

October 29, 2024

Mr. Jim Heller Alabama Department of Environmental Management Groundwater Branch, Land Division 1400 Coliseum Boulevard Montgomery, Alabama 36110-2059

Re: Modified Corrective Action Plan Dated May 7, 2024 (CP-69) Express Zone ADEM Facility ID Number: **20330-121-007087** Incident Number: **UST00-07-32** 32176 Highway 280 Childersburg, Alabama (Talladega County) 35044 SPHERE 3 File: RP-CUP.EZ.69

Dear Mr. Heller:

SPHERE 3 Engineering, Inc. (SPHERE 3) is pleased to provide the additional information you requested in your letter dated June 20, 2024 regarding the Modified Corrective Action Plan. For simplicity, this document is submitted in a question/answer format.

Question: An additional (itemized) quote from a soil vapor extraction equipment provider.

Answer: An additional, itemized quote from Sepco is provided as Attachment 1.

*Question:* An itemized breakdown of MK Environmental, Inc.'s quote for its equipment (note that the Department does not approve lump sums for remediation equipment and services).

Answer: The itemized quote is provided as Attachment 2.

*Questions:* Details of construction waste management - including soil and fluid waste resulting from excavations. Specifically what costs are entailed with generated wastes loading, hauling, and final disposal. Additionally, the Department requires a proposed destination for waste materials and subsequent documentation.

*Answer:* All wastes will be transported to Big Sky Environmental and disposed under manifest protocol. A quote to provide these services has been provided and is included as Attachment 3.

*Questions:* The procedures for groundwater monitoring during the on-going remediation should include details pertaining to purge water management.

Answer: Select monitor wells will be sampled each period. Wells will be purged by bailing. All purge water will be collected and processed within the proposed corrective action equipment. The water is introduced into the system at the oil water separator and allowed to process within the air stripper, where the concentrations are stripped away. The clean water is then discharged under an NPDES permit.

*Question:* Details should be provided regarding influent and effluent sampling (espec. procedures for collection).

Answer: Influent and effluent samples shall be sampled monthly. Influent samples will be collected prior to treatment (i.e. carbon) and include air and groundwater. The influent air will be collected, using a sampling pump, at each leg of the manifold and include analyses of BTEX/MTBE/TPH. The effluent air will be collected as a combination of the airs (after any offgas treatment) and include analyses of BTEX/MTBE/TPH.

Influent groundwater samples will be sampled monthly at the manifold prior to treatment. Analyses will include BTEX/MTBE/Naphthalene. Effluent groundwater samples will be collected post-treatment. Analyses will include BTEX/MTBE/Naphthalene/O&G/Lead.

Sincerely,

Greg Hoagland, P.E.

cc: Mr. Rick Parrott





# Southeastern Environmental Products, Inc.

832 Pickford Point	Madison, MS 39110	601-421-4258	sepco@att.net
SPHERE 3 ENGINEERING, INC	EXPRESS ZONE		November 4, 2024
GREG HOAGLAND	(UST 000732)		
3433 SIERRA DRIVE	32176 Highway	280	Page 1 of 5
HOOVER, AL 35216	Childersburg, Al		
			8

We are pleased to offer the following remediation system:

VAPOR EXTRACTION SYSTEM......\$ 22,927.00

- High airflow with medium vacuum or equal pump
- 280 ACFM @ 3.7" Hg. Condition point
- Roots URAI-47 PD blower with 5.0 hp TEFC Motor or equal
- 100 Gallon Condensate Knock out tank
- Knock out tank clean out port
- Inlet filter and dilution throttling valve
- Transfer pump1.0 hp groundwater transfer pump, TEFC motor
- Transfer pump level controls
- High exhaust temperature switch
- Exhaust silencer

GROUNDWATER PUMPS......\$ 39,520.00

- (5) Pneumatic AutoPumps
- Top fill, short, AP3 or equal

• Pumps only, all other pump accessories provided by others

AIR COMPRESSOR (for pneumatic GW pumps)

- 7.5 HP, 230/460 volt, 3-Phase reciprocating air compressor
- Ingersoll-Rand or equal
- 23 CFM and 125 PSI maximum pressure
- 80 gallon receiver tank with drain
- 3-way outlet solenoid valve

CONTROL SYSTEM ......\$ 28,285.00

- NEMA 4 EXTERIOR MOUNTED CONTROLS
- breaker panel with individual branch breakers for all major components

• control panel with magnetic starters, groundwater pump controls, high level shut off system controls, and all additional control circuits required for the system

- INTERLOCK CONTROL PANEL
- latching pump shut-off relay w/manual reset
- GFCI Utility outlet with breaker for hand tools
- Incoming power monitor and Emergency kill switch
- Variable Frequency Drive for the SVE blower only
- UL stickered and certified panel

#### **TELEMETRY SYSTEM**

- EOS Model B1 telemetry system
- (1) 4-20 mA analog vacuum reading
- (1) flow totalizer reading
- (10) dry contact alarm monitoring
- Remote restart
- Remote shutdown
- Remote monitoring

• Cellular modem connection

#### EQUIPMENT HOUSING.....\$ 32,635.00

- Sized to accommodate extraction and water treatment equipment
- 16' foot long by 8-1/2 feet wide
- Steel frame building with aluminum exterior
- Man door access
- XP lighting
- XP convection heater with XP thermostat
- XP vent fan
- Installation of all equipment specified in this proposal
- OIL WATER SEPARATOR SYSTEM 15 GPM......\$ 34,893.00
- Coalescing pack
- Effluent sump
- Transfer pump 1.5 hp groundwater transfer pump, TEFC motor
- Transfer pump level controls
- Product high level float switch. Drum provided by others

#### LOW PROFILE AIR STRIPPER

- 1-tray stripping unit
- 1.0 hp groundwater transfer pump, TEFC motor
- Transfer pump level controls
- High/Low Air Supply Switch
- High Sump Level Switch
- Aluminum blower
- Air pressure gauge
- Inspection/clean out hatch

- Stainless Steel Construction
- Latched and gasketed lid
- Stainless steel construction
- Blower silencer
- · Final effluent totalizing flow meter with remote monitoring via telemetry

**GROUNDWATER FILTRATION** 

- (2) bag filter housings in parallel
- (1) case of 25 micron filter bags
- Pressure gauge and sample port
- VAPOR PHASE CARBON (located outside the system building)......\$ 9,685.00
- (2) 400 lb drums in series for the SVE exhaust stream
- Condensate drum to collect moisture prior to carbons

#### 240 VOLT SYSTEM MODIFICATION

- 3 phase 240 volt power supply
- Fused disconnect
- Weatherhead
- Meter base

MISCELLANEOUS ITEMS......\$ 8,000.00

- Third party certification of the building and control panel included.
- Includes system start-up assistance with 3 weeks prior notice
- Includes freight to jobsite. Off loading and placement by others.
- Included O&M manual

#### MANIFOLDS:

- SVE inlet manifold by others
- Groundwater air supply and water return line manifolds by others

GRAND TOTAL.....\$ 175,945.00

TERMS: NET 30% DOWN PAYMENT, NET 30 DAYS

FOB: FACTORY

Total does not include permits, fees, etc.

Dale Woodall

Southeastern Environmental Products, Inc.

601-421-4258



#### MK ENVIRONMENTAL INC.

765 Springer Drive Lombard, IL. 60148-6412 615-392-7737

#### jgiltz@mkenv.com

SOLD TO:		SHIP TO:	
Greg Hoagland	202	UST000732	
Sphere 3 Engine	ering, Inc.	Express Zone	
3433 Sierra Driv	e	32176 US Hwy 28	
Hoover, AL.	35216	Childersburg, AL.	
205-403-3317	205-403-3317 (fax)		

QUOTATION

Date 10/11/2024 Quote No. 224001D Reference Express Zone Page No. 1 of 3 Freight Included Terms PWP Net 180 Ship Via FLATBED F.O.B. Factory

Quotation valid for 30 days

QUANTIT	/	UNIT PRICE	AMOUNT
1	200 amp 3/60/230 volt 4 wire plus ground electrical service Brought to NEMA 3R control Panel Interior electrical will comply with NEC requirements for Class 1, Division 2, Group D Hazardous locations Motors will be TEFC construction Soil Vapor Extraction System	19,788.00	\$19,788.00
	Regenerative blower Busch Samos model SB 530 D or equal 280 ACFM @ 50" w.c. vacuum (64" w.c. vacuum max) 4.6 kW (6.2 HP) 3/60/230-460 volt, TEFC motor Direct drive motor 100 gallon Air/water separator with level control switches Clean out ports with vacuum rated quick release lid Liquid filled vacuum gauge Vacuum assist hose 2" drain valves Vacuum relief valve Dilution valve with filter/silencer with rotameter Inlet screen Inlet screen Inlet stemperture gauge Exhaust temperture gauge Exhaust temperture switch Discharge silencer		
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	MKE Model SA15B STRIPPERATOR 15 GPM oil/water Separator and Air stripper treatment system Coalescing separator with skimming weir and water sump tank Low profile air stripping system with nylon aeration tubes and dual pattern diffusers 2.0 HP aluminum blower, AMCA B rated spark resistant Air pressure gauge Intrinsically safe high-high sump level and low blower pressure alarm switches Air stripper blower silencer to reduce the noise level outside the trailer unit	32,758.00	\$32,758.00
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	Groundwater flow totalizer with pulse output for remote totalization Flow calibration button		
2	Bag filter housings piped in parallel 304 stainless steel construction, size 2. Includes a case of 25-micron replacement bag filters		
1	Compressed Air System 5.0 HP, TEFC Motor 23 CFM @ 100 PSI Rotary screw compressor system with inlet filter, motor, 80 gallon receiver tank with automatic drain valve, pressure gauge and 3-way solenoid operated air valve for automatic shut off of pneumatic pumps upon fault condition. Main outlet regulator with priessure gauge.	38,385.00	\$38,385.00

# MK ENVIRONMENTAL INC.

Greg Hoagland Sphere 3 Engineering, Inc.

Date 10/11/2024 Quote No. 224001D Reference Express Zone Page No. 2 of 4

UANTITY	/	UNIT PRICE	AMOUNT
5	Pneumatic Pumps		
ĭ	Model AP3 Short Pneumatic AutoPumps		
	Top fill inlet with hose barbs		
	Down well hoses and well seals provided by others		
	Installed by others		
1	Master Control Panel System Including:	25,150,00	\$25,150,00
	NEMA 3B control panel with blank front cover	20,100.00	φ20,100.00
	Swing out sub panel for gauges, control operators, and switches		
	IEC Magnetic motor starters, safety switches, H-O-A controls		
	Control transformer		
	(8) intrinsically safe relays. (8) alarm indicator LED's. (12) output channels		
	Hard wired relay logic		
	(1) exterior GFCI utility outlet		
	SVE run time totalizing hour meter		
	Blower low pressure alarm		
	Anti-falsing alarm circuit to prevent nuisance tripping		
	Auto-release restart timer for remote restarts via telemetry		
	Three phase voltage and phase monitor		
	Emergency E-stop LED red indicator light located on swing out sub panel		
	Variable Frequency Drive (VFD) for SVE regen blower		
	SVE & GW Pumps automatic shut down upon:		
	AWS1 high liquid level		
	SVE high temperature alarm		
	Air stripper blower low pressure		
	Air stripper sump High liquid level alarm		
	Phase fault condition		
	Interior Emergency Stop Mushroom button with twist to release detent		
1	Fused Main Disconnect system for the SVE with P&T		
	Includes: 200 amp disconnect boxe mounted to the system building		
	(1) Weatherhead with extension pole and bracket support		
	(1) 200 amp Electric meter socket base installed		
1	MK Site Optimization Software (SOS) - Wireless Monitoring Unit.		
	Include based monitoring capabilities with Email & SMS alarming notification		
	Divited lanute, Angles inputs, and Divited Outputs for remete exercision concelulities		
	Elew and Vacuum graphing and data expect capabilities		
	Alarm counters for increased troubleheating officiancy		
	Wireless service will be supported and billed through MKE @ \$125/me. (subject to shappe)		
	Relied monthly on the first of the month following successful factory wet testing		
	blied monthly of the first of the month following successful factory wet tosting.		
1	Vacuum transducer integrated into telemetry system for real time monitoring, 4-20mA		
1	System building (refurbiched)	30 500 00	\$30 500 0
	8 5'W x 16'L x 9 5'H aluminum/steel anclosure fully insulated with	30,300.00	\$50,500.0
	Removable sliding wall nanels for ease of maintenance		
	Exterior grade plywood floor, structural steel frame		
	Includes 100 watt XP interior light, and removable center grate for ease of maintenance		
	The breaker panel and control panel will be mounted on a vertical steel bracket attached		
	to platform end. The bracket, panels and all conduits will allow for the removal of the		
	enclosure panels by one person.		
	10" structural steel base with 4" steel cross members		
	Steel corner posts and roof frame		
	Continuous sheet aluminum roof for superior protection		
	Includes stainless piano hinges on the building corners.		
1	12 000 BTU XP heater with XP thermostat (refurbished)		
Ċ	All components fully piped, wired and factory tested		
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# MK ENVIRONMENTAL INC.

Greg Hoagland Sphere 3 Engineering, Inc.

Date	10/11/2024
Quote No.	224001D
Reference	Express Zor
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QUANTITY	(	UNIT PRICE	AMOUNT
1	Equipment Electrical Installation		
<i>.</i> .	Includes XP wiring, XP seal off connectors, liquid tight flexible conduit		
2			
1	Equipment Mechanical Installation Includes mounting, piping and connectors		
	Brass fittings, sample ports, pressure gauges and sight glasses		
2	Vapor Phase Carbon Vessels - Dual phase offgas - piped in series	4,275.00	\$8,550.00
	VR-400 lbs drums		
	400 lb initial load each 4" plain pipe fitting		
	Off loading, placement & piping provided by others		
	Installed outside the system building by others		
1	AWS3 knock out tank prior to oxidizer to minimize condensed liquids from entering burner or vapor phase carbon bed.		
	Notes:		
	1. Pneumatic Autopump airline and GW return line manifolds by others.		
	2. Pneumatic AutoPumps downwell hoses and well seals by others.		
	<ol> <li>All vapor carbon vessels to be installed and piped outside the system building by others.</li> </ol>		
	4. Wireless monitoring unit will be supported and billed through MK Environmental. Billed monthly on the first of the month following successful factory wet testing at \$135/n Monthly service rate subject to change.	no.	
	5. SVE manifold by others		
	FOUI	. SUB TOTAL	\$155.131.00
	EQUIF	SALES TAX	
oes no ffloadi	ot include permits, fees, etc STAR ing & placement by others. FREIG	UP/TRAINING	\$2,500.00
(			1-1.500.00
erry Gi	IIIZ, VIRONMENTAL, INC. NET T	OTAL	\$160,131,00



# **Greg Hoagland**

From:	Wes Kittle <wkittle@bigskyenv.com></wkittle@bigskyenv.com>
Sent:	Wednesday, October 30, 2024 4:47 PM
То:	Kim Kittle; Greg Hoagland, P.E.
Subject:	Re: Express Zone (UST000732); 32176 Highway 280; Childersburg, AL

Delivery: \$300 Swap/pull: \$1,300 (price includes liner) Special waste Disposal: \$27 per ton

From: Kim Kittle <<u>Kkittle@bigskyenv.com</u>>
Sent: Wednesday, October 30, 2024 4:41:00 PM
To: Wes Kittle <<u>wkittle@bigskyenv.com</u>>
Subject: Fw: Express Zone (UST000732); 32176 Highway 280; Childersburg, AL

# Get Outlook for iOS

From: Greg Hoagland <<u>greg@sphere3.com</u>> Sent: Tuesday, October 29, 2024 4:05:20 PM To: Kim Kittle <<u>Kkittle@bigskyenv.com</u>> Subject: Express Zone (UST000732); 32176 Highway 280; Childersburg, AL

Hi Kim:

Need a quote for the subject facility, as follows:

- Deliver a 20 yard box (with liner) to the site
- Pickup, transport, dispose of soils at your facility in Adamsville
- Multiple boxes required.

Thanks,

Greg Hoagland, P.E. SPHERE 3 Engineering, Inc. 3433 Sierra Drive Hoover, Alabama 35216 Email: <u>greg@sphere3.com</u> Voice/SMS: (205) 288-4896 Fax: (205) 403-3318



# MODIFIED CORRECTIVE ACTION PLAN (CP-69)

Coosa United Properties, LLC Express Zone ADEM Facility ID: 20330-121-007087 UST Incident Number: UST00-07-32 32176 Highway 280 Childersburg, Alabama 35044 (Talladega County)

May 7, 2024

<u>Prepared for:</u> Coosa United Properties, LLC 404 Sterling Park Circle Alabaster, Alabama 35007

Prepared by: SPHERE 3 ENGINEERING, INC (Alabama General Contractor #49971) 3433 Sierra Drive Hoover, Alabama 35216 Phone: (205) 403-3317

SPHERE 3 File: RP-CUP.EZ.69



#### CERTIFICATION PAGE

I certify under penalty of law that this Modified Corrective Action Plan and all plans, specifications, and technical data submitted within were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiring of the person or persons who directly gathered the enclosed information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Signature

Greg Hoagland, P.E.



21581

**Registration Number** 

May 7, 2024

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# I. ADEM UST INCIDENT FORMS

# Underground Storage Tank (UST) Release Fact Sheet

# GENERAL INFORMATION:

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SITE NAME: Express Zone

# ADDRESS: 32176 Highway 280, Childersburg, Talladega County, AL

FACILITY I.D. NO .: 20330-121-007087

UST INCIDENT NO .: UST00-07-32

# RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 feet of site?	None
How many public water supply wells are located within 1 mile of site?	One
Have any drinking water supply wells been impacted by contamination from this release?	No
Is there an imminent threat of contamination to any drinking water wells?	No
Have vapors or contaminated groundwater posed a threat to the public?	No
Are any underground utilities impacted by the release?	No
Have surface waters been impacted by the release?	No
Is there an imminent threat of contamination of surface waters?	No
What is the type of surrounding population? Residential/Co	mmercial

CONTAMINATION DESCRIPTION:	6 6	
Type of contamination at site:	{ <b>X</b> } Gasoline { } Kerosene	{ } Diesel { } Waste Oil
Free product present in wells?	{ } Yes	{ <b>X</b> } No
Max. TPH concentrations meas	sured in soil:	
Max. BTEX or PAH concentrations measured in groundwater: 144,800 ppb BTEX; 26,100 ppb MTBE		

Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 2 of 28

#### **ADEM UST Site Classification System Checklist**

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information, but answer the statements with the knowledge obtained during the closure site assessment.

SITE NAME:	Express Zone
SITE ADDRESS:	32176 Highway 280
	Childersburg (Talladega County) Alabama 35044
FACILITY I.D. NO.:	20330-121-007087
UST INCIDENT NO .:	UST00-07-32
OWNER NAME:	Coosa United Properties, LLC
OWNER ADDRESS:	404 Sterling Park Circle, Alabaster, Alabama 35007
NAME & ADDRESS OF PERSON	Greg Hoagland, P.E.
COMPLETING THIS FORM:	SPHERE 3 Engineering, Inc.
	3433 Sierra Drive; Hoover, Alabama 35216

CLASSIFICATION	DESCRIPTION	YES	NO
CLASS A	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
A.1	Vapor concentrations at or approaching explosive levels that could cause health effects, are present in a residence or building.		
A.2	Vapor concentrations at or approaching explosive levels are present in subsurface utility system(s), but no buildings or residences are impacted.		$\square$
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.		$\boxtimes$
B.2	An active domestic water supply well, domestic water supply line or domestic surface water intake is impacted or immediately threatened.		$\boxtimes$
B.3	The release is located within a designated Wellhead Protection Area I.		$\square$
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.		$\boxtimes$
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.		

Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 3 of 28

CLASSIFICATION	DESCRIPTION	YES	NO
CLASS D	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
D.1	There is a potential for explosive levels, or concentrations of		
	vapors that could cause acute effects, to accumulate in a		
	residence or other building.		
D.2	A non-potable water supply well is impacted or immediately		
	threatened.		
D.3	Shallow contaminated surface soils are open to public access,		
	and dwellings, parks, playgrounds, day care centers, schools or		
	similar use facilities are within 500 feet of those soils.		
CLASS E	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
E.1	A sensitive habitat or sensitive resources (sport fish,		
	economically important species, threatened and endangered		
	species, etc.) are impacted and affected.		
CLASS F	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
F.1	Groundwater is impacted and a public well is located within 1	$\boxtimes$	
	mile of the site.		
F.2	Groundwater is impacted and a domestic well is located within		
	1,000 feet of the site.		
F.3	Contaminated soils and/or groundwater are located within		
	designated Wellhead Protection Areas (Areas II or III).		
CLASS G	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
G.1	Contaminated soils and/or groundwater are located within areas		
	vulnerable to contamination from surface sources.		
GLASS H	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
H.1	Impacted surface water, stormwater or groundwater discharges		
	within 500 feet of a surface water body used for human drinking		
	water, whole body water-contact sports, or habitat to a		
	protected or listed endangered plant and animal species.		
CLASS I	LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR		
	SENSITIVE ENVIRONMENTAL RECEPTORS		
I.1.	Site has contaminated soils and/or groundwater but does not		
	meet any of the above mentioned criteria.		

# ADDITIONAL COMMENTS:

Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 4 of 28

# Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.

Enter the determined classification ranking:	F.1

### II. INTRODUCTION

#### General

SPHERE 3 Engineering, Inc. (SPHERE 3) was retained by Coosa United Properties, LLC to prepare a Corrective Action Plan (CAP) for their Alabama Tank Trust Fund (ATTF) Underground Storage Tank (UST) incident UST00-07-32 known as Express Zone, located at 32176 Highway 280 in Childersburg, Alabama (see Figures 1 and 2). The objective of the CAP is to design a Soil Vapor Extraction (SVE) and Groundwater Pump & Treat (P&T) corrective action system to efficiently remediate the subsurface soils and local groundwater to the applicable Site Specific Target Levels (SSTLs). The CAP has been prepared in accordance with the Alabama Department of Environmental Management (ADEM) regulation R: 335-6-15-.08, .27 and .29 and the Alabama UST Release Investigation and Corrective Action Guidance Manual. Costs associated with development and implementation of the CAP are eligible for reimbursement by the ATTF.

# III. PROPOSED REMEDIATION METHODS

#### Soil, Free Product, and Groundwater Remediation Methods

As part of the CAP discussions, SPHERE 3 recommended a combination of a SVE and a P&T system to remediate the subsurface soils and local groundwater. The design of the SVE and a P&T system will be conservatively interpreted from the pilot testing data generated at facilities with a similar lithology.

The current dissolved hydrocarbon (COCs) plume associated with this incident, as represented by the current Type II monitor well network, has a core of relatively small size, generally extending between source monitor wells MW-3, RW-1, RW-2, RW-3, and RW-14, and compliance monitor well MW-4. It should be noted that the dissolved COCs plume extended as far north as compliance monitor well MW-7 in the past. Monitor well MW-7 was last sampled in December 2004 and was subsequently destroyed, therefore the current dissolved COCs concentrations at that location are not known. Monitor well MW-7 consistently yielded dissolved benzene concentrations exceeding its respective SSTL from March of 2002 up until the time of its final availability in December of 2004. During this time, the dissolved benzene in monitor well MW-7 ranged from 1.190 mg/L to 5.195 mg/L, all of which exceeded the SSTL of 0.137 mg/L. The area of dissolved-phase impacts exceeding applicable SSTLs generally is located to the north and east of the dispenser islands and to the east of the UST area.

If piloted, P&T would likely yield a respectable reach (radius of influence) of approximately 25 feet. Sustained, long term pumping could yield reaches as large as 50 feet and even larger as the reaches from multiple pumps begin to overlap.

Significant soil impact is noted over a depth range of roughly 10 feet bgs to 25 feet bgs. If piloted in a single Type II monitor well constructed with a screen to expose the entire column of impacted soils, SVE would likely yield a limited radius of influence of 20 feet. Long term, sustained application of SVE technology in an appropriately designed network of Type II monitor wells would likely yield a more favorable influence of as much as 35-30 feet.

SVE technology is particularly effective when applied to granular and semi-granular lithologies. Granular soils exhibit higher absolute porosity values, which is the leading indicator of the success of a SVE application. The success of a SVE application is determined predominantly from the measured distribution of the applied vacuum. In consistent lithologies, the applied vacuum is typically distributed in a radial pattern, also referred to as the radius of influence.

A typical practice of defining the radius of influence of a SVE pilot study is to measure the distance to which a pressure change (or induced vacuum) of 1% of application vacuum can be observed. For practical purposes, this distance may be determined by plotting of the curve of the induced vacuum pressure at each observation point versus the distance to that observation point as measured radially from the application point. From this curve, the radius of influence is identified as the intersection of the curve and the corresponding radial distance at which 1% of the application pressure is noted.

In coarse, granular soils (gravels and sands), the radius of influence can be as large as 80-100 feet. The presence of silts and clays retards the distribution of the vacuum and commonly reduces the radius of influence to a range of 15-40 feet. In lithologies consisting predominantly of clays, the distribution of vacuum is usually prevented. For this facility, a conservative radius of influence of 20 feet will be estimated.

A typical extraction rate (per application point) for a 20 feet distribution is approximately 25-35 cfm for an application pressure of approximately 40-50 inches of  $H_2O$ .

#### SVE and P&T System Design

For the abatement of the source area soils, SPHERE 3 proposes the construction of a SVE system and associated vacuum well network consisting of six (6) vacuum extraction wells. For the abatement of the source area groundwater, SPHERE 3 proposes the construction of a P&T system and associated pumping well network consisting of five (5) 4-inch recovery wells.

The proposed pumping well network will consist of existing Type II recovery wells RW-3 and RW-14 and three (3) newly constructed recovery wells (see Figure 8). The three (3) new recovery wells will be installed north of monitor well MW-4, southwest of monitor well MW-13, and south of recovery well RW-2. Each new recovery well will be installed to a depth of 35 feet bgs, constructed with 4-inch diameter PVC well materials including 25 feet of well screen with 0.01-inch slots. Soil sampling is not proposed. Each newly installed pumping well will be developed,

allowed to recharge for a minimum of 48 hours, and purged and sampled for dissolved COCs. The initial dissolved COCs concentrations will establish a baseline data set used to measure the progress of the Corrective Action system.

All pumping wells will be enclosed in a flush mount nominal 24-inch x 24-inch painted steel, traffic rated, bolt-down manhole. Each manway will be secured in a minimum 36-inch x 36-inch concrete pad poured about the center of each well. A schematic of a typical pumping well construction is presented in Figure 9.

Each pumping well will be equipped with a submersible total fluids pneumatic pump with a discharge capacity of approximately 4.8 gallons-per-minute (gpm). Compressed air will be delivered to each pump through a dedicated 1-inch diameter conduit constructed of schedule 80 PVC materials (below and above grade). The fluids generated by each pump will be returned to the pumping system through a separate conduit constructed of both 1.5-inch diameter schedule 40 PVC materials.

The compressed air and recovered fluids headers will be buried in a series of excavated trenches. The excavated trenches will be dug to approximately 24 inches deep and 24 inches wide. A nominal 3 inches of self-compacting bedding material (3/4" crushed stone) will be placed at the base of the trenches. After installation of the header piping, a nominal 4 inches of 3/4" crushed stone will be placed over the header pipes. The uppermost portion of the trenches will be backfilled with 6 inches of 4,000 psi concrete (or re-compacted soils to complete the trenches excavated within a landscaped area). Cross Sections A-A' (see Figure 12) is a diagram of a typical compressed air and recovered fluids header trench.

All compressed air headers will be individually plumbed to a common manifold. Each individual leg of the compressed air manifold will be constructed with 1-inch diameter schedule 80 PVC materials. Each leg of the compressed air manifold will be equipped with an isolation (ball) valve and a pressure gauge. A schematic of a typical compressed air manifold is presented as Figure 11.

The compressed air manifold will interface a series of schedule 80 PVC pipes plumbed from an upright 5-horsepower (hp) air compressor capable of producing adequate compressed air to each of the proposed pumps. The air compressor will likely require 230-volt three phase power. The compressor motor will be mounted at a distance of at least 18 inches above the finished grade to satisfy all explosion hazard criteria. The air compressor will be equipped with a high-pressure pop-off valve, an automatic condensation drain valve, a coalescing filter, and an electrical thermal overload switch.

All recovered fluids headers will be individually plumbed to a common manifold. Each leg of the recovered fluids manifold will be constructed with 1.5-inch diameter schedule 40 PVC materials. Each leg of the recovered fluids manifold will be equipped with a check valve and a section of clear PVC piping for observing each pumping well's production. A schematic of a typical recovered fluids manifold is presented as Figure 11.

The recovered fluids manifold will interface an oil/water separator through a series of schedule 40 PVC pipes. The separator will remove any free product and discharge the groundwater at a total BTEX concentration of 10 mg/L or less. The oil/water separator will have a 15 gpm capacity and will be equipped with a 20 micron coalescing filter, a weir, and gravity skimmer. The skimmer will interface with a 55-gallon free product storage tank equipped with a liquid level shut-off switch.

Groundwater treated in the oil/water separator will flow under gravitational conditions to a shallow tray air stripper. The stripper will be equipped with an explosion-proof blower, likely requiring 230-volt three-phase power. The blower will be equipped with a high (vacuum) pressure spring valve, a high (positive) pressure shut-off switch, and an electrical thermal overload switch. The blower will force clean ambient air through the stripper trays as the groundwater flows downward under gravitational conditions. The stripper will remove the dissolved BTEX at 99.9% efficiency. Groundwater treated in the air stripper will be pumped through a particulate (silt, iron and calcium) filter to ultimately to the final outfall. Emissions control monitoring is specified in report section *V. Operations & Maintenance Activities*.

The SVE vacuum well network has been designed using the radius of influence estimated as 20 feet. The conceptual design consists of six (6) vacuum points, which are located in the areas where the highest soil COCs concentrations exist. The SVE vacuum well network will consist of existing Type II monitor (recovery) well RW-1 and five (5) newly constructed Type II SVE monitor wells (see Figure 8). The five (5) new SVE monitor wells will be installed south-southeast of monitor well MW-4, south-southwest of recovery well RW-2, further south of recovery well RW-2, north of recovery well RW-3, and east-southeast of monitor well MW-3. Each new SVE monitor well will be installed to a depth of 25 feet bgs, constructed with 2-inch diameter PVC well materials including 15 feet of well screen with 0.01-inch slots. Soil sampling is not proposed. Each newly installed vacuum well will be developed, allowed to recharge for a minimum of 48 hours, and purged and sampled for dissolved COCs. The initial dissolved COCs concentrations will establish a baseline data set used to measure the progress of the Corrective Action system.

Each vacuum well will yield approximately 25-35 cfm of air/vapors. A vacuum header will connect just below the top of well casing to each vacuum extraction well using 2-inch diameter schedule 40 PVC materials. Each vacuum well will be enclosed in a flush mount nominal 12-inch diameter, traffic rated, bolt-down typical well cover. Each well cover will be secured in a minimum 24-inch x 24-inch concrete pad poured about the center of each well. A schematic of a typical vacuum well construction is presented in Figure 9.

Each vacuum header will be constructed with 2-inch diameter schedule 40 PVC materials. A typical section of a vacuum header piping will be twenty (20) feet in length with a 4-inch (long) bell-shaped, slip coupling. Header piping couplings will be sealed with PVC bonding agents to reduce the risk of short circuitry. Each header will be individually plumbed to a common manifold. Each leg of the extraction manifold will be equipped with an isolation (ball) valve and a vacuum pressure gauge. A schematic of a typical SVE manifold is presented as Figure 10.

The extraction header piping will be buried in a series of excavated trenches. The trenches will be excavated approximately 24 inches deep and 24 inches wide. A nominal 3 inches of self-

compacting bedding material (3/4" crushed stone) will be placed at the base of the trenches. After installation of the header piping, a nominal 4 inches of 3/4" crushed stone will be placed over the header pipes. The uppermost portion of the trenches will be backfilled with 6 inches of 4,000 psi concrete (or re-compacted soils to complete the trenches excavated within a landscaped area). Cross Sections A-A' (see Figure 12) is a diagram of the proposed vacuum header trench.

Prior to reaching the SVE vacuum blower, the recovered vapors will advance through a moisture separator to remove air moisture. The moisture separator (40-gallon capacity) will be equipped with an automatic high liquid level shut-off switch to prevent fluids from entering the blower. A particulate filter, vacuum gauge, and vacuum-relief valve will be installed between the moisture separator and the blower.

The blower size will be selected by comparing various blower performance curves to the application pressure and the anticipated extracted airflow rate. The estimated extracted airflow was estimated to be approximately 30-45 cfm per vacuum well. As the vacuum well network will consist of six (6) vacuum wells, the blower should be capable of producing a flow rate of approximately 210 cfm (6 wells x 35 cfm) at a vacuum pressure of 50 inches of H<sub>2</sub>O (40 inches of H<sub>2</sub>O for the application pressure and an additional 10 inches of H<sub>2</sub>O to overcome the friction generated from the header piping, fittings and particulate filters. The blower will likely require 230-volt three phase power.

In consideration of the physical properties of the local subsurface soils, which will substantially govern the volumetric air emissions of a proposed SVE system, emissions generated from the operation of the blower will be controlled with vapor-phase carbon. The extracted vapors will be advanced through the carbon under negative pressure conditions. The carbon will be stored in two (2) 400-pound capacity vessels arranged in parallel. Actual system emissions (prior to vapor-carbon treatment) will be determined at system start-up. Emissions control monitoring is specified in report section *V. Operations & Maintenance Activities*.

All SVE and P&T equipment components will be housed within a portable, heated equipment building approximately 16 feet in length, 8.5 feet wide, and 9.5 feet tall. The portable building will have an access door and removable wall panels to aid in servicing and maintaining the system equipment. The system building, emissions control components, and the vacuum, compressed air and recovered fluids manifolds will be secured within a gated equipment compound. The equipment compound will be constructed with galvanized fencing materials. The compound will be constructed to the dimensions of 24 feet in length and 24 feet wide. The perimeter fencing will be constructed to a height of 6 feet high (minimum) and capped with continuous strands of barbed wired. The perimeter fencing will be finished with all-weather privacy slats and an 8-foot (double panel) access gate. The perimeter fence of the compound will be supported with 2" diameter galvanized fence posts spaced on 8 feet (maximum) centers. Within the compound, SPHERE 3 will utilize the existing asphalt surface as the support slab. Details of the equipment compound construction are illustrated on Figure 13.

The equipment compound will be serviced with a 200-amp, 3-phase electrical service extending aerially from an existing utility pole located northwest existing monitor well MW-5.

Telecommunications service required for the system telemetry module will be achieved through the area's cellular network.

The SVE system will consist of a 6.2-horsepower regenerative vacuum blower capable of producing a 280 ACFM airflow at an operating pressure of 50 inches of  $H_2O$ , an air water separator and an emission control component. The P&T system will consist of five (5) downhole pneumatic pumps capable of producing 4.8 gpm, a 5-horsepower air compressor, a shallow tray SA15B stripperator, rated for up to 15 gallons per minute, and a coalescing oil/water separator, a particulate filtering component, and a polishing carbon component. The system will be equipped with an integrated telemetry system, which may be used to remotely monitor and limitedly control the system.

The treated groundwater effluent generated by the P&T system will be discharged, under the State's General National Pollutants Discharge Elimination System (NPDES) permit, to the watershed of Bailey Branch, which is located approximately 3,000 feet southwest of the facility at an approximate elevation of 415 feet above mean sea level (amsl). See Figure 1. A NPDES permit application will be executed upon approval of the CAP.

The groundwater effluent will be sampled (monthly) and reported in accordance with the ADEM Permits and Services Division permit requirements. At a minimum, the General NPDES permit requires the following discharge specifications:

pH:	6.0 to 8.5 standard units (su) daily minimum/maximum;
Oil & Grease:	15 mg/L daily maximum;
MTBE:	report the daily maximum in $\mu$ g/L;
Benzene:	15.5 μg/L daily maximum;
Toluene:	8,723 μg/L daily maximum;
Ethylbenzene:	1,244 μg/L daily maximum;
Total Xylenes:	report the daily maximum in $\mu$ g/L;
Flow:	report the daily maximum in gpd.

To improve the system's ability to meet the requirements of the State's General NPDES permit, the groundwater processed by the system will be treated with an oil/water separator, an aggressive, high-volume air stripper, and a triple-bag suspended mineral and particulate filter. System discharge control monitoring will be specified in report section *V. Operations & Maintenance Activities.* 

A 3-inch diameter schedule 40 PVC discharge (effluent) line will be constructed from the equipment compound to an outfall location within the watershed of Bailey Branch located approximately 40 feet west of the proposed equipment compound (see Figure 8). The discharge conduit will be constructed within an excavated trench.

Emissions generated by the proposed SVE system, will be controlled with vapor-phase carbon granules. SVE influent air samples (prior to vapor-phase carbon treatment, one at each vacuum well) and a SVE exhaust air sample (after vapor-phase carbon treatment, emissions)

will be collected at system start-up and each month of operations. The results of the SVE air influent and emission samples will be included in each Corrective Action System Effectiveness Monitoring Report (SEMR). The SVE air emissions will be controlled using two (2) replenishable 400-pound carbon vessels arranged in parallel. Compliant to ADEM Air Department regulations, emissions of volatile organic compounds (VOCs) shall not exceed 2,000 pounds life-time or 15 pounds per day at maximum rate of 3 pounds per hour. For gasoline UST remediation projects, VOCs are equivalent to gasoline range (C-12 to C-6) organics. System emissions control monitoring will be specified in Section *V. Operations & Maintenance Activities.* 

### Estimated Duration of Clean-up

The estimated time (or duration) of clean-up has been based on the removal of dissolved COCs. The remediation of the subsurface plume will be governed by the system's ability to capture and treat the local groundwater within the footprint of the highest concentrations of dissolved COCs. According to Figure 6, the areal extent of the dissolved COCs plume with an estimated concentration of 1 milligrams per liter (mg/L) benzene or greater (which includes the estimated aerial extent of free product) has a surface area of 4,418 square feet (ft<sup>2</sup>).

As specified, five (5) groundwater pumping wells are proposed. Assuming uniformity of the subsurface soils, consistency of the horizontal and vertical groundwater velocities and that each pump will capture groundwater at the same efficiency, each pump will have an ultimate capture area of 884 ft<sup>2</sup>/pump.

According to the lateral distribution of the dissolved COCs plume, an estimated local Darcy velocity of roughly 2 feet/year can be assumed. Assuming a uniform thickness of the dissolved COCs plume, an equal, consistent drawdown at each pump, and assuming the capture area water gradient will as much as quadruple due to the pumping influence, a <u>unit</u> availability of 54.4 ft<sup>2</sup>/year/pump can be estimated as the circular area defined by the "pumping influenced" Darcy velocity [(2 feet x 4)<sup>2</sup> x  $\pi$ ].

The estimated time for clean-up may be expressed in consideration of the ultimate capture area of each pump and the unit availability of the dissolved phase plume:

Duration<sub>Clean-up</sub> = Area<sub>Capture</sub> ÷ Availability<sub>Darcy (Pumping Influenced)</sub>

Duration<sub>Clean-up</sub> = 884 ft<sup>2</sup>/pump ÷ 201.1 ft<sup>2</sup>/year/pump

 $Duration_{Clean-up} = ~4.4$  years

This duration calculation also assumes that all soil-to-groundwater leaching process will be eliminated with the activation of the SVE blower.

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#### **Construction and Equipment Costs Comparisons**

A quote to construct the system equipment was solicited from MK Environmental of Lombard, Illinois. MK Environmental is the leader in constructing corrective action equipment for ATTF cleanup projects. Their equipment is superior in quality and their prices are generally significantly lower than their competitors. The MK Environmental quote is presented in Appendix A and was received as follows:

MK Environmental

#### \$157,696.00

In an effort to conduct a competitive cost comparison for the installation of the proposed Corrective Action system, SPHERE 3 solicited quotes from Curtis Service, Inc. of Oneonta, Alabama and All Star Construction Co. of Orange Beach, Alabama. The comparison is as follows:

٠	Curtis Service, Inc.	\$72,850.00
•	All Star Construction Co.	\$75,950.00

Each bid includes:

- 1. construction of the SVE, compressed air, and recovered fluids header network trenches;
- 2. construction of the treated water (NPDES) effluent conduit and outfall;
- 3. construction of the SVE, compressed air, and recovered fluids manifolds;
- 4. construction of the equipment compound and support timbers, and;
- 5. crane placement and anchoring of all equipment.

The construction services quotes are presented in Appendix A. Each bid includes comparable materials and services, which meet or exceed the specifications proposed herein. Therefore, SPHERE 3 recommends the use of Curtis Service, Inc. Because of substantial fluctuations in the costs of materials generated by processes which rely on the use of crude oil products or include copper, all bids are guaranteed for only 30 days.

The construction of the electrical service will require a separate license, permit and inspection. For this service, SPHERE 3 solicited a quote from Tortorice Electrical Service, Inc. of Bessemer, Alabama. Tortorice Electrical is experienced in constructing the highly specialized electrical service required for the proposed corrective action equipment. Their components and workmanship are superior in quality and their prices are closely comparable to their competitors. The Tortorice Electrical quote is presented in Appendix A and was received as follows:

Tortorice Electrical Service, Inc. \$9,500.00

Because of substantial fluctuations in the costs of materials generated by processes which rely on the use of crude oil products or include copper, all bids are guaranteed for only 30 days. Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 12 of 28

SPHERE 3 and its personnel will provide the materials necessary for and the construction of:

- 1. the manifolds to system enclosure connections;
- 2. the vapor phase carbon (from the SVE blower) connection;
- 3. the exhaust stack at the effluents of the vapor phase carbon vessels;
- 4. the particulate filter (from the air stripper) connection;
- 5. the treated water discharge connection, and;

### **Required Utilities**

The proposed SVE and P&T components will require 200 amps of 3-phase, 230 volts of electricity, supplied through a closed delta transformer arrangement. The area is serviced by Coosa Valley Electric Cooperative (CVEC). SPHERE 3 personnel have notified CVEC of the probable requirements. In response, CVEC representatives have stated that he believed that a CVEC equipment upgrade may be required but could not make an absolute statement until an assessment of the existing CVEC equipment could be made by their engineers. The CVEC assessment cannot be conducted until an official order for service is made.

In the past, SPHERE 3 has received electrical service construction costs ranging from \$800.00 to \$17,000.00. Most electrical service construction quotes tend to come in closer to the bottom of that range and many are provided at no additional cost. In that consideration, SPHERE 3 has opted to estimate the CVEC service construction cost as \$2,000.00 (two thousand dollars). If the actual cost of the CVEC construction is more than our estimate, an cost addendum will be prepared. If the actual cost of the CVEC construction is less than our estimate, only the amount of the CVEC invoice plus the appropriate passthrough fees will be sought for reimbursement.

A potable water service will be required. Potable water is supplied to the area by Childersburg Waterworks, Sewer, and Gas Board. According to their 2022 fee schedule, the service connection will cost approximately \$2,280.00.

The proposed Corrective Action system will also require a telecommunications service. Telecommunications service will be achieved through the area's cellular network. The cellular telecommunications service will be provided by the equipment manufacturer, MK Environmental. The service is all inclusive and billed monthly.

#### **Operations Permitting**

The proposed Corrective Action system will require Notices of Intent (NOIs) filed with the ADEM Air Division and the ADEM Permits and Services Division (NPDES Permit). The NOIs will be filed immediately upon approval of the CAP by the ADEM – UST Corrective Action Section.

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# IV. RATIONALE FOR SELECTION OF REMEDIATION ALTERNATIVES

Selection of the site remediation methods is based on a number of factors. Several of the main factors considered for the selection of the remedial action system include the exposure assessment, the site hydrogeology, the feasibility of implementing a selected corrective action based on previously conducted Corrective Action, cost, operation and maintenance, disposal options, and site location.

The main source area appears to be centered about monitor wells MW-3 and recovery wells RW-2 and RW-3, while extending west toward the current UST field and north toward an adjacent commercial property.

While a Multiphase Extraction (MPE) application is widely believed to be a more aggressive technology, P&T technology can generate a larger and more consistent reach (radius of influence) in long term applications. That extended reach will prove beneficial in affecting the portion of the dissolved plume likely within the current UST field, the portion of the dissolved plume likely beneath U.S. Highway 280, and the portion of the dissolved plume likely still remaining in the vicinity of former monitor well MW-7, while the supplementation of a SVE application addresses soil COCs and potential free product hidden in the unaccessible source equipment areas.

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# V. OPERATIONS AND MAINTENANCE ACTIVITIES

# **Routine Operations and Maintenance**

To maintain the integrity of the system during operation, the routine operations and maintenance (O&M) will be scheduled to include seven (7) site visits per quarter. The O&M activities will begin the week following the initial start-up, "dial-in" and initial air quality sampling activities included with system installation and will be implemented according to the following schedule of tasks:

Visit One:	General Maintenance	
Visit Two:	Progress Maintenance	
Visit Three:	General Maintenance	
Visit Four:	General Maintenance	
Visit Five:	Progress Maintenance	
Visit Six:	General Maintenance	
Visit Seven:	Quarterly Cleaning, Vapor Sampling, and Groundwater Monitoring	

Where the tasks are defined as follows:

# General Maintenance:

- 1. Field measure the emission rate at the exhaust of the SVE Blower;
- 2. Collection of ambient temperature and barometric pressure;
- 3. Collection of applied vacuum pressure data at each extraction point and vacuum well;
- 4. Collection of SVE exhaust temperature and flow conditions data;
- 5. Collection of SVE vacuum reduction temperature and flow conditions data;
- 6. Cleaning and Disposals as necessary;
- 7. System operation adjustments as necessary;

# Progress Maintenance:

- 8. All included in a General Maintenance visit;
- 9. Collection of SVE influent air samples from each vacuum well (a total of 6);
- 10. Collection of a SVE exhaust sample;
- 11. Analysis of the SVE influent air samples for BTEX, MTBE and TPH;
- 12. The collection of an influent (pre-treatment) and effluent water sample (post-treatment);
- The laboratory analysis of the influent and effluent water sample for BTEX/MTBE/Naphthalene by method 8260B. The effluent sample will also be analyzed for pH (measured in the field), Oil & Grease, and possibly total Lead;
- 14. The collection of volumetric flow data of the effluent water (NPDES discharge);

# Quarterly Cleaning, Vapor Sampling, and Groundwater Monitoring:

- 15. All included in a Progress Maintenance visit;
- 16. Collection of groundwater elevations from all facility monitor wells;
- 17. Collection of groundwater samples from select or all facility monitor wells;
- 18. Analysis of each groundwater sample for BTEX, MTBE and naphthalene by method 8260B, and;
- 19. Thorough cleaning of the compound area.

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Periodically, the system's oil/water separator and air stripper (the stripperator) will require evacuation of oily sludge and precipitated mineral deposits. The sludge and mineral deposits occur as part of the normal operation of the stripperator and must be conducted by vendor with the capacity to manage and dispose of such waste. The frequency of the sludge and mineral evacuation will be determined after the system has been operational of a period of approximately 60 days. Initially, funding for cleaning the stripperator will be requested in the form of an addendum to a current ATTF Cost Proposals. As the cleaning frequency is confirmed, the costs will be included in the appropriate ATTF Cost Proposals.

#### **Operations and Maintenance Personnel**

The General & Progress Maintenance routines will be performed by an experienced, qualified technician who is familiar the particular system. The same technician and an accompanying support technician will perform each quarterly monitoring event. All on-site personnel will be qualified as a Hazardous Materials Handling representatives trained under the OSHA standard 29 CFR 1910.

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# VI. PROPOSED REPORTING REQUIREMENTS

A schedule of implementation will be submitted within thirty (30) days of the approval of the CAP. All data and findings associated with the operations & maintenance of the corrective action system will be reported in quarterly reports.

### VII. SCHEDULE OF IMPLEMENTATION

The CAP will be implemented within 180 days of approval.

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# VIII. QUALITY ASSURANCE/QUALITY CONTROL PLAN

### Air Sampling

Air samples are collected utilizing a "Pulse Pump" (air sampling) pump. The pump is primed, prior to collection of each sample, to displace any trapped air or gases with the targeted air make-up. The air is drawn in and exits through polyethylene tubing. The sample is stored a Tedlar<sup>®</sup> air/gas sampling bag. The pump is also used to extract air/gases from a vacuum and drive them into a field screening instrument. The air sample collection and screening protocols are described below.

### **Air Screening**

Air screening is conducted to provide a field indication of the levels of hydrocarbon gases in vapor phase. The air/gases are screened with a Photoionization Detector (PID) equipped with a methane filter. As stated above, the air/gases are driven into the PID with the air sampling pump. The samples are immediately screened at ambient conditions and the data recorded onto a headspace analysis worksheet.

The field screening test form contains the following information:

- 1. The project name (client and location);
- 2. Table number;
- 3. Personnel collecting the samples;
- 4. Field screening instrument used and I.D. number;
- 5. Calibration information;
- 6. Description of field screening method;
- 7. Sample identification information; and
- 8. Field screening data including time collected, time screened, ambient temperature, and field screening reading;

#### Air Sampling Protocols

Each air sample is submitted for laboratory analysis of BTEX, MTBE and TPH (GRO) by EPA method 18. The air samples are transferred, along with an ample supply of ice, in a cooler to an analytical laboratory following appropriate preservation and chain-of-custody protocols. Preservation protocols are not required for BTEX, MTBE and TPH analysis of air samples.

#### Soil Sampling

Soil samples are collected from all soil exploration borings following one of the following ASTM Standard Methods: D-1452 (Practice for Soil Investigation and Sampling by Auger Borings); D-1586 (Method for Penetration Test and Split -Barrel Sampling of Soils); or D-1587 (Practice for Thin-Walled Tube Sampling of Soils) (Note: samples collected from the upper 5 feet of each boring are collected with hand auger equipment). Soil samples are typically collected on either a continuous basis or on five-foot centers (i.e. samples intervals 3'-5', 8'-10', 13'-15', etc.). Each soil sample is divided into two portions. One portion is prepared for field screening and one portion is prepared for analytical testing. The soil sample collection and screening protocols are described below.

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#### Soil Screening

Soil screening is conducted to provide a field indication of the relative levels of soil constituent concentrations. In the event that the boring depth is dependent upon the results of the soil screening (vertical extent investigations), the soil samples will be field screened immediately upon collection. Otherwise, the soil samples will be allowed to equilibrate to ambient conditions greater than 60 degrees Fahrenheit for at least one hour prior to soil screening.

The portion of the soil sample collected for field screening is placed in a pint or quart mason type glass jar until the jar is approximately half full. The top of the jar is then sealed with aluminum foil and a threaded lid ring. The sample is screened by puncturing the aluminum seal with the instrument probe and measuring the headspace of the ambient samples. The instrument currently used by SPHERE 3 is a PID. The PID are calibrated prior to headspace sampling and rechecked upon completion of headspace analysis each day. The PID is calibrated to a benzene standard.

Generally, the soil samples with the highest PID readings collected from the unsaturated zone are selected for analytical testing. If groundwater is not encountered in the boring, two soil samples are analyzed from each boring. Typically the deepest soil sample and the sample yielding the highest field screening value are selected for analytical testing. Additional soil samples may be selected for analytical testing, depending on site specific conditions.

#### Soil Sampling Protocol

All undisturbed soil samples are collected using either split spoon sampler (ASTM D-1586) or a Shelby Tube sampler (ASTM D-1587) (Note: soil samples collected from the upper 3 feet in each boring are collected with hand auger equipment). The sampling is conducted by advancing the borehole to the desired depth using a flight auger or hollow-stem auger. A clean split spoon or Shelby tube sampler is then advanced to the bottom of the hole and hammered or pushed into the soil. The sampler is then retrieved. The split spoon samples are removed by opening the split spoon and removing the sample using a clean stainless steel knife. The Shelby tube samples are removed with a hydraulic extruder. After being removed from the sampler, the sample is then placed on disposable foil-lined sample catchers for classification and analytical preparation. Upon completion of the sample collection, the boring is advanced to the depth of the next sample using the hollow stem or flight augers and the sampling procedure is repeated.

The soil samples selected for analytical testing are placed in laboratory grade container and submitted for appropriate COCs analysis. The sample jars are packed full with soil in an effort to minimize headspace. Each container is sealed with a Teflon<sup>®</sup> lined cap. Each sample jar is labeled, placed in bubble pack and an airtight "Ziploc" bag, and immediately stored, along with an ample supply of ice, in a cooler. Each sample label includes the site location, sample identification number, name of collector, date and time of collection, and parameter(s) requested (if space permits).

All sample handling is conducted with disposable latex gloves. Between individual samples, all disposable items are discarded and all non-disposable equipment (knives, spatulas, cheese

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cutters, split spoon samplers and Shelby Tube samplers) are decontaminated utilizing the following procedure:

- 1) Rinse with potable water to remove bulk solids;
- 2) Wash with laboratory-grade detergent and potable water solution;
- 3) Rinse with deionized water;
- 4) Wash with isopropanol; and
- 5) Rinse with deionized water.

The soil samples are transferred, along with an ample supply of ice, in a cooler to an analytical laboratory following appropriate preservation and chain-of-custody protocols. Preservation protocols for COCs soil samples include maintaining samples temperatures at or below 4 degrees Celsius at all time. Additional preservatives are not necessary for soil samples.

#### Groundwater Sampling

Groundwater samples are collected approximately 7 to 14 days after monitor well development. Collecting groundwater samples from monitor wells includes the following activities: 1) gauging for the presence of LPH; 2) measurement of static water level; 3) calculation of standing water volume; 4) well purging; 5) sample collection; and 6) equipment cleaning. The results of the sampling activities are recorded on a monitor well sampling record form. The details of these six activities are described in the following sections.

#### **Free Product Measurements**

Free product thicknesses (if present) are measured prior to purging and sampling the well with a hydrocarbon/water interface probe. The thickness is measured by lowering the probe slowly into the well until a tone is heard (Note: an intermittent tone indicates the presence of water and a constant tone indicates the presence of free product). The first point, as the probe is lowered into a well, at which a constant tone is first heard, is considered as the top of the free product. The distance from the top of the PVC well casing to the top of the free product is recorded. This distance is confirmed by re-measuring. The probe is then slowly lowered further into the well until an intermittent tone is heard again. This is considered the free product/water table interface. The distance from the top of the PVC casing to the free product/water table interface. The distance from the top of the PVC casing to the free product/water table interface. The distance is confirmed by re-measuring.

The free product thickness is determined by calculating the difference between these two distances (Note: the interface probe measures product and water levels to an accuracy of +/- 0.01 feet). If free product is identified by the interface probe, a clear bailer is lowered in the well to collect a sample of the free product for a visual confirmation.

#### **Static Groundwater Elevation Measurements**

The static groundwater levels are measured with the hydrocarbon/water interface probe. The measurements are recorded as the distance from the top of the PVC well casing to the point at which an intermittent tone is emitted from the probe. This distance is confirmed by re-measuring. Subsequently, each measurements is converted to an elevation with respect to either an arbitrary
Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 20 of 28

elevation of 100 feet established at the site or to mean sea level as determined from the associated USGS topography map.

#### **Calculations of Standing Water Volumes**

The standing water volume in each well is calculated as the volume of a cylinder:

Volume =  $\pi$  x diameter<sup>2</sup> ÷ 4 x height,

Where the diameter considered is that of the well casing and the height considered is the length of the water column present in the well.

#### Well Purging

The well purging process is implemented after the static water level is measured and the standing water volume has been calculated. Well purging is generally achieved with an appropriate bailer.

Well purging with a bailer is conducted by attaching new nylon line to the bailer then lowering the bailer in to the well until the bailer is submerged. The bailer is then retrieved from the well in such a manner that the bailer and nylon line does not come into contact with any potential source of hydrocarbon constituents. In order to determine the amount of water removed from the well, the contents of the bailer is poured into a graduated bucket. This procedure is repeated until three well volumes of water are removed or the well is purged dry.

#### **Groundwater Sample Collection**

Groundwater samples are collected from monitor wells not containing LPH. The bailer is lowered into the well to a depth were the bailer is completely submerged. The bailer is then retrieved from the well in such a manner that the bailer and nylon line does not come into contact with any potential source of hydrocarbon constituents. The water is then immediately poured slowly into the sample containers.

Each groundwater sample is submitted for laboratory analysis of BTEX, MTBE & naphthalene by method 8260B. The groundwater is poured slowly down the side of the sample vial to avoid aeration. The sample vial is a laboratory grade 40-ml glass vial with a Teflon<sup>®</sup> septum cap. Sample is added until a convex meniscus is formed at the top of vial. A Teflon<sup>®</sup> septum cap is placed and threaded secure on the container. The container is then upended and checked for the presence of trapped air. If air is present, more sample is added and the process repeated until an air-free sample is attained. The preservation of the BTEX, MTBE & naphthalene groundwater samples includes both ice and hydrochloric acid.

Following the collection of groundwater samples, each is labeled, placed in bubble pack and stored, along with an ample supply of ice, in a cooler. Each label includes the site location, sample identification number, name of collector, date and time of collection, and parameter(s) requested (if space permits). The cooler is then sealed and transported overnight to the laboratory follow appropriate chain of custody protocols.

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#### **Cleaning of Groundwater Sampling Equipment**

All equipment used for sampling is either well dedicated or discarded following the completion of the groundwater sampling activities.

#### Chain-of-Custody

Sample custody begins with the subcontracted laboratory as sample kits are prepared and submitted to SPHERE 3. Responsibility for sample container materials and preparation lies with the subcontracted laboratory. Sample containers and kits are normally shipped to SPHERE 3 by common carrier. Upon receipt of the kits, SPHERE 3 personnel complete an inventory of its contents to determine adequacy for the sampling program. Sample bottles may be pre-labeled and contain proper preservative. The sample kits are then resecured until ready for use.

Field sampling operations do not normally involve a transfer of sample custody during the project activities. The samples will remain in the custody of the SPHERE 3 personnel until delivered to the subcontract laboratory or dispatched via common carrier for shipment. In cases where samples leave the control of SPHERE 3, such as shipment to a laboratory by a common carrier (e.g. airfreight), a custody seal(s) will be placed on the shipping container. These seals act as a deterrent against vandalism.

To establish the documentation necessary to trace sample possession from time of collection, a chain-of-custody record will be filled out and will accompany every sample. The record contains the following types of information:

- Sample number
- Signature of collector
- Date and time of collection
- Sample type (e.g., ground water, immiscible layer)
- Identification of well
- Number of containers
- Parameters requested for analysis
- Signature of person(s) involved in the chain of possession

#### Field and Laboratory Quality Control

SPHERE 3 conducts internal quality control checks of sampling procedures and laboratory analyses. Described below is the field and laboratory QA/QC program.

#### Field QA/QC Program

Groundwater samples may be warranted by means of a trip blank. A trip blank is a field blank that is transported from the laboratory to the sampling site, handled the same as other samples, then returned to the laboratory for analysis in determining QA/QC of sample handling procedures. The trip blank should be filled with distilled water in the laboratory at a frequency of one (1) per cooler.

The results of the analysis of the blanks will not be used to correct the groundwater data. If constituents are found in the blanks, an attempt to identify the source will be initiated and corrective action, including resampling, will be evaluated.

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After completion of each sampling program, the field data package (field logs, calibration records, chain-of-custody forms, etc.) will be reviewed by the project manager for completeness and accuracy. The review will include but are not limited to the following:

- A completeness review of field data contained on water and soil sampling logs;
- A verification that sampler rinsate blanks, field blanks, and trip blanks were properly prepared, identified, and analyzed;
- A check on field analyses for equipment calibration and condition;
- A review of chain-of-custody forms for proper completion, signatures of field personnel, and the laboratory sample, custodian, and dates.

#### Laboratory QA/QC Program

The selection of a contract laboratory is typically based upon several factors including cost; laboratory certification; quality data and reporting; and turn-around time. The most critical factor in the selection of an analytical laboratory is the quality of analysis and reporting.

As an analytical report is received by SPHERE 3, validation of the analytical data package will be reviewed by the project manager. The review will include but not be limited to the following:

- A comparison of the Data Package to the reporting level requirements designed for the project, to ensure completeness;
- A comparison of sampling dates, laboratory extraction dates, and analysis dates to determine if samples were extracted and/or analyzed within the proper holding times;
- A review of analytical methods and required detection limits to verify confirmation with the established parameters;
- A review of the laboratory blank(s) to evaluate handling procedures. The preparation techniques and frequencies, and the analytical results (if appropriate) will be considered.

Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 23 of 28

#### IX. SELECT REFERENCES

GeoService, Inc., February 5, 2001, *Preliminary Investigation, Express Zone; ADEM Facility ID:* 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

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GeoService, Inc., April 3, 2003, Additional Secondary Investigation Activities, Express Zone; ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

GeoService, Inc., May 5, 2006, Alabama Risk Based Corrective Action Tier 1 & Tier 2 Report, Express Zone; ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

GeoService, Inc., December 6, 2006, *Revised ARBCA Tier 1/Tier 2 Report, Express Zone;* ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

GeoService, Inc., January 17, 2007, *Corrective Action Pilot Test Program, Express Zone; ADEM Facility ID:* 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; *Childersburg, Alabama* 35044, unpublished report.

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SPHERE 3 Engineering, Inc., March 15, 2022, Corrective Action Plan Evaluation (CP-59), Express Zone; ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

SPHERE 3 Engineering, Inc., October 18, 2022, *High Resolution Site Characterization Report* (CP-64), Express Zone; ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

SPHERE 3 Engineering, Inc., May 31, 2023, Additional Monitor Well Installation Report (CP-68), Express Zone; ADEM Facility ID: 20330-121-007087; UST Incident Number: UST00-07-32; 32176 Highway 280; Childersburg, Alabama 35044, unpublished report.

U.S. Geological Survey, 7.5-minute topographic map, Childersburg, Alabama.

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#### X. LIMITATIONS OF THIS PLAN

SPHERE 3 has prepared this Corrective Action Plan for facility known as Express Zone located at 32176 Highway 280 in Childersburg, Alabama in accordance with the ADEM specifications.

The conclusions contained in this report are based upon conditions at the site during the field investigation and on the assumption that the exploratory borings are representative of the subsurface conditions throughout the site.

Reporting and interpretation is based solely on data obtained within this prescribed scope of work performed. Environmental conditions at this site not identifiable with this conducted work scope, if any, should not be considered the responsibility of SPHERE 3.

The only warranty made by SPHERE 3 in connection with the services provided is that we have used the degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

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XI. SITE HEALTH AND SAFETY PLAN

## SPHERE 3 ENGINEERING, INC

3433 Sierra Drive • Hoover, Alabama 35216 • Phone: (205) 403-3317 • Fax: (205) 403-3318

#### SITE HEALTH and SAFETY PLAN Corrective Action System Installation

SUBMIT TO: Mr. Greg H	loaglan	d, P.E.; SPHERE 3 Engineering	g, Inc.; President		
PROJECT NAME:		Express Zone Corrective Action System Installation			
PROJECT NUMBER:		RP-CUP.EZ.XX (where XX de	RP-CUP.EZ.XX (where XX denotes the ATTF CP number)		
DESCRIPTION OF WORK:		Trenching, Excavating, Soil Boring, Construction			
CLIENT CONTACT(S):		Coosa United Properties, LLC c/o Mr. Rick Parrott 404 Sterling Park Circle Alabaster, Alabama 35007			
PROJECT SITE LOCATION:		Express Zone 32176 Highway 280 Childersburg, Alabama 35044			
PROJECT SITE CONTACTS:		Coosa United Properties, LLC c/o Mr. Rick Parrott 404 Sterling Park Circle Alabaster, Alabama 35007 Tel: (205) 515-8954			
PROJECT SUBCONTRACTORS:		Curtis Service Company Mr. Michael Curtis Cell: (205) 212-8868	Tortorice Electrical Mr. Chuck Tortorice Cell: (205) 876-3856		
PROJECT MANAGER:	Greg Phon	Hoagland, SPHERE 3 Enginee e: (205) 403-3317	ring, Inc. Cell: (205) 288-4896		
ON-SITE MANAGER(S):	Tres I Phone	Bond, SPHERE 3 Engineering, e: (205) 403-3317	Inc. Cell: (205) 288-7460		
WORK SCHEDULE: Gene		rally 7:00 a.m. through 5:00 p.m. each visit			

Corrective Action Plan (CP-69) Express Zone ADEM Facility ID No. 20330-121-007087; UST00-07-32 32176 Highway 280, Childersburg (Talladega County), Alabama Page 26 of 28

#### SITE DESCRIPTION:

Located in Childersburg, Alabama, the site and contiguous properties are of commercial and residential designation. The facility property is improved with an active convenience store, retailing sundry items and motor fuels. Refer to attached area map showing location.

#### PLANNED SITE ACTIVITIES:

- 1. Excavating;
- 2. Trenching, and;
- 3. General Construction.

#### KNOWN CHEMICAL HAZARDS:

			TWA	TLV
Component	Location	Media	TLV*	STEL**
Petroleum Distillates	All Site	SWA	400 ppm	
Gasoline	All Site	SWA	300 ppm	500 ppm
Benzene	All Site	SWA	0.1 ppm	5 ppm
Toluene	All Site	SWA	100 ppm	150 ppm
Xylenes	All Site	SWA	100 ppm	150 ppm
Ethylbenzene	All Site	SWA	100 ppm	125 ppm

Notes:

Values per American Conference of Government Industrial Hygienists (ACGIH) or, 20 CFR Part 1910 (OSHA) whichever is most stringent.

- S soil; W water; A air
  - The Threshold Limit Value (TLV) is the time weighted average concentration for a normal eight-hour day and forty-hour work week, to which all workers may be repeatedly exposed, day after day, without adverse effect.
- \*\* The Short-Term Exposure Limit (STEL) is the concentration at which workers can be exposed continuously for a short period of time. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times in an eight-hour period. There should be at least one hour between each 15 minute exposure at the STEL.

#### OTHER SUSPECTED CHEMICAL HAZARDS:

No other known. If encountered or suspected, contact Office Safety Manager.

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#### CONCENTRATION MEASUREMENT METHODS:

Activity	Location	Detector*	Survey Method**
Air/Gases Sampling	All Site	PID & LEL	Work area breathing zone
Borehole Installation and Sampling	All Site	PID	Work area breathing zone
Groundwater Sampling	Specific	PID	Sources

Notes:

PID - Photoionization Detector.

- \* Instruments to be calibrated daily.
- \*\* Readings to be taken at a minimum of one per hour and more frequently in more contaminated areas or during critical activities.

#### ACTION LEVELS:

		Action	
Activity	Location	Level	Precaution
All On-Site	All Site	>50 ppm	Cease activities until levels decrease

#### POTENTIAL PHYSICAL HAZARDS:

- 1. Overhead electric lines.
- 2. Underground electric and natural gas lines, gasoline product transfer lines, etc.
- (Note: all known utility line locations will be marked by a line-locating company prior to initiating the site activities).
- 3. Falling objects from the drilling rig (i.e. augers, drill rods, slide hammer, etc.).
- 4. Potential for explosive conditions.

#### REQUIRED HEALTH AND SAFETY APPAREL AND PROCEDURES:

All project activities will be conducted under OSHA Health & Safety Level D. Protective equipment will include:

- 1. Hard hat
- 2. Safety glasses
- 3. Steel toe safety boots
- 4. Orange Safety Vest with Reflective Tape
- 5. Sleeved shirt, long pants (coveralls optional).
- 6. Latex and/or nitrile gloves, if phase material encountered (Tyvek Suits optional).

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Smoking is prohibited at the worksite and facility properties. Explosion proof or intrinsically safe equipment must be used in areas designated as hazardous (potentially explosive). At least one class ABC fire extinguisher will be placed in a safe area, accessible to site activities. Access to the work area will be restricted except to essential personnel. A safe distance will be maintained between the work area and public roads and appropriate traffic control will be implemented.

#### CONTINGENCY PLANS:

If the vapor levels in the general work area are found to meet or exceed any of the action levels, then work will be discontinued and the work site evacuated as directed by the Project Manager (SPHERE 3 representative). The work area periphery will be monitored by the On-Site Manager and work will resume when vapor levels drop below the action levels. If vapor levels continue to meet or exceed action levels, work will cease and the work site will be secured and evaluated. Work shall not continue until the Site Safety Plan is appropriately revised to meet the new conditions.

Should persistent safety hazards, accident or fire occur, take appropriate immediate action if required (i.e., extinguish the fire, give first aid, etc.) and contact emergency personnel immediately, and then contact appropriate SPHERE 3 Safety personnel.

This plan does not override any existing client or site specific safety plan. All subcontractors used on these projects are required to submit safety plans applicable to their prescribed activities.

#### EMERGENCY CONTACTS AND PROCEDURES:

Should any situation or unplanned occurrence require outside or support services, the appropriate contact from the following list should be made.

## In Case of Emergency, Dial 911, other contacts listed below:

Agency	Person to Contact	Telephone
Fire & Rescue	Emergency Dispatcher	911
Police:	Emergency Dispatcher	911
Underground Utilities	Receptionist	1-800-292-8525
SPHERE 3 Project Manager	Greg Hoagland	(205) 403-3317
alaboration (1997) in the second of the second second state of the second	Cell	(205) 288-4896











### LEGEND

<b>♦</b>	Soil Exploration Boring
¢	Soil Exploration Boring/Type II Monitor Well
Ŷ	Soil Exploration Boring/Type III Monitor Well
<b>•</b>	Destroyed/Abandoned Type II Monitor Well





<b>ب</b>	Soil Exploration Boring
¢	Soil Exploration Boring/Type II Monitor Well
Ŷ	Soil Exploration Boring/Type III Monitor Well
•	Destroyed/Abandoned Type II Monitor Well
	Sample Collection Depth (feet bas)

	I Sumple collection Depth (leet bgs)
В	Benzene Concentration (mg/kg)
Т	Toluene Concentration (mg/kg)
E	Ethylbenzene Concentration (mg/kg)
Х	Total Xylenes Concentration (mg/kg)
MTBE	Methyl-Tertiary-Butyl-Ether Concentration (mg/kg)
NAPH	Naphthalene Concentration (mg/kg)



•	Soil Exploration Boring
•	Soil Exploration Boring/Type II Monitor Well
Ŷ	Soil Exploration Boring/Type III Monitor Well
¢	Destroyed/Abandoned Type II Monitor Well
В	Dissolved Benzene Concentration (ma/L)
T	Dissolved Toluene Concentration (mg/L)
E	Dissolved Ethylbenzene Concentration (mg/L)
Х	Dissolved Total Xylenes Concentration (ma/L)
MTBE	Dissolved Methyl-Tertiary-Butyl-Ether Concentration (ma/L)
NAP	Dissolved Naphthalene Concentration (mg/L)
0-	Estimated Dissolved MTBE Isoconcentration Contour (mg/L) Groundwater Flow Direction (12/8/2023)
mg/L)	Milligrams per Liter



+	Soil Exploration Boring
<del>\$</del>	Soil Exploration Boring/Type II Monitor Well
Ŷ	Soil Exploration Boring/Type III Monitor Well
•	Destroyed/Abandoned Type II Monitor Well
4.50)	Potentiometric Surface Elevation (feet a.m.s.l.)
8 –	Isopotentiometric Surface Elevation Contour (feet a.m.s.l.)
	Groundwater Flow Direction (12/8/2023)



Estimated Radius of Influence of Vapor Extraction Application





2" SCHED. 80 PVC BALL VALVE (TYP.)

2" SCHED. 80 PVC TEE REDUCED TO 1/4" NPT (TYP.)

- PRESSURE GAUGE (0-60 inches of water, vacuum)













#### MK ENVIRONMENTAL INC.

765 Springer Drive Lombard, IL. 60148-6412 615-392-7737

#### jgiltz@mkenv.com

SOLD TO:		SHIP TO:	
Greg Hoagland		UST000732	
Sphere 3 Engineering, Inc.		Express Zone	
3433 Sierra Driv	e	32176 US Hwy 28	
Hoover, AL.	35216	Childersburg, AL.	
205-403-3317	205-403-3317 (fax)		

QUOTATION

Date 3/20/2024 Quote No. 224001B Reference Express Zone Page No. 1 of 3 Freight Included Terms PWP Net 180 Ship Via FLATBED F.O.B. Factory

Quotation valid for 30 days

QUANTITY		UNIT PRICE	AMOUNT
	200 amp 3/60/230 volt 4 wire plus ground electrical service Brought to NEMA 3R control Panel Interior electrical will comply with NEC requirements for Class 1, Division 2, Group D Hazardous locations		
	Motors will be TEFC construction		
1	Soil Vapor Extraction System Regenerative blower Busch Samos model SB 530 D or equal 280 ACFM @ 50" w.c. vacuum (64" w.c. vacuum max) 4.6 kW (6.2 HP) 3/60/230-460 volt, TEFC motor Direct drive motor 100 gallon Air/water separator with level control switches Clean out ports with vacuum rated quick release lid Liquid filled vacuum gauge Vacuum assist hose 2" drain valves Vacuum relief valve Dilution valve with filter/silencer with rotameter Inlet screen Inlet filter Exhaust temperture gauge	152,696.00	\$152,696.00
	Exhaust temperture switch		
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	MKE Model SA15B STRIPPERATOR 15 GPM oil/water Separator and Air stripper treatment system Coalescing separator with skimming weir and water sump tank Low profile air stripping system with nylon aeration tubes and dual pattern diffusers 2.0 HP aluminum blower, AMCA B rated spark resistant Air pressure gauge Intrinsically safe high-high sump level and low blower pressure alarm switches Air stripper blower silencer to reduce the noise level outside the trailer unit		
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	Groundwater flow totalizer with pulse output for remote totalization Flow calibration button		
2	Bag filter housings piped in parallel 304 stainless steel construction, size 2. Includes a case of 25-micron replacement bag filters		
1	Compressed Air System 5.0 HP, TEFC Motor 23 CFM @ 100 PSI Rotary screw compressor system with inlet filter, motor, 80 gallon receiver tank with automatic drain valve, pressure gauge and 3-way solenoid operated air valve for automatic shut off of pneumatic pumps upon fault condition. Main outlet regulator with priessure gauge.		

#### MK ENVIRONMENTAL INC.

Greg Hoagland Sphere 3 Engineering, Inc.

Date 3/20/2024 Quote No. 224001B Reference Express Zone Page No. 2 of 4

QUANTITY		UNIT PRICE	AMOUNT
-			
5	Pneumatic Pumps		
	Initiate Arts Short Pheumatic AutoPumps		
	Down well hoses and well seals provided by others		
	Installed by others		
1	Master Control Panel System, Including:		
	NEMA 3R control panel with blank front cover		
	Swing out sub panel for gauges, control operators, and switches		
	IEC Magnetic motor starters, safety switches, H-O-A controls		
	(8) intrinsically safe relays (8) alarm indicator LED's (12) output channels		
	Hard wired relay logic		
	(1) exterior GFCI utility outlet		
	SVE run time totalizing hour meter		
	Blower low pressure alarm		
	Anti-falsing alarm circuit to prevent nuisance tripping		
	Auto-release restart timer for remote restarts via telemetry		
	Emergency E-stop LED red indicator light located on swing out sub panel		
	Variable Frequency Drive (VFD) for SVE regen blower		
	SVE & GW Pumps automatic shut down upon:		
	AWS1 high liquid level		
	SVE high temperature alarm		
	Air stripper blower low pressure		
	Phase fault condition		
	Interior Emergency Stop Mushroom button with twist to release detent		
1	Fused Main Disconnect system for the SVE with P&T		
	(1) Weatherhead with extension note and bracket support		
	(1) 200 amp Electric meter socket base installed		
1	MK Site Optimization Software (SOS) - Wireless Monitoring Unit.		
	MK Cloud based monitoring capabilities with Email & SMS alarming notification		
	Includes: Cellular antenna, wiring diagrams, setup forms.		
	Elow and Vacuum graphing and data export capabilities		
	Alarm counters for increased troublshooting efficiency		
	Wireless service will be supported and billed through MKE @ \$135/mo. (subject to change)		
	Billed monthly on the first of the month following successful factory wet testing.		
1	Vacuum transducer integrated into telemetry system for real time monitoring, 4-20mA		
1	System building (refurbished)		
	8.5 W X TO L X 9.5 H aluminum/steel enclosure, fully insulated with Removable sliding wall papels for ease of maintenance		
	Exterior grade plywood floor, structural steel frame		
	Includes 100 watt XP interior light, and removable center grate for ease of maintenance		
	The breaker panel and control panel will be mounted on a vertical steel bracket attached		
	to platform end. The bracket, panels and all conduits will allow for the removal of the		
	enclosure panels by one person.		
	10" structural steel base with 4" steel cross members		
	Steel corner posts and roof frame		
	Continuous sheet aluminum roof for superior protection		
	Includes stainless piano hinges on the building corners.		
2			
1	12,000 BID XP heater with XP thermostat (refurbished)		
	mi componente fully pipeu, wireu anu factory testeu		

#### MK ENVIRONMENTAL INC.

Greg Hoagland

Sphere 3 Engineering, Inc.

Date 3/20/2024 Quote No. 224001B Reference Express Zor Page No. 3 of 4

QUANTITY	1		UNIT PRICE	AMOUNT
1	Equipment Electrical Installation			
	Includes XP wiring, XP seal off connectors, liquid tight flexible conduit			
	UL listed equipment.			
1	Equipment Mechanical Installation			
	Brass fittings, sample ports, pressure gauges and sight glasses			
2	Vapor Phase Carbon Vessels - Dual phase offgas - piped in series			
	400 lb initial load each			
	4" plain pipe fitting Off loading, placement & piping provided by others			
	Installed outside the system building by others			
1	AWS3 knock out tank prior to oxidizer to minimize condensed liquids from entering			
	burner or vapor phase carbon bed.			
	Notes:			
	1. Pneumatic Autopump airline and GW return line manifolds by others.			
	2 Pneumatic AutoPumos downwell hoses and well seals by others			
	<ol> <li>All vapor carbon vessels to be installed and piped outside the system building by others.</li> </ol>			
	4. Wireless monitoring unit will be supported and billed through MK Environmental. Billed monthly on the first of the month following successful factory wet testing at \$' Monthly service rate subject to change.	135/mo.		
	5 SVE manifold by others			
	5. SVE manifold by others			
			R TOTAL	\$152 606 00
	EQ	UIP. SA	LES TAX	φ102,090.00
Does no Offloadi	ot include permits, fees, etc ST.	ART UP	TRAINING	\$2,500.00
				+=,000.00
Jerry Gi MK EN	IIZ, /IRONMENTAL_INC. NE			\$157 696 00

Curtis Service, Inc. 45180 US HWY 231 ONEONTA, AL 35121 +12052128868 curtis\_service@hotmail.com

### Estimate



ADDRESS	
Sphere 3 Engineering, Inc.	
3433 Siera Drive	
Attn: Greg Hogeland	
greg@sphere3.com	
Hoover, AL 35216	

ESTIMATE #	DATE	
10120	04/10/2024	

#### P.O. NUMBER

Express Zone

#### JOB LOCATION

32176 US Hwy280 Childersburg AL

DESCRIPTION	AMOUNT
Job: Installation of a pump and treat soil vapor extraction system.	0.00
This will be to cut roughly 460 LF of concrete and excavate a ditch for installing: 1,400 feet of 2-inch schedule 40 PVC pipe 1,100 feet of 1.5-inch schedule 40 PVC pipe 40 feet of 3- inch schedule 40 PVC pipe (26) 2-inch schedule 40 90's (9) 2-inch schedule 40 45's (6) 2-inch schedule 40 tee's (18) 1.5-inch schedule 40 90's (6) 1.5-inch schedule 40 45's (18) 1-inch schedule 80 90's (1) 3-inch schedule 80 45's	
<ol> <li>We will set six 12-inch diameter well covers along the trench. We will also set five 24-inch square hinged manways in a 48-inch square concrete pad at each pumping point.</li> <li>All debris and soils will be hauled off to the appropriate disposal site.</li> <li>We will back fill the ditches with gravel, dole the concrete ditch Then pour and finish the 4000 psi concrete.</li> <li>A 24'x24'x6' gauge chain link fence with brown privacy slats and two 4' walks gates will be installed prior to the installation of the building. Once the building is to be set, we will have a crane delivered to set the building on 8x8 blocks.</li> </ol>	
Crane	2,800.00
Fence	7,800.00
Concrete	10,500.00
Gravel	5,500.00
Machinery	6,500.00

DESCRIPTION		AMOUNT
Materials		7,250.00
Travel		2,500.00
Labor		30,000.00
Any unforeseen issues that arise on the job, will result in a change order. PAYMENT TERMS: - 50% down payment	TOTAL	\$72,850.00

- 50% at the moment of finish the job.

Accepted By

Accepted Date



Address: 25299 Canal Road Suite A2/1 Orange Beach, AL 36561 Voice/SMS: (251) 403-2165 email: strewnstars@gmail.com

Proposal 🛛

#### Invoice 🛛

С	U	S	Т	0	Ν	Λ	E	R	2

Greg Hoagland SPHERE 3 Engineering, Inc. 3433 Sierra Drive Hoover, AL 35216

DOCUMENT	
EST35-2261	

Express Zone

PROJECT

DATE 4/19/2024

LOCATION Childersburg, AL

DESCRIPTION	AMOUNT
beglist	
Sawcut concrete/asphalt to approximately 920 feet	\$6,000.00
Trench 24"x24"x460'	\$20,000.00
Load all debris in rolloffs provided by others	\$2,500.00
Prep trench with crushed stone basin	\$2,300.00
Construct 1,400 feet of piping network with 2-inch Schedule 40 materials	\$3,500.00
Construct 1,100 feet of piping network with 1.5-inch Schedule 40 materials	\$3,300.00
Construct 1,100 feet of piping network with 1-inch Schedule 80 materials	\$3,100.00
Construct 40 feet of piping network with 3-inch Schedule 40 materials	\$300.00
Fill trenches with crushed stone to 6 inches below surface	\$3,500.00
Cap trenches with reinforced, doweled, 4,000 psi concrete (min 6 inches)	\$12,000.00
Construct 24'x24'x6' chainlink fence compound with razor wire perimeter,	
privacy slats, and a double 4-foot access gate	\$9,400.00
Provide crane to offload and place system container onto 8"x8" timbers	\$2,800.00
Install 5 each 24"x 24" steel vaults (customer to provide).	\$3,750.00
Install 6 each 12" diameter well covers (customer to provide).	\$1,500.00
Construct potable water service line (upto 100') endlist	\$2,000.00

TOTAL

\$75,950.00

Date

**Tortorice Electrical Service, Inc.** PO Box 695 Trussville, AL 35173 US tracilet5@gmail.com

### Estimate

ADDRESS Sphere 3 Engineering 3433 Sierra Drive Hoover, Alabama 35216 ESTIMATE # 1018 DATE 04/18/2024

	TOTAL		;	\$9,500.00	
Services	Construct new 200-amp service with new pole. Wire new gas system up to 70'. Labor & Materials	0	9,500.00	9,500.00	
	Express Zone - Childersburg				
ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT	

Accepted By

Accepted Date

## Childersburg Waterworks, Sewer and Gas Board

# Fees Effective **November 2022**

### **CWSG - FEES**

0	WATER CONNECT	\$30.00
0	GAS CONNECT	\$30.00
0	GAS & WATER CONNECT	\$30.00
0	WATER TRANSFER	\$15.00
0	GAS TRANSFER	\$15.00
0	WATER DISCONNECT (for non-payment)	\$50.00
0	GAS DISCONNECT (for non-payment)	\$50.00
0	BROKEN LOCK WATER METER	\$100.00
0	BROKEN LOCK GAS METER	\$100.00
0	DAMAGE DONE TO ANY CUT OFF The tampering or theft will be investigated and additional fees may apply Theft of services by any means will result in criminal prosecution	\$250.00
0	RETURN CHECK	\$36.00
0	SERVICE CALL	\$15.00
0	REREAD METER AND WAS CORRECT	\$25.00
0	CLEAN UP FEES (includes 3,000 gal)	\$35.00
0	GAS RECONNECT FEE (FOR GAS METER WHEN TURNED OFF, PER CUSTOMER FOR SUMMER MONTHS)	\$75.00
0	LATE FEE	\$15.00
0	SERVICES MOVED AT CUSTOMER REQUEST WILL BE CHARGED BAC CUSTOMER INCLUDING LABOR AND MATERIALS.	СК ТО
0	LINE UPSIZING AT CUSTOMERS REQUEST- FULL TAP PRICING WILL CHARGED IF UPSIZING REQUIRES A NEW TAP. (INCLUDES WATER, S AND GAS SERVICES)	BE SEWER,

#### \*\*\*ALL TAPS ARE SUBJECT TO ENGINEERING AND PERMITTING COSTS, IF APPLICABLE\*\*\*

#### METER DEPOSITS

0	RESIDENTS	WATER	\$100.00
		GAS	\$100.00
0	SMALL BUSINESS	WATER	\$100.00
		GAS	\$100.00
0	LARGE BUSINESS	WATER & GAS	
	(25 OR MORE EMPLOYEES)	(ESTIMATE OF TWO	MONTHS BILL)
0	RESTAURANT	WATER	\$100.00
		GAS	\$600.00

AFTER A METER HAS BEEN PULLED TWICE FOR NONPAYMENT, AN ADDITONAL METER DEPOSIT WILL BE REQUIRED PLUS THE AMOUNT OF PAYMENT OWED

#### WATER CAPACITY FEE - Fee based on point at which utility service ends

0	3/4 INCH TAP
0	74 III III

- o 1 INCH TAP
- o 2 INCH TAP
- 4 INCH TAP
- o 6 INCH TAP

#### WATER TAP

#### SHORT SIDE

#### LONG SIDE

\$250.00 \$500.00

\$1,500.00

\$3,000.00

\$8,000.00

0	<sup>3</sup> / <sub>4</sub> INCH TAP*	\$1,000.00	\$1,200.00
0	1 INCH TAP*	\$1,100.00	\$1,300.00
0	2 INCH TAP**	\$1,300.00	\$1,500.00

\* PLUS COST OF ADDITIONAL BORING AND/OR MATERIAL IF OVER 100FT \*\*PLUS COST OF METER, ADDITONAL BORING AND/OR MATERIAL IF OVER 100FT

\*\*\*SPLIT TAP = COST OF TAP, PLUS \$500.

\*\*\*\*IF ADDING SPLIT TAP TO EXISTING LINE-\$500

- A \$350.00 CHARGE WILL BE APPLIED IF THE TAP REQUIRES A STREET PATCH (APPLICABLE TO ALL TAP SIZES)
- CONTRACTOR PRICING IS AVAILABLE IF TAP NEEDS TO BE EXPEDITED. TAPS ARE TYPICALLY 60 DAYS OUT.
- ALL TAPS LARGER THAN 2 INCHES WILL BE BILLED AT THE CURRENT COST OF LABOR AND MATERIALS ALL METERS ABOVE 1 ½" WILL REQUIRE AN ABOVE GROUND, DUAL PORT, TESTABLE, BACKFLOW PREVENTER TO BE INSTALLED ON THE CUSTOMERS' SIDE OF THE METER, AT THE CUSTOMER'S EXPENSE. BACKFLOW PREVENTERS ARE REQUIRED BY THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT TO BE TESTED ONCE PER CALENDAR YEAR, AND REPAIRED, IF NECESSARY, ON ALL METERS INSTALLED AFTER 2007. TESTING AND REPAIR OF THE BACKFLOW PREVENTER ON 2 INCH AND LARGER METERS IS THE CUSTOMER'S RESPONSIBILITY AND THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CHILDERSBURG

WATER, SEWER & GAS BOARD NO LATER THAN 30 DAYS AFTER TESTING OR BE SUBJECT TO DISCONNECTION.

#### GAS TAP

• LOW PRESSURE UP TO 2" SERVICE

<u>SHORT SIDE</u> \$1,200.00 LONG SIDE \$1,400.00

\*PLUS COST OF ADDITIONAL BORE AND/OR MATERIALS ON SERVICES OVER 100 FT

- \$350.00 CHARGE WILL BE APPLIED IF THE TAP REQUIRES A STREET PATCH (APPLICABLE TO ALL TAP SIZES)
- CONTRACTOR PRICING IS AVAILABLE IF TAP NEEDS TO BE EXPEDITED. TAPS ARE TYPICALLY 60 DAYS OUT.
  - 2" TAPS AND LARGER WILL BE BILLED AT CURRENT COST OF LABOR AND MATERIALS.
  - HIGH PRESSURE TAPS WILL BE BILLED AT CURRENT COST OF LABOR AND MATERIALS.

#### **SEWER TAP**

- 4 INCH TAP
- o 6 INCH TAP

\*\*ALL OTHER TAP SIZES WILL BE BILLED AT CURRENT LABOR AND MATERIAL COSTS.\*\*

#### \*PLUS COST OF ROAD CUT OR BORE AND MANHOLE

- \$350.00 CHARGE WILL BE APPLIED IF THE TAP REQUIRES A STREET PATCH (APPLICABLE TO ALL TAP SIZES)
- CONTRACTOR PRICING IS AVAILABLE IF TAP NEEDS TO BE EXPEDITED. TAPS ARE TYPICALLY 60 DAYS OUT.

#### SEWER CAPACITY FEE -

#### \$250.00

\$1,000.00\*

\$1,100.00\*

Fees based on number of equivalent connections. One equivalent connection is based on average residential usage and is valued at \$250.

Single family or manufactured home

-One (1) equivalent connections

Multi-family homes:

Duplexes	-Two (2) equivalent connections	
Triplexes	-Two and one-half (2 <sup>1</sup> / <sub>2</sub> ) equivalent connections	
Quadplexes	-Three (3) equivalent connections	
Greater than Four	-Two-thirds (2/3) equivalent connections	

## FEES / DEPOSITS

Retail Sales	-One (1) equivalent connection per restroom or restroom pair (a pair of restrooms is defined as one Men's and one Women's restroom)	
Motels and Hotels Restaurants	-One-third (1/3) equivalent connection per room -One (1) equivalent connection per restroom or restroom pair plus one (1) connection for every twenty (20) chairs over forty (40)	
General Business	-One (1) average equivalent connection per restroom or restroom pair plus one average connection for each ten (10) employees over twenty (20)	
Industry	-Same as general business if water is not used in an industrial process, otherwise registered engineer must certify water usage	
Hospitals, Nursing Homes & Other Institutions	One-third (1/3) equivalent connection per bed	
Auto Service Stations	Two (2) equivalent connections per restroom or pair of restrooms	
Schools	One (1) equivalent connection per each fifteen (15) students design capacity	
Churches	One (1) equivalent connection per restroom or pair of restrooms	

### FIRE HYDRANT INSTALLATION

\$4,500.00

### PRIVATE FIRE PROTECTION ANNUAL

0	2 INCH TAP	\$250.00
0	4 INCH TAP	\$500.00
0	6 INCH TAP	\$1,000.00
0	8 INCH TAP	\$2,000.00
0	10 INCH TAP	\$3,000.00
0	12 INCH TAP	\$5,000.00

### LINE EXTENSION

LINE EXTENSIONS WILL BE BILLED BASED ON LABOR, MATERIAL, ENGINEERING, AND PERMITTING COSTS. BIDS WILL BE RECEIVED BY NO LESS THAN THREE CONTRACTORS, WITH THE LOWEST BID BEING QUOTED AS THE LABOR COST. MATERIAL COSTS WILL BE DETERMINED BASED ON CURRENT PRICING. PAYMENT MUST BE RECEVIED BEFORE EXTENSION PROJECTS BEGIN.

ALL LINE EXENSIONS LARGER THAN 2 INCH WILL BE BILLED ON COST PLUS 15% BASIS. ADDITIONAL COST OF STREET CUTTING AND PATCHING WILL BE BILLED AT CURRENT CONTRACT PRICE.



#### **SEWER SERVICE**

- MINIMUM OF 1 HOUR CHARGE MAXIMUM OF 3 HOURS
   ALL OVER 3 HOURS WILL BE BILLED AT COST
   \*SERVICE INCLUDES CAMERA (IF NEEDED) AND JETTING
- CAMERA USED AT CUSTOMER REQUEST TO LOCATE ISSUE \$25.00

\*SEWER SERVICE WILL ONLY BE PERFORMED UP TO THE CUSTOMER'S CLEAN OUT \*IF CUSTOMER DOES NOT HAVE A CLEAN-OUT THEY MUST CALL PLUMBER

\$150.00