

April 2, 2025

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
2520 West Iles Avenue
Springfield, Illinois 62704Illinois Environmental Protection Agency
Collinsville FOS
1101 Eastport Plaza Dr, Suite 100
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
March 2025 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 pre-treatment 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).

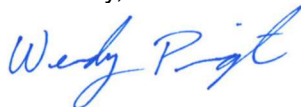
The SEE system was winterized and sat idle during the winter months. System startup activities began in March 2025. During these activities in March 2025, one (1) sample of treated wastewater discharge was analyzed. The table below summarizes the samples and corresponding results.

Sample ID	Sample Date	Benzene (mg/L)
PWYSEE-WaterEff-032825	3/28/2025	0.0003 J

J = estimated result below reporting limit

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

Sincerely,

Wendy Pennington, P.E.
Compliance Manager
AECOMSamuel Fisher, CHMM
Task Manager
AECOM

encl: Teklab 25032560

cc: Buddy Bealer (Shell)
Scott Schmidt (Village of Roxana)
Jason Woody (Village of Roxana)
Project File

March 31, 2025

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
Oklahoma	9978

RE: PWY SEE 2025 Water / 60738191-7.2.2

WorkOrder: 25032560

Dear Samuel Fisher:

TEKLAB, INC received 4 samples on 3/28/2025 12:11:00 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

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

This reporting package includes the following:

Cover Letter	1
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Quality Control Results	11
Receiving Check List	13
Chain of Custody	Appended

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Abbr Definition

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration 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 like 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 calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration 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)

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| J - Analyte detected below quantitation limits | M - Manual Integration used to determine area response |
| ND - Not Detected at the Reporting Limit | R - RPD outside accepted recovery limits |
| S - Spike Recovery outside recovery limits | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Cooler Receipt Temp: 15.5 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: AECOM**Work Order:** 25032560**Client Project:** PWY SEE 2025 Water / 60738191-7.2.2**Report Date:** 31-Mar-25

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2026	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2026	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	8/31/2025	Collinsville
Arkansas	ADEQ	88-0966		3/14/2026	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	KWLCP	KY98050		12/31/2025	Collinsville
Kentucky	KWLCP	KY98006		12/31/2025	Collinsville
Kentucky	UST	0073		1/31/2026	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2028	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Lab ID: 25032560-001

Client Sample ID: PWYSEE-WaterEff-032825

Matrix: AQUEOUS

Collection Date: 03/28/2025 11:30

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS									
Benzene	NELAP	0.1	0.5	J	0.3	µg/L	1	03/29/2025 00:01	236776
Surr: 1,2-Dichloroethane-d4	*	0	80-120		98.1	%REC	1	03/29/2025 00:01	236776
Surr: 4-Bromofluorobenzene	*	0	80-120		96.0	%REC	1	03/29/2025 00:01	236776
Surr: Dibromofluoromethane	*	0	80-120		103.1	%REC	1	03/29/2025 00:01	236776
Surr: Toluene-d8	*	0	80-120		98.8	%REC	1	03/29/2025 00:01	236776

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Lab ID: 25032560-002

Client Sample ID: PWYSEE-PostLGAC500-032825

Matrix: AQUEOUS

Collection Date: 03/28/2025 11:35

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS									
Benzene	NELAP	0.1	0.5		11.6	µg/L	1	03/29/2025 00:28	236776
Surr: 1,2-Dichloroethane-d4	*	0	80-120		98.6	%REC	1	03/29/2025 00:28	236776
Surr: 4-Bromofluorobenzene	*	0	80-120		96.0	%REC	1	03/29/2025 00:28	236776
Surr: Dibromofluoromethane	*	0	80-120		103.3	%REC	1	03/29/2025 00:28	236776
Surr: Toluene-d8	*	0	80-120		98.9	%REC	1	03/29/2025 00:28	236776

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Lab ID: 25032560-003

Client Sample ID: PWYSEE-PostAS-032825

Matrix: AQUEOUS

Collection Date: 03/28/2025 11:40

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS									
Benzene	NELAP	0.5	5.0		1420	µg/L	10	03/29/2025 00:54	236776
Surr: 1,2-Dichloroethane-d4	*	0	80-120		100.0	%REC	10	03/29/2025 00:54	236776
Surr: 4-Bromofluorobenzene	*	0	80-120		96.0	%REC	10	03/29/2025 00:54	236776
Surr: Dibromofluoromethane	*	0	80-120		104.7	%REC	10	03/29/2025 00:54	236776
Surr: Toluene-d8	*	0	80-120		98.3	%REC	10	03/29/2025 00:54	236776

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Lab ID: 25032560-004

Client Sample ID: PWYSEE-Untreated-032825

Matrix: AQUEOUS

Collection Date: 03/28/2025 11:45

Analyses	Certification	MDL	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS									
Benzene	NELAP	25.0	250		43000	µg/L	500	03/29/2025 01:20	236776
Surr: 1,2-Dichloroethane-d4	*	0	80-120		100.2	%REC	500	03/29/2025 01:20	236776
Surr: 4-Bromofluorobenzene	*	0	80-120		96.2	%REC	500	03/29/2025 01:20	236776
Surr: Dibromofluoromethane	*	0	80-120		104.8	%REC	500	03/29/2025 01:20	236776
Surr: Toluene-d8	*	0	80-120		99.2	%REC	500	03/29/2025 01:20	236776

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

 Batch **236776** SampType: **MBLK** Units **µg/L**

SampleID: MBLK-AE250328A-2

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.5		ND						03/28/2025
Surr: 1,2-Dichloroethane-d4	*			49.0	50.00		97.9	80	120	03/28/2025
Surr: 4-Bromofluorobenzene	*			48.6	50.00		97.1	80	120	03/28/2025
Surr: D bromofluoromethane	*			51.3	50.00		102.5	80	120	03/28/2025
Surr: Toluene-d8	*			49.8	50.00		99.5	80	120	03/28/2025

 Batch **236776** SampType: **LCS** Units **µg/L**

SampleID: LCS-AE250328A-2

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.5		52.6	50.00	0	105.2	81.6	120	03/28/2025
Surr: 1,2-Dichloroethane-d4	*			47.8	50.00		95.6	80	120	03/28/2025
Surr: 4-Bromofluorobenzene	*			50.2	50.00		100.3	80	120	03/28/2025
Surr: D bromofluoromethane	*			51.0	50.00		101.9	80	120	03/28/2025
Surr: Toluene-d8	*			48.6	50.00		97.1	80	120	03/28/2025

 Batch **236776** SampType: **LCSD** Units **µg/L**

RPD Limit: 20

SampleID: LCSD-AE250328A-2

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene		0.5		53.1	50.00	0	106.1	52.61	0.85	03/28/2025
Surr: 1,2-Dichloroethane-d4	*			48.2	50.00		96.3			03/28/2025
Surr: 4-Bromofluorobenzene	*			49.7	50.00		99.4			03/28/2025
Surr: D bromofluoromethane	*			51.4	50.00		102.9			03/28/2025
Surr: Toluene-d8	*			48.9	50.00		97.7			03/28/2025

 Batch **236776** SampType: **MS** Units **mg/L**

SampleID: 25032321-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.050		4.06	5.000	0	81.2	74.1	118	03/29/2025
Surr: 1,2-Dichloroethane-d4	*			4.90	5.000		97.9	80	120	03/29/2025
Surr: 4-Bromofluorobenzene	*			4.72	5.000		94.5	80	120	03/29/2025
Surr: D bromofluoromethane	*			5.24	5.000		104.8	80	120	03/29/2025
Surr: Toluene-d8	*			4.99	5.000		99.8	80	120	03/29/2025

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

SW-846 5030B, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 236776		SampType: MSD		Units mg/L				RPD Limit: 20			Date Analyzed	
SampleID: 25032321-001AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene			0.050		4.51	5.000	0	90.3	4.061	10.54		
Surr: 1,2-Dichloroethane-d4		*			4.92	5.000		98.4				
Surr: 4-Bromofluorobenzene		*			4.79	5.000		95.8				
Surr: D bromofluoromethane		*			5.25	5.000		105.0				
Surr: Toluene-d8		*			4.99	5.000		99.9				

Client: AECOM

Work Order: 25032560

Client Project: PWY SEE 2025 Water / 60738191-7.2.2

Report Date: 31-Mar-25

Carrier: Employee

Received By: NR

Completed by:
On:

28-Mar-25

Laura E Henson

Reviewed by:
On:

28-Mar-25

Ellie Hopkins

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

 Yes ☒

 No ☐

 Not Present ☐

 Temp °C **15.5**

Type of thermal preservation?

 None ☐

 Ice ☒

 Blue Ice ☐

 Dry Ice ☐

Chain of custody present?

 Yes ☒

 No ☐

Chain of custody signed when relinquished and received?

 Yes ☒

 No ☐

Chain of custody agrees with sample labels?

 Yes ☒

 No ☐

Samples in proper container/bottle?

 Yes ☒

 No ☐

Sample containers intact?

 Yes ☒

 No ☐

Sufficient sample volume for indicated test?

 Yes ☒

 No ☐

All samples received within holding time?

 Yes ☒

 No ☐

Reported field parameters measured:

 Field ☐

 Lab ☐

 NA ☒

Container/Temp Blank temperature in compliance?

 Yes ☒

 No ☐

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.

Water – at least one vial per sample has zero headspace?

 Yes ☒

 No ☐

 No VOA vials ☐

Water - TOX containers have zero headspace?

 Yes ☐

 No ☐

 No TOX containers ☒

Water - pH acceptable upon receipt?

 Yes ☒

 No ☐

 NA ☐

NPDES/CWA TCN interferences checked/treated in the field?

 Yes ☐

 No ☐

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

Headspace was present in 1 of the 2 volatile vials in WaterEff, PostLGAS, and Untreated samples. - lhenson - 3/28/2025 12:33:58 PM

LAB (LOCATION)

☐ ACCUTEST (_____)

☐ CALSCIENCE (_____)

☐ TESTAMERICA (Pensacola _____)

☒ Other (Teklab; 5445 Horseshoe Lake Rd; Collinsville, IL)



Shell Oil Products US Chain Of Custody Record

AECOM

ACCUTEST ()

CALSCIENCE ()

TESTAMERICA (Pensacola)

☒ Other (Teklab; 5445 Horseshoe Lake Rd; Collinsville, IL)

Lab Vendor # Dropdown

Please Check Appropriate Box:

☐ SGW FDG

☐ PIPELINE

☐ RETAIL

☐ CHEMICALS

☐ CONSULTANT

☐ LUBES

☐ TRANSPORTATION

☐ OTHER

Print Bill To Contact Name:

Samuel Fisher

PO #

pay with credit card

PlaNet Site or Project ID

25278

GSAP Project ID

USPC/0014/R/02/08

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 3/28/25

PAGE: 1 of 1

SAMPLING COMPANY: AECOM

LOG CODE:

ADDRESS: 100 N. Broadway - 20th Floor; ST. LOUIS, MO 63102

PROJECT CONTACT (Hardcopy or PDF Report to): Samuel Fisher

TELEPHONE: 314-429-0100 FAX: 314-429-0462 Bill To Contact E-MAIL: samuel.fisher@aecom.com

TURNAROUND TIME (CALENDAR DAYS):
☐ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☒ 24 HOURS ☒ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☒ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
Email reports to: samuel.fisher@aecom.com;
wendy.pennington@aecom.com; brett.howell@aecom.com;
david.macone@aecom.com
☐ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☒ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

SITE ADDRESS: Street and City State IL

EDF DELIVERABLE TO (Name, Company, Office Location): Samuel Fisher, AECOM, St. Louis PHONE NO.: 314-296-1969

E-MAIL: samuel.fisher@aecom.com AECOM Other ID

Sampler Name(s): B. Howell 1

LAB USE ONLY

REQUESTED ANALYSIS

UNIT COST NON-UNIT COST

Benzene 8260

FIELD NOTES:
TEMPERATURE ON RECEIPT C° 15.5°C
ICE
Container PID Readings or Laboratory Notes
*** 24-HOUR TURNAROUND
Please provide preliminary raw benzene results the moment they are available - don't wait until official lab report is finalized

LAB USE ONLY

Field Sample Identification

SAMPLING

DATE TIME

MATRIX

PRESERVATIVE

HCL HNO3 H2SO4 NONE H2SO4

NO. OF CONT.

PWYSEE-WaterEff- 032825

3/28/25 1130

Aqueous

2

2

X

PWYSEE-PostLGAC500- 032825

3/28/25 1135

Aqueous

2

2

X

PWYSEE-PostAS- 032825

3/28/25 1140

Aqueous

2

2

X

PWYSEE-Untreated- 032825

3/28/25 1145

Aqueous

2

2

X

ONE DAY TAT

Relinquished by (Signature) [Signature]

Received by (Signature) [Signature]

Relinquished by (Signature) [Signature]

Received by (Signature) [Signature]

Relinquished by (Signature) [Signature]

Received by (Signature) [Signature]

Date: 3/28/25 Time: 11:40

Date: 3/28/25 Time: 12:11

HS Present 1/2 for water Eff, Post LGAC, & untreated 3/28