Olympus Technical Services, Inc.

September 23, 2019

Mr. Yueh Chuang
BNSF Railway Company
800 North Last Chance Gulch
Helena, MT 59601

Re: Remedial Investigation Work Plan
Front Street Tank, Front Street and 4th Avenue, Shelby, Toole County, Montana
Facility ID# 60-15335; Release# 5329; Work Plan #33923; Olympus WO# A2365

Dear Mr. Chuang:

Olympus Technical Services Inc. (Olympus) is presenting this work plan, on behalf of BNSF Railway Company (BNSF), for a remedial investigation at the above referenced facility (Site). The Site location is shown on Figure 1 and Site features are shown on Figure 2. Historical Site features shown are based on a review of Station Plat maps, DEQ records, Authority for Expenditure files, and historical site photographs. The Site is currently vacant with no structures present. This work plan is presented in response to a request by the Montana Department of Environmental Quality (DEQ), in a letter dated August 16, 2019, for continued Site investigation of the extent and magnitude of petroleum impacts to soil and groundwater related to petroleum release number 5329. The scope of work outlined in this work plan includes surface and subsurface soil sampling. A cost estimate for the proposed scope of work is attached to this work plan.

Background

In May 2019, six previously unidentified underground storage tanks (USTs) were discovered during a City of Shelby utility installation project along Front Street. The Site is a former lease property owned by BNSF. Previous tenants that conducted fueling operations include Mutual Oil Company and Continental Oil Company (Conoco). The six USTs were removed and impacted soils were excavated to the extent practicable as guided by PID headspace readings and observation of visual staining. The excavation was limited to the southwest by proximity to Front Street. Confirmation sampling confirmed a release to soil with extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH) constituents at concentrations greater than Human Health Standards (HHS) and/or Risk-Based Screening Levels (RBSLs). At the final excavation extents, screening levels were exceeded in three soil samples from the southwestern sidewall along Front Street, one floor sample near Tank 4, and one sample from the northeastern sidewall near Tank 4 as shown on Figure 3.

Scope of Work

Soil Boring Investigation
Olympus will advance sixteen (16) soil borings using a GeoProbe® direct-push rig to a minimum depth of 10 feet below ground surface (bgs) or to 5 feet below the deepest observed impact. The proposed boring locations are shown on Figure 4. Continuous soil samples will be collected during boring advancement using disposable macrocores for field screening and possible laboratory analysis. The soil samples will be screened for hydrocarbon vapors using a photoionization detector (PID) at 1 foot intervals. Soil cuttings with PID headspace readings greater than 10 parts per million (ppm) or with noticeable visual or olfactory impacts will be

containerized and disposed at the High Plains Landfill in Great Falls, Montana. Drill cuttings with PID head space readings less than 10 ppm will be used to backfill the soil boring location.

Prior to drilling activities, Olympus will obtain permits and access agreements for the City of Shelby to work in the Front Street right-of-way. Traffic control will be provided by Mountain West Holdings of Butte, Montana, and a traffic control plan will be submitted prior to mobilization. Olympus will contact the Montana One-Call Center at least 72 hours before drilling activities commence to locate underground utilities at the Site. A private utility locator will be contracted to verify public utility marks. Olympus will coordinate track protection with the roadmaster in Shelby for any activities within 25 feet of the track centerline. A daylighter will be utilized at the Site to clear boreholes to the base of known utilities within 3 feet of their marked locations, (i.e. fiberoptic cable and 54-inch stormwater line along Front Street). A health and safety plan will be completed along with job safety analyses for each task prior to the start of field activities.

Soil Sample Collection and Analyses

Based on results of field screening, a minimum of three soil samples, representing surface soil (0-2 feet bgs), 3-4 feet bgs, and the bottom of the boring will be selected for laboratory analyses. Additional samples may be collected in soil representative of worst-case impacts (PID reading greater than 20 ppm), or soil collected from just above the groundwater table, if encountered. The actual number of soil samples will be determined in the field based on observations made during drilling operations. Soil samples selected for lab analyses will be submitted to Pace National Laboratories in Mount Juliet, Tennessee. Select soil samples may be submitted on a 24-hour rush turn-around time to indicate whether additional soil borings should be advanced. Soil samples will be analyzed for VPH by the Massachusetts Department of Environmental Protection (MADEP) VPH Method, volatile organic compounds (VOCs) by EPA Method 8260B, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270 with select ion monitoring (SIM), metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, silver, thallium, vanadium, and zinc) by EPA Method 6020, mercury by EPA Method 7471, and EPH screen analyses by EPA Method 8015. Soil samples exceeding DEQ's screening level for EPH screen may be further analyzed for EPH fractions by MADEP EPH Fractionation Method upon review of the analytical results by DEQ and Olympus personnel. A summary of the lab costs is provided in the attached Lab Cost Detail.

Groundwater Investigation

Groundwater was not encountered during excavation activities. The regional lithology indicates a confining lean clay layer extends to depths greater than 30 feet at the Site (Lopez, 2002 and Kennedy Jenks, 2019). Isolated pockets of perched surface water were encountered in gravel fill over the clay but would not represent groundwater conditions. At this time, Olympus would not recommend installing groundwater wells unless petroleum impacts are observed to extend below the confining clay layer to avoid potentially creating a pathway to the regional aquifer. Groundwater may be investigated at a later time should investigation results indicate it is needed.

All field work will be conducted in accordance to Olympus' standard operating procedures. Soil samples will be collected into laboratory supplied bottles, stored on ice, and submitted under chain-of-custody procedure to Pace National Laboratories in Mount Juliet, Tennessee for VPH, VOCs, PAHs, EPH screen, and metals analyses.

Quality Assurance/Quality Control (QA/QC) procedures, based on the EPA National Functional Guidelines for Organic Superfund Methods Data Review published in January 2017, will be followed to document the provision of reliable, accurate, and defensible data. Data validation will be completed using the DEQ Data Validation Summary Form. All field activities will be documented in the project field book. QA/QC samples will be collected into laboratory supplied jars, stored on ice, and submitted for laboratory analyses to verify precision and accuracy of the laboratory generated data. One duplicate sample will be collected for every 20 samples collected for laboratory analysis to check for precision related to sample collection methods. One field blank will be collected for every 20 samples and analyzed for VPH, EPH Screen, VOCs, PAHs, and metals. Trip blanks will be submitted for VPH and VOC analysis. A QA/QC review of the analytical data will be performed and the results will be presented on DEQ's Data Validation Summary Form that will be provided in a summary report.

Remedial Investigation Report
The results of surface and subsurface soil investigation work will be presented in a Remedial Investigation Report (RI Report) that will be submitted to the DEQ following receipt of the soil laboratory data. The RI report will include Site maps, tabulated analytical results, laboratory reports, data validation summaries, soil boring logs, and a Release Closure Plan (RCP). Olympus will assess the results of the soil investigation and make recommendations for additional investigation or corrective action as needed to move the Site to closure.

Cost Estimate

A cost estimate for the above scope of work is attached to this work plan and includes estimated time and material costs for Olympus to conduct the soil investigation in 2019. Costs to conduct the work outlined in this work plan will not exceed the attached cost estimate without prior approval from BNSF and the DEQ.

Invoices will be submitted to the Petroleum Tank Release Compensation Board (PTRCB) Fund for reimbursement of eligible costs. Site work will commence upon approval of this work plan by the DEQ and the obligation of funds for the scope of work by the Petroleum Tank Reimbursement Compensation Board (PTRCB). Olympus appreciates the opportunity to assist you with this project. Please contact me at 406-443-3087 should you have any questions regarding the work plan or the project.

Sincerely,
Olympus Technical Services, Inc.

Diane Tackett

Diane Tackett
Project Geologist

Attachments: Figures 1, 2, 3, and 4, Cost Estimate, Lab Cost Detail, and Unit Cost Worksheet Cost Estimate

cc: William Bergum, Montana DEQ, PO Box 200901, Helena, MT 59620-0901

REFERENCES

Kennedy Jenks Consultants, Sampling and Analysis Plan/Quality Assurance Project Plan, BN Facility Shelby, 2019.

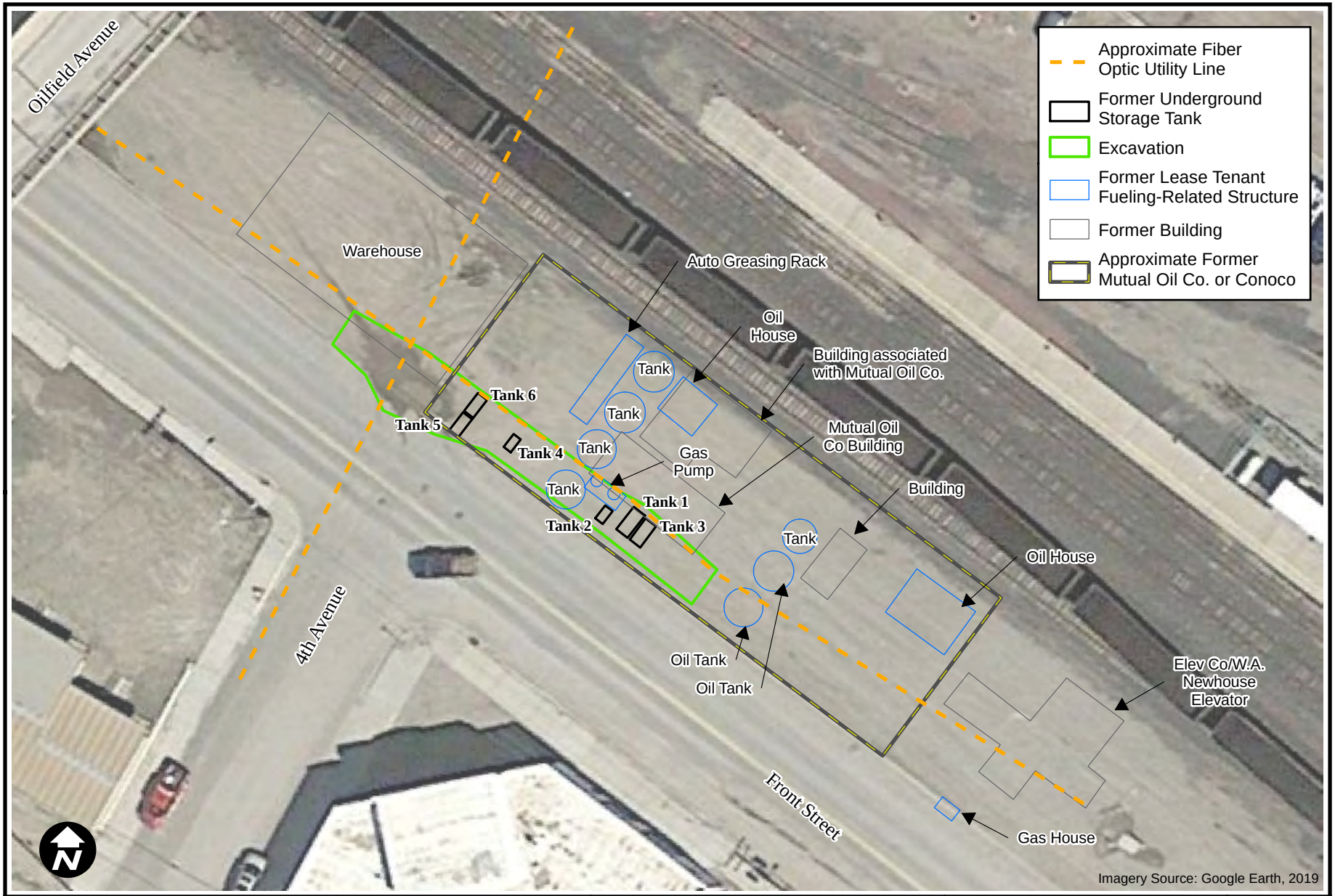
Lopez, David A. Geologic Map of the Sweet Grass Hills 30' x 60' Quadrangle, North Central Montana, Montana Bureau of Mines and Geology Open File Report MBMG 443, 2002.

US Environmental Protection Agency, EPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-2017-002, January 2017.

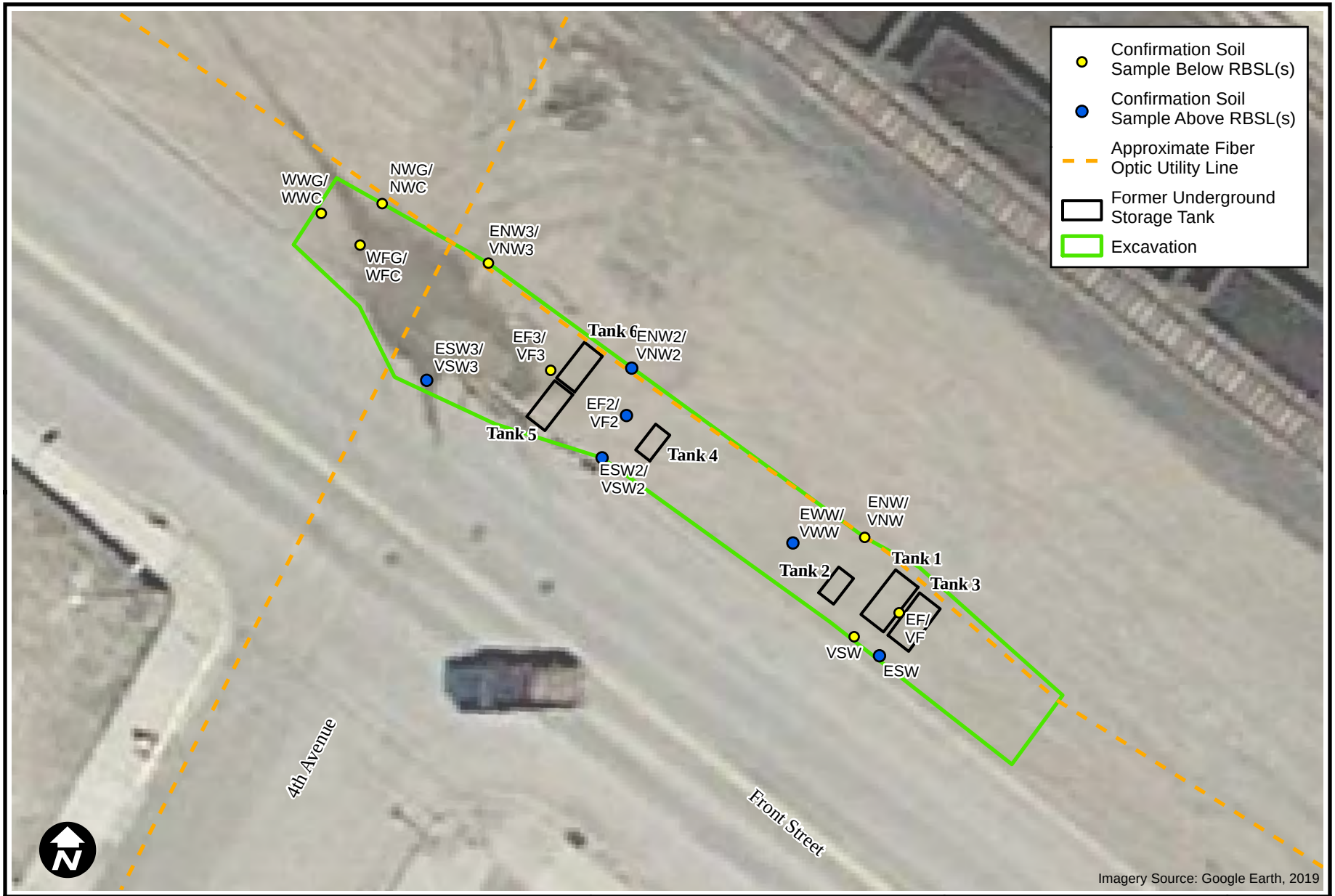
ATTACHMENTS

Figures, Cost Estimate, Lab Cost Detail, and Unit Cost Worksheet

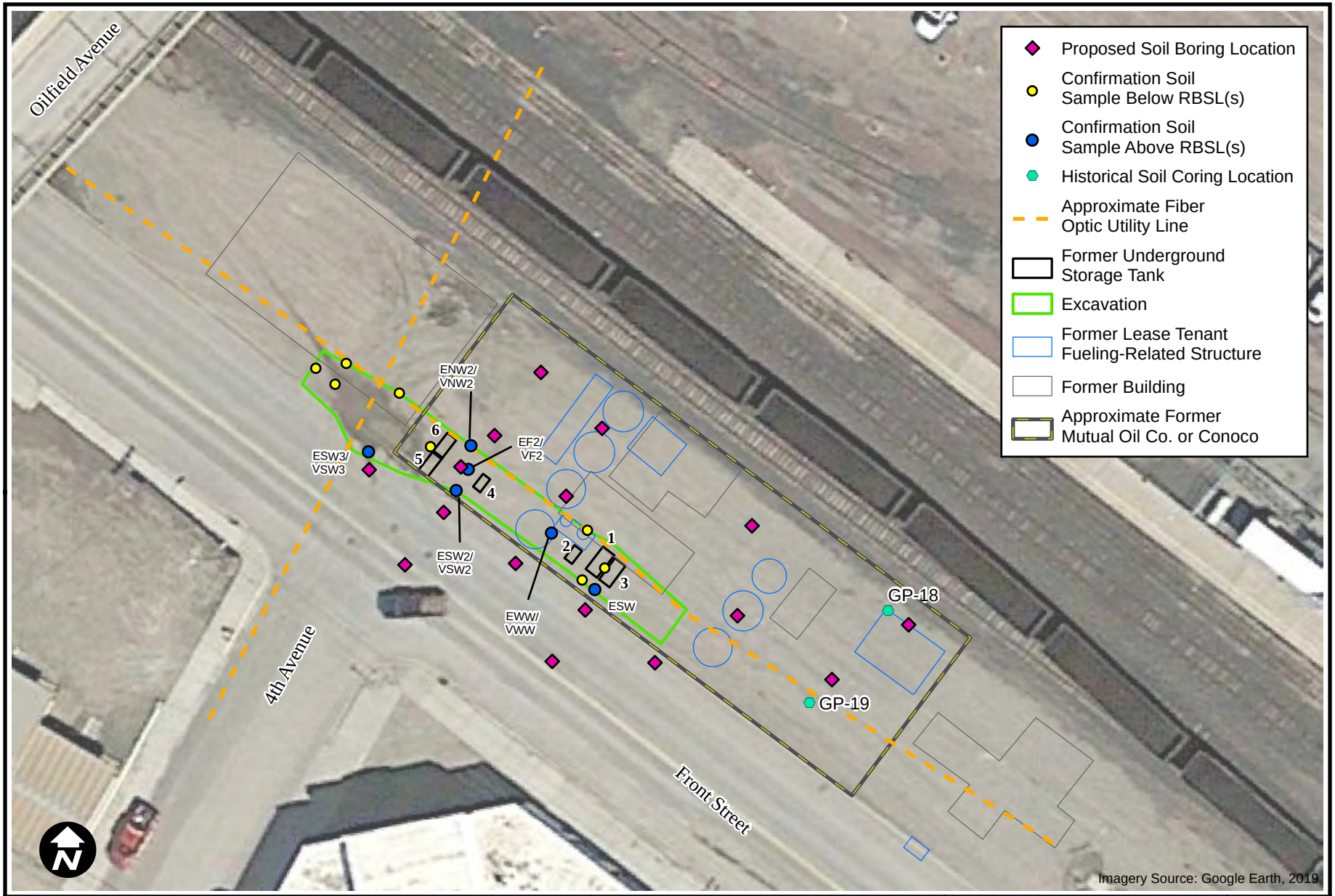
Olympus Technical Services, Inc.	0 60 120 Feet	BNSF Shelby, MT Underground Storage Tank Excavation and Removal	FIGURE 1



Olympus Technical Services, Inc.	0 40 80 Feet	BNSF Shelby, MT Site Features	FIGURE 2



Olympus Technical Services, Inc.	0 20 40 Feet	BNSF Shelby, MT Confirmation Sample Locations	FIGURE 3



Olympus Technical Services, Inc.	0 40 80 Feet	BNSF Shelby, MT Proposed Boring Locations	FIGURE 4

Olympus Technical Services, Inc. Cost Estimate **Date:** 9/23/2019

Client: BNSF
Project Name: Shelby Front Street Tanks
Olympus Project No.: A2365

			ODC	14%
Project Management:	**Quantity**	**Unit**	**Rate**	**Cost**
Project Scientist	4	hr	$132.00	$528.00
Admin	0.5	hr	$47.00	$23.50
				$551.50
Work Plan	**Quantity**	**Unit**	**Rate**	**Cost**
Project Scientist	5	hr	$132.00	$660.00
Senior Project Scientist	1	hr	$146.00	$146.00
				$660.00
Mobilization:	**Quantity**	**Unit**	**Rate**	**Cost**
Geoprobe Mileage	620	mile	$4.25	$2,635.00
Project Scientist	5	hr	$132.00	$660.00
Pickup mileage	360	mile	$0.63	$226.80
				$3,521.80
Utility Daylighting				
Field Supervisor	8	hr	$100.00	$800.00
Field Supervisor OT	4	hr	$122.00	$488.00
Environmental Technician	8	hr	$88.00	$704.00
Environmental Technician OT	4	hr	$96.00	$384.00
Vacuum Trailer (Solids)	1	day	$440.00	$440.00
Air Knife	1	day	$75.00	$75.00
Compressor - Large	1	day	$180.00	$180.00
Hoses and Misc.	1	LS	$100.00	$100.00
Truck Mileage	360	mile	$0.63	$226.80
				$3,397.80
Per Diem	**Quantity**	**Unit**	**Rate**	**Cost**
Per Diem	10	day	$30.50	$305.00
				$305.00
Lodging	**Quantity**	**Unit**	**Rate**	**Cost**
Lodging	8	day	$100.00	$800.00
				$800.00
Drilling	**Quantity**	**Unit**	**Rate**	**Cost**
Geoprobe	180	ft	$25.87	$4,656.60
Project Scientist	22	hr	$132.00	$2,904.00
Pickup (1/2 ton)	2	day	$65.00	$130.00
GPS	1	day	$250.00	$250.00
				$7,940.60

Olympus Technical Services, Inc. Cost Estimate **Date:** 9/23/2019

Client: BNSF
Project Name: Shelby Front Street Tanks
Olympus Project No.: A2365

ODC 14%

RI Report	**Quantity**	**Unit**		**Rate**	**Cost**
Project Scientist	30	Each		$132.00	$3,960.00
Senior Project Scientist	2	Each		$146.00	$292.00
					$4,252.00

Release Closure Plan	**Quantity**	**Unit**		**Rate**	**Cost**
Project Scientist	24	Each		$132.00	$3,168.00
Senior Project Scientist	1	Each		$146.00	$146.00
					$3,314.00

Other Direct Charges (ODC)					
Traffic Control	1	LS	*	$750.00	$750.00
Analytical	1	LS	*	$23,134.50	$23,134.50
ODC Items*				14%	$2,388.45
					$26,272.95

Comments/Notes:

1.
2.
3.
4.
5.

Subtotal	$51,015.65
Contingency	$0.00
GRAND TOTAL	$51,015.65

Lab Cost Detail

Analysis	Samples	QA/QC Samples	Trip Blanks	Total # of Samples	Cost	Estimated Cost
Montana VPH by MADEP	60	5	3	68	$63.05	$4,287.40
Montana EPH by MADEP	60	5		65	$97.00	$6,305.00
EPH Fractionation	30			30	$97.00	$2,910.00
Metals by ICP/MS by EPA 6020	60	5		65	$11.64	$756.60
Polynuclear Aromatics by EPA 8270 SIM	60	5		65	$58.20	$3,783.00
Mercury by EPA 7471	60	5		65	$17.46	$1,134.90
VOCs by EPA 8260	60	5	3	68	$58.20	$3,957.60
					Subtotal:	$23,134.50

Petroleum Tank Release Compensation Board
Soil Boring/Monitoring Well Installation Unit Cost Worksheet

Contractor Information

Company Name: Olympus Technical Services, Inc.

Address: 765 Colleen St

City, State, Zip: Helena, MT 59601

Cost Estimator: Diane Tackett Phone: 406-443-3087

Signature: Diane Tackett Date: 9/23/19

Project Information and Specifications

Site Name: Front Street Tank

Address: Front Street and 4th Avenue

City: Shelby, MT

Facility ID # 60-15335

Release # 5329

WP ID # 33923

Type of Drilling Equipment

- ☐ Hollow-Stem Augers
- ☐ Air Rotary
- ☑ Direct Push
- ☐ Other (please specify)

Monitoring Well Specifications

Number of Wells

Surface: Concrete: ☐ Asphalt: ☐ Barren: ☐

Depth (per well)

Estimated Depth to Groundwater (ft)

Boring Diameter (inches) 4

Casing Diameter and type (inches)

Surface Completion: Flush Mount ☐ Aboveground ☐

Soil Boring

Number of Borings 16

Boring Diameter (inches) 4

Depth (per boring - ft) 10

Surface: Concrete: ☐ Asphalt: ☑ Barren: ☑

Soil Disposal: Onsite: ☑ Stockpile: ☐ Drums: ☑

Abandonment: Bentonite: ☑ Soil Cuttings: ☑

Soil Sampling

- ☑ Continuous Soil Sampling
- ☐ Interval Soil Sampling (specify interval)
- ☑ No Sampling

Cost Estimate Explanation:

(1) Mobilization/Demobilization: Includes all costs and mileage to transport equipment, materials, and personnel to and from the site location. More than one mobilization event of either the drilling rig or support vehicle will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be estimated on a per mile unit rate.

(2) Soil Boring Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples and abandon soil borings, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(3) Monitoring Well Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples, and complete monitoring well to specifications and according to Montana Well Drillers Board rules, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(4) Drilling Standy: Drilling standby should be estimated on an hourly basis. Prior approval and justification for accumulating standby time is needed prior to billing.

(5) Well Development: Includes all costs (labor, equipment, and materials) to develop monitoring wells. This task should be estimated using a per well unit rate.

(6) Monitoring Well Abandonment: Includes all costs (labor, equipment, and materials) to properly abandon a well location according to the Montana Well Drillers Board rules. Abandonment costs should be estimated using a per well unit rate.

Soil Boring/Monitoring Well Installation Unit Cost Worksheet

TASK	UNIT COST	NUMBER OF UNITS	TOTAL COST
Mobilization/Demobilization (1)			
Mobilization/Demobilization: Drilling Rig	$4.25 /mile	620	$ $2,635.00
Mobilization/Demobilization: Support Vehicle	$1.43 /mile	620	$ $886.60
Soil Boring Installation (2)			
Drilling (0'-50' range per boring)	$25.87 /foot	180	$ $4,656.60
Drilling (50'-100' range per boring)	/foot		$ $0.00
Other (please specify) Daylighting Utilities	$113.26	30	$ $3,397.80
Monitoring Well Installation (3)			
Drilling (0'-50' range per well)	/foot		$ $0.00
Drilling (50'-100' range per well)	/foot		$ $0.00
Other (please specify)			$ $0.00
Drilling Standby (4)			
-prior approval needed	/hour		$ $0.00
Well Development (5)			
Well Development	/well		$ $0.00
Monitoring Well Abandonment (6)			
Abandonment	/well		$ $0.00
Lodging may only be paid at actual costs when documented by receipts.			
Per Diem			
Lodging: (number of individuals) 4	$100.00 /person per day	2	$800.00
Food: (number of individuals) 5	$30.50 /person per day	2	$305.00
Maximum Daily Per Diem allowed $30.50 (Breakfast $7.50, Lunch $8.50, Dinner $14.50)			
		TOTAL PROJECT EXPENSE	$ $12,681.00

Additional Conditions/Comments/Costs:

Project Management: $551.50
Work Plan: $660
Field Oversight: $3,284
RI Report:$4,252
RCP: $3,314
Traffic Control: $750

If you require assistance, call 406-444-9710.
Submit completed form to:
Petroleum Tank Release Compensation Board
PO Box 200902, Helena MT 59620-0902