

AECOM 100 North Broadway 20th Floor St. Louis, MO 63102 aecom.com

September 6, 2024

Illinois Environmental Protection Agency Division of Water Pollution Control Compliance Assurance Section 1021 North Grand Avenue East Springfield, Illinois 62794-9276 Illinois Environmental Protection Agency Collinsville FOS 2009 Mall Street Collinsville, Illinois 62234

Shell Oil Products US Steam Enhanced Extraction Pretreatment System - Treated Water Analytical Data Village of Roxana Wastewater Treatment Plant Water Pollution Control Permit No. 2023-EE-68012 August 2024 Analytical

To Whom It May Concern:

AECOM Technical Services, Inc. (AECOM), on behalf of Shell Oil Products US (Shell), is submitting this letter as required by Water Pollution Control Permit No. 2023-EE-68012, Special Condition 8(B). This Permit is for the pretreatment and discharge of the steam enhanced extraction (SEE) wastewater to the Village of Roxana Wastewater Treatment Plant (WWTP). Special Condition 8(B) of the Permit requires monitoring of the system discharges and submittal of analytical results to the Illinois Environmental Protection Agency (IEPA). Wastewater treated through the pretreatment system is sampled on a weekly basis in accordance with Condition 13 of the August 22, 2022 letter from Illinois EPA, Permit Section, Division of Land Pollution Control (Log N. B-43R-CA-107).

During system activities in August 2024, two (2) treated wastewater analytical samples were analyzed. Due to system downtime for maintenance, water was not continuously generated or discharged in August 2024. Samples were collected during periods of water generation. The table below summarizes the samples and corresponding results.

Sample ID	Sample Date	Benzene (mg/L)
PWYSEE-WaterEff-080624	8/6/2024	0.0013
PWYSEE-WaterEff-081324	8/13/2024	<0.0005 (not detected)

Please contact Ms. Wendy Pennington (wendy pennington@aecom.com; 314-452-8929) with any guestions.

Samuel Fisher

Samuel Fisher, CHMM

Task Manager

**AECOM** 

Sincerely,

Wendy Pennington, P.E. Compliance Manager

AECOM

encl: Teklab Work Orders 24080500, 24081140

cc: Buddy Bealer (Shell)

Scott Schmidt (Village of Roxana) Jason Woody (Village of Roxana)

Project File

Oklahoma



August 07, 2024

Samuel Fisher AECOM 100 N. Broadway, 20th Floor

St. Louis, MO 63102 TEL: (314) 802-1152 FAX: (314) 296-1969



 Illinois
 100226

 Illinois
 1004652024-2

 Kansas
 E-10374

 Louisiana
 05002

 Louisiana
 05003

9978

**RE:** PWY SEE 2024 Water Effluent / 60721927-7.2.2 **WorkOrder:** 24080500

Dear Samuel Fisher:

TEKLAB, INC received 1 sample on 8/6/2024 15:12:00 for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Aaron Renner Project Manager

(630)324-6855

arenner@teklabinc.com



# **Report Contents**

http://www.teklabinc.com/

Client: AECOM Work Order: 24080500
Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24

### This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	8
Receiving Check List	10
Chain of Custody	Appended



#### **Definitions**

http://www.teklabinc.com/

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24

#### **Abbr Definition**

- \* Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing cal bration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
  - DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
  - DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly I ke a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- NC Data is not acceptable for compliance purposes
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
  - PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
  - RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
  - RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
  - SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
  - Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
  - TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the cal bration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the cal bration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count ( > 200 CFU )



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#### **Qualifiers**

- # Unknown hydrocarbon
- C RL shown is a Client Requested Quantitation Limit
- H Holding times exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
  - S Sp ke Recovery outside recovery limits
  - X Value exceeds Maximum Contaminant Level

- B Analyte detected in associated Method Blank
- E Value above quantitation range
- I Associated internal standard was outside method criteria
- M Manual Integration used to determine area response
- R RPD outside accepted recovery limits
- T TIC(Tentatively identified compound)



### **Case Narrative**

http://www.teklabinc.com/

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24

Cooler Receipt Temp: 5.5 °C

### Locations

	Collinsville		Springfield	. <u></u>	Kansas City
Address	5445 Horseshoe Lake Road	Address	3920 Pintail Dr	Address	8421 Nieman Road
	Collinsville, IL 62234-7425		Springfield, IL 62711-9415		Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	KKlostermann@teklabinc.com	Email	jhriley@teklabinc.com
	Collinsville Air		Chicago		
Address	5445 Horseshoe Lake Road	Address	1319 Butterfield Rd.		
	Collinsville, IL 62234-7425		Downers Grove, IL 60515		
Phone	(618) 344-1004	Phone	(630) 324-6855		
Fax	(618) 344-1005	Fax			
Email	EHurley@teklabinc.com	Email	arenner@teklabinc.com		



## **Accreditations**

### http://www.teklabinc.com/

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2025	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2025	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville



# **Laboratory Results**

http://www.teklabinc.com/

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24

Lab ID: 24080500-001 Client Sample ID: PWYSEE-WaterEff-080624

Matrix: AQUEOUS Collection Date: 08/06/2024 08:30

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed Batch
SW-846 5030, 8260B, VOLATI	LE ORGANIC C	омроц	INDS BY	GC/MS				
Benzene	NELAP	0.1	0.5		1.3	μg/L	1	08/07/2024 01:19 226828
Surr: 1,2-Dichloroethane-d4	*	0	80-120		92.5	%REC	1	08/07/2024 01:19 226828
Surr: 4-Bromofluorobenzene	*	0	80-120		97.5	%REC	1	08/07/2024 01:19 226828
Surr: Dibromofluoromethane	*	0	80-120		103.1	%REC	1	08/07/2024 01:19 226828
Surr: Toluene-d8	*	0	80-120		90.8	%REC	1	08/07/2024 01:19 226828



# **Quality Control Results**

http://www.teklabinc.com/

Report Date: 07-Aug-24

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2

,			,							
SW-846 5030, 8260B, VOLATI	LE ORGA	NIC C	OMPOUND	S BY GC/MS						
Batch 226828 SampType:	MBLK		Units µg/L							
SamplD: MBLK-AE240806A-2 Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.5	•	ND						08/07/2024
Surr: 1,2-Dichloroethane-d4	*			47.5	50.00		95.0	80	120	08/07/2024
Surr: 4-Bromofluorobenzene	*			48.3	50.00		96.5	80	120	08/07/2024
Surr: D bromofluoromethane	*			50.6	50.00		101.2	80	120	08/07/2024
Surr: Toluene-d8	*			45.6	50.00		91.1	80	120	08/07/2024
Batch 226828 SampType:	LCS		Units µg/L							
SamplD: LCS-AE240806A-2				- 1	~ "	CDK D-tV-I	W DEC	1 1 ::4	10-61:-4	Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Benzene		0.5		53.1	50.00	0	106.3	81.6	120	08/06/2024
Surr: 1,2-Dichloroethane-d4				45.6	50.00		91.1	80	120	08/06/2024
Surr: 4-Bromofluorobenzene				48.9	50.00		97.8	80	120	08/06/2024
Surr: D bromofluoromethane				50.2	50.00		100.5	80	120	08/06/202
Surr: Toluene-d8	•			44.5	50.00		88.9	80	120	08/06/2024
Batch 226828 SampType:	LCSD		Units µg/L					RPD Lir	nit: <b>20</b>	
SamplD: LCSD-AE240806A-2										Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref V	al %RPD	Analyzed
Benzene		0.5		52.8	50.00	0	105.5	53.13	0.72	08/06/2024
Surr: 1,2-Dichloroethane-d4	*			46.7	50.00		93.4			08/06/2024
Surr: 4-Bromofluorobenzene	*			48.7	50.00		97.4			08/06/2024
Surr: D bromofluoromethane	*			50.9	50.00		101.9			08/06/2024
Surr: Toluene-d8	*			44.4	50.00		88.8			08/06/2024
Batch 226828 SampType:	LCSG		Units %REC	;						
SamplD: LCSG-AE240806A-2	Cont	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Analyses Surr: 1,2-Dichloroethane-d4	Cert *	KL	Qual	47.4	50.00	2. 11 1101 Yul	94.8	80	120	08/06/2024
Surr: 4-Bromofluorobenzene	*			48.2	50.00		96.4	80	120	08/06/2024
Surr: D bromofluoromethane	*			51.6	50.00		103.3	80	120	08/06/2024
Surr: Toluene-d8	*			46.6	50.00		93.2	80	120	08/06/2024
Sull. Tolucile-u0				40.0	30.00		85.Z	00	120	00/00/2024



# **Quality Control Results**

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Report Date: 07-Aug-24

Client: AECOM Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2

LE ORGA	NIC CO	MPOUND	S BY GC/MS						
LCSGD	ι	Jnits <b>%REC</b>	:				RPD Lim	it: <b>0</b>	
									Date
Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Va	I %RPD	Analyzed
*			46.7	50.00		93.5			08/07/2024
*			47.8	50.00		95.6			08/07/2024
*			51.2	50.00		102.5			08/07/2024
*			45.3	50.00		90.6			08/07/2024
MS	ι	Jnits µg/L							
									Date
Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
	25.0		5940	2500	3582	94.4	74.1	118	08/07/2024
*			2340	2500		93.6	80	120	08/07/2024
*			2390	2500		95.6	80	120	08/07/2024
*			2270	2500		90.6	80	120	08/07/2024
MSD	ι	Jnits µg/L					RPD Lim	it: <b>20</b>	
									Date
Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Va	I %RPD	Analyzed
	25.0		6170	2500	3582	103.4	5942	3.71	08/07/2024
			2250	2500		94.1			08/07/2024
*			2330	2500		94. I			00/07/2024
*			2380	2500		95.1			08/07/2024
	Cert  *  *  *  *  *  MS  Cert  *  Cert	Cert   RL	Cert         RL         Qual           *         *           *         *           *         *           MS         Units µg/L           Cert         RL         Qual           25.0         *           *         *           MSD         Units µg/L           Cert         RL         Qual           25.0         Qual         Qual           Qual         25.0         Qual	Cert         RL         Qual         Result           *         46.7           *         47.8           51.2         51.2           *         45.3    MS  Units μg/L  Cert  RL  Qual  Result  25.0  \$ 2340  \$ 2390  \$ 2270  MSD  Units μg/L  Cert  RL  Qual  Result  25.0  6170	Cert         RL         Qual         Result         Spike           *         46.7         50.00           *         47.8         50.00           *         51.2         50.00           *         45.3         50.00           MS         Units μg/L         Spike           25.0         5940         2500           *         2340         2500           *         2390         2500           *         2270         2500           MSD         Units μg/L         Spike           Cert         RL         Qual         Result         Spike           Cert         RL         Qual         Result         Spike           25.0         6170         2500	Cert         RL         Qual         Result         Spike         SPK Ref Val           *         46.7         50.00           *         47.8         50.00           *         51.2         50.00           *         45.3         50.00           MS         Units μg/L         Spike         SPK Ref Val           25.0         5940         2500         3582           *         2340         2500         3582           *         2390         2500         2500           *         2270         2500         SPK Ref Val           MSD         Units μg/L         Spike         SPK Ref Val           Cert         RL         Qual         Result         Spike         SPK Ref Val           25.0         6170         2500         3582	Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC           *         46.7         50.00         93.5           *         47.8         50.00         95.6           *         51.2         50.00         102.5           *         45.3         50.00         90.6           MS         Units µg/L           Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC           25.0         5940         2500         3582         94.4           *         2340         2500         95.6           *         2390         2500         90.6           *         2270         2500         90.6           MSD         Units µg/L         Spike         SPK Ref Val         %REC           Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC           Extra RL         Qual         Result         Spike         SPK Ref Val         %REC	Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC         RPD Ref Val           *         46.7         50.00         93.5         95.6         95.6         95.6         95.6         95.6         95.6         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80         90.6         80 <td>Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC         RPD Ref Val         %RPD           *         46.7         50.00         93.5         47.8         50.00         95.6         47.8         50.00         102.5         47.8         47.8         50.00         102.5         47.8         47.8         50.00         90.6         47.8         47.</td>	Cert         RL         Qual         Result         Spike         SPK Ref Val         %REC         RPD Ref Val         %RPD           *         46.7         50.00         93.5         47.8         50.00         95.6         47.8         50.00         102.5         47.8         47.8         50.00         102.5         47.8         47.8         50.00         90.6         47.8         47.



Client: AECOM

### **Receiving Check List**

http://www.teklabinc.com/

Work Order: 24080500

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 07-Aug-24 Carrier: Employee Received By: LEH Completed by: Reviewed by: On: On: 06-Aug-24 06-Aug-24 Paul Schultz Ellie Hopkins Extra pages included 0 Pages to follow: Chain of custody Shipping container/cooler in good condition? Yes 🗸 No 🗔 Not Present Temp °C 5.5 Type of thermal preservation? Ice 🗹 Blue Ice None Dry Ice Chain of custody present? **~** No 🗌 Yes Chain of custody signed when relinquished and received? **~** Yes No L **~** Chain of custody agrees with sample labels? No 🗀 Yes **~** Samples in proper container/bottle? Yes No 🗀 **V** Sample containers intact? Yes No Sufficient sample volume for indicated test? Yes **~** No **✓** No  $\square$ All samples received within holding time? Yes NA 🗸 Field Lab  $\square$ Reported field parameters measured: Yes 🗸 No 🗌 Container/Temp Blank temperature in compliance? When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected. Yes 🗸 No VOA vials Water - at least one vial per sample has zero headspace? No 🗀 No TOX containers Water - TOX containers have zero headspace? Yes No 🗌 Yes 🗹 No 🗌 Water - pH acceptable upon receipt? NA 🗸 NPDES/CWA TCN interferences checked/treated in the field? Yes No 🗀 Any No responses must be detailed below or on the COC.

24080500

	LAB (LOCATION)							Sh	ell	Oil	P	roc	duc	ts l	JS	Cha	ain	Of (	Cus	sto	dy	Re	:co	rd					AECOM
	CUTEST ()		Plea	se Check	App	ropri	ate B	ox:					Print	Bill T	o Co	ntact	Name	<b>:</b> 50:55		F	laNe	t Sit	e or	Proj	ect II	D .		Пο	HECK IF NO INCIDENT # APPLIES
	LSCIENCE ()	SGW FD	G		PIPELI	NE .			RETAIL					800	nuel F	ichar			1				25278						ATE: 3/6/24
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ADDRES	s: 100 N. Broadway	- 20th Floor	; ST. LOL	JIS, MO 6310	)2						1		RABLE TO				n):		NE NO.:				E-MAIL	:	her@ac			11001	ASCOM Other ID
PROJEC	T CONTACT (Hardcopy or PDF Report to):	Samuel Fi									L				i, Si. LU				+-230-				98000	ELHSU	iei wat	EGOHE:			2W Y
TELEPH	ONE: FAX: 314-429-04		Bill To Conta		el.fist	ier@a	есот.	COITE			Joa	inipie P	er Nam	ie(s). Dw	ا) هـ												LAB	3 USE (	JML 7
	AROUND TIME (CALENDAR DAYS):		5.00			<u> </u>	R		NEEDE		上		· · ·				RE	UEST	ED A	NAL'	YSIS								
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	Email reports to: <a href="mailto:samuel.fisher@aecon">samuel.fisher@aecon</a> wendy.pennington@aecom.com; brett.howell@		1	STATE			YENT RA	TE APPI	LIES		ene	}			*******														en ice
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USE ONLY	, , , , , , , , , , , , , , , , , , , ,	DATE	TIME		HCL	HNO3	H2SO4	NONE	H2S04	CONT.					ŀ							Taraban and a second						. 1	
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August 14, 2024

Samuel Fisher AECOM 100 N. Broadway, 20th Floor

St. Louis, MO 63102 TEL: (314) 802-1152 FAX: (314) 296-1969 TNI FBORATORY

 Illinois
 100226

 Illinois
 1004652024-2

 Kansas
 E-10374

 Louisiana
 05002

 Louisiana
 05003

 Oklahoma
 9978

**RE:** PWY SEE 2024 Water Effluent / 60721927-7.2.2 **WorkOrder:** 24081140

Dear Samuel Fisher:

TEKLAB, INC received 1 sample on 8/13/2024 15:37:00 for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Aaron Renner
Project Manager

(630)324-6855

arenner@teklabinc.com



# **Report Contents**

http://www.teklabinc.com/

Client: AECOM Work Order: 24081140
Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24

### This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	8
Receiving Check List	9
Chain of Custody	Appended



#### **Definitions**

http://www.teklabinc.com/

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24

#### Abbr Definition

- \* Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing cal bration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
  - DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
  - DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly I ke a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- NC Data is not acceptable for compliance purposes
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
  - PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
  - RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
  - RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
  - SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
  - Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
  - TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the cal bration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the cal bration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count ( > 200 CFU )



### **Definitions**

http://www.teklabinc.com/

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24

#### **Qualifiers**

- # Unknown hydrocarbon
- C RL shown is a Client Requested Quantitation Limit
- H Holding times exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
  - S Sp ke Recovery outside recovery limits
  - X Value exceeds Maximum Contaminant Level

- B Analyte detected in associated Method Blank
- E Value above quantitation range
- I Associated internal standard was outside method criteria
- M Manual Integration used to determine area response
- R RPD outside accepted recovery limits
- T TIC(Tentatively identified compound)



### **Case Narrative**

http://www.teklabinc.com/

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24

Cooler Receipt Temp: 10.3 °C

### Locations

	Collinsville		Springfield		Kansas City
Address	5445 Horseshoe Lake Road	Address	3920 Pintail Dr	Address	8421 Nieman Road
	Collinsville, IL 62234-7425		Springfield, IL 62711-9415		Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	KKlostermann@teklabinc.com	Email	jhriley@teklabinc.com
	Collinsville Air		Chicago		
Address	5445 Horseshoe Lake Road	Address	1319 Butterfield Rd.		
	Collinsville, IL 62234-7425		Downers Grove, IL 60515		
Phone	(618) 344-1004	Phone	(630) 324-6855		
Fax	(618) 344-1005	Fax			
Email	EHurley@teklabinc.com	Email	arenner@teklabinc.com		



## **Accreditations**

### http://www.teklabinc.com/

Report Date: 14-Aug-24

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2025	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2025	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville



# **Laboratory Results**

http://www.teklabinc.com/

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24

Lab ID: 24081140-001 Client Sample ID: PWYSEE-WaterEff-081324

Matrix: AQUEOUS Collection Date: 08/13/2024 08:00

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed Batch
SW-846 5030, 8260B, VOLATII	LE ORGANIC C	OMPOL	INDS BY	GC/MS				
Benzene	NELAP	0.1	0.5		ND	μg/L	1	08/14/2024 08:55 227129
Surr: 1,2-Dichloroethane-d4	*	0	80-120		99.6	%REC	1	08/14/2024 08:55 227129
Surr: 4-Bromofluorobenzene	*	0	80-120		99.7	%REC	1	08/14/2024 08:55 227129
Surr: Dibromofluoromethane	*	0	80-120		100.5	%REC	1	08/14/2024 08:55 227129
Surr: Toluene-d8	*	0	80-120		99.4	%REC	1	08/14/2024 08:55 227129



# **Quality Control Results**

http://www.teklabinc.com/

Report Date: 14-Aug-24

Client: AECOM Work Order: 24081140

Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2

Batch 227129 SampType:	MBLK		Units µg/L							
SamplD: MBLK-AE240814A-1	<b>a</b> .			<b>5</b> to	~ "	CDK D-f V-l	N/DEO	Lauritimaik	Himb Himit	Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Benzene		0.5		ND						08/14/202
Surr: 1,2-Dichloroethane-d4	*			48.7	50.00		97.4	80	120	08/14/202
Surr: 4-Bromofluorobenzene	*			49.2	50.00		98.4	80	120	08/14/202
Surr: D bromofluoromethane	*			48.9	50.00		97.8	80	120	08/14/202
Surr: Toluene-d8	*			49.6	50.00		99.2	80	120	08/14/202
Batch 227129 SampType:	LCS		Units µg/L							
SamplD: LCS-AE240814A-1										Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Benzene		0.5		47.9	50.00	0	95.8	81.6	120	08/14/202
Surr: 1,2-Dichloroethane-d4	*			48.4	50.00		96.7	80	120	08/14/202
Surr: 4-Bromofluorobenzene	*			49.1	50.00		98.2	80	120	08/14/202
Surr: D bromofluoromethane	*			50.0	50.00		99.9	80	120	08/14/202
Surr: Toluene-d8	*			48.1	50.00		96.3	80	120	08/14/202
Batch 227129 SampType:	LCSD		Units µg/L					RPD Lir	nit: <b>20</b>	
SamplD: LCSD-AE240814A-1										Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref V	al %RPD	Analyzed
Benzene		0.5		46.3	50.00	0	92.6	47.90	3.40	08/14/202
Surr: 1,2-Dichloroethane-d4	*			49.1	50.00		98.3			08/14/202
Surr: 4-Bromofluorobenzene	*			49.9	50.00		99.7			08/14/202
Surr: D bromofluoromethane	*			50.1	50.00		100.1			08/14/202
Surr: Toluene-d8	*			48.3	50.00		96.7			08/14/202
Batch 227129 SampType:	LCSG		Units %REC	:						
SamplD: LCSG-AE240814A-1										Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Surr: 1,2-Dichloroethane-d4	*			49.0	50.00		98.1	80	120	08/14/202
Surr: 4-Bromofluorobenzene	*			48.8	50.00		97.6	80	120	08/14/202
Surr: D bromofluoromethane	*			50.9	50.00		101.8	80	120	08/14/202



### **Receiving Check List**

http://www.teklabinc.com/

Work Order: 24081140

Client: AECOM Client Project: PWY SEE 2024 Water Effluent / 60721927-7.2.2 Report Date: 14-Aug-24 Carrier: Employee Received By: NR Completed by: OMOON DILLALLO Reviewed by: On: On: 13-Aug-24 13-Aug-24 Amber Dilallo Ellie Hopkins Extra pages included 0 Pages to follow: Chain of custody Shipping container/cooler in good condition? Yes 🗸 No 🗔 Not Present Temp °C 10.3 Type of thermal preservation? Ice 🗹 Blue Ice None Dry Ice Chain of custody present? **~** No 🗌 Yes Chain of custody signed when relinquished and received? **~** Yes No L **~** Chain of custody agrees with sample labels? No 🗀 Yes **~** Samples in proper container/bottle? Yes No 🗀 **V** Sample containers intact? Yes No Sufficient sample volume for indicated test? Yes **~** No **✓** No  $\square$ All samples received within holding time? Yes NA 🗸 Field Lab  $\square$ Reported field parameters measured: Yes 🗸 No 🗌 Container/Temp Blank temperature in compliance? When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected. Yes 🗸 No VOA vials Water - at least one vial per sample has zero headspace? No 🗀 No TOX containers Water - TOX containers have zero headspace? Yes No 🗌 Yes 🗹 No 🗌 Water - pH acceptable upon receipt? NA 🗸 NPDES/CWA TCN interferences checked/treated in the field? Yes No 🗀

Any No responses must be detailed below or on the COC.

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