Olympus Technical Services, Inc.

December 17, 2025

Jay Shearer
Montana Department of Environmental Quality
Petroleum Tank Cleanup Section
P.O. Box 200901
Helena, MT 59620-0901

Re: Remedial Investigation and Groundwater Monitoring Work Plan
Former Small Dog Investments
5 South 28th Street
Billings, Yellowstone County, Montana
Facility ID No. 56-14111 (TID 30753), Release No. 4310
DEQ Work Plan ID No. 35098
Olympus Work Order No. A4273

Dear Mr. Shearer:

Olympus Technical Services, Inc. (Olympus), on behalf of Mr. and Ms. Randy and Janna Hafer, is submitting this Remedial Investigation and Groundwater Monitoring Work Plan for the above-referenced Facility (Site). The Montana Department of Environmental Quality (DEQ) Petroleum Cleanup Section requested a work plan in correspondence dated September 25, 2025. The purpose of the work is to further evaluate and monitor petroleum impacts in soil vapor and groundwater at the Site. This will be achieved by advancing soil borings, installing soil vapor points (SVPs) in completed borings, conducting groundwater and soil vapor monitoring, and preparing and submitting one Remedial Investigation Report (RI), one Groundwater Monitoring Report, and updating the Release Closure Plan (RCP) detailing the results of the investigation and path for closure of the release.

Site Description

The Site is located in a downtown commercial district of Billings at the southeast intersection of Minnesota Avenue and South Broadway (South 28th Street) at latitude 45.780272 N and longitude 108.503642 W. The Site occupies a portion of the NW 1/4 of the NE 1/4 of Section 3, Township 1 South, Range 26 East, Montana Principal Meridian, Yellowstone County. The Site is shown in **Figure 1** (Site Topographic Map) and in **Figure 2** (Aerial Photograph). Site features are shown in **Figure 3**.

Previous Site Investigations

According to City of Billings directories, the property was occupied by a service station from circa 1955 to 1963. The property is currently vacant of structures and utilized as a parking lot. Various retail businesses occupied the property after 1963.

A petroleum release (No. 4310) was confirmed at the Site in April 2003 during a subsurface site assessment at the property. Three 500-gallon perforated underground storage tanks (USTs), most likely containing used motor oil, potentially fuel oil, and gasoline, were removed from the facility in 2004 and 2006. The Hafers purchased the property from Mr. Craige Whiteley in 2007. Previous investigations at the Site included two test pit site assessments performed in August 2003 and April 2006 and a Phase I Remedial Investigation (RI) in June 2007. The RI consisted of advancing four soil borings and installing four groundwater monitoring wells (M1-M4) in the borings. Corrective actions included the removal of UST systems in September 2004 and September 2006, and the excavation of approximately 520 bank cubic yards of petroleum impacted soil in November 2006. The excavation extended to a depth of 15-16 feet, and the extent of the excavation was limited by Site infrastructure, including sidewalks and buildings. The confirmation soil samples from all sidewalls and floor samples except the north sidewall contained petroleum hydrocarbon concentrations at concentrations above leaching Risk-Based Screening Levels

(RBSLs). Most of the concrete foundation of the former service station building was removed during the soil excavation in November 2006.

In June, July, September, and November 2020, Olympus performed RI activities which included advancing 11 soil borings, installing six groundwater monitoring wells, and three soil vapor points. Groundwater was also monitored on a semi-annual basis in 2020. Based on the analytical laboratory results, subsurface soil is impacted with predominantly volatile petroleum hydrocarbons (VPH), although extractable petroleum hydrocarbons (EPH) compounds were detected in several subsurface soil samples. The extent and magnitude of soil impacts above the water table appear to be relatively well-defined and occur in the vicinity of the southern tank basin and slightly south of the former buildings at the property. The petroleum-impacted soil may extend off Site to the north-northwest, and to the east beneath the building adjoining the Site. No exceedances for EPH compounds were detected in Site soils. A dissolved-phase hydrocarbon plume containing concentrations of VPH compounds exceeding Human Health Standards (HHS)/RBSLs, extended from the northwestern portion of the Site in an east-southeasterly direction. The soil vapor samples indicated exceedances of Environmental Protection Agency (EPA) Indoor Air Regional Screening Levels (RSLs) for two analytes (chloroform and carbon tetrachloride) from depths of approximately 8 to 9 feet below ground surface (bgs). These two volatile organic compounds (VOCs) are not petroleum hydrocarbons but are compounds that have been associated with the Billings Solvent Site plume. No DEQ RBSLs for Air-Phase Petroleum Hydrocarbons (APH) were exceeded. Based on these results, soil vapor intrusion was not identified as an exposure pathway associated with the petroleum release at the Facility and no further vapor sampling was proposed.

Based on the results of Site data collected to date, groundwater monitoring was recommended to be conducted on an annual basis for two years to evaluate time trends in the dissolved phase petroleum hydrocarbon plume. No further assessment of the extent of the plume was recommended.

A Limited Phase II Environmental Site Assessment (ESA) was performed near the site by Trileaf Corporation in March 2021. As part of the ESA, two soil borings (SB-1 and SB-2) were advanced to approximate depths ranging from 24- to 25-feet bgs east of the subject site. One grab soil sample and one grab groundwater sample were collected from each boring. Based on the results of the ESA, petroleum impacts were identified in soil sample SB-2 (18-20 ft) and groundwater samples SB-1 (18-22 ft) and SB-2 (18-20 ft). In response, DEQ requested additional investigation down-gradient of the subject site to evaluate if the reported impacts are associated with the Site or another unknown offsite source and additional vapor sampling.

As part of the additional RI, 11 soil borings were advanced to depths ranging from approximately 8- to 23-feet bgs, with 6 borings completed as soil vapor points and 5 borings completed as groundwater monitoring wells. Soil samples were collected continuously during advancement of the soil borings converted to monitoring wells. One groundwater monitoring event was conducted and all Site wells were sampled in January 2023. Soil vapor samples were collected from the soil vapor points in January 2023.

Subsurface soil down-gradient of the source area is impacted with predominantly VPH compounds. A smear zone appears to be present beneath the building located adjacent to the east of the Site, and soil impacts above the RBSL were also reported in down-gradient soil borings M13 and M14 just below the groundwater interface. The extent and magnitude of soil impacts above the water table appear to be relatively well-defined.

The soil vapor samples indicated exceedances of various contaminants above EPA Indoor Air RSLs. However, only benzene and ethylbenzene were reported at concentrations exceeding DEQ Vapor Intrusion Screening Levels (VISLs).

In response to elevated C9-C10 aromatic, C5-C8 aliphatic, and C9-C12 aliphatic concentrations detected in groundwater near wells M5 and M6 during the January, June, and October 2023 sampling events, Olympus implemented a PetroFix corrective action in July 2024. A total of approximately 3,600 pounds of PetroFix mixed with 7,370 gallons of water was injected through 30 injection points spaced 5 to 10 feet apart in a grid pattern within the plume area. The solution was applied between 12 and 22 feet bgs. Pre

and post injection groundwater monitoring demonstrated significant contaminant reduction. Concentrations in well M5 – the most impacted location – decreased from 1,780 ug/L C9-C10 aromatics, 1,420 ug/L C5-C8 aliphatics, and 4,620 ug/L C9-C12 aliphatics pre-injection to 431 ug/L, 631 ug/L, and 687 ug/L, respectively, post injection, all below DEQ RBSLs. Following the December 2024 post-injection sampling event, no exceedances HHS or RBSLs were detected in any Site well.

Scope of Work

The scope of work consists of the following primary tasks:

Task 1 – Work Plan

This WP fulfills DEQ's request for a Remedial Investigation and Groundwater Monitoring Work Plan.

Task 2 – Project Management

Project management will include coordination with DEQ, Mr. and Ms. Hafer, and Petroleum Tank Compensation Board (PTRCB) personnel, preparation of the Site Health and Safety Plan, project planning, utility locate notifications, scheduling, coordination with subcontractors, oversight of project details, equipment, and personnel, setup of project files, reviewing historical reports, maps and data for the facility, and other various tasks related to project management. The costs for project management are included in Task 2 of the cost estimate.

Task 3 – Mobilization

Task 3 in the cost estimate details mobilization costs out of our Billings, Montana office for three trips for a Staff Scientist to provide oversight during soil vapor point installation and to conduct two soil vapor sampling events, one trip for a Technician II and a Technician III (Senior) for drilling and soil vapor point installation, and six trips for a Technician III to complete the two semi-annual groundwater sampling events. The drill rig and associated materials and equipment will be mobilized to the Site by Olympus personnel. The petroleum vapor monitoring and groundwater monitoring will be performed during the same time intervals for high and low groundwater events.

Task 4 – Fieldwork

Task 4 in the cost estimate presents the cost for a Staff Scientist to provide oversight of field activities, including private utility locates, soil vapor point installation, and two soil vapor sampling events. Proposed soil vapor point locations are shown on **Figure 3**.

Subsequent to SVP installation, a Staff Scientist will mobilize to the Site to collect up to 3 soil vapor samples from existing and newly installed SVPs and one duplicate field sample. 1-liter batch certified clean Summa canisters will be equipped with 5-minute regulators. Soil vapor samples will be collected by attaching the Summa to the Teflon lines tubing via Swagelok fittings. The sample line will be first purged in accordance with Montana DEQ *Montana Vapor Intrusion* Guide (2021). Soil vapor samples will be collected during low groundwater 2026 and during high groundwater 2026.

Task 5 – Soil Vapor Point Installation

Task 5 includes labor, materials, and equipment costs associated with installation of up to three SVPs to further evaluate the impacts of petroleum vapor intrusion into nearby and future structures. The location of the SVPs will be centered around SV7 and SV8, where previous soil vapor monitoring has reported concentrations of benzene and ethylbenzene above DEQ VISLs. The cost is provided on a per-foot basis. SVPs will be advanced to depths of approximately 8 to 9 feet bgs using Olympus' direct push Geoprobe 7822DT drill rig. SVPs will be connected to Teflon lined tubing to the surface and permanently installed using a flush-mounted well monument. The annular space will be filled with silica sand from the bottom of the borehole to 2 feet above the SVP and bentonite will be place to the surface. The surface will be

completed with a flush mount monument encased in a concrete collar to allow for semi-permanent installation and future sampling events. It is estimated that SVP installation will take approximately 1 day to complete. SVPs will be located using Olympus' Trimble Geo7X GPS and measurements from current surveyed Site wells.

Task 6 – Survey (Private Locate)

Prior to drilling activities, on-site utilities will be located and marked. Montana 811 (Montana One Call) will be notified a minimum of 72 hours prior to beginning drilling. A private utility locator will be subcontracted to locate private utilities. Utility location markings will be maintained throughout the project. Task 6 in the attached cost estimate details costs for subcontracted private utility locates and applicable subcontracted services fees.

Task 7 – Monitoring (Groundwater and Soil Vapor)

Groundwater monitoring will be conducted semi-annually for one year. During the first event all 15 Site wells will be sampled. Based on results from the first sampling event and discussion with DEQ, some Site wells may be removed from the sampling plan for the remaining event. Monitoring will include:

- Measurement of groundwater static water levels (SWLs) in all Site monitoring wells during each groundwater monitoring event using an electronic water level probe.

- Collection of groundwater samples, including a field duplicate, using low-flow methods in general accordance with DEQ's *Groundwater Sampling Guidance*. Groundwater samples will be collected with a peristaltic pump. Field measurements of groundwater quality parameters, including pH, oxidation-reduction potential, specific conductivity, dissolved oxygen, temperature, and turbidity, will be recorded during groundwater sample collection. Depth to groundwater measurements will be recorded during the low-flow pumping and sample procedure.

- All groundwater samples will be submitted for laboratory analysis for VPH and EPH Screen. The cost estimate assumes up to 50% of samples may require further fractionation of EPH compounds.

During each groundwater monitoring event, soil vapor monitoring will also be performed. A Staff Geologist will mobilize to the Site to collect up to 4 soil vapor samples from the SVPs including 1 field duplicate. 1-liter batch certified clean Summa canisters will be equipped with 5-minute regulators. Soil vapor samples will be collected by attaching the Summa to the Teflon lined tubing via Swagelok fittings with a pre-installed T-fitting so that the sample line can be purged. A tracer gas will be introduced into a shroud covering the soil gas probe and a helium detector will be connected to the sampling train. If helium detections at the probe are less than 10% of readings within the shroud, the sample point will have passed the leak detection test. The line will then be purged and the sample collected.

Task 7 in the cost estimate includes the costs for project setup, mobilization, and well sampling on a unit cost basis. A groundwater monitoring worksheet is attached to this work plan.

Task 8 – Laboratory Analysis w/ Fee (Groundwater)

Task 8 in the cost estimate presents the laboratory analytical costs for the two groundwater monitoring events, Groundwater samples will be analyzed for VPH and EPH Screen. The cost estimate assumes up to 50% of collected samples may require further fractionation of EPH compounds. Samples will be submitted to Energy Laboratories, Inc. in Billings, Montana (Energy). One duplicate will also be collected and analyzed for VPH only.

Task 9 – Laboratory Analysis w/ Fee (Soil Vapor)

Task 9 in the cost estimate presents the laboratory analytical costs for the two vapor sampling events. Three soil vapor samples and a field duplicate will be collected during each event and analyzed for VOCs via TO-15 (short list) and APH. Samples will submitted to Pace Laboratories.

Task 10 – Data Validation

Task 10 in the cost estimate presents the costs to provide data validation for two soil vapor and two groundwater laboratory reports.

Task 11 – Reporting

This task includes updating the Release Closure Plan (RCP) and preparation of a Remedial Investigation (RI) Report after the second groundwater and soil vapor monitoring events. An Interim Data Submittal will be prepared following the first sampling event. Task 11 of the cost estimate includes unit cost prices for completing these reports.

Cost

The cost to complete the scope of work outlined above is estimated at $46,681.06, detailed on the attached cost schedule. The cost estimate is based on the following assumptions:

- Existing Facility wells do not require replacement or repair;
- Olympus' direct-push drill rig will be used to advance soil borings and install SVPs, and unit costs for drilling and well installation are provided in the attached cost estimate;
- Site conditions are amenable to direct-push borings;
- A total of three SVPs will be installed at the Site;
- Semi-annual groundwater sampling will be conducted for one year.

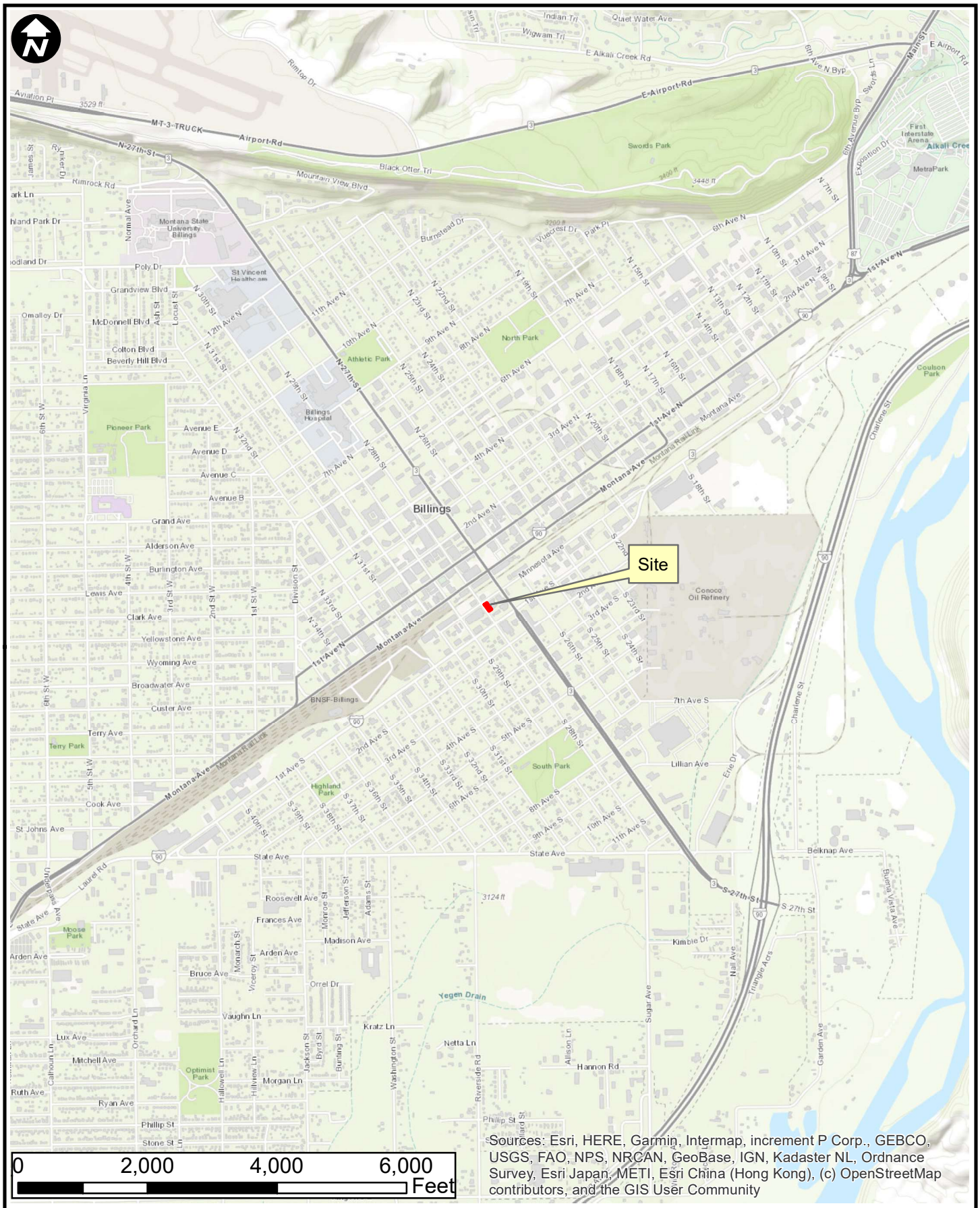
Please contact me if you have any questions regarding this plan.

Sincerely,

Tanner K. Allen
Staff Scientist

Attachments: Figure 1: Site Topographic Map
Figure 2: Aerial Photograph
Figure 3: Site Map
Work Plan Cost Estimate
Groundwater Monitoring and Sampling Unit Cost Worksheet
Soil Boring/Monitoring Well Installation Unit Cost Worksheet
Subcontractor Estimates

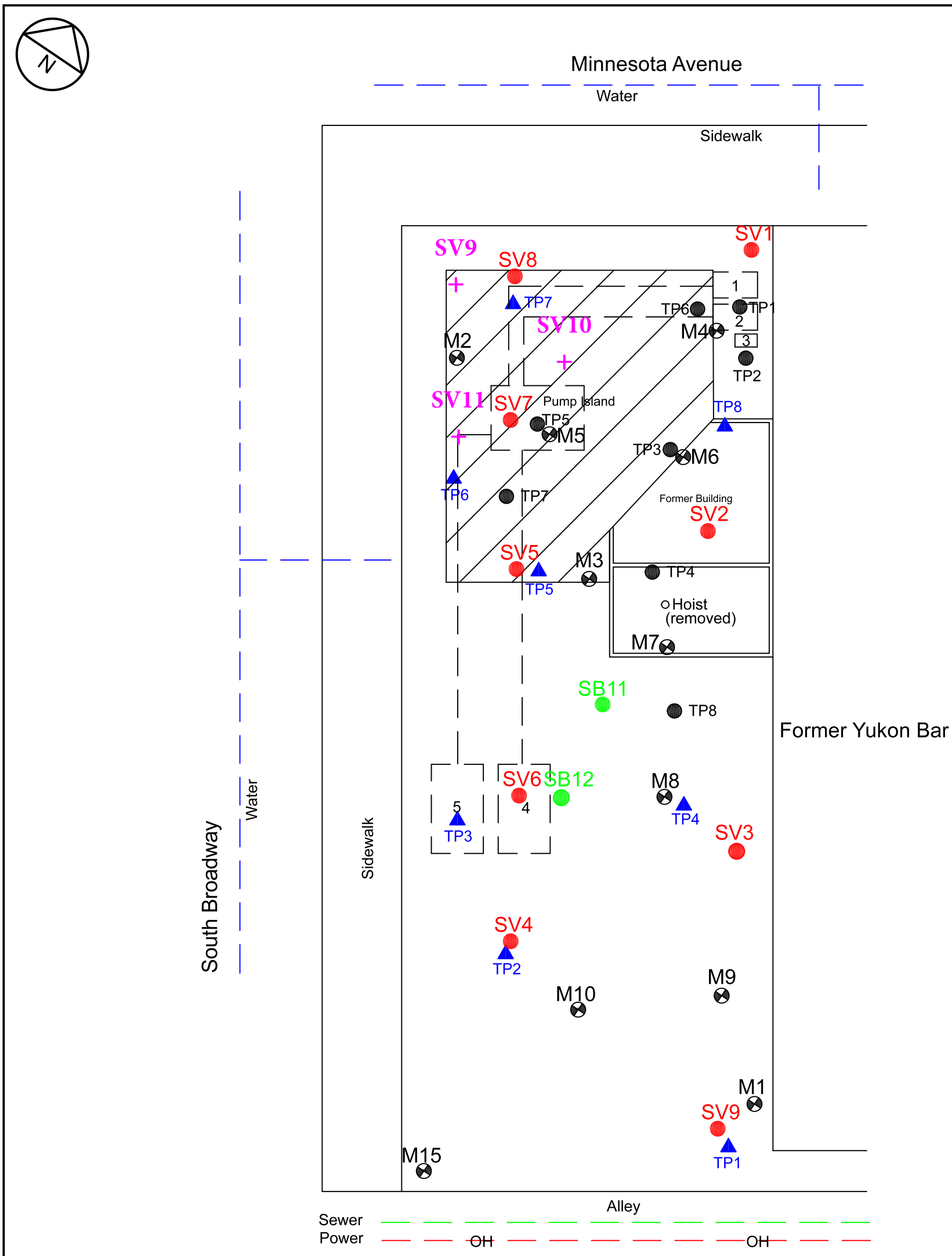
cc: Randy and Janna Hafer, P.O. Box 2203, Billings, Montana 59103



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Olympus Technical Services, Inc.	Site Topographic Map	FIGURE 1

Olympus Technical Services, Inc.	Aerial Photograph	FIGURE 2



LEGEND

- M1 — Monitoring Well
- SV1 — Soil Vapor Point
- SB10 — Soil Boring
- TP4 — Test Pit (2006)
- TP8 — Test Pit (2003)
- Excavated Area
- 4 — Removed UST
- 0 20 SCALE IN FEET

SV + 2025 Proposed Soil Vapor Point

Olympus Technical Services, Inc.				Former Small Dog Investments 5 South Broadway Billings, MT			Site Map	FIGURE 3
DESIGN:	DRAWN: SK	CHECKED: EP	APPROVED: EP	DATE: 03/02/23	JOB NO: A4273	SCALE: as shown	FILENAME: 4273map.dwg	