

July 3, 2019

Allen Schiff
Department of Environmental Quality
Petroleum Tank Cleanup Section
P.O. Box 200901
Helena, MT 59620-0901

Re: *Corrective Action and Work Plan for the Petroleum Release at Swank Enterprises (Former Ford Garage), 617 Teton Avenue (Highway 44), Valier, Pondera County, Montana; Facility ID 37-06080, Release 3207, Work Plan 33829, WET Project No. 445-11*

Dear Allen:

Water and Environmental Technologies (WET) is pleased to provide this Standardized Generic Applications Corrective Action Plan (CAP) AC-07 and budget on behalf of Swank Enterprises. This work plan is being submitted pursuant to your letter dated April 30, 2019. The purpose of the proposed work is to implement in-situ remediation at the site based on the results of a pilot test conducted in 2018. Groundwater monitoring will be conducted to evaluate the effectiveness of the remediation.

Scope of Work

The following tasks have been proposed to accomplish the above stated purpose:

Baseline Groundwater Sampling Event

Conduct groundwater monitoring prior to implementing in-situ remediation amendment to establish “baseline” groundwater contaminant concentrations. Static water levels will be measured in the nine site wells prior to groundwater sample collection. Groundwater samples will be collected from six monitoring wells including MW- 5, MW-6, MW-7, MW-9, MW-10, and MW-11. Standard sampling and decontamination protocols will be followed. Field parameters including dissolved oxygen, specific conductivity, pH, oxygen reduction potential, and temperature will be measured in the purge water prior to sample collection. Groundwater samples will be submitted for analysis of volatile petroleum hydrocarbons (VPH) and environmental protection agency (EPA) method 8260B for 1,2-dichloroethane (DCA).

Site Preparation and Permitting

WET will coordinate subsurface utility locates and utilize a private utility locator to determine the location of the sanitary sewer line and any other subsurface utilities in the vicinity of the

injection area. A truck-mounted geoprobe drill rig will be utilized for the injection. Injection sites will be prepared by cutting three-inch diameter cores out of the asphalt to allow the drive rods to penetrate the ground. This will minimize damage to the site and allow for efficient abandonment and patching of the injection points. WET will also obtain the necessary permits for work in the right-of-way from the Montana Department of Transportation and the Town of Valier.

In-Situ Groundwater Remediation

Following the baseline groundwater sampling event, WET will implement in-situ groundwater remediation at the site. WET proposes the use of Petrofix™ manufactured by Regenesis. This product consists of activated carbon and calcium sulfate dihydrate product that is non-corrosive and produces minimal heat and can be injected at low pressure, which makes it suitable for use near subsurface infrastructure. Petrofix™ is compatible for the capture and degradation of the chemicals of concern for the site including benzene, gasoline range organics, and dichloroethane. These hydrocarbons bond to the activated carbon and are bio-remediated in place. WET has researched similar products including BOS 200® manufactured by Remediation Products, Inc. **Table 1** provides the unit costs of each of the products.

Product	Cost per Pound
Petrofix™	\$3.95
BOS 200®	\$5.75

The product shall be applied to the contaminated zone within the shallow aquifer through eighty-five injection points. The injections will be spaced on approximately 5-foot centers. The proposed injection sites are illustrated in Figure 1; as shown three injection areas are proposed. Approximately 16 borings will be installed in the first area, located in the historical tank basin on the northern side of Teton Avenue (Highway 44). Approximately 53 injection points will be installed adjacent to the sewer main. The activated carbon in this area will remediate groundwater in place and act as a permeable reactive barrier preventing further migration of petroleum hydrocarbons along the sewer trench. The third injection area is located in the vicinity of monitoring well MW-11 and are designed to remediate groundwater in the vicinity of MW-11 and to further act as a permeable reactive barrier preventing downgradient migration of petroleum hydrocarbons.

Injections will occur in the shallow aquifer both in the smear zone and throughout the depths of documented petroleum contamination. Injection will be conducted over an 8-foot interval from 2 to 10 feet below ground surface. Injections on 5-foot centers to allow maximum distribution of the product. Petrofix™ will be applied at a dose of 6 gallons per injection point in the sewer trench and approximately 5 gallons per point in the historic tank basin and the area near MW-11. Petrofix™ will be mixed with water and pumped into the shallow aquifer. Final mix ratios will be refined in the field based on Regenesis recommended mix

ratios and aquifer acceptance rates. It is anticipated that a total volume of 35 to 70 gallons of mixed product will be applied to the shallow aquifer at each injection point.

Following the in-situ application, injection points will be sealed with bentonite and the core holes will be filled with a quick-drying, non-shrinking cement grout. Injection will occur near high groundwater when contaminants are mobilized in order to maximize the likelihood of the activated carbon contacting the contaminants. Based on static water level data for the site, the high groundwater period typically occurs in the late spring and early summer between May and July.

Post Injection Groundwater Sampling Event

Approximately six months after the application of the in-situ activated carbon, a set of groundwater samples will be collected from monitoring wells MW- 5, MW-6, MW-7, MW-9, MW-10, and MW-11. The analytical results will be compared to those of the previous event to determine the efficacy of the in-situ remediation. Static water levels will be measured in the nine site wells prior to groundwater sample collection. Standard sampling and decontamination protocols will be followed. Field parameters including dissolved oxygen, specific conductivity, pH, redox potential, and temperature will be measured in the purge water prior to sample collection. Groundwater samples will be submitted for analysis of VPH and EPA method 8260B for 1,2-dichloroethane.

Reporting

Following receipt of the second set of groundwater analytical results, WET will prepare a Standardized Abbreviated Generic Applications Report (AR-07). The report will contain the results of the two groundwater monitoring events, a summary of the injection and its efficacy, contaminant concentration maps, water table maps from the two events, and a map illustrating the location of the injection points as well as tabulated groundwater analytical and fluid level data.

Bids were solicited from regional contractors who operate geoprobe drills. A summary of the bids is provided in **Table 2**. Subcontractor bids are provided in **Attachment A**.

Enviroprobe Services	\$14,185.50
Dakota Technologies	\$26,050.00
Northern Lights Drilling	\$41,440.00

As shown Enviroprobe Services is the low bidder. A detailed budget for the actions above is presented as **Attachment B**. The total cost associated with the implementation of this work plan is \$72,484.71.

If you have any questions regarding this work plan or other project management activities, please do not hesitate to contact me at (406) 756-2550.

Sincerely,

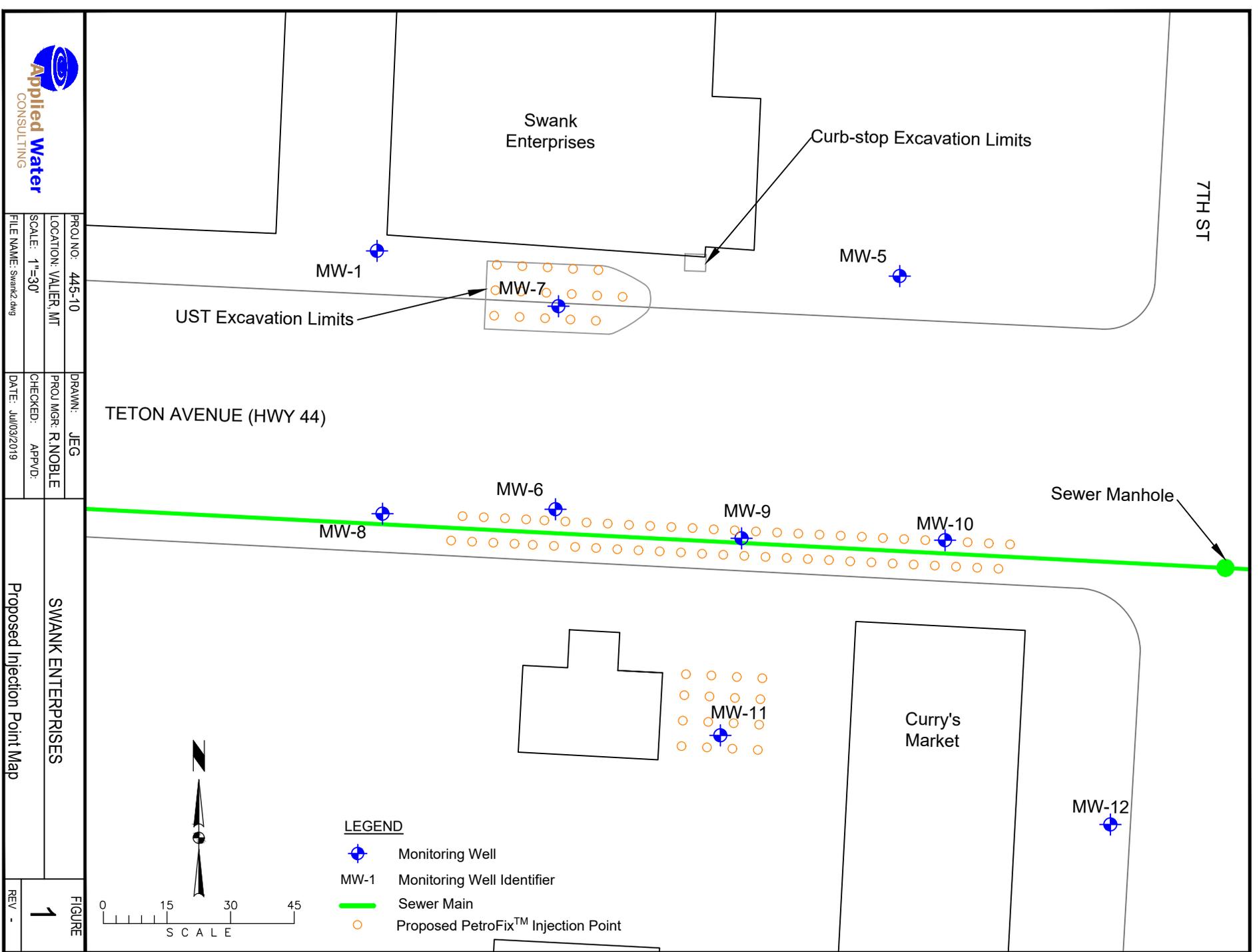
Water & Environmental Technologies



Jamie Graham
Staff Hydrogeologist

c: Dewey Swank w/attachments
Ann Root/PTRC w/attachments

FIGURES



PROJ NO: 445-10
 LOCATION: VALER, MT
 SCALE: 1"=30'
 FILE NAME: Swank.dwg

DRAWN: JEG
 PROJ MGR: R. NOBLE
 CHECKED: APPVD:
 DATE: Jul03/2019

SWANK ENTERPRISES
 Proposed Injection Point Map

FIGURE 1
 REV -



LEGEND

- Monitoring Well
- Monitoring Well Identifier
- Sewer Main
- Proposed PetroFix™ Injection Point

ATTACHMENT A

PROJECT BUDGET

*Work Plan for In-situ Remediation and Groundwater Monitoring for the
Petroleum Release at the Swank Enterprises (Former Ford Garage)
Valier, Montana*

Applied Water Consulting/WET Project Budget Sheet				(2019 PTRCB Approved Rates)			
Project Name:	Swank Enterprises			Facility ID #		37-06080	
Location:	Valier, Montana			Release #		3207	
Type of Project:	Remedial Injection - Chemical Oxidizer/Oxygen Enhancement Agent			Work Plan #		33829	
				AWC #		445-11	
			Description	Rate	Units	# Units	Totals
In-Situ Chemical Oxidizer Injection (AC-07)							
Labor	Project Scientist	work plan prep & coordination	\$ 120.00	hrs.		1	\$ 120.00
	Staff Scientist	Work plan development, solicit bids	\$ 105.00	hrs.		14	\$ 1,470.00
	CAD Drafter	prepare figures for work plan	\$ 90.00	hrs.		1	\$ 90.00
	Word Processor	Work plan assembly	\$ 60.00	hrs.		0.5	\$ 30.00
Subtotal							\$ 1,710.00
Project Management							
	Project Scientist	Meetings with property owner and DEQ, phone communications, coordination with subcontractors;	\$ 120.00	hrs.		15	\$ 1,800.00
	Staff Scientist	coordinate with Regenesis and freight carrier for shipping, coordination with neighboring property owners	\$ 105.00	hrs.		14	\$ 1,470.00
Subtotal							\$ 3,270.00
Prepare Site Health and Safety Plan							
	Staff Scientist	prepare site specific health and safety plan	\$ 105.00	hrs.		4	\$ 420.00
Subtotal							\$ 420.00
Baseline Groundwater Monitoring Event							
	Tech III	(mobilization) Load & unload equipment, travel time	\$ 85.00	hrs.		6	\$ 510.00
	Tech III	collect groundwater samples	\$ 186.00	well		6	\$ 1,116.00
	Tech III	measure static water levels	\$ 42.25	well		3	\$ 126.75
Mileage	Light Duty	(Kalispell to Valier, Valier to Kalispell, ship samples)	\$ 0.63	miles		300	\$ 189.00
Per Diem	Per Diem		\$ 23.00			1	\$ 23.00
Subtotal							\$ 1,964.75
Groundwater Sample Analysis							
	Groundwater VPH		\$ 120.00	sample		6	\$ 720.00
	Lead Scavenger (8011)		\$ 75.00	sample		6	\$ 450.00
	Groundwater EPH Screen		\$ 75.00	sample		6	\$ 450.00
	Groundwater EPH Fractionation (if necessary)		\$ 150.00	sample		6	\$ 900.00
	PTRCB sample fee		\$ 10.00	sample		6	\$ 60.00
Subtotal							\$ 2,580.00

Permit Preparation and Fees							
	Staff Scientist	prepare MDOT & Town of Valier permits for drilling in ROW	105.00	hrs		6	\$ 630.00
		Town of Valier - permitting fee	100.00			1	\$ 100.00
Subtotal							\$ 730.00
Site Preparation and Private Utility Locate							
	Staff Scientist	mobilize to site, mark dig areas	\$ 105.00	hrs		7	\$ 735.00
Subcontractor	Deep D'Tect Services	mark and locate subsurface utilities in area	\$ 2,000.00	estimate		cost + 7%	\$ 2,140.00
mileage	Light Duty	kalisPELL to valier, valier to shelby x 2, valier to kalispell	\$ 0.63	miles		420	\$ 264.60
	Tech III	pre-cut injection holes	\$ 85.00	hrs		16	\$ 1,360.00
	hotel	hotel in shelby	\$ 100.00	night		2	\$ 200.00
	Per Diem		\$ 23.00	day		3	\$ 69.00
Equipment	Generator		\$ 10.00	hrs		16	\$ 160.00
	Water Tank		\$ 50.00	day		2	\$ 100.00
	Core drill and bit	(midway rental)	\$ 180.00	day		3	\$ 540.00
Subtotal							\$ 5,568.60
Activated Carbon Injection							
Labor	Staff Scientist	load and unload equipment, drive to site and from site (include 1 hr mob for each day of injection)	\$ 105.00	hrs.		11	\$ 1,155.00
	Staff Scientist	Injection Oversight	\$ 105.00	hrs.		75	\$ 7,875.00
Subcontractor	Enviroprobe Services		\$ 14,185.50	bid		cost + 7%	\$ 15,178.49
	Regenesis - Product Cost		\$ 3.95	lb		4826.26	\$ 19,063.73
	Product Shipping	freight	\$ 3,000.00	estimate		1	\$ 3,000.00
mileage	Light Duty	(KalisPELL - valier, valier to Kalispell, 8x round trips to Shelby)	\$ 0.63	mile		780	\$ 491.40
hotel	Hotel	(in shelby)	\$ 100.00	day		8	\$ 800.00
	Per Diem		\$ 23.00	day		8	\$ 184.00
Subtotal							\$ 47,747.61
Remedial Assessment Groundwater Monitoring Event							
	Tech III	(mobilization) Load & unload equipment, travel time	\$ 85.00	hrs.		6	\$ 510.00
	Tech III	collect groundwater samples	\$ 186.00	well		6	\$ 1,116.00
	Tech III	measure static water levels	\$ 42.25	well		3	\$ 126.75
Mileage	Light Duty	(KalisPELL to Valier, Valier to Kalispell, sample shipping)	\$ 0.63	miles		300	\$ 189.00
Per Diem	Per Diem		\$ 23.00			1	\$ 23.00
Subtotal							\$ 1,964.75
Groundwater Sample Analysis							
	Groundwater VPH		\$ 120.00	sample		6	\$ 720.00
	Lead Scavenger (8011)		\$ 75.00	sample		6	\$ 450.00
	Groundwater EPH Screen		\$ 75.00	sample		6	\$ 450.00
	Groundwater EPH Fractionation (if necessary)		\$ 150.00	sample		6	\$ 900.00
	PTRCB sample fee		\$ 10.00	sample		6	\$ 60.00
Subtotal							\$ 2,580.00
Remedial Chemical Oxidizer Injection and Groundwater Monitoring Report							
Labor	Project Scientist	review/edit report	\$ 120.00	hrs.		2	\$ 240.00
	Staff Scientist	draft report	\$ 105.00	hrs.		25	\$ 2,625.00
	CAD/GIS Specialist	prepare site maps and figures	\$ 90.00	hrs.		6	\$ 540.00
	Word Processor	report prep	\$ 60.00	hrs.		2	\$ 120.00
Subtotal							\$ 3,525.00
Update Release Closure Plan							
Labor	Staff Scientist	update release closure plan	106.00	hrs.		4	\$ 424.00
Subtotal							\$ 424.00
Project Total							\$ 72,484.71

ATTACHMENT B

SUBCONTRACTOR BIDS

*Work Plan for In-situ Remediation and Groundwater Monitoring for the
Petroleum Release at the Swank Enterprises (Former Ford Garage)
Valier, Montana*



**Enviro Probe Services
Geoprobe 6600 Services**



Date: 25-Jun-19
Company: WET
Contact: Jamie Graham
Project Description: Valier; 85 Petrofix injections to 10'

<u>Geoprobe services</u>	<u>Unit Price</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>
- Project Coordination/Manager	\$90.00	Hour	1	\$90.00
<u>ORC Injection Activities</u>				
- GeoProbe 5410	\$180.00	Hour	60	\$10,800.00
- Bentonite - Backfill	\$10.50	Bag	12	\$126.00
- Injection Pump	\$25.00	Day	7.5	\$187.50
<u>Misc. Costs</u>				
- Standby (As Approved)	\$100.00	Hour	0	\$0.00
- Decontamination/Cleanup	\$100.00	Hour	7	\$700.00
- Prep / Load Supplies/Equipment	\$85.00	Hour	4	\$340.00
- Trailer Rental	\$300.00	Week	1	\$300.00
<u>Travel & Mileage</u>				
- Per Diem	\$30.00	Day	7.5	\$225.00
- (Lodging Actual; Meals \$30)				
- Probe Mileage	\$2.10	Mile	610	\$1,281.00
- Support Truck	\$0.80	Mile	170	\$136.00
			Subtotal	\$14,185.50

Estimated Project Cost **\$14,185.50**



Client will be responsible for all permits, access permission, utility locates, and traffic control, if necessary.
 Enviro Probe Services' assumes no responsibility for any waste generated during the sampling process.
 Estimated project length is 8 days including travel.
 Motel invoiced at cost.
 Estimate Valid for 90 Days

Enviro Probe Services
480 East Park Street
Butte, MT 59701
406-782-5220



14 Green River Rd.
 Morris, Minnesota 56267
 (320) 589-4610
 fax (320) 589-2814

MN Petrofund Registration # 3504

Client: Applied Water
 Contact: Jamie Graham
 Services: Injection

Date: _____
 Project: _____
 Project #: _____
 Address: Valier, MT

- Dakota will coordinate a public utility locate for the work area.
- Client and/or property owners are responsible for private utilities in work area(s).
- Advance 85 Injection borings to a depth of 10' (Dakota will supply tank/pump/tooling).
- Client will supply all of the chemical/Water is available .5 mi away
- Borings will be abandoned according to State guidelines.
- Dakota personnel will be prepared to conduct all work in Level D protective equipment.

Unit Costs

Description	Unit Cost	Unit	Estimated Quantity	Estimated Total
Project Coordination	\$500.00	Lump Sum	1	\$500.00
Mob/Demob (Rig)	\$2.75	Lump Sum	1860	\$5,115.00
Mob/Demob (Support/Water)	\$2.50	Lump Sum	1860	\$4,650.00
Probe/Crew/Supplies	\$2,250.00	10-hr Day	5.5	\$12,375.00
Abandonment	\$1.00	Per Foot	850	\$850.00
Per Diem (2 man crew)	\$160.00	Per Day/Person	16	\$2,560.00
SUBTOTAL				\$26,050.00

Client Signature: _____
 Client Name: _____
 Client Title: _____

Date: _____

Dakota Signature: *Elliot Richards*
 Dakota Name: Elliot Richards
 Dakota Title: Operations Manager

Date: 7/2/2019

Please Note: Projects canceled within 72 hours of scheduled start date may be assessed a \$1,000 cancellation fee.

Northern Lights Drilling LLC
 258 Nitty Gritty Ln
 Priest River, ID 83856 US
 (208) 755-0699
 jr@northernlightsdrilling.com

Estimate

ADDRESS
Jamie Graham Applied Water Consulting PO Box 7667 Kalispell, MT 59904

ESTIMATE #	DATE	EXPIRATION DATE
1180	06/21/2019	09/21/2019

P.O. NUMBER
 Valier,MT

ACTIVITY	QTY	RATE	AMOUNT
MOB1 MOB/DEMOB	680	2.25	1,530.00
GEO GEOPROBE 5400 (10hr day rate)	14	2,100.00	29,400.00
HP HOLEPLUG	10	15.00	150.00
Hauling water (Per hr) estimate on hrly if we have to go to shelby for water	14	150.00	2,100.00
Injection Pump	14	120.00	1,680.00
MOB1 MOB/DEMOB daily back and forth to shelby	840	2.00	1,680.00
Poly tank Poly tank rental per tank	14	50.00	700.00
Per Deim Per Deim (Daily) 2 man crew	14	300.00	4,200.00

TOTAL **\$41,440.00**

Accepted By

Accepted Date