Water & Environmental
TECHNOLOGIES

December 10, 2019

Dean Kinney
Department of Environmental Quality
Petroleum Tank Cleanup Section
655 Timberwolf Way, Suite 3
Kalispell, MT59901

Re: ***Abbreviated Soil Boring and Monitoring Well Installation Corrective Action Work Plan (WP) AC-03 for Petroleum Release at Cut Bank International Airport, 2705 Valier Hwy, Cut Bank, Glacier County, Montana, Facility ID 18-00137, Release 3076, Work Plan: 33966***
WET Project No. 533.11

Dear Dean:

Water and Environmental Technologies (WET) is pleased to present the following Abbreviated Soil Boring and Monitoring Well Installation Corrective Action Work Plan (AC-03) on behalf of the Cut Bank International Airport Board. The work plan is being submitted pursuant to your letter dated October 23, 2019. WET previously submitted a RCP and are moving toward site closure through the PMZ process. One additional monitoring well is required to delineate the downgradient extent of petroleum contamination.

Background Information

The Cut Bank International Airport is located at 2705 Valier Highway in Cut Bank, Montana. The airport was constructed in 1941 and used as an auxiliary heavy bomber training airfield. Two 2,000-gallon underground storage tanks (USTs) were removed in December 1993. The site was subsequently closed on February 14, 1994.

Records indicate that a 10,000 gallon aviation gas UST system apparently suffered an underground line break in 1995. Inventory records for June 8, 1995 indicated a 765-gallon loss. The buried aviation gas line was discontinued from use. The suspected area of the leak was near the former 2,000-gallon UST basin approximately 33 feet east of the 10,000-gallon UST. An aboveground aviation gas transmission line was installed from the UST to the dispenser. The buried piping and leak area was not excavated until approximately 2 years later on April 24, 1997. The buried gas line was approximately 2-feet deep. The pipeline made two 90-degree bends around the former UST basin that contained the two 2,000-gallon tanks. A crack in the piping was found near the western limit of the former UST basin which was the likely source. Soil and groundwater samples collected from the test pit reported exceedances of Department of Environmental Quality (DEQ) risk-based screening levels (RBSLs).

The 10,000-gallon aviation gas and Jet A USTs and buried Jet A piping were removed on November 28, 1997. Confirmation soil samples were collected and submitted for gasoline range organics (GRO) and diesel range organics (DRO) analysis.

In October 2012, eight monitoring wells were installed on the site to delineate the extent of contamination. **Figure 1** is a site feature map that provides monitoring well locations, historical UST and associated piping locations, as well as the active USTs. Soil analytical results reported concentrations of VPH carbon-range constituents in excess of DEQ RBSLs in soil samples collected from monitoring wells MW-4 and MW-6. Groundwater monitoring has been conducted intermittently since 2012. In April 2018 an oxygen enhancement agent was injected into the shallow aquifer to stimulate biodegradation of petroleum constituents. Post injection groundwater monitoring indicates that petroleum constituents in groundwater remain above RBSLs.

WORK PLAN COMPONENTS

Task 1 - Health and Safety Plan Preparation

In order to comply with Occupation Safety and Health Administration Code of Federal Regulations (CFR) 29 1910.120, WET will prepare a health and safety plan (HASP) for the project site. The HASP discloses the potential chemical and physical hazards, identifies potential job hazards associated with field activities, describes safe work practices, specifies personal protective equipment and decontamination procedures, identifies project contacts, emergency medical procedures, and the location of the nearest medical facilities to the site.

Task 2 – Utility Clearance

Prior to commencing drilling activities, WET will prepare and submit a request for U-Dig to locate and mark subsurface utilities within the work area. WET will mark drilling locations and meet with representatives of the various utility locator services.

Task 3 – Soil Boring and Monitoring Well Installation

WET personnel will oversee the drilling of one soil boring that will be completed as a monitoring well. Soil samples will be logged continuously from ground surface and field screened with a PID utilizing a two-foot long stainless-steel split-spoon sampler. A soil boring log will be completed for the borehole. The soil boring log will describe lithology, visual and olfactory impacts from petroleum hydrocarbons, and field screening results. Typically, one "worst-case" soil sample is collected from the boring for laboratory analysis. The sample will be collected from soil-water interface and/or the soil interval that reports the highest PID reading. All non-disposable downhole equipment will be decontaminated before use.

The soil boring will be completed as a monitoring well by inserting a two-inch diameter PVC, 10-foot length of 20-slot well screen with approximately 6-feet of blank well casing into the borehole. The borehole will be filled to two feet above the well screen with 10-20 Colorado silica sand. The monitoring well will be completed with a heavy-duty airport grade flush-mount wellhead protector because it is in an area of aviation vehicle traffic. A map showing the proposed locations is presented as **Figure 2**.
The monitoring well will be developed to establish a hydraulic connection with the shallow aquifer. This will be accomplished utilizing a combination of surging, bailing, and over-pumping

if necessary, to remove the fines. Development will continue until improvement in turbidity and production can be observed.

Task 4 – Soil Sample Analyses

The soil samples will be analyzed for a suite of laboratory methods including volatile petroleum hydrocarbons (VPH), extractable petroleum hydrocarbon (EPH) Screen and lead scavengers by EPA Methods 8260B and 8011. Soil samples that exceed a total extractable hydrocarbon (TEH) concentration of 200 mg/kg will be submitted for fractionation analysis. The samples will be packaged in laboratory provided containers and shipped via overnight courier in a cooler on ice with appropriate chain-of-custody documentation to Energy Laboratories in Billings, Montana.

Task 5 – Groundwater Sample Collection and Analysis

Groundwater samples will be collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and the tank basin well. In accordance with the Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases (May 2018), the samples will be submitted for analysis of VPH, EPH Screen, and lead scavengers by EPA Methods 8260B and 8011. Samples that exceed a TEH concentration of 1,000 µg/L will be submitted for fractionation analysis.

Field water-quality parameters including dissolved oxygen, pH, temperature, specific conductivity, and oxidation/reduction potential will be measured in the purge water of all monitoring wells during groundwater sampling. Purge water will be handled in accordance with *Disposal of Untreated Purge Water from Monitoring Wells* (DEQ, July 27, 2015).

Task 6 – Monitoring Well Survey

WET will subcontract with RPA Surveying to tie in the new monitoring well to the existing survey and confirm measuring point elevations. The elevation and spatial data will be utilized to update the site map and create a potentiometric map.

Task 7 – Project Management

Project management tasks include the preparation and review of subcontractor agreements, attending meetings with DEQ PTCS staff and the owner, budget reconciliation and coordination with Petroleum Tank Release Compensation Fund (PTRCF) staff, communications with RPA Surveying, Energy Laboratories, and Boland Drilling, and other communications and management activities as needed.

Task 8 – Prepare Abbreviated Soil Boring & Monitoring Well Installation Report (AR-03)

WET will prepare an Abbreviated Soil Boring and Monitoring Well Installation Report (AR-03) upon receipt of the soil and groundwater analytical results. The report will contain the results of the soil and groundwater investigation, tabulated soil and groundwater laboratory data, soil boring

logs, monitoring well completion diagrams, soil disposal receipts and appropriate figures and tables.

PROJECT BUDGET

A cost estimate for soil boring and monitoring well installation was solicited from Boland Drilling, a contractor that utilizes a hollow-stem auger rig. Boland Drilling is located in Great Falls, Montana and is over 150 miles closer to the project site than other contractors that provide comparable services. Therefore, Boland Drilling will have the lowest mobilization costs to complete the work. Additionally, the bid provided by Boland Drilling is less than $2,500. Therefore, additional bids were not solicited.

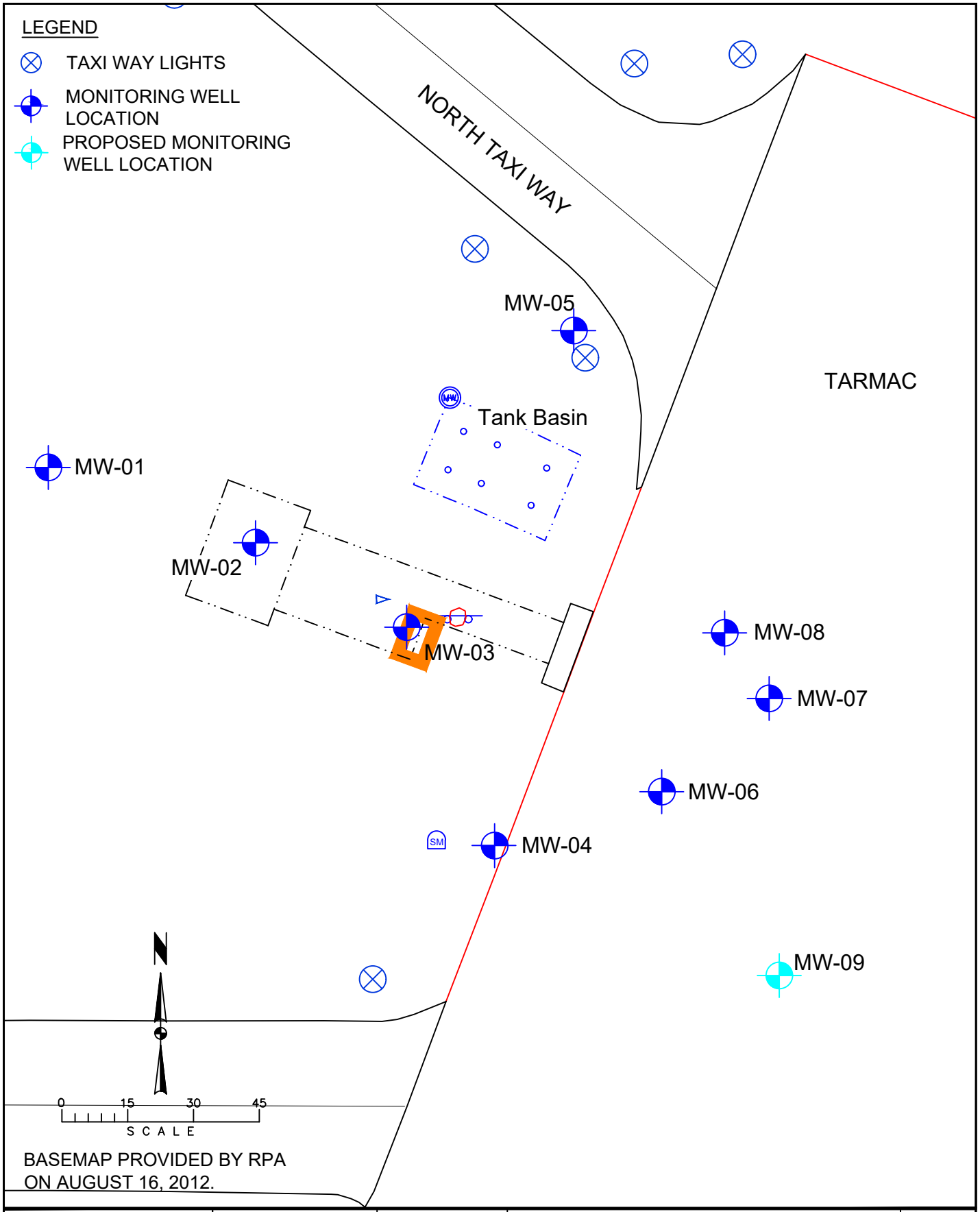
A detailed budget for the actions above is presented as **Attachment A** and subcontractor bids are provided in **Attachment B**.

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

Sincerely,

Jamie Graham.
Staff Hydrogeologist

c: Cut Bank Airport Authority Board



Water & Environmental TECHNOLOGIES	PROJ NO: 533-12	DRAWN: JEG	CUT BANK INTERNATIONAL AIRPORT	FIGURE 1
	LOCATION: CUT BANK, MT	PROJ MGR: R.NOBLE		
	SCALE: 1"=30'	CHECKED: APPVD:	Proposed Monitoring Well Location Map	REV -
	FILE NAME: CutBankAirport1.dwg	DATE: Dec/10/2019		

ATTACHMENT A

WET PROJECT BUDGET ESTIMATE

Abbreviated Soil Boring, Monitoring Well Installation, and Groundwater Monitoring Work Plan
Petroleum Release at Cut Bank International Airport
Cut Bank, Montana

Water & Environmental TECHNOLOGIES

Project Cost Estimate
10-Dec-19

Cut Bank International Airport
2705 Valier Highway, Cut Bank, MT
Facility ID: 18-00137, Release: 3076,
Work Plan: 33966

TASK DESCRIPTION	PRICE	UNITS	QUANTITY	PRICE
TASK 1 - Work Plan Perparation (AC-03) Soil Boring and Semi-annual Groundwater Monitoring				
Project Scientist	$ 120.00	hr	1	$ 120.00
Staff Scientist	$ 105.00	hr	9	$ 945.00
Word Processor	$ 60.00	hr	1	$ 60.00
			Task Subtotal	*$ 1,125.00*
TASK 2 - Project Management				
Project Hydrogeologist	$ 120.00	hr	8	$ 960.00
Staff Hydrogeologist	$ 105.00	hr	7	$ 735.00
			Task Subtotal	*$ 1,695.00*
TASK 3 - Mobilization (Round trip travel for well installation oversight & two groundwater monitoring events)				
Tech III (mark drilling location)	$ 85.00	hr	6	$ 510.00
Tech III (groundwater monitoring & survey support)	$ 85.00	hr	12	$ 1,020.00
Staff Hydrogeologist (well installation oversight)	$ 105.00	hr	6	$ 630.00
mileage	$ 0.63	mile	1120	$ 705.60
			Task Subtotal	*$ 2,355.60*
TASK 4 - Subcontractor - Soil Boring & Monitoring Well Installation				
Boland Drilling	$ 2,192.00	bid	cost +7%	$ 2,345.44
			Task Subtotal	*$ 2,345.44*
Task 5 - Subcontractor Well Survey (subcontractor)				
RPA	$ 2,500.00	bid	cost +7%	$ 2,675.00
			Task Subtotal	*$ 2,675.00*
TASK 6 - Field Work - Mark Drilling Area, Soil Boring Installation Oversight, Well Development, & Survey Support				
Staff Hydrogeologist (well install oversight)	$ 105.00	hr	6	$ 630.00
Tech III (well development)	$ 85.00	hr	1	$ 85.00
Tech III (survey support)	$ 85.00	hr	3	$ 255.00
			Task Subtotal	*$ 715.00*
TASK 7 - Equipment				
PID (soil boring installation)	$ 10.00	hr	6	$ 60.00
submersible pump (well development)	$ 5.50	hr	1	$ 5.50
Disposable Bailer (well development)	$ 8.00	bailer	1	$ 8.00

				Task Subtotal	*$*	*73.50*
Task 8 - Groundwater Monitoring (Ten wells per event, Two events)						
Groundwater monitoring	$	200.00	well	20	$	4,000.00
				Task Subtotal	*$*	*4,000.00*
Task 9 - Laboratory Analysis and Sample Fee						
Soil VPH	$	120.00	sample	1	$	120.00
Soil 1,2-DCA (EPA 8260B)	$	150.00	sample	1	$	150.00
Soil 1,2-EDB (EPA 8011)	$	75.00	sample	1	$	75.00
Groundwater VPH	$	120.00	sample	20	$	2,400.00
Groundwater 1,2-DCA (EPA 8260B)	$	150.00	sample	20	$	3,000.00
Groundwater 1,2-EDB (EPA 8011)	$	75.00	sample	20	$	1,500.00
PTRCB Sample Fee	$	10.00	sample	21	$	210.00
				Task Subtotal	*$*	*7,455.00*
Task 10 - Lodging and Per-diem						
Hotel (at cost)	$	100.00	/night	3	$	300.00
Per Diem	$	30.50	/day	6	$	183.00
				Task Subtotal	*$*	*483.00*
Task 11 - Release Closure Plan						
Staff Hydrogeologist	$	105.00	hrs	4	$	420.00
Subtotal				*Task Subtotal*	*$*	*420.00*
Task 12 - Report (AR-07) Soil Boring, Well Installation, and Semi-annual Groundwater Monitoring						
Project Scientist	$	120.00	hrs	4	$	480.00
Staff Scientist	$	105.00	hrs	24	$	2,520.00
CAD Specialist	$	90.00	hrs	5	$	450.00
Word Processor	$	60.00	hrs	1	$	60.00
				Task Subtotal	*$*	*3,510.00*
TOTAL COST					**$**	**26,852.54**

ATTACHMENT B

SUBCONTRACTOR BID

Abbreviated Soil Boring, Monitoring Well Installation, and Groundwater Monitoring Work Plan
Petroleum Release at Cut Bank International Airport
Cut Bank, Montana

BOLAND DRILLING CO.
4701 North Star Boulevard
Great Falls, MT 59405
(406) 761-1063

Estimate

Environmental Drilling

Customer
WET ATTN: JAMIE GRAHAM SENT VIA EMAIL JGRAHAM@WATERENVTECH.COM

Date	Estimate #
11/1/2019	2019130

Project
DRILL AND CONSTRUCT 1 MONITOR WELL AT CUT BANK AIRPORT

Description	Quantity	Unit	Rate	Total
PROJECT: DRILL AND CONSTRUCT 1 MONITOR WELL AT CUT BANK AIRPORT				
MOBILIZE AND DEMOBILIZE	1	LSUM	800.00	800.00
CUT CONCRETE 12" DIA. X 12" DEPTH	1	LSUM	400.00	400.00
DRILLING FOOTAGE	16	FT	30.00	480.00
MONITOR WELL CONSTRUCTION	16	FT	32.00	512.00

If you have any questions or if there is any other information you might need please let me know.

Respectfully Submitted,

Chris Boland

Total $2,192.00