



Meridian Environmental Consulting, LLC

August 1, 2018

Carrie Stoltz
Wisconsin Department of Natural Resources
107 Sutliff Avenue
Rhineland, Wisconsin 54501

Subject: **Change Order:**

- Soil Vapor Extraction System (Install and 1st year Operation)
- Install monitoring wells to complete definition of ground water contamination
- Ground Water Sampling
- Reporting

Site: Jim's Bar
 W14764 Highway 73
 Jump River, Wisconsin
 PECFA No. 54433-9769-64
 DNR BRRTS No. 03-61-000116
 Meridian No. 05F781

This Change Order provides a Work Plan and associated Costs for the following tasks:

- Soil Vapor Extraction System (Install and 1st year Operation)
- Install monitoring wells (including piezometers) to complete definition of ground water contamination
- Ground Water Sampling
- Reporting

Please refer to the recent ***Progress Report*** dated July 19, 2018 and the project file for detailed information regarding this site and the recommended Scope of Work in this Change Order.

The remainder of this Change Order describes the recommended Scope of Work, associated costs, and implementation schedule.

SCOPE OF WORK

1. Soil Vapor Extraction System

A soil vapor extraction (SVE) system will be installed to remediate the impacted soil at the source property. Installation and operation of the SVE system (for 12 months) will consist of the following tasks:

- **Install Soil Vapor Extraction vents and Connect to SVE Equipment Trailer**

Currently there are six SVE vents (SV-1, -2, -4, -5, -6, -7) around the source area (former tank and pump)(Figure 1). Four (4) more SVE vents (SV-8, -9, -10, -11) will be installed to address the soil contamination beneath the building (see Figure 1). The vents will be constructed similar to the current SVE vents, i.e., 20 ft deep screened from 10 – 20 ft below grade (see Figure 2).

Piping will be installed as shown in Figures 2 and 3 to connect the SVE vents to the SVE equipment trailer. Each vent will be individually connected to the treatment trailer using 2-inch dia. PVC. The piping will be installed 3 - 4 feet below grade and covered with insulation (4-inch thick, high-density Styrofoam). The piping will slope from the treatment trailer to the well to allow condensation to drain back to the well.

- **SVE Equipment Trailer**

Figure 4 is a schematic of the SVE system. Appendix A contains supporting documents describing the proposed SVE system equipment.

The SVE system equipment (i.e., blower, heater, control panel, piping, etc) will be housed in an enclosed, locked trailer parked next to the power supply. The SVE equipment will consist of a 3 Hp vacuum blower connected to the SVE vents via piping through the trailer wall. The air discharge will be through a 25 ft stack.

The SVE blower will be controlled using a Variable Frequency Drive (VFD) which controls the speed of the vacuum blower motor. This will allow operation of the SVE system to maximize contaminant removal and to 'pulse' the system.

We plan to install the SVE system as soon as possible. However, delivery of the SVE system designed for this site will take 10 - 14 weeks. The piping and trenching and electrical power drop will take approximately 3 - 4 weeks. A smaller (1 ½ hp) SVE blower will be installed temporarily until the SVE system arrives. This will allow the higher VOC concentrations to be reduced while waiting for the SVE system. Air sampling will be collected to comply with NR405/406. Costs for this rental unit (REI) are included in this Change Order.

- **Power Requirements**

Electrical power will be provided by Jump River Electric Coop. A 208 volt, 3-phase power drop will be provided at the power pole.

An electrician (Ideal Services – Gilman) will connect the SVE electrical system to the power drop. The equipment trailer will contain a control panel to operate the system.

- **Operation (12 months)**

The system operation will be checked every month. Air samples will be collected during this monthly site visit. The system operation check will include the vacuum blower, remove condensate as needed, check offgas discharge from various vents and adjust the blower speed accordingly, measure offgas with PID, and address any other operation and/or maintenance issues.

We expect to operate the system for 12 months. Further operation will be determined at the end of the 12 month time period. The system will be 'pulsed' to maximize contaminant removal during system operation.

- **Air Sampling**

In compliance with NR406/407, samples of the air discharge will be collected every day for the first 3 days of operation, weekly for the first 3 weeks of operation, and monthly thereafter.

The air discharge limits are (see NR406.04(1)(m), NR407.03(1)(sm), NR445.07 Table A):

Benzene	936 lbs/yr
VOCs	5.7 lbs/hour

Air discharge samples will be collected using carbon tubes provided by the lab (TestAmerica).

Benzene – NIOSH Method 1501 (Modified)

Gasoline – NIOSH Method 1550 (Modified)

The "Gasoline" analysis will be used to measure VOC emissions for compliance with air regulations.

2. Install additional monitoring wells

The extent of impacted ground water is not defined downgradient. Additional monitoring wells should be installed as described below. This information will be important for monitoring the performance of the SVE system as well as meet the requirements of NR700 and the Closure Committee.

- Monitoring wells should be installed across (east of) the ball field as shown in Figure 5. The monitoring wells will consist of 3 water table wells (screened 15 – 25 ft below grade), 2 piezometers (screened 55 – 60 ft below grade) plus two piezometers screened 35 – 40 ft below grade.
- Three monitoring wells (screened 15 – 25 ft below grade) should be installed along the north and west side of the tavern (Jim's Bar) (see Figure 5).

The monitoring well borings will be sampled continuously to document the lithology. Only one boring from wells installed adjacent to each other (within 5 ft) will be sampled; the adjacent boring(s) will be "earth-drilled" to depth.

The monitoring well elevations and locations will be surveyed after installation. The site map will be updated.

3. Ground Water Sampling

We recommend the monitoring well network be sampled quarterly (2x) during the SVE system operation. This will document the performance of the remedial system. This will include MW-1, -2, -3, -5, -6, -7, -8A, -8B, -8C, -9A, -9B, -10A, -10B, -12A, -12B, -12C, -13, -14, -15, -16A, -16B, -17A, -17B, plus 6 new water table wells and 4 new piezometers.

Private wells should be sampled as part of the monitoring program. These wells (Figure 6) will include the onsite well, 8910 Elm, 8907 Birch, 8908 Birch, 8896 Birch, 14789 Hwy. 73 (new well), 8891 Bridge (Store – before and after treatment), 8887 Bridge, 8890 Bridge, and 14778 River (access to this residence has been intermittent).

4. Reporting

- As-Built and 6-month O&M Report

An As-Built and 6 month O&M report will be submitted after 6 months. This report will describe the system installed, operation performance, results of air monitoring, results of ground water sampling and recommendations for further operation.

This report will also document the monitoring well installation, ground water sampling, installation of replacement well at Keepers (as part of previous Change Order), and recommendations regarding the ground water contamination at the site.

- Annual Report

An annual report will be submitted after 12 months of SVE system operation. This report will document the SVE system performance including air sampling, ground water monitoring, and recommendations regarding further work.

COST

The estimated cost for this Change Order is enclosed. Supporting documentation (e.g., description of equipment, bid documents for piping and trenching, SVE system cost estimate, electrical power cost estimate, etc) are provided in Appendix A.


The monthly electrical cost is not included in this Change Order. This cost will be an ongoing expense and will be included on routine PECFA claims.

SCHEDULE

- We plan to install the SVE system as soon as possible. However, delivery of the SVE system designed for this site will take 10 - 14 weeks. The piping and trenching and electrical power drop will take approximately 3 - 4 weeks. A smaller rental SVE blower will be installed temporarily until the SVE system arrives. Costs for this rental unit (assume 2 months of use) are included in this Change Order. This will allow the higher VOC concentrations to be reduced while waiting for the SVE system. Air sampling will be collected in compliance with NR406/407.
- The monitoring wells will be installed immediately after authorization.
- The ground water sampling will begin as soon as the monitoring wells are installed.
- Reporting will occur at 6 month and 12 month intervals.

Please contact me with any questions regarding this Change Order.

Sincerely,
MERIDIAN ENVIRONMENTAL CONSULTING, LLC


Kenneth Shimko, PG
Project Manager

C: Gary Gilbert, PE
Project Engineer

COST ESTIMATE

Usual and Customary Standardized Invoice #23

January 2018- June 2018



RR-092a

PECFA #: 54433-9769-64
 BRRTS #: 03-61-000116
 Site Name: Jim's Bar
 Site Address: Jump River (Gilman Post)

Vendor Name: Change Order
 Invoice #: Change Order
 Invoice Date: August 3, 2018
 Check #: Change Order

U&C Total \$ 44,060.49
 Variance to U&C Total \$ 114,709.81
 Grand Total \$ 158,770.30

TASK	TASK DESCRIPTION	SERVICES	ACTIVITY CODE	ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAX UNIT COST	UNITS	TOTAL MAX
Install 10 additional MWs: two well nests to document downgradient extent of GW Contamination (2 screened 55-60 ft in deep sand aquifer, 2 screened 35 -40 ft in "hardpan", 2 screened 15 - 25 at water table)(sample 60 ft wells (lithology), no sample remaining 4 adjacent wells) plus 4 water table wells (screened 15 - 25 ft; sample lithology each boring). Estimate 25 drums. Survey. Well Development. Dispose Purge Water (6 drums)								
Ground Water Sampling (2 quarters)(10 new wells plus MW-1, -2, -3, -5, -6, -7, -8A, -8B, -8C, -9A, -9B, -10A, -10B, -12A, -12B, -12C, -13, -14, -15, -16A, -16B, -17A, -17B) plus private wells (onsite well, 14789 (new well), 8891 Bridge (store - before&after carbon), 8887 Bridge, 8890 Bridge, 14778 River, 8910 Elm, 8907 Birch, 8908 Birch, 8896 Birch. TOTAL = 44 samples x 2 = 88 water samples								
Install 4 SVE vents (screened 10 - 20 ft)(variance for continuous-wrapped screens - 20 slot). Earth drill.								

TASK	TASK DESCRIPTION	SERVICES	ACTIVITY CODE	ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAX UNIT COST	UNITS	TOTAL MAX
1	GW Sampling		GS05	Sample Collection	Well	\$ 72.45	88	\$ 6,375.60
1	GW Sampling		GS25	Primary Mob/Demob	Site	\$ 628.11	2	\$ 1,256.22
4	Waste Disposal	Consultant	WD05	Consultant Coordination (soil, GW)	Site	\$ 137.13	1	\$ 137.13
4	Waste Disposal	Commodity	WD10	GW Sample and/or Purge (well develop (2 drums), sample 2X (4 drums), Condensate - 2 drums)	Drum	\$ 42.11	8	\$ 336.88
4	Waste Disposal	Commodity	WD15	Drill Cuttings	Drum	\$ 108.15	25	\$ 2,703.75
4	Waste Disposal	Commodity	WD25	Primary Mob/Demob (1x - soil, 1x - develop, 2x - sampling)	Site	\$ 287.70	4	\$ 1,150.80
10	Initial Site Survey	Consultant	IS10	Subsequent Surveys	Well	\$ 110.15	10	\$ 1,101.50
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR05	0 - 25 ft bgs (6x25=150)	Ft	\$ 5.40	150	\$ 810.00
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR10	26 - 50 ft bgs (2x25 = 50)	Ft	\$ 5.67	50	\$ 283.50
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR15	51 - 75 ft bgs (2x10=20)	Ft	\$ 7.30	20	\$ 146.00
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR20	Primary Mob/Demob	Site	\$ 593.04	1	\$ 593.04
13.b	Drilling In Unconsolidated Soils - Without Soil And/Or GW Sampling	Consultant	DR25	Consultant Oversight (4 SVE vents = 4 x 20 = 80 plus two nests: 2x40 + 2x25=130. Total = 210)	Ft	\$ 1.58	210	\$ 331.80
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR45	0 - 25 ft bgs (2x60, 4x25 = 150 + 50+ 20 = 220)	Ft	\$ 16.70	150	\$ 2,505.00
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR50	26 - 50 ft bgs	Ft	\$ 18.38	50	\$ 919.00
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR55	51 - 75 ft bgs	Ft	\$ 21.53	20	\$ 430.60
13.e	Drilling In Unconsolidated Soils - Without Soil And/Or GW Sampling	Commodity	DR60	Drilling in Unconsolidated Soils (MWs - 130+ SVE -80 = 210)	Ft	\$ 11.97	210	\$ 2,513.70
14	Monitoring Well Installation	Consultant	MWI05	0 - 25 ft bgs (4 SVE vents: 4x20 = 80 plus MWs: 10x25=250)	Ft	\$ 3.89	330	\$ 1,283.70
14	Monitoring Well Installation	Consultant	MWI10	26 - 75 ft bgs (MWs: 2 x 35 + 2 x 15 = 100)	Ft	\$ 2.73	100	\$ 273.00
14	Monitoring Well Installation	Commodity	MWI15	2 inch PVC Casing	Ft	\$ 16.70	430	\$ 7,181.00
14	Monitoring Well Installation	Commodity	MWI20	Well Development	Well	\$ 147.63	10	\$ 1,476.30
14	Monitoring Well Installation	Commodity	MWI25	Mob/Demob (For development of grout or slurry sealed wells)	Site	\$ 548.63	1	\$ 548.63
15	Misc. Drilling Activities & Supplies		MDT05	Drill Rig Mob/Demob	Mob/Demob	\$ 963.38	1	\$ 963.38
15	Misc. Drilling Activities & Supplies		MDT10	Well Cover/flushmount (4 SVE vents + 10 MWs)	Each	\$ 202.65	14	\$ 2,837.10
15	Misc. Drilling Activities & Supplies		MDT25	Commodity Service Provider Per Diem (drilling and direct push)	Person	\$ 203.28	10	\$ 2,032.80
15	Misc. Drilling Activities & Supplies		MDT41	Private Utility Locate	Each	\$ 117.18	1	\$ 117.18
21	Access Agreements		AA05	Access Agreements (Township)	Property	\$ 401.94	1	\$ 401.94
31	Consultant Overnight Per Diem		COPD05	Overnight	Night	\$ 113.72	5	\$ 568.60
33	Schedule Of Laboratory Maximums	Commodity		Laboratory (see task 33 total on Lab Schedule)	Lab Schedule		126	\$ 4,400.56
36	Change Order Request		COR05	Change Order Request (cost cap exceedance requests)	Change Order	\$ 381.78	1	\$ 381.78

VARIANCE ITEMS

Variance	Install SVE System and Operate 12 months (see attached spreadsheet)							\$ 113,509.81
Variance	Continuous-wrapped screens (20 slot). PVC				5 ft	\$ 150.00	8	\$ 1,200.00

Budget: Soil Vapor Extraction (SVE) System Installation and First Year O&M

Jims Bar/ Jump River, Wisconsin
Meridian No. 05F781

Description	Units	Quantity	Unit Cost	Total Cost
Design of SVE System (vents, equipment, piping, trenching, electrical, permits)				
Project Engineer (PE)	hr	32	\$109.67	\$3,509.44
Hydrogeologist (PG)	hr	32	\$109.67	\$3,509.44
Project Management (Bid Docs, Cost Estimates)	hr	16	\$109.67	\$1,754.72
Install Extraction Wells and Underground Piping				
1. Install 4 additional SVE vents (see enclosed U&C Summary)	U&C			
2. Install piping connecting vents to equipment trailer				
Subcontractor	est	1	\$10,400.00	\$10,400.00
Field Time (Meridian)				
Prep/deprep	hr	4	\$91.39	\$365.56
Field Time	hr	40	\$91.39	\$3,655.60
Per Diem (U&C Overnight)	Day	4	\$108.30	\$433.20
Project Management	hr	4	\$109.67	\$438.68
Engineering (PE)	hr	4	\$109.67	\$438.68
PID	Task	1	\$75.00	\$75.00
Piping Manifold Compartment (materials and build)	Task	1	\$500.00	\$500.00
System Installation/Startup (includes first 3 days of air sampling)				
SVE System (includes \$1200 for temporary blower rental unit)	ls	1	\$27,496.00	\$27,496.00
Electrician - labor, wiring, materials (estimated cost - actual costs will be submitted)	ls	1	\$3,000.00	\$3,000.00
Jump River Electric Coop (power drop)	est	1	\$3,500.00	\$3,500.00
Field Time (Meridian)				
Construction Coordination (PE)	hr	6	\$109.67	\$658.02
Construction Coordination (Project Manager)	hr	6	\$109.67	\$658.02
Construction Oversight - system install (PE)	hr	36	\$109.67	\$3,948.12
Construction Oversight - system install (Field Staff)	hr	45	\$91.39	\$4,112.55
Travel - system install/startup (PE)	hr	6	\$109.67	\$658.02
Per Diem - system install/startup (PE)	day	3	\$109.67	\$329.01
Per Diem - system install/startup (Field Staff)	day	3	\$91.39	\$274.17
Misc PVC Piping/plumbing	ls	1	\$500.00	\$500.00
Security Fencing (temporary)	ls	1	\$750.00	\$750.00
Air pump rental (from lab)	week	1	\$60.00	\$60.00
PID	day	3	\$75.00	\$225.00
Subtotal:				\$71,249.23

System Operation	Unit	Quantity	Events	Rate	Total
Field Time (week 2, week 3, plus months 2 thru 12 = 13 site visits)					
Prep	hour	1	13	\$91.39	\$1,188.07
sample/maint	hour	4	13	\$91.39	\$4,752.28
travel	hour	3	13	\$91.39	\$3,564.21
mileage	mile	150	13	\$0.51	\$994.50
Project Management	hour	4	13	\$109.67	\$5,702.84
Project Engineer	hour	5	13	\$109.67	\$7,128.55
Equipment					
PID	day	1	13	\$75.00	\$975.00
Interface Probe	day	1	13	\$70.00	\$910.00
air pump (rented from lab)	day	1	13	\$60.00	\$780.00
Contingency Mobilizations (estimate 3)					
Field Time					
Prep	hour	1	3	\$91.39	\$274.17
sample/maint	hour	4	3	\$91.39	\$1,096.68
travel	hour	3	3	\$91.39	\$822.51
mileage	mile	150	3	\$0.60	\$270.00
Project Management	hour	4	3	\$109.67	\$1,316.04
Project Engineer	hour	5	3	\$109.67	\$1,645.05
Equipment					
PID	day	1	3	\$75.00	\$225.00
Interface Probe	day	1	3	\$70.00	\$210.00
Documentation / Reporting					
As-Built and First 6 month O&M					
Project Engineer (PE) (SVE system)	hr	24		\$109.67	\$2,632.08
Project Hydrogeologist (PG) (SVE system, MWs, GW sampling, updated site map and tables, etc.)	hr	32		\$109.67	\$3,509.44
Annual Report with recommendations					
Project Engineer (PE)	hr	24		\$109.67	\$2,632.08
Project Hydrogeologist (PG)	hr	24		\$109.67	\$2,632.08
Subtotal					\$43,260.58

See U&C for Air Samples, Waste Disposal (condensate water), install 4 SVE vents

GRAND TOTAL: \$114,509.81

Usual and Customary Standardized Invoice #23

January 2018- July 2018



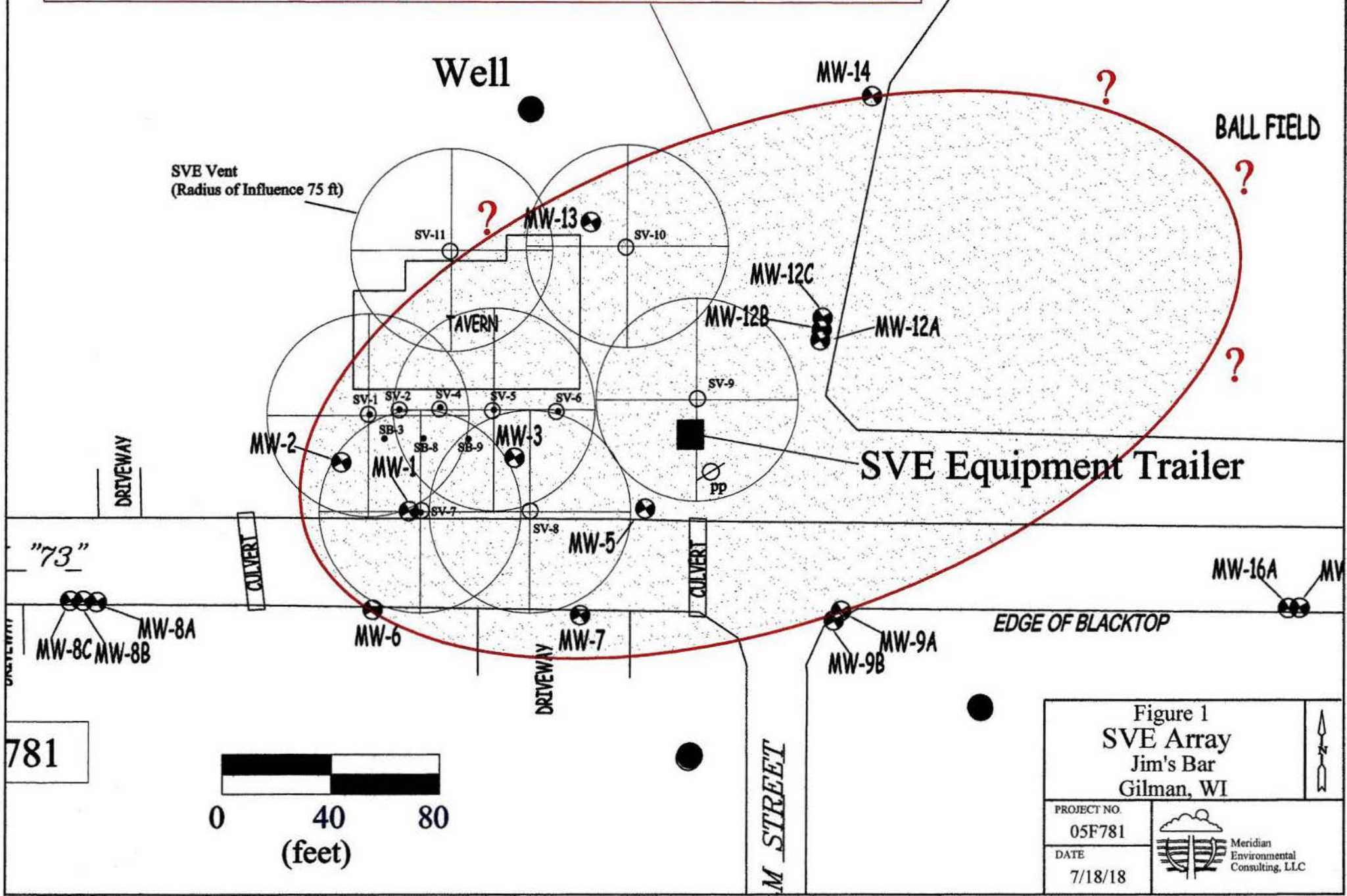
RR-092A

TOTAL LAB CHARGES \$ 4,400.56 TASK 33 126 \$ 4,400.56 TASK 24 0 \$ -

MATRIX	REF CODE	REIMBURSABLE ANALYTE	UNITS	MAX COST	SAMPLES	TOTAL	MAX COST	SAMPLES	TOTAL
AIR	A1	Benzene	SAMPLE	\$ 44.94	19	\$ 853.86			
AIR	A2	BETX	SAMPLE	\$ 49.46		\$ -			
AIR	A3	GRO	SAMPLE	\$ 46.10	19	\$ 875.90			
AIR	A4	VOC's	SAMPLE	\$ 71.93		\$ -			
WATER	W1	GRO/PVOC	SAMPLE	\$ 29.19		\$ -			
WATER	W2	PVOC	SAMPLE	\$ 26.99		\$ -			
WATER	W3	PVOC + 1,2 DCA	SAMPLE	\$ 43.79		\$ -			
WATER	W4	PVOC + Naphthalene	SAMPLE	\$ 30.35	88	\$ 2,670.80			
WATER	W5	VOC	SAMPLE	\$ 71.93		\$ -			
WATER	W6	PAH	SAMPLE	\$ 72.98		\$ -			
WATER	W7	Lead	SAMPLE	\$ 12.39		\$ -			
WATER	W8	Cadmium	SAMPLE	\$ 13.55		\$ -			
WATER	W9	Hardness	SAMPLE	\$ 12.39		\$ -			
WATER	W10	BOD, Total	SAMPLE	\$ 23.63		\$ -			
WATER	W11	Nitrate	SAMPLE	\$ 11.24		\$ -			
WATER	W12	Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
WATER	W13	Ammonia	SAMPLE	\$ 16.91		\$ -			
WATER	W14	Sulfate	SAMPLE	\$ 10.19		\$ -			
WATER	W15	Iron	SAMPLE	\$ 10.19		\$ -			
WATER	W16	Manganese	SAMPLE	\$ 10.19		\$ -			
WATER	W17	Alkalinity	SAMPLE	\$ 10.19		\$ -			
WATER	W18	methane	SAMPLE	\$ 46.10		\$ -			
WATER	W19	Phosphorous	SAMPLE	\$ 18.06		\$ -			
WATER	W20	VOC Method 524.2	SAMPLE	\$ 176.30		\$ -			
WATER	W21	EDB Method 504	SAMPLE	\$ 95.45		\$ -			
SOILS	S1	GRO	SAMPLE	\$ 24.78		\$ -	MAX COST	SAMPLES	TOTAL
SOILS	S2	DRO	SAMPLE	\$ 30.35		\$ -	\$ 24.78		\$ -
SOILS	S3	GRO/PVOC	SAMPLE	\$ 28.14		\$ -	\$ 30.35		\$ -
SOILS	S4	PVOC	SAMPLE	\$ 25.83		\$ -	\$ 28.14		\$ -
SOILS	S5	PVOC + 1,2 DCA + Naphthalene	SAMPLE	\$ 49.46		\$ -	\$ 25.83		\$ -
SOILS	S6	PVOC + Naphthalene	SAMPLE	\$ 36.02		\$ -	\$ 49.46		\$ -
SOILS	S7	VOC	SAMPLE	\$ 71.93		\$ -	\$ 36.02		\$ -
SOILS	S8	SPLP Extraction VOC only	SAMPLE	\$ 50.61		\$ -	\$ 71.93		\$ -
SOILS	S9	PAH	SAMPLE	\$ 72.98		\$ -	\$ 50.61		\$ -
SOILS	S10	Lead	SAMPLE	\$ 12.39		\$ -	\$ 72.98		\$ -
SOILS	S11	Cadmium	SAMPLE	\$ 14.60		\$ -	\$ 12.39		\$ -
SOILS	S12	Free Liquid	SAMPLE	\$ 11.24		\$ -			
SOILS	S13	Flash Point	SAMPLE	\$ 25.83		\$ -			
SOILS	S14	Grain Size - dry	SAMPLE	\$ 42.74		\$ -			
SOILS	S15	Grain Size - wet	SAMPLE	\$ 57.33		\$ -			
SOILS	S16	Bulk Density	SAMPLE	\$ 13.55		\$ -			
SOILS	S17	Permeability	SAMPLE	\$ 41.58		\$ -			
SOILS	S18	Nitrogen as Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
SOILS	S19	Nitrogen as Ammonia	SAMPLE	\$ 16.91		\$ -			
SOILS	S20	% Organic Matter	SAMPLE	\$ 29.19		\$ -			
SOILS	S21	TOC as NPOC	SAMPLE	\$ 57.33		\$ -			
SOILS	S22	Soil Moisture Content	SAMPLE	\$ 6.83		\$ -			
SOILS	S23	Air Filled Porosity	SAMPLE	\$ 25.83		\$ -			
SOILS	S24	% Total Solids	SAMPLE	\$ 6.83		\$ -			
SOILS	S25	Field Capacity	SAMPLE	\$ 28.14		\$ -			
SOILS	S26	TCLP Lead	SAMPLE	\$ 83.16		\$ -			
SOILS	S27	Cation Exchange (Ca, MG, & K)	SAMPLE	\$ 26.99		\$ -			
SOILS	S28	TCLP Cadmium	SAMPLE	\$ 83.16		\$ -			
SOILS	S29	TCLP Benzene	SAMPLE	\$ 83.16		\$ -			
		Viscosity + Density							
LNAPL	LFPS01	Interfacial tension I (LNAPL/water [dyne/cm])	SAMPLE	\$ 561.33		\$ -			
		Interfacial tension II (LNAPL/air [dyne/cm])							
		Interfacial tension III (water/air [dyne/cm])							
						TASK 33 TOTAL \$	4,400.56		

FIGURES

Estimated Extent of Petroleum Impacted Ground Water



<p>Figure 1 SVE Array Jim's Bar Gilman, WI</p>		
PROJECT NO.	05F781	
DATE	7/18/18	
		<p>Meridian Environmental Consulting, LLC</p>

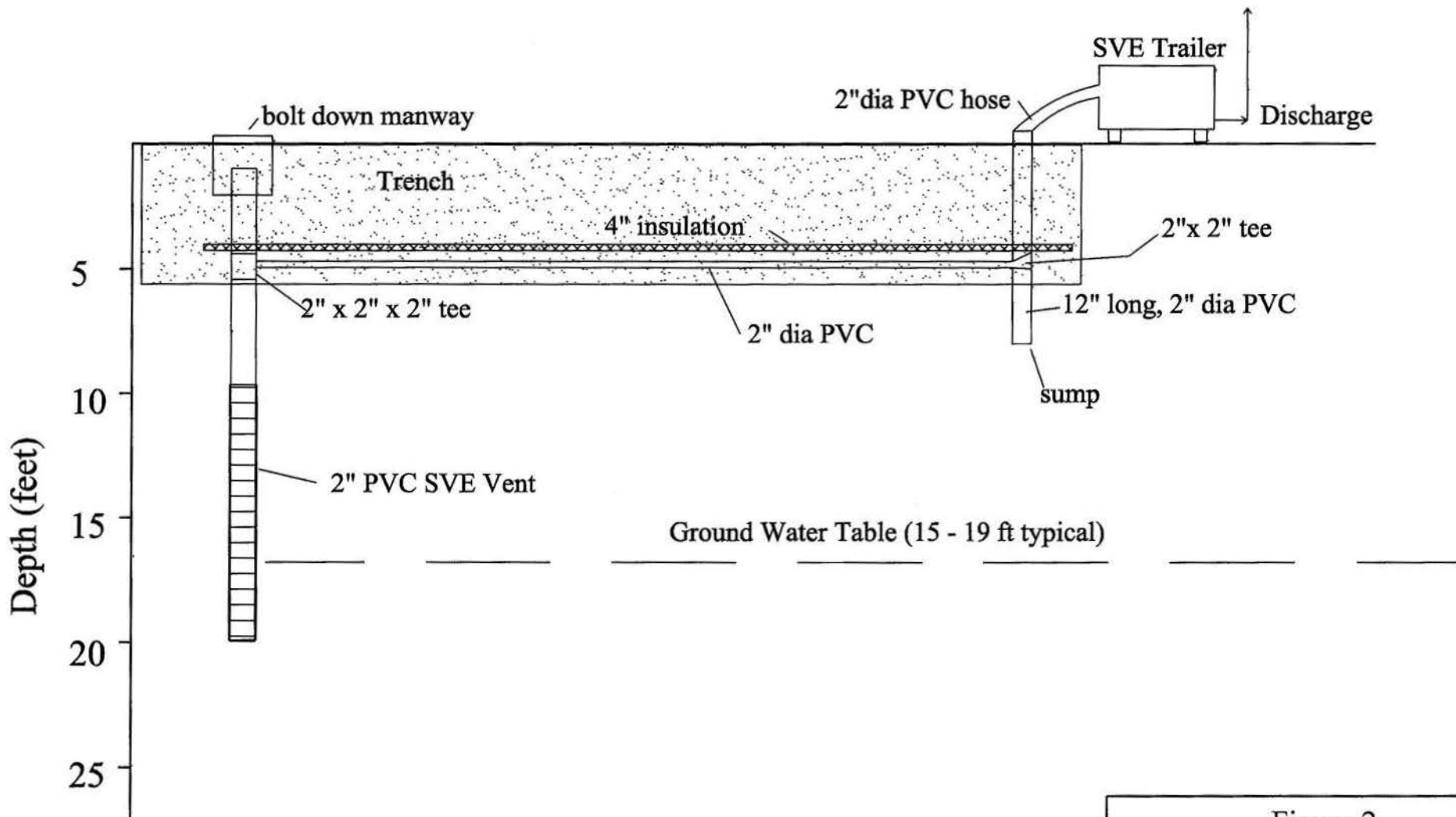

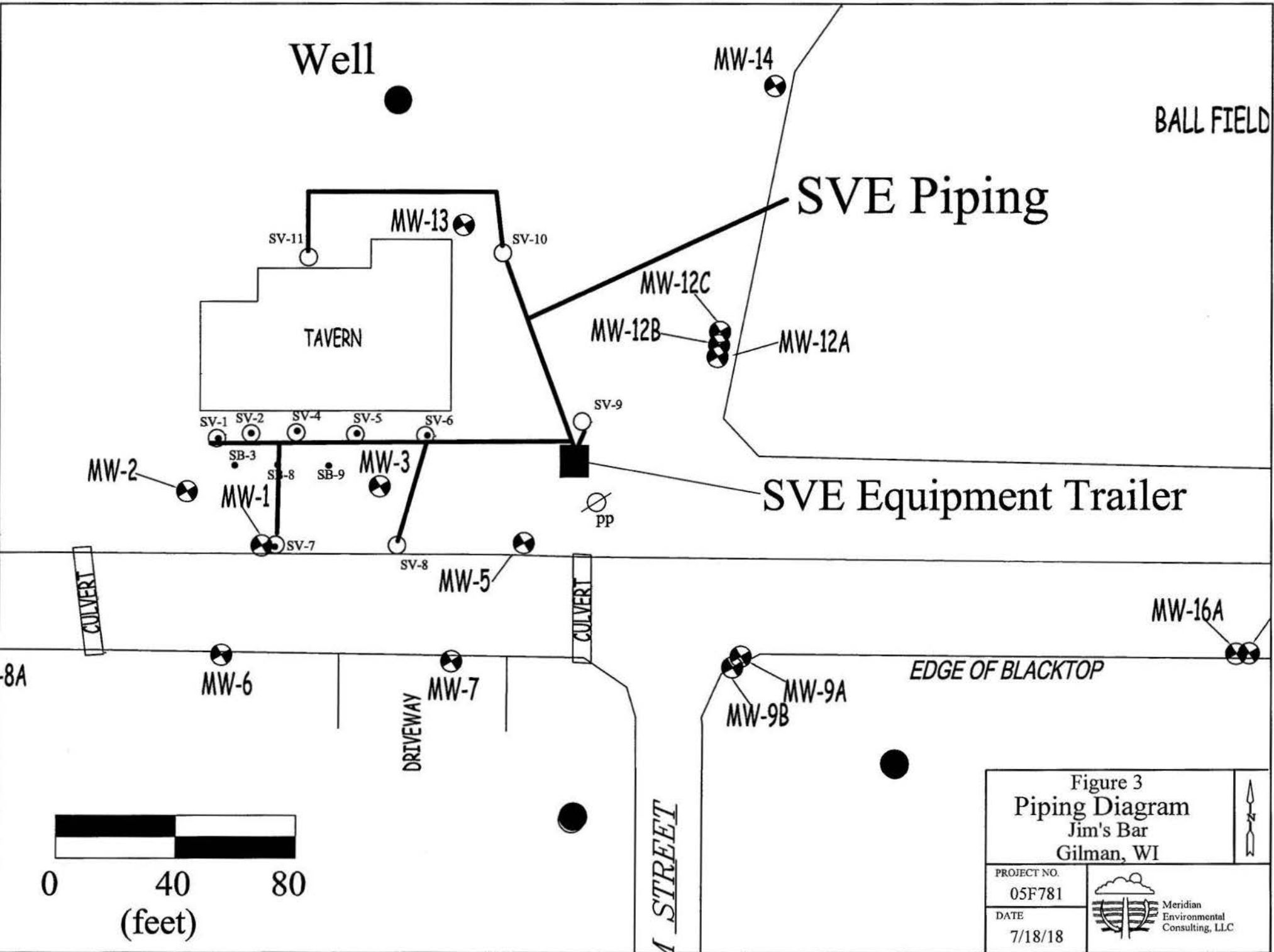


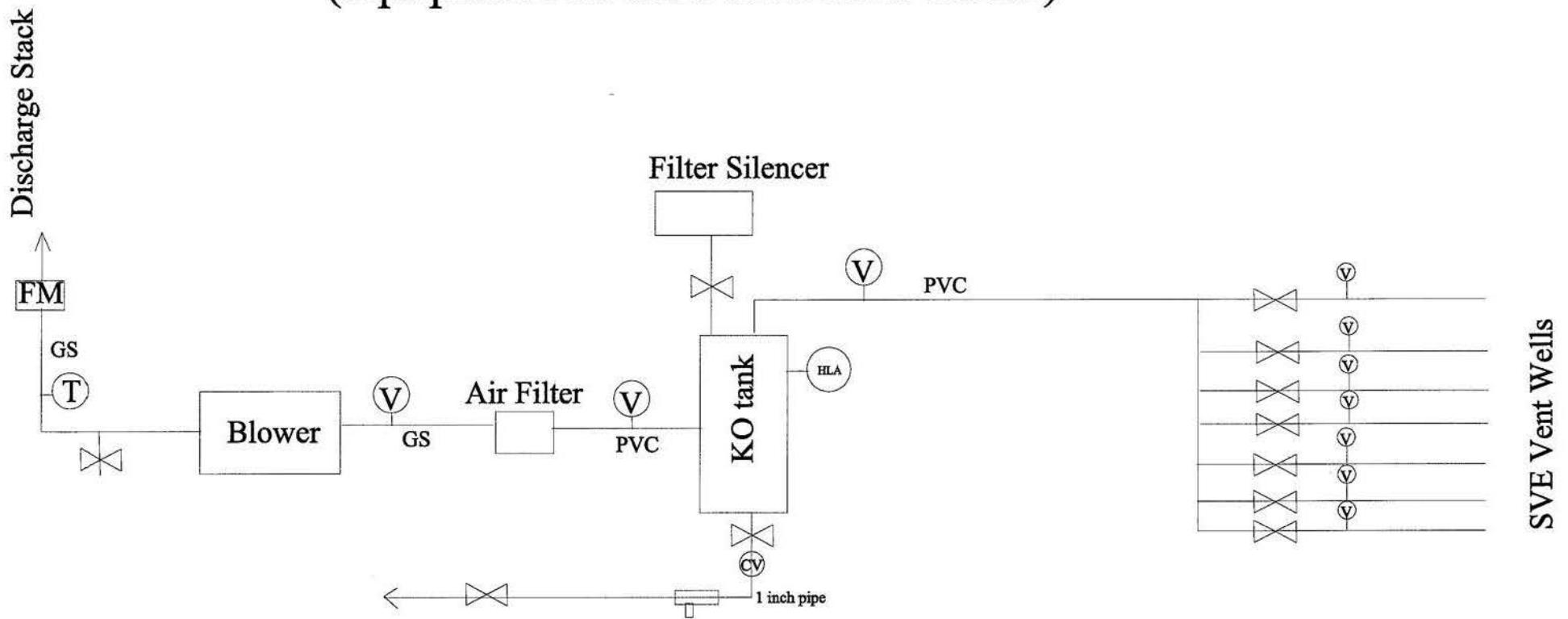
Figure 2
 Schematic of SVE Wells/Piping
 Jim's Bar
 Jump River, Wisconsin

PROJECT NO. 05F781	PREPARED BY KAS	 Meridian Environmental Consulting, LLC
DATE 7/23/18	REVIEWED BY KAS	



SVE System Schematic

(equipment housed in locked trailer)











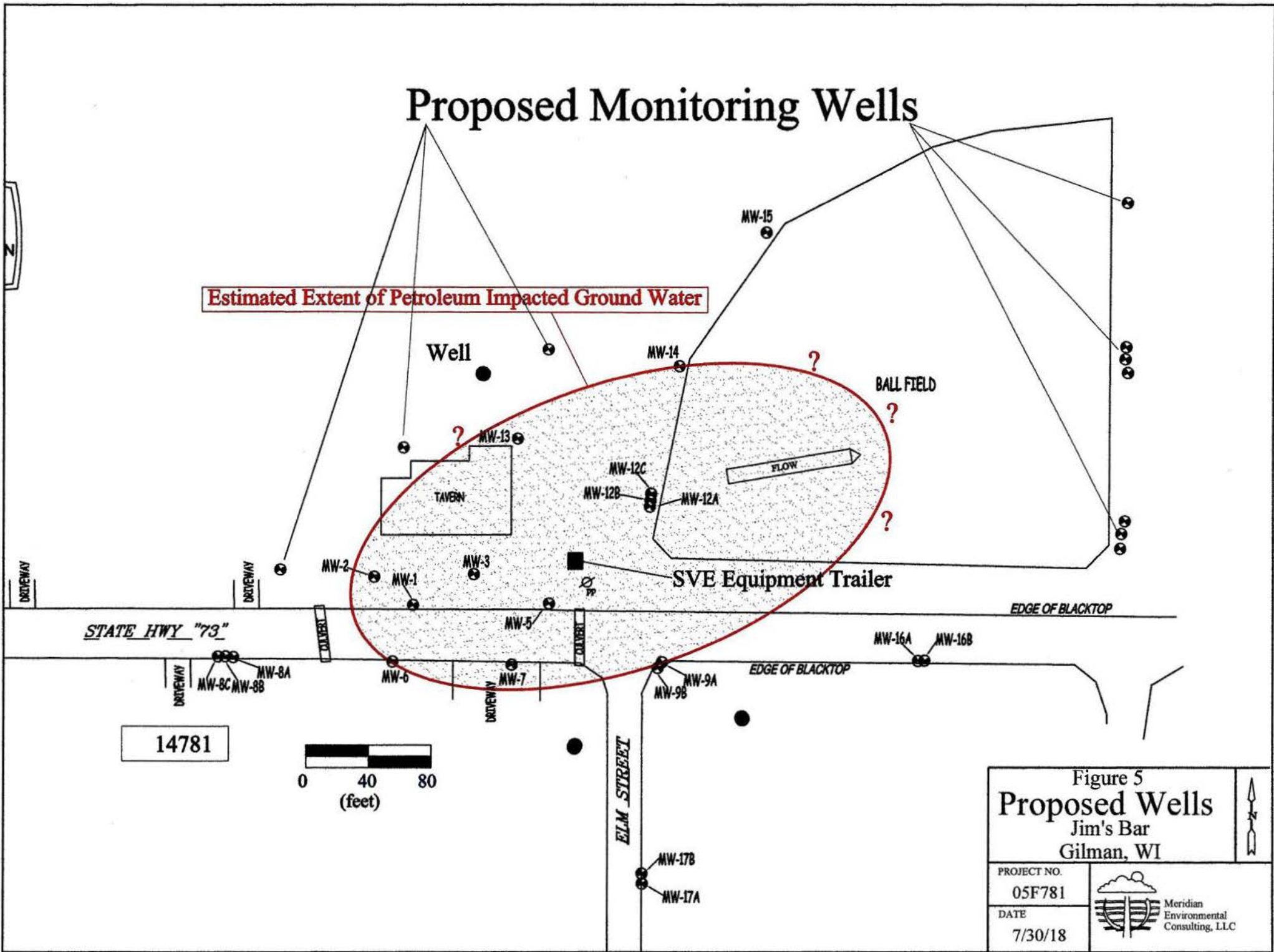
	Wye strainer		Bull Valve
GS	2" galvanized steel pipe		vacuum gauge
PVC	2" Sch. 40 PVC		temperature gauge
HL,LL,HLA	Level Floats		pressure gauge
			flow meter
			check valve



Figure 4
SVE System Schematic
Jim's Bar
Jump River, Wisconsin

PROJECT NO. 05F781	PREPARED BY KAS	
DATE 7/23/18	REVIEWED BY KAS	

Meridian
Environmental
Consulting, LLC

Proposed Monitoring Wells



<p>Figure 5 Proposed Wells Jim's Bar Gilman, WI</p>		
PROJECT NO.	05F781	
DATE	7/30/18	
		<p>Meridian Environmental Consulting, LLC</p>

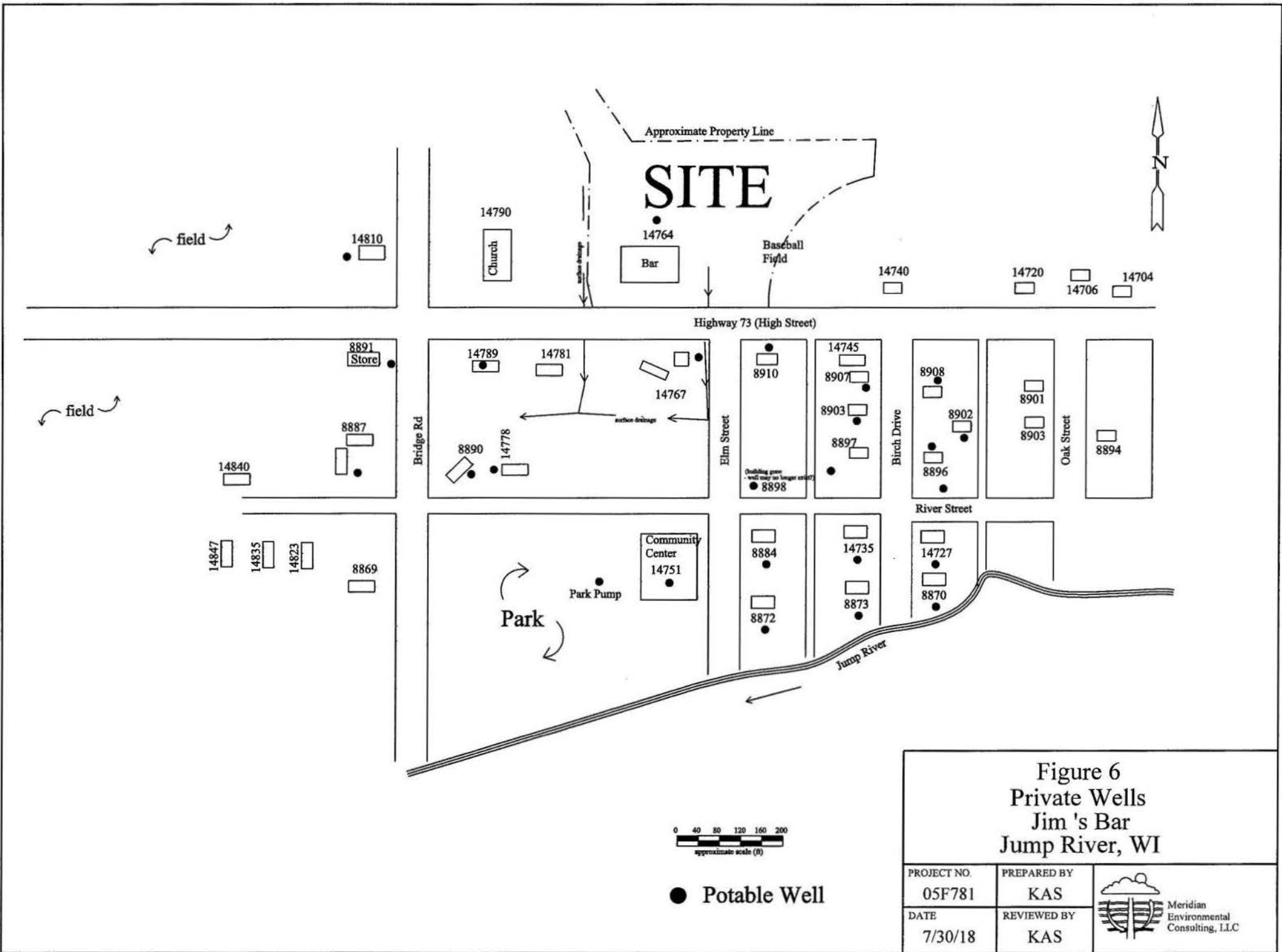



Figure 6
Private Wells
Jim 's Bar
Jump River, WI

PROJECT NO. 05F781	PREPARED BY KAS	 Meridian Environmental Consulting, LLC
DATE 7/30/18	REVIEWED BY KAS	

● Potable Well

APPENDIX A

SVE System Cost Documentation

Ken Shimko

From: Sam Howard <showard@jrec.com>
Sent: Friday, June 29, 2018 2:01 PM
To: Ken Shimko
Subject: RE: Question re: cost for power drop: 3-phase vs single-phase

Ken, Sorry for the delay of responding back to you

Yes there is a different in cost. To install single 200 amp the cost would be approx..\$1550 and the cost for 3 phase 200/320 amp, 120/208 would be approx. \$3000. Let me know if you have any ?

Thanks Sam

Sam Howard

Operations Manager

Jump River Electric Cooperative

P.O. Box 99

Ladysmith, WI 54848

715-532-5524 Fx 715-532-3065

Cell 715-415-0539

JREC is an equal opportunity provider and employer

From: Ken Shimko [mailto:kshimko.meridianenv@gmail.com]
Sent: Thursday, June 21, 2018 8:50 AM
To: Sam Howard <showard@jrec.com>
Subject: Question re: cost for power drop: 3-phase vs single-phase

Hi Sam.

As you know, we are planning a Soil Vapor Extraction (SVE) system at Cindy Piotrowski's tavern in Jump River. We are designing the system but had one question re: electrical power drop cost.

Is there a difference in cost for a 3-phase vs single-phase power drop?

Thanks

Kenneth Shimko, PG
Meridian Environmental Consulting, LLC
2711 North Elco Road
Fall Creek, Wisconsin 54742
(715)832-6608 (office)
(715)579-0723 (cell)
Email: kshimko.meridianenv@gmail.com

Ken Shimko

From: Jeffrey Manninen <jeffrey.manninen@psiusa.com>
Sent: Wednesday, August 01, 2018 3:37 PM
To: Ken Shimko
Subject: RE: 2-inch wire-wrapped PVC screens

Ken,

I can get them for \$150 more per 5 foot section than regular screen. The only place they are made is on the east coast so the shipping makes it expensive.

Thanks,

Jeff Manninen
Branch Manager
Building & Construction
Intertek-PSI

Office 715.738.2770
Email jeffrey.manninen@psiusa.com
www.intertek.com/building



Intertek-PSI, 12839 30th Avenue, Chippewa Falls, WI 54729

From: Ken Shimko <kshimko.meridianenv@gmail.com>
Sent: Monday, July 30, 2018 4:30 AM
To: Jeffrey Manninen <jeffrey.manninen@psiusa.com>
Subject: 2-inch wire-wrapped PVC screens

screens
↙

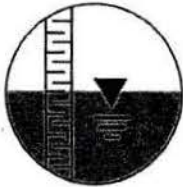
Jeff.

I would like to install four 2-in. dia., 10 ft long, PVC screens – Johnson wire-wrapped VEE type.

Can you tell me what the additional cost will be for each screen (or 5 ft section).

Thanks

Kenneth Shimko, PG
Meridian Environmental Consulting, LLC
2711 North Elco Road
Fall Creek, Wisconsin 54742
(715)832-6608 (office)
(715)579-0723 (cell)
Email: kshimko.meridianenv@gmail.com



Enviro-Equipment Inc.
 10120 Industrial Drive
 Pineville, NC 28134
 Phone 704-556-7723
 Fax 704-556-7228

Quote

Date	Quote No.
7/24/2018	4621rev1

Name / Address
Meridian Environmental Consulting, LLC Gary Gilbert 2711 North Elco Road Fall Creek, Wisconsin 54742

Ship To
Meridian Environmental Consulting, LLC Gary Gilbert 2711 North Elco Road Fall Creek, WI 54742

Payment Terms	Estimated Lead Time
See Below	10-14 Weeks

Part No.	Description	Qty	Cost	Total
	SVE Trailer			
	PAYMENT TERMS: 50% Up Front, 50% Plus Shipping Net 30 From Ship Date Requires Approved Credit.			
HIE656M72XL	Rotron HIE656M72XL Blower with 3HP 3PH XP VFD Rated Motor	1	3,524.00	3,524.00
MS300PS	038520 MS300PS Moisture Separator(Polyethylene) with one switch	1	1,855.00	1,855.00
CT-851-200C	Solberg CT-851-200C 2" Inlet Filter, T Style	1	468.00	468.00
SLCR200	SLCR200 Solberg 2" FPT Discharge Silencer	1	135.00	135.00
FS-31P-200	FS-31P-200 2" Solberg Filter Silencer	1	95.00	95.00
BTB3257D	Bimetal thermometer, 3" dial, 2-1/2" stem length, range 50/550°F (10/290°C), 5°F (5°C) div.	1	42.00	42.00
LPG4-D7722N	Dwyer LPG4-D7722N Vacuum Gauge, 0-100" W.C.	7	50.00	350.00
LPG4-D8122N	LPG4-D1822N Low Pressure Gauge 0-15" WC	1	50.00	50.00
DS-300-2	Dwyer Flow Sensor, 2" Pipe Size	1	227.00	227.00
A-610	Magnehelic Gauge Pipe mounting kit for 1-1/4" to 2" pipe. 5.6" x 4.6" x 1.4", 1.0 lb	1	32.00	32.00
2015	Series 2000 Magnehelic® Differential Pressure Gage 0 to 15" WC Range	1	77.00	77.00

	Subtotal
--	-----------------

	Sales Tax (7.25%)
--	--------------------------

	Total
--	--------------

This estimate is subject to the "Enviro-Equipment Estimate Terms and Conditions", "Enviro-Equipment Invoice Terms and Conditions", "Enviro-Equipment Rental/Service Agreement Terms and Conditions" and the "Enviro-Equipment New and Used Purchased Remediation Equipment Warranty and Returns Policy". It is the responsibility of the buyer to request and review these applicable terms and conditions. Acceptance of this estimate by the buyer shall be deemed as acceptance of all of these terms. All prices valid for 30 days unless otherwise specified. All equipment is subject to availability which may change without notice. All prices are in US dollars and do not include shipping costs unless otherwise specified.

Signature



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Payment Terms	Estimated Lead Time
See Below	10-14 Weeks

Part No.	Description	Qty	Cost	Total
Part	SVE Piping: - Galvanized Steel Blower Exhaust Piping from Blower including 1/2" tap for temperature gauge, 1/4" tap for pressure gauge, - 1/4" tap for brass ball valve with barb for sample port, 1/4" tap for pitot tube flow meter, pipe stub through enclosure ceiling with exhaust rain cap - 2" Galvanized Steel vacuum piping from blower to air filter with 1/4" tap for vacuum gauge - 2" SCH 80 PVC vacuum piping from air filter to moisture separator with 1/4" tap for vacuum gauge, 2" tee for dilution line with brass gate valve and filter silencer - 2" SCH 80 PVC from moisture separator to manifold trunk - 2" SCH 80 PVC manifold header with 4x 2" legs - 4x 2" SCH 80 PVC manifold legs each with PVC compact ball valve, section of clear PVC for sight glass with unions both sides, 1/4" tap for vacuum gauge, 1/4" tap for brass ball valve and barb for sample port, pipe stub through wall ending in 2" male camlock fitting - 3/4" SCH 80 PVC KO tank drain line with gate valve	1	800.00	800.00
Trailer- New	-----SYSTEM ENCLOSURE----- Homesteader Fury Trailer 4' x 6' x 4' Interior Height 3' Tongue 2,000lb Single Axle (1,400lb Payload) Rear Door 3/8" Walls 3/4" Floors 13" Tires/Wheels Spare Tire	1	2,000.00	2,000.00
XP Fan	Used Explosion Proof Fan with Guard and Louver	1	700.00	700.00

Subtotal

Sales Tax (7.25%)

Total

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Payment Terms	Estimated Lead Time
See Below	10-14 Weeks

Part No.	Description	Qty	Cost	Total
4MY93	PECO Remote Use Thermostat (1 for Heater, 1 for Fan)	2	58.00	116.00
XP Heater	Used XP Heater	1	750.00	750.00
Part	Galvanized Intake Louver Installed in Rear Door	1	75.00	75.00
Part	Electrical Conduit, Wire, Seals, Boxes, Fittings, Unistrut, Etc. for Class 1 Div 2 Group D Electrical Installation inside trailer, General Industrial Weatherproof Installation of Control Panel, Convenience Outlet, Thermostats and Telemetry Box on exterior over trailer tongue via angle iron / unistrut rack	1	550.00	550.00
Control_Panel	-----CONTROL PANEL----- 208V 3PH Control Panel Consisting Of: QTYx PART# - DESCRIPTION 1x R9C3060U - EATON 60A NONFUSED DISCONNECT 1x SF320SH5X5 - EATON 320mm DISC. SHAFT 1x SHB0N12 - EATON BLACK/BLUE HANDLE MECH 1x TS3R9CV - EATON TERMINAL SHIELDS 1x XTCE007B10A - EATON CONTACTOR 7A, 120V COIL 1x XTOB006BC1 - EATON OVERLOAD 6A 1x M22-WRLK3-2-G-K20-230G - EATON 3POS GREEN ILL., RET FROM LEFT, 2NO 1x M22-L-R-230R - EATON RED PILOT LIGHT, 85-264VAC 1x M22-L-W-230W - EATON WHITE PILOT LIGHT, 85-264VAC 1x M22-PVT-K01 - EATON EMERGENCY STOP, 1NC 1x M22-D-S-K01 - EATON BLACK PUSHBUTTON, 1NC 1x C0250E2AFB - EATON 250VA TRANSFORMER MULTI-TAP 2x QCR1015 - EATON BREAKER, 1POLE, 15A 1x QCR2015 - EATON BREAKER, 2POLE, 15A 1x FAZ-D30/3-NA - EATON MCB, 3POLE, 30A, D CURVE 2x RH3B-UAC120 - IDEC 3POLE RELAY 120V 2x SH3B-05 - IDEC 3POLE SOCKET	1	3,200.00	3,200.00

Subtotal

Sales Tax (7.25%)

Total

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Payment Terms	Estimated Lead Time
See Below	10-14 Weeks

Part No.	Description	Qty	Cost	Total
	1x SP1-208Y - EATON PANEL MT SURGE PROTECTOR, 208Y 1x EN4SD363612LG - HAMMOND 36X36X12 ENCLOSURE 1x EP3636 - HAMMOND 36X36 BACK PANEL 1x ESP3636 - HAMMOND 36X36 SWING PANEL 1x 2QPL - HAMMOND LOCKABLE LATCH 2x RH20000LG - HAMMOND RAIN HOOD 1x PF22000T12LG - HAMMOND FAN FILTER KIT 1x PFA20000LG - HAMMOND EXHAUST AND FILTER 6x HCTR 3-1/2 - EDISON CLASS CC 3.5A, TIME DELAY 3x BCM603-1C - EDISON 1P, CLASS CC FUSE BLOCK 3x HCLR 2 - EDISON CLASS CC 2A, FAST ACTING 1x N3-203-C - TECO DRIVE 230V, 3HP 1x 6-T-3H-508RPM-406 - E/M HR METER, 115VAC, 2.8-IN RND, 3-HOLE FLANGE 1x D65VMLP480 - 208-480V PLUG-IN UNIVERSAL VOLTAGE MONITOR 1x D3PA2 - SOCKET FOR VOLTAGE MONITOR 8x 22 LEGENDS - CUSTOM LEGENDS, 22mm, SILVER, BLACK LETTERING 1x MET LISTING - METS LAB CERTIFICATION 1x MISC. ELECT. - MISCELLANOUS ELECTRICAL, WIRE, TERMINALS, ETC.. 1x 23050HT - PANEL HEATER 50 WATT			
	----LABOR----			
Labor - Control Panel	Control Panel Engineering, Assembly, Drawings, Etc. Labor	1	2,750.00	2,750.00
Labor - System	System Assembly and Testing Labor	1	3,000.00	3,000.00
	----DELIVERY-----			

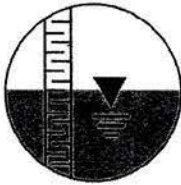
Subtotal

Sales Tax (7.25%)

Total

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Quote

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7/24/2018	4621rev1

Name / Address
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Ship To
Meridian Environmental Consulting, LLC Gary Gilbert 2711 North Elco Road Fall Creek, WI 54742

Payment Terms	Estimated Lead Time
See Below	10-14 Weeks

Part No.	Description	Qty	Cost	Total
Shipping	Estimated SVE Trailer Delivery - Not to Exceed \$5,500 Actual cost + 20% handling will be billed.	1	5,500.00	5,500.00

Subtotal	\$26,296.00
Sales Tax (7.25%)	\$0.00
Total	\$26,296.00

This estimate is subject to the "Enviro-Equipment Estimate Terms and Conditions", "Enviro-Equipment Invoice Terms and Conditions", "Enviro-Equipment Rental/Service Agreement Terms and Conditions" and the "Enviro-Equipment New and Used Purchased Remediation Equipment Warranty and Returns Policy". It is the responsibility of the buyer to request and review these applicable terms and conditions. Acceptance of this estimate by the buyer shall be deemed as acceptance of all of these terms. All prices valid for 30 days unless otherwise specified. All equipment is subject to availability which may change without notice. All prices are in US dollars and do not include shipping costs unless otherwise specified.

Signature _____

2711 N. Elco Road • Fall Creek, WI 54742 • (715) 832-6608 • Fax (715) 832-6797

Bid Form - SVE Piping and Trenching

Jump River, Wisconsin

Contact: Ken Shimko
Cell: 715-579-0723

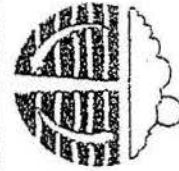
Scope of Work:

Install SVE Piping per Materials Spec (see attached) and Bid Specs (see attached)

Task	Units	#Units	Cost/Unit	Cost
Trenching, install piping, insulation, and backfill. Compaction. Dispose of excess clean soil	Scope of Work Per Bid Specs	Job		\$ 4800.00
Furnish Materials per Materials Spec	Scope of Work Per Materials Spec	Job		\$ 5600.00
			Total Cost	\$10,400.00

My signature below obligates my firm to complete the requested Scope of Work per Bid Specs and Material Specs.

Name Chris Olympick Date: 7-31-18
Signature [Signature]
Company John S. Almed Inc.
Phone 715-314-0018



Meridian Environmental Consulting, LLC



Bid Form - SVE Piping and Trenching

Form 5000 (Revised 2010)

Capital Item Estimate
Form 5000 (Revised 2010)

Scope of Work:
Install SVE piping per materials list for effluent and fill flows from industrial

Task	Units	Quantity	Unit Cost	Total Cost
Removal, install piping, installation, and backfill Constructive Dewatering of Process Water pond	Linear of Work Per Bid Specs	200	2100	420,000
Supply materials per Materials Spec	Supply of Work Per Materials Spec	200	2100	420,000
				* 13,890

My signature below indicates my firm to complete the requested Scope of Work per Bid Specs and Material Specs.

Name: Doug Feltz
 Signature: [Handwritten Signature]
 Company: Doug's Excavating & Construction, LLC
 Phone: 715-333-2633

Doug's Excavating - see next pg.

Melrose Junior High

- 150 - 2000 Super Tones, Piles, Cards, tape, Inkjet + Ink
- 160 - 100 35 lbs Milk Dens. Foam
- 170 - 2000 X 1 = 50 Slab X 27
- 180 - Timberline
- 190 - 20' x 40' Slab 40' Solid 20' 90
- 200 - 20' x 40' Slab 80' 90
- 210 - 30' Solid 30' 90
- 220 - 10' Solid 80' 90
- 230 - 10' Solid 80' 45' 60'
- 240 - 10' Solid 80' 45' 60'
- 250 - 10' Solid 80' 45' 60'
- 260 - 10' Solid 80' 45' 60'
- 270 - 10' Solid 80' 45' 60'
- 280 - 10' Solid 80' 45' 60'
- 290 - 10' Solid 80' 45' 60'
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- 390 - 10' Solid 80' 45' 60'
- 400 - 10' Solid 80' 45' 60'
- 410 - 10' Solid 80' 45' 60'
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- 780 - 10' Solid 80' 45' 60'
- 790 - 10' Solid 80' 45' 60'
- 800 - 10' Solid 80' 45' 60'
- 810 - 10' Solid 80' 45' 60'
- 820 - 10' Solid 80' 45' 60'
- 830 - 10' Solid 80' 45' 60'
- 840 - 10' Solid 80' 45' 60'
- 850 - 10' Solid 80' 45' 60'
- 860 - 10' Solid 80' 45' 60'
- 870 - 10' Solid 80' 45' 60'
- 880 - 10' Solid 80' 45' 60'
- 890 - 10' Solid 80' 45' 60'
- 900 - 10' Solid 80' 45' 60'
- 910 - 10' Solid 80' 45' 60'
- 920 - 10' Solid 80' 45' 60'
- 930 - 10' Solid 80' 45' 60'
- 940 - 10' Solid 80' 45' 60'
- 950 - 10' Solid 80' 45' 60'
- 960 - 10' Solid 80' 45' 60'
- 970 - 10' Solid 80' 45' 60'
- 980 - 10' Solid 80' 45' 60'
- 990 - 10' Solid 80' 45' 60'
- 1000 - 10' Solid 80' 45' 60'

1000 - 10' Solid 80' 45' 60'



Meridian Environmental Consulting, LLC

July 24, 2018

REQUEST FOR BID

Bid Item: Install trenching and piping for Soil Vapor Extraction system

Site Location: Jim's Bar (Piotrowski's)
Jump River, Wisconsin (Gilman Post Office - 54433)

Bid Due: **July 31, 2018**

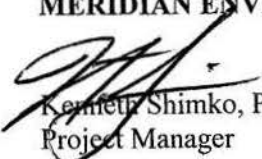
Meridian Environmental Consulting, LLC (Meridian) invites Bids to conduct the following Scope of Work:

Install trenching and piping for Soil Vapor Extraction System.

The attached Bid Specifications describe the job. An onsite Pre-Bid meeting is recommended before bidding.

Please complete the enclosed Bid Form and return by the Bid Due date.

Sincerely,
MERIDIAN ENVIRONMENTAL CONSULTING, LLC


Kenneth Shimko, PG
Project Manager

Sent to:

Olynick #10,400
Doug's Excavating #13,890
Kramer Well Drilling #12,750-verbal
Russ Thompson - No Bid
Promig Plumbing (Gilman) - No Bid

BID SPECIFICATIONS

These Bid Specifications describe the Scope of Work. Changes may be made in the Scope of Work prior to the work being completed or during the onsite work. All changes will be at the sole discretion of Meridian. Monetary changes will require prior written authorization from Meridian.

Contractor will provide all materials, equipment, and labor to complete the Scope of Work.

Site Description:

The site is a tavern located in the Village of Jump River, Wisconsin. The tavern formerly sold gasoline. The underground storage tanks leaked gasoline into the soil and ground water. The underground storage tanks, pumps, and piping were removed in 1994.

The work area is either gravel or grass.

Soils and Ground Water:

The soils at the site are typically sand and gravel in the parking area and black dirt in the grassy areas. Ground water is found about 15 feet below grade.

SCOPE OF WORK

Trenching

We plan to connect soil vapor extraction (SVE) wells to a central vacuum blower using buried piping. Figure 1 illustrates the trenching layout. Figure 2 provides a schematic of the piping and trench.

The piping needs to be installed in trenches which are 3 - 4 feet deep and wide enough to accommodate the piping (1 foot minimum). Each SVE well will be connected to the remediation system by its own pipe. The pipes will slope to the vent well allowing moisture to drain back to the well.

Wiring will be placed in the trench to allow future location of the trench and piping. The wiring will extend to the equipment trailer.

Piping

Figure 2 provides a schematic of the piping.

The piping will be 2-inch diameter Schedule 40 PVC with bell and spigot ends. All fittings (corners, Tees, couplings, etc.) will be Schedule 80. The piping will be connected to existing 2-inch diameter vent wells using 2x2x2 Schedule 80 PVC Tee and stubbed to 6 inches below grade. No PVC male adapters to be used. All joints will be glued or threaded.

At the equipment trailer location, the piping will be stubbed approximately 2 feet above grade and interconnected using standard Uni-strut bracing (two – one below grade and one above grade (12 inches).

The piping will have a 1 foot Sch. 40 PVC sump (using a 2x2x2 Tee) at the equipment trailer end to collect moisture. No PVC male adapters to be used. All joints will be glued or threaded.

The piping will be pressure tested at 5 psi for 15 minutes. No loss of pressure can be allowed. Meridian staff will be present during testing.

Backfilling and Compaction

The trenches will be backfilled with approximately 4 - 6 inches of clean fine sand around the piping. The sand will be covered with 4-inches of high-density Styrofoam sheeting. The excavated soil will be placed on top of the Styrofoam sheeting. The backfilled trenches will be compacted in 2 foot lifts (compaction testing not required) and topped with 6-inches of gravel or black dirt. The surface will be graded to match the surrounding grade. Lawn areas will be seeded with grass seed.

Excess Soil

Clean soil can be used as backfill or disposed offsite. No petroleum impacted soil is expected. However, if found, contaminated soil will be stockpiled onsite and Meridian will arrange/pay for removal and disposal. Meridian will determine whether soil is clean or contaminated.

Safety and Security

Barriers (barrels, cones, plastic ribbon) will be installed around the work area to keep traffic and onlookers at a safe distance.

A Site Health and Safety Plan will be prepared by Meridian and will be reviewed prior to the work. All onsite personnel will adhere to this Safety Plan.

In addition, Contractor is responsible for the Health and Safety of their personnel, equipment, and activities.

Utilities

Meridian will clear public and private utilities.

Permits

Meridian will obtain all permits.

Schedule

The work is scheduled for late August 2018. Work to be completed in 5 days once started.

Payment

The Contractor will invoice Meridian using the same format and pricing as provided in the Bid Form.

Meridian will provide the Contractor a Promissory Note required for PECFA reimbursement.

Insurance/Contract

Contractor will sign Meridian's Subcontract and provide Certificate of Insurance documenting compliance with insurance requirements prior to the work beginning.



Meridian Environmental Consulting, LLC

Bid Form - SVE Piping and Trenching

Jump River, Wisconsin

Contact: Ken Shimko
Cell: 715-579-0723

Scope of Work:

Install SVE Piping per Materials Spec (see attached) and Bid Specs (see attached)

Task	Units	#Units	Cost/Unit	Cost
Trenching, install piping, insulation, and backfill. Compaction. Dispose of excess clean soil	Scope of Work Per Bid Specs	Job		
Furnish Materials per Materials Spec	Scope of Work Per Materials Spec	Job		
			Total Cost	

My signature below obligates my firm to complete the requested Scope of Work per Bid Specs and Material Specs.

Name _____ Date: _____
Signature _____
Company _____
Phone _____

Piping and Trenching Specifications

Jump River SVE System

Meridian No. 05F781

- (Contractor will provide all Sch 40 PVC piping, Sch80 couplings and Tee, glue, styrofoam, etc.)
- (contractor will provide equipment (e.g., excavator, compactor, etc.), backfill materials (e.g., sand, gravel, black dirt, grass seed). remove/dispose of excavated clean soil, and asphalt gravel finish (graded and compacted).
- (any contaminated soil will be disposed under separate contract by Meridian)

Piping	
SVE Well	Distance (well to system)(use for pipe length)
Units	ft
SV-1	120
SV-2	107
SVE-4	90
SV-5	70
SV-6	50
SV-7	132
SV-8	85
SV-9	20
SV-10	70
SV-11	170
Total	914

Trenching	
Units	Length
	ft
Main Trench in front of tavern (connecting SV-1, -2, -4, -5, -6 to Equipment Trailer)	120
SV-7 to Main Trench	32
SV-8 to Main Trench	35
SV-9 to Equipment Trailer	20
SV-10 to Equipment Trailer	70
SV-11 to SV-10 trench	100
Total	377

Styrofoam sheets (8x4 x 2 in) = 377 ft/8/2 x 2 = 48 sheets minimum

Main trench may require addtl to accommodate all piping
4-inches of Styrofoam extends 6 inches past pipe(s) in trench

These measurements are estimated. Actual amounts may vary in the field. Contractor work product and invoicing to comply with actual amounts.

Well

BALL FIELD

MW-14

MW-13

SV-11

SV-10

TAVERN

MW-12C

MW-12B

MW-12A

SV-9

SVE Equipment Trailer

SV-1

SV-2

SV-4

SV-5

SV-6

MW-2

MW-1

SB-3

SV-7

SV-8

SB-9

MW-3

PP

SV-8

MW-5

MW-16A

8A

MW-6

MW-7

DRIVEWAY

MW-9B

MW-9A

EDGE OF BLACKTOP

M STREET



0 40 80
(feet)

Figure 1
Piping Diagram
Jim & Cindy's Bar
Gilman, WI

PROJECT NO.

05F781

DATE

7/18/18



Meridian
Environmental
Consulting, LLC



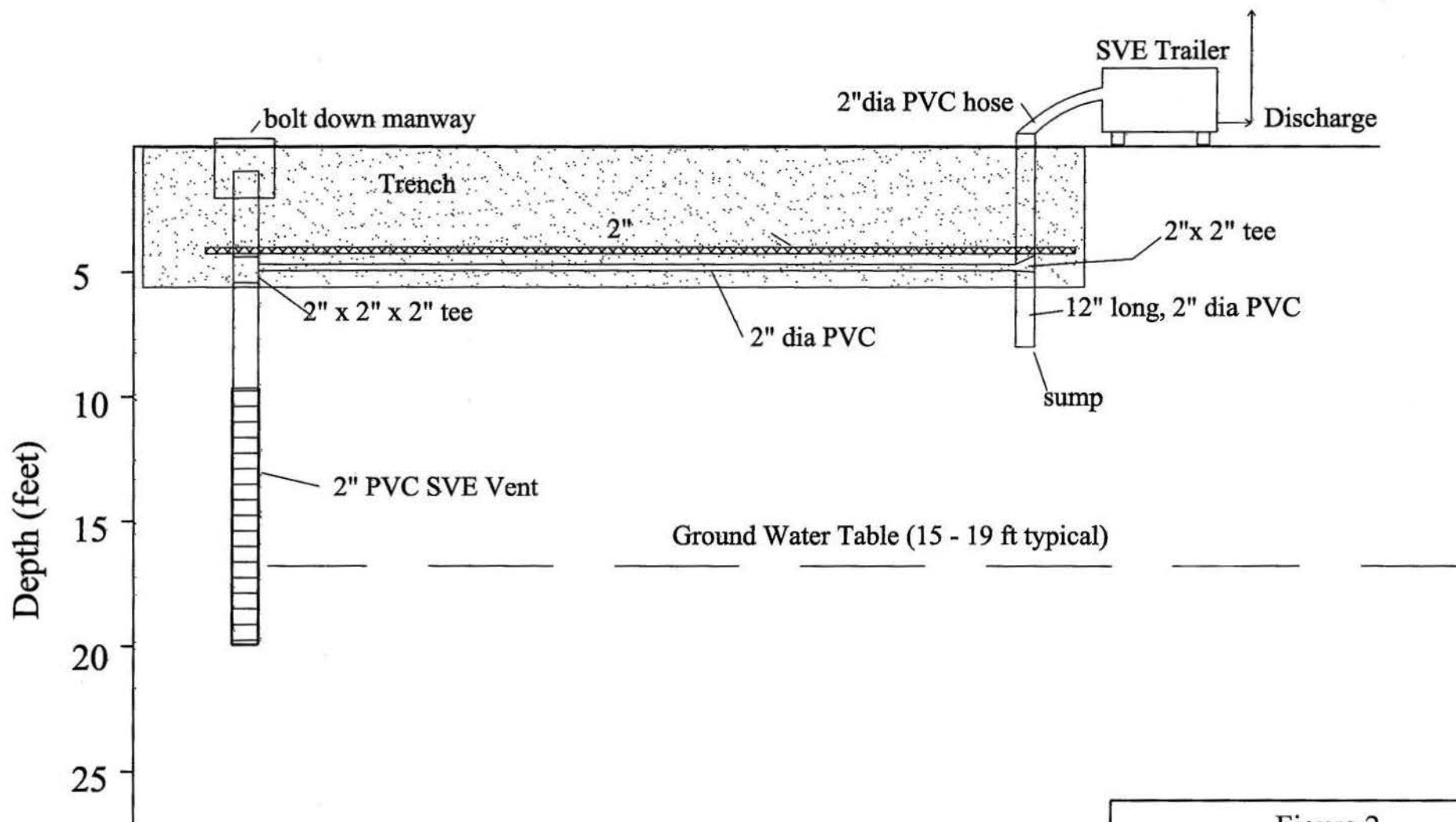



Figure 2
 Schematic of SVE Wells/Piping
 Jim's Bar
 Jump River, Wisconsin

PROJECT NO. 05F781	PREPARED BY KAS	 Meridian Environmental Consulting, LLC
DATE 7/23/18	REVIEWED BY KAS	

Stoltz, Carrie R - DNR

From: Ken Shimko <kshimko.meridianenv@gmail.com>
Sent: Monday, August 06, 2018 3:00 PM
To: Stoltz, Carrie R - DNR
Subject: Jump River - revised Cost Sheets
Attachments: IMG_20180801_103759215.jpg; IMG_20180801_103814012.jpg; Revised Cost Sheets - Jump River.pdf

Per our discussion:

- Revised cost sheets (move per diem to U&C, add potable well recon, correct mileage to \$.545/mile)
- JPG of Doug's Excavating Bid

Kenneth Shimko, PG
Meridian Environmental Consulting, LLC
2711 North Elco Road
Fall Creek, Wisconsin 54742
(715)832-6608 (office)
(715)579-0723 (cell)
Email: kshimko.meridianenv@gmail.com

Usual and Customary Standardized Invoice #23

January 2018- June 2018



RR-092a

PECFA #: 54433-9769-64
 BRRTS #: 03-61-000116
 Site Name: Jim's Bar
 Site Address: Jump River (Gilman Post)

Vendor Name: Change Order
 Invoice #: Change Order
 Invoice Date: August 3, 2018
 Check #: Change Order

U&C Total \$ 45,440.03
 Variance to U&C Total \$ 114,716.93
 Grand Total \$ 160,156.96

TASK	TASK DESCRIPTION	SERVICES	ACTIVITY CODE	ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAX UNIT COST	UNITS	TOTAL MAX
Install 10 additional MWs: two well nests to document downgradient extent of GW Contamination (2 screened 55-60 ft in deep sand aquifer, 2 screened 35 -40 ft in "hardpan", 2 screened 15 - 25 at water table)(sample 60 ft wells (lithology), no sample remaining 4 adjacent wells) plus 4 water table wells (screened 15 - 25 ft: sample lithology each boring). Estimate 25 drums. Survey. Well Development. Dispose Purge Water (6 drums)								
Ground Water Sampling (2 quarters)(10 new wells plus MW-1, -2, -3, -5, -6, -7, -8A, -8B, -8C, -9A, -9B, -10A, -10B, -12A, -12B, -12C, -13, -14, -15, -16A, -16B, -17A, -17B) plus private wells (onsite well, 14789 (new well), 8891 Bridge (store - before&after carbon), 8887 Bridge, 8890 Bridge, 14778 River, 8910 Elm, 8907 Birch, 8908 Birch, 8896 Birch. TOTAL = 44 samples x 2 = 88 water samples								
Install 4 SVE vents (screened 10 - 20 ft)(variance for continuous-wrapped screens - 20 slot). Earth drill.								

1	GW Sampling		GS05	Sample Collection	Well	\$ 72.45	88	\$ 6,375.60
1	GW Sampling		GS25	Primary Mob/Demob	Site	\$ 628.11	2	\$ 1,256.22
4	Waste Disposal	Consultant	WD05	Consultant Coordination (soil, GW)	Site	\$ 137.13	1	\$ 137.13
4	Waste Disposal	Commodity	WD10	GW Sample and/or Purge (well develop (2 drums), sample 2X (4 drums), Condensate - 2 drums))	Drum	\$ 42.11	8	\$ 336.88
4	Waste Disposal	Commodity	WD15	Drill Cuttings	Drum	\$ 108.15	25	\$ 2,703.75
4	Waste Disposal	Commodity	WD25	Primary Mob/Demob (1x - soil, 1x - develop, 2x - sampling)	Site	\$ 287.70	4	\$ 1,150.80
10	Initial Site Survey	Consultant	IS10	Subsequent Surveys	Well	\$ 110.15	10	\$ 1,101.50
11	Potable Well Field Reconnaissance		PWFR05	Potable Well Field Reconnaissance	Site	\$ 583.50	1	\$ 583.50
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR05	0 - 25 ft bgs (6x25=150)	Ft	\$ 5.40	150	\$ 810.00
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR10	26 - 50 ft bgs (2x 25 = 50)	Ft	\$ 5.67	50	\$ 283.50
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR15	51 - 75 ft bgs (2x10=20)	Ft	\$ 7.30	20	\$ 146.00
13.a	Drilling In Unconsolidated Soils - With Soil Sampling	Consultant	DR20	Primary Mob/Demob	Site	\$ 593.04	1	\$ 593.04
13.b	Drilling In Unconsolidated Soils - Without Soil And/Or GW Sampling	Consultant	DR25	Consultant Oversight (4 SVE vents = 4 x 20 = 80 plus two nests: 2x40 + 2x25=130. Total = 210)	Ft	\$ 1.58	210	\$ 331.80
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR45	0 - 25 ft bgs (2x60, 4x25 = 150 + 60* 20 = 220)	Ft	\$ 16.70	150	\$ 2,505.00
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR50	26 - 50 ft bgs	Ft	\$ 18.38	50	\$ 919.00
13.d	Drilling In Unconsolidated Soils - With Soil Sampling	Commodity	DR55	51 - 75 ft bgs	Ft	\$ 21.53	20	\$ 430.60
13.e	Drilling In Unconsolidated Soils - Without Soil And/Or GW Sampling	Commodity	DR60	Drilling in Unconsolidated Soils (MWs - 130* SVE -80 = 210)	Ft	\$ 11.97	210	\$ 2,513.70
14	Monitoring Well Installation	Consultant	MWI05	0 - 25 ft bgs (4 SVE vents- 4x20 = 80 plus MWs 10x25=250)	Ft	\$ 3.89	330	\$ 1,283.70
14	Monitoring Well Installation	Consultant	MWI10	26 - 75 ft bgs (MWs: 2 x 35 + 2 x 15 = 100)	Ft	\$ 2.73	100	\$ 273.00
14	Monitoring Well Installation	Commodity	MWI15	2 inch PVC Casing	Ft	\$ 16.70	430	\$ 7,181.00
14	Monitoring Well Installation	Commodity	MWI20	Well Development	Well	\$ 147.63	10	\$ 1,476.30
14	Monitoring Well Installation	Commodity	MWI25	Mob/Demob (For development of grout or slurry sealed well)	Site	\$ 548.63	1	\$ 548.63
15	Misc. Drilling Activities & Supplies		MDT05	Drill Rig Mob/Demob	Mob/Demob	\$ 963.38	1	\$ 963.38
15	Misc. Drilling Activities & Supplies		MDT10	Well Cover/flushmount (4 SVE vents + 10 MWs)	Each	\$ 202.65	14	\$ 2,837.10
15	Misc. Drilling Activities & Supplies		MDT25	Commodity Service Provider Per Diem (drilling and direct push)	Person	\$ 203.26	10	\$ 2,032.80
15	Misc. Drilling Activities & Supplies		MDT41	Private Utility Locate	Each	\$ 117.18	1	\$ 117.18
21	Access Agreements		AA05	Access Agreements (Township)	Property	\$ 401.94	1	\$ 401.94
31	Consultant Overnight Per Diem		COPD05	Overnight (4 - trenching, 3-system startup, 5 - MWs)	Night	\$ 113.72	12	\$ 1,364.64
33	Schedule Of Laboratory Maximums	Commodity		Laboratory (see task 33 total on Lab Schedule)	Lab Schedule		126	\$ 4,400.56
36	Change Order Request		COR05	Change Order Request (cost cap exceedance requests)	Change Order	\$ 381.78	1	\$ 381.78

VARIANCE ITEMS

Variance	Install SVE System and Operate 12 months (see attached spreadsheet)	\$ 113,516.93
Variance	Continuous-wrapped screens (20 slot). PVC	5 ft \$ 150.00 8 \$ 1,200.00

Budget: Soil Vapor Extraction (SVE) System Installation and First Year O&M

Jims Bar/ Jump River, Wisconsin
Meridian No. 05F781

Description	Units	Quantity	Unit Cost	Total Cost
Design of SVE System (vents, equipment, piping, trenching, electrical, permits)				
Project Engineer (PE)	hr	32	\$109.67	\$3,509.44
Hydrogeologist (PG)	hr	32	\$109.67	\$3,509.44
Project Management (Bid Docs, Cost Estimates)	hr	16	\$109.67	\$1,754.72
Install Extraction Wells and Underground Piping				
1. Install 4 additional SVE vents (see enclosed U&C Summary)	U&C			
2. Install piping connecting vents to equipment trailer				
Subcontractor	est	1	\$10,400.00	\$10,400.00
Field Time (Meridian)				
Prep/deprep	hr	4	\$91.39	\$365.56
Field Time	hr	40	\$91.39	\$3,655.60
Per Diem (U&C Overnight)(see U&C)	Day	4		
Project Management	hr	4	\$109.67	\$438.68
Engineering (PE)	hr	4	\$109.67	\$438.68
PID	Task	1	\$75.00	\$75.00
Piping Manifold Compartment (materials and build)	Task	1	\$500.00	\$500.00
System Installation/Startup (Includes first 3 days of air sampling)				
SVE System (includes \$1200 for temporary blower rental unit)	ls	1	\$27,496.00	\$27,496.00
Electrician - labor, wiring, materials (estimated cost - actual costs will be submitted)	ls	1	\$3,000.00	\$3,000.00
Jump River Electric Coop (power drop)	est	1	\$3,500.00	\$3,500.00
Field Time (Meridian)				
Construction Coordination (PE)	hr	6	\$109.67	\$658.02
Construction Coordination (Project Manager)	hr	6	\$109.67	\$658.02
Construction Oversight - system install (PE)	hr	36	\$109.67	\$3,948.12
Construction Oversight - system install (Field Staff)	hr	45	\$91.39	\$4,112.55
Travel - system install/startup (PE)	hr	6	\$109.67	\$658.02
Per Diem - system install/startup (PE)(see U&C)	day	3		
Misc PVC Piping/plumbing	ls	1	\$500.00	\$500.00
Security Fencing (temporary)	ls	1	\$750.00	\$750.00
Air pump rental (from lab)	week	1	\$60.00	\$60.00
PID	day	3	\$75.00	\$225.00
			Subtotal:	\$70,212.85

System Operation	Unit	Quantity	Events	Rate	Total
Field Time (week 2, week 3, plus months 2 thru 12 = 13 site visits)					
Prep	hour	1	13	\$91.39	\$1,188.07
sample/maint	hour	4	13	\$91.39	\$4,752.28
travel	hour	3	13	\$91.39	\$3,564.21
mileage	mile	150	13	\$0.545	\$1,062.75
Project Management	hour	4	13	\$109.67	\$5,702.84
Project Engineer	hour	5	13	\$109.67	\$7,128.55
Equipment					
PID	day	1	13	\$75.00	\$975.00
Interface Probe	day	1	13	\$70.00	\$910.00
air pump (rented from lab)	day	1	13	\$60.00	\$780.00
Contingency Mobilizations (estimate 3)					
Field Time					
Prep	hour	1	3	\$91.39	\$274.17
sample/maint	hour	4	3	\$91.39	\$1,096.68
travel	hour	3	3	\$91.39	\$822.51
mileage	mile	150	3	\$0.545	\$245.25
Project Management	hour	4	3	\$109.67	\$1,316.04
Project Engineer	hour	5	3	\$109.67	\$1,645.05
Equipment					
PID	day	1	3	\$75.00	\$225.00
Interface Probe	day	1	3	\$70.00	\$210.00
Documentation / Reporting					
As-Built and First 6 month O&M					
Project Engineer (PE) (SVE system)	hr	24		\$109.67	\$2,632.08
Project Hydrogeologist (PG) (SVE system, MWs, GW sampling, updated site map and tables, etc.)	hr	32		\$109.67	\$3,509.44
Annual Report with recommendations					
Project Engineer (PE)	hr	24		\$109.67	\$2,632.08
Project Hydrogeologist (PG)	hr	24		\$109.67	\$2,632.08
			Subtotal		\$43,304.08

See U&C for Air Samples, Waste Disposal (condensate water), install 4 SVE vents

GRAND TOTAL: \$113,516.93

Usual and Customary Standardized Invoice #23

January 2018- July 2018



RR-092A

TOTAL LAB CHARGES \$ 4,400.56 TASK 33 126 \$ 4,400.56 TASK 24 0 \$ -

MATRIX	REF CODE	REIMBURSABLE ANALYTE	UNITS	MAX COST	SAMPLES	TOTAL	MAX COST	SAMPLES	TOTAL
AIR	A1	Benzene	SAMPLE	\$ 44.94	19	\$ 853.86			
AIR	A2	BETX	SAMPLE	\$ 49.46		\$ -			
AIR	A3	GRO	SAMPLE	\$ 46.10	19	\$ 875.90			
AIR	A4	VOC's	SAMPLE	\$ 71.93		\$ -			
WATER	W1	GRO/PVOC	SAMPLE	\$ 29.19		\$ -			
WATER	W2	PVOC	SAMPLE	\$ 26.99		\$ -			
WATER	W3	PVOC + 1,2 DCA	SAMPLE	\$ 43.79		\$ -			
WATER	W4	PVOC + Naphthalene	SAMPLE	\$ 30.35	88	\$ 2,670.80			
WATER	W5	VOC	SAMPLE	\$ 71.93		\$ -			
WATER	W6	PAH	SAMPLE	\$ 72.98		\$ -			
WATER	W7	Lead	SAMPLE	\$ 12.39		\$ -			
WATER	W8	Cadmium	SAMPLE	\$ 13.55		\$ -			
WATER	W9	Hardness	SAMPLE	\$ 12.39		\$ -			
WATER	W10	BOD, Total	SAMPLE	\$ 23.63		\$ -			
WATER	W11	Nitrate	SAMPLE	\$ 11.24		\$ -			
WATER	W12	Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
WATER	W13	Ammonia	SAMPLE	\$ 16.91		\$ -			
WATER	W14	Sulfate	SAMPLE	\$ 10.19		\$ -			
WATER	W15	Iron	SAMPLE	\$ 10.19		\$ -			
WATER	W16	Manganese	SAMPLE	\$ 10.19		\$ -			
WATER	W17	Alkalinity	SAMPLE	\$ 10.19		\$ -			
WATER	W18	methane	SAMPLE	\$ 46.10		\$ -			
WATER	W19	Phosphorous	SAMPLE	\$ 18.06		\$ -			
WATER	W20	VOC Method 524.2	SAMPLE	\$ 176.30		\$ -			
WATER	W21	EDB Method 504	SAMPLE	\$ 95.45		\$ -			
SOILS	S1	GRO	SAMPLE	\$ 24.78		\$ -	\$ 24.78		\$ -
SOILS	S2	DRO	SAMPLE	\$ 30.35		\$ -	\$ 30.35		\$ -
SOILS	S3	GRO/PVOC	SAMPLE	\$ 28.14		\$ -	\$ 28.14		\$ -
SOILS	S4	PVOC	SAMPLE	\$ 25.83		\$ -	\$ 25.83		\$ -
SOILS	S5	PVOC + 1,2 DCA + Naphthalene	SAMPLE	\$ 49.46		\$ -	\$ 49.46		\$ -
SOILS	S6	PVOC + Naphthalene	SAMPLE	\$ 36.02		\$ -	\$ 36.02		\$ -
SOILS	S7	VOC	SAMPLE	\$ 71.93		\$ -	\$ 71.93		\$ -
SOILS	S8	SPLP Extraction VOC only	SAMPLE	\$ 50.61		\$ -	\$ 50.61		\$ -
SOILS	S9	PAH	SAMPLE	\$ 72.98		\$ -	\$ 72.98		\$ -
SOILS	S10	Lead	SAMPLE	\$ 12.39		\$ -	\$ 12.39		\$ -
SOILS	S11	Cadmium	SAMPLE	\$ 14.60		\$ -			
SOILS	S12	Free Liquid	SAMPLE	\$ 11.24		\$ -			
SOILS	S13	Flash Point	SAMPLE	\$ 25.83		\$ -			
SOILS	S14	Grain Size - dry	SAMPLE	\$ 42.74		\$ -			
SOILS	S15	Grain Size - wet	SAMPLE	\$ 57.33		\$ -			
SOILS	S16	Bulk Density	SAMPLE	\$ 13.55		\$ -			
SOILS	S17	Permeability	SAMPLE	\$ 41.58		\$ -			
SOILS	S18	Nitrogen as Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
SOILS	S19	Nitrogen as Ammonia	SAMPLE	\$ 16.91		\$ -			
SOILS	S20	% Organic Matter	SAMPLE	\$ 29.19		\$ -			
SOILS	S21	TOC as NPOC	SAMPLE	\$ 57.33		\$ -			
SOILS	S22	Soil Moisture Content	SAMPLE	\$ 6.83		\$ -			
SOILS	S23	Air Filled Porosity	SAMPLE	\$ 25.83		\$ -			
SOILS	S24	% Total Solids	SAMPLE	\$ 6.83		\$ -			
SOILS	S25	Field Capacity	SAMPLE	\$ 28.14		\$ -			
SOILS	S26	TCLP Lead	SAMPLE	\$ 83.16		\$ -			
SOILS	S27	Cation Exchange (Ca, MG, & K)	SAMPLE	\$ 26.99		\$ -			
SOILS	S28	TCLP Cadmium	SAMPLE	\$ 83.16		\$ -			
SOILS	S29	TCLP Benzene	SAMPLE	\$ 83.16		\$ -			
		Viscosity + Density							
LNAPL	LFPS01	Interfacial tension I (LNAPL/water [dyne/cm])	SAMPLE	\$ 561.33		\$ -			
		Interfacial tension II (LNAPL/air [dyne/cm])							
		Interfacial tension III (water/air) [dyne/cm]							
						TASK 33 TOTAL \$	4,400.56		

MAX COST	SAMPLES	TOTAL
\$ -		\$ -
\$ 24.78		\$ -
\$ 30.35		\$ -
\$ 28.14		\$ -
\$ 25.83		\$ -
\$ 49.46		\$ -
\$ 36.02		\$ -
\$ 71.93		\$ -
\$ 50.61		\$ -
\$ 72.98		\$ -
\$ 12.39		\$ -
TASK 24 TOTAL \$ -		

TASK 33 TOTAL \$ 4,400.56

Bid Form - SVE Piping and Trenching

Jump River, Wisconsin

Contact: Ken
Call: 715-833-6408

Scope of Work:

Install SVE Piping per Materials Spec (see attached) and Bid Specs (see attached)

Task	Units	#Units	Cost/Unit
Trenching, install piping, insulation, and backfill. Compaction, Dispose of excess clean soil	Scope of Work Per Bid Specs	100	93.00
Furnish Materials per Materials Spec	Scope of Work Per Materials Spec	100	37.00
			Total Cost

My signature below obligates my firm to complete the requested Scope of Work per Bid Specs and Material Spec

Name Doug Tallefson Date 7-30-18
 Signature Doug Tallefson
 Company Dave's Trenching & Excavating LLC
 Phone 715 533 2933

2713 N. Dixie Road • Fall Creek, WI 54742 • 715 833 6408 • Fax 715 833 6409

Meridian Jump River

150	-	Safety Snow Fence, Posts, Caution tape Installed & Removed
		• R ¹⁰ 2x3' 25 PSI High Density Foam
1400	-	2' wide x 4" x 0 = 50 sheets X 28'
250	-	TRACOR WIRE
120	-	2" PVC Sched 40 Ballie Spigot 960'
240	-	20 90 Sched 80 Tees
120	-	30 Sched 80 90°
75	-	12 Sched 80 Couplers
75	-	12 Sched 80 45°
100	-	1 PSI Testing Device w/ Gauge w/ AirComp W/ Ferraco
175	-	Compoetal Plate
150	-	Grass Seed & FERT 50# Rapin Grass
160	-	4 Rolls Emot
75	-	PVC Glue & Cleaner
350 350		1Ld TOPSOIL
300		1Ld Gravel
250		1Ld Bedding Sand
400	} 9900	MOB T70 = mini = CABIN
2700		30 HRS mini
3300		30 HRS T70
3500		70 HRS LABOR
	13890	Total