

ENGINEERING DESIGN REPORT

Wastewater Treatment - Marcus Whitman Hotel

Prepared for: Stillwater Holdings, LLC

Project No. AS230442 • May 8, 2024 DRAFT



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1 Introduction

Geosyntec Consultants Inc., dba Aspect Consulting (Aspect) has prepared this Engineering Design Report (EDR) on behalf of Stillwater Holdings, LLC (Stillwater), to present the design details for installation and operation of a wastewater treatment system at the Marcus Whitman Hotel (Hotel), located at 6 West Rose Street in Walla Walla, Washington. The Hotel is located to the southwest of the Stillwater Holdings Chevron, a Chevron-branded fuel station located at 7 East Rose Street, owned by Stillwater (herein referred to as the Stillwater Property). The location of the properties is depicted on Figure 1 and the relative locations of the Hotel and Stillwater Property are depicted on Figure 2.

Water that accumulates within a flood-control sump located in the basement of the Hotel contains gasoline-range petroleum hydrocarbons and related compounds that have been attributed to a fuel release at the Stillwater Property. This EDR has been prepared to meet the requirements of Chapter 173-216 of the Washington Administrative Code (WAC) and Chapter 90.48 RCW and local requirements for collection and treatment of the sump water for discharge to the City of Walla Walla (City) Publicly Owned Treatment Works (POTW).

1.1 Background

The original thirteen-story tower of the Hotel, located at the west corner of the intersection of North 2nd Avenue and Rose Street, was constructed in 1928. A basement underlies the original portion of the Hotel and includes operations/utility rooms (electrical room, boiler room, air handler room, etc.), shop rooms used for various types of building maintenance, and miscellaneous storage rooms and spaces. In the east corner of the basement, a lower-level basement (referred to as the sub-basement or bat cave) contains a partial dirt floor and is used for miscellaneous storage of construction materials and hotel supplies.

The sump is a solid, rectangular concrete structure that is approximately 4 feet by 4 feet and extends to a depth of approximately nine feet. The sump collects water from unknown locations via several piping inlets located at variable depths within it. During normal operation, the sump discharges water to the City sanitary sewer to prevent localized flooding of the Hotel sub-basement. Shallow inlets to the sump suggest that one purpose may be to collect and drain water from beneath the basement floor slab.

On September 14, 2023, petroleum-like odors were observed in the basement and sub-basement of the Hotel. Testing of air quality within the basement of the Hotel by the City of Walla Walla Fire Department identified elevated concentrations of volatile organic compounds (VOCs) and combustible gas concentrations at 93 percent of the Lower Explosive Limit (LEL; Ecology, 2023). Further investigation identified gasoline as light non-aqueous phase liquid (LNAPL) in the Hotel sump, as well as two other subsurface features in the basement. The Washington State Department of Ecology (Ecology), and their contractor Clean Harbors, responded and conducted spill response actions that

included the recovery of gasoline as light non-aqueous phase liquid (LNAPL) and contaminated water from the Hotel sump.

The recovered liquid, including both LNAPL and contaminated water, have been treated in an initial treatment system¹ that includes an oil-water separator, a hydrocarbon filter sock, an organoclay filter, and granular activated carbon. The oil-water separator was removed from the initial treatment system in December 2023, approximately six weeks after the last observed recovery of LNAPL. The initial treatment system has been operating since late September 2023 and has been effective at treating water with dissolved-phase concentrations of gasoline in the range of seven milligrams per liter (mg/l) to 54 mg/l to non-detect concentrations (<0.5 milligram per liter [mg/l]).

¹ The initial treatment system is located on the property located at 106 N 2nd Avenue (106 Building) and is being used to treat contaminated water generated by flood-control sumps on both properties.

2 Discharge Criteria

The City has provided discharge criteria for treated wastewater from the Hotel. The discharge quality maximum concentration levels were provided to Stillwater via email on December 5, 2023 (City of Walla Walla, 2023) and originated from the Ecology Water Quality Program Permit Writer's Manual as criteria applicable to independent leaking underground storage tank (LUST) cleanup sites (Ecology, 2018). The discharge criteria for petroleum hydrocarbons, as provided by the City are provided in Table 1.

Table 1. City of Walla Walla Discharge Quality Maximum Concentration Levels

Pollutant	Maximum Discharge Limit
TPH-G	1 ppm
TPH-D	5 ppm
BTEX	200 ppb
Benzene	10 ppb

Notes:

TPH-G = gasoline-range petroleum hydrocarbons

TPH-D = diesel-range petroleum hydrocarbons

BTEX – benzene, toluene, ethylbenzene, and xylenes

ppm = parts per million, equivalent to mg/L

ppb = parts per billion, equivalent to micrograms per liter (ug/L)

3 Wastewater Treatment System

This section describes the design of the wastewater pretreatment system to support an application to the City for a wastewater discharge authorization for the existing Hotel sump.

3.1 Pre-Treatment Components

The treatment system consists of a series of pumps, filters, and granular activated carbon (GAC) canisters to treat the petroleum hydrocarbons and petroleum-related constituents present in the Hotel sump water. Figure 3 provides a Piping and Instrumentation Diagram (P&ID) of the treatment system and Figure 4 provides a conceptual overview of the treatment system.

The treatment system will be staged in the sub-basement on a concrete slab that will be installed to cover the existing dirt floor as part of planned vapor mitigation measures for the Hotel. The GAC canisters will be placed within a secondary containment berm to capture any leaks and will be plumbed to the sump to discharge any captured releases. Although not part of the wastewater treatment system, the details about the vapor intrusion mitigation measures to be implemented concurrently with wastewater treatment system construction can be found on the drawings included in Appendix A. Figure V-1 of these drawings includes a plan view map of the wastewater treatment system components and the tie-in location to the discharge point.

The treatment system will consist of the following:

- Sump pumps – Will consist of two Liberty XLF50 Series pumps (or similar):
 - Pumps are rated at 0-5 horsepower.
 - Configured in a lead-tag system.
 - Estimated initial flow rate set point of 12 to 14 gallons per minute (gpm).
 - Rated for hazardous environments (Class I, Division 2).
 - High and low floats to control pump starts and stops.
 - Mounting brackets and rails for pump access.
- Duplex Control Box – Intrinsically safe:
 - Designed for use in hazardous environments.
 - Fitted with audible and visual alarm for fault conditions.
- Bag filters:
 - Duplex housing or two singular bag filters (one for each line) will be used .
 - Provides redundancy to allow for ability to service one filter and leave system online.
 - Oil absorption multilayered filter bags will be used to assist in the removal of trace oil and grease. Anticipated sizing is 25 microns.

- Carbon drums:
 - Two treatment train legs (A and B) will be used. Each treatment train will consist of three in-line 55-gallon containers (200 pounds each) of GAC. The system will be configured with a lead-lag-polish configuration to mitigate contaminant breakthrough. GAC has a well-established history of use in the removal of petroleum-related compounds.
 - Valving will be configured in such a way to allow for the lead-lag drums to be switched without moving the GAC containers.
- Ancillary equipment:
 - Inline flowmeters will be installed for flow measurement readings on each leg of the treatment train, as well as on the treatment bypass line.
 - Ball, knife, and butterfly valves will be installed to control flow from the pumps, bag filters and carbon containers.
 - Check valves will be used to control water flow direction.
 - Air release valves will be used to provide any necessary air breaks.
 - Sample ports will be installed pre-carbon, post-lead carbon, and post-polish carbon for monitoring and compliance sampling.
 - Flexible housing and cam locks will be used for connecting the carbon containers.

3.2 Pre-treatment Design Calculations

GAC usage in treating petroleum hydrocarbons is an accepted treatment technology in the remediation industry. The removal efficiency of GAC for hydrocarbons is a function of initial concentration, flow rate, and residence time (contact) with the GAC. Published removal efficiencies range from 80% to over 98%, depending on the input variables. We worked with Pacific Coast Carbon to determine GAC usage and estimated discharge concentrations. We assumed:

- GAC containers (200 gallons of carbon) have a maximum rated flow of 10 gpm.
- An assumed flow rate of 10 gpm (per leg) was used; however, the expected design rate will be five to six gpm. As such, the estimated carbon usage calculated is overly conservative for the anticipated flow.
- Input concentration of chemicals of concern were based on sump samples collected on March 28, 2024 (see Appendix B, MWH Sump sample). The inputs include:
 - TPH-G – 17,000 µg/l
 - Benzene – 640 µg/l
 - Toluene – 1,900 µg/l
 - Ethylbenzene – 28 µg/l

- Xylenes – 2,540 µg/l
- Based on the starting concentrations and the requested discharge limits, removal efficiencies required are:
 - TPH-G – 94.1%
 - Benzene – 98.4%
 - BTEX Total – 96.1%

Based on these inputs, it is anticipated that approximately 12 to 15 pounds of GAC will be used per 1,000 gallons treated. As such, the estimated volume of water that can be processed before breakthrough is detected in the lead GAC canister is approximately 15,000 gallons. Breakthrough has been defined as the detection of contaminants above the proposed discharge limits.

The actual volume of water that will be treated will be highly dependent on seasonal rains, snow melt, and groundwater conditions. Between January 2024 and March 2024, the removed volume from the sump averaged 3,000 gallons per week, or less than 17 gallons per hour (gph). At this flow rate, breakthrough of the lead canister would occur after approximately 11 weeks of treatment system operation.

3.3 Operations and Maintenance

The treatment system will require minimal operations and maintenance (O&M), including:

- Prior to use, GAC containers will be pre-wetted with clean water to compact and flush the GAC.
- Pump flow rates will be adjusted via valving to the desired flow rate of five to six gpm per leg (10 to 12 total).
- Pump floats and alarms will be tested during installation.
- Pump service is expected to be minimal over the first two to three years of use.
- Weekly flow readings and pressure readings will be collected.
- Bag filters will be replaced as pressure readings increase. We anticipate that filters will need to be serviced on a monthly basis.
- The initial lead carbon canister change out is expected after ~34,000 gallons of water has been treated. When a change out occurs, the lead drum will be removed, the lag drum will be rotated into the lead position, and the new drum will be installed in the lag position. The polish drum will not be rotated.
- Carbon change-out frequencies will be revised as actual flow rates and revised input concentrations are determined.

4 Discharge Monitoring

Monitoring will be conducted in accordance with the requirements of the City of Walla Walla wastewater discharge authorization. Discharge monitoring during startup and long-term operation is described below, along with analytical testing and reporting requirements.

4.1 Startup Monitoring

During startup and initial operation of the treatment system, discharge monitoring will occur biweekly (once every two weeks) for a period of six weeks. Startup discharge monitoring will consist of recording flow volumes and collecting water samples for analytical testing (Section 4.3). Water samples will be collected from before the lead GAC unit, between the GAC units, and after the lag GAC unit for analytical testing.

4.2 Long-Term Monitoring

Following initial operation of the treatment system, discharge monitoring will occur monthly. Long term monitoring will consist of recording flow volumes and collecting a water sample from between the GAC units for analytical testing.

4.3 Analytical Testing

The samples will be submitted to an Ecology-accredited chemical laboratory for analysis of the following:

- Gasoline-range petroleum hydrocarbons by Northwest Method NWTPH-GX
- BTEX by U.S. Environmental Protection Agency Method 8260D

4.4 Discharge Monitoring Reports

Discharge Monitoring Reports (DMRs) will be submitted to the City on a quarterly basis and include the following:

- Monthly flow volume
- Results of analytical testing

5 References

City of Walla Walla, 2023, Email from Leah Rohan, Environmental Engineer, to Joey Hickey and Ashley Sutton, Geosyntec Consultants, Inc., regarding ER Requirements and Limits Table, December 5, 2023.

Washington State Department of Ecology (Ecology), 2018, Water Quality Program Permit Writer's Manual, publication no. 92-109, revised July 2018.

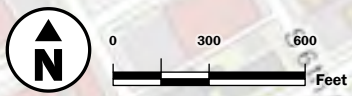
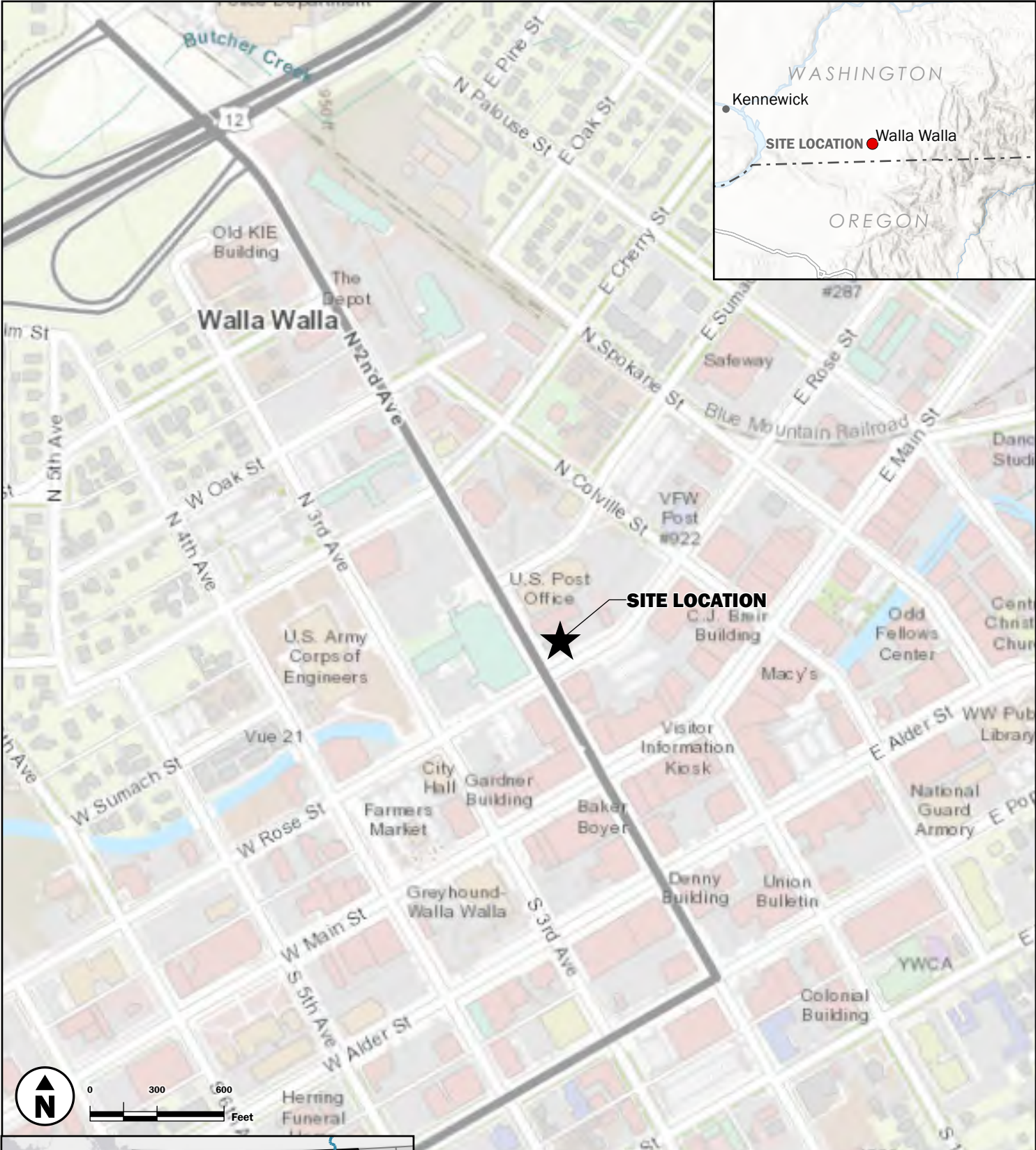
Washington State Department of Ecology (Ecology), 2023, Incident Briefing ICS

6 Limitations

Work for this project was performed for the Stillwater Holdings, LLC (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

FIGURES



Site Location Map

Stillwater Holdings Chevron
Walla Walla, Washington

	FEB-2024	BY: STM / HMD	FIGURE NO. 1
	PROJECT NO. 230442	REVISED BY: --- / ---	

Data source credits: None | Basemap Service Layer Credits: City of Walla Walla, Bureau of Land Management, State of Oregon, State of Oregon DOT, State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, City of Walla Walla, Oregon State Parks, WA State Parks GIS, Esri, TomTom, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, USGS, Esri, HERE, Garmin, USGS, EPA, NPS

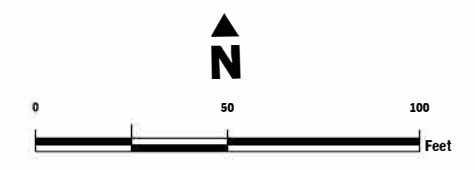
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- Boring
- Test Pit
- Monitoring Well
- Decommissioned Monitoring Well
- Sump
- Sewer Manhole
- Storm Manhole
- Catch Basin
- Bubble Up Catch Basin
- Sewer Main
- Storm Main
- Water Main
- CNGC Gas Main
- CNGC Gas Service Line
- Existing Underground Storage Tanks (UST)
- Decommissioned UST
- Property Boundary
- Walla Walla Tax Parcel

DRAFT

- Notes:
- UST locations approximate from map provided by the City of Walla Walla.
 - Utility locations approximate from map provided by the City of Walla Walla.
 - Monitoring Well locations from survey provided by PBS Engineering and Environmental.
 - Estimated groundwater flow direction approximate from Plateau Geoscience Group Quarterly Monitoring Report, Sept 2012.
 - Decommissioned monitoring well locations approximate from Plateau Geoscience Group Quarterly Monitoring Report, Sept 2012.
 - Sump locations approximate from map provided by Clean Harbors.
 - Parcel boundaries from County of Walla Walla GIS.
 - Mill Creek boundary from WADNR GIS.



Site Map Showing Investigation Locations
 Stillwater Holdings Chevron
 Walla Walla, Washington

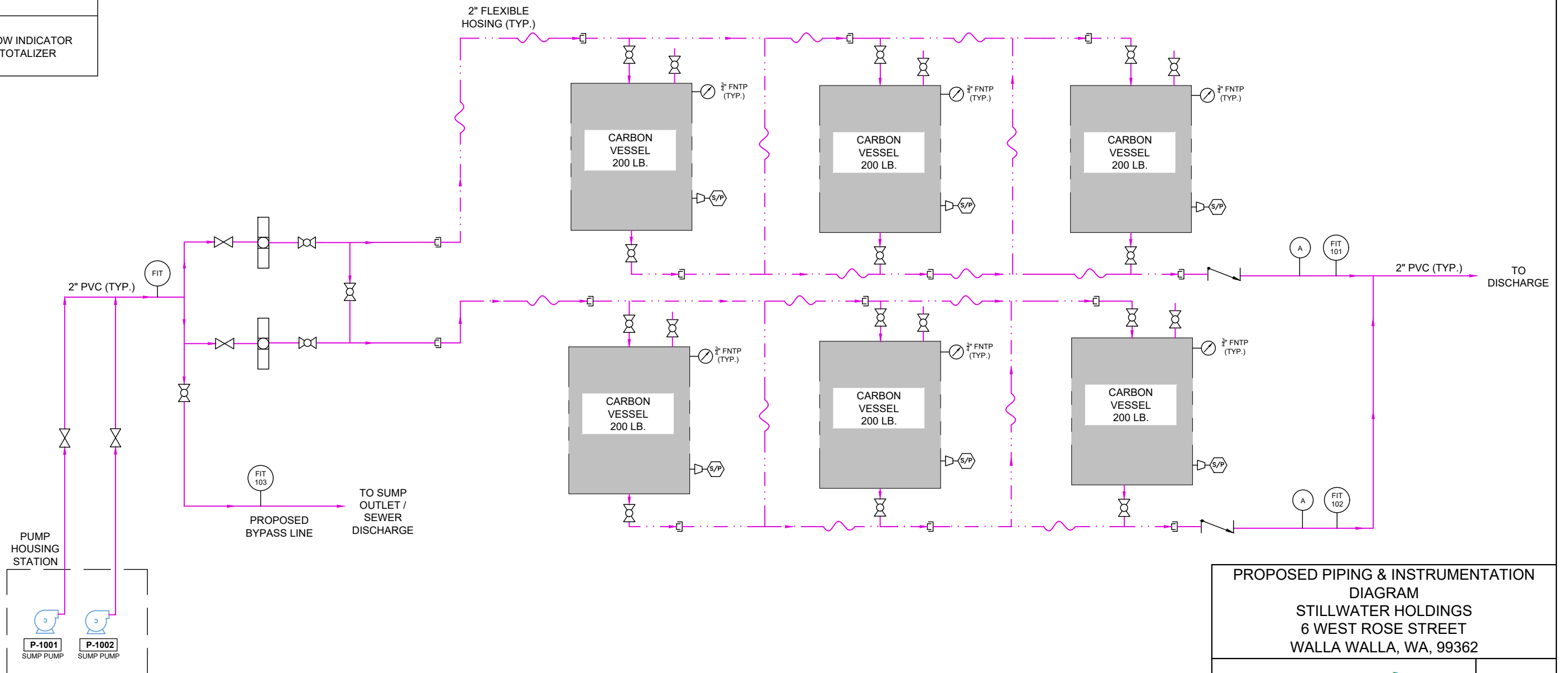
	APR-2024	BY DIM / NLK	FIGURE NO.
	PROJECT NO. 230442	REVISED BY CEB / RAP	2

Data source credits: None | Basemap Service Layer Credits: NA

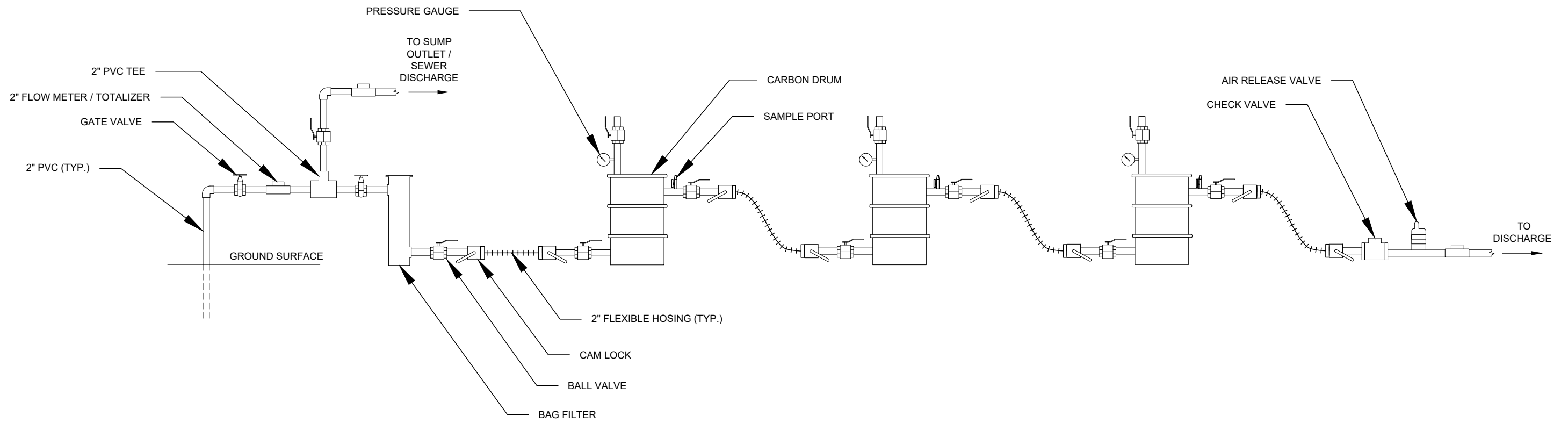
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LEGEND:	
	GATE VALVE
	CHECK VALVE
	BALL VALVE
	AIR RELEASE VALVE
	FLEXIBLE HOISING
	PRESSURE GAUGE
	SAMPLE PORT
	CAM LOCK
	BAG FILTER
	FLOW INDICATOR TOTALIZER

- NOTES:
- DUAL BAG FILTER FOR OPERATIONAL REDUNDANCY - CAN BE OPERATED EITHER AS 2+0 OR 1+1 (DUTY/STANDBY). SKID COMES WITH INLET AND OUTLET BUTTERFLY ISOLATION VALVES.
 - CARBON VESSELS ARE DESIGNED FOR LEAD/LAG/POLISH. FLEXIBLE HOISING CAN BE SWITCHED BETWEEN TANKS TO ALLOW FOR ALL THREE TANKS TO BE IN LEAD/LAG/POLISH CONFIGURATION.
 - ALL VALVES ARE MANUAL.



PROPOSED PIPING & INSTRUMENTATION DIAGRAM STILLWATER HOLDINGS 6 WEST ROSE STREET WALLA WALLA, WA, 99362	
PROJECT NO: AS230442	APRIL 2024
FIGURE 1	

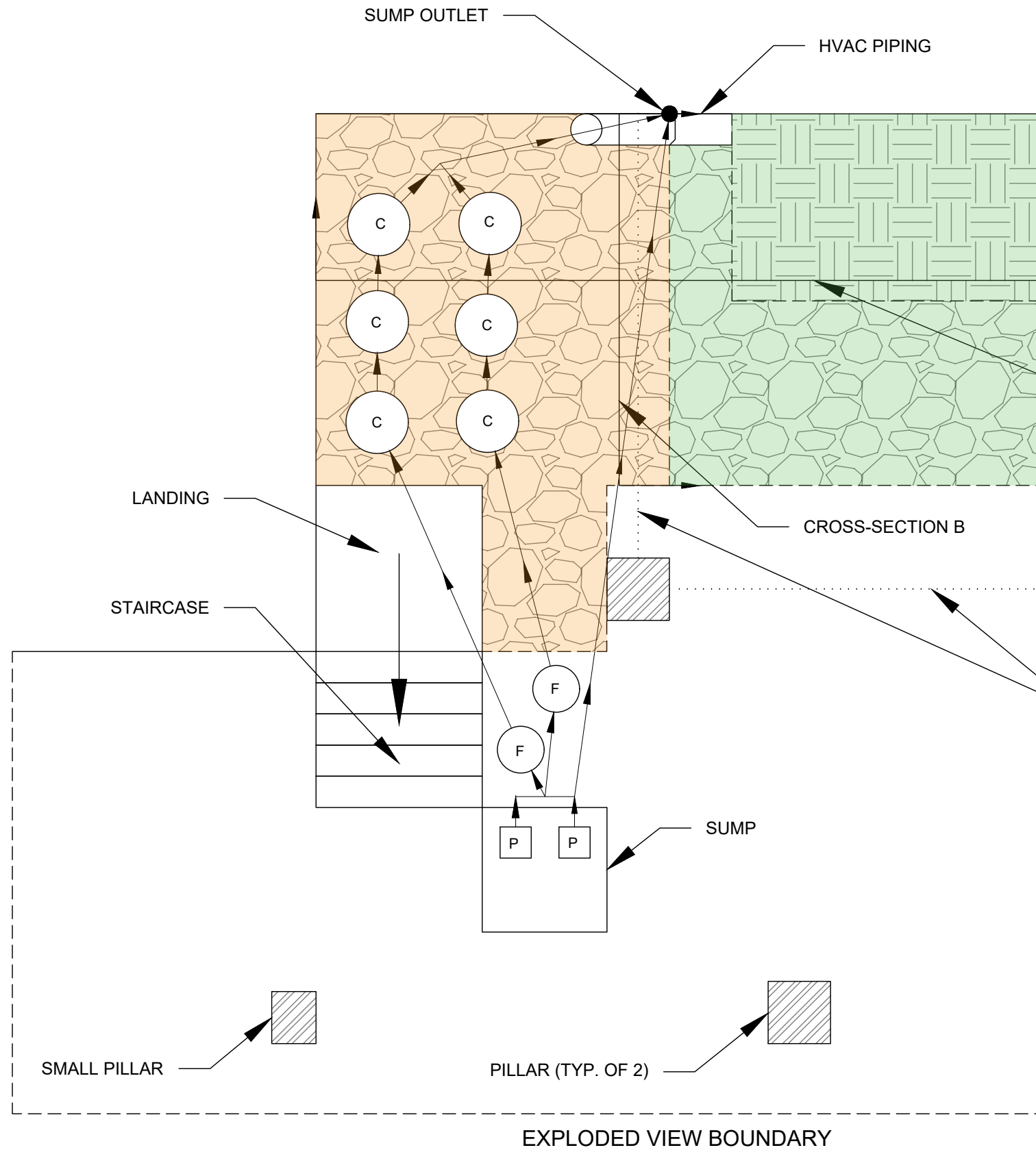


PROPOSED MECHANICAL DRAWING STILLWATER HOLDINGS 6 WEST ROSE STREET WALLA WALLA, WA, 99362	
	FIGURE 2
PROJECT NO: AS230442	APRIL 2024










APPENDIX A

VIMS Plan Details

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LEGEND

-  GRAVEL
-  PILLAR
-  CONCRETE/ROCK OUTCROPPING
-  NEW CONCRETE WITH VAPOR BARRIER MEMBRANE
-  VAPOR BARRIER MEMBRANE WITHOUT CONCRETE COVER
-  CARBON DRUM
-  FILTER CARTRIDGE
-  SUMP PUMP
-  PIPING

NOTE:
VIMS INDICATES VAPOR INTRUSION MITIGATION SYSTEM

*NOT TO SCALE

VIMS PLAN VIEW LAYOUT STILLWATER HOLDINGS 6 WEST ROSE STREET WALLA WALLA, WA, 99362	
	FIGURE V-1
PROJECT NO: AS230442	APRIL 2024

A. GENERAL

1. THE WORK DEPICTED ON THESE DRAWINGS SHALL BE PERFORMED BY AN EXPERIENCED CONTRACTOR WHO HAS A WORKING KNOWLEDGE OF APPLICABLE CODES, STANDARDS, AND INDUSTRY ACCEPTED STANDARD GOOD PRACTICES.
2. NOT EVERY CONDITION OR ELEMENT IS OR CAN BE EXPLICITLY SHOWN ON THESE DRAWINGS; THEREFORE, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. WORK SHALL BE IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL BUILDING, FIRE, ELECTRICAL, PLUMBING, AND MECHANICAL CODES.
4. INSPECTIONS REQUIRED BY BUILDING CODES AND/OR THESE DRAWINGS SHALL BE PROVIDED BY THE BUILDING DEPARTMENT AS APPLICABLE. INSPECTIONS RELATED TO THE VIMS DESIGN SHALL BE PERFORMED BY A TECHNICIAN APPROVED BY GEOSYNTEC CONSULTANTS, INC. (GEOSYNTEC).

B. VAPOR INTRUSION MITIGATION SYSTEM - INTENT AND BASIS

1. THE BUILDING SHOWN ON THESE DRAWINGS IS A HOTEL LOCATED AT 6 WEST ROSE STREET, WALLA WALLA, WASHINGTON. A RELEASE OF GASOLINE FROM A NEARBY FILLING STATION HAS RESULTED IN THE POTENTIAL FOR VOLATILE ORGANIC COMPOUNDS (VOCs) TO MIGRATE FROM THE SUBSURFACE INTO THE INDOOR AIR OF THE BUILDING VIA THE VAPOR INTRUSION PATHWAY.
2. THE INTENT OF THIS DESIGN IS TO INSTALL A NEW SECTION OF CONCRETE SLAB AND VAPOR BARRIER MEMBRANE IN THE HOTEL SUB-BASEMENT THAT WILL BE CONFIGURED FOR IMPLEMENTATION OF A FUTURE VAPOR INTRUSION MITIGATION REMEDY FOR THE SPACE.

C. VAPOR BARRIER MEMBRANE

1. THE MEMBRANE AND GEOTEXTILE INSTALLER SHALL BE AN EXPERIENCED MITIGATION CONTRACTOR, AND CERTIFIED FOR SOIL GAS MITIGATION BY THE AMERICAN ASSOCIATION OF RADON SCIENTISTS AND TECHNOLOGISTS.
2. THE MEMBRANE INSTALLER SHALL FURNISH THE OWNER WITH A 1-YEAR WRITTEN WARRANTY AGAINST DEFECTS IN WORKMANSHIP.
3. VAPOR BARRIER MEMBRANE SHALL BE VIAFLEX VAPORBLOCK® PLUS (VBP20), OR OTHER VAPOR BARRIER MEMBRANE APPROVED BY THE ENGINEER.
4. STORAGE, HANDLING, AND INSTALLATION OF THE VAPOR BARRIER MEMBRANE SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
5. SOIL STOCKPILES, GRAVEL BAGS, GAS PERMEABLE ROCK, NAILS, POSTS, AND/OR STAKES SHALL NOT BE USED TO ANCHOR THE MEMBRANE AT ANY TIME. SANDBAGS MAY BE USED TO TEMPORARILY ANCHOR THE MEMBRANE.
6. THE VAPOR BARRIER MEMBRANE SHALL BE INSTALLED IN THE AREAS SHOWN ON THE DRAWINGS. THE VAPOR BARRIER MEMBRANE SHALL BE ATTACHED 6" MINIMUM TO THE FOOTINGS AND EXISTING SECTIONS OF SLAB IN ACCORDANCE WITH THE VAPOR BARRIER MEMBRANE MANUFACTURER'S RECOMMENDATIONS AS SHOWN ON THE CROSS SECTIONS ON V-3 AND V-4, OR AS OTHERWISE APPROVED BY GEOSYNTEC.
7. ADDITIONALLY, IN LOCATIONS WHERE THE VAPOR BARRIER MEMBRANE IS INSTALLED OUTSIDE OF NEW SECTIONS OF SLAB, IT SHALL BE SECURED TO WALLS, FOOTINGS, OR OTHER EXISTING SECTIONS OF THE BUILDING STRUCTURE USING VIAFLEX 2-INCH BUTYL SEAL TAPE AND STEGO® TERM BAR WITH CONCRETE ANCHORS INSTALLED IN THE PRE-DRILLED HOLE IN THE TERM BAR.
8. PIPES, ELECTRICAL CONDUITS, AND OTHER PENETRATIONS THROUGH THE VAPOR BARRIER MEMBRANE SHALL BE SEALED TO THE MEMBRANE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, AND AS SHOWN ON THE DETAILS ON DRAWINGS V-3 AND V-4.
9. INSTALLATION OF THE VAPOR BARRIER MEMBRANE MUST BE INSPECTED BY GEOSYNTEC PRIOR TO PLACEMENT OF THE CONCRETE FLOOR SLAB.
10. THE CONTRACTOR SHALL TAKE PRECAUTIONS NECESSARY TO AVOID CONTAMINATION OF THE MEMBRANE BY SOLVENTS AND FUELS. IF SOLVENTS AND/OR FUELS ARE SPILLED ON OR OTHERWISE IMPACT THE MEMBRANE, THE CONTRACTOR SHALL REMOVE AND REPLACE THE IMPACTED SECTIONS OF THE MEMBRANE AND ADDITIONAL IMPACTED MATERIALS (SUBGRADE, GAS PERMEABLE AGGREGATE, GEOTEXTILES, ETC.) TO THE SATISFACTION OF THE ENGINEER. MANAGEMENT OF CONTAMINATED MATERIALS SHALL BE CONDUCTED IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

D. VAPOR BARRIER MEMBRANE REPAIR

1. REPAIR PROCEDURES FOR THE VAPOR BARRIER MEMBRANE WILL VARY DEPENDING ON THE DAMAGE TO BE REPAIRED, AND THE STAGE OF THE INSTALLATION PROCESS AT WHICH THE DAMAGE OCCURRED.
2. ADEQUATE SEAL SHOULD BE CONFIRMED ON REPAIRS MADE TO THE VAPOR BARRIER MEMBRANE AFTER COMPLETION OF THE REPAIR.
3. REPAIRS TO THE VAPOR BARRIER MEMBRANE SHALL BE MADE IN ACCORDANCE WITH THE VAPOR BARRIER MEMBRANE MANUFACTURER'S RECOMMENDATIONS.
4. ALL WASTE MATERIALS ASSOCIATED WITH VAPOR BARRIER MEMBRANE REPAIRS SHALL BE MANAGED APPROPRIATELY.
5. PUNCTURES OF THE VAPOR BARRIER MEMBRANE SHALL BE REPAIRED BY TAPING OR SEALING THE PUNCTURES FOLLOWING VAPOR BARRIER MEMBRANE MANUFACTURER RECOMMENDATIONS WITH MATERIAL APPROVED BY THE VAPOR BARRIER MEMBRANE MANUFACTURER.
6. IF A PORTION OF THE FLOOR SLAB OR VAPOR BARRIER MUST BE REMOVED, CONSULT WITH THE GEOSYNTEC TO DETERMINE THE REQUIREMENTS FOR THE REPAIR.
7. IF A PORTION OF THE FLOOR SLAB OR VAPOR BARRIER MUST BE REMOVED, THE VICINITY OF THE EXPOSED SOIL AREA SHALL BE VENTILATED AS NEEDED AND THE AIR EXHAUSTED OUTSIDE THE BUILDING IN A SAFE MANNER UNTIL THE VAPOR BARRIER MEMBRANE HAS BEEN REPLACED.
8. WHILE VENTILATING THE VICINITY OF THE REPAIR AREA AS NEEDED, CONCRETE TO BE REMOVED SHALL BE SAW CUT INTO MANAGEABLE PIECES THAT CAN BE REMOVED WITHOUT DAMAGING ADJACENT FLOOR SLAB OR VAPOR BARRIER AREAS.
9. AFTER THE FLOOR SLAB OR VAPOR BARRIER HAVE BEEN REMOVED AND THE REQUIRED SUB-SLAB WORK PERFORMED, NEW VAPOR BARRIER MEMBRANE MATERIAL SHALL BE PLACED BENEATH THE EXISTING MEMBRANE AT THE PERIMETER OF THE SAW CUT OPENING, AND THE JOINT BETWEEN THE EXISTING AND NEW VAPOR BARRIER MEMBRANES SEALED ACCORDING TO MANUFACTURER RECOMMENDATIONS. AFTER THE NEW AND OLD VAPOR BARRIER MEMBRANES HAVE BEEN SEALED TOGETHER, THE FLOOR SLAB CONCRETE CAN BE REPLACED.

E. GEOTEXTILE AND VAPOR MATTING

1. STORAGE, HANDLING, AND INSTALLATION OF THE GEOTEXTILE AND VAPOR MATTING SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. THE GEOTEXTILE AND VAPOR MATTING INSTALLER SHALL BE RESPONSIBLE AND SHALL PROVIDE SUFFICIENT RESOURCES FOR FIELD HANDLING, DEPLOYING, SEAMING, TEMPORARILY RESTRAINING, AND OTHER ASPECTS OF THE DEPLOYMENT AND INSTALLATION OF THE GEOTEXTILE AND VAPOR MATTING COMPONENTS OF THE PROJECT.
3. A CONTINUOUS LAYER OF ENKAVENT® 6128 VAPOR MATTING SHALL BE PLACED ABOVE THE SUBGRADE IN THE LOCATIONS INDICATED ON DRAWING V-1, FOLLOWING DETAILS IN THE CROSS SECTIONS ON DRAWINGS V-3 AND V-4. THIS LAYER WILL BE REFERRED TO HEREIN AS THE "VAPOR MATTING".
4. A CONTINUOUS LAYER OF 10 OZ/YD² CUSHION GEOTEXTILE (NONWOVEN NEEDLE-PUNCHED) SHALL BE PLACED ABOVE THE VAPOR BARRIER MEMBRANE IN THE LOCATIONS INDICATED ON DRAWING V-1, FOLLOWING DETAILS IN THE CROSS SECTIONS ON DRAWINGS V-3 AND V-4. THE CUSHION GEOTEXTILE DEPLOYED ABOVE THE VAPOR BARRIER MEMBRANE WILL BE REFERRED TO HEREIN AS THE "UPPER CUSHION GEOTEXTILE".
5. GRAVEL BAGS SHALL NOT BE USED TO SECURE GEOTEXTILES. SANDBAGS MAY BE USED TO TEMPORARILY SECURE GEOTEXTILES.
6. ANY HOLES OR TEARS IN THE GEOTEXTILE OR VAPOR MATTING SHALL BE REPAIRED USING A PATCH MADE FROM THE SAME MATERIAL. PATCHES SHALL BE OVERLAPPED A MINIMUM OF 6 INCHES. SHOULD ANY TEAR EXCEED 50% OF THE WIDTH OF THE ROLL, THAT ROLL SHALL BE REMOVED AND REPLACED.
7. CARE SHOULD BE TAKEN SUCH THAT MINIMUM SLIPPAGE OCCURS BETWEEN THE GEOTEXTILE, VAPOR MATTING, AND UNDERLYING LAYERS DURING PLACEMENT.

GENERAL NOTES AND SPECIFICATIONS
 STILLWATER HOLDINGS
 6 WEST ROSE STREET
 WALLA WALLA, WA, 99362



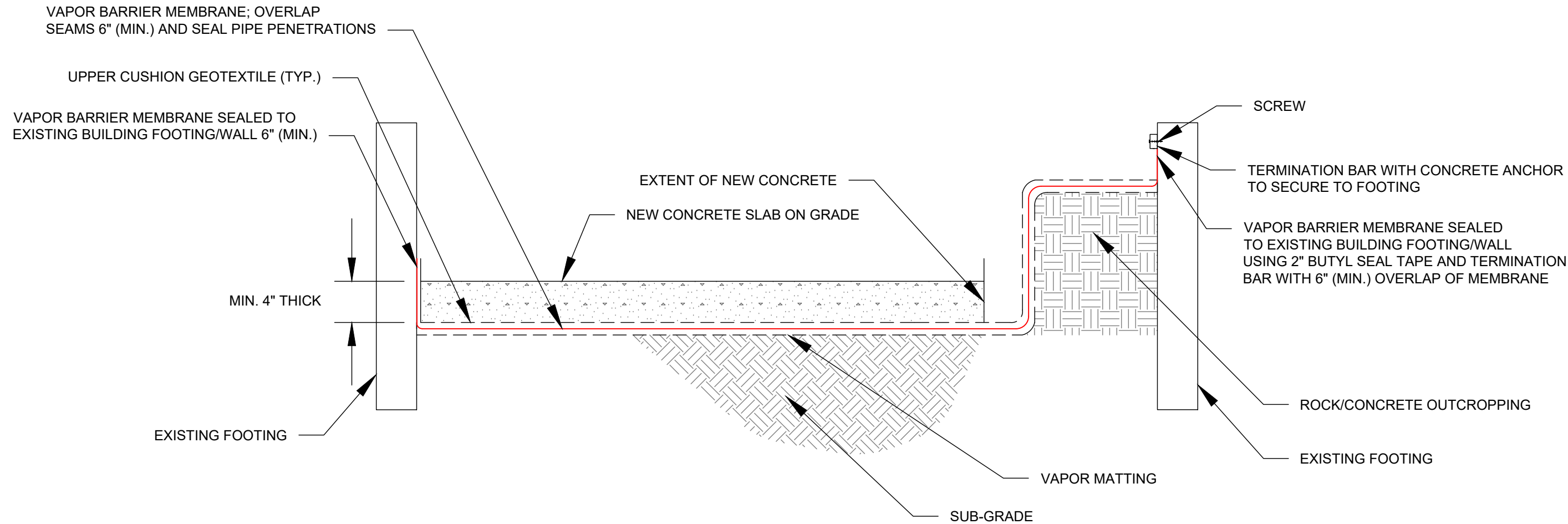
FIGURE

V-2

PROJECT NO: AS230442

APRIL 2024

CROSS-SECTION A



*NOT TO SCALE

NOTES:

1. INDIVIDUAL SECTIONS OF VAPOR BARRIER MEMBRANE SHALL OVERLAP AT LEAST 6" AND THE RESULTING SEAM(S) BETWEEN SECTIONS SEALED.
2. SUB-GRADE SHALL BE EXCAVATED AND GRADED TO ALLOW FOR INSTALLATION OF MIN. 4" THICK CONCRETE SLAB, AND VAPOR MATTING, LEVEL WITH ADJACENT SECTIONS OF EXISTING SLAB.
3. COMPACTION OF SUB-GRADE SHALL BE MINIMIZED TO THE EXTENT NEEDED FOR INSTALLATION OF OVERLYING CONCRETE SLAB.

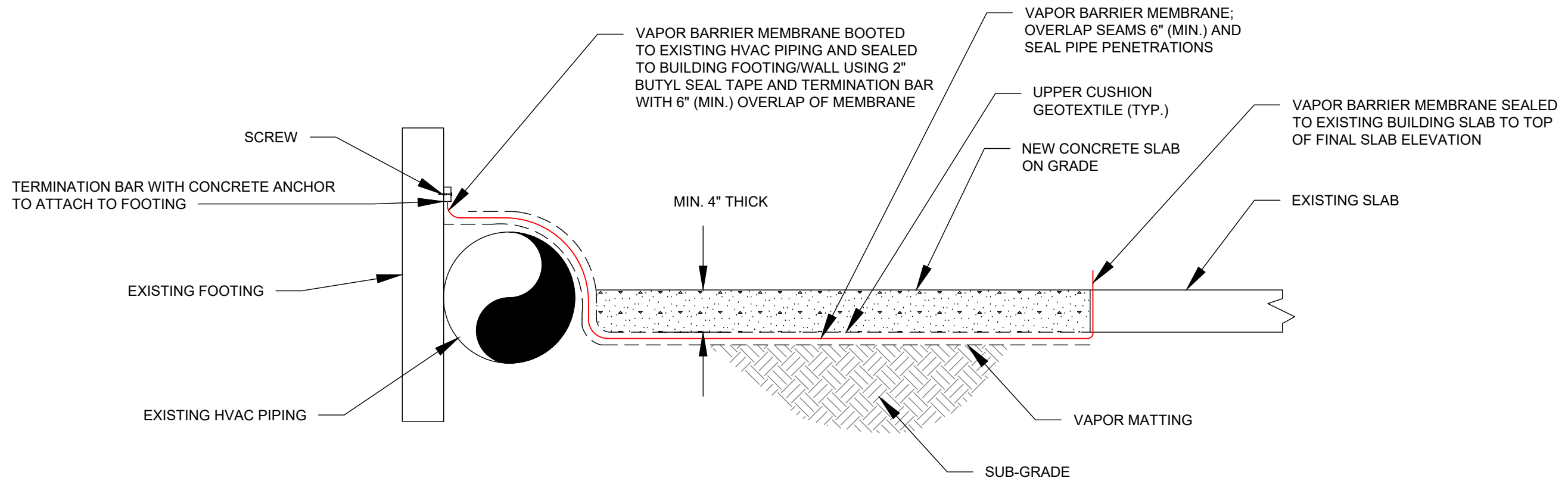
VIMS CROSS-SECTION A
 STILLWATER HOLDINGS
 6 WEST ROSE STREET
 WALLA WALLA, WA, 99362



FIGURE
 V-3

PROJECT NO: AS230442 APRIL 2024

CROSS-SECTION B



*NOT TO SCALE

NOTES:

1. INDIVIDUAL SECTIONS OF VAPOR BARRIER MEMBRANE SHALL OVERLAP AT LEAST 6" AND THE RESULTING SEAM(S) BETWEEN SECTIONS SEALED.
2. SUB-GRADE SHALL BE EXCAVATED AND GRADED TO ALLOW FOR INSTALLATION OF MIN. 4" THICK CONCRETE SLAB, AND VAPOR MATTING, LEVEL WITH ADJACENT SECTIONS OF EXISTING SLAB.
3. COMPACTION OF SUB-GRADE SHALL BE MINIMIZED TO THE EXTENT NEEDED FOR INSTALLATION OF OVERLYING CONCRETE SLAB.

VIMS CROSS-SECTION B
 STILLWATER HOLDINGS
 6 WEST ROSE STREET
 WALLA WALLA, WA, 99362

Geosyntec
 consultants

FIGURE

V-4

PROJECT NO: AS230442

APRIL 2024

APPENDIX B

Laboratory Analytical Data



April 16, 2024

Ms. Carla Brock
Aspect Consulting, LLC
710 - 2nd Ave, Suite 550
Seattle, WA 98104

Dear Ms. Brock,

On March 29th, 2 samples were received by our laboratory and assigned our laboratory project number EV24030258. The project was identified as your Stillwater Holdings . The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Aspect Consulting, LLC 710 - 2nd Ave, Suite 550 Seattle, WA 98104	DATE:	4/16/2024
CLIENT CONTACT:	Carla Brock	ALS JOB#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	ALS SAMPLE#:	EV24030258-01
CLIENT SAMPLE ID	106 SUMP	DATE RECEIVED:	03/29/2024
		COLLECTION DATE:	3/28/2024 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	9900	500	10	UG/L	04/03/2024	MNC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	04/01/2024	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2024	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	04/01/2024	DLC
Acrylonitrile	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloroform	EPA-8260	5.1	2.0	1	UG/L	04/01/2024	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Benzene	EPA-8260	270	40	20	UG/L	04/02/2024	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
tert-Butanol	EPA-8260	U	20	1	UG/L	04/01/2024	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Toluene	EPA-8260	1400	200	100	UG/L	04/02/2024	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Aspect Consulting, LLC 710 - 2nd Ave, Suite 550 Seattle, WA 98104	DATE:	4/16/2024
CLIENT CONTACT:	Carla Brock	ALS JOB#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	ALS SAMPLE#:	EV24030258-01
CLIENT SAMPLE ID	106 SUMP	DATE RECEIVED:	03/29/2024
		COLLECTION DATE:	3/28/2024 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2024	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Ethylbenzene	EPA-8260	160	40	20	UG/L	04/02/2024	DLC
m,p-Xylene	EPA-8260	870	80	20	UG/L	04/02/2024	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
o-Xylene	EPA-8260	450	40	20	UG/L	04/02/2024	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Isopropylbenzene	EPA-8260	6.5	2.0	1	UG/L	04/01/2024	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
N-Propyl Benzene	EPA-8260	15	2.0	1	UG/L	04/01/2024	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,3,5-Trimethylbenzene	EPA-8260	110	40	20	UG/L	04/02/2024	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2,4-Trimethylbenzene	EPA-8260	310	40	20	UG/L	04/02/2024	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
P-Isopropyltoluene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Naphthalene	EPA-8260	54	40	20	UG/L	04/02/2024	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Fats/Oils/Grease (Total)	EPA-1664	U	5.0	1	MG/L	04/11/2024	MAH
Biochemical Oxygen Demand (BOD)	SM5210B	13	5.0	1	MG/L	03/29/2024	MJC
Total Suspended Solids	SM2540D	U	25	1	MG/L	04/03/2024	MNC
pH	SM4500H	7.12 HT07	± 0.01	1	S.U.	03/29/2024	MJC
Cyanide	SM4500-CN E	U	0.050	1	MG/L	03/29/2024	EBS
Mercury	EPA-245.1	U	0.20	1	UG/L	04/04/2024	RAL
Arsenic	EPA-200.8	1.6	1.0	1	UG/L	04/05/2024	EBS



CERTIFICATE OF ANALYSIS

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CLIENT PROJECT:	Stillwater Holdings	ALS SAMPLE#:	EV24030258-01
CLIENT SAMPLE ID	106 SUMP	DATE RECEIVED:	03/29/2024
		COLLECTION DATE:	3/28/2024 8:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium	EPA-200.8	U	1.0	1	UG/L	04/05/2024	EBS
Chromium	EPA-200.8	U	2.0	1	UG/L	04/05/2024	EBS
Copper	EPA-200.8	2.3	2.0	1	UG/L	04/05/2024	EBS
Lead	EPA-200.8	1.1	1.0	1	UG/L	04/05/2024	EBS
Nickel	EPA-200.8	U	2.0	1	UG/L	04/05/2024	EBS
Silver	EPA-200.8	U	1.0	1	UG/L	04/05/2024	EBS
Zinc	EPA-200.8	9.0	2.5	1	UG/L	04/05/2024	EBS
Ammonia	EPA-350.1	U	0.010	1	MG/L	04/04/2024	CAS
Total Kjeldahl Nitrogen (TKN)	EPA-351.1	0.52	0.20	1	MG/L	04/11/2024	CAS
Total Phosphorous	EPA-365.1	0.15	0.010	1	MG/L	04/11/2024	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	77.2	04/03/2024	MNC
1,2-Dichloroethane-d4	EPA-8260	91.2	04/01/2024	DLC
1,2-Dichloroethane-d4 20X Dilution	EPA-8260	93.9	04/02/2024	DLC
1,2-Dichloroethane-d4 100X Dilution	EPA-8260	94.1	04/02/2024	DLC
Toluene-d8	EPA-8260	102	04/01/2024	DLC
Toluene-d8 20X Dilution	EPA-8260	105	04/02/2024	DLC
Toluene-d8 100X Dilution	EPA-8260	104	04/02/2024	DLC
4-Bromofluorobenzene	EPA-8260	96.2	04/01/2024	DLC
4-Bromofluorobenzene 20X Dilution	EPA-8260	95.9	04/02/2024	DLC
4-Bromofluorobenzene 100X Dilution	EPA-8260	101	04/02/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated. Chromatogram indicates that it is likely that sample contains lightly weathered gasoline.



CERTIFICATE OF ANALYSIS

CLIENT:	Aspect Consulting, LLC 710 - 2nd Ave, Suite 550 Seattle, WA 98104	DATE:	4/16/2024
CLIENT CONTACT:	Carla Brock	ALS JOB#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	ALS SAMPLE#:	EV24030258-02
CLIENT SAMPLE ID	MWH SUMP	DATE RECEIVED:	03/29/2024
		COLLECTION DATE:	3/28/2024 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
TPH-Volatile Range	NWTPH-GX	17000	500	10	UG/L	04/03/2024	MNC
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	04/01/2024	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Carbon Disulfide	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Acetone	EPA-8260	U	25	1	UG/L	04/01/2024	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	04/01/2024	DLC
Acrylonitrile	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2-Butanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Cis-1,2-Dichloroethene	EPA-8260	2.4	2.0	1	UG/L	04/01/2024	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Benzene	EPA-8260	640	100	50	UG/L	04/02/2024	DLC
Trichloroethene	EPA-8260	2.2	2.0	1	UG/L	04/01/2024	DLC
tert-Butanol	EPA-8260	U	20	1	UG/L	04/01/2024	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
4-Methyl-2-Pentanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
Toluene	EPA-8260	1900	100	50	UG/L	04/02/2024	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2-Hexanone	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Tetrachloroethylene	EPA-8260	5.8	2.0	1	UG/L	04/01/2024	DLC



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT:	Carla Brock	ALS JOB#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	ALS SAMPLE#:	EV24030258-02
CLIENT SAMPLE ID	MWH SUMP	DATE RECEIVED:	03/29/2024
		COLLECTION DATE:	3/28/2024 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	04/01/2024	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Ethylbenzene	EPA-8260	28	2.0	1	UG/L	04/01/2024	DLC
m,p-Xylene	EPA-8260	1700	200	50	UG/L	04/02/2024	DLC
Styrene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
o-Xylene	EPA-8260	840	100	50	UG/L	04/02/2024	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Isopropylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
N-Propyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,3,5-Trimethylbenzene	EPA-8260	200	100	50	UG/L	04/02/2024	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
T-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2,4-Trimethylbenzene	EPA-8260	590	100	50	UG/L	04/02/2024	DLC
S-Butyl Benzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
P-Isopropyltoluene	EPA-8260	3.1	2.0	1	UG/L	04/01/2024	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
N-Butylbenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	04/01/2024	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Naphthalene	EPA-8260	110	100	50	UG/L	04/02/2024	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	04/01/2024	DLC
Fats/Oils/Grease (Total)	EPA-1664	U	5.0	1	MG/L	04/11/2024	MAH
Biochemical Oxygen Demand (BOD)	SM5210B	10	5.0	1	MG/L	03/29/2024	MJC
Total Suspended Solids	SM2540D	U	25	1	MG/L	04/03/2024	MNC
pH	SM4500H	7.42 HT07	± 0.01	1	S.U.	03/29/2024	MJC
Cyanide	SM4500-CN E	U	0.050	1	MG/L	03/29/2024	EBS
Mercury	EPA-245.1	U	0.20	1	UG/L	04/04/2024	RAL
Arsenic	EPA-200.8	2.8	1.0	1	UG/L	04/05/2024	EBS



CERTIFICATE OF ANALYSIS

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CLIENT SAMPLE ID	MWH SUMP	DATE RECEIVED:	03/29/2024
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		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Cadmium	EPA-200.8	U	1.0	1	UG/L	04/05/2024	EBS
Chromium	EPA-200.8	U	2.0	1	UG/L	04/05/2024	EBS
Copper	EPA-200.8	U	2.0	1	UG/L	04/05/2024	EBS
Lead	EPA-200.8	U	1.0	1	UG/L	04/05/2024	EBS
Nickel	EPA-200.8	2.0	2.0	1	UG/L	04/05/2024	EBS
Silver	EPA-200.8	U	1.0	1	UG/L	04/05/2024	EBS
Zinc	EPA-200.8	4.7	2.5	1	UG/L	04/05/2024	EBS
Ammonia	EPA-350.1	U	0.010	1	MG/L	04/04/2024	CAS
Total Kjeldahl Nitrogen (TKN)	EPA-351.1	0.30	0.20	1	MG/L	04/11/2024	CAS
Total Phosphorous	EPA-365.1	0.080	0.010	1	MG/L	04/11/2024	CAS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	86.3	04/03/2024	MNC
1,2-Dichloroethane-d4	EPA-8260	88.0	04/01/2024	DLC
1,2-Dichloroethane-d4 50X Dilution	EPA-8260	94.6	04/02/2024	DLC
Toluene-d8	EPA-8260	110	04/01/2024	DLC
Toluene-d8 50X Dilution	EPA-8260	105	04/02/2024	DLC
4-Bromofluorobenzene	EPA-8260	102	04/01/2024	DLC
4-Bromofluorobenzene 50X Dilution	EPA-8260	96.9	04/02/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

HT07 -Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated. Chromatogram indicates that it is likely that sample contains lightly weathered gasoline.



CERTIFICATE OF ANALYSIS

CLIENT: Aspect Consulting, LLC
 710 - 2nd Ave, Suite 550
 Seattle, WA 98104

DATE: 4/16/2024
 ALS SDG#: EV24030258
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Carla Brock
 CLIENT PROJECT: Stillwater Holdings

LABORATORY BLANK RESULTS

MBG-040224W - Batch 209876 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	04/02/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-040124W2 - Batch 210049 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	04/01/2024	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Carbon Disulfide	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Acetone	EPA-8260	U	UG/L	25	04/01/2024	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	04/01/2024	DLC
Acrylonitrile	EPA-8260	U	UG/L	10	04/01/2024	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
2-Butanone	EPA-8260	U	UG/L	10	04/01/2024	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Chloroform	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Benzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
tert-Butanol	EPA-8260	U	UG/L	20	04/01/2024	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
4-Methyl-2-Pentanone	EPA-8260	U	UG/L	10	04/01/2024	DLC
Toluene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC



CERTIFICATE OF ANALYSIS

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 710 - 2nd Ave, Suite 550
 Seattle, WA 98104

DATE: 4/16/2024
 ALS SDG#: EV24030258
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Carla Brock
 CLIENT PROJECT: Stillwater Holdings

LABORATORY BLANK RESULTS

MB-040124W2 - Batch 210049 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
2-Hexanone	EPA-8260	U	UG/L	10	04/01/2024	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	04/01/2024	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	04/01/2024	DLC
Styrene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Bromoform	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Isopropylbenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
N-Propyl Benzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
T-Butyl Benzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
S-Butyl Benzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
P-Isopropyltoluene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
N-Butylbenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	04/01/2024	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
Naphthalene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	04/01/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R464019 - Batch R464019 - Water by EPA-1664

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Fats/Oils/Grease (Total)	EPA-1664	U	MG/L	5.0	04/11/2024	MAH



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CLIENT PROJECT:	Stillwater Holdings	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MBLK-R464019 - Batch R464019 - Water by EPA-1664

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R463047 - Batch R463047 - Water by SM5210B

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Biochemical Oxygen Demand (BOD)	SM5210B	U	MG/L	5.0	03/29/2024	MJC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R463033 - Batch R463033 - Water by SM2540D

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Total Suspended Solids	SM2540D	U	MG/L	25	04/03/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R463046 - Batch R463046 - Water by SM4500-CN E

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Cyanide	SM4500-CN E	U	MG/L	0.050	03/29/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R463159 - Batch R463159 - Water by EPA-245.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-245.1	U	UG/L	0.20	04/04/2024	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-040424W - Batch 209993 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-200.8	U	UG/L	1.0	04/05/2024	EBS
Cadmium	EPA-200.8	U	UG/L	1.0	04/05/2024	EBS
Chromium	EPA-200.8	U	UG/L	2.0	04/05/2024	EBS
Copper	EPA-200.8	U	UG/L	2.0	04/05/2024	EBS
Lead	EPA-200.8	U	UG/L	1.0	04/05/2024	EBS
Nickel	EPA-200.8	U	UG/L	2.0	04/05/2024	EBS
Silver	EPA-200.8	U	UG/L	1.0	04/05/2024	EBS
Zinc	EPA-200.8	U	UG/L	2.5	04/05/2024	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

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LABORATORY BLANK RESULTS

MBLK-R464107 - Batch R464107 - Water by EPA-350.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Ammonia	EPA-350.1	U	MG/L	0.010	04/04/2024	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R464108 - Batch R464108 - Water by EPA-351.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Total Kjeldahl Nitrogen (TKN)	EPA-351.1	U	MG/L	0.20	04/11/2024	CAS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R464110 - Batch R464110 - Water by EPA-365.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Total Phosphorous	EPA-365.1	U	MG/L	0.010	04/11/2024	CAS

U - Analyte analyzed for but not detected at level above reporting limit.



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 CLIENT PROJECT: Stillwater Holdings

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 209876 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	84.8			66.5	122.7	04/02/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	95.3	12		66.5	122.7	04/02/2024	MNC

ALS Test Batch ID: 210049 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Dichlorodifluoromethane - BS	EPA-8260	141			50	150	04/01/2024	DLC
Dichlorodifluoromethane - BSD	EPA-8260	141	0		50	150	04/01/2024	DLC
Chloromethane - BS	EPA-8260	95.2			50	150	04/01/2024	DLC
Chloromethane - BSD	EPA-8260	99.1	4		50	150	04/01/2024	DLC
Vinyl Chloride - BS	EPA-8260	94.8			50	150	04/01/2024	DLC
Vinyl Chloride - BSD	EPA-8260	96.0	1		50	150	04/01/2024	DLC
Bromomethane - BS	EPA-8260	67.0			50	150	04/01/2024	DLC
Bromomethane - BSD	EPA-8260	70.4	5		50	150	04/01/2024	DLC
Chloroethane - BS	EPA-8260	110			50	150	04/01/2024	DLC
Chloroethane - BSD	EPA-8260	111	1		50	150	04/01/2024	DLC
Carbon Tetrachloride - BS	EPA-8260	119			50	150	04/01/2024	DLC
Carbon Tetrachloride - BSD	EPA-8260	120	1		50	150	04/01/2024	DLC
Trichlorofluoromethane - BS	EPA-8260	118			50	150	04/01/2024	DLC
Trichlorofluoromethane - BSD	EPA-8260	119	1		50	150	04/01/2024	DLC
Carbon Disulfide - BS	EPA-8260	114			50	150	04/01/2024	DLC
Carbon Disulfide - BSD	EPA-8260	116	1		50	150	04/01/2024	DLC
Acetone - BS	EPA-8260	67.4			50	150	04/01/2024	DLC
Acetone - BSD	EPA-8260	71.7	6		50	150	04/01/2024	DLC
1,1-Dichloroethene - BS	EPA-8260	108			72.5	136	04/01/2024	DLC
1,1-Dichloroethene - BSD	EPA-8260	109	1		72.5	136	04/01/2024	DLC
Methylene Chloride - BS	EPA-8260	115			50	150	04/01/2024	DLC
Methylene Chloride - BSD	EPA-8260	125	8		50	150	04/01/2024	DLC
Acrylonitrile - BS	EPA-8260	106			50	150	04/01/2024	DLC
Acrylonitrile - BSD	EPA-8260	107	1		50	150	04/01/2024	DLC
Methyl T-Butyl Ether - BS	EPA-8260	101			50	150	04/01/2024	DLC
Methyl T-Butyl Ether - BSD	EPA-8260	105	4		50	150	04/01/2024	DLC
Trans-1,2-Dichloroethene - BS	EPA-8260	110			50	150	04/01/2024	DLC
Trans-1,2-Dichloroethene - BSD	EPA-8260	111	1		50	150	04/01/2024	DLC
1,1-Dichloroethane - BS	EPA-8260	108			50	150	04/01/2024	DLC
1,1-Dichloroethane - BSD	EPA-8260	110	2		50	150	04/01/2024	DLC
2-Butanone - BS	EPA-8260	98.7			50	150	04/01/2024	DLC
2-Butanone - BSD	EPA-8260	102	4		50	150	04/01/2024	DLC
Cis-1,2-Dichloroethene - BS	EPA-8260	107			50	150	04/01/2024	DLC



CERTIFICATE OF ANALYSIS

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CLIENT CONTACT: Carla Brock
CLIENT PROJECT: Stillwater Holdings

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Cis-1,2-Dichloroethene - BSD	EPA-8260	109	2		50	150	04/01/2024	DLC
2,2-Dichloropropane - BS	EPA-8260	115			50	150	04/01/2024	DLC
2,2-Dichloropropane - BSD	EPA-8260	114	1		50	150	04/01/2024	DLC
Bromochloromethane - BS	EPA-8260	92.9			50	150	04/01/2024	DLC
Bromochloromethane - BSD	EPA-8260	95.0	2		50	150	04/01/2024	DLC
Chloroform - BS	EPA-8260	104			50	150	04/01/2024	DLC
Chloroform - BSD	EPA-8260	106	2		50	150	04/01/2024	DLC
1,1,1-Trichloroethane - BS	EPA-8260	108			50	150	04/01/2024	DLC
1,1,1-Trichloroethane - BSD	EPA-8260	109	1		50	150	04/01/2024	DLC
1,1-Dichloropropene - BS	EPA-8260	114			50	150	04/01/2024	DLC
1,1-Dichloropropene - BSD	EPA-8260	114	1		50	150	04/01/2024	DLC
1,2-Dichloroethane - BS	EPA-8260	82.9			50	150	04/01/2024	DLC
1,2-Dichloroethane - BSD	EPA-8260	85.9	4		50	150	04/01/2024	DLC
Benzene - BS	EPA-8260	105			74.7	143	04/01/2024	DLC
Benzene - BSD	EPA-8260	107	2		74.7	143	04/01/2024	DLC
Trichloroethene - BS	EPA-8260	98.8			74.4	141	04/01/2024	DLC
Trichloroethene - BSD	EPA-8260	100	1		74.4	141	04/01/2024	DLC
tert-Butanol - BS	EPA-8260	82.8			50	150	04/01/2024	DLC
tert-Butanol - BSD	EPA-8260	90.4	9		50	150	04/01/2024	DLC
1,2-Dichloropropane - BS	EPA-8260	100			50	150	04/01/2024	DLC
1,2-Dichloropropane - BSD	EPA-8260	103	2		50	150	04/01/2024	DLC
Dibromomethane - BS	EPA-8260	96.6			50	150	04/01/2024	DLC
Dibromomethane - BSD	EPA-8260	100	4		50	150	04/01/2024	DLC
Bromodichloromethane - BS	EPA-8260	95.5			50	150	04/01/2024	DLC
Bromodichloromethane - BSD	EPA-8260	98.3	3		50	150	04/01/2024	DLC
Trans-1,3-Dichloropropene - BS	EPA-8260	99.3			50	150	04/01/2024	DLC
Trans-1,3-Dichloropropene - BSD	EPA-8260	107	7		50	150	04/01/2024	DLC
4-Methyl-2-Pentanone - BS	EPA-8260	94.3			50	150	04/01/2024	DLC
4-Methyl-2-Pentanone - BSD	EPA-8260	99.5	5		50	150	04/01/2024	DLC
Toluene - BS	EPA-8260	105			71.7	139	04/01/2024	DLC
Toluene - BSD	EPA-8260	107	2		71.7	139	04/01/2024	DLC
Cis-1,3-Dichloropropene - BS	EPA-8260	99.3			50	150	04/01/2024	DLC
Cis-1,3-Dichloropropene - BSD	EPA-8260	102	3		50	150	04/01/2024	DLC
1,1,2-Trichloroethane - BS	EPA-8260	96.6			50	150	04/01/2024	DLC
1,1,2-Trichloroethane - BSD	EPA-8260	104	7		50	150	04/01/2024	DLC
2-Hexanone - BS	EPA-8260	93.6			50	150	04/01/2024	DLC
2-Hexanone - BSD	EPA-8260	102	9		50	150	04/01/2024	DLC
1,3-Dichloropropane - BS	EPA-8260	97.3			50	150	04/01/2024	DLC
1,3-Dichloropropane - BSD	EPA-8260	105	8		50	150	04/01/2024	DLC
Tetrachloroethylene - BS	EPA-8260	94.9			50	150	04/01/2024	DLC



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LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Tetrachloroethylene - BSD	EPA-8260	96.0	1		50	150	04/01/2024	DLC
Dibromochloromethane - BS	EPA-8260	101			50	150	04/01/2024	DLC
Dibromochloromethane - BSD	EPA-8260	107	6		50	150	04/01/2024	DLC
1,2-Dibromoethane - BS	EPA-8260	99.5			50	150	04/01/2024	DLC
1,2-Dibromoethane - BSD	EPA-8260	108	8		50	150	04/01/2024	DLC
Chlorobenzene - BS	EPA-8260	104			73	131	04/01/2024	DLC
Chlorobenzene - BSD	EPA-8260	111	6		73	131	04/01/2024	DLC
1,1,1,2-Tetrachloroethane - BS	EPA-8260	97.2			50	150	04/01/2024	DLC
1,1,1,2-Tetrachloroethane - BSD	EPA-8260	104	7		50	150	04/01/2024	DLC
Ethylbenzene - BS	EPA-8260	104			50	150	04/01/2024	DLC
Ethylbenzene - BSD	EPA-8260	111	6		50	150	04/01/2024	DLC
m,p-Xylene - BS	EPA-8260	105			50	150	04/01/2024	DLC
m,p-Xylene - BSD	EPA-8260	111	6		50	150	04/01/2024	DLC
Styrene - BS	EPA-8260	105			50	150	04/01/2024	DLC
Styrene - BSD	EPA-8260	111	6		50	150	04/01/2024	DLC
o-Xylene - BS	EPA-8260	104			50	150	04/01/2024	DLC
o-Xylene - BSD	EPA-8260	111	6		50	150	04/01/2024	DLC
Bromoform - BS	EPA-8260	98.8			50	150	04/01/2024	DLC
Bromoform - BSD	EPA-8260	107	8		50	150	04/01/2024	DLC
Isopropylbenzene - BS	EPA-8260	106			50	150	04/01/2024	DLC
Isopropylbenzene - BSD	EPA-8260	112	5		50	150	04/01/2024	DLC
1,1,2,2-Tetrachloroethane - BS	EPA-8260	107			50	150	04/01/2024	DLC
1,1,2,2-Tetrachloroethane - BSD	EPA-8260	125	16		50	150	04/01/2024	DLC
1,2,3-Trichloropropane - BS	EPA-8260	99.1			50	150	04/01/2024	DLC
1,2,3-Trichloropropane - BSD	EPA-8260	117	17		50	150	04/01/2024	DLC
Bromobenzene - BS	EPA-8260	95.3			50	150	04/01/2024	DLC
Bromobenzene - BSD	EPA-8260	109	14		50	150	04/01/2024	DLC
N-Propyl Benzene - BS	EPA-8260	105			50	150	04/01/2024	DLC
N-Propyl Benzene - BSD	EPA-8260	119	13		50	150	04/01/2024	DLC
2-Chlorotoluene - BS	EPA-8260	97.3			50	150	04/01/2024	DLC
2-Chlorotoluene - BSD	EPA-8260	111	13		50	150	04/01/2024	DLC
1,3,5-Trimethylbenzene - BS	EPA-8260	103			50	150	04/01/2024	DLC
1,3,5-Trimethylbenzene - BSD	EPA-8260	117	13		50	150	04/01/2024	DLC
4-Chlorotoluene - BS	EPA-8260	100			50	150	04/01/2024	DLC
4-Chlorotoluene - BSD	EPA-8260	114	13		50	150	04/01/2024	DLC
T-Butyl Benzene - BS	EPA-8260	112			50	150	04/01/2024	DLC
T-Butyl Benzene - BSD	EPA-8260	128	13		50	150	04/01/2024	DLC
1,2,4-Trimethylbenzene - BS	EPA-8260	103			50	150	04/01/2024	DLC
1,2,4-Trimethylbenzene - BSD	EPA-8260	117	13		50	150	04/01/2024	DLC
S-Butyl Benzene - BS	EPA-8260	110			50	150	04/01/2024	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Aspect Consulting, LLC
 710 - 2nd Ave, Suite 550
 Seattle, WA 98104

DATE: 4/16/2024
 ALS SDG#: EV24030258
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Carla Brock
 CLIENT PROJECT: Stillwater Holdings

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
S-Butyl Benzene - BSD	EPA-8260	124	12		50	150	04/01/2024	DLC
P-Isopropyltoluene - BS	EPA-8260	111			50	150	04/01/2024	DLC
P-Isopropyltoluene - BSD	EPA-8260	125	12		50	150	04/01/2024	DLC
1,3-Dichlorobenzene - BS	EPA-8260	101			50	150	04/01/2024	DLC
1,3-Dichlorobenzene - BSD	EPA-8260	116	13		50	150	04/01/2024	DLC
1,4-Dichlorobenzene - BS	EPA-8260	101			50	150	04/01/2024	DLC
1,4-Dichlorobenzene - BSD	EPA-8260	117	14		50	150	04/01/2024	DLC
N-Butylbenzene - BS	EPA-8260	121			50	150	04/01/2024	DLC
N-Butylbenzene - BSD	EPA-8260	137	12		50	150	04/01/2024	DLC
1,2-Dichlorobenzene - BS	EPA-8260	101			50	150	04/01/2024	DLC
1,2-Dichlorobenzene - BSD	EPA-8260	116	14		50	150	04/01/2024	DLC
1,2-Dibromo 3-Chloropropane - BS	EPA-8260	93.4			50	150	04/01/2024	DLC
1,2-Dibromo 3-Chloropropane - BSD	EPA-8260	110	16		50	150	04/01/2024	DLC
1,2,4-Trichlorobenzene - BS	EPA-8260	110			50	150	04/01/2024	DLC
1,2,4-Trichlorobenzene - BSD	EPA-8260	128	15		50	150	04/01/2024	DLC
Hexachlorobutadiene - BS	EPA-8260	118			50	150	04/01/2024	DLC
Hexachlorobutadiene - BSD	EPA-8260	133	12		50	150	04/01/2024	DLC
Naphthalene - BS	EPA-8260	107			50	150	04/01/2024	DLC
Naphthalene - BSD	EPA-8260	129	19		50	150	04/01/2024	DLC
1,2,3-Trichlorobenzene - BS	EPA-8260	104			50	150	04/01/2024	DLC
1,2,3-Trichlorobenzene - BSD	EPA-8260	123	17		50	150	04/01/2024	DLC

ALS Test Batch ID: R464019 - Water by EPA-1664

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Fats/Oils/Grease (Total) - BS	EPA-1664	84.6			73.6	117	04/11/2024	MAH

ALS Test Batch ID: R463047 - Water by SM5210B

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Biochemical Oxygen Demand (BOD) - BS	SM5210B	88.9			85	115	03/29/2024	MJC
Biochemical Oxygen Demand (BOD) - BSD	SM5210B	91.4	3		85	115	03/29/2024	MJC

ALS Test Batch ID: R463033 - Water by SM2540D

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Total Suspended Solids - BS	SM2540D	92.0			85	115	04/03/2024	MNC



CERTIFICATE OF ANALYSIS

CLIENT:	Aspect Consulting, LLC 710 - 2nd Ave, Suite 550 Seattle, WA 98104	DATE:	4/16/2024
CLIENT CONTACT:	Carla Brock	ALS SDG#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R463046 - Water by SM4500-CN E

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Cyanide - BS	SM4500-CN E	108			82	116	03/29/2024	EBS
Cyanide - BSD	SM4500-CN E	111	3		82	116	03/29/2024	EBS

ALS Test Batch ID: R463159 - Water by EPA-245.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-245.1	108			80.6	118	04/04/2024	RAL
Mercury - BSD	EPA-245.1	108	0		80.6	118	04/04/2024	RAL

ALS Test Batch ID: 209993 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-200.8	97.4			89.1	110	04/08/2024	EBS
Arsenic - BSD	EPA-200.8	101	3		89.1	110	04/08/2024	EBS
Cadmium - BS	EPA-200.8	102			89.4	110	04/08/2024	EBS
Cadmium - BSD	EPA-200.8	105	3		89.4	110	04/08/2024	EBS
Chromium - BS	EPA-200.8	97.0			88.3	110.2	04/08/2024	EBS
Chromium - BSD	EPA-200.8	101	4		88.3	110.2	04/08/2024	EBS
Copper - BS	EPA-200.8	102			85.4	109	04/08/2024	EBS
Copper - BSD	EPA-200.8	105	4		85.4	109	04/08/2024	EBS
Lead - BS	EPA-200.8	95.4			87.5	107	04/08/2024	EBS
Lead - BSD	EPA-200.8	98.2	3		87.5	107	04/08/2024	EBS
Nickel - BS	EPA-200.8	99.1			85.4	109	04/08/2024	EBS
Nickel - BSD	EPA-200.8	103	4		85.4	109	04/08/2024	EBS
Silver - BS	EPA-200.8	103			80	120	04/08/2024	EBS
Silver - BSD	EPA-200.8	104	1		80	120	04/08/2024	EBS
Zinc - BS	EPA-200.8	101			88.2	111	04/08/2024	EBS
Zinc - BSD	EPA-200.8	103	2		88.2	111	04/08/2024	EBS

ALS Test Batch ID: R464107 - Water by EPA-350.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Ammonia - BS	EPA-350.1	99.7			86	114	04/04/2024	CAS

ALS Test Batch ID: R464108 - Water by EPA-351.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Total Kjeldahl Nitrogen (TKN) - BS	EPA-351.1	98.2			72	129	04/11/2024	CAS

CERTIFICATE OF ANALYSIS

CLIENT:	Aspect Consulting, LLC 710 - 2nd Ave, Suite 550 Seattle, WA 98104	DATE:	4/16/2024
CLIENT CONTACT:	Carla Brock	ALS SDG#:	EV24030258
CLIENT PROJECT:	Stillwater Holdings	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R464110 - Water by EPA-365.1

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Total Phosphorous - BS	EPA-365.1	103			85	115	04/11/2024	CAS

APPROVED BY



Rob Greer
Laboratory Director



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV24030258

Date 3-28-24 Page 1 Of 1

PROJECT ID:					ANALYSIS REQUESTED													OTHER (Specify)										
REPORT TO COMPANY:					NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	MTBE by EPA 8021	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
PROJECT MANAGER:																												
ADDRESS:																												
PHONE:																												
E-MAIL:																												
INVOICE TO COMPANY:																												
ATTENTION:																												
ADDRESS:																												
SAMPLE I.D.	DATE	TIME	TYPE	LAB#																								
1. 106 Sump	3-28-24	0835	W	1			X			X																X	X	
2. MW4 Sump	3-28-24	0900	W	2			X			X																X	X	
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
 1. Relinquished By: Scott Colagrass, Geosyntec, 3-28-2024/200
 Received By: FED EX, [Signature], ALS 3/29/24 0913
 2. Relinquished By: _____
 Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis
 10 (Standard) 5 3 2 1 SAME DAY

Fuels & Hydrocarbon Analysis
 5 (Standard) 3 1 SAME DAY

OTHER: _____
 Specify: _____

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Geosyntec / Aspect Consult ALS Job#: EV24030258

Project: Stillwater Holdings

Login Date: 3/29/24 Login Time: 0913 Login By: AV

Type of Shipping Container: Cooler Box Other

Shipped via: FedEx Ground UPS Courier Hand Delivered ALS Courier
FedEx Express

Priority Overnight Yes No N/A

Were custody seals on outside of shipping container? Yes No N/A
If yes, how many? _____ Where? _____
Custody seal date: _____ Seal name: _____

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time? AV

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

Subcontract test containers added to Subcontract Bin?

Wetchem test containers marked with required Tests?

Short hold time test containers delivered to analysts?

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: none

5035A kits received?
Low Kits: _____ # High Kits: _____

5035A kits returned?
Low Kits: _____ # High Kits: _____

Temperature of cooler upon receipt: 2.6 °C On ice?

Explain any discrepancies: pH received outside of hold.

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: