0.2	4	0.0	56	0.1
CATOSTOMINAE sp.			3	0.0							3	0.0
Carpiodes sp.	5	0.0			1	0.0					6	0.0
ICTIOBINAE sp.	4	0.0	2	0.0					6	0.1	12	0.0
QUILLBACK	43	0.4	28	0.2	21	0.2	8	0.1	21	0.2	121	0.2
RIVER CARPSUCKER	67	0.6	54	0.3	69	0.5	54	0.8	266	3.1	510	0.9
SMALLMOUTH REDHORSE	10	0.1	22	0.1	83	0.7	47	0.7	35	0.4	197	0.4
SILVER REDHORSE	1	0.0			3	0.0	3	0.0	4	0.0	11	0.0
RIVER REDHORSE			4	0.0	3	0.0	4	0.1			11	0.0
GOLDEN REDHORSE	13 5	0.1	11 1	0.1 0.0	23 2	0.2	17 2	0.2	7	0.1	71 10	0.1
NORTHERN HOG SUCKER	5	0.0	6	0.0	2 4	0.0 0.0	21	0.0		0.0	41	0.0 0.1
BIGMOUTH BUFFALO	2	0.0	1	0.0	2	0.0	5	0.1	1	0.0	11	0.0
SPOTTED SUCKER							1	0.0			1	0.0
CHANNEL CATFISH	48	0.4	47	0.3	106	0.8	53	0.7	47	0.5	301	0.5
FLATHEAD CATFISH	10	0.1	9	0.1	18	0.1	9	0.1	3	0.0	49	0.1
IROUT-PERCH			1	0.0							1	0.0
NESTERN MOSQUITOFISH	8	0.1	3	0.0	1	0.0			13	0.1	25	0.0
BROOK SILVERSIDE	6	0.1	2	0.0	1	0.0	3	0.0	4	0.0	16	0.0
Morone sp.	3	0.0	1	0.0	12	0.1					16	0.0
STRIPED BASS					1	0.0			1	0.0	2	0.0
HYBRID STRIPER	48	0.4	34	0.2	28	0.2	29	0.4	9	0.1	148	0.3
WHITE BASS	5	0.0	8	0.1	37	0.3	28	0.4	25	0.3	103	0.2
ROCK BASS			2		2	0.0	1	0.0			3	0.0
<i>Lepomis</i> HYBRID <i>Lepomis</i> sp.			∠	0.0							3	0.0
GREEN SUNFISH		0.0		0.0	5	0.0	2	0.0	2	0.0	13	0.0
VARMOUTH			1	0.0			1	0.0			2	0.0
BLUEGILL	7	0.1	65	0.4	25	0.2	16	0.2	17	0.2	130	0.2
DRANGESPOTTED SUNFISH									2	0.0	2	0.0
LONGEAR SUNFISH	16	0.1	31	0.2	34	0.3	12	0.2	7	0.1	100	0.2
REDEAR SUNFISH					2	0.0					2	0.0
<i>Micropterus</i> sp.					1	0.0					1	0.0
SMALLMOUTH BASS	17	0.2	28	0.2	22	0.2	16	0.2	16	0.2	99	0.2
ARGEMOUTH BASS			2	0.0			2	0.0	1	0.0	5	0.0
SPOTTED BASS	8	0.1	17	0.1	27	0.2	26	0.4	6	0.1	84	0.2
HITE CRAPPIE BLACK CRAPPIE	1	0.0 0.0	3	0.0 0.0	3	0.0 0.0	2	0.0	1	0.0	10 6	0.0 0.0
REENSIDE DARTER		0.0		0.0		0.0		0.0		0.0	6	0.0
OGPERCH				0.0		0.0			1	0.0	10	0.0
Sander sp.	2	0.0	30	0.2					17	0.2	49	0.1
AUGEYE			1	0.0	2	0.0					3	0.0
SAUGER	63	0.6	423	2.7	287	2.3	117	1.6	122	1.4	1,012	1.8
FRESHWATER DRUM	348	3.1	154	1.0	176	1.4	123	1.7	137	1.6	938	1.7
TOTAL FISH	11,290	100.0	15,868	100.0	12,648	100.0	7,187	100.0	8,671	100.0	55,664	100.0
FOTAL SPECIES	40		40		43		41		41		59	

#### Table 4-2 (Continued)

(a) ORERP ELECTROFISHING AND SEINING DATA COLLECTED NEAR CANE RUN PLANT IN JUNE/JULY, AUGUST, AND OCTOBER. (b) INCLUDES SIX ORSANCO ELECTROFISHING EVENTS FROM JULY (<u>http://www.orsanco.org/data/fish-population/</u>). NOTE: 0.0 DENOTES VALUES LESS THAN 0.05. A two-year entrainment study was conducted at Mill Creek Station in 2015 and 2016 to fulfill 40 CFR 122.21(r)(9) of the U.S. Environmental Protection Agency's (EPA) final Clean Water Act § 316(b) Existing Facilities Rule (see Section 9 and EPRI 2020c). Sampling was conducted in the Area of Influence (AOI) in front of the CWIS at multiple depths and during two diel periods to characterize annual, seasonal, and diel variations in entrainment. In 2015, sampling was conducted every two weeks from March through September. Sampling in 2016 was also conducted every two weeks from April through early May and July through August, but every week from early May through June to gather more data during times of highest ichthyoplankton density. This study provides the most recent data describing the ichthyofauna at Mill Creek Station.

In 2015, 35,743 fish including all life stages (adults, juveniles, larvae, and eggs) were collected, consisting of 25 distinct identifications<sup>1</sup> (Table 4-3). The 2016 collections yielded 52,971 fish (juveniles, larvae, and eggs) representing 27 distinct identifications. For the two years combined, 88,714 specimens were collected that represented 33 distinct identifications across 11 fish families.

Formiler	Tava	20	)15	2016		Years Combined		
Family	Таха	#	%	#	%	#	%	
Polyodontidae	Paddlefish			4	< 0.05%	4	< 0.05%	
Lepisosteidae	Gar sp.	1	< 0.05%			1	< 0.05%	
	Clupeidae type			1	<0.05%	1	< 0.05%	
	Clupeidae sp.	4,384	12.3%	1,024	1.9%	5,408	6.1%	
	Skipjack Herring	109	0.3%	296	0.6%	405	0.5%	
Clupeidae	Alosa type	1	< 0.05%			1	< 0.05%	
	Gizzard Shad	18,099	50.6%	5,664	10.7%	23,763	26.8%	
	Threadfin Shad	4	< 0.05%	151	0.3%	155	0.2%	
	Dorosoma sp.	1,194	3.3%	80	0.2%	1,274	1.4%	
Hiodontidae	Goldeye	1	< 0.05%			1	< 0.05%	
Thouontidae	Mooneye	20	0.1%	3	< 0.05%	23	< 0.05%	
	Central Stoneroller			1	<0.05%	1	< 0.05%	
	Common Carp	74	0.2%	38	0.1%	112	0.1%	
	Asian Carp (+type) <sup>(a)</sup>	705	2.0%	10,632	20.1%	11,337	12.8%	
	Macrhybopsis type	1	< 0.05%	3	< 0.05%	4	< 0.05%	
	Shiner type	7	< 0.05%	19	< 0.05%	26	< 0.05%	
Cyprinidae	Shiner sp.	9	< 0.05%			9	< 0.05%	
	Emerald Shiner	30	0.1%	18	< 0.05%	48	0.1%	
	Emerald Shiner type	311	0.9%	1,329	2.5%	1,640	1.8%	
	Channel Shiner	1	< 0.05%			1	< 0.05%	
	Notropis sp.	14	< 0.05%	4	< 0.05%	18	< 0.05%	
	Suckermouth Minnow type	1	< 0.05%	12	< 0.05%	13	<0.05%	

Table 4-3 Number and relative abundance of taxa collected by entrainment sampling at
Mill Creek Station in 2015 and 2016 (EPRI 2020c)

<sup>&</sup>lt;sup>1</sup> Distinct taxa counts do not include higher level identifications (e.g., family or subfamily) when lower (e.g., genus or species) identifications were made.

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Fomily	Таха	20	015	2016		Years Combined	
Family	Taxa	#	%	#	%	#	%
	Pimephales type	474	1.3%	1,591	3.0%	2,065	2.3%
Comminidae	Pimephales sp.	2	< 0.05%			2	< 0.05%
Cyprinidae	Cyprindae type	6	< 0.05%	19	< 0.05%	25	< 0.05%
	Cyprinidae sp.	82	0.2%	241	0.5%	323	0.4%
	Quillback			1	< 0.05%	1	< 0.05%
	White Sucker			1	< 0.05%	1	< 0.05%
	Spotted Sucker	1	< 0.05%			1	< 0.05%
Catostomidae	Moxostoma sp.	6	< 0.05%	6	< 0.05%	12	< 0.05%
Catostomidae	Catostominae type			4	< 0.05%	4	< 0.05%
	Catostominaw sp.			3	< 0.05%	3	< 0.05%
	Ictiobinae sp.	4,077	11.4%	8,775	16.6%	12,852	14.5%
	Catostomidae sp.	1	< 0.05%			1	< 0.05%
Ictaluridae	Channel Catfish	1	<0.05%			1	< 0.05%
	White Bass	1	< 0.05%			1	< 0.05%
Moronidae	Striped Bass type			5	< 0.05%	5	< 0.05%
Moronidae	Morone sp. (not Striped Bass)	425	1.2%	125	0.2%	550	0.6%
	Morone sp.	243	0.7%	118	0.2%	361	0.4%
	Rock Bass			1	< 0.05%	1	< 0.05%
	Green Sunfish			1	< 0.05%	1	< 0.05%
	Bluegill type			1	< 0.05%	1	< 0.05%
Centrarchidae	Lepomis sp.	24	0.1%	33	0.1%	57	0.1%
	Smallmouth Bass			1	< 0.05%	1	< 0.05%
	White Crappie	1	< 0.05%			1	< 0.05%
	Pomoxis sp.	4	< 0.05%	5	< 0.05%	9	< 0.05%
	Sauger	43	0.1%	38	0.1%	81	0.1%
	Walleye	1	< 0.05%			1	< 0.05%
	Sander sp.	40	0.1%	32	0.1%	72	0.1%
Percidae	Logperch type	23	0.1%	182	0.3%	205	0.2%
	Darter sp.	3	< 0.05%	5	< 0.05%	8	< 0.05%
	Darter (not Logperch) sp.			1	< 0.05%	1	< 0.05%
	Percidae sp.	1	< 0.05%			1	< 0.05%
0.1	Freshwater Drum	5,122	14.3%	22,404	42.3%	27,526	31.0%
Sciaenidae	Freshwater Drum type			1	< 0.05%	1	< 0.05%
	Cyprinidae/Catostomidae	19	0.1%	12	< 0.05%	31	< 0.05%
	Cyprindae/Catostomidae type	56	0.2%			56	0.1%
	Morone/Freshwater Drum			1	< 0.05%	1	< 0.05%
	UNIDENTIFIED	121	0.3%	85	0.2%	206	0.2%
	Total Fish	35,743	100.0%	52,971	100.0%	88,714	100.0%

#### Table 4-3 (Continued)

<sup>(a)</sup> Asian carp taxa and groupings were combined into Asian carp (+type) because relatively few Asian carp (Grass Carp [+type], Silver Carp type, or *Hypophthalmichthys* sp.) were identified beyond the Asian carp or Asian carp type categories (EPRI 2020c).

Note: # = number collected; % = relative abundance; "--" indicates none collected.

The most abundant taxa collected in 2015 were, in decreasing order of abundance, Gizzard Shad, Freshwater Drum, Clupeidae sp. (Gizzard Shad, Threadfin Shad, and/or Skipjack Herring), and Ictiobinae sp. (carpsucker/buffalo species). These taxa composed 88.6% of the specimens collected at Mill Creek Station in 2015 (EPRI 2020c). In fact, Gizzard Shad post yolk-sac larvae alone composed 50.5% of the entire catch. The dominant taxa for 2016, in decreasing order of abundance, were Freshwater Drum, Asian carp (+type)<sup>2</sup>, Ictiobinae sp., and Gizzard Shad. These taxa composed 89.6% of the specimens collected in 2016. The two most abundant taxa in 2016, Freshwater Drum and Asian carp (+type), were dominated by the viable egg life stage (EPRI 2020c).

#### 4.3 Species and Life Stages Most Susceptible to Impingement and Entrainment

(iii) Identification of the species and life stages that would be most susceptible to impingement and entrainment. Species evaluated should include the forage base as well as those most important in terms of significance to commercial and recreational fisheries.

Impingeable sized organisms are defined in § 125.92(n) of the Rule and are individuals sufficiently large enough to not pass through 3/8-inch square or 1/2 x 1/4-inch rectangular mesh screens. They are trapped against the screen by the force of intake water flowing through the screen. Organisms that pass through the mesh are entrained (see Rule definition at § 125.92(h)). Entrained specimens will pass through the condenser cooling water systems and do not impact facility operation. Generally, a fish species vulnerability to impingement and/or entrainment is a function of life history such as habitat preference, water column distribution, reproductive behavior, early life history characteristics, swimming ability, natural mortality, or physical influences such as water body hydraulics and ambient water temperature. Vulnerability to impingement and/or entrainment for most fish species is not dictated by their abundance in the source water body.

#### 4.3.1 Shellfish

Adult and juvenile Unionida mussels reside in the sediment and have very limited mobility; therefore, it can reasonably be concluded that they are not susceptible to entrainment nor are they readily susceptible to impingement. Larval Unionida mussels, glochidia, require temporary attachment to a "host" (almost exclusively fish) to survive beyond the larval stage. Some Unionida species use active methods to ensnare or attract a host: 1) they release "webs" or "trot lines" of mucus containing glochidia that ensnare passing fishes; 2) they bind glochidia into matrices called conglutinates that can resemble fish larvae, worms, insect larvae, or other food items that attract fish, which are subsequently infested with glochidia when they attempt to feed on the conglutinates; or 3) they have modified their mantle into lures resembling fishes, insects, and other food items such that when it is struck by a predatory fish, females snap their shells closed on the protruded marsupia, causing the marsupia to rupture and release clouds of glochidia (Watters et al. 2003). It is reasonable to assume that glochidia of such species would only be indirectly susceptible to entrainment if their host is entrained.

<sup>&</sup>lt;sup>2</sup> Asian carp taxa and groupings were combined into Asian carp (+type) because relatively few Asian carp (Grass Carp [+type], Silver Carp type, or *Hypophthalmichthys* sp.) were identified beyond the Asian carp or Asian carp type categories (EPRI 2020c).

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Other Unionida species are broadcast spawners that expel the glochidia along with water and waste products. Hosts either take in suspended glochidia and pass them over their gills, where they attach, or the hosts contact glochidia on the substrate, where they attach to the fins or skin (Watters et al. 2009).

Although unattached glochidia may be susceptible to direct entrainment, it would be challenging or impossible to: 1) effectively and efficiently collect them; 2) identify them to species; and 3) determine whether they are viable or moribund. For example, glochidia range in size from 50 to 450  $\mu$  (Williams et al. 2008) and therefore would require a net with a minimum mesh size of 50  $\mu$ , which would become clogged quickly upon deployment (water will not passively flow through 50  $\mu$ ). Most importantly, once shed by the female, glochidia must acquire a suitable host or die, usually within 24-48 hours (Watters et al. 2009). As such, glochidia collected during entrainment sampling are likely moribund because they would have drifted past hundreds or thousands of potential host fish before being entrained.

Little is known about host use in nature for most mussel species because using morphological characteristics to identify encysted glochidia is difficult. Morphological characteristics have been used with some success when only one or a few mussel species are present in a location; however, in species rich communities, only a fraction of glochidia are identifiable based on morphology and some are not identifiable below the genus or subfamily levels. Molecular identification keys, using restriction fragment length polymorphisms (RFLPs) for species identification of encysted glochidia, have been created in response to the difficulty of identifying glochidia; however, these keys have not been used frequently in nature (Kneeland and Rhymer 2008). Given the above information, all life stages of Unionida mussels would **not** be considered among "*the species and life stages that would be most susceptible to impingement and <i>entrainment*". For example, Unionida mussels were a target organism during the 2005-2007 impingement study at the nearby Cane Run Plant and none were collected during that two-year study (EPRI 2009). Additionally, the KDEP did not request that mussels be a target organism for the 2015-2016 entrainment study at Mill Creek Station.

Crayfish do not appear in entrainment samples due to their reproductive behavior. Females retain and protect eggs attached to their swimmerets. After hatching, the young may stay with the mother until after the second or third molt<sup>3</sup>. Therefore, crayfish are not susceptible to entrainment and have limited susceptibility to impingement. For example, they composed only 0.8% of the 2005-2007 impingement catch at the nearby Cane Run Plant (Table 4-4).

<sup>&</sup>lt;sup>3</sup> <u>http://www.uky.edu/Ag/CritterFiles/casefile/relatives/crayfish/crayfish.htm</u>

Table 4-4 Number and relative abundance of fish and shellfish collected during
impingement studies at Cane Run Plant, June 2005 – June 2007 (EPRI 2009)

Species	June 2 June 2		June 2 June 2		Years Combined		
	Number	%	Number	%	Number	%	
Crayfish	11	1.28	7	0.50	19	0.80	
Shovelnose Sturgeon			1	0.08	1	0.05	
Longnose Gar	1	0.11			1	0.04	
Mooneye	1	0.12			1	0.05	
Skipjack Herring	52	5.84	1	0.07	53	2.26	
Gizzard Shad	442	49.87	50	3.46	492	21.12	
Common Carp	2	0.23			2	0.09	
Emerald Shiner	10	1.17			10	0.45	
River Carpsucker			1	0.08	1	0.05	
Quillback	3	0.36	1	0.07	4	0.18	
Blue Sucker	1	0.12			1	0.05	
Smallmouth Buffalo	22	2.50			22	0.95	
Bigmouth Buffalo	1	0.12			1	0.05	
Blue Catfish			1	0.07	1	0.04	
Channel Catfish	6	0.69	14	0.95	20	0.85	
Flathead Catfish	5	0.60	3	0.21	8	0.36	
White Bass	13	1.49	3	0.21	16	0.70	
Morone sp.	19	2.14			19	0.81	
Warmouth			1	0.08	1	0.05	
Bluegill	4	0.48	27	1.87	31	1.34	
Smallmouth Bass	1	0.11			1	0.04	
Largemouth Bass			1	0.07	1	0.04	
Sauger	10	1.15	1	0.08	11	0.49	
Freshwater Drum	278	31.38	1,330	92.20	1,608	69.06	
Unidentified	2	0.23			2	0.09	
Total Fish and Crayfish	886	100.00	1,442	100.00	2,328	100.00	
Total Fish Species	17		14		22		
24-hour sampling events	20		20		40		

Note: Nomenclature follows Page et al. (2013); % = relative abundance; "--" indicates none collected.

#### 4.3.2 Fish Impingement

Although recent impingement data are not available for the Mill Creek Station, a two-year study was conducted at the nearby Cane Run Plant during 2005-2007 (EPRI 2009; King et al. 2010). That study consisted of 40, 24-hour sampling events during which 22 fish species were impinged (Table 4-4). Over 99% of the impinged organisms were fish; the remainder consisted of unidentified crayfish that accounted for 0.8% of the two-year total. All fish species collected during impingement sampling, except Shovelnose Sturgeon, Blue Sucker, and Blue Catfish were also collected during the in-river surveys near Cane Run (Table 4-2 and Table 4-4), whereas 41 of the 59 species collected during the in-river surveys were not encountered during impingement

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sampling. Impingement collections were dominated by Freshwater Drum and Gizzard Shad that collectively accounted for 91.0% of the fish impinged during the study. The Kentucky Administrative Regulations<sup>4</sup> classifies Freshwater Drum and Gizzard Shad as rough fish. Freshwater Drum was the sixth most abundant species during the in-river surveys near Mill Creek Station, whereas Gizzard Shad was the third most abundant. The relative abundance of Freshwater Drum and Gizzard Shad were much lower in the in-river surveys (1.7% and 5.8%, respectively) than in the impingement fish collections (69.7% and 21.3%, respectively), indicating they are disproportionately susceptible to impingement. Impingement of both Gizzard Shad and Freshwater Drum can be attributed to their overall abundance in the river and pelagic schooling behavior of their young-of-the-year (YOY). Markedly lower numbers of all other impinged species or taxa during the two-year study suggests low susceptibility to impingement. For example, Emerald Shiner, Channel Shiner, and River Shiner were among the four most abundant species in the in-river catch for 2014 through 2018 combined (Table 4-2), but no Channel Shiner or River Shiner and only 10 Emerald Shiner specimens were impinged during the two-year study (Table 4-4). The in-river collections show that cyprinids were much more abundant than indicated by the impingement collections, suggesting that they are not susceptible to impingement. Similarly, Longnose Gar, River Carpsucker, Quillback, Smallmouth Bass, and Sauger had higher relative abundances in the in-river surveys compared to impingement collections. Sport fish<sup>4</sup> taxa contributed only 2.1% to the impingement catch. White Bass and Morone sp. were the most commonly impinged sport fish taxa, composing 72.9% of the sport fish catch.

Commercial harvest data from 1999 through 2007 for the portion of the Ohio River bordering Indiana and Kentucky was dominated by Paddlefish (51.6%) followed by catfish (Channel Catfish, Blue Catfish, and Flathead Catfish) and buffalo that accounted for 24.2% and 23.2% of the total harvest, respectively (Stefanavage 2009). These dominant commercial (rough fish<sup>4</sup>) species accounted for only 2.3% of the fish impinged during the two-year study.

#### 4.3.3 Fish Entrainment

The two-year entrainment study conducted in 2015 and 2016 provided recent data that addressed the taxa and life stages susceptible to entrainment at Mill Creek Station (EPRI 2020c). The sampling periods each year encompassed the vast majority of the time when ichthyoplankton were present in the Ohio River. Thirty-three unique taxa were collected during the Mill Creek Station study with Gizzard Shad, Freshwater Drum, Clupeidae sp. (Gizzard Shad, Threadfin Shad, and/or Skipjack Herring), and Ictiobinae sp. (carpsucker/buffalo species) accounting for 88.6% of the catch in 2015, and Freshwater Drum, Asian carp (+type)<sup>2</sup>, Ictiobinae sp., and Gizzard Shad composing 89.6% of the catch in 2016 (Table 4-3 and Table 4-5). Collectively, these five taxa composed 90.6% to 91.6% of the catch each year. These taxa are considered rough fish by the Kentucky Administrative Regulations<sup>4</sup>. In addition, Asian carp (+type) are

<sup>&</sup>lt;sup>4</sup> At 301 KAR 1:060 (<u>http://www.lrc.state.ky.us/kar/301/001/060.pdf</u>), the Kentucky Administrative Regulations define "sport fish" and "rough fish": **Section 1.** The following fishes are designated sport fishes and may be taken only by angling: Largemouth Bass; rock fish (Striped Bass); Smallmouth Bass; White Bass; Kentucky [Spotted] Bass; Yellow Bass; Coosa Bass; Musky; Rock Bass; Northern Pike; White Crappie; Black Crappie; Chain Pickerel; trout; Walleye; Sauger; Redear Sunfish; and hybrids of any of the above. **Section 2.** All species of fishes, except those listed in Section 1 of this administrative regulation, are hereby designated as rough fish and may be harvested by the methods prescribed by any section of KRS Chapter 150 or 301 KAR Chapter 1.

considered aquatic nuisance species by the Kentucky Department of Fish and Wildlife Resources<sup>5</sup>.

Year:		2015			2016	
Volume Sampled (m <sup>3</sup> ):		9,152.5			9,919.1	
Таха	Number	%	Density	Number	%	Density
Clupeidae sp.	4,384	12.3%	4.79	1,024	1.9%	1.03
Gizzard Shad	18,099	50.6%	19.77	5,664	10.7%	5.71
Ictiobinae sp.	4,077	11.4%	4.45	8,775	16.6%	8.85
Asian carp (+type) <sup>(a)</sup>	705	2.0%	0.77	10,632	20.1%	10.72
Freshwater Drum	5,122	14.3%	5.60	22,404	42.3%	22.59
Other Identified Taxa	3,235	9.1%	3.53	4,387	8.3%	4.42
UNIDENTIFIED	121	0.3%	0.13	85	0.2%	0.09
Total	35,743	100.0%	39.05	52,971	100.0%	53.40

## Table 4-5Number, density, and relative abundance of common and abundant taxacollected in entrainment samples at Mill Creek Station in 2015 and 2016 (EPRI 2020c)

<sup>(a)</sup> Asian carp taxa and groupings were combined into Asian carp (+type) because relatively few Asian carp (Grass Carp [+type], Silver Carp type, or *Hypophthalmichthys* sp.) were identified beyond the Asian carp or Asian carp type categories.

Note: % = relative abundance and Density =  $\#/10m^3$ .

In 2015, specimen density for all taxa combined was 39.1 specimens per ten cubic meters (#/10m<sup>3</sup>) (Table 4-5). Gizzard Shad dominated (50.6%) the 2015 catch with a density of 19.8/10m<sup>3</sup>, followed by Freshwater Drum (14.3%; 5.6/10m<sup>3</sup>), Clupeidae sp. (12.3%; 4.8/10m<sup>3</sup>), and Ictiobinae sp. (11.4%; 4.5/10m<sup>3</sup>). *Dorosoma* sp. (Gizzard Shad and/or Threadfin Shad), Asian carp (+type), *Pimephales* type<sup>6</sup>, and *Morone* sp. (not Striped Bass)<sup>7</sup> were the only other taxa that contributed greater than 1.0% to the 2015 catch (Table 4-3; EPRI 2020c). Collectively, *Dorosoma* sp., *Pimephales* type, and *Morone* sp. (not Striped Bass) composed 64.7% of the "Other Identified Taxa" in 2015 (Table 4-3 and Table 4-5).

Specimen density for all taxa combined in 2016 was  $53.4/10m^3$  (Table 4-5). Freshwater Drum dominated (42.3%) the 2016 catch with a density of 22.6/10m<sup>3</sup>, followed by Asian carp (+type) (20.1%; 10.7/10m<sup>3</sup>), Ictiobinae sp. (16.6%; 8.9/10m<sup>3</sup>), and Gizzard Shad (10.7%; 5.7/10m<sup>3</sup>).

<sup>&</sup>lt;sup>5</sup> <u>https://fw.ky.gov/Fish/Pages/Asian-Carp-Information.aspx#ACI04</u>

<sup>&</sup>lt;sup>6</sup> Larvae in this grouping were characterized by flattened, elliptical eyes, sometimes flattened heads, and scattered ventral chromatophores. Myomere counts for this group varied but most often had 22-24 preanal myomeres. In the Ohio River, this grouping contains members of *Pimephales*, the old *Hybopsis* complex (*Macrhybopsis* sp., *Erimystax* sp., and *Hybopsis* sp.), Suckermouth Minnow, and some shiner species (possibly River Shiner and Spotfin Shiner) (EPRI 2020c).

<sup>&</sup>lt;sup>7</sup> This category distinguished the small larvae of White Perch or White Bass from Striped Bass, the latter being much larger in the egg and yolk-sac larval stages. Typically, *Morone* larvae from about 4 to 6 mm in total length, without visible yolk or oil, were placed in this grouping (EPRI 2020c).

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*Pimephales* type, Emerald Shiner type<sup>8</sup>, and Clupeidae sp. were the only other taxa that contributed greater than 1.0% to the 2016 catch (Table 4-3; EPRI 2020c). Collectively, *Pimephales* type and Emerald Shiner type composed 66.6% of the "Other Identified Taxa" in 2016 (Table 4-3 and Table 4-5).

The dominant life stage in 2015 was post yolk-sac larvae (72.2%), followed by yolk-sac larvae (14.6%) and viable eggs (6.8%) (Table 4-6). Gizzard Shad post yolk-sac larvae alone composed 50.5% of the 2015 catch, and Clupeidae sp. post yolk-sac larvae contributed an additional 7.8% (Table 4-7). Freshwater Drum ichthyoplankton were co-dominated by viable eggs and post yolk-sac larvae, which collectively composed 12.0% of the 2015 catch. The most abundant life stage for Ictiobinae sp. was yolk-sac larvae, and they accounted for 9.9% of the 2015 catch. Combined, these five taxa-life stages composed 80.3% of the entrainment catch at Mill Creek Station in 2015.

In contrast to 2015, the dominant life stage in 2016 was viable eggs (50.4%). Freshwater Drum and Asian carp (+type) accounted for 68.5% and 31.0% of the 2016 viable egg catch, respectively (Table 4-6 and Table 4-7). Yolk-sac larvae was the second most abundant life stage in 2016, composing 26.8% of the catch and 57.1% of them were Ictiobinae sp. Slightly less than 20% of the 2016 catch was made up of post yolk-sac larvae compared to slightly over 50% in 2015 (Table 4-6). As in 2015, post yolk-sac larvae was again the dominant life stage for Gizzard Shad in 2016; however, their relative abundance was much lower in 2016 (10.4%) than in 2015 (50.5%) (Table 4-7). Collectively, these four taxa-life stages composed 75.8% of the entrainment catch at Mill Creek Station in 2016.

<sup>&</sup>lt;sup>8</sup> Most of the cyprinid larvae in this grouping had high preanal myomere counts (usually > 25), and streamlined, slender bodies. Pigmentation consisted of a mid-ventral row of melanophores on the yolk sac or gut, occipital and mid-lateral pigment that increased with total length, and a developing double row of dorsal pigment. Most of the representatives had round eyes, but a few specimens with all the above characters had slightly flattened eyes. Based on the taxonomic literature, these characteristics are typical of Emerald Shiner. However, since descriptive or developmental taxonomic information are lacking for most Cyprinidae species, this grouping probably represents more than one species and may include Channel Shiner, Mimic Shiner, Ghost Shiner, and Silver Shiner. For many of these "type" eggs, the chorions were collapsed. These eggs appeared to be 3 to 4 mm in diameter, with a clear perivitelline space and small embryos, which are characteristic of Emerald Shiner (EPRI 2020c).

# Table 4-6 Number and relative abundance of life stages collected at Mill Creek Station in2015 and 2016 (EPRI 2020c)

I ifa Staga	-	2015	2016			
Life Stage	Number         % Composition		Number	% Composition		
Eggs (non-viable)	13	<0.05%	348	0.7%		
Eggs (viable)	2,440	6.8%	26,721	50.4%		
Not Determined	2	<0.05%	78	0.1%		
Yolk-sac Larvae	5,234	14.6%	14,170	26.8%		
Larvae <sup>(a)</sup>	1,734	4.9%	938	1.8%		
Post Yolk-sac Larvae	25,794	72.2%	10,481	19.8%		
Juveniles	524	1.5%	235	0.4%		
Adult	2	<0.05%				
Total	35,743	100.0%	52,971	100.0%		

<sup>(a)</sup> Yolk-sac and/or post yolk-sac larvae that could not be differentiated due to damage or were in a transitional phase between yolk-sac and post yolk-sac (T1) (EPRI 2020c).

# Table 4-7Number and relative abundance of ichthyoplankton by taxon and life stage<br/>collected at Mill Creek Station in 2015 and 2016 (EPRI 2020c)

			2015			2016		
Taxa	Life Stage	#	%	Density	#	%	Density	
Paddlefish	Post Yolk-sac				4	< 0.01%	< 0.01	
T dddleffish	Larvae					<0.0170	<0.01	
Gar sp.	Post Yolk-sac	1	< 0.01%	< 0.01				
	Larvae							
Clupeidae type	Eggs (viable)				1	< 0.01%	< 0.01	
	Eggs (viable)				1	< 0.01%	< 0.01	
<u> </u>	Yolk-sac Larvae	61	<0.01%	0.07	61	< 0.01%	0.06	
Clupeidae sp.	Post Yolk-sac Larvae	2,782	7.8%	3.04	849	1.6%	0.86	
	Larvae <sup>(a)</sup>	1,541	4.3%	1.68	113	<0.010/	0.11	
	Eggs (viable)	1,541	<0.01%	<0.01	113	<0.01% <0.01%	0.02	
	Not Determined		<0.01%	<0.01	3	<0.01%	< 0.02	
	Yolk-sac Larvae	22	< 0.01%	0.02	182	<0.01%	0.18	
Skipjack Herring	Post Yolk-sac							
Skipjack Herring	Larvae	84	< 0.01%	0.09	84	< 0.01%	0.08	
	Larvae				5	< 0.01%	0.01	
	Juveniles	2	< 0.01%	< 0.01	3	< 0.01%	< 0.01	
Alosa type	Eggs (viable)	1	< 0.01%	< 0.01				
21	Yolk-sac Larvae	18	< 0.01%	0.02	56	< 0.01%	0.06	
	Post Yolk-sac	10.061	50.5%	19.73	5 500	10 40/	5 57	
Gizzard Shad	Larvae	18,061	30.5%	19.75	5,522	10.4%	5.57	
	Larvae				80	< 0.01%	0.08	
	Juveniles	20	< 0.01%	0.02	6	< 0.01%	0.01	
	Yolk-sac Larvae	4	< 0.01%	< 0.01	1	< 0.01%	< 0.01	
Threadfin Shad	Post Yolk-sac				150	< 0.01%	0.15	
	Larvae		0.04-1					
	Yolk-sac Larvae	23	<0.01%	0.03	3	< 0.01%	< 0.01	
D	Post Yolk-sac	1,170	3.3%	1.28	26	< 0.01%	0.03	
Dorosoma sp.	Larvae Larvae				51	<0.01%	0.05	
	Juveniles	1	 <0.01%	<0.01		<0.01%	0.05	
Goldeye	Yolk-sac Larvae	1	<0.01%	<0.01				
Oblideye	Yolk-sac Larvae	18	<0.01%	0.01	2	<0.01%	< 0.01	
Mooneye	Post Yolk-sac							
mooneye	Larvae	2	<0.01%	< 0.01	1	< 0.01%	< 0.01	
~	Post Yolk-sac					0.04-1	0.04	
Central Stoneroller	Larvae				1	< 0.01%	< 0.01	
	Yolk-sac Larvae	67	< 0.01%	0.07	30	< 0.01%	0.03	
Common Com	Post Yolk-sac	7						
Common Carp	Larvae	7	<0.01%	0.01	6	<0.01%	0.01	
	Larvae				2	< 0.01%	< 0.01	
	Eggs (non-viable)				268	0.5%	0.27	
Asian carp (+type)	Eggs (viable)	174	< 0.01%	0.19	8,277	15.6%	8.34	
	Yolk-sac Larvae	512	1.4%	0.56	1,691	3.2%	1.70	
	Post Yolk-sac				392	0.7%	0.40	
	Larvae							
	Larvae	19	<0.01%	0.02	4	<0.01%	< 0.01	
Macrhybopsis type	Post Yolk-sac	1	< 0.01%	< 0.01	3	< 0.01%	< 0.01	
	Larvae							

	2015				2016			
Таха	Life Stage	#	%	Density	#	%	Density	
	Yolk-sac Larvae				1	< 0.01%	< 0.01	
Shiner type	Post Yolk-sac	7	< 0.01%	0.01	16	< 0.01%	0.02	
Sinner type	Larvae	,	<0.0170	0.01				
	Juveniles				2	< 0.01%	< 0.01	
	Post Yolk-sac	8	< 0.01%	0.01				
Shiner sp.	Larvae							
	Juveniles	1	<0.01%	< 0.01				
	Post Yolk-sac Larvae	16	< 0.01%	0.02	17	< 0.01%	0.02	
Emerald Shiner	Larvae	1	< 0.01%	< 0.01				
	Juveniles	12	<0.01%	0.01	1	< 0.01%	< 0.01	
	Adult	12	<0.01%	< 0.01		<0.01%	<0.01	
	Eggs (viable)	29	<0.01%	0.03	89	<0.01%	0.09	
	Yolk-sac Larvae	69	<0.01%	0.03	509	1.0%	0.51	
	Post Yolk-sac							
Emerald Shiner type	Larvae	200	0.6%	0.22	699	1.3%	0.70	
	Larvae				14	< 0.01%	0.01	
	Juveniles	13	< 0.01%	0.01	18	<0.01%	0.02	
Channel Shiner	Adult	1	< 0.01%	< 0.01				
	Post Yolk-sac			0.01	1	0.010/	0.01	
Notropis sp.	Larvae	4	<0.01%	< 0.01	1	<0.01%	< 0.01	
	Juveniles	10	< 0.01%	0.01	3	< 0.01%	< 0.01	
Cooler and Minner	Yolk-sac Larvae				9	< 0.01%	0.01	
Suckermouth Minnow	Post Yolk-sac	1	<0.01%	< 0.01	3	<0.01%	< 0.01	
type	Larvae	1	<0.01%	<0.01	3	<0.01%	<0.01	
	Yolk-sac Larvae	347	1.0%	0.38	1,073	2.0%	1.08	
	Post Yolk-sac	112	< 0.01%	0.12	515	1.0%	0.52	
Pimephales type	Larvae				515	1.070	0.52	
	Larvae	10	<0.01%	0.01				
	Juveniles	5	<0.01%	0.01	3	< 0.01%	< 0.01	
<b>N</b> I I I	Post Yolk-sac	1	< 0.01%	< 0.01				
Pimephales sp.	Larvae							
<b>Q 1 1 1</b>	Juveniles	l	<0.01%	<0.01				
Cyprinidae type	Eggs (viable)	6	<0.01%	0.01	19	<0.01%	0.02	
Cyprinidae sp.	Eggs (viable)	4	< 0.01%	< 0.01	2	< 0.01%	< 0.01	
	Not Determined Yolk-sac Larvae	2	< 0.01%	< 0.01	61	<0.01%	0.06	
	Post Yolk-sac	7	<0.01%	0.01	159	<0.01%	0.16	
	Larvae	14	< 0.01%	0.02	7	< 0.01%	0.01	
	Larvae	53	< 0.01%	0.06	12	< 0.01%	0.01	
	Juveniles	2	<0.01%	< 0.00		<0.0170	0.01	
Quillback	Yolk-sac Larvae				1	< 0.01%	< 0.01	
White Sucker	Yolk-sac Larvae				1	<0.01%	<0.01	
Spotted Sucker	Yolk-sac Larvae	1	< 0.01%	< 0.01				
Moxostoma sp.	Yolk-sac Larvae	6	<0.01%	0.01	6	< 0.01%	0.01	
Catostominae type	Eggs (viable)				2	<0.01%	< 0.01	
······································	Eggs (non-viable)				2	<0.01%	< 0.01	
Catostominae sp.	Yolk-sac Larvae				2	<0.01%	< 0.01	
·····r·	Larvae				1	< 0.01%	< 0.01	

# Table 4-7 (Continued)

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Table 4-7 (Continued)									
			2015			2016			
Таха	Life Stage	#	%	Density	#	%	Density		
	Yolk-sac Larvae	3,548	9.9%	3.88	8,084	15.3%	8.15		
Ictiobinae sp.	Post Yolk-sac Larvae	528	1.5%	0.58	87	<0.01%	0.09		
ieuooniae sp.	Larvae	1	<0.01%	< 0.01	603	1.1%	0.61		
	Juveniles				1	< 0.01%	< 0.01		
Catostomidae sp.	Larvae	1	< 0.01%	< 0.01					
Channel Catfish	Juveniles	1	< 0.01%	< 0.01					
White Bass	Juveniles	1	< 0.01%	< 0.01					
Striped Bass type	Eggs (viable)				5	< 0.01%	0.01		
	Eggs (viable)				2	< 0.01%	< 0.01		
Morone sp. (not Striped	Yolk-sac Larvae	21	< 0.01%	0.02	82	< 0.01%	0.08		
Bass)	Post Yolk-sac Larvae	404	1.1%	0.44	39	<0.01%	0.04		
	Larvae				2	<0.01%	< 0.01		
Morone sp.	Yolk-sac Larvae				69	< 0.01%	0.07		
Morone sp.	Post Yolk-sac Larvae	243	0.7%	0.27	49	< 0.01%	0.05		
Rock Bass	Post Yolk-sac Larvae				1	< 0.01%	< 0.01		
Green Sunfish	Juveniles				1	< 0.01%	< 0.01		
Bluegill type	Juveniles				1	< 0.01%	< 0.01		
	Yolk-sac Larvae	5	< 0.01%	0.01	11	< 0.01%	0.01		
Lanamiaan	Post Yolk-sac Larvae	19	< 0.01%	0.02	18	< 0.01%	0.02		
Lepomis sp.	Larvae				1	< 0.01%	< 0.01		
	Juveniles				3	< 0.01%	< 0.01		
Smallmouth Bass	Post Yolk-sac Larvae				1	< 0.01%	< 0.01		
White Crappie	Juveniles	1	< 0.01%	< 0.01					
Pomoxis sp.	Post Yolk-sac Larvae	4	< 0.01%	< 0.01	5	< 0.01%	0.01		
	Yolk-sac Larvae	20	< 0.01%	0.02	23	< 0.01%	0.02		
Sauger	Post Yolk-sac Larvae	22	< 0.01%	0.02	15	< 0.01%	0.02		
	Juveniles	1	< 0.01%	< 0.01					
Walleye	Yolk-sac Larvae	1	< 0.01%	< 0.01					
	Yolk-sac Larvae	38	< 0.01%	0.04	10	< 0.01%	0.01		
<i>Sander</i> sp.	Post Yolk-sac Larvae				22	< 0.01%	0.02		
	Juveniles	2	< 0.01%	< 0.01					
	Yolk-sac Larvae	18	< 0.01%	0.02	177	< 0.01%	0.18		
Logperch type	Post Yolk-sac Larvae	4	< 0.01%	< 0.01	5	< 0.01%	0.01		
	Larvae	1	< 0.01%	< 0.01					
Douton on	Yolk-sac Larvae	3	< 0.01%	< 0.01	4	< 0.01%	< 0.01		
Darter sp.	Juveniles				1	< 0.01%	< 0.01		
Darter (not Logperch)	Yolk-sac Larvae				1	<0.01%	< 0.01		
sp.					1	<0.0170	<0.01		
Percidae sp.	Yolk-sac Larvae	1	< 0.01%	< 0.01					
	Eggs (viable)	2,208	6.2%	2.41	18,29 5	34.5%	18.44		
	Eggs (non-viable)	9	< 0.01%	0.01	49	< 0.01%	0.05		
En shundan D	Not Determined				6	< 0.01%	0.01		
Freshwater Drum	Yolk-sac Larvae	356	1.0%	0.39	1,919	3.6%	1.93		
	Post Yolk-sac Larvae	2,097	5.9%	2.29	1,943	3.7%	1.96		
	Larvae	1	<0.01%	< 0.01	·				
	Juveniles	451	1.3%	0.49	192	< 0.01%	0.19		

# Table 4-7 (Continued)

			2015			2016	
Таха	Life Stage	#	%	Density	#	%	Density
Freshwater Drum type	Yolk-sac Larvae				1	$<\!0.01\%$	< 0.01
	Eggs (viable)	5	< 0.01%	0.01	1	< 0.01%	< 0.01
Cyprinidae/Catostomidae	Not Determined				8	< 0.01%	0.01
Cyprinidae/Catostofnidae	Yolk-sac Larvae	6	$<\!\!0.01\%$	0.01			
	Larvae	8	$<\!0.01\%$	0.01	3	$<\!0.01\%$	< 0.01
Cyprinidae/Catostomidae type	Yolk-sac Larvae	56	< 0.01%	0.06			
Morone/Freshwater Drum	Yolk-sac Larvae				1	< 0.01%	< 0.01
	Eggs (viable)	12	< 0.01%	0.01	8	< 0.01%	0.01
	Eggs (non-viable)	4	< 0.01%	< 0.01	29	< 0.01%	0.03
UNIDENTIFIED	Yolk-sac Larvae	5	< 0.01%	0.01	1	< 0.01%	< 0.01
UNIDENTIFIED	Post Yolk-sac	2	< 0.01%	< 0.01			
	Larvae	2	<0.01%	<0.01			
	Larvae	98	$<\!0.01\%$	0.11	47	$<\!0.01\%$	0.05
	Total Fish	35,743	100.00%	39.05	52,971	100.00%	53.40

### Table 4-7 (Continued)

<sup>(a)</sup> Yolk-sac and/or post yolk-sac larvae that could not be differentiated due to damage or were in a transitional phase between yolk-sac and post yolk-sac (T1) (EPRI 2020c).

Note: # = number collected; % = relative abundance; Density = #/10m<sup>3</sup>.

Based on information summarized above, the native taxa most susceptible to entrainment and/or impingement at or near Mill Creek Station are Gizzard Shad, Freshwater Drum, and Ictiobinae sp. (assumed Quillback, River Carpsucker, and Smallmouth Buffalo). Freshwater Drum and Gizzard Shad were the two most abundant species collected in a recent impingement study at the nearby Cane Run Plant (Table 4-4), and they also ranked first and second, respectively, during the two-year entrainment study at Mill Creek Station (Table 4-3 and Table 4-5). Although Ictiobinae species collectively composed only 1.2% of the fish impinged (Table 4-4), Ictiobinae sp. was the third most abundant taxon during the Mill Creek Station entrainment study and accounted for 14.5% of the two-year entrainment catch (Table 4-3). Ictiobinae species identified during both the in-river and impingement studies were River Carpsucker, Quillback, Smallmouth Buffalo, and Bigmouth Buffalo; however, Bigmouth Buffalo was uncommon during both the inriver and impingement studies (Table 4-2 and Table 4-4). Therefore, due to their higher relative abundance in the in-river catch, Quillback, River Carpsucker, and Smallmouth Buffalo will be discussed for Ictiobinae sp. It should be noted that Stefanavage (2009) listed buffalo species as an important commercial fish group in the Kentucky/Indiana portion of the Ohio River. Freshwater Drum, Gizzard Shad, Quillback, River Carpsucker, and Smallmouth Buffalo are rough fish as defined by the Kentucky Administrative Regulations<sup>4</sup>.

Sport fish species<sup>4</sup> were uncommon in the entrainment and impingement collections with *Morone* taxa being the most abundant sport fish taxa group collected during both studies (Table 4-3 and Table 4-4). *Morone* taxa (White Bass and *Morone* sp.) composed only 1.5% of the fish impinged during the two-year study at the nearby Cane Run Plant, and all *Morone* taxa collectively accounted for only 1.0% of the two-year entrainment catch at Mill Creek Station. Since White Bass was the most abundant or only identifiable *Morone* species during the in-river, impingement, and entrainment studies (Table 4-2, Table 4-3, and Table 4-4), it represents the White Bass (+*Morone* sp.) sport fish group. White Bass is classified as a sport fish species by the Kentucky Administrative Regulations<sup>4</sup> and therefore are subject to statewide and regional

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recreational fishing regulations of the Kentucky Department of Fish and Wildlife Resources (KDFWR 2020).

### 4.4 Primary Period of Reproduction, Larval Recruitment, and Period of Peak Abundance for Relevant Taxa

*(iv) Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa.* 

In the Ohio River, there is a marked seasonality to ichthyoplankton in the water column (ESE 1992). Most species have a limited spawning season, outside of which individuals are not susceptible to entrainment due to growth beyond the size that can pass through traveling screens. Some taxa have a defined single spawning season that is temporally compressed and measured in days or weeks, while others may spawn over a longer season, measured in months. Ichthyoplankton are effectively absent in the winter months. Ichthyoplankton densities begin to increase mid-spring, peak in late spring or early summer, and then decline in July and August. This pattern occurred in 2015 and 2016 during the Mill Creek Station entrainment study (Figure 4-1).

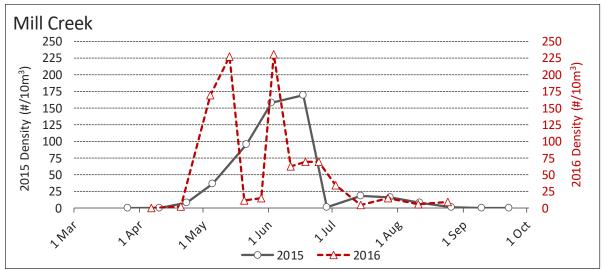


Figure 4-1 Ichthyoplankton density by sampling event at Mill Creek Station, 2015 and 2016

The temporal pattern in 2015 consisted of increasing densities from latter April through mid-June, a sharp decrease in densities during late June, followed by low and variable densities through August; only a few ichthyoplankton were collected in September (Figure 4-1). The maximum densities in 2015 were observed in early June (157.8/10m<sup>3</sup>) and mid-June (169.3/10m<sup>3</sup>), when Gizzard Shad composed 62.8% and 70.0% of the catches, respectively (EPRI 2020c). Clupeidae sp., most likely Gizzard Shad, accounted for an additional 21.4% and 9.7% of those peak densities, respectively. The two peak-density periods yielded 64.4% of the 2015 ichthyoplankton catch.

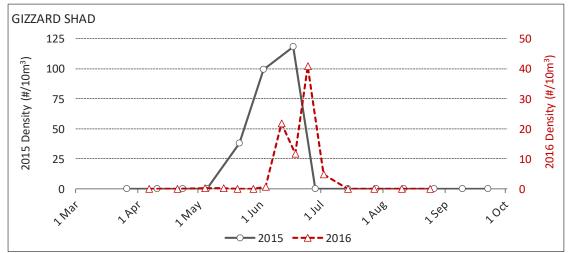
In 2016, initial density peaks  $(168.7/10m^3 \text{ to } 227.0/10m^3)$  were observed during the first half of May with markedly lower densities in the latter half of May. Following that low-density period, another peak  $(231.0/10m^3)$  was observed in early June. Elevated densities  $(61.8/10m^3 \text{ to } 227.0/10m^3)$ 

69.2/10m<sup>3</sup>) were also observed through late June, after which densities decreased and remained low through August (Figure 4-1). The three peak-density periods produced 61.1% of the ichthyoplankton collected in 2016. Ictiobinae sp. (primarily yolk-sac larvae) composed 78.0% of the early May peak, whereas Asian carp (+type) eggs accounted for 93.8% of the mid-May peak. The early June peak was dominated (92.1%) by Freshwater Drum (primarily eggs). Freshwater Drum and Gizzard Shad collectively composed between 69% and 87% of the elevated densities through the remainder of June (EPRI 2020c).

The primary period of reproduction near Mill Creek Station begins latter April and extends through July, whereas the period of peak abundance occurs in May and June (Figure 4-1). Temporal characteristics of four taxa most susceptible to entrainment in upper Cannelton Pool, Gizzard Shad, Clupeidae sp., Ictiobinae sp., and Freshwater Drum (Table 4-5) are presented below. Asian carp (+type) are not discussed because this grouping represents aquatic nuisance species<sup>5</sup>; taxa that are not "relevant". Although *Morone* taxa were uncommon during the two-year entrainment catch (Table 4-3 and Table 4-7), the White Bass (+*Morone* sp.) taxa group is discussed below because it was the most abundant sport fish taxa group entrained (1.0% of the two-year entrainment catch) and likely represents primarily White Bass.

### 4.4.1 Gizzard Shad

In 2015, Gizzard Shad was collected from latter May through late June and in mid-August (Figure 4-2), though only three post yolk-sac larvae and 10 juveniles were collected after mid-June (EPRI 2020c). No Gizzard Shad or other Clupeidae specimens were collected during July 2015, possibly the result of historic high river flow conditions during much of July that may have interrupted clupeid spawning (Figure 4-2; USACE 2015; EPRI 2020c). 2015 peak Gizzard Shad densities occurred from latter May (38.1/10m3) through mid-June (118.5/10m3), whereas densities were low during the other two sampling events in which they were collected in 2015 (Figure 4-2). In fact, 99.9% of the 2015 Gizzard Shad catch occurred in those three peak-density sampling events, and 60.4% of the ichthyoplankton catch during that period was made up of Gizzard Shad (EPRI 2020c).



Note: The scale of the y-axis is different for each year.

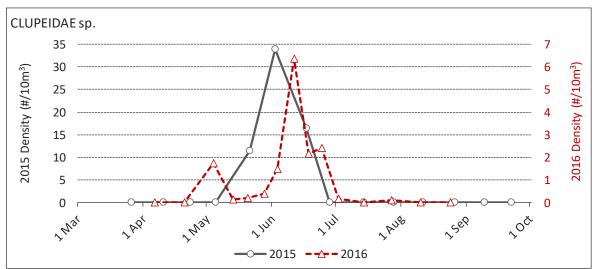
### Figure 4-2 Gizzard Shad density by sampling event at Mill Creek Station, 2015 and 2016

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In 2016, Gizzard Shad larvae were collected from early May through the first half of August (Figure 4-2). Peak densities (11.7/10m<sup>3</sup> to 40.9/10m<sup>3</sup>) occurred during the latter three June sampling events, particularly late June (Figure 4-2; EPRI 2020c). Those three peak-density periods produced 92.5% of the 2016 Gizzard Shad catch (EPRI 2020c). Gizzard Shad were collected more frequently in 2016 (12 sampling events) than in 2015 (five sampling events). Based on the 2015 and 2016 data, the primary period of reproduction for Gizzard Shad near Mill Creek Station is from mid-May through early July, whereas the period of peak abundance occurs in June (Figure 4-2).

### 4.4.2 Clupeidae sp.

Specimens identified as Clupeidae sp. were often in a physical condition that did not allow identification to lower taxonomic levels nor differentiation between post yolk-sac and yolk-sac larval life stages, many were therefore categorized as "larvae<sup>9</sup>" (EPRI 2020c). It is likely that many Clupeidae sp. specimens were Gizzard Shad because this taxa group shared a similar temporal distribution to Gizzard Shad (Figure 4-3 and Figure 4-2).



Note: The scale of the y-axis is different for each year.

### Figure 4-3 Clupeidae sp. density by sampling event at Mill Creek Station, 2015 and 2016

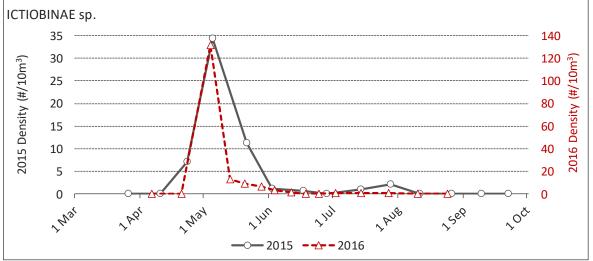
As per Gizzard Shad, 99.9% of the 2015 Clupeidae sp. catch occurred from latter May through mid-June, with densities ranging from 11.4/10m<sup>3</sup> (latter May) to 33.9/10m<sup>3</sup> (early June) (Figure 4-3). Only three post yolk-sac larvae were collected outside of that 2015 period, in mid-August (EPRI 2020c). Similarly, 99.9% of the 2016 Clupeidae sp. catch occurred in June. However, the maximum density in 2016 (6.4/10m<sup>3</sup>) was noticeably lower than that observed in 2015 (33.9/10m<sup>3</sup>) (Figure 4-3; EPRI 2020c). As observed for Gizzard Shad, Clupeidae sp. were collected more frequently in 2016 (10 sampling events) than in 2015 (four sampling events). Based on these data, the primary period of reproduction for Clupeidae sp. near Mill Creek

<sup>&</sup>lt;sup>9</sup> Yolk-sac and/or post yolk-sac larvae that could not be differentiated due to damage or were in a transitional phase between yolk-sac and post yolk-sac (T1).

Station is from early May through June, whereas the period of peak abundance occurs from latter May through June (Figure 4-3).

### 4.4.3 Ictiobinae sp.

Ictiobinae sp., primarily yolk-sac larvae, were collected from latter April through the first half of August in 2015, but they were most abundant (7.1/10m<sup>3</sup> to 34.4/10m<sup>3</sup>) from latter April through May when 92.1% of all Ictiobinae sp. were caught (Figure 4-4; EPRI 2020c). In addition, this taxon composed 89.0% to 96.3% of the ichthyoplankton catches in latter April and early May of 2015. Ictiobinae sp. densities in 2016 exhibited a temporal pattern similar to 2015 (Figure 4-4). Specimens, primarily yolk-sac larvae, were again collected over a broad season (latter April through late July) during 2016, and the peak density (131.6/10m<sup>3</sup>) occurred in early May. That peak-density sampling event produced 79.0% of the 2016 Ictiobinae sp. catch, and this taxon composed 78.0% the ichthyoplankton catch in early May (EPRI 2020c). The 2015-2016 temporal density patterns indicate that the primary period of reproduction for Ictiobinae sp. near Mill Creek Station occurs from latter April through early June with the period of peak abundance is abbreviated and occurs in early May (Figure 4-4; EPRI 2020c).



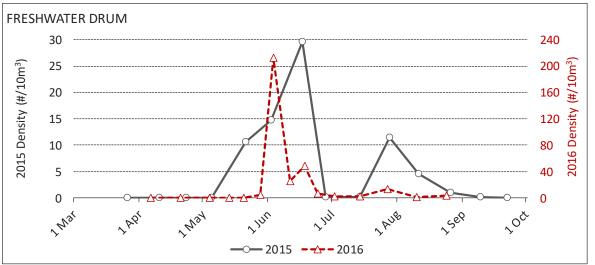
Note: The scale of the y-axis is different for each year.



### 4.4.4 Freshwater Drum

Freshwater Drum was collected from May through September in 2015, but it was most abundant (10.6/10m<sup>3</sup> to 29.7/10m<sup>3</sup>) during two periods: latter May through mid-June and late July through mid-August (Figure 4-5; EPRI 2020c). The latter May through mid-June period produced 76.0% of its 2015 catch, but Freshwater Drum composed only 9.4% to 17.5% of those ichthyoplankton catches. Conversely, the second period contributed only 22.2% to the 2015 Freshwater Drum catch, but it composed 57.5% to 71.5% of the ichthyoplankton catches during that period (EPRI 2020c). Few specimens were collected from late June to mid-July (Figure 4-5), which was likely the result of Freshwater Drum spawning being interrupted by the historic high river flow conditions that occurred from late June through mid-July (USACE 2015; EPRI 2020c).





Note: The scale of the y-axis is different for each year.

#### Figure 4-5 Freshwater Drum density by sampling event at Mill Creek Station, 2015 and 2016

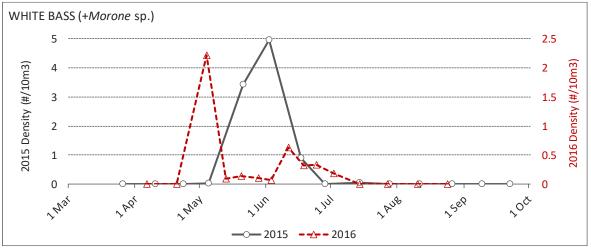
As in 2015, Freshwater drum was collected from May through the end of the sampling season in 2016 (Figure 4-5). The primary peak density in 2016 (212.8/10m<sup>3</sup>) was about seven times higher than the 2015 peak (29.7/10m<sup>3</sup>), and it occurred about two weeks earlier than the 2015 peak. The 2016 peak produced 66.4% of the 2016 Freshwater Drum catch, and this species composed 92.1% of the ichthyoplankton catch during that peak (Figure 4-5; EPRI 2020c). The 2015-2016 temporal density patterns indicate that the primary period of reproduction for Freshwater Drum near Mill Creek Station occurs from latter May through July, with less intensive reproduction through August. The period of peak abundance for Freshwater Drum occurs in June (Figure 4-5; EPRI 2020c).

#### 4.4.5 White Bass (+Morone sp.)

White Bass (+*Morone* sp.<sup>10</sup>), primarily post yolk-sac larvae, were collected almost exclusively from early May through mid-June in 2015, with only two larvae collected outside that period in mid-July (Figure 4-6; EPRI 2020c). Their peak 2015 densities occurred in latter May (3.4/10m<sup>3</sup>) and early June (5.0/10m<sup>3</sup>), whereas densities were low ( $\leq 0.9/10m^3$ ) during the other three sampling events in which they were collected that year. Those two peak events produced 90.1% of all White Bass (+*Morone* sp.) specimens collected in 2015 (EPRI 2020c). In 2016, White Bass (+*Morone* sp.) were collected over a period that was similar to 2015, early May through early July (Figure 4-6; EPRI 2020c). The yolk-sac larval stage was the most abundant life stage collected in 2016 (Table 4-7). Two density peaks were also observed in 2016. However, the primary peak (2.2/10m<sup>3</sup>) occurred in early May, three to four weeks earlier than the 2015 peaks, and the second (minor) peak in 2016 (0.6/10m<sup>3</sup>) occurred near mid-June, which was about a week later than the primary peak in 2015 (Figure 4-6; EPRI 2020c). The two peak events in 2016 produced 66.3% of all White Bass (+*Morone* sp.) specimens collected that year. White Bass (+*Morone* sp.) densities were low ( $\leq 0.3/10m^3$ ) during the other seven sampling events in which they were collected in 2016 (EPRI 2020c). The primary period of reproduction for White Bass (+*Morone* sp.) specimens collected that year. White Bass (+*Morone* sp.) densities were low ( $\leq 0.3/10m^3$ ) during the other seven sampling events in which they were collected in 2016 (EPRI 2020c). The primary period of reproduction for White Bass

<sup>&</sup>lt;sup>10</sup> Excludes Striped Bass type (Table 4-3 and Table 4-7).

(+*Morone* sp.) near Mill Creek Station begins in early May and extends through June, whereas the period of peak abundance extends from early May to mid-June (Figure 4-6).



Note: The scale of the y-axis is different for each year.

# Figure 4-6 White Bass (+*Morone* sp.) density by sampling event at Mill Creek Station, 2015 and 2016

### 4.5 Seasonal and Daily Activities of Relevant Taxa

(v) Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure.

The studies conducted in upper Cannelton Pool during 2005-2006 and 2015-2016 determined that Gizzard Shad, Freshwater Drum, and Ictiobinae sp. (assumed Quillback, River Carpsucker, and Smallmouth Buffalo) were the native taxa most susceptible to impingement and/or entrainment. Sport fish species<sup>4</sup> were uncommon in the entrainment and impingement collections with *Morone* taxa being the most abundant sport fish taxa group collected during both studies.

## 4.5.1 Gizzard Shad

Gizzard Shad is classified as a rough fish by the Kentucky Administrative Regulations<sup>4</sup>. It is a pelagic species, usually living in schools at or the near surface, and inhabits large rivers, lakes, reservoirs, swamps, bays, sloughs, and similar quieter open waters (Becker 1983). Although Gizzard Shad is not considered a migratory species, spring and fall runs as well as winter migrations have been noted (Wallus et al. 1990). Spawning occurs from April through June in the Midwest (Smith 2002), which is consistent with the primary collection periods of its early life stages in upper Cannelton Pool (Figure 4-2 and Figure 4-3). They usually spawn at night in shallow shoreline areas over a variety of substrates (Wallus et al. 1990). Gizzard Shad egg production is highest in age-2 females, averaging about 380,000 per individual. Fertilized eggs are demersal and adhesive, and therefore adhere to submerged vegetation and various benthic substrate (Becker 1983), which makes them less susceptible to entrainment. Conversely, their pelagic larval stages are highly susceptible to entrainment (Table 4-3 and Table 4-7; EPRI 2011). Yolk-sac larvae can move vertically in the water column soon after hatching and after three or four days, they begin active horizontal movements. However, larvae are weak swimmers for at

least several weeks after hatching (Becker 1983). Yolk-sac and post yolk-sac larvae appear to feed primarily on protozoans, but transition to zooplankton as juveniles and greater percentages of phytoplankton as they grow older (Becker 1983). Within its range, Gizzard Shad is usually among the most abundant species entrained and tends to dominate impingement collections (EPRI 2011; Table 4-3 and Table 4-4). Its prevalence in impingement studies is largely associated with winter-die offs (EPRI 2008a and 2008b) and the fact that they are considered a fragile species, as classified by The Rule at 40 CFR 125.92(m).

### 4.5.2 Freshwater Drum

Freshwater Drum is classified as a rough fish by the Kentucky Administrative Regulations<sup>4</sup>. It is a bottom dweller and often found over mixed substrates such as sand, silt, and mud, and prefers moderately deep water. Freshwater Drum is considered a mobile species and tends to travel long distances downstream and much shorter distances upstream. In large rivers, it may travel distances up to approximately 100 miles (Wallus and Simon 2006). Spawning occurs from May through mid-summer (Mettee et al. 1996; Figure 4-5). Freshwater Drum spawns pelagically in main channel areas of large rivers and reservoirs, usually far from shore, in schools of a few to several hundred individuals (Wallus and Simon 2006; Becker 1983). Fecundity of females varies greatly from about 27,000 to 850,000 eggs per individual, but most females tend to produce between 200,000 and 400,000 eggs (Wallus and Simon 2006). Fertilized, water-hardened eggs are buoyant or semibuoyant; therefore, eggs and newly hatched yolk-sac larvae float at or near the surface and are scattered by currents and wind (Wallus and Simon 2006; Becker 1983), which makes these early life stages of Freshwater Drum highly susceptible to river drift and entrainment (Table 4-3 and Table 4-7; EPRI 2011). At approximately 25 mm in length, Freshwater Drum juveniles are found on or near the bottom where they remain for most of their lives. Feeding often begins before the yolk-sac is completely absorbed; the early diet consists primarily of copepods and cladocerans, though early piscivory on clupeids and cyprinids has been observed (Wallus and Simon 2006; Becker 1983). Larger Freshwater Drum feed primarily on aquatic insects, along with snails, crayfish, and fish (Mettee et al. 1996; Becker 1983). Freshwater Drum is also susceptible to impingement. For example, EPRI (2011) summarized the results of 2004 Phase II EPA Rule § 316(b) impingement data for large rivers such as the Ohio River, and Freshwater Drum was the third most frequently impinged species. During the Cane Run Plant impingement study, it was the most abundant species (Table 4-4).

### 4.5.3 Ictiobinae sp.

Ictiobinae sp. were the third most abundant taxon collected during the 2015-2016 entrainment study at Mill Creek Station (Table 4-3 and Table 4-5). Ictiobinae species identified during both the in-river and impingement studies were River Carpsucker, Quillback, Smallmouth Buffalo, and Bigmouth Buffalo; however, Bigmouth Buffalo was uncommon during both the in-river and impingement studies (Table 4-2 and Table 4-4). Therefore, due to their higher relative abundance in the in-river catch, Quillback, River Carpsucker, and Smallmouth Buffalo will be discussed for Ictiobinae sp. All three species are classified as a rough fish by the Kentucky Administrative Regulations<sup>4</sup>, and buffalo were noted as an important commercial fish on the Kentucky/Indiana portion of the Ohio River (Stefanavage 2009). Quillback, River Carpsucker, and Smallmouth Buffalo are bottom-dwelling species found in pools, oxbow lakes, and deeper water of large rivers (Smith 2002; Becker 1983). All three species can tolerate turbid and silty waters (Smith

2002; Kay et al. 1994). Peak spawning occurs in the spring, typically starting in April or May, but may continue into September in its southern range (Smith 2002; Kay et al. 1994; Becker 1983; Figure 4-4). These species are broadcast spawners with adhesive eggs that attach to the substrate, woody debris, and vegetation (Smith 2002; Kay et al. 1994). Fecundity has been estimated to be 18,200 eggs per age-2 female to over 500,000 per age-15 female for Smallmouth Buffalo, 15,000 to 64,000 per female for Quillback, and 18,000 to 196,000 per female for River Carpsucker (Kay et al. 1994; Becker 1983). No parental care is provided to the early life stages. Immediately after hatching, planktonic yolk-sac larvae repeatedly swim to the surface and drift back to the bottom of the water column (Kay et al. 1994). As such, these species are susceptible to entrainment during the yolk-sac larval life stage. For example, over 90% of collected Ictiobinae sp. specimens were volk-sac larvae during the two-year entrainment study at Mill Creek Station (Table 4-7). Young Smallmouth Buffalo feed on small planktonic invertebrates such as copepods and cladocerans, but algae and duckweed may also be consumed. Smallmouth Buffalo become more opportunistic as they grow, feeding on algae and associated invertebrates (Becker 1983). Quillback and River Carpsucker are bottom feeders that typically consume algae, insects, and small invertebrates from bottom substrate (Becker 1983). Ictiobinae taxa composed only 1.3% of the fish collected during electrofishing/seining surveys near Mill Creek Station from 2014 through 2018 (Table 4-2). Based on this community composition, Ictiobinae species appear to be moderately susceptible to impingement, composing 1.3% of all fish impinged during the 2005-2007 study (Table 4-4), and slightly more susceptible to entrainment as they composed 14.5% of all specimens entrained during the 2015-2016 study (Table 4-3 and Table 4-5).

### 4.5.4 White Bass (+*Morone* sp.)

White Bass (+*Morone* sp.<sup>11</sup>) composed only 1.5% of the impinged fish and only 1.0% of the entrained ichthyoplankton; however, they were the most abundant sport fish taxa group collected during these two studies (Table 4-3 and Table 4-4). Since White Bass was the most abundant or only identifiable Morone species during the in-river, impingement, and entrainment studies (Table 4-2, Table 4-3, and Table 4-4), it represents the White Bass (+Morone sp.) sport fish group. White Bass is classified as a sport fish species by the Kentucky Administrative Regulations<sup>4</sup> and therefore are subject to statewide and regional recreational fishing regulations of the Kentucky Department of Fish and Wildlife Resources (KDFWR 2020). White Bass is a schooling pelagic species that prefers open water of lakes, reservoirs, and large rivers. This species is capable of large movements (up to 1 mile per day) and in one study of post-spawning adults, the average distance traveled prior to recapture was 21 miles (Becker 1983). Spawning primarily occurs from April through June (e.g., Figure 4-6) and is temperature dependent with peak spawning occurring at 16.9-22.6°C. Spawning takes place mid-water with spawning groups rising to the surface where eggs are scattered. Eggs are adhesive and attach to vegetation, gravel, and rocks. The average female produces 565,000 eggs per season, but larger individuals may produce over 900,000 (Becker 1983; Wallus and Simon 2006). Young White Bass feed on planktonic crustaceans and insect larvae such as cladocerans, chironomid larvae, and copepods. As they grow, White Bass incorporate fish as a food item, though small invertebrates still

<sup>&</sup>lt;sup>11</sup> Excludes Striped Bass type collected during the entrainment study (Table 4-3 and Table 4-7). However, the entrained and impinged *Morone* sp. may include Striped Bass and/or hybrid striper in addition to White Bass (Table 4-2).

compose an important portion of their diet (Becker 1983). *Morone* taxa composed 0.5% of the fish collected during in-river surveys near Mill Creek Station (Table 4-2), but slightly higher percentages (1.0% to 1.5%) of all fish specimens impinged and entrained (Table 4-3 and Table 4-4). Based on those relative abundance data, White Bass (+*Morone* sp.) appear to be moderately susceptible to impingement and entrainment in upper Cannelton Pool.

### 4.6 Threatened, Endangered, and Other Protected Species that Might be Susceptible to Impingement and Entrainment

(vi) Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at your cooling water intake structures.

Federally-listed and state-listed threatened and endangered (T&E) species were identified that are known to or believed to occur in Jefferson County, Kentucky, where Mill Creek Station is located and Harrison County, Indiana, which is across the river from the facility. The following addresses these federally-listed T&E species, whereas discussion of state-listed T&E is limited to aquatic species that potentially have a nexus with the operation of the Mill Creek Station CWIS.

Although the Kentucky State Nature Preserves Commission (KSNPC 2019)<sup>12</sup> lists taxa as T&E, the definition of endangered species in the Kentucky Administrative Regulations (Title 301, Chapter 3, Part 061, Section 2)<sup>13</sup> states:

Any species or subspecies designated as endangered by the Secretary of the Interior on a current United States List of Endangered and Threatened Wildlife as recorded in 50 Code of Federal Regulations, Part 17, is considered an endangered species in Kentucky under the provisions of KRS 150.183. Those species described as "threatened" on the above federal list are not included under KRS 150.183 or this administrative regulation.

This definition does not include a state list of T&E species; nonetheless, the KSNPC T&E designations are presented here with the federal- and Indiana state-level listings.

### 4.6.1 Federally-listed Species

Federally-listed species for Jefferson County, Kentucky, and Harrison County, Indiana, were gathered from the USFWS Environmental Conservation Online System (ECOS)<sup>14</sup> and Information for Planning and Consultation (IPaC)<sup>15</sup> websites (USFWS 2020a and 2020b). The IPaC Project area encompasses 350 acres and includes the Ohio River near Mill Creek Station and surrounding terrestrial habitat on both sides of the river (Figure 4-7):

<sup>&</sup>lt;sup>12</sup> <u>http://app.fw.ky.gov/speciesinfo/speciesinfo.asp</u>

<sup>&</sup>lt;sup>13</sup> https://apps.legislature.ky.gov/law/kar/301/003/061.pdf

<sup>&</sup>lt;sup>14</sup> <u>https://ecos.fws.gov/ecp/</u>

<sup>&</sup>lt;sup>15</sup> https://ecos.fws.gov/ipac/

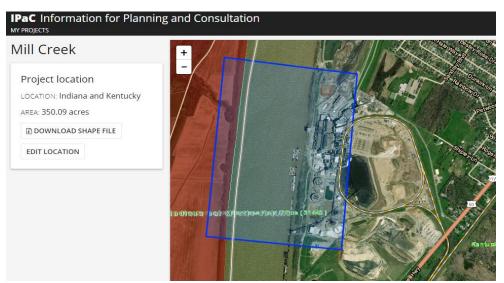


Figure 4-7 Project area designated for investigation in the IPaC website (https://ecos.fws.gov/ipac/; USFWS 2020b).

The USFWS lists 18 species as endangered and three as threatened under the Endangered Species Act (Table 4-8; USFWS 2020a and 2020b). Eleven freshwater mussel species are listed as endangered and one as threatened in Jefferson County, Kentucky, and/or Harrison County, Indiana, and two additional endangered mussels were identified through the IPaC website search. None of these 14 federally-listed mussel species were collected during recent mussel surveys conducted upstream and downstream of the facility (ESI 2012; LEC 2017), nor during historical surveys conducted upstream of the facility from ORM 610.3 to ORM 623.5 (Table 4-1). The other federally-listed species consist of the endangered Running Buffalo Clover (*Trifolium stoloniferum*), Short's Goldenrod (*Solidago shortii*), Least Tern (*Sterna antillarum*), Indiana Bat (*Myotis sodalis*), Gray Bat (*Myotis grisescens*), and the threatened Kentucky Glade Cress (*Leavenworthia exigua laciniate*) and Northern Long-eared Bat (*Myotis septentrionalis*) (Table 4-8). There is no nexus between these seven species and operation of the Mill Creek Station CWIS. Federally-listed fish species are not known to occur in the action area based on the county listings (USFWS 2020a) and the IPaC website search (USFWS 2020b).

There is designated critical habitat for only the Indiana Bat, which is located across the river from the Mill Creek Station CWIS (USFWS 2020b). The Indiana Bat critical habitat is limited to terrestrial environments and is not affected by the operation of the Mill Creek Station CWIS.

As discussed in Section 4.3.1, mussels are not among organisms that are most susceptible to impingement and entrainment. However, impingement of host fish likely represents the highest risk among all potential CWIS impact pathways for mussels (EPRI 2017b). Most common host species for listed mussels are bottom-dwelling species, as they provide the greatest opportunity for interaction with mussels and provide the greatest success rates for glochidia attachment (EPRI 2017b). Known host fish species for the 14 federally-listed mussel species are given in Table 4-9; this is an incomplete list because all mussel species have not been tested with all fish species presented, and hosts are not known for three of the mussel species.

# Table 4-8 Endangered and Threatened Species listed by the USFWS known to or believedto occur in Jefferson County, KY, and Harrison County, IN, and species listed in JeffersonCounty by the KDFWR and in Harrison County by the IDNR

		Sta	tus (E=Enc	langered,	T=Threat	ened)
			Federal		St	ate
Common Name	Scientific Name	Jefferson, KY	Harrison, IN	IPaC Search	Jefferson, KY <sup>(a)</sup>	Harrison, IN
	Mussels					
Elktoe	Alasmidonta marginata				Т	
Fanshell	Cyprogenia stegaria	Е	NL <sup>(b)</sup>	Е	Е	Е
Catspaw	Epioblasma obliquata	NL	NL	Е		
Northern Riffleshell	Epioblasma rangiana	NL	NL	Е		
Snuffbox	Epioblasma triquetra	Е	Е	NL	Е	Е
Pink Mucket	Lampsilis abrupta	Е	NL	Е	Е	
Pocketbook	Lampsilis ovata				Е	
Spectaclecase	Margaritifera monodonta	Е	NL	Е	Е	
Ring Pink	Obovaria retusa	Е	NL	Е	Е	
Round Hickorynut	Obovaria subrotunda					Е
Orangefoot Pimpleback	Plethobasus cooperianus	Е	NL	Е	Е	
Sheepnose	Plethobasus cyphyus	NL	Е	Е	Е	Е
Clubshell	Pleurobema clava	Е	NL	Е	Е	Е
Rough Pigtoe	Pleurobema plenum	Е	NL	Е		
Pyramid Pigtoe	Pleurobema rubrum				Е	
Fat Pocketbook	Potamilus capax	Е	NL	NL	Е	
Salamander Mussel	Simpsonaias ambigua				Т	
Rabbitsfoot	Theliderma cylindrica	Т	NL	Т	Т	
Rayed Bean	Villosa fabalis	Е	NL	NL		
	Crustacean	s				
Bousfield's Amphipod	Gammarus bousfieldi				Е	
Louisville Crayfish	Faxonius jeffersoni	1			Е	
	Fish					
Lake Sturgeon	Acipenser fulvescens				Е	
Alabama Shad	Alosa alabamae	1			Е	
Hoosier Cavefish	Amblyopsis hoosieri					Е
Alligator Gar	Atractosteus spatula				Е	
Variegate Darter	Etheostoma variatum					Е
	Bird <sup>(c)</sup>					
Least Tern	Sterna antillarum	Е	NL	Е	Е	
	Amphibian	L				
Eastern Hellbender	Cryptobranchus a. alleganiensis				Е	Е

### Table 4-8 (Continued)

		T=Threa	=Threatened)			
			Federal		State	
Common Name	Scientific Name	Jefferson, KY	Harrison, IN	IPaC Search	Jefferson, KY <sup>(a)</sup>	Harrison, IN
	Mammals					
Indiana Bat	Myotis sodalis	Е	Е	Е	Е	Е
Gray Bat	Myotis grisescens	Е	Е	Е	Т	Е
Northern Long-eared Bat	Myotis septentrionalis	Т	Т	Т	Е	Е
	Insects – Dragonflies and	d Damself	lies			
Handsome Clubtail	Gomphus crassus					Т
Green-faced Clubtail	Gomphus viridifrons					Т
Smoky Shadowdragon	Neurocordulia molesta					Е
Stygian Shadowfly	Neurocordulia yamaskanensis	]				Т
Spatterdock Darner	Rhionaeschna mutata					Т
Least Clubtail	Stylogomphus sigmastylus					Е
Riverine Clubtail	Stylurus amnicola	]				Т
Elusive Clubtail	Stylurus notatus					Е
	Insects – Stone	flies				
Southern Stone	Agnetina annulipes					Е
Alta Needlefly	Leuctra alta					Е
Narrow-lobed Needlefly	Leuctra tenuis					Е
Coosa Stone	Neoperla coosa					Е
	Insects – Cadd	isfly			r	
A Northern Casemaker Caddisfly	Pycnopsyche rossi					Е
	Reptile				1	[
Western Cottonmouth	Agkistrodon piscivorus leucostoma					Е
Kantuaku Glada Crass	Plants <sup>(c)</sup>	Т	NL	NL		
Kentucky Glade Cress Short's Goldenrod	Leavenworthia exigua laciniata Solidago shortii	NL	E NL	NL		 E
Running Buffalo Clover		E	NL	E		
					CTE O E	

<sup>(a)</sup> The Jefferson County, KY, list of T&E species is compiled by KDFWR (2019) from the state-wide list of T&E species generated by the KSNPC (2019).

<sup>(b)</sup> NL denotes that the federally-listed species was not present on that USFWS list.

<sup>(c)</sup> Only the federally-listed bird and plant species are presented.

Source: USFWS (2020a); USFWS (2020b); KDFWR (2019); IDNR (2019, 2020); mussel scientific nomenclature follows Williams et al. (2017).

# Table 4-9 Known host fish species of Federally-listed mussel species known to or believed<br/>to occur in Jefferson County, Kentucky, and Harrison County, Indiana

Mussel Species	Host Species (from EPRI [2017b] and INHS [2014] unless otherwise noted)
Fanshell (Cyprogenia stegaria)	Greenside Darter ( <i>Etheostoma blennioides</i> ), Mottled Sculpin ( <i>Cottus bairdii</i> ), Snubnose Darter ( <i>Etheostoma simoterum</i> ), Banded Darter ( <i>Etheostoma zonale</i> ), Tangerine Darter ( <i>Percina aurantiaca</i> ), Blotchside Logperch ( <i>Percina burtoni</i> ), Logperch ( <i>Percina caprodes</i> ), and Roanoke Logperch ( <i>Percina rex</i> )
Catspaw (Epioblasma obliquata)	<b>Rock Bass</b> ( <i>Ambloplites rupestris</i> ), Mottled Sculpin, Stonecat ( <i>Noturus flavus</i> ), Blackside Darter ( <i>Percina maculata</i> ), and <b>Logperch</b> (USFWS 2015)
Northern Riffleshell (Epioblasma rangiana)	Mottled Sculpin, Rainbow Darter ( <i>Etheostoma caeruleum</i> ), Bluebreast Darter ( <i>Etheostoma camurum</i> ), Iowa Darter ( <i>Etheostoma exile</i> ), Johnny Darter ( <i>Etheostoma nigrum</i> ), Banded Darter ( <i>Etheostoma zonale</i> ), <b>Logperch</b> , Blackside Darter, and Brown Trout ( <i>Salmo trutta</i> )
Snuffbox (Epioblasma triquetra)	Mottled Sculpin, Banded Sculpin ( <i>Cottus carolinae</i> ), Blackspotted Topminnow ( <i>Fundulus olivaceus</i> ), Round Goby ( <i>Neogobius melanostomus</i> ), <b>Logperch</b> , and Blackside Darter
Pink Mucket (Lampsilis abrupta)	Walleye (Sander vitreus), <u>Sauger (Sander canadensis)</u> , <u>Freshwater Drum</u> (Aplodinotus grunniens), <u>Smallmouth Bass (Micropterus dolomieu)</u> , Spotted Bass (Micropterus punctulatus), <u>Largemouth Bass (Micropterus salmoides</u> ), and White Crappie (Pomoxis annularis)
Spectaclecase (Margaritifera monodonta)	Shorthead Redhorse ( <i>Moxostoma macrolepidotum</i> ) and Bigeye Chub ( <i>Hybopsis amblops</i> )
Ring Pink (Obovaria retusa)	None Identified
Orangefoot Pimpleback (Plethobasus cooperianus)	None Identified
Sheepnose (Plethobasus cyphyus)	Primary hosts: <u>Sauger</u> , Central Stoneroller ( <i>Campostoma anomalum</i> ), and Mimic Shiner ( <i>Notropis volucellus</i> ) Potential hosts: Blackspotted Topminnow, Blacktail Shiner ( <i>Cyprinella venusta</i> ), Bleeding Shiner ( <i>Luxilus zonatus</i> ), <b>Bluntnose Minnow</b> ( <i>Pimephales notatus</i> ), Brassy Minnow ( <i>Hybognathus hankinsoni</i> ), <b>Bullhead Minnow</b> ( <i>Pimephales vigilax</i> ), Common Shiner ( <i>Luxilus cornutus</i> ), Eastern Blacknose Dace ( <i>Rhinichthys atratulus</i> ), Fathead Minnow ( <i>Pimephales promelas</i> ), Longnose Dace ( <i>Rhinichthys cataractae</i> ), Ozark Minnow ( <i>Notropis nubilus</i> ), Pearl Dace ( <i>Margariscus margarita</i> ), Red Shiner ( <i>Cyprinella lutrensis</i> ), <b>River Shiner</b> ( <i>Notropis blennius</i> ), <b>Silver Chub</b> ( <i>Macrhybopsis storeriana</i> ), Southern Redbelly Dace ( <i>Chrosomus erythrogaster</i> ), <b>Spotfin Shiner</b> ( <i>Luxilus chrysocephalus</i> ), Suckermouth Minnow ( <i>Phenacobius mirabilis</i> ), <b>Western</b> Mosquitofish ( <i>Gambusia affinis</i> ), and Whitetail Shiner ( <i>Cyprinella galactura</i> )
Clubshell (Pleurobema clava)	Blackside Darter, <b>Central Stoneroller</b> , <b>Logperch</b> , and <b>Striped Shiner</b> (O'Dee and Watters 2000)
Rough Pigtoe ( <i>Pleurobema plenum</i> )	None Confirmed
Fat Pocketbook (Potamilus capax)	Freshwater Drum
Rabbitsfoot (Theliderma cylindrica)	Whitetail Shiner, <b>Spotfin Shiner</b> , Bigeye Chub, and Rainbow Darter (NatureServe 2019)
Rayed Bean (Villosa fabalis)	Tippecanoe Darter ( <i>Etheostoma tippecanoe</i> ), Rainbow Darter, <b>Greenside Darter</b> , Mottled Sculpin, and <u>Largemouth Bass</u> (Woolnough 2002; White et al. 1996)

Note: Bolded taxa were collected during in-river surveys in Cannelton Pool from 2014 to 2018 (Table 4-2). Underlined taxa were impinged at the nearby Cane Run Plant during 2005-2007 (Table 4-4).

With the exception of Spectaclecase (Margaritifera monodonta) and three mussel species for which hosts have not been identified, host fish for each mussel species have been collected during Cannelton Pool in-river surveys (Table 4-9 and Table 4-2). In addition, at least one fish host species for four of the 10 remaining mussel species was collected during the 2005-2007 impingement study at the nearby Cane Run Plant (Table 4-9 and Table 4-4). The Fanshell (Cyprogenia stegaria), which prefers coarse sand or gravel that is stable and silt free, typically uses darter species as hosts. The Catspaw (Epioblasma obliquata) uses Rock Bass, Mottled Sculpin, Stonecat, and darter species as hosts. It prefers shallow water and requires swift current; it is found in substrates from sand to boulders and is intolerant of siltation. Preferred habitat for Northern Riffleshell (Epioblasma rangiana) is medium to large rivers with riffles and coarse substrate; hosts for this species are primarily darter species. The Snuffbox (Epioblasma triquetra) is typically found in large or medium rivers with coarse substrate and riffles; it utilizes small demersal species such as darters and sculpin as hosts. The Pink Mucket (Lampsilis abrupta) utilizes Walleye, Sauger, Freshwater Drum, black bass species, and White Crappie as hosts and prefers silt-free substrates in areas with swift currents and riffles. Only two species (Shorthead Redhorse and Bigeve Chub) have been identified as hosts for Spectaclecase, which occurs primarily under slab rocks and bedrock shelves or among boulders. However, it is likely that Smallmouth Redhorse (Moxostoma breviceps), a former Shorthead Redhorse subspecies, is a host species for Spectaclecase. Host species are not known for Ring Pink (Obovaria retusa) or Orangefoot Pimpleback (*Plethobasus cooperianus*); both of these species prefer sand and gravel substrates. Sheepnose (*Plethobasus cyphyus*), which may occur in gravel and cobble riffles or areas with mixtures of sand, gravel, and mud, is known to use Sauger, Central Stoneroller, and Mimic Shiner as hosts, but may be able to utilize a wide array of small cyprinid species based on laboratory studies. The Clubshell is generally found in medium to small rivers and streams within clean, coarse sand and gravel of runs, often just downstream of a riffle and uses Blackside Darter, Central Stoneroller, Logperch, and Striped Shiner as hosts. Hosts are not known for Rough Pigtoe (*Pleurobema plenum*), which requires stable substrates composed of a mixture of firm and clean gravel and sand. Preferred habitat for Fat Pocketbook (Potamilus capax) includes medium or large rivers with finer sediment such as gravel, sand, and muck. Freshwater Drum is the only species known to act as a host for the Fat Pocketbook. The Rabbitsfoot mussel is typically found in small to medium streams but may be found in larger rivers in areas with sand and gravel. Whitetail Shiner, Spotfin Shiner, Bigeye Chub, and Rainbow Darter have been confirmed hosts of Rabbitsfoot glochidia. Though the Rayed Bean (Villosa fabalis) is often found in smaller headwater creeks, it can also inhabit large rivers in areas of gravel and sand. The Rayed Bean's hosts include Largemouth Bass, Rainbow Darter, Greenside Darter, and Mottled Sculpin.

### 4.6.2 State-listed Species

As stated above, the Kentucky Administrative Regulations' definition of endangered species of fish and wildlife<sup>13</sup> does not include a state list of T&E species. However, the KSNPC's list of T&E species is considered here for completeness. KDFWR compiles wildlife T&E species by county from the KSNPC's state-encompassing list (KDFWR 2019; KSNPC 2019)<sup>12</sup>. One amphibian, 28 birds (only one presented in Table 4-8), three mammals, 14 mussels, two crustaceans, and three fish are listed as T&E by the KSNPC in Jefferson County, Kentucky

§ 122.21(r)(4) Source Water Baseline Biological Characterization Data

(Table 4-8). The list of T&E species in Harrison County, Indiana, was obtained from the IDNR<sup>16</sup> (IDNR 2020). One amphibian species, one reptilian species, three bird species (not presented in Table 4-8), eight dragonfly/damselfly species, four stonefly species, one caddisfly species, five mussel species, and two fish species are Indiana state-listed T&E species in Harrison County (Table 4-8). The plant, bird (e.g., Barn Owl), and bat (e.g., Indiana Bat) species are not considered here because they are not susceptible to entrainment nor impingement. The remaining state-listed T&E animal species include one amphibian, one reptile, eight dragonfly/damselfly, four stonefly, one caddisfly, 15 mussel, two crustacean, and five fish species (Table 4-8).

The Eastern Hellbender (*Cryptobranchus a. alleganiensis*) is listed as endangered in Indiana and as endangered by the KSNPC for Kentucky (Table 4-8). Its native habitat consists of large slab rocks in clear and well-aerated streams and rivers (Burgmeier et al. 2011), habitat that is lacking in the impounded Ohio River in the vicinity of the Mill Creek Station.

Western Cottonmouth (*Agkistrodon piscivorus leucostoma*) is listed as endangered for Harrison County, Indiana (Table 4-8). This species utilizes aquatic habitat and feeds primarily on small fish and amphibians; therefore, if this species occurs near Mill Creek Station, an indirect effect of CWIS operation could occur if entrainment or impingement losses are substantial, which is highly unlikely.

Eight Dragonfly/damselfly species are listed as endangered or threatened in Harrison County, Indiana. Known habitats for these insect species are given in Table 4-10. The majority would not occur in the Ohio River due to habitat requirements. However, three species (Smoky Shadowdragon [*Neurocordulia molesta*], Stygian Shadowfly [*Neurocordulia yamaskanensis*], and Elusive Clubtail [*Stylurus notatus*]) have been noted to use larger rivers. It is unknown if these three species occur in the vicinity of Mill Creek Station.

Common Name	Habitat Details
Handsome Clubtail (Gomphus crassus)	Small to medium rivers with rapid current and gravel bottom (NatureServe 2019).
Green-faced Clubtail (Gomphus viridifrons)	Small to large moderate-gradient rivers; free flowing with high water quality; larvae burrow in silt (NatureServe 2019).
Smoky Shadowdragon (Neurocordulia molesta)	Rivers, including the large rivers, sometimes large streams, all with rocks or logs to which the larvae cling (NatureServe 2019).
Stygian Shadowfly (Neurocordulia yamaskanensis)	It prefers clean lakes and large rivers with water in constant motion and not too acidic. It is occasionally found in larger rivers (NatureServe 2019).
Spatterdock Darner (Rhionaeschna mutata)	Sinkhole ponds, bog ponds, small lakes, and artificial ponds; usually fishless; <i>Nuphar</i> sp. (spatterdock) frequently present at breeding sites (NatureServe 2019).
Least Clubtail (Stylogomphus sigmastylus)	Small, clear rivers with moderate current and sand to rock substrates, usually in woodlands. Larvae burrow in bottom substrates (Paulson 2017).
Riverine Clubtail (Stylurus amnicola)	Clear rivers with moderate current and gravel/sandy substrates (NatureServe 2019).
Elusive Clubtail (Stylurus notatus)	Large, clear rivers with moderate current and gravel or sandy substrates; can also occur in large lakes with bottom substrates of silt or gravel rather than just sand (NatureServe 2019).

# Table 4-10 Dragonfly and Damselfly species listed as endangered or threatened in<br/>Harrison County, Indiana.

<sup>&</sup>lt;sup>16</sup> <u>http://www.in.gov/dnr/naturepreserve/files/np\_harrison.pdf</u>

Four stonefly species are listed as endangered in Harrison County, Indiana (Table 4-8); however, species-specific habitat data are not available (NatureServe 2020). Stoneflies (Order Plecoptera) have an immature larval stage that is entirely aquatic in North America. Nymphs of most genera occur in cold lotic habitats with several occurring in warm lotic systems, but comparatively few occur in cold lentic habitats, and none in warm lentic habitats (NatureServe 2020). Dispersal is primarily accomplished stochastically by nymphs and actively by winged adults. Most stoneflies require some form of moving water for development of nymphs but drift tendency is low for stoneflies (NatureServe 2020). As such, they would have low susceptibility to entrainment. It is unlikely that these four species occur in the vicinity of Mill Creek Station.

Of the 15 mussel species listed for Indiana or by the KSNPC for Kentucky, ten have been discussed above as they are also federally-listed. Of the remaining taxa, Pocketbook (*Lampsilis ovata*) and Pyramid Pigtoe (*Pleurobema rubrum*) are endangered in Jefferson County, Kentucky; Round Hickorynut (*Obovaria subrotunda*) is listed as endangered in Harrison County, Indiana; and Elktoe (*Alasmidonta marginata*) and Salamander Mussel (*Simpsonaias ambigua*) are listed as threatened in Jefferson County, Kentucky (Table 4-8). Pocketbook is the only state-listed mussel species that has been collected near Mill Creek Station (Table 4-1). However, it was only reported along the Indiana shoreline (LEC 2017) and not in the immediate vicinity of the CWIS during the ESI (2012) study.

Information for the host fish of the Pocketbook could not be identified. It adapts well to variable waterbody characteristics including strong currents or standing water. Pocketbook may be found in big rivers or reservoirs at depths of 5 to 6 m and in small streams in less than 0.6 m water. It prefers mixed substrate of gravel, coarse sand, and silt or mud (Woolnough and Seddon 2017). The Pyramid Pigtoe is typically found in medium to large rivers with sand or gravel substrates. A single species has been identified as a host for this species: the Spotfin Shiner (INHS 2014). The Round Hickorynut can be found in medium rivers with flow and substrates of sand and gravel; host fish include Banded Sculpin, Greenside Darter, Iowa Darter, Fantail Darter (*Etheostoma flabellare*), and Blackside Darter. The Elktoe is associated with medium to large streams with swift flow. They utilize a wide variety of sucker species, cyprinid species, and topminnow species as hosts (24 species listed in INHS 2014). The Salamander Mussel only utilizes the Common Mudpuppy (*Necturus maculosus*) as a host and is therefore typically found in habitat that suits its host, medium to large streams with coarse substrate and slab rocks (INHS 2014).

Two crustaceans, Bousfield's Amphipod (*Gammarus bousfieldi*) and Louisville Crayfish (*Faxonius jeffersoni*) are listed as endangered by the KSNPC for Jefferson County, Kentucky (Table 4-8). Neither of these species are known to occur in the vicinity of the Mill Creek Station CWIS and would not be at risk to entrainment. For example, Bousfield's Amphipod is found in mud substrates of small streams<sup>17,18</sup> and habitat of the Louisville Crayfish consists of small tributaries to the Ohio River, but not in the river proper<sup>19</sup>.

Although federally-listed fish species are not known to occur in the action area (USFWS 2020a and 2020b), five fish species are state-listed for the action area (Table 4-8). Three are listed as

<sup>&</sup>lt;sup>17</sup> https://explorer.natureserve.org/Taxon/ELEMENT\_GLOBAL.2.115181/Gammarus\_bousfieldi

<sup>&</sup>lt;sup>18</sup> <u>https://nepis.epa.gov/Exe/ZyNET.exe/...</u>

<sup>&</sup>lt;sup>19</sup> https://explorer.natureserve.org/Taxon/ELEMENT\_GLOBAL.2.116858/Faxonius\_jeffersoni

§ 122.21(r)(4) Source Water Baseline Biological Characterization Data

endangered in Jefferson County (KDFWR 2019): Lake Sturgeon (*Acipenser fulvescens*), Alabama Shad (*Alosa alabamae*), and Alligator Gar (*Atractosteus spatula*), but they have not been reported in Kentucky since 2000<sup>20</sup>, 1995<sup>21</sup>, and 1977<sup>22</sup>, respectively (waterbodies unknown but Ohio River is likely). Indiana lists two fish species as endangered in Harrison County (IDNR 2020): Hoosier Cavefish (*Amblyopsis hoosieri*) and Variegate Darter (*Etheostoma variatum*). The cavefish obviously does not occur in the Ohio River, and Variegate Darter has only been collected in the upper portion of the Ohio River (ORMs 45.6-126.8) based on ORSANCO fisheries data from 1957 through 2018<sup>23</sup> and ORERP fisheries data from 1973 through 2018 (EPRI 2016, 2017a, 2019, 2020a,b). Therefore, it is reasonable to conclude that these five species do not occur in the vicinity of the Mill Creek Station CWIS. Furthermore, no state-listed species were collected during the recent in-river (Table 4-2), entrainment (Table 4-3), nor impingement (Table 4-4) studies at or near Mill Creek Station.

### 4.7 Public Participation

(vii) Documentation of any public participation or consultation with Federal or State agencies undertaken in development of the plan.

This pubic participate documentation refers to the Design and Construction Technology Plan for new facilities and for offshore oil and gas facilities that was previously required in the 2011 proposed EPA Rule, but does not apply to existing facilities under the new Rule. There is no required plan submittal associated with the § 122.21(r) studies, nor are there requirements for public participation or consultation with Federal or State agencies in completion of the required studies in this section.

### 4.8 Methods and Quality Assurance Procedures for Supporting Field Studies

(viii) If you supplement the information requested in paragraph (r)(4)(i) of this section with data collected using field studies, supporting documentation for the Source Water Baseline Biological Characterization must include a description of all methods and quality assurance procedures for sampling, and data analysis including a description of the study area; taxonomic identification of sampled and evaluated biological assemblages (including all life stages of fish and shellfish); and sampling and data analysis methods. The sampling and/or data analysis methods use must be appropriate for a quantitative survey and based on consideration of methods used in other biological studies performed within the same source water body. The study area should include, at a minimum, the area of influence of the cooling water intake structure.

No new field studies were conducted because information for upper Cannelton Pool was available to address § 122.21(r)(4). Methods for the collection of juvenile and adult fish from the Ohio River near the Mill Creek Station are described in EPRI (2019) and ORSANCO (2020d),

<sup>&</sup>lt;sup>20</sup> <u>http://app.fw.ky.gov/speciesinfo/speciesListCounty.asp?strScientificName=Acipenser+fulvescens&strGroup=1</u>

<sup>&</sup>lt;sup>21</sup> http://app.fw.ky.gov/speciesinfo/speciesListCounty.asp?strScientificName=Alosa+alabamae&strGroup=1

<sup>&</sup>lt;sup>22</sup> http://fw.ky.gov/Fish/Pages/Alligator-Gar.aspx

<sup>&</sup>lt;sup>23</sup> <u>http://www.orsanco.org/data/fish-population/</u>

entrainment sampling methods are described in EPRI (2020c), and the Cane Run Plant impingement study methods can be found in EPRI (2009).

### 4.9 Source Water Baseline Biological Characterization Data Affirmation

(ix) In the case of the owner or operator of an existing facility or new unit at an existing facility, the Source Water Baseline Biological Characterization Data is the information in paragraphs (r)(4)(i) through (xii) of this section.

This provision simply contains a statement of clarification and does not call for specific information. This report provides the information required under 122.21(r)(4)(i-xii).

### 4.10 Protective Measures and Stabilization Activities near the CWIS

(x) For the owner or operator of an existing facility, identification of protective measures and stabilization activities that have been implemented, and a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.

Protective measures at Mill Creek Station consist of the cooling towers on Units 2, 3, and 4, which have reduced the design intake flow rate by 82.7 percent and the retirement of Unit 1. There have been no stabilization activities or other protective measures performed by LGE-KU near the intake that would affect fish populations or baseline water conditions.

## 4.11 Fragile Species

(xi) For the owner or operator of an existing facility, a list of fragile species, as defined at 40 CFR 125.92(m), at the facility. The applicant need only identify those species not already identified as fragile at 40 CFR 125.92(m). New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

Gizzard Shad is the only species known to occur in Cannelton Pool (Table 4-2) that is listed as a fragile species in 40 CFR 125.92(m). EPA defines a fragile species of fish or shellfish as those that have an impingement survival rate of less than 30%, which ensures that a facility's performance in reducing impingement mortality would only reflect effects of its improvements to the CWIS technology and not be biased by effects of data collection that are not caused by impingement.

## 4.12 USFWS Incidental Take Exemption or Authorization

(xii) For the owner or operator of an existing facility that has obtained incidental take exemption or authorization for its cooling water intake structure(s) from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, any information submitted in order to obtain that exemption or authorization may be used to satisfy the permit application information requirement of paragraph 40 CFR 125.95(f) if included in the application.

This is not applicable to Mill Creek Station because it does not hold an incidental take exemption or authorization from the USFWS.

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# 5 § 122.21(R)(5) COOLING WATER SYSTEM DATA

The Rule at § 122.21(r)(5) requires that LG&E provide the following cooling water system data for Mill Creek:

(i) A narrative description of the operation of the cooling water system and its relationship to cooling water intake structures; the proportion of the design intake flow that is used in the system; the number of days of the year the cooling water system is in operation and seasonal changes in the operation of the system, if applicable; the proportion of design intake flow for contact cooling, non-contact cooling, and process uses; a distribution of water reuse to include cooling water reused as process water, process water reused for cooling, and the use of gray water for cooling; a description of reductions in total water withdrawals including cooling water intake flow reductions already achieved through minimized process water withdrawals; a description of any cooling water that is used in a manufacturing process either before or after it is used for cooling, including other recycled process water flows; the proportion of the source waterbody withdrawn (on a monthly basis);

(ii) Design and engineering calculations prepared by a qualified professional and supporting data to support the description required by paragraph (r)(5)(i) of this section; and

(iii) Description of existing impingement and entrainment technologies or operational measures and a summary of their performance, including but not limited to reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

The data presented in this section is used to evaluate the existing cooling water system and potential designs of entrainment BTAs that would apply to Mill Creek.

## 5.1 Cooling Water System Design and Operation

Four generating units are currently operated at Mill Creek. Unit 1 is designed with once-through cooling, while Units 2, 3, and 4 have closed-cycle recirculating systems. All four units use the Ohio River as the cooling water source. There are two circulating water pumps for Unit 1. Both pumps are typically operated resulting in a maximum circulating water flow rate is 350.7 cfs (157,400 gpm, 226.7 MGD). When only one pump is operated, such as when one pump is offline for maintenance, the flow to Unit 1 is 206.3 cfs (92,600 gpm, 133.3 MGD). The difference between the flow rate through each pump with one and two pumps operating is a result of increased discharge pressure on the circulating water pumps associated with the increased flow. The two Unit 1 circulating water pumps will cease operations by the end of 2024 when Unit 1 is retired.

The two circulating water pumps for Unit 1 discharge into two 60 inch diameter inlet pipes, which run from the CWIS to the unit's condenser. Only one pipe is used while the unit is in one pump operation, while both pipes are utilized when both circulating pumps are operating. The

condenser is divided into two independent condenser halves with cross-over valves. This arrangement allows each half to be taken out of service for maintenance while the other remains in operation.

There are also four long-shaft service water pumps that provide service water and auxiliary make-up water to Units 2, 3, and 4 CCRS. Two service water pumps are located in the northernmost intake bay and have a combined flow of 44.6 cfs (20,000 gpm, 28.8 MGD); the two other pumps are located in the adjacent screen bay and have a combined flow of 46.8 cfs (21,000 gpm, 30.2 MGD). Two or three long-shaft service water pumps are operated depending on service water needs. The amount of service water needed is expected to be reduced with the retirement of Unit 2, which will occur no later than the end of 2028.

A single 20-inch diameter pipe carries water from the long-shaft service water pumps at the screen house, to the Unit 2 condenser and cooling tower. The Unit 2 condenser is designed for a flow rate of 289.6 cfs (130,000 gpm, 187.2 MGD). The Unit 2 cooling tower is an 8-cell induced draft cooling tower that is approximately 290 ft long, and 75 ft wide. Each of the 8 cells contains a 28-ft diameter fan with a 200 hp motor. The cooling tower is designed for an internal circulating water flow of 334.2 cfs (150,000 gpm, 216 MGD). According to the water balance diagram, (Figure 3-5), the Unit 2 cooling tower has an annual peak monthly average make-up water flow rate of approximately 11.1 cfs (5,000 gpm, 7.2 MGD). The tower is located approximately 890 ft northeast of the CWIS. Unit 2 is scheduled to be retired by the end of 2028. Once this unit is retired, additional long-shaft pumps may also be retired.

Units 3 and 4 condensers and cooling towers are also provided cooling water by two long-shaft service water pumps in the CWIS. The Unit 3 condenser is designed for a flow rate of 287.7 cfs (174,000 gpm, 250.6 MGD), while the Unit 4 condenser is designed for a flow rate of 449.5 cfs (201,770 gpm, 290.5 MGD).

The Unit 3 cooling tower is a round, 8-cell mechanical draft cross-flow designed cooling tower that is approximately 211 ft in diameter, and 60 ft tall. Each of the 8 cells contains a 28 ft diameter fan with a 200 hp motor. The cooling tower is designed for an internal circulating water flow of 456.7 cfs (205,000 gpm, 295.2 MGD) measured at the cooling tower discharge. The Unit 3 cooling tower is designed for an inlet temperature of 116°F and an outlet temperature of 95°F at a wet bulb temperature of 78°F. According to the water balance diagram, (Figure 3-5), the Unit 3 cooling tower has an annual peak monthly average make-up water flow rate of approximately 13.0 cfs (5,833 gpm, 8.4 MGD). Approximately 8.4 cfs (3,778 gpm, 5.4 MGD) is lost to evaporation from heat rejection by the towers and another 0.02 cfs (10.25 gpm, 0.014 MGD) is lost to drift. The tower is located approximately 1,700 ft southwest of the CWIS.

The Unit 4 cooling tower is a round, 12-cell counter-flow design that is approximately 215 ft in diameter, and approximately 61 ft tall. Each of the 12 cells contains an 8 bladed, 30 ft diameter fan with a 200 hp motor. The cooling tower is designed for an internal circulating water flow of 496.0 cfs (222,600 gpm, 320.5 MGD), with an inlet temperature of 116°F and an outlet temperature of 94°F at a wet bulb temperature of 78°F. According to the water balance diagram, (Figure 3-5), the Unit 4 cooling tower has an annual peak monthly average make-up water flow rate of approximately 13.3 cfs (5,972 gpm, 8.6 MGD). Approximately 9.2 cfs (4,117 gpm, 5.9

MGD) is lost to evaporation from heat rejection by the towers and another 0.02 cfs (11.13 gpm, 0.016 MGD) is lost to drift. The tower is located immediately north of the Unit 3 cooling tower.

After passing through the condenser, the flows from Unit 1 combine into a 6.5 ft wide by 7 ft high discharge tunnel. The cooling tower blowdown from Units 2, 3 and 4 also flows into this common discharge tunnel. The tunnel directs the water where it is discharged back to the Ohio River approximately 577 ft downstream of the CWIS.

The current design intake flow (DIF) for Mill Creek with all six pumps operating is 442.0 cfs (198,400 gpm, 285.7 MGD). Except for emergency fire suppression water, no other pumps withdraw water directly from the Ohio River. After the retirement of Unit 1 and its two circulating water pumps by the end of 2024, the Mill Creek DIF will be reduced to 91.4 cfs (41,000 gpm, 59.0 MGD). This is a 79% reduction in flow. Additional flow reductions will be realized after the retirement of Unit 2 in 2028.

The annual pump hours of operation for the four long-shaft service water pumps for the last 5 years (2017-2021) are provided in Table 3-2.

### 5.2 Proportion of Design Intake Flow for Contact Cooling, Non-contact Cooling, and Process Uses

The current Mill Creek DIF is 442.0 cfs (198,400 gpm, 285.7 MGD). The proportion of the design intake flow used for contact cooling, non-contact cooling, and process uses were estimated using the flow splits identified in the water balance diagram Figure 3-5. All but approximately 2.4% of the water withdrawn is used for contact or non-contact cooling. This small percentage (2.4%) is comprised of flue gas desulfurization (FGD )service water, spraywash water, clear well settling, The remaining water is used for the Unit 1 once-through cooling and make-up water to Units 2, 3, and 4 CCRS. Mill Creek is an electrical generating facility and does not use any water for manufacturing processes.

With the retirement of Unit 1 before the end of 2024, the Mill Creek DIF will be reduced from 442.0 cfs (198,400 gpm, 285.7 MGD) down to 91.4 cfs (41,000 gpm, 59.0 MGD).

## 5.3 Proportion of Source Waterbody Withdrawn

The current Mill Creek DIF is 442.04 cfs (198,400 gpm, 285.7 MGD). The actual intake flow (AIF) varies throughout the year, based on the intake water temperature and number of units operating. The average monthly AIF for the long shaft service water pumps from 2017 through 2021, as presented in Table 3-4 were used when calculating the percent of the Ohio River flow withdrawn by Mill Creek. The circulating water flow withdrawn by Unit 1 was excluded from these calculations to provide a better estimate of the amount of river flow that will be withdrawn once Unit 1 is retired. This is consistent with how Mill Creek will be operated after Unit 1 is retired in 2024.

Average monthly Ohio River flows were estimated using daily flow data from January 1, 2002 through December 31, 2021 the period of record, for flows measured at USGS 03294500 at

Louisville, KY. The average monthly river flow was compared to the future DIF (post retirement of Unit 1), and the average monthly AIF of just the long shaft service water pumps from 2017 to 2021 to estimate the percent of river flow withdrawn. The following equation was used to determine the proportion of the Ohio River flow withdrawn by Mill Creek;

 $Proportion of Source Waterbody = \frac{Mill Creek Intake flow (cfs)}{Ohio River Flow (cfs)} \times 100$ 

After the retirement of Unit 1 by the end of 2024, the Mill Creek DIF will be reduced to 91.4 cfs (41,000 gpm, 59.0 MGD). The average monthly proportion of the Ohio River withdrawn by Mill Creek for both the future DIF and monthly AIF is provided in Table 5-1. As can be seen from this table, if operated at its future DIF, Mill Creek would withdraw a maximum of 0.19% of the Ohio River occurring in the month of August. Based on historic operations, Mill Creek's long-shaft service water pumps withdrew up to 0.12% of the Ohio River flow, also occurring in the Month of August. The future DIF does not account for the possible retirement of one or more of the long-shaft pumps as part of the Unit 2 retirement, which will occur by the end of 2028.

# Table 5-1 Average Monthly Ohio River Flow (January 2000 through December 2019) and Percent of Ohio River Flow Withdrawn by the Mill Creek Long Shaft Service Water Pumps based on Historic Operations from 2017 through 2021

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean of Monthly Ohio River Discharge (cfs)	200,013	214,400	252,915	216,858	184,246	111,550	77,036	48,256	60,015	59,450	111,247	173,128
	Design Intake Flow (59.0 MGD)											
Design Intake Flow (cfs)	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
Percent of River Flow	0.05%	0.04%	0.04%	0.04%	0.05%	0.08%	0.12%	0.19%	0.15%	0.15%	0.08%	0.05%
			Month	ly Daily Av	verage Inta	ake Flow (2	2016-2020)					
Actual Intake Flow (cfs)	49.1	51.4	49.5	52.2	55.4	60.3	60.1	56.6	49.7	55.7	52.9	47.9
Percent of River Flow	0.02%	0.02%	0.02%	0.02%	0.03%	0.05%	0.08%	0.12%	0.08%	0.09%	0.05%	0.03%

### 5.4 Intake Velocities

Velocities at the Mill Creek CWIS were calculated approaching the trash racks, approaching the traveling water screens, and through the traveling water screen mesh. The velocities under the skimmer and baffle wall were also calculated. The velocities were calculated for two different inflow conditions, the current DIF (442.0 cfs, 198,400 gpm, 285.7 MGD) with all four long-shaft service water pumps operating and both the Unit 1circulating water pumps operating and the future DIF (91.4 cfs, 41,000 gpm, 59.0 MGD). The velocities were also calculated at two different water levels, the assumed design low water level El. 375.0 ft and the lowest recorded river level from January 1, 2002 through December 31, 2021 adjusted to Mill Creek of El. 380.7 ft.

Velocities in the intake opening, through the trash racks and traveling water screens were calculated at 100% clean condition. The traveling water screens have a 0.375 inch square mesh with 14 gauge wires. This mesh has an estimated percent open area of 67.9%. In lieu of a measured percent open area for the Mill Creek traveling water screen frames, percent open area values provided by screen vendors for similar screens were used for determining the through-screen velocities. The traveling water screens are standard through-flow traveling water screens with an assumed framing open area of 86%. Taking into account the screen mesh and framing, the traveling water screens are estimated to have a 58.0% combined open area.

The results of the intake velocity calculations at the assumed design low water level are summarized in Table 5-2. The calculated velocities at the lowest recorded water levels are provided in Table 5-3. Once Unit 1 is retired, the velocities within the CWIS, including the through-screen velocity, are expected to remain at 0.5 ft/sec or below down to the minimum recorded water level as shown in Table 5-3. The velocity calculations are provided in Figure 5-1.

I	Existing DIF		Velocity (ft/sec)					
Pumps	Flow (gpm)	Low Water (ft)	Approach to Trash Rack/ Under Skimmer Wall	Under Baffle Wall	Approach to Screens	Through- screen (clean)		
Unit 1	157,400	EL 275 0 6	1.4	1.9/2.31	$1.6/2.7^{1}$	$3.2/3.8^{1}$		
Long-shaft	41,000	El. 375.0 ft	1.4	0.5	0.4	0.7		
	Future DIF		Velocity (ft/sec)					
Pumps	Flow (gpm)	Low Water (ft)	Approach to Trash Rack/ Under Skimmer Wall	Under Baffle Wall	Approach to Screens	Through- screen (clean)		
Long-shaft	41,000	El. 375.0 ft	0.6 <sup>2</sup>	0.5	0.4	0.7		

# Table 5-2 Estimated Intake Velocities (ft/sec) During Assumed Design Low WaterLevels (El. 375.0 ft)

1 Velocities within the Unit 1 screen bay were calculated with both one pump (92,600 gpm) and two pumps (157,400 gpm) operating.

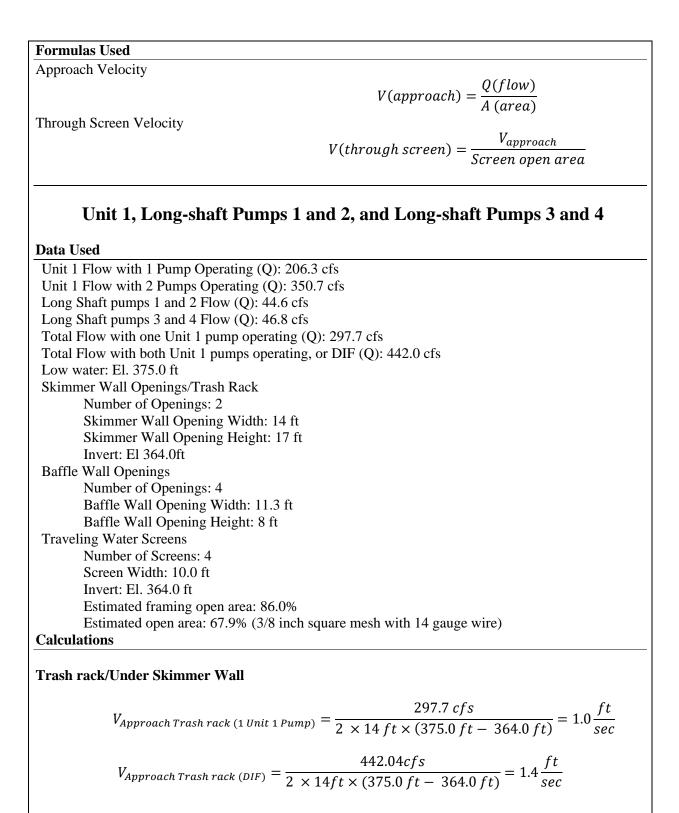
2 Assumed all the flow is concentrated through one trash rack opening

I	Existing DIF			Velocity	(ft/sec)		
Pumps	Flow (gpm)	Low Water (ft)	Approach to Trash Rack/ Under Skimmer Wall	Under Baffle Wall	Approach to Screens	Through- screen (clean)	
Unit 1	157,400	El. 380.7 ft	0.0	$1.9/2.3^{1}$	$1.0/1.2^{1}$	$1.8/2.1^{1}$	
Long-shaft	41,000	El. 380.7 Il	0.9	0.5	0.3	0.5	
	Future DIF		Velocity (ft/sec)				
Pumps	Flow (gpm)	Low Water (ft)	Approach to Trash Rack/ Under Skimmer Wall	Under Baffle Wall	Approach to Screens	Through- screen (clean)	
Long-shaft	41,000	El. 380.7 ft	0.4 <sup>2</sup>	0.5	0.3	0.5	

# Table 5-3 Estimated Intake Velocities (ft/sec) During Observed Lowest Low WaterLevels ((El. 380.7 ft) (January 1, 2002 through December 31, 2022)

1 Velocities within the Unit 1 screen bay were calculated with both one pump (92,600 gpm) and two pumps (157,400 gpm) operating.

2 Assumed all of the flow is concentrated through one trash rack opening



**Under Baffle Wall** 

$$V_{Unit 1(1 pump operating)} = \frac{206.3 cfs}{1 \times 8 ft \times 11.3} = 2.3 \frac{ft}{sec}$$

$$V_{Long Shafts 1 and 2} = \frac{44.6 cfs}{1 \times 8 ft \times 11.3} = 0.5 \frac{ft}{sec}$$

$$V_{Long Shafts 3 and 4} = \frac{46.8 cfs}{1 \times 8 ft \times 11.3} = 0.5 \frac{ft}{sec}$$

$$V_{Unit 1(both pumps operating)} = \frac{350.7 cfs}{2 \times 8 ft \times 11.3} = 1.9 \frac{ft}{sec}$$
Traveling screen
$$Screen open area = 86.0\% \times 67.9\% = 58.0\%$$

$$V_{Approach Unit 1 with 1 pump operating} = \frac{206.3 cfs}{1 \times 10 ft \times (375.0 ft - 364.0 ft)} = 1.9 \frac{ft}{sec}$$

$$V_{Approach Long Shaft pumps 1 and 2} = \frac{44.6 cfs}{1 \times 10 ft \times (375.0 ft - 364.0 ft)} = 0.4 \frac{ft}{sec}$$

$$V_{Approach Long Shaft pumps 3 and 4} = \frac{46.8 cfs}{1 \times 10 ft \times (375.0 ft - 364.0 ft)} = 0.4 \frac{ft}{sec}$$

$$V_{Approach Unit 1 with 2 pumps operating} = \frac{350.7 cfs}{0.58} = 3.2 \frac{ft}{sec}$$

$$V_{Approach Unit 1 with 2 pumps operating} = \frac{0.41 \frac{ft}{sec}}{0.58} = 0.7 \frac{ft}{sec}$$

$$V_{Through screen Long Shaft Pumps 3 and 4} = \frac{0.43 \frac{ft}{sec}}{0.58} = 2.8 \frac{ft}{sec}$$

### Figure 5-1 Mill Creek Velocity Calculations

### 5.5 Existing I&E Reduction Measures

Mill Creek's CWIS is equipped with trash racks and standard through-flow traveling water screens. These features alone do not constitute I&E reduction measures. The CWIS shared between four units, one once-through cooled unit (Unit 1) and three with CCRS (Units 2, 3, and 4). The existing design and operation of Mill Creek Units 2, 3, and 4 are expected to provide a significant reduction in impingement and entrainment at the CWIS. The use of CCRS greatly reduces the amount of cooling water withdrawn from the Ohio River and is considered BTA for both impingement and entrainment under 316(b).

The estimated level of flow reduction provided by the Units 2 through 4 cooling towers was calculated by determining the ratio of make-up water flow to the internal circulating water flow in the cooling towers.

% Flow Reduction =  $1 - \frac{Makeup Water}{Internal Circulating Water Flow}$ 

The combined internal circulating water flow for Units 2 through 4 cooling towers is 831.7 MGD. As a result of CCRS, the combined annual peak monthly average flow of cooling tower make-up water for Units 2 through 4 is only 37.4 cfs (16,800 gpm, 24.2 MGD). This results in a 97% flow reduction compared to what the units would have withdrawn if they were designed with once-through cooling.

The planned retirement of Unit 1 by the end of 2024 will reduce the station's DIF to 91.4 cfs (41,000 gpm, 59.0 MGD). This will result in a 79% flow reduction from the existing DIF. Additional reductions in the DIF are expected to occur after 2028 with the retirement of Unit 2.

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## 6 § 122.21(R)(6) CHOSEN METHOD OF COMPLIANCE WITH IMPINGEMENT MORTALITY IMPINGEMENT STANDARD

The Rule at § 122.21(r)(6) requires LG&E to discuss the chosen method of compliance with the impingement mortality standard for Mill Creek. Facilities must select one of the seven alternatives at § 125.95(c)(1) through (7) unless the facility qualifies for an exemption or less stringent standard. The owner/operator must identify the chosen compliance method for the entire facility; alternatively, the applicant must identify the chosen compliance method for each cooling water intake structure.

LG&E selects use of § 125.94(c)(1), operating a closed-cycle recirculating system as defined at § 125.92. LG&E is planning on retiring Unit 1, the only unit that uses once-through cooling, by the end of 2024, leaving Units 2, 3 and 4 in operation. These three units currently use CCRS. Unit 2, which uses CCRS will be retired by the end of 2028.

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## 7 § 122.21(R)(7) ENTRAINMENT PERFORMANCE STUDIES

### 7.1 Entrainment Performance Studies at §122.21(r)(7)

The Rule at § 122.21(r)(7) requires LG&E to discuss entrainment performance studies for Mill Creek. Specifically, the Rule requires "*The owner or operator of an existing facility must submit any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies. Any such submittals must include a description of each study, together with underlying data, and a summary of any conclusions or results. Any studies conducted at other locations must include an explanation as to why the data from other locations are relevant and representative of conditions at your facility. In the case of studies more than 10 years old, the applicant must explain why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definition of entrainment at 40 CFR 125.92(h)."* 

LG&E has never conducted entrainment performance studies at Mill Creek. LG&E did participate in an EPRI § 316(b) supplemental project that included conducting a literature survey of all impingement and entrainment performance studies that could be located. The final report for the literature survey is titled "Narrative Descriptions of Impingement and Entrainment Survival Studies" (EPRI 2014). This study identified 16 entrainment survival studies, some of which were through plant survival studies and some of which were survival after collection on fine-mesh traveling water screens. However, 13 of the studies were conducted at facilities located on oceans and estuaries where species are not representative of Mill Creek's source waterbody and two of the studies were conducted on the Great Lakes and are also not considered representative for Mill Creek's species. A single study that is potentially relevant for Mill Creek was conducted at Fort Calhoun, located on the mainstem Missouri River from 1974 - 1977. This was a through plant entrainment survival study that compared intake larval fish survival with discharge larvae survival. Freshwater Drum was also a commonly entrained species for Mill Creek (Freshwater Drum made up 16.4% of total entrainment in 2015 and 41.5% of total entrainment study in 2016, see Chapter 4, section 4.9.5 of Appendix A). Following is a summary of the Missouri River entrainment survival study taken from the report.

"Freshwater drum (*Aplodinotus grunniens*) was the most abundant species collected ranging from 43.7% (1974) to 88.2% (1977) of the total yearly larval collection (Table 3-45). Catostomids; consisting of carpsucker (*Carpiodes* spp.), white sucker (*Catostomus commersoni*), buffalo (*Ictiobus* sp.), and redhorse (*Moxostoma* spp.) were the only other taxa collected in sufficient number for survival analysis. Discharge mortalities of all species averaged 86.4% over the four-year study, with a range of 57 to 95% in June and July during peak seasonal larval abundance. Freshwater drum which accounted for nearly 75% of the entrained larvae, experience 96% entrainment mortality, while Catostomids experience nearly 49% mortality at the discharge. Collection in 1977 samples indicated that nearly 62% of the larvae collected at the intake were dead. The author attributed the high intake mortality to net- and naturally-induced mortality.

§ 122.21(r)(7) Entrainment performance studies

Additionally, the data obtained from separation of opaque and transparent dead larvae indicated that natural mortality was less than 60% at the intake."

# 8 § 122.21(R)(8) OPERATIONAL STATUS

The Rule at § 122.21(r)(8) requires LG&E to discuss the operational status of Mill Creek. Specifically, *"the owner or operator of an existing facility must submit a description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to:* 

(i) For power production or steam generation, descriptions of individual unit operating status including age of each unit, capacity utilization rate (or equivalent) for the previous 5 years, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, including identification of any operating unit with a capacity utilization rate of less than 8 percent averaged over a 24-month block contiguous period, and any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type; (ii) Descriptions of completed, approved, or scheduled uprates and Nuclear Regulatory Commission relicensing status of each unit at nuclear facilities;

(iii) For process units at your facility that use cooling water other than for power production or steam generation, if you intend to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c), descriptions of individual production processes and product lines, operating status including age of each line, seasonal operation, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, any major upgrades completed within the last 15 years, and plans or schedules for decommissioning or replacement of process units or production processes and product lines; (iv) For all manufacturing facilities, descriptions of current and future production schedules; and

(v) Descriptions of plans or schedules for any new units planned within the next 5 years."

The section provides information on the operation of the Mill Creek as required by  $\frac{122.21(r)(8)}{122.21(r)(8)}$ .

### 8.1 Operating Status

Mill Creek is owned and operated by LG&E and has four coal-fired units. Unit 1 has a gross generating capacity of 303 MW, Unit 2 has a gross generating capacity of 299 MW, Unit 3 has a gross generating capacity of 397 MW, while Unit 4 has a gross generating capacity of 492 MW for a combined generating capability of 1,491 MW. Unit 1 utilizes a once-through cooling system and was put into service in 1972 (50 years). Units 2, 3, and 4 all utilize a CCRS system with mechanical draft cooling towers. Unit 2 was put into service in 1974 (48 years), Unit 3 was put into service in 1978 (44 years), while Unit 4 was put into service in 1982 (40 years). The net annual capacity factor for the entire Mill Creek facility from 2017 through 2021 was 59.7%. The annual capacity factor for each of the four Mill Creek units from 2017 through 2021 is summarized in Table 8-1.

Year	Unit 1	Unit 2	Unit 3	Unit 4
2017	63.6%	64.9% 75.3%		68.9%
2018	74.4%	59.5%	71.6%	63.3%
2019	57.1%	70.1%	53.7%	73.3%
2020	64.2%	35.4%	50.2%	54.5%
2021	50.6%	43.0%	62.1%	67.4%
Average	62.0%	54.6%	62.6%	65.5%

 Table 8-1
 Average Annual Net Capacity Factor for Mill Creek (2017-2021)

#### 8.2 Major Upgrades in Last 15 Years

There have been no major structural changes to the Mill Creek CWIS in the last fifteen years. However, there were some operational changes made. Starting in 2020, Mill Creek was able to reduce the total average daily river intake flow of the station by 1.9%. The majority of the flow reduction is a result of the conversion of the Units 1, 2, 3, and 4 fly and bottom ash sluicing system to dry handling, and gypsum wash water reductions.

### 8.3 Other Cooling Water Uses

The Mill Creek generating station is a coal-fired steam electric generating facility and does not use water for manufacturing purposes.

#### 8.4 Plans or Schedules for New Units within Five Years

There are no plans for any new units at Mill Creek in the next five years. Unit 1 and 2 are however scheduled to be retired during the next permit cycle.

## 9 § 125.98(F) FACTORS THAT MUST AND MAY BE CONSIDERED FOR THE ENTRAINMENT BTA DETERMINATION

KDEP is required to make an entrainment BTA determination for Mill Creek as discussed in §125.98(f) of the Rule which states:

"(f) Site-specific entrainment requirements. The Director must establish site-specific requirements for entrainment after reviewing the information submitted under 40 CFR 122.21(r) and § 125.95. These entrainment requirements must reflect the Director's determination of the maximum reduction in entrainment warranted after consideration of factors relevant for determining the best technology available for minimizing adverse environmental impact at each facility. These entrainment requirements may also reflect any control measures to reduce entrainment of Federally-listed threatened and <u>f</u>endangered species and designated critical habitat (e.g. prey base). The Director may reject an otherwise available technology as a basis for entrainment requirements if the Director determines there are unacceptable adverse impacts including impingement, entrainment, or other adverse effects to Federally-listed threatened or endangered species or designated critical habitat. Prior to any permit reissuance after July 14, 2018, the Director must review the performance of the facility's installed entrainment technology to determine whether it continues to meet the requirements of § 125.94(d).

(1) The Director must provide a written explanation of the proposed entrainment determination in the fact sheet or statement of basis for the proposed permit under 40 CFR 124.7 or 124.8. The written explanation must describe why the Director has rejected any entrainment control technologies or measures that perform better than the selected technologies or measures, and must reflect consideration of all reasonable attempts to mitigate any adverse impacts of otherwise available better performing entrainment technologies.

(2) The proposed determination in the fact sheet or statement of basis must be based on consideration of any additional information required by the Director at § 125.98(i) and the following factors listed below. The weight given to each factor is within the Director's discretion based upon the circumstances of each facility.

(i) Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federallylisted, threatened and endangered species, and designated critical habitat (e.g., prey base);

(ii) Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;

(iii) Land availability inasmuch as it relates to the feasibility of entrainment technology;

(iv) Remaining useful plant life; and

§ 125.98(f) factors that must and may be considered for the entrainment bta determination

(v) Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision.

(3) The proposed determination in the fact sheet or statement of basis may be based on consideration of the following factors to the extent the applicant submitted information under 40 CFR 122.21(r) on these factors:

(i) Entrainment impacts on the waterbody;

(*ii*) Thermal discharge impacts;

(iii) Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014;

*(iv) Impacts on the reliability of energy delivery within the immediate area;* 

(v) Impacts on water consumption; and

(vi) Availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity and quality for reuse as cooling water.

(4) If all technologies considered have social costs not justified by the social benefits, or have unacceptable adverse impacts that cannot be mitigated, the Director may determine that no additional control requirements are necessary beyond what the facility is already doing. The Director may reject an otherwise available technology as a BTA standard for entrainment if the social costs are not justified by the social benefits."

#### 9.1 Factors That Must Be Considered:

#### Numbers and Types of Organisms Entrained 0

The Rule states for this factor "(i) Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federallylisted, threatened and endangered species, and designated critical habitat (e.g., prey base);"

The purpose of the factor is to identify the reduction in entrainment as a result of the alternative fish protection technologies evaluated. For Mill Creek, retirement of Unit 1 will completely eliminate any entrainment associated with once-through cooling. This will reduce the DIF of the facility by 79% and is expected to result in a commensurate reduction in entrainment. Organisms will still be susceptible to entrainment into the Units 2, 3 and 4 make-up water systems. The CCRS used by these units represents BTA for both impingement and entrainment.

#### Impact of Particulate Emissions or Other Pollutants 0

The Rule states for this factor "(ii) Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;"

Since Unit 1 will be retired, there will be an overall reduction in particulate emissions and other pollutants that are currently generated by Unit 1. Particulate emission rates for the remaining three units are expected to be the same as current operations.

#### Land Availability 0

The Rule states for this factor "(iii) Land availability inasmuch as it relates to the feasibility of entrainment technology;"

Since Unit 1 is being retired, no entrainment technology is considered and as a result land availability is not an issue for Mill Creek.

#### • Remaining Useful Plant Life

The Rule states for this factor "(iv) Remaining useful plant life;"

As discussed, Unit 1 will be retired by the end of 2024 and thus there are less than three years of operation left for Mill Creek.

### • Quantified Benefits and Costs

The Rule states for this factor "(v) Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision."

There is insufficient time for the design, permitting and construction of any alternative entrainment fish protection technology for Unit 1 prior to its retirement. Thus, there would be a very significant cost for no biological benefit.

### 9.2 Factors that May be Considered

#### • Entrainment Waterbody Impacts

The Rule states for this factor "(*i*) *Entrainment impacts on the waterbody*;". The purpose of this factor is to quantify the benefit of alternative fish protection technologies evaluated.

For Mill Creek, the decision to retire Unit 1 will eliminate all entrainment associated with oncethrough cooling. It is therefore unnecessary to evaluate other technologies for Unit 1. Units 2, 3 and 4 already use CCRS, which minimize their cooling water withdrawals and are considered BTA for entrainment. Therefore, it is unnecessary to evaluate other entrainment reducing technologies for Units 2, 3 and 4.

#### • Thermal Discharge Impacts

The Rule states for this factor "*Thermal discharge impacts;*". The purpose of this factor is to consider the change in the thermal plume resulting from a fish protection technology such as a CCRS that would significantly reduce the size of the thermal plume.

For Mill Creek, the retirement of Unit 1 will completely eliminate the thermal discharge associated with once-through cooling. Cooling tower blowdown will still be discharged. The amount of water discharged will however be significantly reduced along with any thermal discharge related impacts,

### • Credit for Retired Unit Flow Reductions

The Rule states for this factor "(*iii*) Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014;"

No units were retired at Mill Creek prior to October 14, 2014.

### Impacts on Energy Delivery

The Rule states for this factor "(*iv*) *Impacts on the reliability of energy delivery within the immediate area;*". The purpose of this factor is to consider the impact of electrical output to the

§ 125.98(f) factors that must and may be considered for the entrainment bta determination

grid as a result of energy loss due to the energy requirement of an alternative fish protection technology such as a CCRS.

While the retirement of Unit 1 will reduce the electrical output to the grid provided by this unit, the retirement decision was based on economic considerations not related to § 316(b).

#### Impacts on Water Consumption 0

The Rule states for this factor "(v) Impacts on water consumption;". The purpose of this factor is to consider loss of freshwater due to increased evaporation from use of a CCRS.

In the case of Mill Creek, this will not be an issue and there will be a decrease in water consumption from evaporative water loss within the thermal plume.

#### Availability of Other Cooling Water Sources 0

The Rule states for this factor "Availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity and quality for reuse as cooling water." The purpose of this factor is to evaluate the use of alternative sources of cooling to reduce withdrawals from the source waterbody.

Since Retirement of Unit 1 will completely eliminate the need for once-through cooling water, consideration of this factor is not relevant for Mill Creek.

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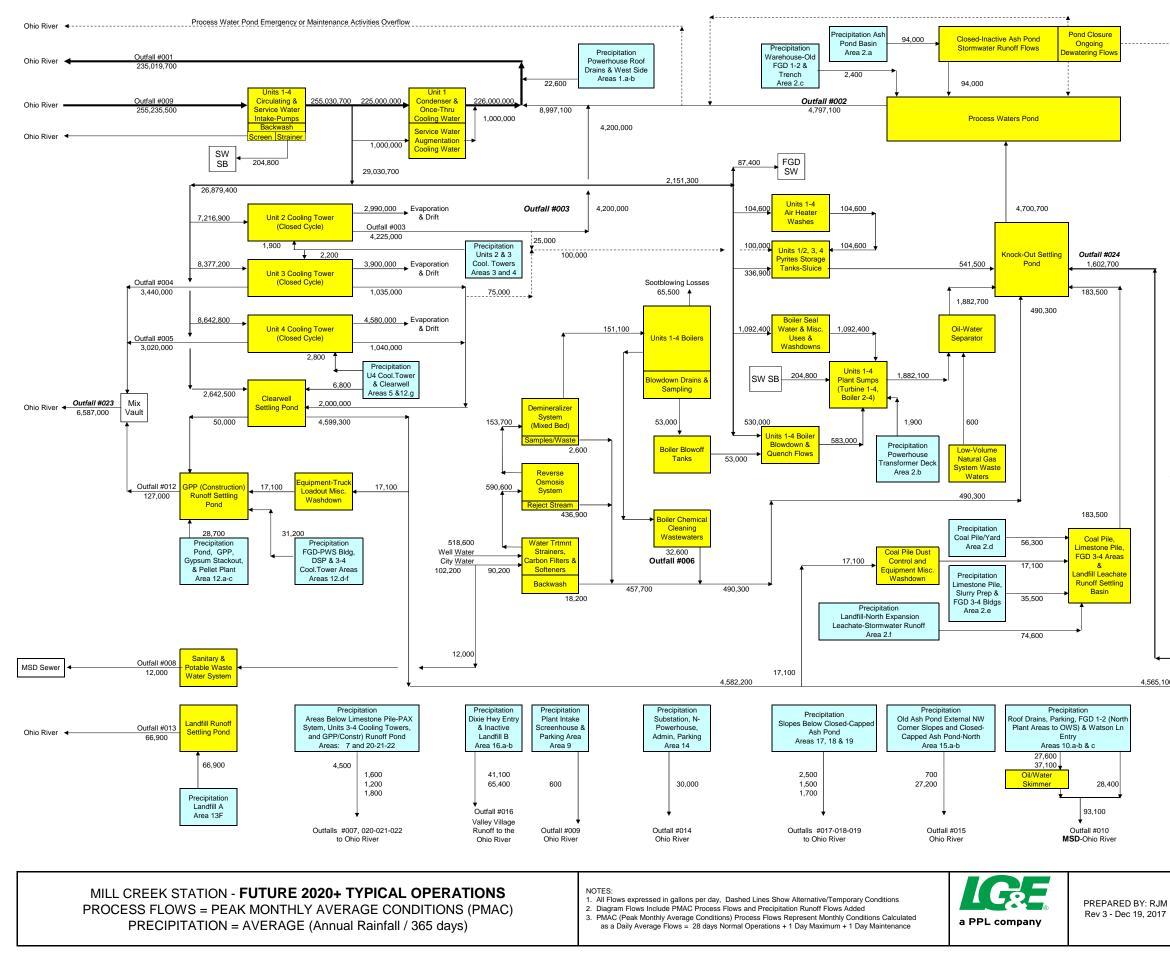
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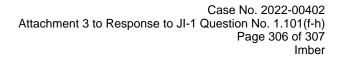
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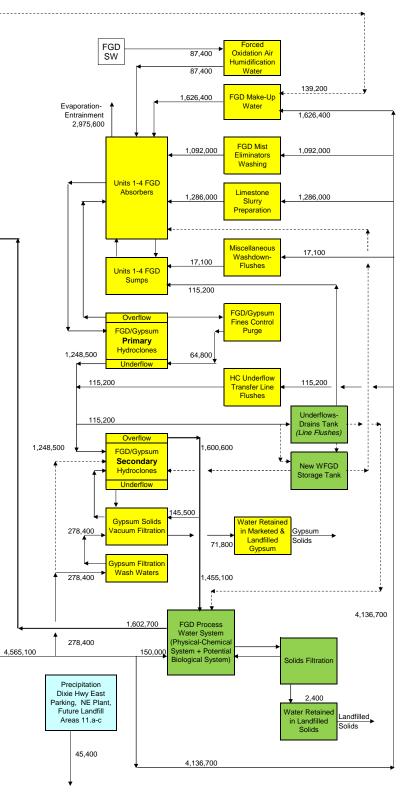
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## APPENDIX A MILL CREEK FLOW LINE DIAGRAM









#### MILL CREEK GENERATION STATION WATER BALANCE DIAGRAM - FUTURE OPERATIONS PMAC CONDITIONS AND AVERAGE PRECIPITATION KPDES PERMIT KY0003221

Below is the lab analysis performed on the distribution electrical vault wash waters:

Hg	O&G	TSS	Fe	Cu	Se
(ng/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
28.0	5.1	690	25.9	1.0	