January 18, 2024

Marney DeVroom
FJ Management Inc.
185 South State Street
Suite 1300
Salt Lake City UT 84111

Subject: Supplemental Cleanup Actions Work Plan
Former Flying J Inc. – 607 First Street, Havre, Montana
DEQ Facility 21-08665 (TID 22358); Release 475; WPID 34744
AWS Project 21037.2

Air Water Soil, LLC (AWS) is pleased to present this Supplemental Cleanup Actions Work Plan (SCWP) for continued remediation at the Former Flying J Inc. petroleum release site (hereafter, "the site"). The site is located at 607 First Street in Havre, Montana (see Figure 1, Attachment A).

This SCWP has been prepared on behalf of FJ Management Inc. (FJM), as requested by the Montana Department of Environmental Quality Petroleum Tank Cleanup Section (DEQ) in a June 23, 2023 correspondence. AWS has prepared this SCWP in general conformance with the guidelines given for a SCWP in DEQ's *Montana Cleanup Guidance for Petroleum Releases* draft document dated November 2020.

BACKGROUND

AWS's understanding of the site history is based on information provided by the previous consultant, Johnston Leigh, Inc. Their information is summarized in the following paragraphs.

The site was operated as a Flying J retail petroleum distributor between 1982 and 1993. During that time, gasoline was stored in four underground storage tanks (USTs) and dispensed via one set of dispensers (see Figure 2, Attachment A).

On approximately September 27, 1990 the UST system was emptied of gasoline fuel after the station manager noted discrepancies in fuel inventories. This action was also implemented because tank and line testing could not occur until October 1990. On October 15, 1990, tank and line testing confirmed a fuel system leak, and the DEQ was notified of the suspect petroleum leak on the same day.

Numerous investigative and clean activities have occurred to address Release 475, including:

- 1991: The four UST systems were removed, impacted soil was excavated, and monitoring wells MW1 through MW7 were installed.
- 2005: An extensive subsurface investigation was completed including the drilling and sampling of 21 soil borings and the installation of monitoring wells MW8 through MW13.
- 2008: A chemical oxidation pilot test was completed, leading to the installation of injection wells (e.g., IW15, IW17).
- 2009: A Laser Induced Fluorescence (LIF) soil investigation was completed via the installation of 17 soil borings.
- 2010: An Accelerated Remediation Technologies, Inc. (ART) in-well system was installed in recovery wells RW1 through RW5.
- 2014: An insitu chemical oxidation pilot test was completed by direct subsurface injection near wells RW1 and MW9.
- 2017: The former Flying J site building was demolished.
- 2017 An addition LIF soil investigation was completed via the installation of 16 soil borings with the footprint of the former site building. Additionally, monitoring wells MW18 through MW20 were installed.
- 2019: A High Vacuum Dual Phase Extraction (HVDPE) pilot test was completed utilizing MW9.
- 2022: Direct injection of Trap and Treat® BOS 200® activated carbon (BOS 200), as manufactured by Remediation Products Inc. (RPI), coupled with sulfate reduction media, micronutrients, and facultative microbes, was completed via 40 direct push soil borings.

The results of the 2022 direct injection work were favorable in reducing the overall subsurface contaminant mass below the site. Johnston Leigh Inc. recommended in their April 10, 2023 report that another phase of the enhanced BOS-200 injections be completed. DEQ concurred and requested in their June 23, 2023 correspondence that this remediation strategy continue to be utilized for the supplemental cleanup work.

CLEANUP OBJECTIVES

The objectives of the supplemental cleanup actions are to continue the reduction of petroleum contaminant mass below the site by enhanced bioremediation. Specifically, the supplemental work will target the soil and groundwater contaminant mass located west and north of the former service station building, as shown in Figure 2.

CLEANUP METHOD CHOSEN

AWS will work with Alpine Remediation, Inc. of Golden, Colorado (Alpine) to provide and inject the enhanced BOS 200 media to promote enhanced bioremediation of the petroleum contaminant mass below the site. Alpine was the subcontractor that successfully deployed the media during 2022 work and is an RPI authorized contractor.

CLEANUP WORK PLAN TASKS

In order to achieve the stated cleanup objectives, AWS has prepared the scope of work for this SCWP to include the following 10 tasks: 1) SCWP Preparation; 2) Project Administration; 3) Mobilization; 4) Per Diem and Lodging; 5) Limited Remedial Injection; 6) Groundwater Monitoring; 7) Laboratory Analytical; 8) Data Validation; 9) Release Closure Plan; and, 10) Report Preparation.

AWS's standard task naming for petroleum release projects is intended to generally align with the Petroleum Tank Release Compensation Board (PTRCB) task naming requirements. The tasks identified for this scope of work therefore generally follow this standardized naming approach.

Task 1 – Supplemental Cleanup Actions Work Plan Preparation

AWS's SCWP and associated cost estimate (Attachment C) have been created in general conformance with the guidelines given for a SCWP in DEQ's *Montana Cleanup Guidance for Petroleum Releases* draft document dated November 2020. SCWP preparation included correspondence and planning, estimating costs to implement each task, creating figures, and preparing this document.

Task 2 – Project Administration

Project administration activities will include:

- Correspondence with FJM's representatives and DEQ staff throughout the period of performance.
- Coordinating the schedule for on-site activities with FJM's representatives and Alpine.
- Completing a permit application and obtaining approval for the injections through the United States Environmental Protection Agency Region 8 Underground injection Control program.
- Subcontracting Alpine to complete injection services.
- Scheduling AWS's and Alpine's field personnel and activities.
- Procuring and coordinating equipment and supplies, as necessary, to complete the scope of work.
- Tracking the project budget.

Task 3 – Mobilization

Mobilization includes labor and vehicle mileage costs for project travel necessary to complete the cleanup work plan tasks. This generally includes AWS personnel's travel to and from the site, as well as preparation time of up to 1 hour per mobilization event, as applicable. Field activities will be combined to reduce mobilization events and costs, where feasible. For this SCWP, the anticipated mobilization events necessary to complete the cleanup work plan tasks are summarized as follows:

- Close Off Injection Area
  - 1 mobilization
  - Tech II
- Remedial Injection Kick-Off
  - 1 mobilization
  - Staff Engineer/Scientist
- Remedial Injection Spot Check
  - 1 mobilization
  - Staff Engineer/Scientist
- GWM Event #1 – Post-Injection (1-2 months)
  - 1 mobilization
  - Tech II
- GWM Event #2 – Post-Injection (5-6 months)
  - 1 mobilization
  - Tech II

Task 4 – Per Diem and Lodging

Per diem and lodging costs will be invoiced using standard meal rates (per employee) and actual hotel costs incurred during completion of the scope of work. The following is a summary of the anticipated per diem and lodging necessary to complete the cleanup work plan tasks, based on the anticipated mobilization schedule outlined above. Actual costs may vary.

- Close Off Injection Area
  - Meals: 1 person, 1 day
- Remedial Injection Kick-Off
  - Meals: 1 person, 1 day
- Remedial Injection Spot Check
  - Meals: 1 person, 1 day
- GWM Event #1 – Post-Injection (1-2 months)
  - Meals: 1 person, 2 days
  - Lodging: 1 person, 1 night
- GWM Event #2 – Post-Injection (5-6 months)
  - Meals: 1 person, 3 days
  - Lodging: 1 person, 2 nights

Task 5 – Limited Remedial Injection

The site is regularly used by area workers/employees for parking vehicles during working hours. Because of the adjacent railway operations, working hours can extend throughout all hours of the day and throughout Monday through Saturday. Therefore, access to the site to complete the injection work will require installation and setup of construction delineator candles and taping.

AWS personnel will travel to the site on a Sunday and close off a large area around the planned injections to prevent parking. Construction delineator posts (i.e., construction candles) and construction barrier tape will be installed around the area to prevent unauthorized parking.

At least 2 full business days prior to initiating the injection activities, AWS will submit a subsurface utility locate request through Montana811 (aka "Call Before You Dig" or "One-Call"). Montana811 will subsequently coordinate surface marking of public underground utilities within the closed-off area at the site.

Thereafter, AWS personnel will coordinate with Alpine to be present at the site at the beginning of the supplemental injection work (i.e., remedial injection kick-off). AWS personnel will return to the site near the end of Alpine's site work (i.e., remedial injection spot check) to document progress.

The injection area will be north and west of the former service station, as shown in Figure 2. Alpine will be subcontracted to implement the supplemental injections at the site. Their proposal, which is provided in Attachment C, delineates two treatment areas identified as Area A and Area B and details the injection plan.

Alpine will deploy the injectate in the same manner as they did previously utilizing their direct-push drilling system. Injection borings will be abandoned and backfilled with hydrated bentonite upon completion of injection activities at a given location. Asphalt cold patch or concrete will be placed at the surface to match surrounding pavement, where present.

Task 6 – Groundwater Monitoring

Existing groundwater baseline contaminant concentrations, prior to the injection work, will be assumed to be the same as those provided by Johnston Leigh Inc. for their October 10, 2022 sampling event. These baseline values will eventually be compared to results obtained from the following post-injection events.

Groundwater monitoring will be conducted during 2 separate events:

- Event #1 – Post-Injection (1-2 months)
- Event #2 – Post-Injection (5-6 months)

Event #1 will be limited to sampling the 5 wells listed in the groundwater monitoring analytical plan presented in Attachment B. Note the listed 5 wells are proximate to the injection areas as shown in Figure 2. Event #1 will be completed 1 to 2 months after completion of the supplemental injection work.

Event #2 will be completed 5 to 6 months after completion of the supplemental injection work. This second event will encompass the sampling of 15 wells as listed in the groundwater monitoring analytical plan presented in Attachment B. Note that the purpose of the groundwater sampling plan is to evaluate the efficacy of the supplemental injections over time.

Prior to collection of groundwater samples, an electronic probe will be used to measure depth to water (DTW), relative to the established measuring points, in the specified wells. DTW measurements will be used to determine groundwater elevations and approximate sample depths of each well to be sampled. Pre-purge dissolved oxygen (DO) will be measured using an electronic, down-hole meter in each of the wells scheduled for sampling. Other field intrinsic biodegradation indicators (IBIs) will be monitored for each of the sampled wells during low-flow evacuation, using a peristaltic pump; open, flow-through monitoring cell; and electronic meters. IBI parameters measured in the flow-through cell will include DO, oxidation/reduction potential (ORP), potential of hydrogen (pH), specific conductance (SC), and temperature. Turbidity will also be measured throughout low-flow evacuation, although measurements will not be taken inside the flow-through cell. Aliquots will be diverted from the flow-through cell at periodic intervals for evaluation in a separate electronic meter.

A peristaltic pump system will be used to evacuate and sample the specified monitoring wells. New, disposable tubing will be submerged to approximately the upper third of the water column for each monitored well. The flow rate of the pump will be set between 200 to 500 milliliters per min (ml/min), and the effluent will be set to flow into the bottom of the open monitoring cell and allowed to overflow the open top. Field IBI parameters will be observed and recorded in approximate five-minute intervals, and low-flow evacuation will continue until DO, pH, SC, ORP, and turbidity readings stabilize. Stabilized readings will include changes of ± 0.1 su for pH, ± 3% for SC, ± 10 millivolts for ORP, and ± 10 % for DO and turbidity.

Care will be taken to prevent cross-contamination from well to well. All re-usable down-hole equipment will be cleaned with a residue-free detergent solution scrub, a 10% isopropyl alcohol solution rinse, and a distilled water rinse prior to monitoring at each well. All electronic meters will be field calibrated in accordance with the respective manufacturer recommendations. Unused water evacuated from each well will be disposed of in accordance with DEQ's *Purge Water Disposal Flowchart*.

Laboratory samples will be collected after confirming IBI parameters have stabilized. Natural samples will be collected from each of the specified monitoring wells, along with 1 duplicate sample collected from 1 monitoring well during each event. All laboratory samples will be containerized and preserved in accordance with requirements for the respective analytical methods, as discussed below, using sample vessels and preservatives provided by the analytical laboratory. The samples will be kept cool following collection and will be shipped to the laboratory using chain-of-custody protocol.

Task 7 – Laboratory Analyses

To meet DEQ requirements, laboratory analyses of petroleum analytes shall be as stipulated in the May 2018 *Montana Risk Based Corrective Action Guidance for Petroleum Releases* for groundwater suspected of being contaminated by gasoline. AWS anticipates utilizing Energy Laboratories, Inc. (Energy), in Helena, Montana, for analysis of groundwater samples collected under this SCWP. The table in Attachment B summarizes the analyses which will be requested

for samples collected during each monitoring event. The duplicate samples will be analyzed for Volatile Petroleum Hydrocarbons (VPH).

Task 8 – Data Validation

Upon receipt of final laboratory analytical data for each sampling event, AWS will complete data validation in accordance with DEQs Data Validation Summary Form. Data will be validated to assess the precision, accuracy, repetitiveness, comparability, and completeness of the reported parameters.

Task 9 – Release Closure Plan

AWS will complete a Release Closure Plan (RCP) for Release 475 in accordance with the DEQ document format. The RCP process requires a thorough review and evaluation of historic investigation, cleanup, and monitoring information for the release. Therefore, AWS will gather and evaluate historical information available through FJM's representatives and DEQ so that an accurate and thorough RCP can be created. The RCP process will help determine appropriate supplemental remediation strategies to address Release 475 and will list identified data gaps which should be addressed during future work.

Task 10 – Report Preparation

Following completion of Tasks 1 through 9, including receipt and review of all final analytical data, AWS will prepare a Supplemental Cleanup Actions Report (SCR) in general conformance with the guidelines given for a SCR in DEQ's *Montana Cleanup Guidance for Petroleum Releases* draft document dated November 2020. The SCR will include a discussion of the cleanup method, the RCP, and will present conclusions and recommendations for additional work, as appropriate.

Data will be presented in tabular form and selected information will be presented in site figures. The report will be submitted to FJM and DEQ electronically, in Portable Document Format (PDF); a hard copy will not be prepared or provided.

SCHEDULE

Based on Alpine's availability at the time of preparation of this SCWP, AWS anticipates the soonest remedial injection activities can be initiated will be April 2024. The on-site portion of the supplemental injection work, to include closing off the injection area, marking utilities, and completing the injections, will be completed over the course of approximately 4 weeks. The actual schedule will be dependent on availability of equipment and supplies following AWS's receipt of authorization to proceed from FJM and DEQ.

Post-injection groundwater monitoring schedules will be set based on the confirmed schedule for injections. Each event will be completed in 2 to 3 field days. Groundwater analytical results are expected to be available within approximately 4 weeks following each event.

The final report, which will include the completed RCP document, will be submitted as quickly as feasible following receipt of final analytical data.

FEES

AWS's fees for completing the cleanup work plan tasks will be assessed on a time-and-materials basis, in accordance with the attached cost estimate (Attachment C). Our cost estimate has been prepared using the PTRCB's standard rates and reimbursable costs for 2023 and AWS's proposed equipment and labor rates for 2024. Services provided will be invoiced using rates approved by the PTRCB for the current billing period.

Estimated lodging costs have been included in the cost estimate, but actual costs will be invoiced. Laboratory analytical costs will be invoiced at cost. Subcontractor services will be invoiced at cost plus 7%, in accordance with PTRCB standard practice. Invoices will be accompanied by backup documentation for lodging, laboratory analytical, and subcontractor costs.

Actual costs may vary somewhat depending on a variety of factors, including but not limited to unforeseen delays or other necessary but unexpected changes to the scope of work. AWS will coordinate changes to the scope of work with FJM and DEQ, as appropriate.

LIMITATIONS

The scope of work included in this Supplemental Cleanup Actions Work Plan has been prepared for FJ Management Inc. and includes only those services described above. This SCWP does not include remedial or disposal services, or costs for such services, beyond those listed specifically in the scope of work.

AWS cannot and does not warrant that the scope of services described in this SCWP will be adequate to identify all potential environmental conditions or latent conditions at the site. Our scope of work will be performed with a standard of care meeting or exceeding that of other environmental consultants performing similar work in the area.

ACCEPTANCE

Please contact AWS at your earliest convenience to contract the work and answer any additional questions.

Respectfully Submitted,

Alan Frohberg, PE
Principal
alan@airwatersoil.com

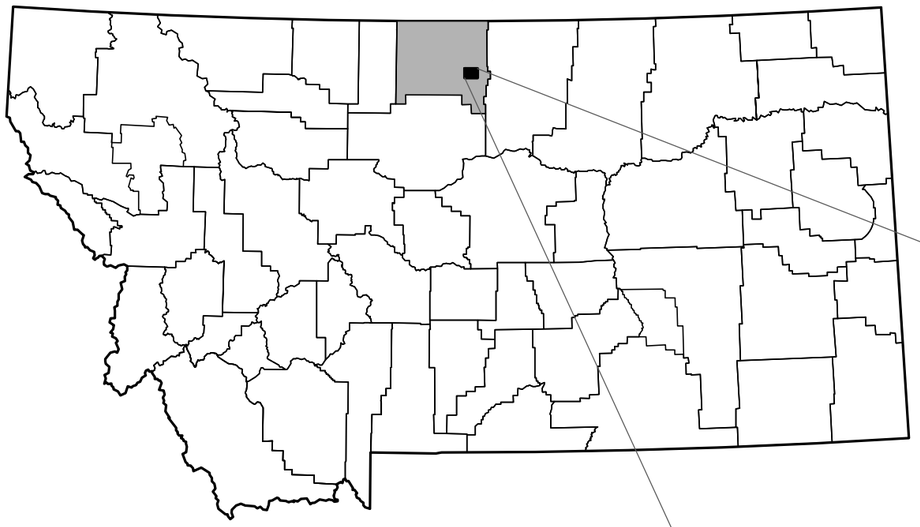
Attachments: A – Figures
B – Groundwater Monitoring Analytical Plan
C – Cost Estimate

ATTACHMENT A

Figures

AIR WATER SOIL
GREAT FALLS, MT
p 406.315.2201

HAVRE, HILL COUNTY, MONTANA



PROJECT SITE

NORTH

1
FIG 1

SITE VICINITY MAP

DEQ FACILITY ID 21-08665; RELEASE 475; WPID 34744

607 FIRST STREET; HAVRE, MT
FORMER FLYING J INC.

Supplemental Cleanup Action Work Plan
FJ MANAGEMENT INC.

1.5.2023
21037.2

DRAWN BY
DRESCH

CHECKED BY
FROHBERG

SITE VICINITY MAP

FIGURE
1

AIR WATER SOIL
GREAT FALLS, MT
p 406.315.2201

DEQ FACILITY ID 21-08665; RELEASE 475; WPID 34744

607 FIRST STREET; HAVRE, MT

FORMER FLYING J INC.

Supplemental Cleanup Action Work Plan

FJ MANAGEMENT INC.

1.9.2024
21037.2

DRAWN BY
DRESCH

CHECKED BY
FROHBERG

SITE PLAN

FIGURE
2

AIR WATER SOIL

ATTACHMENT B

Groundwater Monitoring Analytical Plan

AIR WATER SOIL

GROUNDWATER MONITORING ANALYTICAL PLAN

Supplemental Cleanup Actions Work Plan
Former Flying J Inc. – 607 First Street, Havre, Montana
DEQ Facility 21-08665 (TID 22358); Release 475; WPID 34744

Wells	Depth to Water (DTW)	Volatile Petroleum Hydrocarbons (VPH) *(MT VPH Method)*	Extractable Petroleum Hydrocarbons (EPH) Screen *(MT EPH Method)*	EPH Fractions *(MT EPH Method)*	1,2-dichloroethane (DCA) *(Method 8260B)*	Ethylene Dibromide (EDB) *(Method 8011)*	Alkalinity *(Method A2320B)*	Dissolved Methane *(Method SW8015M)*	Sulfates *(Method E300.0)*	Sulfides *(Method A4500-SF)*	Nitrogen, Nitrate + Nitrite *(Method E353.2)*	Dissolved + Total Iron and Manganese *(Methods E200.7/E200.8)*	Total Organic Carbon (TOC) *(Method A5310C)*
Event #1:	**Post-Injection (1-2 months)**												
MW-9	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-14	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-18	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-19	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-20	✓	✓	--	--	--	--	--	--	--	--	--	--	--
Duplicate	--	✓	--	--	--	--	--	--	--	--	--	--	--
Event #2:	**Post-Injection (5-6 months)**												
MW-1	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-6	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-7	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-8	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-9	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-10	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-11	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-12	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-13	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-14	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-18	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-19	✓	✓	--	--	--	--	--	--	--	--	--	--	--
MW-20	✓	✓	--	--	--	--	--	--	--	--	--	--	--
BCW-3	✓	✓	--	--	--	--	--	--	--	--	--	--	--
RW-4	✓	✓	--	--	--	--	--	--	--	--	--	--	--
Duplicate	--	✓	--	--	--	--	--	--	--	--	--	--	--