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MAY 04, 2020
MT DEQ / PTCS

May 4, 2020

Ms. Latysha Pankratz
Department of Environmental Quality
Petroleum Tank Cleanup Section
P.O. Box 200901
Helena, MT 59620-0901

RE: Standardized Corrective Action Work Plan (WP) AC-07 for the Petroleum Release at Three Rivers Quik Stop (Former Three Rivers Exxon), 325 South Main Street, Twin Bridges, Madison County, Montana; Facility ID 28-10708 (TID 24759), Release 0857, Work Plan 34052.

Dear Ms. Pankratz,

Water & Environmental Technologies (WET) is pleased to provide this Standardized Corrective Action Plan (AC-07) and cost estimate (**Attachment A**) for environmental consulting services for the subject-referenced facility. The AC-07 was prepared in response to a request by the Montana Department of Environmental Quality (DEQ) for a Work Plan in a letter dated April 1, 2020.

SCOPE OF WORK

The scope of work specified in the DEQ Work Plan Request includes designing and implementing a subsurface chemical oxygen release injection; repairing well monuments; proposing a groundwater monitoring schedule; validating data obtained during the project's field work; and preparing an Abbreviated Standardized Application Report (AR-07) summarizing work plan implementation. An updated Release Closure Plan (RCP) will be appended to the AR-07. WET's proposed approach to complete the work in accordance with DEQ's letter request is detailed in the following paragraphs with the exception of the workplan preparation.

Project Management

WET personnel will provide informal status reports to Mr. Hanson and DEQ on an as-needed basis. Other duties associated with this task include scheduling field work, coordinating with contractors, project reporting, and monitoring the project budget and deliverables.

Mobilization

An estimated total of 11 mobilizations to the site will be required to complete this scope of work. The first mobilization will be for meeting the private utility locator onsite to identify and

document buried utilities before the injection work begins. The second mobilization will be for coring the concrete apron where injection sites are planned. An estimated five mobilization will be required for the injection work. The final four mobilizations will be for the quarterly groundwater monitoring events following the injection.

Field Work

WET will use Montana One Call for public utility location. In addition, WET will utilize Pathfinder Daylighting to locate on-site utilities. The Pathfinder Daylighting bid is included as **Attachment B**. To minimize damage to the facility, the injection sites located on the concrete pad will be precut by a A-Core, a concrete coring company. A-Core's Bid is included as **Appendix C**.

Injection

Following the utility location, WET will implement an in-situ injection of an oxygen releasing compound to remediate the dissolved petroleum constituents in the subsurface. WET proposes that the oxygen release compound ORC Advanced®, manufactured by Regenesys, be used as the injectate. ORC Advanced® slowly releases oxygen into the targeted treatment zone, promoting and supporting aerobic biodegradation of contaminants for 9 to 12 months. This compound ships as a white powder that is mixed with water in the field to form a pumpable slurry. ORC Advanced® can be injected at low pressures, produces minimal heat upon reaction, and is non-corrosive, which makes it a safe option to use at a site with active tank basins like the Three Rivers facility. ORC Advanced® injection volume should promote continued biodegradation of the contamination at the facility, throughout a year's worth of groundwater fluctuation. ORC Advanced® specification sheet is included as **Attachment D**.

The ORC Advanced® slurry will be applied to the shallow aquifer at depths ranging from 5 to 15 feet below ground surface, within the footprint of the dissolved contaminant plume as shown on **Figure 1**. Injections will be centered around the existing monitoring well 3R-A7, a centrally located well, where groundwater samples have exhibited relatively high petroleum constituent concentrations. Injections points will be installed using a Geoprobe and a direct push drilling method that will create boreholes to 15-ft below the surface. The oxidant will then be pumped using the Geoprobe's onboard auxiliary low-pressure pump. The Geoprobe bid for this project is included as **Attachment E**.

Groundwater at this facility is highly variable and has been observed to reverse flow direction throughout the year. This is believed to be due to the proximity and connectivity with the nearby Beaverhead River and adjacent irrigated farmland. Therefore, by injecting into the shallow aquifer and smear zone in the vicinity of 3R-A7, the oxidant will act as a permeable reactive barrier, degrading the facility contamination as it flows back and forth across the treatment area.

Injections will occur in the shallow aquifer and smear zone over a 10-foot interval from depths of 15-ft to 5-ft below ground surface. The proposed injection point layout for the facility is given in **Figure 1**. Due to the uncertainty of the volume of injectate that each injection point will accept, this injection plan has been designed to begin with several injection points around monitoring

well 3R-A7, with subsequent injection points progressing outward from this location, as depicted by the color-coded priority zones shown on **Figure 1**.

The green zone will be injected first, followed by the yellow and red zones, until all the oxidant is injected. An estimated total of 2,320 pounds of ORC Advanced ® slurry will be injected into the subsurface. The recommended ORC Advanced ® slurry percentage is 30% by weight, which equates to 13 gallons of water per 46-lbs of ORC; however, exact mix ratio will be refined in the field based on aquifer acceptance rates. The volume of ORC slurry injected at each point and the final injection volume total will be recorded in the field and included in the final report.

Following the injection, the boreholes will be sealed with bentonite to a level flush with the bottom of the surrounding pavement layer, followed by a cement grout patch flush with the paved surface. To maximize contact with contaminants, the injection will occur during high groundwater when the maximum thickness of smear-zone impacts are below the water table and contaminants are more likely to be mobilized. Therefore, it is recommended that the remedial in-situ oxidation application occur between late May and late June 2020.

Well Monument Repair

During the last groundwater monitoring event, which took place on May 29, 2019, field personnel noted damages to the flush-mount well monuments of wells 3R-A7, 3R-A4R, and 3R-A2. It is believed that frost heaves have caused the well casing to rise and push up on the monument lids, which have then been damaged by incoming traffic to the gas station. As a result, these wells all have poorly fitting lids, and some of the bolt ears inside the monument have broken off. Following completion of the injection, the hammer tool of the Geoprobe will be used to break up and remove the old monuments of these three wells and new ones will be installed and secured with concrete. Field personnel will attempt to avoid disturbing the well casings during the repair work.

Groundwater Monitoring

One month after the ORC Advanced ® slurry injection, WET will conduct the first of four quarterly groundwater monitoring events. Monitoring will include depth-to-water measurements, and the collection of groundwater samples from all seven active facility wells (3R-A4R, 3R-A10, PW-2, 3R-A11, 3R-A2, PW-1, and 3R-A7), in this order, which is from wells historically exhibiting the lowest petroleum analyte concentrations to wells historically exhibiting the highest concentrations. Samples will be collected using a peristaltic pump and low-flow sample procedures. Groundwater field parameters including temperature, dissolved oxygen, specific conductivity, pH, and oxygen reduction potential (ORP) will be measured during purging. Depth to groundwater and turbidity measurements will be collected at regular intervals during the purging, to verify the low-flow sampling procedures. Following the stabilization of parameters, or after 30-minutes of continual low-flow purging has occurred, a groundwater sample will be collected in laboratory supplied bottles and analyzed for volatile petroleum hydrocarbons (VPH), volatile organic compounds (VOCs) (short list) by method SW8260B, which includes lead scavenger 1,2-dichloroethane (1,2-DCA), and for the lead scavenger ethylene dibromide (EDB) by method 8011. Following the initial sampling event, the analytical results will be shared with

the DEQ project manager, and the necessity for further analysis for Methods SW8260B and 8011 will be discussed.

Project Reporting

Upon completion of field activities and receipt of groundwater analytical results, WET will prepare and submit a Generic Action Report (AR-07) containing all the pertinent sections listed in the DEQ template for an Abbreviated Report for Groundwater Monitoring, as well as an updated Release Closure Plan. The analytical data will be validated and qualified by WET personnel in accordance with DEQ standards and a data validation summary form (DEQ version) will be included in the final report.

COST AND SCHEDULE

Work effort levels have been estimated using best professional judgement and typical scenarios related to work of this type. The estimated cost for WET to complete this project is \$70,770.93. A detailed cost estimate and subcontractors' bids for the required work are provided in **Attachment A**.

WET will begin implementation of the CAP immediately upon DEQ approval and obligation of reimbursement funds by the Montana Petroleum Tank Release Compensation Board.

If you have any questions or concerns, please contact me at lsurratt@waterenvtech.com or 782-5220.

Sincerely,



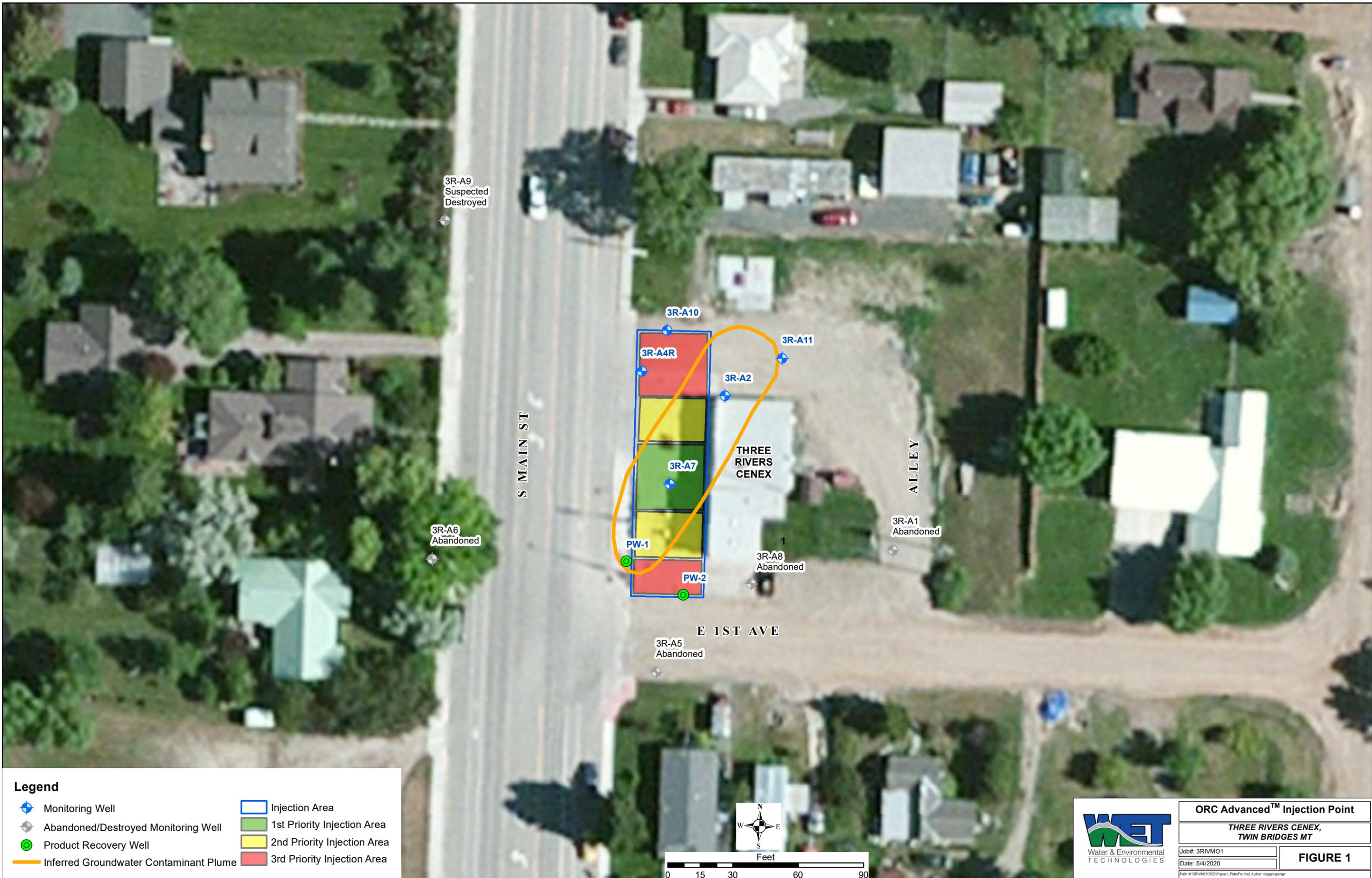
Laura Surratt, MS, EI
Project Engineer

Figures: Figure 1 – ORC Advanced Injection Area

Attachments: Attachment A – Project Cost Estimate
Attachment B – Pathfinder Daylighting Bid
Attachment C – A-Core Bid
Attachment D – ORC Advanced ® Specifications
Attachment E – Geoprobe Bid

Cc: Danny Hanson, Three Rivers Quik Stop,
JoAnne Adydan PTRCB
Van Puckett, Madison County Sanitarian

Figure 1 – ORC Advanced Injection Area



Legend

- ◆ Monitoring Well
- ◆ Abandoned/Destroyed Monitoring Well
- Product Recovery Well
- Inferred Groundwater Contaminant Plume
- Injection Area
- 1st Priority Injection Area
- 2nd Priority Injection Area
- 3rd Priority Injection Area



ORC Advanced™ Injection Point

**THREE RIVERS CENEX,
TWIN BRIDGES MT**

Job#: 3RIVM01
Date: 5/4/2020

FIGURE 1

Path: M:\3RIVM01\2020\Figure1_PendFu.mxd, Author: reggieberger

Attachment A – Project Cost Estimate



Additional Corrective Action Plan Cost Estimate
4-May-20

Former Three Rivers Exxon
325 S. Main Street, Twin bridges, MT
Facility ID 28-10708, Release 0857
Work Plan 34052

TASK DESCRIPTION	PRICE	UNITS	QTY	PRICE
TASK 1. Project Management				
Project Engineer	\$125.00	HR	44	\$5,500.00
TASK 1 SUBTOTAL:				\$5,500.00
TASK 2. Work Plan Preparation (CAP-MR-01)				
Project Engineer	\$125.00	HR	5	\$625.00
GIS Specialist	\$97.00	HR	6	\$582.00
Staff Engineer	\$108.00	HR	15	\$1,620.00
TASK 2 SUBTOTAL:				\$2,827.00
TASK 3. Mob/Demob (11 trips)				
Staff Engineer/Hydrogeologist	\$108.00	HR	26	\$2,808.00
Mileage	\$0.625	MI	1320	\$825.00
Per diem	\$30.00	Day	11	\$330.00
TASK 3 SUBTOTAL:				\$3,963.00
TASK 4. Field work				
Pathfinder Daylighting	\$800.00	LS	1	\$800.00
Subcontractor Markup	7%	LS	1	\$56.00
Acore precoring	\$1,175.00	LS	1	\$1,175.00
Subcontractor Markup	7%	LS	1	\$82.25
Staff Engineer/Hydrogeologist	\$108.00	HR	48	\$5,184.00
TASK 4 SUBTOTAL:				\$7,297.25
TASK 5. Injection				
Enviroprobe Svcs. (See attached bid)	\$9,147.95	LS	1	\$9,147.95
ORC Advanced injectate	\$22,344.23	LS	1	\$22,344.23
TASK 5 SUBTOTAL:				\$31,492.18
TASK 6. Monitoring Well Repair				
Monitoring Well Monument	\$152.50	LUMP	3	\$457.50
60-lb bag concrete	\$8.00	LUMP	3	\$24.00
TASK 6 SUBTOTAL:				\$481.50
TASK 7. Groundwater Monitoring (Seven (7) Wells, Four (4) Events)				
Staff Engineer/Hydrogeologist	\$108.00	HR	40	\$4,320.00
YSI Combo Meter w/ Flow Through Cell	\$10.00	HR	40	\$400.00
Peristaltic Pump	\$11.00	HR	40	\$440.00
Interface Probe	\$10.00	HR	40	\$400.00
TASK 7 SUBTOTAL:				\$5,560.00
Task 8. Laboratory Analysis **				
VPH (Water)	\$120.00	SAMPLE	28	\$3,360.00
VOC short list (Water) ***	\$120.00	SAMPLE	28	\$3,360.00
Ethylene Dibromide (Water)***	\$75.00	SAMPLE	28	\$2,100.00
PTRCB Sampling Fee (Water)	\$10.00	SAMPLE	28	\$280.00
TASK 8 SUBTOTAL:				\$9,100.00
Task 9. AR-07 Report, Release Closure Plan, Data Validation				
Staff Engineer/Hydrogeologist	\$108.00	HR	28	\$3,024.00
GIS Specialist	\$97.00	HR	8	\$776.00
Project Engineer	\$125.00	HR	6	\$750.00
TASK 9 SUBTOTAL:				\$4,550.00
TOTAL COST :				\$70,770.93

Notes:

* A-Core's Bid is for an estimated 20 holes. Final number of precut holes will be dependant on utility locate. Invoice will reflect actual cost for number of cores drilled. If injectionpoint accept less injectate volume than anticipated, additional holes may be required at additional cost.

** Task 7: Actual totals will be reflected on laboratory invoices.

*** Task 7: VOC's and Lead scavengers will be analyzed on the first event. Further analysis will be discussed with DEQ case manager.

Attachment B – Pathfinder Daylighting Biid

Tim Driscoll

From: Yahoo <pathfinderlocating@yahoo.com>
Sent: Wednesday, April 22, 2020 1:21 PM
To: Tim Driscoll
Subject: Re: Bid for Utility Locate.

Hello Tim,

\$800.00 should cover the work and mobilization.

Thanks,

Cory
PFL
406-490-7334

On Tuesday, April 21, 2020, 01:00:39 PM MDT, Tim Driscoll <tdriscoll@waterenvtech.com> wrote:

From: Tim Driscoll
Sent: Wednesday, April 15, 2020 10:31 AM
To: pathfinderlocating@yahoo.com
Subject: Bid for Utility Locate.

Hi Corry,

Could you provide me with a bid for locating utilities at an active gas station in Twin Bridges? I have attached a map, and a google earth file. The property address is – 325 S Main Street, Twin Bridges, MT. We will be doing some drilling on the property near 3R-A7 (see map), so that would be the main area I need located, but the entire yard would be best, just to be safe. I am writing the work plan now, and it is due next week, so if you could send me a bid in what ever format is most convenient for you, that would be great. The plan has to be approved by DEQ, but I would expect this to take place this summer. I will coordinate with you ahead of time once we get approval if you are interested.

Thanks,

Tim Driscoll



Tim Driscoll, M.S.

Staff Hydrogeologist

P: (406) 299-9854

C: (406) 498-1568

tdriscoll@waterenvtech.com



CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Attachment C – A-Core Bid

Attachment D – ORC Advanced ® Specifications



Proposal for Site Remedy

To: Tim Discoll w/ Water & Environmental Technologies
tdiscoll@waterenvtech.com
From: Brittain Griffiths
bgriffiths@regenesisis.com 916.587.3098
Subject: *Preliminary Design and Cost Estimate Proposal*
Site: *Three Rivers Cenex*

April 16, 2020
Proposal No. BRG66585

Treatment Unit: Dissolved Plume

Applicable Product(s) **Link to View/Download Product Information**
ORC Advanced® [ORC Advanced](#)

Technical and Cost Summary

The following is a preliminary remedial design for the above-referenced site. Based on the site data provided, the preliminary design and cost estimate includes the use of Oxygen Release Compound Advanced® (ORC Advanced) to treat residual petroleum hydrocarbons. The treatment area is shown on the attached treatment map with text boxes summarizing relevant information for the remedial design. Design assumptions and technical specifications regarding the proposed design are contained on the attached tables behind the map. The following table provides a summary of pertinent information pertaining to the treatment areas, basic design elements and product cost.

Treatment Unit	Treatment Surface Area (sq ft)	Treatment Thickness (ft)	Cubic Yards (cy)	Technology	Injection Points	Product Quantity (lbs)	Injection Volume (gals)	Product Cost*
Dissolved Plume	3,200	10	1,185	ORC Advanced	50	2,320	753	\$21,599
Project Totals					50		753	\$21,599

*Tax and freight charges are not included. Please contact Customer Service Department at 949-366-8000 for a shipping quote.

Product Description and Use Rationale

Petroleum hydrocarbon plumes are typically depleted in oxygen, which limits the ability of naturally occurring microorganisms to degrade petroleum hydrocarbons. ORC Advanced supplies a controlled release of oxygen for 9-12 months in the target treatment zone to create and support the geochemical environment necessary for aerobic biodegradation of contaminants. This preliminary technical design and cost estimate contains information related to the design, application, and performance monitoring of ORC Advanced. Use the above hyperlink to access more information about ORC Advanced.

Conceptual Model and Treatment Area Technical Considerations

In generating this design proposal Regenesisis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site. The attached design summary tables specify the assumptions used in preparation of this technical design. We request that these modeling input assumptions be verified by your firm prior to application.



REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s). The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the Government.

The ORC-Advanced should be injected into 50 points spaced 8 ft on center. Offset the rows of injection points parallel to gw flow by 4 feet. The injection should occur from 5 to 15 ft bgs.

Application Guidance

ORC Advanced is shipped as a dry, off-white powder and is mixed with water to form a slurry. Most designs specify a slurry percentage of 20% to 30%. This material is typically applied using a direct push technology (DPT) injection method as proposed here. It is important that the materials be applied per the design, including material loading rates and injection point spacing specified, to the extent site conditions allow. A brief description of the application method is provided below along with links to application instructions for these products. Regenesis can assist with further site-specific application design information, as needed, upon notification that our proposed remedy is chosen for implementation.

Application Method	Description	Instructions
Direct Push Injection	Direct push drilling rods are advanced to target depth. Reagent is injected through rods, evenly throughout the treatment zone.	ORC-Advanced App Inst

Given the complexities associated with applications, it is recommended that a contractor with proven experience mixing and injecting the remediation products proposed for this project. As part of the selection process, it is suggested to question the application contractor on the following:

- Specific experience injecting the reagent proposed
- of the appropriate injection pump (type, pressure rating, flow rate, etc.)
- Use of in-line flow meters and pressure gauges
- In-line safety valves for bleeding high pressure from injection lines
- Injection tooling for bottom up or top down application
- Other project specific tooling (i.e. air compressor)
- Distribution monitoring during injection

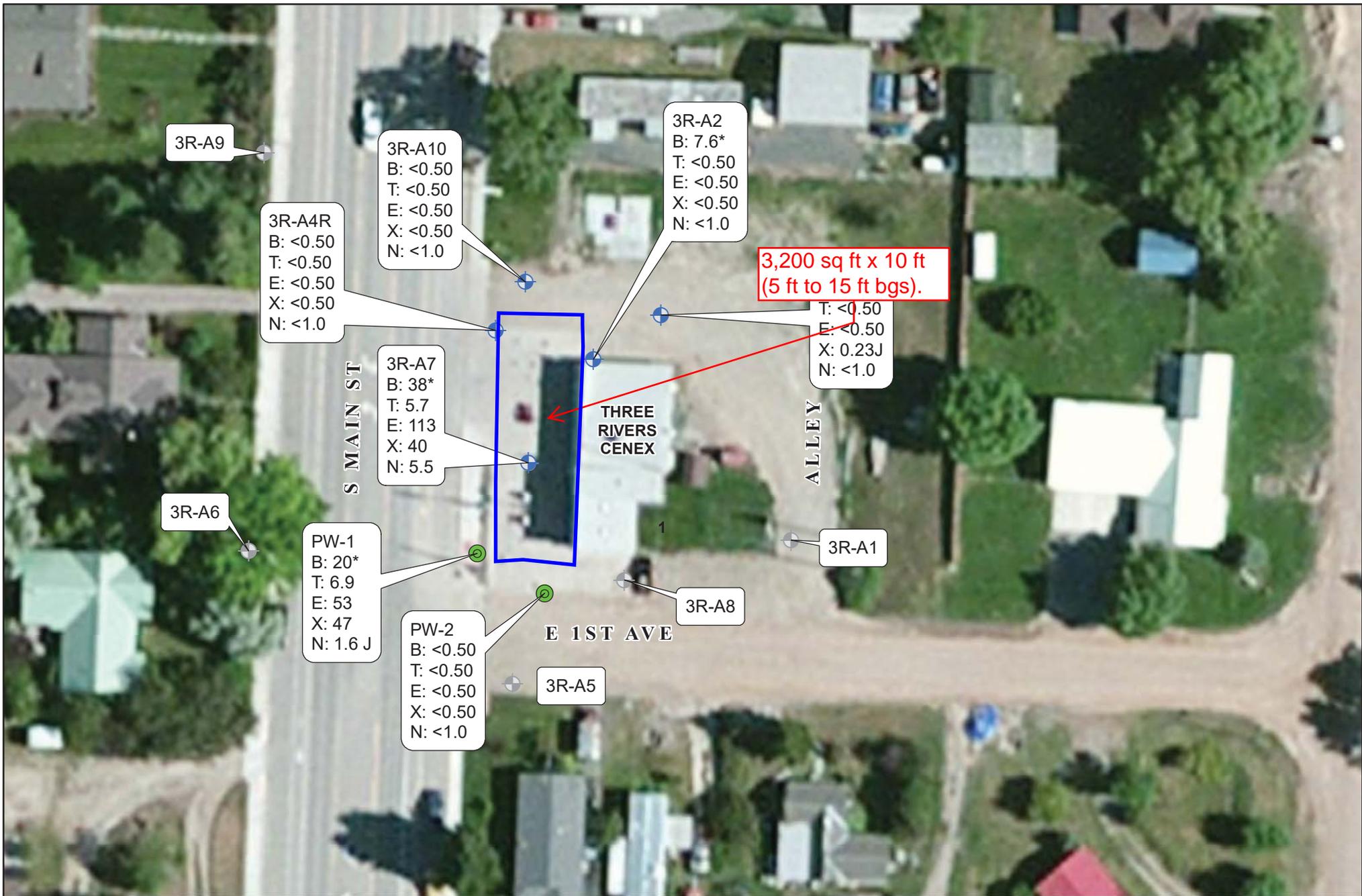
The contractor should provide a detailed log of field activities for the application process. This information is critical to the post-injection assessment of remediation performance across the site.

Performance Monitoring

We recommend groundwater samples be collected from select performance monitoring wells to evaluate enhanced natural attenuation processes. Ideally, wells from within and outside of the treatment area (i.e., upgradient and downgradient of the plume) should be sampled. A round of sampling should be conducted prior to treatment with ORC Advanced to evaluate the baseline aquifer conditions and to assess the total demand for oxygen in the treatment area. After ORC Advanced has been installed into the subsurface, groundwater samples should be collected on a quarterly, or more frequent, basis. We recommend samples be collected using low-flow methods and be analyzed for field redox parameters (pH, Temp, DO, ORP, turbidity). Additionally, submit samples to a qualified laboratory for analysis of: chemicals of concern, total dissolved Fe and Mn, COD, BOD (5 day) and methane. If practical, analyze some soil samples from the proposed treatment areas just below the water table for the contaminants of concern. This is useful in estimating the amount of hydrocarbon contamination that can continue to partition from the soil to the dissolved phase.

Closing

Please feel free to contact me if you need additional information or have any questions regarding our evaluation and/or this correspondence (contact info provided above). I will be following up with you in the near future regarding this proposal. We appreciate the opportunity and thank you for considering Regenesis as your remedial solution provider for this project.



3R-A9

3R-A10
 B: <0.50
 T: <0.50
 E: <0.50
 X: <0.50
 N: <1.0

3R-A2
 B: 7.6*
 T: <0.50
 E: <0.50
 X: <0.50
 N: <1.0

3,200 sq ft x 10 ft
 (5 ft to 15 ft bgs).

3R-A4R
 B: <0.50
 T: <0.50
 E: <0.50
 X: <0.50
 N: <1.0

T: <0.50
 E: <0.50
 X: 0.23J
 N: <1.0

S MAIN ST

3R-A7
 B: 38*
 T: 5.7
 E: 113
 X: 40
 N: 5.5

THREE RIVERS CENEX

ALLEY

3R-A6

PW-1
 B: 20*
 T: 6.9
 E: 53
 X: 47
 N: 1.6 J

3R-A1

3R-A8

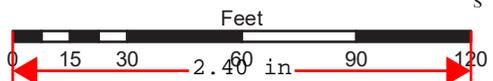
E 1ST AVE

PW-2
 B: <0.50
 T: <0.50
 E: <0.50
 X: <0.50
 N: <1.0

3R-A5

Legend

- Monitoring Well
- Abandoned/Destroyed Monitoring Well
- Product Recovery Well



BTEXN Concentrations	
<i>THREE RIVERS CENEX, TWIN BRIDGES MT</i>	
Job#: 3RIVMO1	FIGURE 3
Date: 7/23/2019	
<small>Path: M:\3RIVMO1\2019\Figures4_TargetAnalysis.mxd, Author: ceggenporter</small>	



ORC Advanced® Application Design Summary		
Three Rivers Cenex		
Dissolved Plume		Field App Instructions
Application Method	Direct Push	Input special application instructions here as needed.
Spacing Within Rows (ft)	8.0	
Spacing Between Rows (ft)	8.0	
Application Points	50	
Areal Extent (square ft)	3,200	
Top Application Depth (ft bgs)	5	
Bottom Application Depth (ft bgs)	15	
ORC Advanced to be Applied (lbs)	2,320	Field Mixing Ratios
ORC Advanced per point (lbs)	46	Water per Pt (gals)
Percent Slurry	30%	13
Volume Water (gals)	649	ORC Advanced per Pt (lbs)
Volume ORC Advanced (gals)	104	46
Total Application Volume (gals)	753	Total Volume per Pt (gals)
Injection Volume per Point (gals)	15	15
Technical Notes/Discussion		
<p>In generating this preliminary estimate, Regenesi s relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.</p> <p>REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s). The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the Government.</p>		
Assumptions/Qualifications		



**OXYGEN
RELEASE
COMPOUND**

ORC Advanced® Technical Description

ORC Advanced® is an engineered, oxygen release compound designed specifically for enhanced, *in situ* aerobic bioremediation of petroleum hydrocarbons in groundwater and saturated soils. Upon contact with groundwater, this calcium oxyhydroxide-based material becomes hydrated producing a controlled release of molecular oxygen (17% by weight) for periods of up to 12 months on a single application.

ORC Advanced decreases time to site closure and accelerates degradation rates up to 100 times faster than natural degradation rates. A single ORC Advanced application can support aerobic biodegradation for up to 12 months with minimal site disturbance, no permanent or emplaced above ground equipment, piping, tanks, power sources, etc are needed. There is no operation or maintenance required. ORC Advanced provides lower costs, greater efficiency and reliability compared to engineered mechanical systems, oxygen emitters and bubblers.



Example of ORC Advanced

ORC Advanced provides remediation practitioners with a significantly faster and highly effective means of treating petroleum contaminated sites. Petroleum hydrocarbon contamination is often associated with retail petroleum service stations resulting from leaking underground storage tanks, piping and dispensers. As a result, ORC Advanced technology and applications have been tailored around the remediation needs of the retail petroleum industry and include: tank pit excavations, amending and mixing with backfill, direct-injection, bore-hole backfill, ORC Advanced Pellets for waterless and dustless application, combined ISCO and bioremediation applications, etc.

For a list of treatable contaminants with the use of ORC Advanced, view the [Range of Treatable Contaminants Guide](#)

Chemical Composition

- Calcium hydroxide oxide
- Calcium hydroxide
- Monopotassium phosphate
- Dipotassium phosphate

Properties

- Physical state: Solid
- Form: Powder
- Odor: Odorless
- Color: White to pale yellow
- pH: 12.5 (3% suspension/water)



ORC Advanced® Technical Description

Storage and Handling Guidelines

Storage

- Store in a cool, dry place out of direct sunlight
- Store in original tightly closed container
- Store in a well-ventilated place
- Do not store near combustible materials
- Store away from incompatible materials
- Provide appropriate exhaust ventilation in places where dust is formed

Handling

- Minimize dust generation and accumulation
- Keep away from heat
- Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces
- Observe good industrial hygiene practices
- Take precaution to avoid mixing with combustibles
- Keep away from clothing and other combustible materials
- Avoid contact with water and moisture
- Avoid contact with eyes, skin, and clothing
- Avoid prolonged exposure
- Wear appropriate personal protective equipment

Applications

- Slurry mixture direct-push injection through hollow rods or direct-placement into boreholes
- *In situ* or *ex situ* slurry mixture into contaminated backfill or contaminated soils in general
- Slurry mixture injections in conjunction with chemical oxidants like RegenOx or PersulfOx
- Filter sock applications in groundwater for highly localized treatment
- *Ex situ* biopiles

Health and Safety

Wash thoroughly after handling. Wear protective gloves, eye protection, and face protection. Please review the [ORC Advanced Safety Data Sheet](#) for additional storage, usage, and handling requirements.



www.regensis.com
1011 Calle Sombra, San Clemente CA 92673
949.366.8000



Remedial Design Assumptions and Qualifications

Cost Estimate Disclaimer: The cost listed assumes conditions set forth within the proposed scope of work and assumptions and qualifications. Changes to either could impact the final cost of the project. This may include final shipping arrangements, sales tax or application related tasks such as product storage and handling, access to water, etc. If items listed need to be modified, please contact Regenesis for further evaluation.

Shipping Estimates: Shipping estimates are valid for 30 days. All shipping charges are estimates and actual freight charges are calculated at the time of invoice. Additional freight charges may be assessed for any accessorial requested at the time of delivery. The estimate included within assumes standard shipping.

Standard delivery is between 8am -5pm Monday –Friday. *accessorial – can include, but not limited to lift gate and pallet jack at delivery, inside delivery, time definite deliveries, and delivery appointments.

Please communicate any requirements for delivery with the customer service department at the time the order is placed.

Return Policy: To initiate a return please contact your local sales manager for an RMA. A 15% re-stocking fee will be charged for all returned goods. Return freight must be prepaid. All requests to return product must be in original condition and no product will be accepted for return after 90 days from date of delivery.

Professional Judgement: In generating this estimate, REGENESIS relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s), and in reliance upon REGENESIS' prior experience on similar project sites. The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the government.



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Terms and Conditions Products and Services

1. PAYMENT TERMS. Net 30 Days. Accounts outstanding after 30 days will be assessed 1.5% monthly interest. Volume discount pricing will be rescinded on all accounts outstanding over 90 days. An early payment discount of 1.5% Net 10 is available for cash or check payments only. We accept Master Card, Visa and American Express.

2. RETURN POLICY. A 15% re-stocking fee will be charged for all returned goods. All requests to return product must be pre-approved by seller. Returned product must be in original condition and no product will be accepted for return after a period of 90 days.

3 FORCE MAJEURE. Seller shall not be liable for delays in delivery or services or failure to manufacture or deliver due to causes beyond its reasonable control, including but not limited to acts of God, acts of buyer, acts of military or civil authorities, fires, strikes, flood, epidemic, war, riot, delays in transportation or car shortages, or inability to obtain necessary labor, materials, components or services through seller's usual and regular sources at usual and regular prices. In any such event Seller may, without notice to buyer, at any time and from time to time, postpone the delivery or service dates under this contract or make partial delivery or performance or cancel all or any portion of this and any other contract with buyer without further liability to buyer. Cancellation of any part of this order shall not affect Seller's right to payment for any product delivered or service performed hereunder.

4. LIMITED WARRANTY. Seller warrants the product(s) sold and services provided as specified on face of invoice, solely to buyer. Seller makes no other warranty of any kind respecting the product and services, and expressly DISCLAIMS ALL OTHER WARRANTIES OF WHATEVER KIND RESPECTING THE PRODUCT AND SERVICES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND NON-INFRINGEMENT.

5. DISCLAIMER. Where warranties to a person other than buyer may not be disclaimed under law, seller extends to such a person the same warranty seller makes to buyer as set forth herein, subject to all disclaimers, exclusions and limitations of warranties, all limitations of liability and all other provisions set forth in the Terms and Conditions herein. Buyer agrees to transmit a copy of the Terms and Conditions set forth herein to any and all persons to whom buyer sells, or otherwise furnishes the products and/or services provided buyer by seller and buyer agrees to indemnify seller for any liability, loss, costs and attorneys' fees which seller may incur by reason, in whole or in part, of failure by buyer to transmit the Terms and Conditions as provided herein.

6. LIMITATION OF SELLER'S LIABILITY AND LIMITATION OF BUYER'S REMEDY. Seller's liability on any claim of any kind, including negligence, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair or use of any goods or performance of any services covered by or furnished hereunder, shall in no case exceed the lesser of (1) the cost of repairing or replacing goods and repeating the services failing to conform to the forgoing warranty or the price of the goods and/or services or part thereof which gives rise to the claim. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, OR FOR DAMAGES IN THE NATURE OF PENALTIES.

7. INDEMNIFICATION. Buyer agrees to defend and indemnify seller of and from any and all claims or liabilities asserted against seller in connection with the manufacture, sale, delivery, resale or repair or use of any goods, and performance of any services, covered by or furnished hereunder arising in whole or in part out of or by reason of the failure of buyer, its agents, servants, employees or customers to follow instructions, warnings or recommendations furnished by seller in connection with such goods and services, by reason of the failure of buyer, its agents, servants, employees or customers to comply with all federal, state and local laws applicable to such goods and services, or the use thereof, including the Occupational Safety and Health Act of 1970, or by reason of the negligence or misconduct of buyer, its agents, servants, employees or customers.

8. EXPENSES OF ENFORCEMENT. In the event seller undertakes any action to collect amounts due from buyer, or otherwise enforce its rights hereunder, Buyer agrees to pay and reimburse Seller for all such expenses, including, without limitation, all attorneys and collection fees.

9. TAXES. Liability for all taxes and import or export duties, imposed by any city, state, federal or other governmental authority, shall be assumed and paid by buyer. Buyer further agrees to defend and indemnify seller against any and all liabilities for such taxes or duties and legal fees or costs incurred by seller in connection therewith.

10. ASSISTANCE AND ADVICE. Upon request, seller in its discretion will furnish as an accommodation to buyer such technical advice or assistance as is available in reference to the goods and services. Seller assumes no obligation or liability for the advice or assistance given or results obtained, all such advice or assistance being given and accepted at buyer's risk.

11. SITE SAFETY. Buyer shall provide a safe working environment at the site of services and shall comply with all applicable provisions of federal, state, provincial and municipal safety laws, building codes, and safety regulations to prevent accidents or injuries to persons on, about or adjacent to the site.

12. INDEPENDENT CONTRACTOR. Seller and Buyer are independent contractors and nothing shall be construed to place them in the relationship of partners, principal and agent, employer/employee or joint ventures. Neither party will have the power or right to bind or obligate the other party except as may be expressly agreed and delegated by other party, nor will it hold itself out as having such authority.

13. REIMBURSEMENT. Seller shall provide the products and services in reliance upon the data and professional judgments provided by or on behalf of buyer. The fees and charges associated with the products and services thus may not conform to billing guidelines, constraints or other limits on fees. Seller does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where seller may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by seller, it is the sole responsibility of the buyer or other entity seeking reimbursement to ensure the products and services and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, seller does not knowingly present or cause to be presented any claim for payment to the Government.

14. APPLICABLE LAW/JURISDICTION AND VENUE. The rights and duties of the parties shall be governed by, construed, and enforced in accordance with the laws of the State of California (excluding its conflict of laws rules which would refer to and apply the substantive laws of another jurisdiction). Any suit or proceeding hereunder shall be brought exclusively in state or federal courts located in Orange County, California. Each party consents to the personal jurisdiction of said state and federal courts and waives any objection that such courts are an inconvenient forum.

15. ENTIRE AGREEMENT. This agreement constitutes the entire contract between buyer and seller relating to the goods or services identified herein. No modifications hereof shall be binding upon the seller unless in writing and signed by seller's duly authorized representative, and no modification shall be effected by seller's acknowledgment or acceptance of buyer's purchase order forms containing different provisions. Trade usage shall neither be applicable nor relevant to this agreement, nor be used in any manner whatsoever to explain, qualify or supplement any of the provisions hereof. No waiver by either party of default shall be deemed a waiver of any subsequent default.



Remedial Design Assumptions and Qualifications

Cost Estimate Disclaimer: The cost listed assumes conditions set forth within the proposed scope of work and assumptions and qualifications. Changes to either could impact the final cost of the project. This may include final shipping arrangements, sales tax or application related tasks such as product storage and handling, access to water, etc. If items listed need to be modified, please contact Regenesis for further evaluation.

Shipping Estimates: Shipping estimates are valid for 30 days. All shipping charges are estimates and actual freight charges are calculated at the time of invoice. Additional freight charges may be assessed for any accessorial requested at the time of delivery. The estimate included within assumes standard shipping.

Standard delivery is between 8am -5pm Monday –Friday. *accessorial – can include, but not limited to lift gate and pallet jack at delivery, inside delivery, time definite deliveries, and delivery appointments.

Please communicate any requirements for delivery with the customer service department at the time the order is placed.

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4. LIMITED WARRANTY. Seller warrants the product(s) sold and services provided as specified on face of invoice, solely to buyer. Seller makes no other warranty of any kind respecting the product and services, and expressly DISCLAIMS ALL OTHER WARRANTIES OF WHATEVER KIND RESPECTING THE PRODUCT AND SERVICES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND NON-INFRINGEMENT.

5. DISCLAIMER. Where warranties to a person other than buyer may not be disclaimed under law, seller extends to such a person the same warranty seller makes to buyer as set forth herein, subject to all disclaimers, exclusions and limitations of warranties, all limitations of liability and all other provisions set forth in the Terms and Conditions herein. Buyer agrees to transmit a copy of the Terms and Conditions set forth herein to any and all persons to whom buyer sells, or otherwise furnishes the products and/or services provided buyer by seller and buyer agrees to indemnify seller for any liability, loss, costs and attorneys' fees which seller may incur by reason, in whole or in part, of failure by buyer to transmit the Terms and Conditions as provided herein.

6. LIMITATION OF SELLER'S LIABILITY AND LIMITATION OF BUYER'S REMEDY. Seller's liability on any claim of any kind, including negligence, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair or use of any goods or performance of any services covered by or furnished hereunder, shall in no case exceed the lesser of (1) the cost of repairing or replacing goods and repeating the services failing to conform to the forgoing warranty or the price of the goods and/or services or part thereof which gives rise to the claim. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, OR FOR DAMAGES IN THE NATURE OF PENALTIES.

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8. EXPENSES OF ENFORCEMENT. In the event seller undertakes any action to collect amounts due from buyer, or otherwise enforce its rights hereunder, Buyer agrees to pay and reimburse Seller for all such expenses, including, without limitation, all attorneys and collection fees.

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PRICE QUOTATION

(Valid for only 30 days from date of quote)*

Contact Name	Tim Driscoll	Account Name	Water & Environmental Technologies
Created Date	4/16/2020	Prepared By	Shannon Suangka
Quote Name	28561 - Three Rivers Cenex	Quote Number	00028561

Thank you for your interest in Regenesis Products. Please find below the sales price and related shipping, handling and tax costs per your request.

Please note that a Price Quotation is not a sales order. To place an order please contact our customer service department at 949 366-8000 or order online at <http://www.regenesis.com/order>.

Products

Product Code	Product	Quantity	Sales Price	Total Price
1801	ORC Advanced® Bags (40 lb) (RBP)	2,314.20	USD 9.31	USD 21,545.20

Special Delivery Instructions	R+L Carriers : Lift gate and pallet jack at delivery 5-6 days transit Delivery appointment Limited access - Jobsite	Subtotal	USD 21,545.20
		Tax	USD 0.00
		Estimated Shipping/Freight	USD 724.03
		Handling Fees	USD 75.00
		Grand Total	USD 22,344.23

Payment Terms	Net 30	Ship From	Pacific Coast Chino
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F.O.B. Origin

PAYMENT TERMS: Accounts outstanding after the listed payment terms will be assessed 1.5% monthly interest.

Volume discount pricing will be rescinded on all accounts outstanding over 90 days. An early payment discount of 1.5% Net 10 is available on cash or check payment only.

RETURN POLICY: All requests to return product must be pre-approved by Regenesis. A 15% re-stocking fee will be charged for all returned goods. Return freight must be prepaid and product must be in saleable condition. No product will be accepted for return after of 90 days from original delivery date.

SHIPPING POLICY: the following terms and conditions shall apply

1. As a service Regenesis will assist and coordinate with independent trucking brokers/carriers the delivery of product. Regenesis will also coordinate a "will call" pick up at one of its warehouse locations with a customer's freight carrier of choice. Please note that product availability will vary by warehouse location.



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2. All quoted rates and delivery dates are based on Standard Delivery Terms, which allow or provide only an estimated date and time of delivery of product to a site. Delivery times will vary per carrier. A Guaranteed Delivery can be arranged for an additional cost and must be placed 7 days prior to shipment. Under a Guarantee Delivery, if the product is not delivered per the specified date and time, the carrier will refund some amount up to the full transportation costs associated with the shipment.
3. Shipping /Freight costs are estimates and may change pending requirement of any additional equipment or change in volume or delivery instructions at time of placing order.

SHIPPING DISCLAIMER: Regenesis is not in the business of shipping or transportation of its products. We will strive to assist in meeting shipping requirements, but please realize that all shipments are subject to carrier's availability, weather, mechanical problems, or other unforeseen circumstances. As a result, Regenesis cannot be held responsible for project/site costs incurred due to shipping related problems.

Sales Tax: Sales tax charges are estimated on the quote/ sales confirmations based on delivery location. The actual sales tax rate is calculated at time of invoice. Variations due to, but not limited to county and or local sales tax rates.

Sales Tax: Sales tax charges are estimated on the quote/ sales confirmations based on delivery location. The actual sales tax rate is calculated at time of invoice. Variations due to, but not limited to county and or local sales tax rates.

Resale /Tax Exempt Certificate: A Re-Sales Certificate or Tax Exempt Certificate must be presented to the customer service department at the time an order is placed.

Handling Fee: Handling Fees may be subject to sales tax based on point of delivery.

Freight Freight charges are estimates and actual freight charges are calculated at the time of invoice. Additional freight charges may be assessed for any accessorial requested at the time of delivery. Please communicate any requirements for delivery with the customer service department at the time the order is placed. Standard delivery is between 8am -5pm Monday –Friday. *accessorial – can include, but not limited to lift gate and pallet jack at delivery, inside delivery, time definite deliveries, and delivery appointments.

*Florida Department of Environmental Protection (PRP) Quote valid for 60 days

RegenOx® is a proprietary technology of Regenesis. RegenOx® is an advanced in situ chemical oxidation technology that is composed of two parts, RegenOx® Part A and Part B. RegenOx® Part A is a solid alkaline oxidant that employs a sodium percarbonate complex and RegenOx® Part B is a catalytic component composed of a liquid mixture of sodium silicates, silica gel and ferrous sulfate. When both RegenOx® Part A and Part B are mixed with water and applied to the subsurface, RegenOx® will directly oxidize contaminants while its unique catalytic component generates a range of highly oxidizing free radicals that rapidly and effectively destroy a range of target contaminants. RegenOx® is sold exclusively by Regenesis.

RegenOx PetroCleanze® is a proprietary technology of Regenesis. RegenOx PetroCleanze® is an advanced in situ chemical oxidation technology that is composed of two parts, Part A and Part B. RegenOx PetroCleanze® Part A is a solid alkaline oxidant that employs a sodium per carbonate complex and RegenOx PetroCleanze® Part B is a catalytic component composed of a liquid mixture of sodium silicates, silica gel and ferrous sulfate. When both RegenOx PetroCleanze® Part A and Part B are mixed with water and applied to the subsurface, RegenOx PetroCleanze® will directly oxidize and desorb contaminants while its unique catalytic component generates a range of highly oxidizing free radicals that rapidly and effectively destroy a range of target contaminants. RegenOx PetroCleanze® is sold exclusively by Regenesis.

PersulfOx SP® is a proprietary technology of Regenesis. PersulfOx SP® is an advanced in situ chemical oxidation technology that is composed of sodium persulfate to enhance oxidative destruction of both hydrocarbon and chlorinated contaminants in the subsurface. PersulfOx SP® is sold exclusively by Regenesis.

PersulfOx® is a proprietary technology of Regenesis. PersulfOx® is an advanced in situ chemical oxidation technology that is composed of sodium persulfate which employs a uniquely patented catalyst to enhance oxidative destruction of both hydrocarbon and chlorinated contaminants in the subsurface. PersulfOx® contains a built-in catalyst which activates the persulfate component and generates contaminant destroying free radicals without the need for the addition of a separate activator. PersulfOx® is sold exclusively by Regenesis.

ORC Advanced® is proprietary technology of Regenesis composed of a patented formulation of calcium oxyhydroxide intercalated with



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phosphate ions that releases 17% of its weight as oxygen. This phosphate intercalation gives ORC Advanced® controlled time-release oxygen properties. The term intercalation refers to the process where phosphates are intimately incorporated in the calcium oxyhydroxide (or any other peroxygen) crystals as they are formed. This phenomenon slows the transmission of water into the structure, controlling the rate of hydration of the crystal and subsequently controlling the rate in which oxygen is released. ORC Advanced® is sold exclusively by Regenesis.

ORC Advanced® Pellets are a proprietary technology of Regenesis composed of a patented formulation of calcium oxyhydroxide intercalated with phosphate ions that releases 17% of its weight as oxygen. This phosphate intercalation gives ORC Advanced® controlled time-release oxygen properties, and the technology is patent-protected in the United States and Europe (e. g: US Patent 5,264,018). The term intercalation refers to the process where phosphates are intimately incorporated in the calcium oxyhydroxide (or any other peroxygen) crystals as they are formed. This phenomenon slows the transmission of water into the structure, controlling the rate of hydration of the crystal and subsequently controlling the rate in which oxygen is released. ORC Advanced® Pellets are sold exclusively by Regenesis.

PlumeStop® is a proprietary technology of Regenesis. PlumeStop® is a liquid activated carbon technology that is composed of very fine particles of activated carbon (1-2 µm) suspended in water through the use of unique organic polymer dispersion chemistry. The unique formulation makes PlumeStop® highly dispersible under low pressure, and once in the subsurface, the material behaves as a colloidal biomatrix. PlumeStop® binds to the aquifer matrix, rapidly removes contaminants from groundwater by sorption, and expedites permanent contaminant biodegradation. PlumeStop® is sold exclusively by Regenesis.

Attachment E – Geoprobe Bid



**Enviro Probe Services
Geoprobe 6600 Services**



Date: 20-Apr-20
Company: WET
Contact: Tim Driscoll
Project Description: Twin Bridges; 50 ORC injections to 5-15' (15 gallons per point)

<u>Geoprobe services</u>	<u>Unit Price</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>
- Project Coordination/Manager	\$100.00	Hour	1	\$100.00
<u>ORC Injection Activities</u>				
- GeoProbe 5410	\$180.00	Hour	35	\$6,300.00
- Bentonite - Backfill	\$10.50	Bag	12	\$126.00
- Expendable Points	\$4.25	Each	50	\$212.50
- Injection Pump	\$11.25	Hour	35	\$393.75
<u>Misc. Costs</u>				
- Standby (As Approved)	\$100.00	Hour	0	\$0.00
- Decontamination/Cleanup	\$100.00	Hour	4	\$400.00
- Prep / Load Supplies/Equipment	\$85.00	Hour	4	\$340.00
<u>Travel & Mileage</u>				
- Per Diem	\$150.00	Day	4	\$600.00
- (Lodging Actual; Meals \$30)				
- Probe Mileage	\$2.10	Mile	257	\$539.70
- Support Truck	\$0.80	Mile	170	\$136.00
			Subtotal	\$9,147.95

Estimated Project Cost \$9,147.95



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 4.5 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**