

**Four Star Supply
2024 Third Quarter
Groundwater Monitoring
Sampling Report**

**Four Star Supply, Inc.
355 NW State Street
Pullman, Washington**

Project Number: 223516.01

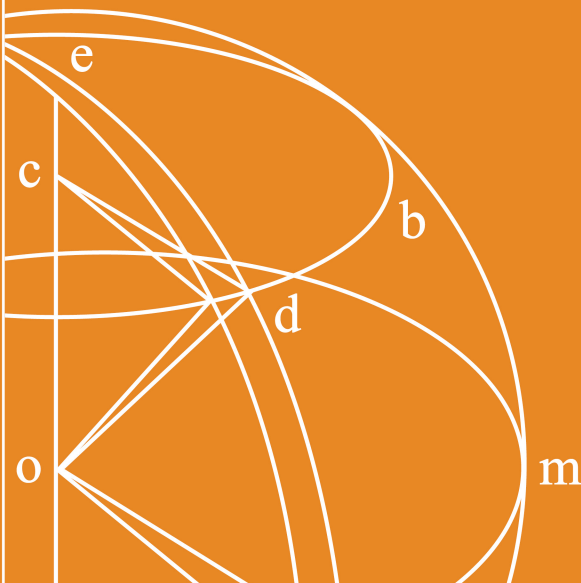
Date: October 14, 2024

Prepared for:

Four Star Supply
Attn: Kevin McDonnell
355 NW State Street
Pullman, Washington 99163

Prepared by:

Fulcrum Environmental Consulting, Inc.
207 West Boone Avenue
Spokane, Washington 99201





Report Title: Four Star Supply Third Quarter 2024 Groundwater Monitoring Report

Project Number: 223516.01

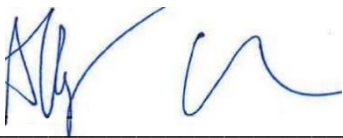
Date: October 14, 2024

Site: Four Star Supply, Inc.
355 NW State Street
Pullman, Washington

Prepared for: Four Star Supply, Inc.
Attn: Kevin McDonnell
355 NW State Street
Pullman, Washington

Prepared by: Fulcrum Environmental Consulting, Inc.
207 West Boone Avenue
Spokane, Washington 99201
509.459.9220

The professionals who completed site services and prepared and reviewed this report include, but are not limited to:

Authored by:  Date: 10/14/2024

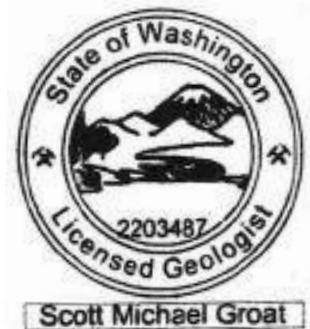
Abby Whitmore
Senior Environmental Technician

Reviewed by:  Date: 10/14/2024

Ethan Ducken, GIT
Environmental Scientist

Reviewed by:  Date: 10/14/2024

Scott Groat, LG
Regional Manager





Report Integrity

Fulcrum Environmental Consulting, Inc. 's scope of service for this project was limited to those services as established in the proposal, contract, verbal direction, and/or agreement. This report is subject to applicable federal, state, and local regulations governing project-specific conditions and was performed using recognized procedures and standards of the industry. Scientific data collected in situ may document conditions that may be specific to the time and day of service, and subject to change as a result of conditions beyond Fulcrum's control or knowledge. Fulcrum makes no warranties, expressed or implied, as to the accuracy or completeness of other's work included herein. Fulcrum has performed these services in accordance with generally accepted environmental science standards of care at the time of the inspection. No warranty, expressed or implied, is made.



TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION	1
1.1 Scope of Services	1
1.2 Site Description.....	1
1.3 Site Hydrogeology	2
1.4 Background	2
2.0 DISCUSSION OF PERTINENT REGULATIONS AND GUIDANCE.....	3
2.1 MTCA Regulations	3
2.2 MTCA Cleanup Standards	4
3.0 FIELD ACTIVITIES	4
3.1 Groundwater Sampling	4
4.0 GROUNDWATER MONITORING RESULTS	4
4.1 Laboratory Analytical Results	4
4.2 Hydraulic Results.....	5
4.3 Data Quality	5
5.0 DISCUSSION	5
6.0 RECOMMENDATIONS	6

TABLES

Table 1: Four Star Groundwater Analytical Results – September 12, 2024	5
--	---

FIGURES

Figure 1	Site Location Map
Figure 2	Historical Site Diagram Map
Figure 3	Site Diagram Map
Figure 4	Groundwater Elevation Map

APPENDICES

Appendix A	Professional Certifications
Appendix B	Summary of Historical Data
Appendix C	Laboratory Analytical Results



1.0 INTRODUCTION

On September 12, 2024, Fulcrum Environmental Consulting, Inc. (Fulcrum) conducted a quarterly groundwater monitoring event for three monitoring wells at the Four Star Supply, Inc. (Four Star) site located at 355 NW State Street in Pullman, Washington. The purpose of the monitoring was to evaluate petroleum hydrocarbon impacts to site groundwater associated with a diesel release identified in April of 2022 and with pre-existing petroleum contaminated soil.

Site services were completed by Travis Trent, a Washington State Licensed Hydrogeologist, assisted by Nick Hays, a Senior Environmental Technician, both with Fulcrum. Relevant professional certifications are presented in Appendix A.



*Four Star Fuel Supply
355 NW State Street, Pullman, Washington*

1.1 Scope of Services

Fulcrum was retained by Four Star to conduct quarterly groundwater sampling services at the Four Star Supply site located at 355 NW State Street in Pullman, Washington. Each quarterly sampling event consists of measurement of water depths in the three onsite groundwater monitoring wells followed by collection of water samples from each well after stabilization of groundwater parameters are realized. Samples are collected in accordance with industry standard of care and submitted under chain of custody to a Washington State accredited laboratory to be analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), gasoline-range organics, diesel-range organics, and heavy oil-range organics. Results of the investigation and testing from September 12, 2024 are presented in this summary report.

1.2 Site Description

The site is identified as parcel 10850058130001 and is located on the corner of Poplar Street and Northwest State Street in Pullman, Washington directly adjacent to the South Fork Palouse River (SFPR). The subject site was historically used for bulk fuel storage with six above ground storage tanks (AST) containing gasoline and diesel fuel all located within a concrete secondary containment.

Prior to remediation, the property was observed to be covered by concrete or gravel. Beneath the concrete and gravel surface was approximately 8 feet (ft) of non-native fill material consisting of basalt boulders and cobbles intermixed with sand/silt.



Soil transitioned into clayey sand from approximately 8-ft below ground surface (bgs) to 16-ft bgs. A compact clay layer was encountered at approximately 22 ft bgs. Bedrock was not encountered during site excavations. Groundwater was encountered in limited amounts within the remedial excavation at depths below 18 ft bgs measured from road grade. Groundwater was encountered at approximately 12 ft bgs measured from road grade during the September 2024 groundwater monitoring event.

During site remediation, site soil was removed to a depth of approximately 22-feet bgs and replaced with clean fill. The site was left as a vacant gravel lot and brought to grade.

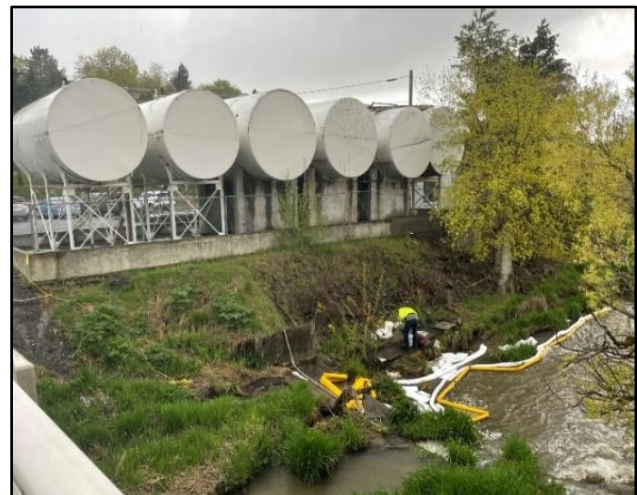
1.3 Site Hydrogeology

The site is located at approximately 2,332 feet above mean sea level (MSL). Groundwater depth ranges from 11 to 14 feet bgs as measured from road grade. Groundwater flow direction is based on data collected during groundwater monitoring and generally flows north-northeast to north-northwest towards the South Fork Palouse River (SFPR), with a hydraulic gradient of 0.002.

1.4 Background

On April 25, 2022, Four Star identified a diesel fuel leak from an AST located on Parcel 10850058130001 in Pullman, Washington. The diesel leaked into a concrete secondary containment that failed resulting in discharge to site soils beneath the concrete. The leak resulted in a discernable sheen to the adjacent SFPR.

Initial response activities consisted of placement of containment booms and sorbent pads within the SFPR and the use of absorbent clay to remove free product from the secondary containment. Reported calculations indicated that approximately 400-gallons of diesel fuel were released from the failed AST. The site is recognized on the Washington State Cleanup Program as Grange Supply Company Pullman (Cleanup Site ID 16631, Facility/Site ID 3394273, UST ID 171).



View looking southwest at the site, the six historic AST's can be seen in the background and the SFPR can be seen in the foreground.

Emergency services and Department of Ecology staff responded to the accident. Fulcrum was retained by Four Star to respond to the initial event, assist with regulatory permitting documents, oversee independent cleanup actions for the release, conduct confirmatory sampling, and to prepare a Petroleum Spill Remediation Report. Able Clean-up Technologies Inc. (Able) was retained by Four Star to provide spill response and cleanup services. Plateau Archaeological Investigations, LLC (Plateau) was retained by Four Star to conduct Archaeological monitoring during excavation activities.



Remedial excavation of contaminated site soils was performed in two phases. Phase I initial remedial excavation for diesel contaminated soil associated with the April 2022 fuel release and Phase II remedial excavation of historical petroleum contaminated soils. Laboratory analysis identified the contaminants of concern; gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes to be above MTCA Method A Cleanup Levels throughout site soils. All current and historic contaminated soil was removed from the subject site except the stream bank. Contaminated soil remained at property margins shared with NW State Street, Poplar Street, and an adjacent building.

A compact clay barrier was placed at the north property boundary between the site and the South Fork Palouse River. The barrier extends from a native compact clay layer that was encountered across the site at approximately 20 feet bgs to approximately 3 feet bgs. It extends the full length of the bank frontage and wraps back to the south at the east and west property boundaries.

Removed soil was transported to Roach Construction Land Farm located in Genesee, Idaho for treatment. A total of 4,246 cubic yards (CY) of petroleum contaminated soil (PCS) was excavated from the site.

2.0 DISCUSSION OF PERTINENT REGULATIONS AND GUIDANCE

2.1 MTCA Regulations

In March 1989, the Model Toxics Control Act (MTCA) went into effect in Washington State. The MTCA regulations, WAC 173-340, set standards to ensure quality of cleanup and protection of human health and the environment. A major portion of the MTCA regulation (completed in 1991) was the development of numerical cleanup standards and requirements for cleanup actions. Three options were established under MTCA for site-specific cleanup levels: Method A, B, and C. Method A defines cleanup levels for 25 of the most common hazardous substances found at sites. Method B levels are set using a site risk assessment, which enables consideration of site-specific characteristics. Method C is similar to Method B; however, the individual substance's cancer risk portion of the assessment is set at 1 in 100,000 rather than 1 in 1,000,000.

Rule amendments to MTCA became effective August 15, 2001, and changed the cleanup levels of petroleum hydrocarbon contamination. Whereas diesel and heavy oil concentrations were increased, the MTCA Method A cleanup levels for gasoline and gasoline components benzene, toluene, ethylbenzene, and xylene (BTEX) were lowered significantly. Updates since 2001 have been primarily administrative in nature, although review and adjustment of cleanup levels are ongoing.



2.2 MTCA Cleanup Standards

Ecology's MTCA Method A cleanup tables were developed to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. Method A cleanup levels are specifically designated as appropriate for residential facilities and are appropriate for a conservative approach at schools and public sites. Therefore, Fulcrum has determined that Ecology's MTCA Method A cleanup levels to be the most appropriate regulatory guidance for evaluating the need for site cleanup at the site.

3.0 FIELD ACTIVITIES

3.1 Groundwater Sampling

On September 12, 2024, Fulcrum completed groundwater sampling of the three onsite monitoring wells: MW-01, MW-02, and MW-03. Fulcrum collected groundwater samples from each of the three onsite monitoring wells (FS-091224-MW01, FS-091224-MW-02, and FS-091224-MW-03). One field duplicate (FS-091224-MW-04) was collected for a total of four groundwater samples. Prior to sample collection, Fulcrum measured the depth to groundwater (DTW) and depth to bottom (DTB) utilizing an electronic water level indicator accurate to ± 0.01 foot. Elevation corrections were made using wellhead elevation data from the subject site. Sampling activities were completed using a peristaltic pump and Hanna brand water quality instruments. At each well, water was pumped until a minimum of three well volumes were purged.

Samples were placed in a pre-cooled ice chest and delivered under standard chain-of-custody for analysis to Eurofins Test America Laboratories, Inc, a Washington State certified laboratory located in Spokane Valley, Washington. Personnel conducting analysis are trained in accordance with the laboratory's internal quality assurance/quality control (QA/QC) policy. A site diagram map is presented as Figure 3.

4.0 GROUNDWATER MONITORING RESULTS

4.1 Laboratory Analytical Results

All groundwater samples were analyzed for concentrations of gasoline-range hydrocarbons by Northwest Total Petroleum Hydrocarbons as Gasoline (NWTPH-Gx), diesel-range and heavy oil-range hydrocarbons by Northwest Total Petroleum Hydrocarbons as diesel (NWTPH-Dx), and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260c. Table 1 summarizes sample identification, locations, and analyte concentrations, which are reported in micrograms per liter ($\mu\text{g/L}$). Full laboratory analytical results are presented in Appendix C.



Table 1: Four Star Groundwater Analytical Results – September 12, 2024

Location	Sample Number	Ground-water Elevation	Results (µg/L)						
			NWTPH-Dx		Gasoline	Benzene	Toluene	Ethylbenzene	Xylene
			Diesel	Oil					
MW-01	FS-091224-MW01	2319.17	ND	ND	ND	ND	ND	ND	ND
MW-02	FS-091224-MW02	2319.13	250	ND	ND	ND	ND	ND	ND
MW-03	FS-091224-MW03	2319.17	260	ND	ND	ND	ND	5.7	ND
	FS-091224-MW04	2319.17	240	ND	ND	ND	ND	5.4	ND
MTCA Cleanup Levels ¹			500		800*	5	1,000	700	1,000

ND – Non-detect

*Established cleanup level when benzene is present in groundwater.

Laboratory analytical results identified all samples to have concentrations below the laboratory method of detection limits for all analytes with the exception of diesel which was identified below regulatory thresholds in MW-02 and MW-03, and ethylbenzene which was identified below regulatory thresholds in MW-03. Sample FS-091224-MW04 was collected as a duplicate of FS-091224-MW03.

4.2 Hydraulic Results

The groundwater flow direction, as determined by this sampling and monitoring event, is northeast toward the South Fork Palouse River with a hydraulic gradient of 0.002 (0.04-ft change in groundwater depth over 27.6-ft), which is consistent with anticipated site geomorphology and hydrogeology. A groundwater elevation map is presented as Figure 4.

4.3 Data Quality

Samples were shown as received by the laboratory at an acceptable temperature. The results for Fulcrum's field duplicate were within an acceptable range of variance. Qualifiers were not present in the laboratory quality control (QC) sample results report. Based on reported analytical results, identified cleanup standards, and the absence of lab data qualifiers, it is Fulcrum's opinion that field and laboratory data quality results confirm acceptable accuracy of analytical data.

5.0 DISCUSSION

Review of current groundwater analytical data indicates the following:

- **MW-01:** Analytical results for groundwater samples collected from MW-01 were non-detect for oil-range hydrocarbons, diesel-range hydrocarbons, gasoline-range hydrocarbons, and BTEX.



- **MW-02:** Analytical results for groundwater samples collected from MW-02 were non-detect for oil-range hydrocarbons, gasoline, and BTEX. Diesel-range hydrocarbons were identified below MTCA Method A Cleanup Levels.
- **MW-03:** Analytical results for groundwater samples collected from MW-03 were non-detect for oil-range hydrocarbons, gasoline, and BTEX. Diesel-range hydrocarbons and ethylbenzene were identified below MTCA Method A Cleanup Levels.

The September 2024 groundwater analytical data indicates contaminant concentrations in all wells to be below MTCA method A cleanup levels.

6.0 RECOMMENDATIONS

Fulcrum recommends continuing quarterly monitoring of the onsite monitoring wells.



Figures

Figure 1: Site Location Map

Figure 2: Historical Site Diagram Map

Figure 3: Site Diagram Map

Figure 4: Groundwater Elevation Map



LEGEND

Site Location

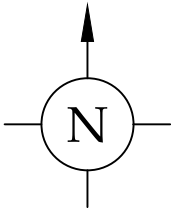
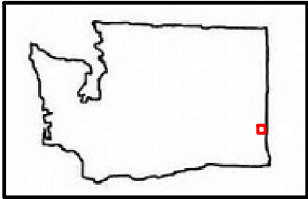


Figure 1: Site Location Map

September 2024 Groundwater Sampling Event
Four Star Supply
355 NW State Street
Pullman, Washington



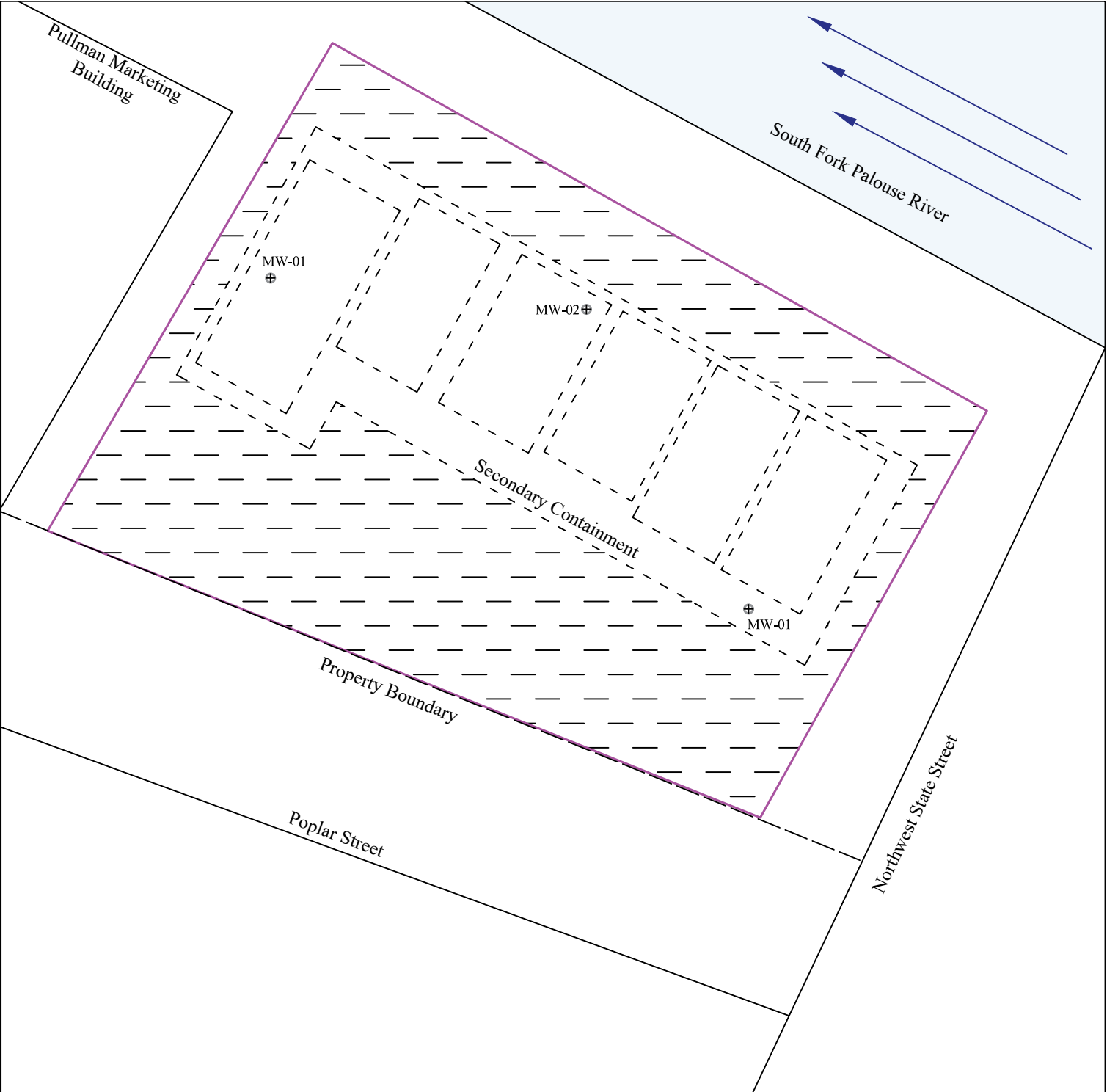
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Abby Whitmore




PROJECT NUMBER: 223516.01

DATE: October 9, 2024

REVIEWED BY: Scott Groat



LEGEND

-  Approximate Extent of Soil Excavation
-  Historical ASTs and Secondary Containment Removed from Site
-  Existing Onsite Monitoring Well

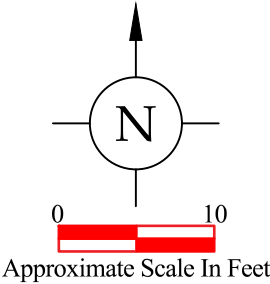


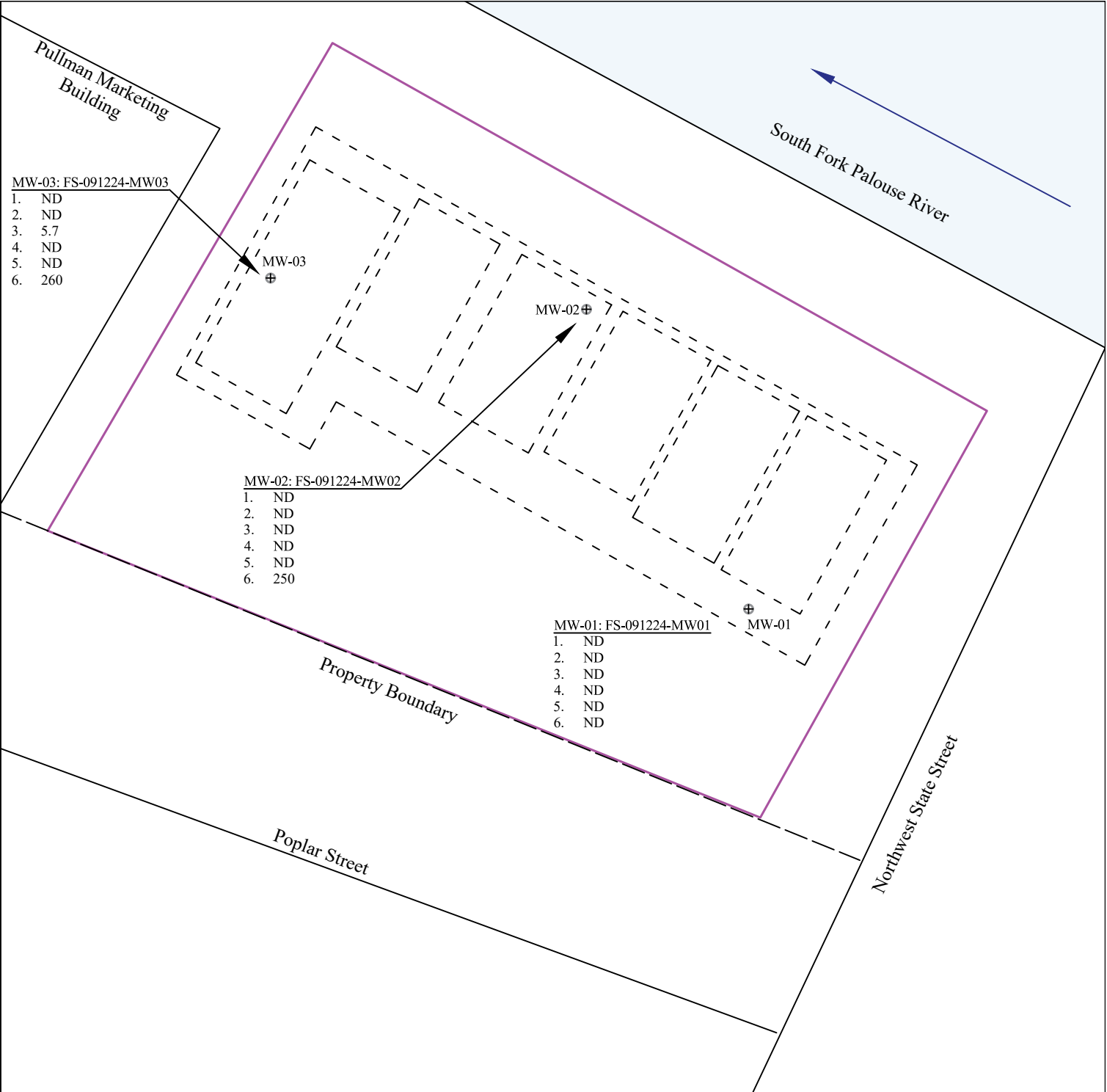
Figure 2: Historical Site Diagram Map

September 2024 Groundwater Sampling Event
Four Star Supply
355 NW State Street
Pullman, Washington



FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Abby Whitmore	PROJECT NUMBER: 233516.01
DATE: October 9, 2024	REVIEWED BY: Scott Groat



LEGEND

Parameters (µg/L)

1. Benzene
2. Toluene
3. Ethylbenzene
4. Xylenes
5. NWTPH-GX
6. Combined Diesel-range and Heavy Oil-range Hydrocarbons

⊕ Monitoring Well

* Analyte Concentration Exceeds MTCA Method A Cleanup Level

--- Historical ASTs and Secondary Containment Removed from Site

0 10

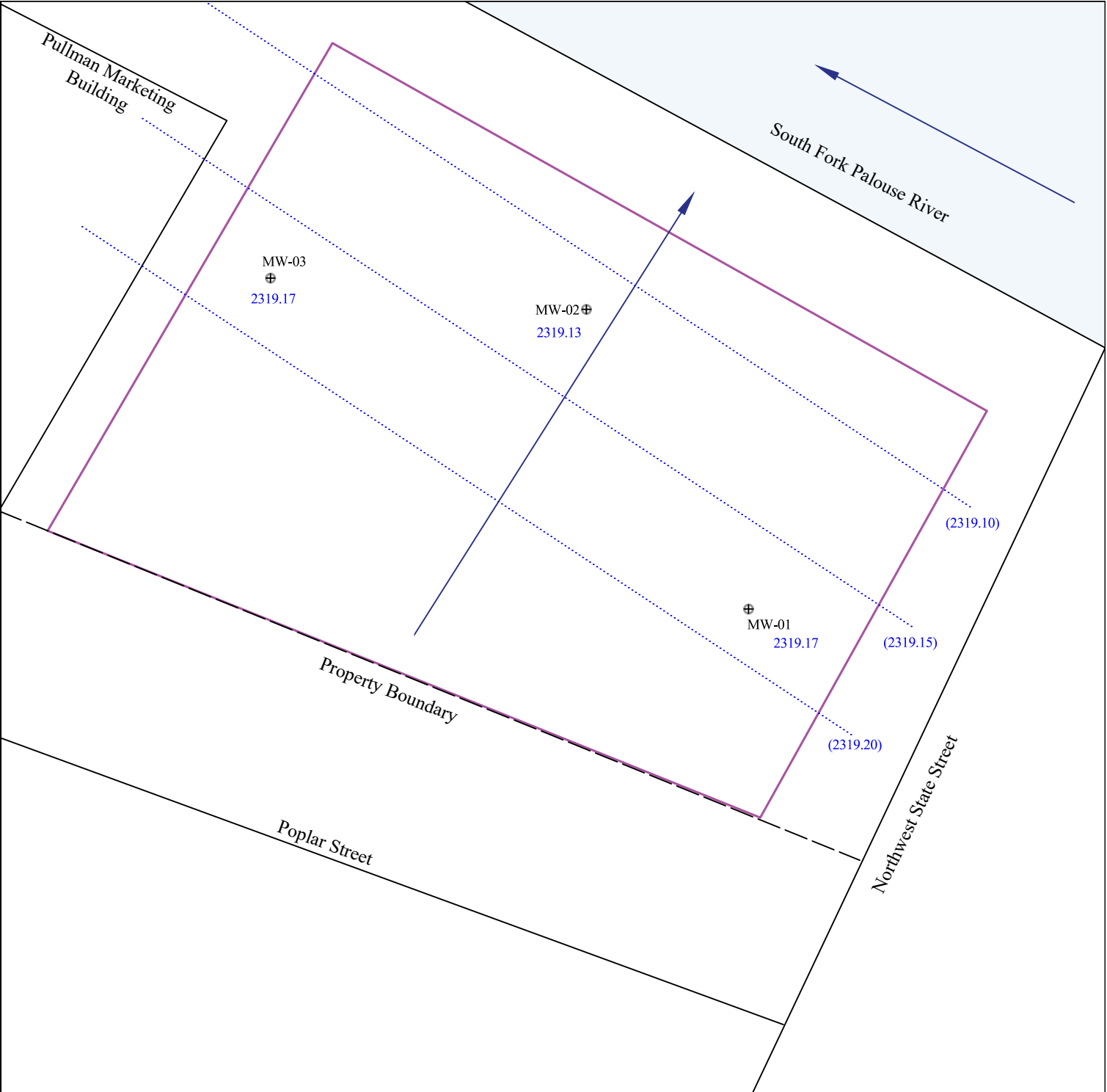
Approximate Scale In Feet

Figure 3: Site Diagram Map





September 2024 Groundwater Sampling Event
 Four Star Supply
 355 NW State Street
 Pullman, Washington

FULCRUM ENVIRONMENTAL CONSULTING, INC.
 207 W. BOONE AVENUE
 SPOKANE, WASHINGTON 99201
 (509) 459-9220 www.efulcrum.net

MAP BY: Abby Whitmore	PROJECT NUMBER: 223516.01
DATE: October 10, 2024	REVIEWED BY: Scott Groat



LEGEND

-  Approximate Groundwater Direction and Gradient
-  Groundwater Elevation Contour (In Feet)
-  Monitoring Well Groundwater Elevation (In Feet)
-  Monitoring Well

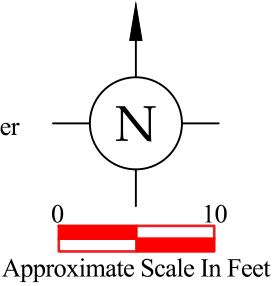


Figure 4: Groundwater Elevation Map

September 2024 Quarterly Groundwater Monitoring Event
Four Star Supply
355 NW State Street
Pullman, Washington



FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Abby Whitmore	PROJECT NUMBER: 223516.01
DATE: October 10, 2024	REVIEWED BY: Scott Groat



APPENDIX A

Professional Certifications



STATE OF WASHINGTON

DEPARTMENT OF LICENSING - BUSINESS AND PROFESSIONS DIVISION



THIS CERTIFIES THE PERSON OR BUSINESS NAMED BELOW IS AUTHORIZED AS A

**GEOLOGIST
HYDROGEOLOGIST**

TRAVIS L TRENT

364

License Number

01/08/2002

Issue Date

06/06/2025

Expiration Date



Marcus J Glasper, Director

APPENDIX B

Summary of Historical Data

355 NW State Street
Pullman, Washington

Four Star Fuel supply

Four Star Supply, Inc.
September 2024 Groundwater Monitoring Event

APPENDIX C

Laboratory Analytical Results

ANALYTICAL REPORT

PREPARED FOR

Attn: Scott Groat
Fulcrum Environmental Consulting Inc
207 West Boone Avenue
Spokane, Washington 99201

Generated 9/18/2024 3:59:28 PM

JOB DESCRIPTION

Four Star

JOB NUMBER

590-26988-1

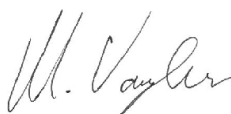
Eurofins Spokane

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



Generated
9/18/2024 3:59:28 PM

Authorized for release by
Madison Vaughan, Analyst I
Madison.Vaughan@et.eurofinsus.com
Designee for
Randee Arrington, Business Unit Manager
Randee.Arrington@et.eurofinsus.com
(509)924-9200



Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Sample Summary	5
Definitions	6
Client Sample Results	7
QC Sample Results	10
Chronicle	13
Certification Summary	14
Method Summary	15
Chain of Custody	16
Receipt Checklists	17

Case Narrative

Client: Fulcrum Environmental Consulting Inc
Project: Four Star

Job ID: 590-26988-1

Job ID: 590-26988-1

Eurofins Spokane

Job Narrative 590-26988-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/13/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.5°C.

Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Hydrocarbons

Method NWTPH_Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel.

FS-091224-MW02 (590-26988-2), FS-091224-MW03 (590-26988-3) and FS-091224-MW04 (590-26988-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Spokane

Sample Summary

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-26988-1	FS-091224-MW01	Water	09/12/24 11:00	09/13/24 09:30
590-26988-2	FS-091224-MW02	Water	09/12/24 12:00	09/13/24 09:30
590-26988-3	FS-091224-MW03	Water	09/12/24 13:00	09/13/24 09:30
590-26988-4	FS-091224-MW04	Water	09/12/24 14:00	09/13/24 09:30

Definitions/Glossary

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Client Sample ID: FS-091224-MW01

Lab Sample ID: 590-26988-1

Date Collected: 09/12/24 11:00

Matrix: Water

Date Received: 09/13/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/17/24 00:44	1
Ethylbenzene	ND		1.0		ug/L			09/17/24 00:44	1
m-Xylene & p-Xylene	ND		2.0		ug/L			09/17/24 00:44	1
o-Xylene	ND		1.0		ug/L			09/17/24 00:44	1
Toluene	ND		1.0		ug/L			09/17/24 00:44	1
Xylenes, Total	ND		3.0		ug/L			09/17/24 00:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		09/17/24 00:44	1
4-Bromofluorobenzene (Surr)	110		76 - 120		09/17/24 00:44	1
Dibromofluoromethane (Surr)	91		80 - 123		09/17/24 00:44	1
Toluene-d8 (Surr)	102		80 - 120		09/17/24 00:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/17/24 00:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		68.7 - 141		09/17/24 00:44	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.22		mg/L		09/13/24 16:49	09/17/24 12:00	1
Residual Range Organics (RRO) (C25-C36)	ND		0.37		mg/L		09/13/24 16:49	09/17/24 12:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150	09/13/24 16:49	09/17/24 12:00	1
n-Triacontane-d62	77		50 - 150	09/13/24 16:49	09/17/24 12:00	1

Client Sample ID: FS-091224-MW02

Lab Sample ID: 590-26988-2

Date Collected: 09/12/24 12:00

Matrix: Water

Date Received: 09/13/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/17/24 01:05	1
Ethylbenzene	ND		1.0		ug/L			09/17/24 01:05	1
m-Xylene & p-Xylene	ND		2.0		ug/L			09/17/24 01:05	1
o-Xylene	ND		1.0		ug/L			09/17/24 01:05	1
Toluene	ND		1.0		ug/L			09/17/24 01:05	1
Xylenes, Total	ND		3.0		ug/L			09/17/24 01:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		09/17/24 01:05	1
4-Bromofluorobenzene (Surr)	108		76 - 120		09/17/24 01:05	1
Dibromofluoromethane (Surr)	92		80 - 123		09/17/24 01:05	1
Toluene-d8 (Surr)	103		80 - 120		09/17/24 01:05	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Client Sample ID: FS-091224-MW02

Lab Sample ID: 590-26988-2

Date Collected: 09/12/24 12:00

Matrix: Water

Date Received: 09/13/24 09:30

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/17/24 01:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		68.7 - 141					09/17/24 01:05	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	0.25		0.22		mg/L		09/13/24 16:49	09/17/24 12:41	1
(C10-C25)									
Residual Range Organics (RRO)	ND		0.37		mg/L		09/13/24 16:49	09/17/24 12:41	1
(C25-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				09/13/24 16:49	09/17/24 12:41	1
n-Triacontane-d62	91		50 - 150				09/13/24 16:49	09/17/24 12:41	1

Client Sample ID: FS-091224-MW03

Lab Sample ID: 590-26988-3

Date Collected: 09/12/24 13:00

Matrix: Water

Date Received: 09/13/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/17/24 01:27	1
Ethylbenzene	5.7		1.0		ug/L			09/17/24 01:27	1
m-Xylene & p-Xylene	ND		2.0		ug/L			09/17/24 01:27	1
o-Xylene	ND		1.0		ug/L			09/17/24 01:27	1
Toluene	ND		1.0		ug/L			09/17/24 01:27	1
Xylenes, Total	ND		3.0		ug/L			09/17/24 01:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120					09/17/24 01:27	1
4-Bromofluorobenzene (Surr)	118		76 - 120					09/17/24 01:27	1
Dibromofluoromethane (Surr)	92		80 - 123					09/17/24 01:27	1
Toluene-d8 (Surr)	102		80 - 120					09/17/24 01:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/17/24 01:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		68.7 - 141					09/17/24 01:27	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	0.26		0.23		mg/L		09/13/24 16:49	09/17/24 13:01	1
(C10-C25)									
Residual Range Organics (RRO)	ND		0.38		mg/L		09/13/24 16:49	09/17/24 13:01	1
(C25-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				09/13/24 16:49	09/17/24 13:01	1
n-Triacontane-d62	84		50 - 150				09/13/24 16:49	09/17/24 13:01	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Client Sample ID: FS-091224-MW04

Lab Sample ID: 590-26988-4

Date Collected: 09/12/24 14:00

Matrix: Water

Date Received: 09/13/24 09:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/17/24 01:49	1
Ethylbenzene	5.4		1.0		ug/L			09/17/24 01:49	1
m-Xylene & p-Xylene	ND		2.0		ug/L			09/17/24 01:49	1
o-Xylene	ND		1.0		ug/L			09/17/24 01:49	1
Toluene	ND		1.0		ug/L			09/17/24 01:49	1
Xylenes, Total	ND		3.0		ug/L			09/17/24 01:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		09/17/24 01:49	1
4-Bromofluorobenzene (Surr)	116		76 - 120		09/17/24 01:49	1
Dibromofluoromethane (Surr)	91		80 - 123		09/17/24 01:49	1
Toluene-d8 (Surr)	103		80 - 120		09/17/24 01:49	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/17/24 01:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		68.7 - 141		09/17/24 01:49	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.24		0.22		mg/L		09/13/24 16:49	09/17/24 13:22	1
Residual Range Organics (RRO) (C25-C36)	ND		0.37		mg/L		09/13/24 16:49	09/17/24 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150	09/13/24 16:49	09/17/24 13:22	1
n-Triacontane-d62	94		50 - 150	09/13/24 16:49	09/17/24 13:22	1

QC Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-49688/10

Matrix: Water

Analysis Batch: 49688

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/16/24 20:24	1
Ethylbenzene	ND		1.0		ug/L			09/16/24 20:24	1
m-Xylene & p-Xylene	ND		2.0		ug/L			09/16/24 20:24	1
o-Xylene	ND		1.0		ug/L			09/16/24 20:24	1
Toluene	ND		1.0		ug/L			09/16/24 20:24	1
Xylenes, Total	ND		3.0		ug/L			09/16/24 20:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		09/16/24 20:24	1
4-Bromofluorobenzene (Surr)	110		76 - 120		09/16/24 20:24	1
Dibromofluoromethane (Surr)	93		80 - 123		09/16/24 20:24	1
Toluene-d8 (Surr)	102		80 - 120		09/16/24 20:24	1

Lab Sample ID: LCS 590-49688/1005

Matrix: Water

Analysis Batch: 49688

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.1		ug/L		101	80 - 120
Ethylbenzene	10.0	10.0		ug/L		100	80 - 122
m-Xylene & p-Xylene	10.0	9.90		ug/L		99	80 - 125
o-Xylene	10.0	9.28		ug/L		93	80 - 130
Toluene	10.0	9.93		ug/L		99	80 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	108		76 - 120
Dibromofluoromethane (Surr)	94		80 - 123
Toluene-d8 (Surr)	95		80 - 120

Lab Sample ID: LCSD 590-49688/6

Matrix: Water

Analysis Batch: 49688

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.99		ug/L		100	80 - 120	1	15
Ethylbenzene	10.0	9.99		ug/L		100	80 - 122	0	35
m-Xylene & p-Xylene	10.0	9.91		ug/L		99	80 - 125	0	35
o-Xylene	10.0	9.39		ug/L		94	80 - 130	1	35
Toluene	10.0	9.77		ug/L		98	80 - 129	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	109		76 - 120
Dibromofluoromethane (Surr)	93		80 - 123
Toluene-d8 (Surr)	97		80 - 120

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-49687/10

Matrix: Water

Analysis Batch: 49687

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/16/24 20:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		68.7 - 141					09/16/24 20:24	1

Lab Sample ID: LCS 590-49687/1009

Matrix: Water

Analysis Batch: 49687

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline	1000	1020		ug/L		102	80 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	117		68.7 - 141						

Lab Sample ID: LCSD 590-49687/1020

Matrix: Water

Analysis Batch: 49687

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Gasoline	1000	1000		ug/L		100	80 - 120	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	115		68.7 - 141						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-49646/1-A

Matrix: Water

Analysis Batch: 49665

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 49646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		09/13/24 16:49	09/17/24 09:31	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40		mg/L		09/13/24 16:49	09/17/24 09:31	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				09/13/24 16:49	09/17/24 09:31	1
n-Triacontane-d62	85		50 - 150				09/13/24 16:49	09/17/24 09:31	1

Lab Sample ID: LCS 590-49646/2-A

Matrix: Water

Analysis Batch: 49665

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics (DRO) (C10-C25)	1.60	1.21		mg/L		75	50 - 150		

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 590-49646/2-A

Matrix: Water

Analysis Batch: 49665

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Residual Range Organics (RRO) (C25-C36)	1.60	1.54		mg/L		96	50 - 150

	LCS %Recovery	LCS Qualifier	Limits
Surrogate			
o-Terphenyl	83		50 - 150
n-Triacontane-d62	81		50 - 150

Lab Sample ID: LCSD 590-49646/3-A

Matrix: Water

Analysis Batch: 49665

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 49646

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.29		mg/L		80	50 - 150	6	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.58		mg/L		99	50 - 150	2	25

	LCSD %Recovery	LCSD Qualifier	Limits
Surrogate			
o-Terphenyl	88		50 - 150
n-Triacontane-d62	85		50 - 150

Lab Chronicle

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Client Sample ID: FS-091224-MW01

Lab Sample ID: 590-26988-1

Date Collected: 09/12/24 11:00

Matrix: Water

Date Received: 09/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	49688	09/17/24 00:44	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	49687	09/17/24 00:44	JSP	EET SPK
Total/NA	Prep	3510C			268.4 mL	2 mL	49646	09/13/24 16:49	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	49665	09/17/24 12:00	NMI	EET SPK

Client Sample ID: FS-091224-MW02

Lab Sample ID: 590-26988-2

Date Collected: 09/12/24 12:00

Matrix: Water

Date Received: 09/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	49688	09/17/24 01:05	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	49687	09/17/24 01:05	JSP	EET SPK
Total/NA	Prep	3510C			267.3 mL	2 mL	49646	09/13/24 16:49	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	49665	09/17/24 12:41	NMI	EET SPK

Client Sample ID: FS-091224-MW03

Lab Sample ID: 590-26988-3

Date Collected: 09/12/24 13:00

Matrix: Water

Date Received: 09/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	49688	09/17/24 01:27	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	49687	09/17/24 01:27	JSP	EET SPK
Total/NA	Prep	3510C			266.6 mL	2 mL	49646	09/13/24 16:49	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	49665	09/17/24 13:01	NMI	EET SPK

Client Sample ID: FS-091224-MW04

Lab Sample ID: 590-26988-4

Date Collected: 09/12/24 14:00

Matrix: Water

Date Received: 09/13/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	43 mL	43 mL	49688	09/17/24 01:49	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	49687	09/17/24 01:49	JSP	EET SPK
Total/NA	Prep	3510C			267.2 mL	2 mL	49646	09/13/24 16:49	MRV	EET SPK
Total/NA	Analysis	NWTPH-Dx		1	1 mL	1 mL	49665	09/17/24 13:22	NMI	EET SPK

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins Spokane

Accreditation/Certification Summary

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Laboratory: Eurofins Spokane

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-07-25

1
2
3
4
5
6
7
8
9
10
11
12

Method Summary

Client: Fulcrum Environmental Consulting Inc
Project/Site: Four Star

Job ID: 590-26988-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	EET SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

590-26988 Chain of Custody

Login Sample Receipt Checklist

Client: Fulcrum Environmental Consulting Inc

Job Number: 590-26988-1

Login Number: 26988

List Source: Eurofins Spokane

List Number: 1

Creator: Vaughan, Madison R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	