Outlook

ust PN 20120 Former Station

From Trevor Hudson <thudson@envirosouth.com>
Date Thu 19/06/2025 04:19 PM
To Zachary A. Griffith <Zachary.Griffith@des.sc.gov>
Cc William Lyons <wlyons@envirosouth.com>

Zach, Please see the answers to your questions below in red.

Will,

A couple of concerns on the CAP for this site.

I do not see a detailed discussion regarding previous assessment of the target area chosen, other than the obvious impacted well. If the contamination is in the vadose zone, injection will not treat the contamination effectively. Previous assessment included a Tier I assessment and a follow-up additional assessment. Soil and groundwater data from both assessments as well as the following comprehensive groundwater monitoring activities indicate that the contaminant plume is confined to the area around monitoring well MW-4 (apparent former UST basin). The treatment area proposed is an "elbows out" approach to capture any gaps in our data.

If sampling results between ISCO and carbon injections indicate that the goal is achieved, what do you propose to do following? We will need more detail on the contingency plan. If sampling results between ISCO and carbon injections indicate that the goal is achieved, carbon injection will still be implemented to prevent any possible rebound of petroleum hydrocarbon contamination. If the contaminant mass remaining indicates carbon injection will be insufficient to achieve SSTLs the remaining pre-approved costs will be used to treat the contaminant plume utilizing other techniques such as excavation.

<u>For Injections</u>

Can you give some more information on why you propose 10-30' depths for ISCO and 15-30' for carbon injection? Why the difference? The treatment depth of ISCO was chosen to treat a petroleum smear zone (depth of 10-15 feet bgs), the water table aquifer (15-25 feet bgs), and any potential vertically migrating contamination (25-30 feet bgs).

The treatment depth of carbon used the same reasoning with the exception that the carbon chosen (PetroFix) will not be effective in the vadose zone or petroleum smear zone.

How will you track detailed records for each point that includes depth, pressure, and volume? Typically in the past we have submitted injection logs that include all of these parameters for each injection report.

what is your target pressures? Our Hydracell D-10 pump does not generate a set pressure for injection. However, it matches the pressure of the formation (up to 650 psi). We typically see pressures of 30-80 psi in piedmont soils or 120-180 psi in fractured bedrock aquifers.

Are you injecting top down or bottom up? A bottom-up injection technique will be utilized to minimize pump downtime.

what are your injection depth intervals? A five-foot ported screen will be used at each injection well.

If you could address these comments in an updated CAP we can get moving from there.

Trevor Hudson
Environmental Engineer

ENVIROSOUTH
Environmental Consultants

3440 Augusta Road
Greenville, SC 29605
864-236-9010 (Greenville)
864-516-3043 (Cell)

CONFIDENTIAL COMMUNICATION: The information contained in this message may contain privileged and confidential information only for the intended recipient. If the reader of this message is not the intended recipient, you are hereby notified that any use, dissemination, distribution or duplication of this transmission is strictly prohibited. If you have received this communication in error, we request that you notify us by telephone or email and destroy all printed and electronic copies.

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

ENVIROSOUTH
Environmental Consultants

May 2, 2025

Mr. Zach Griffith
SCDES
UST Management Division
2600 Bull Street
Columbia, South Carolina 29201

RECEIVED
MAY 08 2025
UST

Re: Corrective Action Plan
Former Station
113 O'Dell Road
Liberty, South Carolina
SCDES UST ID #20120
EnviroSouth Job No. 3159

Dear Mr. Griffith:

On behalf of Ms. June Nix, EnviroSouth, Inc. is pleased to submit the attached Corrective Action Plan regarding the above-referenced site in Liberty, South Carolina.

If you have any questions concerning our submittal, please do not hesitate to call.

Sincerely,

EnviroSouth, Inc.
UST Contractor No. 257

Thomas F. Donn, P.G.
Principal Hydrogeologist
S.C. Registration No. 908

cc: Ms. June Nix

ENVIROSOUTH
Environmental Consultants

May 2, 2025

Mr. Zach Griffith
SCDES
UST Management Division
2600 Bull Street
Columbia, South Carolina 29201

Re: Corrective Action Plan
Former Station
113 O'Dell Road
Liberty, South Carolina
SCDES UST ID #20120
EnviroSouth Job No. 3159

Dear Mr. Griffith:

On behalf of Ms. June Nix, EnviroSouth, Inc. is pleased to submit the attached Corrective Action Plan regarding the above-referenced site in Liberty, South Carolina.

If you have any questions concerning our submittal, please do not hesitate to call.

Sincerely,

EnviroSouth, Inc.
UST Contractor No. 257

Thomas F. Donn, P.G.
Principal Hydrogeologist
S.C. Registration No. 908

cc: Ms. June Nix

Prepared for:

Ms. June Nix
236 Amberwood Road
Pickens, South Carolina 29671

CORRECTIVE ACTION PLAN

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

Job No. 3159
SCDES UST ID #20120

Prepared by:

EnviroSouth, Inc.
3440 Augusta Road
Liberty, South Carolina 29605

UST Contractor #257

May 2, 2025

A report prepared for:

Ms. June Nix
236 Amberwood Road
Pickens, South Carolina 29671

CORRECTIVE ACTION PLAN
FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

EnviroSouth Job No. 3159
SCDES UST Permit No. 20120

Prepared by:

Trevor Hudson
Environmental Engineer

Reviewed by:

Thomas F. Donn, P.G.
Principal Hydrogeologist
S.C. Registration No. 908

EnviroSouth, Inc.
3440 Augusta Road
Liberty, South Carolina 29605
864-236-9010

UST Contractor #257

May 2, 2025

TABLE OF CONTENTS

APPENDICES

INTRODUCTION

EnviroSouth, Inc. has completed this Corrective Action Plan (CAP) for the former gas station facility as requested by the South Carolina Department of Environmental Services (SCDES) in a letter dated March 24, 2025. This document outlines the plan for targeted-scope corrective action to achieve regulatory closure at the facility.

The facility is located in the town of Liberty, Pickens County, South Carolina. The site is located at 113 O'Dell Road at the intersection with Moorefield Memorial Highway (US Highway 178) as shown on Figure 1.

SUMMARY OF ASSESSMENT

Based upon review of project history, it appears that the facility was formerly a gas station that ceased operations around 1972. A release from the previous underground storage tank (UST) system was confirmed in May 2022 and identified as release number one by the South Carolina Department of Environmental Services (SCDES, formerly known as the SCDHEC). A Tier I assessment was conducted by EnviroSouth, Inc. in March 2023. One or more petroleum constituents were documented above regulatory limits during the Tier I assessment. Based on the results of the Tier I assessment, the SCDES requested an additional assessment that included the installation of three (3) shallow monitoring wells and two (2) deep monitoring wells. The purpose of that assessment was to delineate the horizontal and vertical extent of the contaminant plume. A comprehensive sampling event was performed in March 2024. Based on the results of the comprehensive sampling event, the SCDES calculated site-specific target levels (SSTLs) and requested a Strategy to Closure in a letter dated January 15, 2025. Following review of the Strategy to Closure document, the SCDES requested this Corrective Action Plan in a letter dated March 24, 2025.

PROPOSED CORRECTIVE ACTION

Permitting

A SCDES underground injection control (UIC) permit application has been prepared and will be submitted concurrently with the CAP to the UIC program at the SCDES. A memo from the State

Toxicologist's office referencing the safety of the proposed injectates (PersulfOx® and PetroFix®) for the intended remediation purpose is also attached.

ISCO – PersulfOx® Treatment

The remediation strategy proposed in the source area surficial aquifer is by in-situ chemical oxidation (ISCO) which will consist of two (2) rounds of injection. A solution of water and PersulfOx® placed by temporary underground injection wells will be utilized to oxidize the petroleum hydrocarbons in the source area. Each of the two (2) injection events will utilize twenty-five (25) temporary injection wells and will be spaced approximately six (6) weeks apart. The treatment area is approximately 1,500 square feet roughly centered around monitoring well MW-4. The injection interval extends from 10 to 30 feet below ground surface (bgs). The injection points for each application will be installed in an approximate 8 feet by 8 feet grid within the 1,500 square foot treatment area. The grid for the second application will be offset by approximately four (4) feet from the first application to maximize coverage (see Figures 3 and 4).

Both application events will utilize a combined total of 19,616 pounds of PersulfOx® mixed with 21,155 gallons of potable water to meet the stoichiometric demands of the planned ISCO approach in the source area.

The temporary injection wells will be installed using a Geoprobe 7822DT drill rig with 1.50-inch diameter probe rods and a five-foot length of ported injection rod utilized in a bottom-up injection technique. Figure 6 is a schematic diagram showing the injection well details.

Enriched Carbon – PetroFix® Treatment

Following the initial mass reduction achieved by the two (2) rounds of PersulfOx®, injection of the enriched colloidal carbon, PetroFix®, will be necessary to accomplish satisfactory contaminant reduction to meet SSTLs. There will be one (1) application of PetroFix® utilizing forty-four (44) temporary injection wells. The injection wells will be installed on a 6 feet by 6 feet grid within the 1,500 square foot treatment area. The injection interval extends from 15 to 30

feet bgs (see Figure 5). The PetroFix® application event will be performed at least three (3) months after the final application of PersulfOx®.

An estimated 4,800 pounds of PetroFix® with 240 pounds of PetroFix® electron acceptor blend, 4,800 pounds of sodium bicarbonate, and 12,974 gallons of water will be mixed and applied during the injection event.

Interim Performance Monitoring

One (1) comprehensive intermittent sampling event will be performed two (2) months following the end of the second PersulfOx® injection event to generate remedial progress data prior to the follow-up PetroFix® application. All groundwater samples (wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8D, and MW-9D) and surface water samples (SW-1 and SW-2) , along with one (1) duplicate and one (1) field blank, will be analyzed for benzene, toluene, ethylbenzene, xylenes (total), methyl-tert-butyl ether, naphthalene (BTEXMN), 1,2-dichloroethane (1,2-DCA), and eight (8) oxygenates by EPA Method 8260 and 1,2-dibromoethane by EPA Method 8011. A trip blank will also be collected during the interim sampling event and analyzed for BTEXMN, 1,2-DCA, and oxygenates by EPA Method 8260 only.

Groundwater Monitoring

Four (4) comprehensive sampling events will be performed in the four (4) quarters following the PetroFix® application event. All samples (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8D, MW-9D, SW-1, SW-2, duplicate, and field blank will be analyzed for BTEXMN, 1,2-DCA, oxygenates, and 1,2-dibromoethane. A trip blank will be collected during each sampling event and analyzed for BTEXMN, 1,2-DCA, and oxygenates by EPA Method 8260 only.

Sulfate, nitrate, nitrite, total and dissolved iron and manganese, and total aluminum and calcium are recommended by Regenesis (the manufacturer of PersulfOx® and PetroFix®) as additional monitoring parameters in select monitoring wells (MW-4, MW-6, and MW-7). These wells will be analyzed for the additional parameters prior to injection activities to establish a baseline and at the beginning of each comprehensive sampling event.

Following the quarterly groundwater sampling events detailed above and SCDES approval, all monitoring wells at the site will be properly abandoned by a South Carolina licensed driller.

Contingency Plan

In the event that interim performance monitoring indicates that the planned ISCO approach is unsuccessful in achieving mass reduction, alternative techniques will be utilized with remaining approved funds to reach site-closure. EnviroSouth will submit addendums to the Corrective Action Plan and Underground Injection Control Permit, as necessary, in the event that a contingency plan is required.

Spill Prevention

The sodium persulfate mixture will come in sealed 55-pound plastic bags and will not be opened until ready for mixing. The solution of water and sodium persulfate will be contained in plastic tanks/totes with secured lids during the mixing and injection process. A spill containment kit will be onsite at all times during the operation. The kit will contain absorbent pads, socks and booms, absorbent clay, and a wet-vac capable of capturing any spills or leaks that may arise during the operation.

The colloidal carbon mixture will come in sealed 270-gallon totes or 55-gallon drums and will not be opened until ready for mixing. The solution of water and colloidal carbon will be contained in plastic tanks/totes with secured lids during the mixing and injection process. A spill containment kit will be onsite at all times during the operation. The kit will contain absorbent pads, socks and booms, absorbent clay, and a wet-vac capable of capturing any spills or leaks that may arise during the operation.

Waste Materials

Sodium persulfate bags will be emptied of all contents and placed in heavy-duty contractor trash bags daily for future disposal at an approved landfill.

Colloidal carbon totes or drums will be emptied of all contents and stored on-site during injection activities. The empty totes and drums will be transported in bulk to an approved landfill for disposal.

Sodium bicarbonate (baking soda) bags will be emptied of all contents and placed in heavy-duty contractor trash bags daily for future disposal at an approved landfill.

Spent absorbent pads, socks, booms, and absorbent clay necessary to manage spills or leaks will be managed as investigation derived waste (IDW) and will be placed in labeled 55-gallon steel drums and disposed under manifest control at an approved landfill.

Equipment Deactivation

After completion of each injection application, all equipment brought to the site will be removed.

Parcel Information

The subject property and adjoining properties tax parcel information are attached.

Site-Specific Health and Safety Plan

A site-specific health and safety plan for this work is attached for information purposes only.

Pertinent Contacts

South Carolina Department of Environmental Services

SCDES Project Manager: Mr. Zach Griffith
Telephone Number: (803) 898-0606

Environmental Consultant

Contractor:	EnviroSouth
Site Contact:	Mr. William Lyons, P.G.
Telephone Number:	(864) 979-7862
Address:	3440 Augusta Road
	Greenville, South Carolina 29605

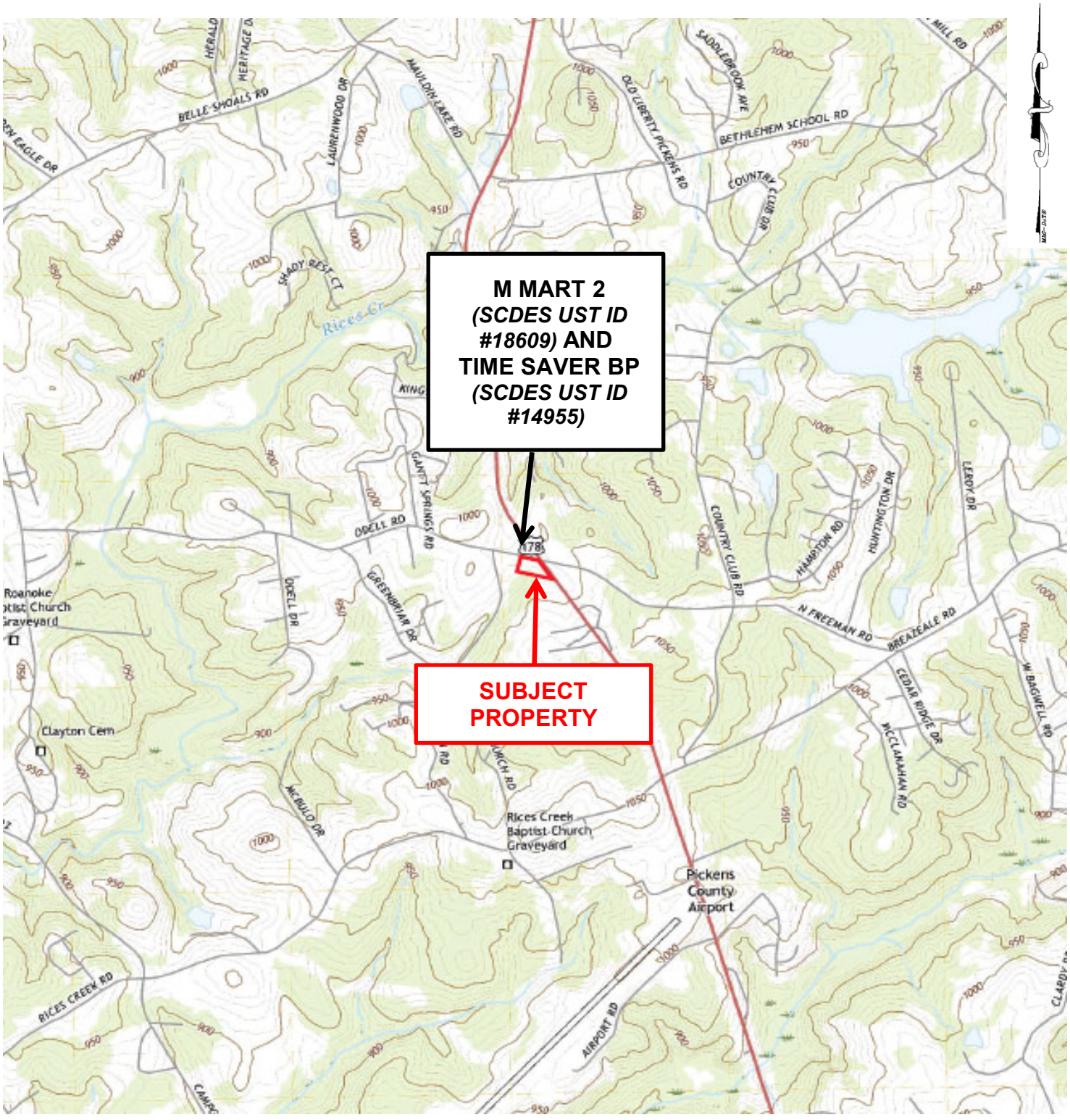
Chemical Manufacturer

Injectate:	PersulfOx® & PetroFix®
Provider:	Regenesis
Contact:	Mr. Daniel Pile
Telephone:	(470) 757-8560
Address:	1101 Calle Sombra
	San Clemente, California 92673

Implementation Schedule

A Gantt chart showing the proposed implementation schedule is attached.

FIGURES



SOURCE: USGS 7.5' QUADRANGLE MAP 2020, LIBERTY, SC

ENVIROSOUTH
Environmental Consultants

SITE VICINITY MAP

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

JOB NO.: 3159	CHECKED BY: TFD	FIGURE: 1
SCALE: NOT SHOWN	DRAWN BY: BD	DATE: 06/07/2023

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL

MW-8D = DEEPER AQUIFER MONITORING WELL

SW-1 = SURFACE WATER SAMPLE LOCATION

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

O'DELL ROAD

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HWY

MW-5

MW-2

MW-8D

MW-4

MW-6

MW-7

MW-9D

MW-3

MW-1

DOLLAR GENERAL
113 O'DELL ROAD

CONCRETE DUMPSTER PAD

DETENTION POND

SW-2

SW-1

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE 10/03/2023	DRAWN BY BD	CHECKED BY TFD	SCALE AS SHOWN	JOB NO. 3159	FIGURE 2

ENVIROSOUTH Environmental Consultants

SITE MAP

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 1ST ROUND INJECTION WELL LOCATION

= GIS PROPERTY LINE

MW-4

8'

8'

5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	3

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 1ST ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 2ND ROUND INJECTION WELL LOCATION

– – – – – – – = GIS PROPERTY LINE

MW-4

8'

8'

5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	4

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 2ND ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 3RD ROUND INJECTION WELL LOCATION

– – – – – – – = GIS PROPERTY LINE

MW-4

6'

6'

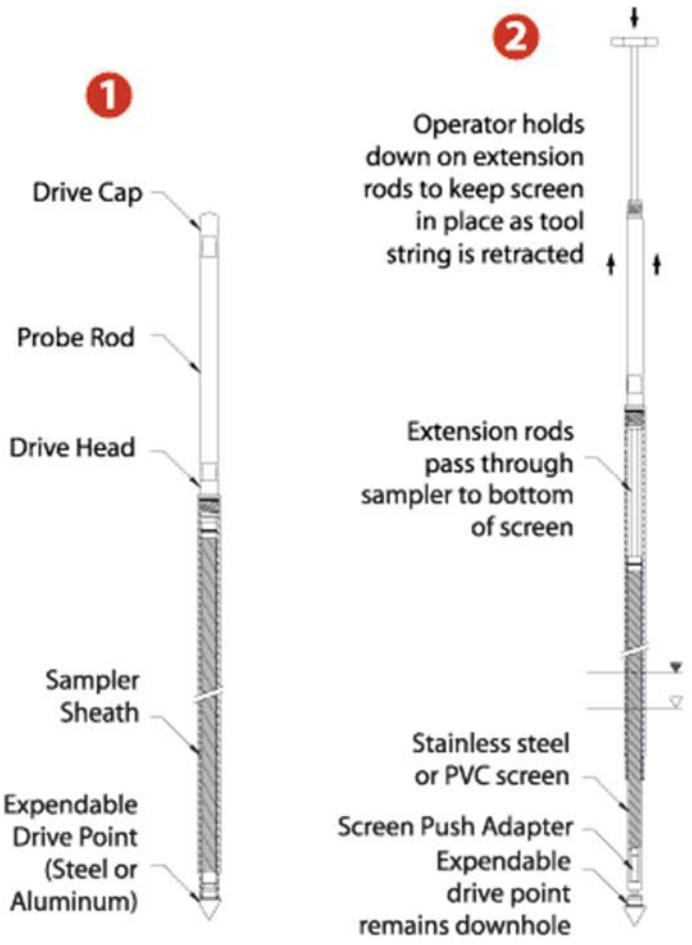
5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	5

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 3RD ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120


1
Drive Cap
Probe Rod
Drive Head
Sampler Sheath
Expendable Drive Point (Steel or Aluminum)
2
Operator holds down on extension rods to keep screen in place as tool string is retracted
Extension rods pass through sampler to bottom of screen
Stainless steel or PVC screen
Screen Push Adapter
Expendable drive point remains downhole

REGENESIS

Technology-Based Solutions for the Environment

PROJECT NAME

Liberty Dollar General

Preliminary Cost Proposal

PREPARED FOR

EnviroSouth
Trevor Hudson
thudson@envirosouth.com

PREPARED BY

REGENESIS

Patrick Singer
psinger@regenesis.com

Daniel Pile
dpile@regenesis.com

Ian Doliana
idoliana@regenesis.com

December 20, 2024

Project Summary

REGENESIS appreciates the opportunity to provide EnviroSouth our remedial design and cost estimate for the Liberty Dollar General project. This proposal includes an overview of our proposed solution, the project goals, technologies proposed, application design summary table and a treatment area map.

Proposed Solution

We propose a two-phase treatment starting with PersulfOx for overall mass reduction followed by PetroFix to address residual petroleum hydrocarbons and 1,2-Dibromoethane (EDB) impacts within the defined treatment area. These reagents will be applied via direct push injection. The PetroFix should be applied at least three months after the final PersulfOx application. Dosage rates for sodium bicarbonate is also included and can be mixed directly with the PetroFix. This is only needed if groundwater pH is lower than baseline when preparing to apply the PetroFix. Low pH will not impact the PetroFix, but may decrease biodegradation rates.

Project Goals

- Reduce BTEX and EDB impacts to below RBSLs

Technologies Proposed

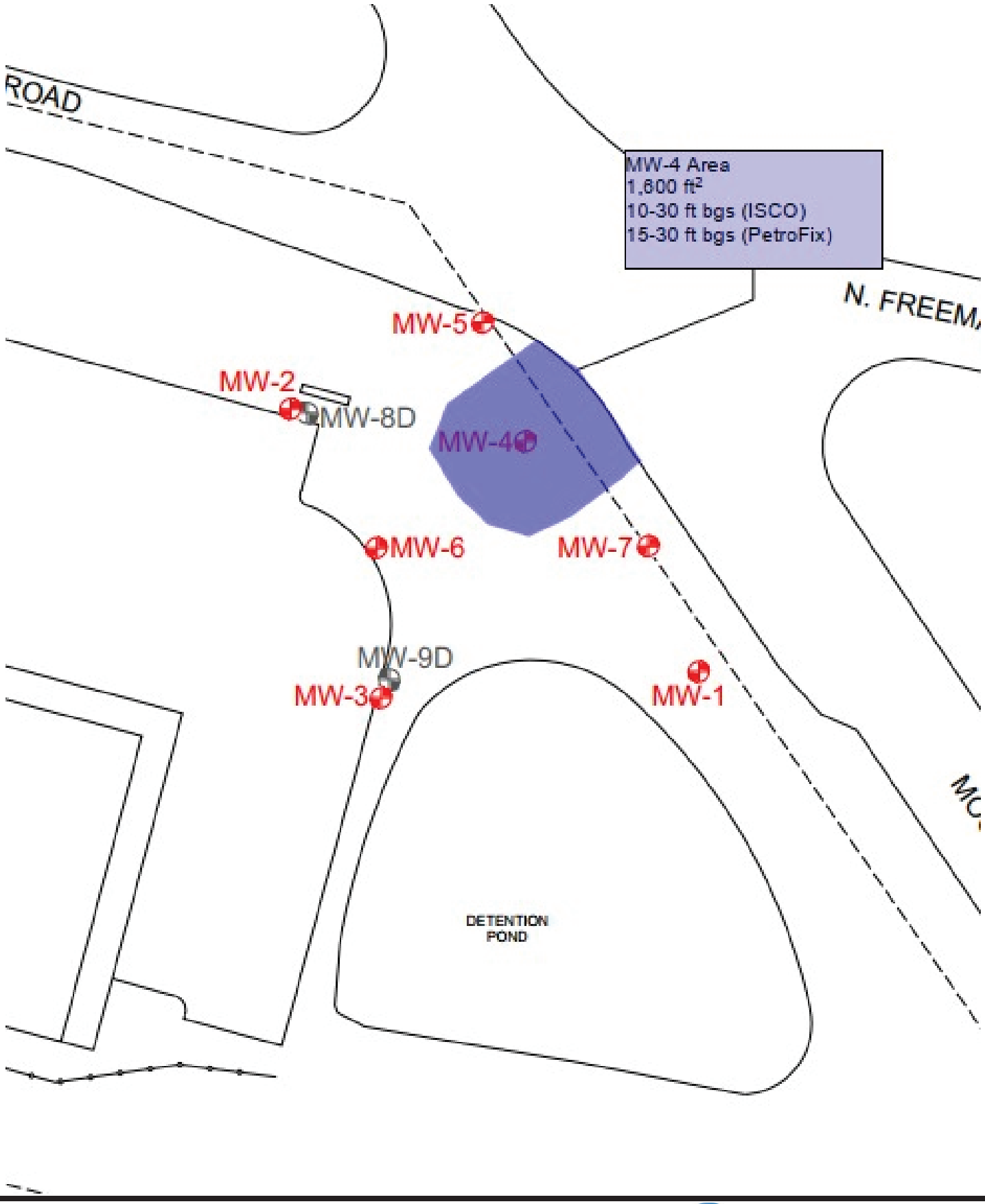
- PersulfOx®
- PetroFix®

ISCO Mass Reduction		
Design Parameters	**Unit**	**Value**
Treatment Area	ft sq.	1,600
Top Treat Depth (ft. bgs)		10
Bottom Treat Depth (ft. bgs)		30
Vertical Treatment Interval	ft	20
Soil Type		silt
Porosity	cm3/cm3	0.40
Effective Porosity	cm3/cm3	0.20
Hydraulic Gradient	ft/ft	0.025
GW Velocity	ft/yr	6.60
Application Summary		
Spacing Within Rows (ft)		8
Spacing Between Rows (ft)		8
Injection Points (per app.)		25
Number of Applications		2
PersulfOx Solution %		10%
Eff. Pore Voume Occupancy		46%
Product Dosage		
PersulfOx	lbs	19,616
Water Required	gallons	21,155
Total Volume Applied	gallons	22,136

MW-4 PetroFix		
Design Parameters	**Unit**	**Value**
Treatment Area	ft	1,600
Top Treat Depth	ft	15
Bot Treat Depth	ft	30
Vertical Treatment Interval	ft	15
Soil Type		Fine >75% Silt/Clay
Observed Mobile LNAPL		No
Total BTEX	mg/L	0.78
TPH-G	mg/L	1.94
TPH-D	mg/L	0.00
Application Summary		
Spacing Within Rows	ft	6
Spacing Between Rows	ft	6
Injection Points		44
Eff. Pore Volume Occupancy		50.0%
Product Dosage		
PetroFix Remedial Fluid	lb	4,800
Electron Acceptor Blend	lb	240
*Sodium Bicarbonate	lbs	4,800
Water Required	gallons	12,974
Total Volume Applied	gallons	13,465
*Not supplied by REGENESIS		

Technical Resources

- Combined Remedy Case Study: Large Dilute BTEX Plume Successfully Treated To Meet Concentration Milestones
- PersulfOx® Technical Bulletin: Advantages of the Persulfox Catalyst
- PetroFix® Case Study - Success at 6 UST Sites
- PetroFix Case Study - Former Gas Station Closure and +99% Reductions - CO



Liberty Dollar General

EnviroSouth

December 20, 2024

Figure 1-Treatment Area Map

REGENESIS

Technology-Based Solutions for the Environment

Detailed Design Table

Project Information		
Liberty Dollar General		
Liberty, South Carolina		
ISCO Mass Reduction		
Prepared For:		
EnviroSouth, Inc.		
Target Treatment Zone (TTZ) Info	**Unit**	**Value**
Treatment Area	ft^2	1,600
Top Treatment Depth	ft	10.0
Bottom Treatment Depth	ft	30.0
Vertical Treatment Interval	ft	20.0
Treatment Zone Volume	ft^3	32,000
Treatment Zone Volume	cy	1,185
Soil Type	-	silt
Porosity	cm^3/cm^3	0.40
Effective Porosity	cm^3/cm^3	0.20
Treatment Zone Pore Volume	gals	95,751
Treatment Zone Effective Pore Volume	gals	47,875
Soil Density	g/cm^3	1.5
Hydraulic Conductivity	ft/day	0.1
Hydraulic Gradient	ft/ft	0.025
GW Velocity	ft/yr	6.6
Application Design Summary		
Treatment Area	ft^2	1600
Top Treatment Depth	ft bgs	10
Bottom Treatment Depth	ft bgs	30
Application Method	-	**Direct Push**
Spacing within Rows	ft	8.0
Spacing Between Rows	ft	8.0
Injection Points (per app.)	-	25
Number of Applications	-	**2**
Total PersulfOx to be Applied	**lbs**	**19,616**
PersulfOx per Application	lbs	9,808
PersulfOx Solution	**%**	**10.0%**
Volume of Water	gals	21,155
Total Application Volume	**gals**	**22,136**
Application Volume per Foot	gals	22
Injection Volume per Point	gals	443
Application Dosing		
PersulfOx Required	**lbs**	**19,616**
Prepared By:	Ian Doliana - Design Specialist	
Date:	12/31/2024	

Detailed Design Table

REGENESIS

PetroFix Application Summary
Grid Estimate
Liberty Dollar General
MW-4 PetroFix

PetroFIX Remediation Fluid

PetroFix Amount	4,800 lb
Electron Acceptor Amount	240 lb
Treatment Surface Area	1,600 ft^2
Injection Points	44
Point Spacing	6.0 ft
Top of Treatment Interval	15.0 ft bgs
Bottom of Treatment Interval	30.0 ft bgs
Treatment Volume	889 yd^3
PetroFix Dose	5.4 lb/yd^3

Total Volume	13,465 gal
Product Volume	491 gal
Water Volume	12,974 gal
Injection Volume Per Point	306 gal
Injection Volume Per Vertical Foot	20 gal
Product/Point	11.2 gal
Water/Point	294.9 gal
Soil Type	Fine >75% Silt/Clay
Effective Pore Volume Fill %	50%

Mix Tank Volume*	275 gal
Dilution Factor	27.4 x
PetroFix per Mix Tank	10.0 gal
Water Per Mix Tank	265.0 gal
Electron Acceptor per Mix Tank	4.9 lb
Number of Batches Required	49.0

**Adjust tank volume to that used in field.*

AREA NOTES

If the local pH is lower than baseline after the PersulfOX applications, add 4,800 lbs of sodium bicarbonate with the PetroFix.

Reported Groundwater Concentrations (mg/L)

Benzene	0.179	Isopropylbenzene	0.000
Toluene	0.305	Naphthalenes	0.011
Ethylbenzene	0.093	MTBE	0.000
Xylenes	0.198	TPH-GRO	1.938
Trimethylbenzenes	0.000	TPH-DRO	0.000
Butylbenzene	0.000	EDB	0.041

Date Generated: 12/31/2024

Prepared By: Ian Doliana

IDoliana@regenesis.com, 814-418-4655

www.petrofix.com

Pricing

Below is the cost estimate to provide the remediation technologies and execute the design provided in this proposal. Please also see the assumptions and qualifications section. **Sodium bicarbonate is not supplied by REGENESIS if needed.**

Description	Price	Qty	Subtotal
PersulfOx® - Event 1	~~$2.95~~ $2.65 Discount ($) -0.3	9807.8	$25,990.67
Estimated Shipping and Tax on Products (Event 1)			$4,678.32
PersulfOx® - Event 2	~~$2.95~~ $2.65 Discount ($) -0.3	9807.8	$25,990.67
Estimated Shipping and Tax on Products (Event 2)			$4,678.32
PetroFix	$5.74	4800	$27,552
PetroFix EA Blend	$0	240	$0
Estimated Shipping and Tax on Products (PetroFix)			$4,959.36
Total			**$93,849.34**
Total Savings			**$5,884.68**

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

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

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

Technical Approach

PersulfOx is an *in-situ* chemical oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through powerful, yet controlled, chemical reactions. Contaminant destruction is achieved through both direct and radical oxidation. A sodium persulfate-based technology, PersulfOx employs a patented self-contained, amorphous silica catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface. The silica catalyst possesses a large surface area which traps contaminants and allows a surface for chemical oxidation to occur. Also, present on the surface of the catalyst are silanol function groups which react with the hydrogen ions produced during radical formation, allowing radical formation to proceed.

PetroFix is a unique activated carbon remedial fluid (carbon milled to a diameter of 1 to 2 micrometers) paired with soluble, anaerobic electron acceptors designed to remediate dissolved hydrocarbons. This allows the product to be injected as a fluid using low pressure. PetroFix is commonly used for source and plume treatment, excavation polishing, and barrier applications. PetroFix features:

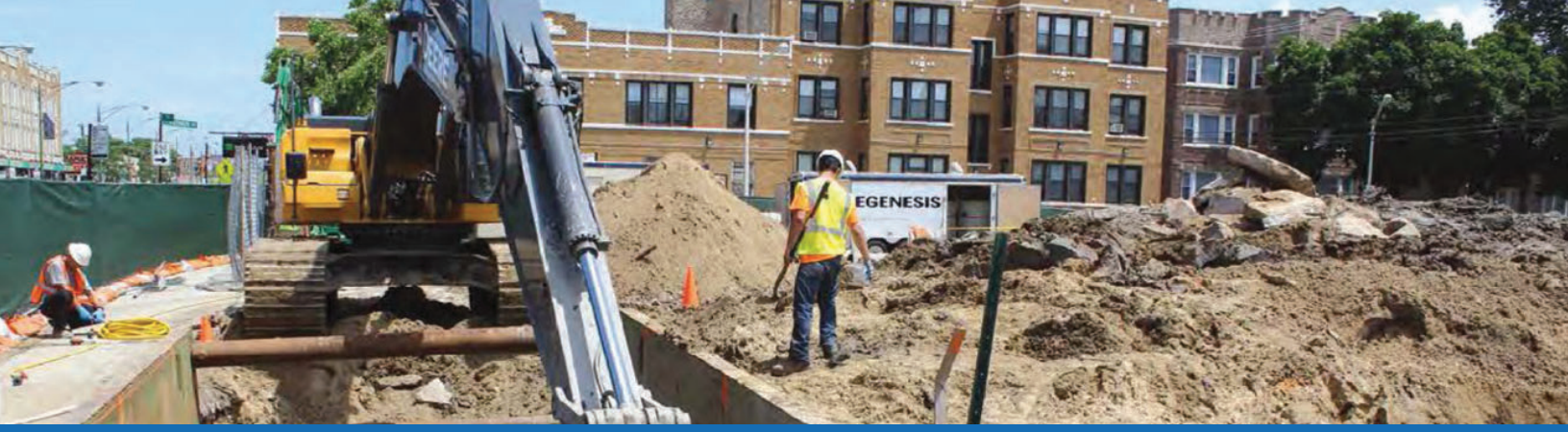
- Provides rapid and sustained results allowing for faster and more certain site closure
- Dual-technology approach relying on both carbon sorption and anaerobic biodegradation
- Low-pressure "flooding" vs high pressure "fracturing" improves distribution and reduces surfacing
- Safe to handle because is non-hazardous and shipped as a liquid (no fugitive carbon dust)
- Mitigates hydrocarbon back diffusion which is a cause of concentration rebound

PetroFix is typically self-applied and is supported by large library of application instruction, technical bulletin, and videos (www.petrofix.com/resources). Based on our experience at hundreds of sites we have developed recommendations for the different phases of your project which are summarized on the next page. Please see application guideline sheets that may provided with this proposal that give hyperlinks to key documents and video.

Treatment Zone Design Parameters

The table below summarizes pertinent treatment zone information used for developing the remedial application design. Where site-specific data were unavailable, default values based on soil type were used.

Target Treatment Zone (TTZ) Info	Unit	Value
Treatment Area	ft^2	1,600
Top Treatment Depth	ft	10.0
Bottom Treatment Depth	ft	30.0
Vertical Treatment Interval	ft	20.0
Treatment Zone Volume	ft^3	32,000
Treatment Zone Volume	cy	1,185
Soil Type	-	silt
Porosity	cm^3/cm^3	0.40
Effective Porosity	cm^3/cm^3	0.20
Treatment Zone Pore Volume	gals	95,751
Treatment Zone Effective Pore Volume	gals	47,875
Soil Density	g/cm^3	1.5
Hydraulic Conductivity	ft/day	0.1
Hydraulic Gradient	ft/ft	0.025
GW Velocity	ft/yr	6.6



Acknowledgement

This scope and associated costs are budgetary and should not be considered final. Listed below are the next steps to secure a final design and cost estimate from REGENESIS.

Steps to Final Design and Scope of Work

1. Signature notifying REGENESIS to proceed with final design.
2. REGENESIS technical team contacts EnviroSouth to review final scope of work and provide detailed design and cost estimate
3. Provide Detailed Remediation Services Scope of Work, if applicable.
4. Confirm Implementation Schedule
5. Submit Detailed Design and Cost Estimate to EnviroSouth for review and final approval

Signature below confirms signee accepts this preliminary scope of work and would like REGENESIS to proceed with a detailed design and cost estimate.

SIGNATURE
William Lyons

SIGNATURE
Trevor Hudson

Not yet accepted

EnviroSouth | William Lyons, Trevor Hudson

Terms & Conditions

1. **PAYMENT TERMS.** Net 90 Days. Accounts outstanding after 90 days will be assessed 1.5% monthly interest. Volume discount pricing will be rescinded on all accounts outstanding over 90 days. An early payment discount of 1.5% Net 10 is available for cash or check payments only. We accept Master Card, Visa and American Express.
2. **RETURN POLICY.** A 15% re-stocking fee will be charged for all returned goods. All requests to return product must be pre-approved by seller. Returned product must be in original condition and no product will be accepted for return after a period of 90 days.
3. **FORCE MAJEURE.** Seller shall not be liable for delays in delivery or services or failure to manufacture or deliver due to causes beyond its reasonable control, including but not limited to acts of God, acts of buyer, acts of military or civil authorities, fires, strikes, flood, epidemic, war, riot, delays in transportation or car shortages, or inability to obtain necessary labor, materials, components or services through seller's usual and regular sources at usual and regular prices. In any such event Seller may, without notice to buyer, at any time and from time to time, postpone the delivery or service dates under this contract or make partial delivery or performance or cancel all or any portion of this and any other contract with buyer without further liability to buyer. Cancellation of any part of this order shall not affect Seller's right to payment for any product delivered or service performed hereunder.
4. **LIMITED WARRANTY.** Seller warrants the product(s) sold and services provided as specified on face of invoice, solely to buyer. Seller makes no other warranty of any kind respecting the product and services, and expressly DISCLAIMS ALL OTHER WARRANTIES OF WHATEVER KIND RESPECTING THE PRODUCT AND SERVICES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND NON-INFRINGEMENT.
5. **DISCLAIMER.** Where warranties to a person other than buyer may not be disclaimed under law, seller extends to such a person the same warranty seller makes to buyer as set forth herein, subject to all disclaimers, exclusions and limitations of warranties, all limitations of liability and all other provisions set forth in the Terms and Conditions herein. Buyer agrees to transmit a copy of the Terms and Conditions set forth herein to any and all persons to whom buyer sells, or otherwise furnishes the products and/or services provided buyer by seller and buyer agrees to indemnify seller for any liability, loss, costs and attorneys' fees which seller may incur by reason, in whole or in part, of failure by buyer to transmit the Terms and Conditions as provided herein.
6. **LIMITATION OF SELLER'S LIABILITY AND LIMITATION OF BUYER'S REMEDY.** Seller's liability on any claim of any kind, including negligence, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair or use of any goods or performance of any services covered by or furnished hereunder, shall in no case exceed the lesser of (1) the cost of repairing or replacing goods and repeating the services failing to conform to the foregoing warranty or the price of the goods and/or services or part thereof which gives rise to the claim. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, OR FOR DAMAGES IN THE NATURE OF PENALTIES.
7. **INDEMNIFICATION.** Buyer agrees to defend and indemnify seller of and from any and all claims or liabilities asserted against seller in connection with the manufacture, sale, delivery, resale or repair or use of any goods, and performance of any services, covered by or furnished hereunder arising in whole or in part out of or by reason of the failure of buyer, its agents, servants, employees or customers to follow instructions, warnings or recommendations furnished by seller in connection with such goods and services, by reason of the failure of buyer, its agents, servants, employees or customers to comply with all federal, state and local laws applicable to such goods and services, or the use thereof, including the Occupational Safety and Health Act of 1970, or by reason of the negligence or misconduct of buyer, its agents, servants, employees or customers.

8. **EXPENSES OF ENFORCEMENT.** In the event seller undertakes any action to collect amounts due from buyer, or otherwise enforce its rights hereunder, Buyer agrees to pay and reimburse Seller for all such expenses, including, without limitation, all attorneys and collection fees.
9. **TAXES.** Liability for all taxes and import or export duties, imposed by any city, state, federal or other governmental authority, shall be assumed and paid by buyer. Buyer further agrees to defend and indemnify seller against any and all liabilities for such taxes or duties and legal fees or costs incurred by seller in connection therewith.
10. **ASSISTANCE AND ADVICE.** Upon request, seller in its discretion will furnish as an accommodation to buyer such technical advice or assistance as is available in reference to the goods and services. Seller assumes no obligation or liability for the advice or assistance given or results obtained, all such advice or assistance being given and accepted at buyer's risk.
11. **SITE SAFETY.** Buyer shall provide a safe working environment at the site of services and shall comply with all applicable provisions of federal, state, provincial and municipal safety laws, building codes, and safety regulations to prevent accidents or injuries to persons on, about or adjacent to the site.
12. **INDEPENDENT CONTRACTOR.** Seller and Buyer are independent contractors and nothing shall be construed to place them in the relationship of partners, principal and agent, employer/employee or joint ventures. Neither party will have the power or right to bind or obligate the other party except as may be expressly agreed and delegated by other party, nor will it hold itself out as having such authority.
13. **REIMBURSEMENT.** Seller shall provide the products and services in reliance upon the data and professional judgments provided by or on behalf of buyer. The fees and charges associated with the products and services thus may not conform to billing guidelines, constraints or other limits on fees. Seller does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the “Government”). In any circumstance where seller may serve as a supplier or subcontractor to an entity that seeks reimbursement from the Government for all or part of the services performed or products provided by seller, it is the sole responsibility of the buyer or other entity seeking reimbursement to ensure the products and services and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity that seeks reimbursement from the Government, seller does not knowingly present or cause to be presented any claim for payment to the Government.
14. **APPLICABLE LAW/JURISDICTION AND VENUE.** The rights and duties of the parties shall be governed by, construed, and enforced in accordance with the laws of the State of California (excluding its conflict of laws rules which would refer to and apply the substantive laws of another jurisdiction). Any suit or proceeding hereunder shall be brought exclusively in state or federal courts located in Orange County, California. Each party consents to the personal jurisdiction of said state and federal courts and waives any objection that such courts are an inconvenient forum.
15. **ENTIRE AGREEMENT.** This agreement constitutes the entire contract between buyer and seller relating to the goods or services identified herein. No modifications hereof shall be binding upon the seller unless in writing and signed by seller's duly authorized representative, and no modification shall be effected by seller's acknowledgment or acceptance of buyer's purchase order forms containing different provisions. Trade usage shall neither be applicable nor relevant to this agreement, nor be used in any manner whatsoever to explain, qualify or supplement any of the provisions hereof. No waiver by either party of default shall be deemed a waiver of any subsequent default.

PERSULFOX SAFETY DATA SHEET

REGENESIS

Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier	**PersulfOx®**
Other means of identification	None.
Recommended use	Soil and Groundwater Remediation.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Regenesis
Address	1011 Calle Sombra San Clemente, CA 92673
Telephone	949-366-8000
E-mail	CustomerService@regenesis.com
Emergency phone number	CHEMTREC® at 1-800-424-9300 (International)

2. Hazard(s) identification

Physical hazards	Oxidizing solids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement May intensify fire; oxidizer. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Precautionary statement

Prevention Keep away from heat. Keep/Store away from clothing and other combustible materials. Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Silicic Acid, sodium salt, sodium silicate	1344-09-8	≤10
Sodium Persulfate	7775-27-1	≥90

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water spray, fog (flooding amounts).

Unsuitable extinguishing media Do not use water unless flooding amounts are available. Material reacts with water. Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates.

Specific hazards arising from the chemical Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed. Combustion products may include: sulfur oxides.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

Specific methods Cool containers exposed to flames with water until well after the fire is out. Avoid dust formation.

General fire hazards May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Stop the flow of material, if this is without risk. Spillage collected should be monitored for signs of reaction or decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water.

Large Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Minimize dust generation and accumulation. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Place all material into loosely covered plastic containers for later disposal. For waste disposal, see section 13 of the SDS. Wear appropriate protective equipment and clothing during clean-up.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from heat. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Avoid contamination. Wear appropriate personal protective equipment (See Section 8). Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS). Recommended storage temperature: less than 40°C.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium Persulfate (CAS 7775-27-1)	TWA	0.1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use dust-tight, unvented chemical safety goggles when there is potential for eye contact.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Frequent change is advisable. Rubber, neoprene or PVC gloves are recommended.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Respirator type: approved respirator with P100 filters.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Free-flowing powder
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	11.5 (10% suspension/water) (10 % solution, 77 °F (25 °C))
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Oxidizer.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.5 - 1.8 (68 °F (20 °C))

Solubility(ies)

Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Decomposition will occur upon heating.
Viscosity	Not available.

Other information

Flammability	Non-combustible.

10. Stability and reactivity

Reactivity	Greatly increases the burning rate of combustible materials.
Chemical stability	Decomposes on heating.
Possibility of hazardous reactions	Oxidizing, avoid contact with reducing agents.
Conditions to avoid	Heat. Contact with incompatible materials. Avoid dust formation.
Incompatible materials	Acids. Bases. Combustible material. Reducing agents. Metals. Organic compounds.
Hazardous decomposition products	Oxygen. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Dust may irritate respiratory system.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Dusts may irritate the respiratory tract, skin and eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May cause allergic respiratory and skin reactions. May cause respiratory irritation.

Components	Species	Test Results
Silicic Acid, sodium salt, sodium silicate (CAS 1344-09-8)		
Acute		
Oral		
LD50	Rat	1280 mg/kg
Sodium Persulfate (CAS 7775-27-1)		
Acute		
Dermal		
LD50	Rabbit	> 10000 mg/kg
Inhalation		
LC50	Rat	> 5.1 mg/l, 4 Hours
Oral		
LD50	Rat	895 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Silicic Acid, sodium salt, sodium silicate (CAS 1344-09-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	247 mg/l, 4.2 days
Sodium Persulfate (CAS 7775-27-1)			
Aquatic			
Crustacea	EC50	Daphnia	133 mg/l, 48 hours
Fish		Bluegill (Lepomis macrochirus)	771 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Label(s)	5.1
Packing group	III
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	62, IB8, IP3, T1, TP33
Packaging exceptions	152
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	III
Environmental hazards	No
ERG Code	5L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1479
UN proper shipping name	OXIDIZING SOLID, N.O.S. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-Q
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - Yes

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium Persulfate (CAS 7775-27-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	12-February-2015
Revision date	02-April-2015
Version #	02
Further information	HMIS® is a registered trade and service mark of the American Coatings Association (ACA).
HMIS® ratings	Health: 2* Flammability: 0 Physical hazard: 1
NFPA ratings	
Disclaimer	Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

PETROFIX SAFETY DATA SHEET

SAFETY DATA SHEET

1. Identification

Product identifier **PetroFix**

Other means of identification None.

Recommended use Remediation of contaminants in soil and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name REGENESIS

Address 1011 Calle Sombra
San Clemente, CA 92673 USA

General information 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

USA, Canada 1-800-424-9300

International 1-703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Activated carbon <10 µm	7440-44-0	>25
Calcium sulfate dihydrate	10101-41-4	<10
Additive	-	<2

Composition comments All concentrations are in percent by weight unless otherwise indicated.
Components not listed are either non-hazardous or are below reportable limits.
Chemical ingredient identity and/or concentration information withheld for some or all components present is confidential business information (trade secret), and is being withheld as permitted by 29 CFR 1910.1200(i).

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, nitrogen oxides, sulfur oxides, calcium oxide.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	This material will not burn until the water has evaporated. Residue can burn. When dry may form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Activated carbon <10 µm (CAS 7440-44-0)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Activated carbon <10 µm (CAS 7440-44-0)	TWA	2 mg/m3	Respirable fraction.
Calcium sulfate dihydrate (CAS 10101-41-4)	TWA	10 mg/m3	Inhalable fraction.

Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Aqueous suspension.
Color	Black.
Odor	Odorless.
Odor threshold	Not available.
pH	8 - 10
Melting point/freezing point	32 °F (0 °C).
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Vapor pressure	Property has not been measured.
Vapor density	Property has not been measured.
Relative density	Property has not been measured.
Solubility(ies)	
Solubility (water)	Not determined.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture. Not applicable, product is a mixture.
Auto-ignition temperature	Property has not been measured.
Decomposition temperature	Property has not been measured.
Viscosity	Not available.
Other information	
Density	Property has not been measured.
Explosive properties	Not explosive.
Flammability	This material will not burn until the water has evaporated.
Kinematic viscosity	Property has not been measured.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

Conditions to avoid	May generate combustible dust if material dries. Contact with incompatible materials. Avoid drying out product.
Incompatible materials	Acids. Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Spray mist may irritate the respiratory system. For dry material: Dust may irritate respiratory system.
Skin contact	Prolonged or repeated exposure may cause minor irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Activated carbon <10 µm (CAS 7440-44-0)		
Acute		
Oral		
LD50	Rat	> 10000 mg/kg

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation. Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer. Based on available data, the classification criteria are not met.
Skin sensitization	This product is not expected to cause skin sensitization. Based on available data, the classification criteria are not met.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Based on available data, the classification criteria are not met.
Carcinogenicity	Not classifiable as to carcinogenicity to humans. Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects. Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Not classified. Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Not classified. Based on available data, the classification criteria are not met.
Aspiration hazard	Not an aspiration hazard. Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)	All components of the mixture on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Calcium sulfate dihydrate (CAS 10101-41-4)

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Activated carbon <10 µm (CAS 7440-44-0)
Calcium sulfate dihydrate (CAS 10101-41-4)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15-February-2018

Revision date 02-December-2021

Version # 02

HMIS® ratings

Health: 1
Flammability: 1
Physical hazard: 0
Personal protection: B

NFPA ratings

Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

1. Identification

Product identifier **PetroFix Electron Acceptor Blend**

Other means of identification None.

Recommended use Remediation of soils and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Regenesis

Address 1011 Calle Sombra
San Clemente, CA 92673 USA

General information 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

USA, Canada, Mexico 1-800-424-9300

International 1-703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2B

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement Causes eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium sulfate	7783-20-2	40 - 60
Sodium nitrate	7631-99-4	40 - 60

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: nitrogen oxides, sulfur oxides, ammonia.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection	Unvented, tight fitting goggles should be worn in dusty areas.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Wear NIOSH approved respirator appropriate for airborne exposure at the point of use. Appropriate respirator selection should be made by a qualified professional. Recommended use: Wear respirator with dust filter.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	This material will not burn.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Heat.
Incompatible materials	Strong reducing agents. Strong acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Causes eye irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Further information	Nitrate poisoning resulting in methemoglobinemia manifested as cyanosis is rare, but possible for people with specific susceptibility traits.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	The product solely consists of inorganic compounds which are not biodegradable.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ammonium sulfate	7783-20-2	40 - 60
Sodium nitrate	7631-99-4	40 - 60

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

US. New Jersey Worker and Community Right-to-Know Act

Sodium nitrate (CAS 7631-99-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

US. Rhode Island RTK

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15-August-2018

Revision date -

Version # 01

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

REAGENT SPECIFICATION SHEET

PersulfOx® Technical Description

PersulfOx is an *In Situ* Chemical Oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through powerful, yet controlled, chemical reactions. A sodium persulfate-based technology (figure 1), PersulfOx employs a patented catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface.

Typically, sodium persulfate is activated with the addition of heat, chelated metals, hydrogen peroxide, or base in order to generate sulfate radicals. These activation processes are inherently complex, costly and can pose additional health and safety risks. In comparison, PersulfOx is a relatively safe and easy-to-use ISCO agent with a built-in catalyst which activates the persulfate component, generating contaminant-destroying free radicals without the need for the addition of a separate activator. The equation below shows the net complete oxidation of toluene, a constituent of gasoline, by PersulfOx:

Example of PersulfOx

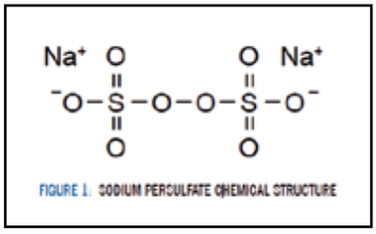


FIGURE 1: SODIUM PERCULFATE CHEMICAL STRUCTURE

For a list of treatable contaminants with the use of PersulfOx, view the Range of Treatable Contaminants Guide

Chemical Composition

- Sodium Persulfate - CAS #7775-27-1
- Sodium Silicate - CAS #1344-09-8

Properties

- pH - 7 to 11.5 at 25°C
- Appearance – White, free-flowing powder, clear to cloudy when mixed with water
- Odor – Not detectable
- Vapor Pressure – None
- Chemical Hazard Classification - Class 5.1 Oxidizer

Storage and Handling Guidelines

Storage
Store locked up
Keep away from heat
Store in a cool, dry place out of direct sunlight

Handling
Minimize dust generation and accumulation
Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces

PersulfOx® Technical Description

Storage (continued)
Store in original tightly closed container
Store in a well-ventilated place
Do not store near combustible materials
Store away from incompatible materials
Recommended to store at less than 40°C
Provide appropriate exhaust ventilation in places where dust is formed

Handling (continued)
Avoid mixing with combustibles
Avoid contamination
Keep away from clothing and other combustible materials
Wear appropriate personal protective equipment
Avoid breathing dust
Avoid contact with eyes, skin, and clothing
Avoid prolonged exposure
Do not taste or swallow
When using, do not eat, drink or smoke
Wear appropriate personal protective equipment
Wash hands thoroughly after handling
Observe good industrial hygiene practices

Applications

- PersulfOx is mixed with water at a rate of 5% to 20% prior to application.
- For most applications, REGENESIS suggests a 10-15% solution. The resulting mixture has viscosity similar to water.
- Injects into formation through direct push injection points, injection wells or other injection delivery systems.

Application instructions for this product are contained here PersulfOx Application Instructions.

Health and Safety

Material is relatively safe to handle; however, avoid contact with eyes, skin and clothing. OSHA Level D personal protection equipment including: vinyl or rubber gloves, eye protection, and dust mask are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: PersulfOx SDS.

©2015 All rights reserved. Regenesis and PersulfOx® are registered trademarks of Regenesis Bioremediation Products. All other trademarks are the property of their respective owners.

PetroFix™ Specification Sheet

PetroFix Technical Description

PetroFix is a new remedial technology designed to treat petroleum fuel spills in soil and groundwater. A simple-to-use fluid that can be applied under low pressure into the subsurface or simply poured into open excavations, PetroFix offers a cost-effective solution for environmental practitioners and responsible parties to address petroleum hydrocarbon contaminants quickly and effectively.

PetroFix has a dual function; quickly removing hydrocarbons from the dissolved phase, by absorbing them onto the activated carbon particles, while added electron acceptors stimulate hydrocarbon biodegradation in-place. PetroFix does not require high pressure "fracking" for application and can be applied with ease using readily available equipment associated with direct push technology.

The remedial fluid is a highly concentrated water-based suspension consisting of micron-scale activated carbon and biostimulating electron acceptors. PetroFix has a viscosity higher than water and is black in appearance. Its environmentally-compatible formulation of micron-scale activated carbon (1-2 microns) is combined with both slow and quick-release inorganic electron acceptors. A blend of additional electron acceptors is included along with the PetroFix fluid. Practitioners can select between a sulfate and nitrate combination blend (recommended), or sulfate only for the additional electron acceptors required.

PetroFix Design Assistant

REGENESIS has developed a proprietary web-based design assistant called PetroFix Design Assistant™ that provides environmental professionals the ability to input their site parameters, determine the required product amount, and order the product through REGENESIS' customer service. The PetroFix Design Assistant includes defaults and warnings throughout the process to guide users toward effective designs that will offer best results.

To access the PetroFix Design Assistant, create an account and login at www.PetroFix.com

PetroFIX™ Remediation Fluid

PetroFix Fluid Chemical Composition	Properties
Activated Carbon - CAS 7440-44-0 > 30% Calcium Sulfate Dihydrate - CAS 10101-41-4 < 10%	**Appearance:** Black Fluid **Viscosity:** 1500-3500 cP (corn syrup-like) **pH:** 8-10

PetroFix Electron Acceptor Powder Chemical Composition	Properties
OPTION 1 - EA Blend (preferred) Sodium Nitrate - CAS 7631-99-4, 50% Ammonium Sulfate - CAS 7783-20-2, 50% OPTION 2 - EA Blend NF Potassium Sulfate - CAS 7778-80-5, 50% Ammonium Sulfate - CAS 7783-20-2, 50%	**Appearance:** White Powder

Storage and Handling Guidelines

Storage:

- Store away from incompatible materials
- Store in original closed container
- Store at temperatures between 40°F and 95°F
- Do not allow material to freeze or store in direct sunlight.
- Freezing and hot weather technical memo can be accessed at www.petrofix.com/resources or at this ***link*** here.
- Dispose of waste and residues in accordance with local authority requirements

Handling:

- Never add additives to solution prior to mixing with water
- Wear appropriate personal protective equipment
- Do not taste or ingest
- Observe good industrial hygiene practices
- Wash hands after handling

Applications

PetroFix is mixed with water on-site and easily applied onto the sub-surface using low pressure injections, or mixed in excavations. PetroFix is compatible with and can be used with ORC Advanced® to expedite rates of biodegradation. For more information about co-application with ORC Advanced, contact REGENESIS.

REGENESIS®

Corporate Headquarters
1011 Calle Sombra, San Clemente, CA 92673 USA
Tel: +1 949.366.8000

European Offices (UK, Ireland, Belgium and Italy)
Email: europe@regenesis.com
Tel: +44 (0) 1225 61 81 61

www.regenesis.com

©2020 All rights reserved. REGENESIS is a registered trademark and PetroFix and the PetroFix Design Assistant are trademarks of REGENESIS Bioremediation Products.

PetroFIX® Remediation Fluid

Pre- and Post-PetroFix Performance Monitoring Parameters

Analytical Parameter	Method
Recommended	
Contaminants of Concern (COC's)	Varies by site. Recommend a minimum of BTEX analysis plus Total Petroleum Hydrocarbon (TPH) measurements for gasoline (TPH-G) and/or diesel range contamination (TPH-D) based on contaminant source.
pH	Meter reading taken in flow-through cell (DO can also be measured with a Hach kit)
Dissolved Oxygen (DO)	
Oxidation Reduction Potential (ORP)	
Electral Conductivity (EC)	
Cations - Ca, Mn, Al*	EPA Method 6010
Sulfate	EPA 375.3 or EPA 9056
Nitrate	EPA 353.1 or EPA 9056
Visual Confirmation of PetroFix in Wells**	Place groundwater sample in 40 mL VOA for inspection. PetroFix shipments come with a field concentration test kit taped to the top of a drum or a tote. See the groundwater sampling guidance document via the hyperlink at the bottom of the page for more information.

MEMOS FROM STATE TOXICOLOGIST

Memorandum

To: William Lyons
EnviroSouth Environmental Consultants
wlyons@envirosouth.com

From: Ray Holberger
Environmental Risk Specialist
Environmental Affairs

Date: February 01, 2024

Re: Proposed PersulfOx Remedial Injectate

Fran Marshall and I have conducted a review of the PersulfOx specification sheet and Safety Data Sheets provided in email correspondence. Sodium Persulfate, the primary oxidizing agent in the product, would be expected to be reduced to sodium bisulfate upon contact with dissolved organics in groundwater. Neither the sodium persulfate, the sodium silicate activator, nor the sodium bisulfate degradation product would be expected to substantially contribute to the degradation of the quality of off-Site groundwater used for drinking water or released in the aquatic receiving environment.

The Secondary Maximum Contaminant Level (MCL) for sulfate, a naturally occurring potential PersulfOx degradation product, is 250 mg/L. The Secondary MCL was proposed to protect against aesthetic impacts to drinking water quality. We recommend that sulfate concentrations in one or more downgradient monitoring wells at PersulfOx injection sites be compared to the secondary MCL to assess potential impacts to local groundwater taste and odor from its use of as a remedial injectate.

Don't hesitate to contact me at 803-608-0875 or by email at holberrr@dhec.sc.gov if you have any questions or comments concerning this review.

cc'd:
Fran Marshall – Environmental Affairs, Environmental Public Health,
Courtney Milledge - Bureau of Water, Groundwater Protection Division

SC DEPARTMENT *of*
ENVIRONMENTAL SERVICES

William Lyons
EnviroSouth
3440 Augusta Road
Greenville, SC 29605

Dear Mr. Lyons,

I have conducted a review of the PetroFix and Safety Data Sheets provided in email correspondence dated November 1st, 2023 and the specification sheets available online. PetroFix consists of micron-scale activated carbon and calcium sulfate dihydrate. The finely ground activated carbon adsorbs to soil particles in an aquifer and binds to organic compounds, such as petroleum hydrocarbons. Activated carbon is otherwise chemically inert and would not adversely impact groundwater quality.

Ammonium sulfate and sodium nitrate are added to act as additional election acceptors intended to encourage microbial growth that biodegrades organic contaminants adsorbed to the microscale carbon. Regenesis, the company that manufactures PetroFix, asserts that the ammonium and nitrate in the electron acceptor are completely consumed by the microbes within a hydrocarbon impacted aquifer and will not adversely affect groundwater or surface water quality. Nitrate and nitrite are regulated under the National Primary Drinking Water Regulations and have Maximum Contaminant Levels (MCLs) of 1 mg/L and 10 mg/L, respectively. Nitrate or Nitrite impacted groundwater is relatively common in many regions of South Carolina, so the potential for the nitrogenous compounds in the electron acceptor product to adversely affect groundwater quality should be considered.

EnviroSouth proposes the injection of 4,400 lbs of PetroFix along 200 lbs of electron receptor powder, and 4,400 lobs of sodium bicarbonate according to the manufacturer's specifications at the Former Station (UST Permit No. 20120), Moorefield Memorial Highway and O'Dell Road in Liberty SC. I recommend collecting an initial sample for nitrate prior to the injection to identify any nitrate that is present and collecting additional rounds of nitrate samples if concentrations greater than the MCL are identified in two rounds of downgradient sampling. Future proposed groundwater injections of PetroFix with nitrogenous Electron Acceptors should be evaluated on a site-by-site basis in consideration of aquifer vulnerability to nitrate impacts.

Don't hesitate to contact me at 803-608-0875 or by email at ray.holberger@des.sc.gov if you have any questions or comments concerning this review.

Ray Holberger
Environmental Risk Specialist

cc'd: Fran Marshall – Environmental Affairs, Office of Science Services,
Courtney Milledge - Bureau of Water, Groundwater Protection Division

HEALTH AND SAFETY PLAN

Prepared for submittal to:

South Carolina Department of Environmental Services
UST Management Division
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

SITE-SPECIFIC HEALTH AND SAFETY PLAN

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

SCDES UST Site ID No. 20120

Job No. 3159

Prepared by:

EnviroSouth, Inc.
3440 Augusta Road
Greenville, South Carolina 29605

Prepared for submittal to:

South Carolina Department of Environmental Services
UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Attention: Mr. Zach Griffith

SITE-SPECIFIC HEALTH AND SAFETY PLAN
FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

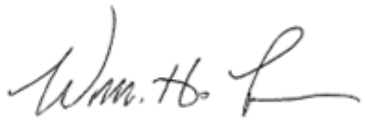
SCDES UST Site ID No. 20120

EnviroSouth Job No. 3159

Prepared by:

Trevor Hudson
Environmental Engineer

Reviewed by:



William H. Lyons, P.G.
UST Coordinator and Senior Hydrogeologist
S.C. Registration No. 2705

EnviroSouth, Inc.
3440 Augusta Road
Greenville, South Carolina 29605
864-236-9010

May 1, 2025

Disclaimer

ENVIROSOUTH, INC. DOES NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE POTENTIAL HAZARDS OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE FOR USE UNDER DIRECT ENVIROSOUTH SUPERVISION AND SHOULD NOT BE USED ON ANY OTHER SITE.

TABLE OF CONTENTS

APPENDICES

FIGURES

1 Site Vicinity Map
2 Rally Point Map
3 Hospital Route and Map

TABLES

1 Personnel Assignments
2 Chemical Hazards Known or Suspected On-Site
3 Health & Safety Hazard Analysis
4 Personal Protective Equipment

PERSONNEL LOG

SUPERVISOR'S INVESTIGATION REPORT

EQUIPMENT CALIBRATION LOG

1.0 EMERGENCY PHONE NUMBERS

Site Name: Former Station
Address: 113 O'Dell Road
City, State: Liberty, South Carolina
Site Contact: Dollar General Store
Phone: 864-372-1073

In case of emergency, the following phone numbers should be used. Site personnel should familiarize themselves with the location of the nearest telephones. The Emergency Action Plan is contained in Section 8.0.

NOTE: When contacting the local authorities be sure to give: your name, facility name, full address, telephone number, and the nature of the emergency.

Local Fire Department, Ambulance, Police Department:	911
Poison Control Center:	(800) 343-2722
SCDES Spill Reporting:	(888) 481-0125
National Response Center:	(800) 424-8802

Local Hospital:

AnMed Cannon
123 W.G. Acker Drive
Pickens, South Carolina 29671

Hospital Telephone: 864-787-4791

Distance to Prisma Health Greenville Memorial Hospital is approximately 3.4 miles (est. 6 minutes)

A map showing the route to Prisma Health Baptist Easley Hospital is attached as Figure 3.

2.0 INTRODUCTION

2.1 Purpose and Scope

This Site-Specific Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by all EnviroSouth personnel and our subcontractors participating in-situ chemical oxidation (ISCO) remedial activities at the site. Potential contaminants principally include petroleum compounds and sodium persulfate (injectate).

This HASP has been developed in accordance with EnviroSouth's Corporate Safety and Health Program as required under OSHA's Hazardous Waste Operations standard (29 CFR 1910.120). As previously mentioned, this plan has been developed to establish minimum standards for project oversight and ISCO-related activities to protect the health and safety of EnviroSouth personnel and EnviroSouth's subcontractors. All EnviroSouth site personnel have received the required level of training and field experience as required under subpart (e) of the standard and have received medical examinations in accordance with EnviroSouth's medical surveillance program as required under subpart (f) of the standard. Non-EnviroSouth personnel will not be permitted in the Exclusion Zones unless they have received training and medical surveillance under the standard.

This plan is to be used only for project oversight and ISCO-related activities conducted by EnviroSouth and EnviroSouth's subcontractors. All EnviroSouth personnel and EnviroSouth's subcontractors shall be familiar with this HASP prior to conducting proposed site work. This plan must be present on-site and be available for reference/inspection when the subject site work is being conducted.

2.2 General Information

Site Name:	Former Station
Site Address:	113 O'Dell Road
	Liberty, South Carolina
Site Contact:	Dollar General Store
Phone Number:	864-372-1073

2.3 Site Description

The property is located at 113 O'Dell Road, Liberty, South Carolina. The property is in a rural corridor at the intersection with Moorefield Memorial Highway (US Highway 178).

Based upon review of project history, it appears that the facility was formerly a gas station that ceased operations around 1972. A release from the previous underground storage tank (UST) system was confirmed in May 2022 and identified as release number one by the South Carolina Department of Environmental Services (SCDES, formerly known as the SCDHEC). A Tier I assessment was conducted by EnviroSouth, Inc. in March 2023. One or more petroleum constituents were documented above regulatory limits during the Tier I assessment. Based on the results of the Tier I assessment, the SCDES requested an additional assessment that included the installation of three (3) shallow monitoring wells and two (2) deep monitoring wells. The purpose of that assessment was to delineate the horizontal and vertical extent of the contaminant plume. A comprehensive sampling event was performed in March 2024. Based on the results of the comprehensive sampling event, the SCDES calculated site-specific target levels (SSTLs) and requested a Strategy to Closure in a letter dated January 15, 2025. Following review of the Strategy to Closure document, the SCDES requested this Corrective Action Plan in a letter dated March 24, 2025.

The remediation strategy proposed in the source area surficial aquifer is by in-situ chemical oxidation (ISCO) which will consist of two (2) rounds of injection. A solution of water and PersulfOx® placed by temporary underground injection wells will be utilized to oxidize the petroleum hydrocarbons in the source area. Each of the two (2) injection events will utilize twenty-five (25) temporary injection wells and will be spaced approximately six (6) weeks apart. The treatment area is approximately 1,500 square feet roughly centered around monitoring well MW-4. The injection interval extends from 10 to 30 feet below ground surface (bgs). The injection points

for each application will be installed in an approximate 8 feet by 8 feet grid within the 1,500 square foot treatment area. The grid for the second application will be offset by approximately four (4) feet from the first application to maximize coverage.

Following the initial mass reduction achieved by the two (2) rounds of PersulfOx®, injection of the enriched colloidal carbon, PetroFix®, will be necessary to accomplish satisfactory contaminant reduction to meet SSTLs. There will be one (1) application of PetroFix® utilizing forty-four (44) temporary injection wells. The injection wells will be installed on a 6 feet by 6 feet grid within the 1,500 square foot treatment area. The injection interval extends from 15 to 30 feet bgs. The PetroFix® application event will be performed at least three (3) months after the final application of PersulfOx®.

2.4 Personnel Designations

The EnviroSouth personnel listed on Table 1 are designated to perform the stated project activities and to assure that the requirements of the HASP are met. No investigation activities shall be performed within the Areas of Environmental Concern (AOEC) unless EnviroSouth's Health and Safety Officer (HSO) or Alternate is present. Personnel assignments are listed in Table 1.

3.0 AREAS OF ENVIRONMENTAL CONCERN

3.1 Scope of Work

In general, the work to be performed by EnviroSouth and EnviroSouth subcontractors consists of two (2) applications of a sodium persulfate-based solution into fifty (50) temporary injection wells and one (1) follow-up application of an enriched carbon into forty-four (44) temporary injection wells.

4.0 HAZARD ANALYSIS

The overall health & safety risk from environmental investigation activities is considered moderate because of the number of potential hazardous constituents identified on-site. It is anticipated that EnviroSouth personnel and subcontractors may come in contact with the chemical solutions that are being used for in-situ chemical oxidation at the site.

4.1 Physical, Chemical and Environmental Hazards

Table 2 provides a list of chemical substances potentially present on site along with odor threshold, permissible exposure limit (PEL), threshold limit value (TLV), OSHA ceiling, immediately dangerous to life or health (IDLH) concentration, route of exposure, and symptoms of acute exposure, if any.

See the Hazard Analysis Summary presented in Table 3 for a listing of the various hazards related to project environmental investigation activities and proposed methods to minimize these risks.

4.2 Confined Space Entry

EnviroSouth personnel are authorized and trained to enter confined spaces. No confined space entry is planned for the current work plan at the site. If the need for confined space arises the health and safety plan may be revised, and an entry permit will be written.

4.3 Monitoring Procedures

The following environmental monitoring instruments/procedures shall be used on-site at the specified intervals.

Instrument/Procedure	Sampling Interval
Photoionization Detector (PID) in the breathing zone	Periodically as deemed by HSO

Background ambient air levels will be established outside the exclusion zone prior to commencement of site work. Ambient air sampling will occur in the breathing zone of site workers for comparison to the action levels (described below). Additionally, air sampling will be conducted in the vicinity of any intrusive exploration (i.e., near excavations, test borings, etc.) to determine if any contaminants are present.

The following Action Levels will be used:

Instrument	Action Level	Level of Protection or Action Required
PID	No reading above background	▪ No action required. ▪ Continue PID monitoring. ▪ Level D protection.
PID	Up to 100 ppm above background	▪ Evacuate exclusion zone. ▪ Recheck levels after 15 minutes. ▪ If levels are sustained, contact Health and Safety Manager. ▪ Use engineering controls to lower breathing zone vapors. ▪ Level C protection (at the Health & Safety Manager's direction).
PID	>100 ppm above background	▪ Evacuate exclusion zone. ▪ Recheck levels after 15 minutes. ▪ Use engineering controls to lower breathing zone vapors. ▪ If levels are sustained, contact Health and Safety Manager, and re-evaluate HASP.

When an action level is equaled or exceeded, the work area should be evacuated, and the area re-tested with the sampling device. If the appropriate action level continues to be exceeded, the HSO will assess the use of engineering controls to lower vapor levels or availability of required increased personal protection equipment before authorizing re-entry.

Calibration of all instruments will occur at least once per day. A calibration log has been included in the appendices.

5.0 ENGINEERING CONTROL MEASURES

5.1 Air Monitoring

In order to determine potential health hazards and to determine the level of personal protection needed during sampling activities within the areas of concern, a photo-ionization detector will be periodically operated to monitor air quality for the purpose of ensuring minimal exposure to volatile organic compounds. Please refer to Section 4.3 of this plan for specific air monitoring procedures/action levels.

5.2 Protective Zones

Protective zones specific for each phase of the plan will be established by the Health and Safety Officer prior to the start of field work associated with those phases of the plan. The purpose of the protective zones is to prevent potential cross-contamination of adjacent areas as well as to protect project personnel from exposure to contaminated areas.

Protective zones shall be delineated in the field prior to work as follows:

- *Exclusion Zone*: This is the contaminated area in which intrusive activities are performed. The exclusion zone is an area (at least 30 feet) surrounding the mixing tank, chemical storage area, and active injection well-field. A single access point for entrance and exit should be established and maintained, if possible.

- *Support Zone*: This zone will be utilized by equipment and vehicle storage and will be kept free of contaminated material. The Site Safety Officer will determine the location of this zone.

- *Contaminant Reduction Zone*: This zone is a transition zone located between the Exclusion Zone and the Support Zone and is utilized to decontaminate personnel and equipment.

6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

6.1 Level of Protection

As previously discussed in Section 4.0, the overall health and safety risk associated with chemical hazards for EnviroSouth and EnviroSouth's subcontractors is considered moderate. This is primary because of the number of potential hazardous constituents identified on-site. It is anticipated that EnviroSouth personnel and subcontractors may come in contact with chemical solution that is being used for in-situ chemical oxidation at the facility. Therefore, the minimal level of protection for EnviroSouth and EnviroSouth's subcontractors during the conduct of the work performed at the site will be level D and consist of the personal protective equipment listed in Table 4. Level D PPE will be required for all workers present at all stations except for the mixing station. Personnel responsible for chemical mixing will be required to utilize modified Level C protection including the use of a full-face respirator with appropriate acid gas cartridges.

If site conditions warrant, the level of protection will be upgraded to Level C (refer to Section 4.3 for the appropriate action levels).

If it is determined protection beyond Level C is required, EnviroSouth will re-evaluate the HASP as well as the site conditions and may revise the HASP, as necessary.

7.0 DECONTAMINATION

7.1 Decontamination Procedures

All personnel and equipment leaving the exclusion zone must be properly cleaned and decontaminated. When there is evidence of chemical contamination during the site operations, all personnel will be decontaminated under the direction of the HSO. Cleanup and/or decontamination of personnel shall consist of washing off excessively soiled PPE with an Alconox detergent scrub and water. At the very least, all personnel should wash their hands and face before leaving the exclusion zone. After washing, all disposable clothing (tyvek, gloves, etc.) will be removed and placed in a double lined plastic bag.

Sampling tools and any other non-disposable items will be decontaminated between sampling points, and at the direction of the EnviroSouth Project Manager, to prevent cross contamination of work areas or environmental samples.

All injection equipment will be decontaminated prior to and between installation of temporary injection wells.

7.2 Emergency Decontamination

If immediate medical attention is required in an emergency, decontamination will be performed after the victim has been stabilized. If a worker has been exposed to an extremely toxic or corrosive material, then emergency decontamination will consist of flushing with copious amounts of water. If the victim cannot be decontaminated because it will interfere with emergency medical aid being administered, then the victim should be wrapped with plastic or other available items (i.e., an uncontaminated coverall) to reduce potential contamination of other personnel or medical equipment.

If a site worker has been overcome by a heat related illness, then any protective clothing should be removed immediately. In the case of non-medical emergency

evacuation, decontamination should be performed as quickly as possible, unless instant evacuation is necessary to save life or prevent injury.

8.0 EMERGENCY ACTION PLAN

In the event of a worker injury, fire, explosion, spill, flood, or other emergency that threatens the safety and health of site workers, the following procedure will be followed.

1. If the emergency originates within the work area covered by this plan, EnviroSouth's HSO shall act as the Emergency Coordinator. The emergency evacuation signal is an air horn or a loud yell. All emergency situations (including worker injuries, no matter how small) will be reported to the HSO, who will determine the appropriate emergency response, up to and including evacuation. Only the HSO may initiate evacuation of the work area. The HSO will be responsible for reporting any emergency situation to the appropriate authorities using a telephone or other appropriate method.

2. In the case of an evacuation, site workers will exit the site along the safest route(s) and assemble with team members at the rally point (Figure 2). Those workers in the Exclusion Zone will follow the emergency decontamination procedures outlined in Section 7.2. Accounting of all site personnel will be conducted by the HSO using the personnel log at a location determined by the HSO.

3. EnviroSouth personnel are not permitted to participate in handling the emergency. Fire and medical emergencies will be handled by the local fire department and ambulance service. In the case of a spill of hazardous materials, the following commercial spill clean-up firm should be contacted:

   VLS Recovery Services, LLC
   Spartanburg, South Carolina
   Phone: 864-583-2717

   In addition, the HSO/Project Manager must advise the site contact that the South Carolina Department of Health and Environmental Control Oil and Chemical Spill section should be contacted and, if the spill quantity is greater than the Reportable Quantity (RQ) under CERCLA and/or SARA, the National Response Center and Local Emergency Planning Committee should also be contacted.

If the spill begins to flow over land and threatens to contaminate a storm drain or surface water, EnviroSouth personnel may attempt to contain and isolate the spill using any available resources, but only if, in the judgement of the HSO, such action will not expose the workers to dangerous levels of hazardous substances and is necessary to preserve life or property.

4. Once initial emergency procedures to protect worker safety and health and to control the emergency have been completed, the HSO will apprise the site contact and the EnviroSouth Health and Safety Manager of the nature of the emergency and the control actions taken. The HSO will also complete a Supervisor's Investigation Report form (a blank investigation report form is included in the appendices) and submit this form to EnviroSouth's Project Manager and Health and Safety Manager within 24 hours.

5. All site workers will be familiarized with the above procedures during the pre-entry briefing to be conducted before site work begins.

9.0 TRAINING/MEDICAL SURVEILLANCE

9.1 Training Requirements

All EnviroSouth and EnviroSouth subcontractor personnel who enter the work zone and/or Exclusion Zone must have successfully completed the 40-hour or 24-hour training requirement outlined in 29 CFR 1910(e). If the 40-hour or 24-hour training of any person occurred more than 12 months prior to commencement of work, then that person must have attended an 8-hour refresher course within the 12 months prior to commencement of work. If respirators are in use in the Exclusion Zone, then all personnel must have undergone respirator training and a fit test within the last 12 months. Training certificates and records for each EnviroSouth employee are on file at EnviroSouth. EnviroSouth subcontractors will be required to supply written proof of training before being allowed in the Exclusion Zone.

9.2 Pre-Entry Briefing

Prior to commencement of work in area of suspected contamination, EnviroSouth's Health and Safety officer will conduct a pre-entry briefing with on-site drilling representatives to include:

- Name of the HSO and person responsible for the personnel log.
- Description of the parcel as well as location of emergency telephones and the location/boundaries of the Exclusion Zone, Contamination Reduction Zone, and Support Zone, if established.
- Review of hospital location and directions.
- Review of tasks to be conducted within the parcel by the Contractor's personnel.
- Review of the Emergency Action Plan and rally point (Figure 2), including the nearest emergency communications and telephone numbers.
- The nature, level, and degree of anticipated hazards (physical, chemical, environmental, etc.) involved in the site work.
- Required personal protective equipment.

- Decontamination procedures.

The HSO should also, at this time, ensure that all on-site EnviroSouth personnel and EnviroSouth subcontractor personnel have read the HASP and signed the last page of the original (Section 11.0). If additional information on the site becomes available, the HSO will call additional briefings, as necessary.

10.0 AUTHORIZATIONS

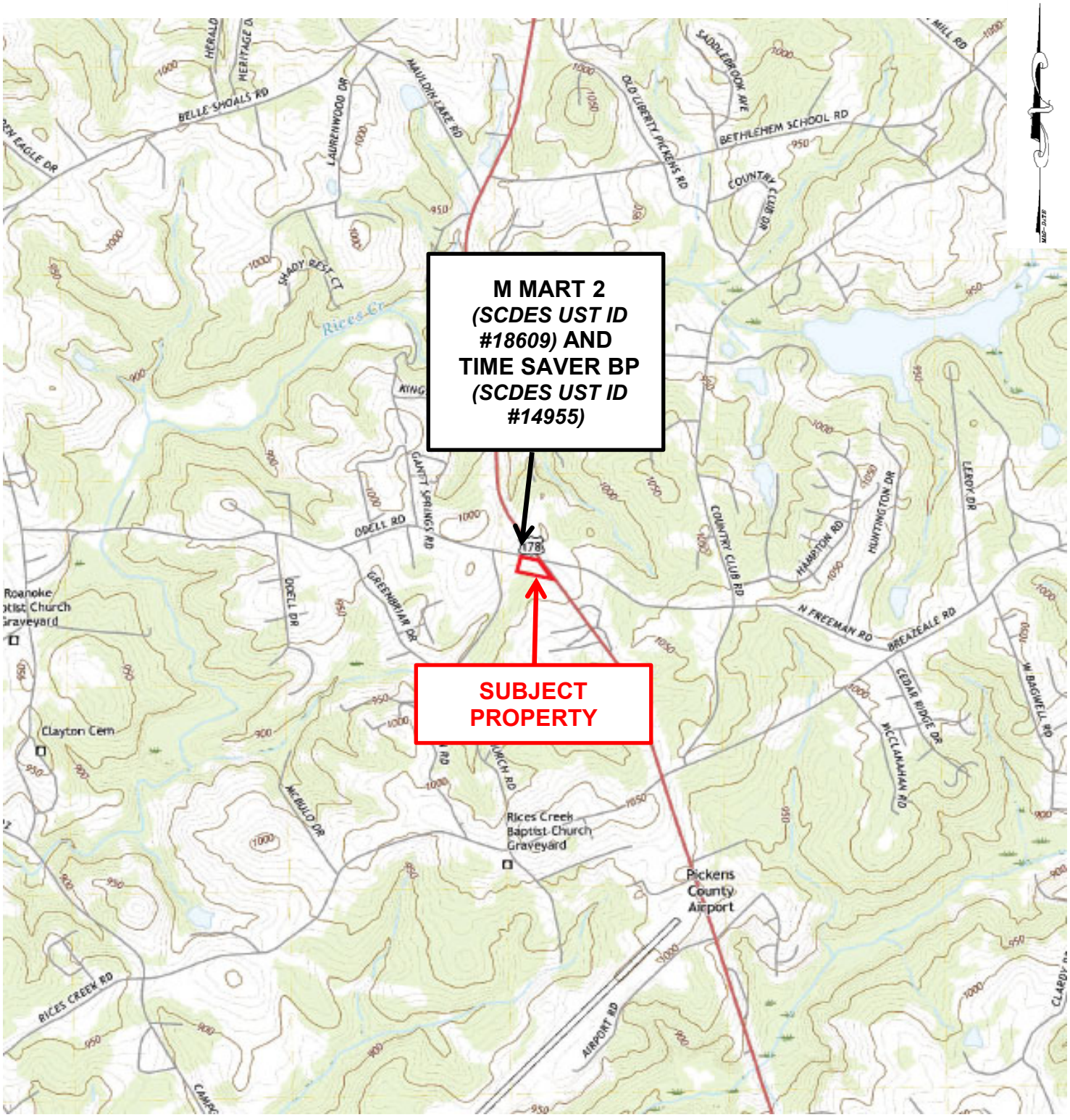
Personnel authorized to enter the Exclusion Zone include the personnel listed in Table 1. Persons not listed in Table 1 may enter the exclusion Zone only if the appropriate training and medical fitness certifications have been supplied to either the EnviroSouth Project Manager or the Health and Safety Manager and the HSO or their designee on-site has approved site entry. All personnel entering or leaving the Exclusion Zone must sign in and sign out with the recordkeeper.

11.0 FIELD TEAM REVIEW

All EnviroSouth and EnviroSouth subcontractor personnel shall sign below after reading the HASP and before entering any exclusion zones as set forth by the contractor's site safety officer. Personnel shall agree with the following statement:

> *"I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provisions set forth therein."*

Printed Name	Signature	Date



SOURCE: USGS 7.5' QUADRANGLE MAP 2020, LIBERTY, SC

ENVIROSOUTH
Environmental Consultants

SITE VICINITY MAP

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

JOB NO.: 3159	CHECKED BY: TFD	FIGURE: 1
SCALE: NOT SHOWN	DRAWN BY: BD	DATE: 06/07/2023

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL

MW-8D = DEEPER AQUIFER MONITORING WELL

SW-1 = SURFACE WATER SAMPLE LOCATION

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

O'DELL ROAD

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HWY

MW-5

MW-2

MW-8D

MW-4

RALLY POINT

MW-6

MW-7

MW-9D

MW-3

MW-1

DOLLAR GENERAL
113 O'DELL ROAD

CONCRETE DUMPSTER PAD

DETENTION POND

SW-2

SW-1

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	10/03/2023	BD	TFD	AS SHOWN	3159	2

ENVIROSOUTH Environmental Consultants

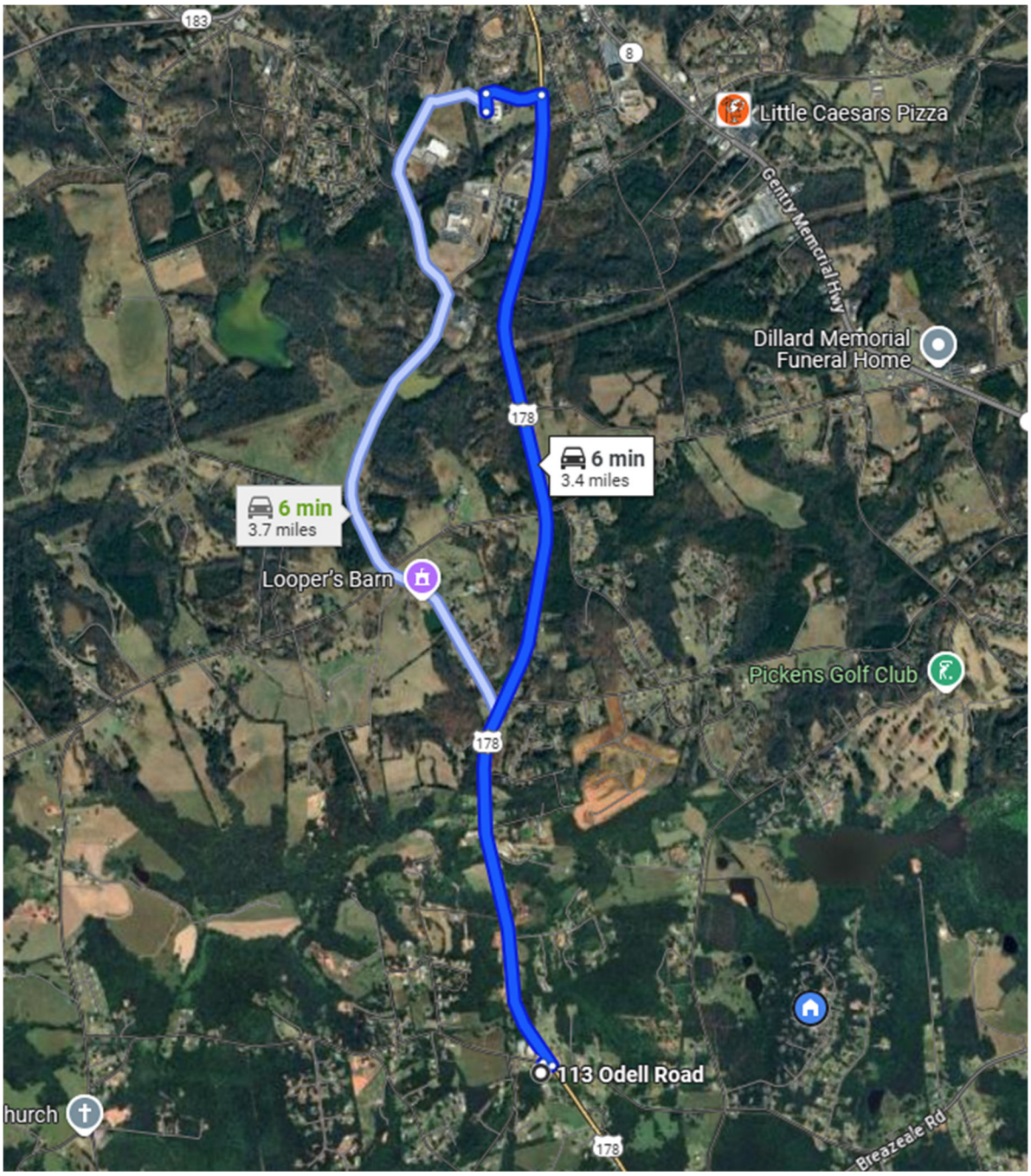
SITE MAP WITH RALLY POINT LOCATION

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDHEC UST ID #20120

FIGURE 3

MAP AND ROUTE TO ANMED CANNON HOSPITAL

123 W.G. Acker Drive
Pickens, South Carolina
864-878-4791



Directions from 113 O'Dell Road, Liberty, SC to AnMed Cannon Hospital (total distance = 3.4 miles):

1. Head east on O'Dell Road toward US Highway 178 West for 151 feet.
2. Take a sharp left onto US Highway 178 West and continue for 3.2 miles.
3. Turn left onto W.G. Acker Drive and continue 0.2 miles.
4. Turn left into the hospital and continue straight. The hospital will be on the left.

TABLE 1

PERSONNEL ASSIGNMENTS

Project Manager	Health & Safety Officers (HSO)	Security Officer (SO) Recordkeeper	HSO/SO Designated Alternate	Field Team Members	Public Information Officer
Will Lyons	Trevor Hudson	Will Lyons	Will Lyons	Will Lyons Trevor Hudson Allen Meadows	Will Lyons
PERSONNEL RESPONSIBILITIES					
• General project supervisor and director of hazardous waste operations	• Implementation of HASP • Stop work if poor work practices or conditions endanger worker health & safety • Act as Emergency Coordinator if necessary • Provide pre-entry briefing	• Maintain site records • Enforce site control program	• Perform HSO/SO duties if so designated	• Perform site work tasks • Supervision of subcontractors • Mixing of chemical solution • Supervision of pumping activities	• Provide public information as necessary

TABLE 2

CHEMICAL HAZARDS KNOWN OR SUSPECTED ON-SITE

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
Benzene	4.7 ppm	1 ppm	0.5 ppm	5 ppm	[500] ppm	Inh, Ing, Abs, Con	Irrit Eyes, Nose, Throat; Head, Nau, Derm, Ftg, Anor, Lass
Ethylbenzene	870 ppm	100 ppm	100 ppm	125 ppm	700 ppm	Inh, Abs, Con	Head. Irrit, Derm, Marc., Irrit Eyes, Skin, Coma
1,2-Dichloroethane	26 ppm	50 ppm	10 ppm	2 ppm	50 ppm	Inh, Abs	Narco, Nau, vomit
Methyl-tert-butyl ether (MTBE)	---	---	50 ppm	---		Inh, Abs	
Naphthalene	0.084 ppm	10 ppm	10 ppm		250 ppm	Inh, Abs, Ing, Con	Eye Irritation; Headache; Confusion, Excitement, Malaise (vague feeling of ill-being); Nausea, Vomiting, Abdominal Pain; Irritated Bladder; Profuse Sweating; Renal Shutdown; Dermatitis
Toluene	2.14 ppm	200 ppm	50 ppm	300 ppm	500 ppm	Inh, Abs, Ins, Con	Resp, Irrit, Ftg, Conf, Dizz, Head, Derm, Euph, Head, Dilated Pupils, Lac, Ner, Musc FTs, Insom, Pares, Derm, Lass
Xylene	4.5 mg/m^3	100 ppm	100 ppm	150 ppm	900 ppm	Inh, Ing, Abs, Con	Dizz, Drow, Irrit, Excite, Nau, Vomit, Eyes, Skin, Nose, Throat
EDB	76.8 mg/m^3	20 ppm		30 ppm		Inh, Abs	Resp. Irr, Eye Irr. [Carc]

TABLE 2

CHEMICAL HAZARDS KNOWN OR SUSPECTED ON-SITE

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
PersulfOx®	Not Available	--	--	--	--	Inh, ing, Abs	Oral, skin sen, resp
PetroFix®	Not Available	--	--	--	--	Inh, ing, Abs	Skin irritation, allergic skin reaction, serious eye irritation, allergy or asthma symptoms or breathing difficulties, respiratory irritation

NOTES

[1]PEL = Permissible Exposure Limit. If no PEL is available, then the NIOSH Threshold Limit Value (TLV) should be used, if available.

[2]Ceiling limit or Short-Term Exposure Limit (STEL), if available. Again, the NIOSH TLV may be used if no OSHA standard exists.

[3]Abbreviations are contained on the next page

ABBREVIATIONS

abdom = Abdominal
abs = Absorption
aggress = Agressiveness
agit = Agitation
anor = Anorexia
anos = Anosmia (loss of the sense of smell)
Anxi = anxiety
anem – Anemia
aspir = Aspiration
asph – asphyxia
bron = Bronchitis
[carc] = Potential occupational carcinogen
Card = Cardiac arrhythmias
CNS = Central nervous system
conf = Confusion
constip = Constipation
con = Skin and/or eye contact
conv = Convulsions
corn = Corneal
defat = Defatting
depres = Depressant/Depression
derm = Dermatitis
diarr = Diarrhea
dist = Disturbance
dizz = Dizziness
drow = Drowsiness
dry = Dry mouth
dysp = Dyspnea (breathing difficulty)
emphy = Emphysema
epil-conv = Epileptiform convulsions
eryth = Erythema
euph = Euphoria
fib = Fibrosis
frost = frostbite
ftg = Fatigue
flush = Flushing
GI = Gastrointestinal
head = Headache
hyperpig = Hyperpigmentation
inco = Incoordination
ing = Ingestion
inh = Inhalation
inj = Injury
insom = Insomnia
irrit = Irritation
lac = Lacrimination (discharge of tears)
lass = Lassitude (weakness, exhaustion)
li-head = Lightheadedness
liq = Liquid
low-wgt = Weight loss
mal = Malaise (vague feeling of discomfort)
malnut = Malnutrition
methem = Methemoglobinemia
myo = Myochonic (jerks of limbs)
mg/m = milligrams/cubic meter
muc memb = Mucous membrane
narco = Narcosis
nau = Nausea
ner = Nervousness
numb = Numbness
optic = Optic nerve damage (blindness)
parap = Paralysis
ppm = Parts per million
pares = Paresthesia
paresi = Paresis
peri neur = Peripheral neuropathy
pneu = Pneumonia
prot = Proteinuria
pulm = Pulmonary
peri neur = Peripheral neuropathy
pneu = Pneumonia
prot = Proteinuria
pulm = Pulmonary
repro = Reproductive
resp = Respiratory
skin sen = skin sensitization
som = Somnolence (sleepiness unnatural drowsiness)
subs = Substernal (occurring beneath the sternum)
stup = Stupor
sys = System
tingle = tingle limbs
trem - Tremors
vis dist = Visual disturbance
vomit = Vomiting
weak = Weakness

TABLE 3

HEALTH AND SAFETY HAZARD ANALYSIS

Description of Hazard	Methods to Identify and Minimize	Potential for Occurrence of Hazard
Activity: Site Mobilization and Utility Clearance		
1. Biological Hazards	• Wear appropriate clothing and tape sleeves and pant cuffs in tick infested areas. • Use insect repellant. • Maintain awareness of surroundings, avoid poisonous plants and areas that may shelter snakes and spiders. • Mow/brush hog, if needed.	Low
2. Slip/Trip/Fall	• Wear appropriate footwear. • Be aware of surroundings. • Maintain safe and orderly work areas. • Unloading areas should be on even terrain. • Identify and repair potential tripping hazards.	Moderate
3. Adverse Weather	• Monitor weather daily. • Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.	Moderate
4. Heat/Cold Stress	• Determine probable weather conditions prior to arrival at site. • Wear proper clothing. • Monitoring of yourself and teammates. • Drink plenty of fluids containing electrolytes. • Utilize work breaks as often as necessary. • Avoid working in extreme heat or cold conditions.	Moderate
5. Noise	• Distancing from noise sources. • Wear hearing protection.	Moderate

TABLE 3

HEALTH AND SAFETY HAZARD ANALYSIS

Description of Hazard	Methods to Identify and Minimize	Potential for Occurrence of Hazard
Activity: Injection Well Installation and Sample Collection		
1. Operating Heavy Equipment	• Inspect equipment before operation. • Utilizing proper equipment operation methods. • Maintain safe clearance distances. • Wear appropriate eye/ear protection according to manufacturer's recommendations.	Moderate
2. Utilities	• Complete a Call Before You Dig (CBYD) mark-up prior to the work start date. • Obtain information concerning buried private lines from site contact and clearance of sampling locations from site contact. • Avoid using heavy equipment or drill rig in close proximity to overhead utilities. • Inspect sampling areas for CBYD markings as well as inspecting catch basins and manholes to determine buried pipeline directions prior to sampling. • Avoid sampling within area of pavement cuts that may be indicative of buried lines.	Moderate
3. Inhalation of volatile organic compounds	• Monitor borehole/well with PID. • Implement and strictly adhere to action levels stipulated in air monitoring program for volatile organics. • Wear appropriate protective equipment. • Report potential exposure symptoms immediately. • Utilize engineering controls such as fans.	Moderate

TABLE 3

HEALTH AND SAFETY HAZARD ANALYSIS

Description of Hazard	Methods to Identify and Minimize	Potential for Occurrence of Hazard
Activity: Injection Well Installation and Sample Collection		
4. Contaminant Contact	• Wear appropriate protective clothing (e.g., Tyvek® coveralls, apron, nitrile gloves, safety glasses) when handling samples. • Follow proper decontamination procedures. • Report potential exposure symptoms immediately.	Moderate
5. Slip/Trip/Fall	• Wear appropriate footwear. • Be aware of surroundings. • Maintain safe and orderly work areas. • Unloading areas should be on even terrain. • Identify and repair potential tripping hazards.	Moderate
6. Adverse Weather	• Monitor weather daily. • Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.	Moderate
7. Heat/Cold Stress	• Determine probable weather conditions prior to arrival at site. • Wear proper clothing. • Monitoring of yourself and teammates. • Drink plenty of fluids. • Utilize work breaks as often as necessary. • Avoid working in extreme heat or cold conditions. • Set-up fans or heater in the Support Zone.	Moderate
8. Noise	• Distancing from noise sources. • Wear hearing protection.	Moderate

TABLE 3

HEALTH AND SAFETY HAZARD ANALYSIS

Description of Hazard	Methods to Identify and Minimize	Potential for Occurrence of Hazard
Activity: Chemical Injection		
1. Inhalation of volatile organic compounds	• Monitor core with PID. • Implement and strictly adhere to action levels stipulated in air monitoring program for volatile organics. • Wear appropriate protective equipment. • Report potential exposure symptoms immediately. • Utilize engineering controls such as fans.	Moderate
2. Contaminant Contact	• Wear appropriate protective clothing (e.g., Tyvek® coveralls, apron, nitrile gloves, safety glasses) when handling samples. • Follow proper decontamination procedures. • Report potential exposure symptoms immediately. • Person mixing chemicals will wear a respirator.	Moderate
3. Slip/Trip/Fall	• Wear appropriate footwear. • Be aware of surroundings. • Maintain safe and orderly work areas. • Unloading areas should be on even terrain. • Identify and repair potential tripping hazards.	Moderate
4. Adverse Weather	• Monitor weather daily. • Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.	Moderate

TABLE 3

HEALTH AND SAFETY HAZARD ANALYSIS

Description of Hazard	Methods to Identify and Minimize	Potential for Occurrence of Hazard
Activity: Chemical Injection		
5. Heat/Cold Stress	• Determine probable weather conditions prior to arrival at site. • Wear proper clothing. • Monitoring yourself and teammates. • Drink plenty of fluids. • Utilize work breaks as often as necessary. • Avoid working in extreme heat or cold conditions. • Set-up fans and or heater in the Support Zone.	Moderate
6. Noise	• Distancing from noise sources. • Wear hearing protection.	Moderate

Modified level D personal protective equipment is suitable to protect against the anticipated hazards at this site. This equipment is listed below. ***Prior to entry and periodically throughout the duration of the project, the HSO must confirm that this level of protection is appropriate through air monitoring and evaluation of identified hazards.***

TABLE 4 – PERSONAL PROTECTIVE EQUIPMENT

WORK TASK	MINIMUM PROTECTIVE EQUIPMENT												
	Respirator	Work Clothes	Steel Toe Shoes	Work Gloves	Chem. Resistant Gloves[1]	Safety Glasses	Hearing Protection	Tyvek	Apron	Hard Hat	Face Shield	Fall Protection[2]	Visibility Vest
SAMPLING/ROUTINE TASKS													
Air Sampling		X	X		X								
Bridge Inspection/Const. Supervision		X	X				X			X			X
Chemical Injection	X	X	X	X	X	X	X	X		X			X
Drilling		X	X		X	X	X			X			
Drum Sampling & Moving		X	X	X	X	X				X	X		
Ground Water Sampling (MW,RW)		X	X		X	X							
Hand Sampling (shovel, auger)		X	X	X	X								
Landfill Sampling (soil, sediment, gw, sw, leachate)		X	X		X	X		X					
Phase 1 Site Inspection		X	X										
Probing		X	X		X	X	X			X			
Product Sampling (RW)		X	X		X	X		X					
Remediation Monitoring (air systems)		X	X		X	X	X						
Remediation Monitoring (water systems)		X	X	X	X	X	X						
Soil Gas Sampling		X	X		X	X							
Stack Testing		X	X		X					X		X	
Stormwater Sampling		X	X		X								
Surface Water Sampling		X	X		X	X							
Surveying		X	X										X
Wastewater Sampling		X	X		X	X							
Wastewater Benchmark Test		X	X		X	X			X		X		
CHEMICAL HANDLING													
Filling Decon Bottles		X	X			X			X				
Soil Sample Disposal		X	X		X	X							
POWER EQUIPMENT													
Circular Saw		X	X			X	X						
Concrete Core Machine		X	X	X		X	X						
Drill Press		X	X			X	X						
Generators		X	X	X		X	X						
Industrial Vacuum		X	X	X		X	X						
Pavement Saw		X	X	X		X	X						
Power Equipment (handrills, grinder, etc.)		X	X	X		X	X						
Power Washer		X	X		X	X	X						
Regenerative Blowers/Air Compressors		X	X	X		X	X						
Rotary Percussion Hammer		X	X	X		X	X						
Sawzall		X	X			X	X						

Notes: Minimum protective equipment means the minimally acceptable protective gear to be donned when performing or using the equipment listed above. Additional protective equipment (i.e., respirators) may be required as described in the site-specific health and safety plan or based on the anticipated hazards associated with the project. Work clothes include long pants, short or long sleeve shirt and other winter clothing. If upgrade to level C respiratory protection is necessary the appropriate respirator cartridges will provide protection against hydrogen sulfide and volatile organics, but not oxygen deficient atmospheres due to methane gas displacement of ambient air.

[1]The type of chemical resistant glove (i.e., disposable rubber, nitrile, other) must be selected based on the anticipated chemical hazards. [2]Must be reviewed on a case-by-case basis.

PERSONNEL LOG				
NAME	REPRESENTING	DATE	TIME IN	TIME OUT

SUPERVISOR'S INVESTIGATION REPORT

ENVIROSOUTH
SUPERVISOR'S INVESTIGATION REPORT

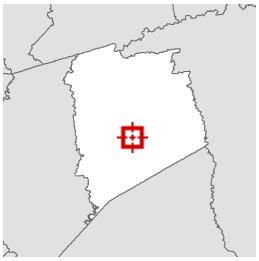
<table>
<tr><td>Name</td><td>Age</td><td>Time</td><td>Date</td></tr>
<tr><td>Department/Project Manager</td><td colspan="3">Site Name/Location</td></tr>
<tr><td>WHAT HAPPENED?</td><td colspan="3">Describe what took place or what caused you to make this investigation.</td></tr>
<tr><td>WHY DID IT HAPPEN?</td><td colspan="3">Get all the facts by studying the job and situation involved.
Question by use of
WHY – WHAT – WHERE – WHEN – WHO- HOW</td></tr>
<tr><td rowspan="2">WHAT SHOULD BE DONE?</td><td colspan="3">Determine which of the 12 items under EMP require additional attention.</td></tr>
<tr><td><u>Equipment</u>
Select
Arrange
Use
Maintain</td><td><u>Material</u>
Select
Place
Handle
Process</td><td><u>People</u>
Select
Place
Train
Lead</td></tr>
<tr><td>WHAT HAVE YOU DONE THUS FAR?</td><td colspan="3">Take or recommend action, depending upon your authority.
Follow up – was action effective?</td></tr>
<tr><td>HOW WILL THIS IMPROVE OPERATIONS?</td><td colspan="3">OBJECTIVE
Eliminate job hindrances</td></tr>
<tr><td>Investigated by:</td><td>Date</td><td><u>Reviewed By</u></td><td>Date</td></tr>
</table>

EQUIPMENT CALIBRATION LOG		
Instrument	**Calibration Date**	**Calibrated By**

TAX MAP INFORMATION

Pickens County, SC

Overview



Legend

- Parcels
- 911 Address
- Roads

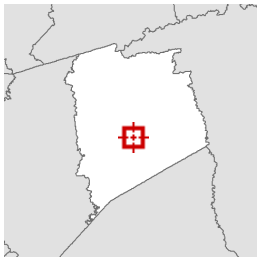
Parcel ID	4089-00-84-4699	**Account Type**	Commercial	**Ownership**	BRUNO THERESA	**Documents**			
Account No	R0043975	**Class**	Retail Store		15 12TH AVE	**Date**	**Price**	**Doc**	**Vacant or Improved**
Property Address	113 ODELL RD LIBERTY	**Acreage**	2.32		SAN MATEO, CA 94402-0000	8/1/2024	$1,457,957	2703/ / 188	Vacant
District	A12-Liberty	**LEA**	0183			8/30/2022	$150,000	2445/ / 100	Vacant
Brief Tax Description	TRACTS 1 2 PT 3 W/SIDE HWY 178, PLAT 616/54 (Note: Not to be used on legal documents)	**Code**							
		Value	$1,284,800						

Date created: 5/2/2025
Last Data Uploaded: 5/2/2025 10:44:15 AM

Developed by SCHNEIDER GEOSPATIAL

Pickens County, SC

Overview



Legend

- Parcels
- 911 Address
- Roads

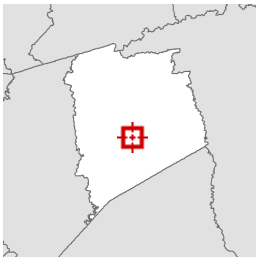
Parcel ID	4089-00-84-4903	**Account Type**	Commercial	**Ownership**	SHAYONA CONVENIENCE LLC	**Documents**			
Account No	R0080592					**Date**	**Price**	**Doc**	**Vacant or Improved**
Property Address	5798 MOOREFIELD MEM HWY LIBERTY	**Class**	Convenience Store		5798 MOOREFIELD MEMORIAL HWY LIBERTY, SC 29657	1/16/2014	$1,000,000	1578/ / 164	Improved
		Acreage	1.06			9/22/2010	$379,000	1346/ / 97	Improved
District	A12-Liberty	**LEA Code**	0150						
Brief Tax Description	W/SIDE 178 NEAR ODELL RD PLAT 57/175B PLAT 391/2A LOT A (Note: Not to be used on legal documents)	**Value**	$442,700						

Date created: 5/2/2025
Last Data Uploaded: 5/2/2025 10:44:15 AM

Developed by SCHNEIDER GEOSPATIAL

Pickens County, SC

Overview



Legend

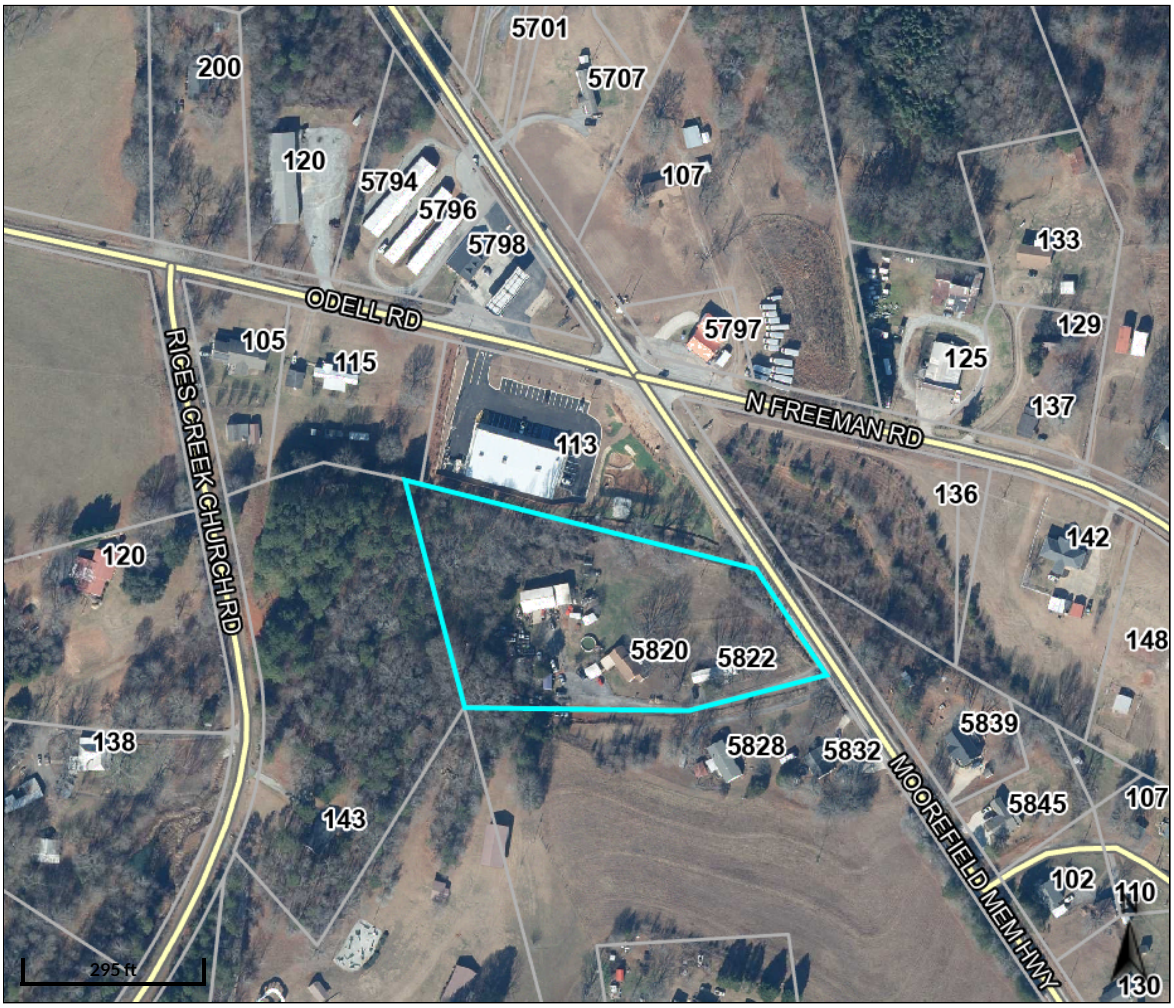
- Parcels
- 911 Address
- Roads

Parcel ID	4089-00-84-7637	**Account Type**	Residential	**Ownership**	CHAPMAN ANSEL GREGORY	**Documents**			
Account No	R0096714					**Date**	**Price**	**Doc**	**Vacant or Improved**
Property Address	136 N FREEMAN RD LIBERTY	**Class**	1 Story		136 N FREEMAN RD	n/a	$	/	n/a
District	A12-Liberty	**Acreage**	2.211		LIBERTY, SC 29657-0000	n/a	$	/	n/a
Brief Tax Description	E/SIDE HWY 178 S/SIDE ODELL RD LOT 1-B PLAT 620/121 (Note: Not to be used on legal documents)	**LEA Code**	0075						
		Value	$206,300						

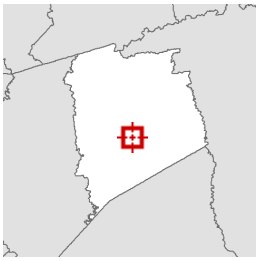
Date created: 5/2/2025
Last Data Uploaded: 5/2/2025 10:44:15 AM

Developed by SCHNEIDER GEOSPATIAL

Pickens County, SC



Overview



Legend

- Parcels
- 911 Address
- Roads

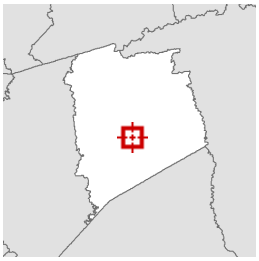
Parcel ID	4089-00-84-6308	**Account Type**	Residential	**Ownership**	PILGRIM CHARLES W	**Documents**			
Account No	R0044241	**Class**	1 Story		5820 MOOREFIELD HWY LIBERTY, SC 29657	**Date**	**Price**	**Doc**	**Vacant or Improved**
Property Address	5820 MOOREFIELD MEM HWY LIBERTY	**Acreage**	3.35			5/31/2022	$1	2408/ / 56	Vacant
		LEA	0008.5			11/8/2001	$0	436/ / 14A	Vacant
District	A12-Liberty	**Code**							
Brief	W/SIDE HWY 178 P/O PLAT	**Value**	$100,700						
Tax Description	436/14A (Note: Not to be used on legal documents)								

Date created: 5/2/2025
Last Data Uploaded: 5/2/2025 10:44:15 AM

Developed by SCHNEIDER GEOSPATIAL

Pickens County, SC

Overview



Legend

- Parcels
- 911 Address
- Roads

Parcel ID	4089-00-84-1775	**Account Type**	Purged MH	**Ownership**	WILSON LINDA ANN	**Documents**			
Account No	R0043949					**Date**	**Price**	**Doc**	**Vacant or Improved**
Property Address	115 ODELL RD LIBERTY	**Class**	Single Wide		115 ODELL RD LIBERTY, SC 29657-0000	11/17/2016	$5	1822 / 180	Improved
District	A12-Liberty	**Acreage**	1.48			5/29/2008	$1	1187/ / 322	Improved
Brief Tax Description	S/SIDE ODELL RD (Note: Not to be used on legal documents)	**LEA Code**	0014						
		Value	$38,100						

Date created: 5/2/2025
Last Data Uploaded: 5/2/2025 10:44:15 AM

Developed by SCHNEIDER GEOSPATIAL

GANTT SCHEDULE

FORMER STATION CORRECTIVE ACTION SCHEDULE

Actual Start | % Complete | Actual (beyond plan) | % Complete (beyond plan

ACTIVITY	PLAN START (DATE)	PLAN DURATION (DAYS)	ACTUAL START (DATE)	ACTUAL DURATION (DAYS)	PERCENT COMPLETE
Corrective Action Plan and Underground Injection Control Permit Application Submittal	4/28/2025	7	4/28/2025	7	100%
Public Notice	6/2/2025	30			0%
CAP and UIC Approval	7/21/2025	7			0%
Order, Receive, and Store Chemicals for 1st Round Injection	7/28/2025	14			0%
Ground Penetrating Radar	8/4/2025	1			0%
Baseline Sampling Event for Additional Parameters at wells MW-4, MW-6, and MW-7	8/4/2025	2			0%
1st Round Injection Event	8/11/2025	5			0%
Report #1	8/18/2025	2			0%
Order, Receive, and Store Chemicals for 2nd Round Injection	9/15/2025	1			0%
Ground Penetrating Radar	9/22/2025	1			0%
2nd Round Injection Event	9/29/2025	5			0%
Report #2	10/6/2025	1			0%
Interim Sampling Event	12/1/2025	1			0%
Order, Receive, and Store Chemicals for 3rd Round Injection	12/15/2025	2			0%
Report #3	12/22/2025	2			0%
Ground Penetrating Radar	12/29/2025	1			0%
3rd Round Injection Event	1/5/2026	8			0%
Report #4	1/19/2026	2			0%
1st Sampling Event	4/6/2026	1			0%
Report #5	4/27/2026	2			0%
2nd Sampling Event	7/6/2026	1			0%
Report #6	7/27/2026	2			0%
3rd Sampling Event	10/5/2025	1			0%
Report #7	10/26/2026	2			0%
4th Sampling Event	1/4/2027	1			0%
Report #8	1/25/2027	1			0%
Abandon Wells	2/15/2027	2			0%
Report #9	3/1/2027	1			0%

4/28/2025 | 5/5/2025 | 5/12/2025 | 5/19/2025 | 5/26/2025 | 6/2/2025 | 6/9/2025 | 6/16/2025 | 6/23/2025 | 6/30/2025 | 7/7/2025 | 7/14/2025 | 7/21/2025 | 7/28/2025 | 8/4/2025 | 8/11/2025 | 8/18/2025 | 8/25/2025 | 9/1/2025 | 9/8/2025 | 9/15/2025 | 9/22/2025 | 9/29/2025 | 10/6/2025 | 10/13/2025 | 10/20/2025 | 10/27/2025 | 11/3/2025 | 11/10/2025 | 11/17/2025 | 11/24/2025 | 12/1/2025 | 12/8/2025 | 12/15/2025 | 12/22/2025 | 12/29/2025

FORMER STATION CORRECTIVE ACTION SCHEDULE

Actual Start | % Complete | Actual (beyond plan) | % Complete (beyond plan

ACTIVITY	PLAN START (DATE)	PLAN DURATION (DAYS)	ACTUAL START (DATE)	ACTUAL DURATION (DAYS)	PERCENT COMPLETE
Corrective Action Plan and Underground Injection Control Permit Application Submittal	4/28/2025	7	4/28/2025	7	100%
Public Notice	6/2/2025	30			0%
CAP and UIC Approval	7/21/2025	7			0%
Order, Receive, and Store Chemicals for 1st Round Injection	7/28/2025	14			0%
Ground Penetrating Radar	8/4/2025	1			0%
Baseline Sampling Event for Additional Parameters at wells MW-4, MW-6, and MW-7	8/4/2025	2			0%
1st Round Injection Event	8/11/2025	5			0%
Report #1	8/18/2025	2			0%
Order, Receive, and Store Chemicals for 2nd Round Injection	9/15/2025	1			0%
Ground Penetrating Radar	9/22/2025	1			0%
2nd Round Injection Event	9/29/2025	5			0%
Report #2	10/6/2025	1			0%
Interim Sampling Event	12/1/2025	1			0%
Order, Receive, and Store Chemicals for 3rd Round Injection	12/15/2025	2			0%
Report #3	12/22/2025	2			0%
Ground Penetrating Radar	12/29/2025	1			0%
3rd Round Injection Event	1/5/2026	8			0%
Report #4	1/19/2026	2			0%
1st Sampling Event	4/6/2026	1			0%
Report #5	4/27/2026	2			0%
2nd Sampling Event	7/6/2026	1			0%
Report #6	7/27/2026	2			0%
3rd Sampling Event	10/5/2025	1			0%
Report #7	10/26/2026	2			0%
4th Sampling Event	1/4/2027	1			0%
Report #8	1/25/2027	1			0%
Abandon Wells	2/15/2027	2			0%
Report #9	3/1/2027	1			0%

COST AGREEMENT

SC DEPARTMENT of ENVIRONMENTAL SERVICES

TARGETED COMPONENT INVOICE

South Carolina
Department of Environmental Services
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account
August 9, 2023

Facility Name: **Former Station**

UST Permit #: 20120 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE		TOTAL
C. Survey					
1.2 Comprehensive Survey		each	$1,270.36		$0.00
5.1 Ground Penetrating Radar Survey (100 x 100)	3	each	$1,111.57		$3,334.71
D. Mob/Demob					
1.2 Equipment (3 driller, 3 ES injection equipment, 1 abandonment)	7	each	$1,245.93		$8,721.51
2.2 Personnel (6 sampling events, 1 abandonment)	7	each	$516.69		$3,616.83
3.2 Adverse Terrain Vehicle		each	$610.75		$0.00
E. Soil Borings*					
1.1 Soil Borings (hand auger)		foot	$21.80		$0.00
F. Soil Borings (requiring equipment, push technology, etc) or Field Screening (including sampling and analyst)*					
1.2 Standard	2820	per foot	$33.50		$94,470.00
2.2 Fractured Rock		per foot	$41.40		$0.00
H. Well Abandonment (does not include Field Screening)*					
1.2 2" diameter or less	3065	per foot	$3.79		$11,616.35
2.2 Greater than 2" to 6" diameter		per foot	$5.50		$0.00
3.2 Dug/Bored well (up to 6 feet diameter)		per foot	$18.32		$0.00
I. **Well Installation (In accordance with R.61-71)***					
1.2 Water Table (hand augered)		per foot	$31.40		$0.00
2.B Water Table (drill rig) 2" Diameter		per foot	$54.90		$0.00
2.2 Single-cased 2" Diameter Monitoring Well >50ft		per foot	$59.80		$0.00
3.2 Telescoping		per foot	$84.70		$0.00
4.2 Rock Drilling		per foot	$81.80		$0.00
5.2 2" Rock Coring		per foot	$88.50		$0.00
6.2 Multi-sampling ports/screens		per foot	$59.40		$0.00
7.2 Recovery Well (4" diameter)		per foot	$69.60		$0.00
9.2 Rotosonic (2" diameter)		per foot	$119.00		$0.00
10.2 Re-develop Existing Well		per foot	$13.44		$0.00
J. Groundwater Sample Collection / Gauging Depth to Water/Product *					
1.2 Groundwater Purge		per well	$73.29		$0.00
2.2 Air or Vapors		sample	$14.66		$0.00
3.2 Water Supply Sample		sample	$26.87		$0.00
4.1A HydraSleeve		sample	$34.20		$0.00
4.2B No-purge Groundwater Sample/Surface water	10	sample	$57.24		$572.40

5.2 Gauge Well only		sample	$8.55		$0.00
6.2 Sample Below Product		sample	$14.66		$0.00
7.2 Passive Diffusion Bag		sample	$31.75		$0.00
8.2 Field Duplicates (MWs & WSWs) and Field Blar	10	sample	$30.06		$300.60
9.2 Groundwater (low flow purge)	48	sample	$111.16		$5,335.68
10.2 Equipment Blank		sample	$30.06		$0.00
11.1 Sample Product		per well	$52.66		$0.00
K. Laboratory Analyses-Groundwater					
1.2 BTEXNM+Oxyg's+1,2 DCA+Eth(8260D)	70	per sample	$149.02		$10,431.40
2.2 Lead, Filtered		per sample	$16.85		$0.00
3.2 Rush EPA Method 8260B		per sample	$187.62		$0.00
4.2 Trimethal, Butyl, and Isopropyl Benzenes		per sample	$34.20		$0.00
5.2 PAH's		per sample	$74.02		$0.00
6.2 Lead		per sample	$19.54		$0.00
7.2 EDB by EPA 8011	65	per sample	$55.21		$3,588.65
8.2 EDB by EPA Method 8011 Rush		per sample	$83.31		$0.00
9.2 8 RCRA Metals		per sample	$77.45		$0.00
10.2 TPH (9070)		per sample	$50.09		$0.00
11.2 PH		per sample	$6.35		$0.00
12.2 BOD		per sample	$24.42		$0.00
13.2 Ethanol		per sample	$18.08		$0.00
K. Analyses-Drinking Water					
14.2 BTEXNM+1,2 DCA (524.2)		per sample	$151.52		$0.00
15.2 7-OXYGENATES & ETHANOL (8260D)		per sample	$112.07		$0.00
16.2 EDB (504.1)		per sample	$97.11		$0.00
17.2 RCRA METALS (200.8)		per sample	$122.15		$0.00
K. Analyses-Soil					
18.2 BTEX + Naphth.		per sample	$78.18		$0.00
19.2 PAH's		per sample	$78.22		$0.00
20.2 8 RCRA Metals		per sample	$68.89		$0.00
21.2 TPH-DRO (3550C/8015C)		per sample	$48.86		$0.00
22.2 TPH-GRO (5035B/8015C)		per sample	$43.92		$0.00
23.2 Grain size/hydrometer		per sample	$127.04		$0.00
24.2 Total Organic Carbon		per sample	$37.38		$0.00
P. Survey*					
1.1 Subsequent Survey		each	$297.65		$0.00
Q. Disposal (gallons or tons)*					
1.2 Wastewater	100	gallon	$1.19		$119.00
2.2 Free Product		gallon	$1.63		$0.00
3.2 Soil Treatment/Disposal		ton	$156.25		$0.00
4.2 Drilling fluids		gallon	$1.25		$0.00
R. Miscellaneous (attach receipts)					
Targeted Corrective Action (see attached Table)	1	each	$179,442.25		$179,442.25
W. Aggressive Fluid & Vapor Recovery (AFVR)					
1.2 8-hour Event		per event	$1,787.40		$0.00
2.1 24-hour Event		per event	$4,407.78		$0.00

3.1 48-hour Event		per event	$7,242.29		$0.00
4.1 96-hour Event		per event	$14,482.28		$0.00
5.1 Off-gas Treatment 8 hour		per event	$141.17		$0.00
6.2 Off-gas Treatment 24 hour		per event	$294.30		$0.00
7.2 Off-gas Treatment 48 hour		per event	$386.10		$0.00
8.1 Off-gas Treatment 96 hour		per event	$898.84		$0.00
9.1 Off-gas Treatment 8 hour (w/chlorinated compounds)		per event	$464.40		$0.00
10.1 Off-gas Treatment 24 hour (w/chlorinated compounds)		per event	$540.00		$0.00
11.1 Off-gas Treatment 48 hour (w/chlorinated compounds)		per event	$1,080.00		$0.00
12.1 Off-gas Treatment 96 hour (w/chlorinated compounds)		per event	$2,160.00		$0.00
13.2 AFVR Effluent Disposal(w/chlorinated compounds)		gallon	$0.64		$0.00
14.2 AFVR Site Reconnaissance		each	$302.40		$0.00
15.1 Additional Hook-ups		each	$29.68		$0.00
16.2 AFVR Effluent Disposal		gallon	$0.53		$0.00
17.2 AFVR Mobilization/Demobilization		each	$777.60		$0.00
Z. **High Resolution Site Characterization**					
1.1 HRSC Screening Equipment Mobilization		each	$1,468.80		$0.00
2.1 HRSC Drilling Category 1		per foot	$31.32		$0.00
3.1 HRSC Drilling Category 2		per foot	$36.18		$0.00
4.1 HRSC Drilling Category 3		per foot	$29.16		$0.00
5.1 HRSC 3-D Model		each	$4,363.20		$0.00
S. Report Prep & Project Management	12%	percent	$321,549.38		$38,585.93
TOTAL					$360,135.31

ITEM							
R. Miscellaneous (attach receipts)			QUANTITY	UNIT	UNIT PRICE		TOTAL
Corrective Action Plan			1	each	$10,000.00		$10,000.00
I. Injection							
Injectate - Event 1 (PersulfOx)			1	per event	$30,668.99		$30,668.99
Injectate - Event 2 (PersulfOx)			1	per event	$30,668.99		$30,668.99
Injectate - Event 3 (PetroFix)			1	per event	$32,511.36		$32,511.36
Injectate - Event 3 (Sodium Bicarbonate)			1	per event	$5,040.00		$5,040.00
Injection Services and Equipment - Event 1			1	per event	$15,000.00		$15,000.00
Injection Services and Equipment - Event 2			1	per event	$15,000.00		$15,000.00
Injection Services and Equipment - Event 3			1	per event	$24,000.00		$24,000.00
Expendable Supplies and Tooling - Event 1			1	per event	$3,556.96		$3,556.96
Expendable Supplies and Tooling - Event 2			1	per event	$3,556.96		$3,556.96
Expendable Supplies and Tooling - Event 3			1	per event	$3,556.96		$3,556.96
Secondary Parameter Analysis			15	each	$157.33		$2,360.00
Skid Steer Rental			3	each	$1,174.01		$3,522.03
II. Enhanced AFVR							$0.00
Injectate				per event			$0.00
Injection Services				per event			$0.00
Secondary Parameter Analysis				each			$0.00
III. Excavation				ton			$0.00
Excavation Equipment and Operator				each			$0.00
Backfill Material				ton			$0.00
Backfill Additive				ton			$0.00
Proctor/Compaction Testing				per event			$0.00
Sheet Piling				per event			$0.00
Dewatering Equipment				per event			$0.00
Excavation Security/Fencing				per event			$0.00
TOTAL							$179,442.25

"WHERE LESS IS MORE"

LessChem, Inc.
608 Branch Drive
Gray Court, SC 29645
(864) 684-7172
ablakely@prtcnet.com

To: Will Lyons, EnviroSouth
LessChem, Inc. can provide a quoted price of $1.05/pound for 4,800 pounds of Sodium Bicarbonate (Baking Soda).

Jacob Blakely
Operations Manager
LessChem, Inc.

2225 Riverside Dr
Asheville, NC 28804
Phone: 828-254-7176
Fax: 828-252-4618

Quote Prepared for:

EnviroSouth Environmental Consultants
3440 Augusta Rd
Greenville, SC 29605
United States

Trevor Hudson
(864) 236-9010
thudson@envirosouth.com

Quote Information

Quote Name	00176172 - ENVIROSOUTH_Liberty Dollar General_12/31/24_MH(CG)
Quote Number	00176172
Created Date	2/5/2025
Expiration Date	6/30/2026

Pace® Contact Information

Account Executive
Craig Griffin
craig.griffin@pacelabs.com
(704) 773-3966

Pace Project Manager
Matthew Brainard
matthew.brainard@pacelabs.com
704-977-0942

Project Information

Standard TAT:	7 Business Days
Rush Surcharges:	7 day=Standard, 5 day=1.25x, 4 day=1.50x, 3 day=2.00x, 2 day=2.50x, 1 day=3.00x
Project Location	SC
Report Level	Level II
EDD Requirements:	Standard
Certification Requirements	SC

Payment Information

Customer Invoice To Contact:	Thomas Donn
Customer Invoice To Email:	tdonn@envirosouth.com
Credit Application Approved?	Credit Approved
Payment Terms:	30 Days
Payment Term Details:	Approved 6-26-24

Minimum Laboratory Fee (per work order)

Waived

Quote Details

Quantity	Method	Product	Line Item Description	Sales Price	Sub-Total	Total-Price
3.00	EPA 6010 (ICP)	Dissolved Metals, Field Filtered	Dissolved Fe, Mn $13/metal	$26.00	$78.00	$78.00
3.00	EPA 6010 (ICP)	Metal Analysis (4 Metals) (water)	Total Mn, Al, Fe and Ca $12/metal	$48.00	$144.00	$144.00
3.00		Metals Digestion (per sample)	included at no additional charge for this project	$0.00	$0.00	$0.00

2225 Riverside Dr
Asheville, NC 28804
Phone: 828-254-7176
Fax: 828-252-4618

3.00	EPA 9056	Sulfate (water)		$28.00	$84.00	$84.00
3.00	EPA 9056	Nitrogen, Nitrate (water)		$25.00	$75.00	$75.00
3.00	EPA 9056	Nitrogen, Nitrite (water)		$25.00	$75.00	$75.00
1.00		Environmental Impact Fee (Per Invoice)		$10.00	$10.00	$10.00
3.00		Sample Disposal (per sample)		$2.00	$6.00	$6.00

Estimated Grand-Total $472.00

For New Customer and Credit Application Form, Click Here

Additional Pricing Considerations:

If you have specific questions about any conditions noted below, please contact your Pace Analytical Representative.
•Unless accepted, signed and returned, or otherwise noted above, proposal expires 60 days from Created Date above.
• Quoted prices include standard Pace Analytical QA/QC, reporting limits, compound lists and standard report format unless noted otherwise.
• If project specific MS/MSD samples are submitted, they may be billable.
• Volatile soils need to be frozen within 48 hours of collection. To facilitate this, they should be submitted to the lab within 40 hours of collection.
• TAT (Turn Around Time) is in working days unless otherwise specified above.
• To ensure requested TAT is available, please coordinate with your Pace Analytical representative at time of sample submittal.
• Any deviation from the above quoted scope of work, including sample arrival date and volume, may result in adjustment of prices.
• Please include Quote Number on Chain-of-custody to ensure proper billing.
• Pricing includes standard delivery of bottle/sample kits and coolers.
• Charges will apply for non-standard shipping and for projects where shipping exceeds 10% of the total analytical costs of the shipment.
• All air and air-related equipment charges (i.e. rental fees for unused, unreturned or damaged equipment, are detailed in the Pace® Canister Use Policy
• PACE RESERVES THE RIGHT TO SURCHARGE ON CREDIT CARD PAYMENTS BASED ON CARD TYPE AND ZIP CODE
• PACE RESERVES THE RIGHT TO PASS ALONG ALL EXPEDITED SHIPPING FEES. A MINIMUM FEE OF $100 PER COOLER MAY BE APPLIED.

Pace Analytical Terms and Conditions

These Standard Terms (Terms) govern all services that Pace Analytical _____ ("Lab") will perform on behalf of _____ ("Client"), and supersede any other written provisions (including purchase/work orders) related to the services, as well as all prior discussions, courses of dealing, and/or performance, unless a separate, executed agreement for the same or similar services already exists between the Lab and Client (collectively "the Parties), or the Parties subsequently agree to terminate or amend these Terms, as allowed in Section 10 and 12, respectively.

1. Definitions:
Chain of Custody (COC): A document evidencing the collection, handling, delivery, etc. of a sample or Sample Delivery Group
Holding Time: The maximum amount of time a sample may be stored before being analyzed.
Sample Delivery Acceptance (SDA): The date and time when Lab officially receives a sample or Sample Delivery Group, as evidenced by either a notation on the Chain of Custody or an entry in the Lab's information management system (LIMS).
Sample Delivery Group (SDG): A set of samples normally shipped and reported to the Lab as a group.
Turnaround Time (TAT): The maximum allowable period within which Lab must report out its analytical testing results to Client, calculated from the date of SDA.

2. Client's Obligations:
a. To initiate Lab's services, Client must reference a quotation number (if applicable) and complete one of the following steps:
   i. Submit a completed purchase order by:
      1. hand (i.e., in person)
      2. mail, or
      3. e-mail; or
   ii. Place an order by:
      1. telephone
      2. e-mail, or
      3. delivering a sample (or SDG) to Lab and completing the COC

2225 Riverside Dr
Asheville, NC 28804
Phone: 828-254-7176
Fax: 828-252-4618

b. Subject to occasional, mutually agreed-upon exceptions, Client must give five (5) days' prior notice for each sample delivery and provide the following information:
   i. Name of the responsible project manager
   ii. Name of the person submitting the sample
   iii. Name/location of collection site
   iv. Date and time of collection
   v. Specific testing being requested, and
   vi. Sufficient details about reporting requirement(s).

c. Client shall also:
   i. Remain liable for any loss or damage to sample(s) until SDA (including that which may occur as a result of third-party shipping delays)
   ii. Payment Terms: Net 30 days from date of invoice unless a valid fully executed agreement is on file with Pace.
   iii. Notify Lab about any disputed charges or results within 30 days of receiving applicable invoice
   iv. Reimburse Lab for any costs* related to delinquent payments
   v. Demonstrate its (or, if applicable, the Prime Client's) credit worthiness by accessing the following link: https://www.pacelabs.com/my-account.html and clicking on "Client Profile Information." (Note: Client must pre-pay for services pending completion of this process and Lab's approval of a credit line.)
   vi. Pay for any services it orders on any already analyzed sample
   vii. Obtain Lab's written consent before assigning billing or payment of Lab services to any third party, (failure to do so shall mean Client remains responsible for the payment of any outstanding balance)
   viii. Refrain from using any of Lab's supplies (e.g., containers) in connection with any non-Lab work
   ix. Ensure that any sample(s) containing any known hazardous substance is (are) labeled, packaged, manifested, transported, and delivered to Lab in accordance with all applicable regulations. (No SDA of any "high hazard" sample can occur without Lab's express permission.)
   x. Obtain Lab's prior written consent before publishing Lab's name and/or any data
   xi. Reimburse Lab for any out-of-scope services and related expenses (e.g., defending its analytical results or responding to a subpoena for documents and/or expert testimony)
   xii. Excuse Lab for any failure or delay in its performance caused by someone or something outside its control, e.g., a third party or "Force Majeure" event or circumstance, such as natural disasters or government shutdowns; and
   xiii. Accept responsibility for any claims, damages, losses, expenses*, etc. to the extent caused by Client's: breach of these Terms; negligence or willful misconduct (includes Client's use of Lab data for anything other than the specific purpose for which it was intended), or violation of applicable laws.

3. Lab's Obligations:

Lab shall:

a. Perform its services in accordance with generally accepted analytical and environmental laboratory practices and professionally recognized standards.
b. Identify on quotation if services will be sent to another Lab location or to a third party.
c. Promptly notify Client of any:
   i. Missing sample or otherwise compromised sample(s)
   ii. Significant delays or other issues affecting Lab's services, or
   iii. Subpoena or similar demand for Lab compliance
d. Maintain high-quality services.
e. Prepare and keep accurate records.
f. Obtain/maintain any permit(s), license(s), or certification(s).
g. Charge its fees on a net 30 basis (unless otherwise agreed).
h. Impose a one and one half percent (1.5%) per month late charge on any unpaid balances.
i. Assess a two and one half percent (2.5%) surcharge on any payments made by credit card. (Client can avoid this charge by paying with a debit card, an e-check/check by phone, a wire transfer, or an ACH payment.)
j. Invoice Client for each sample or SDG as reported.
k. Assume risk of loss or damage to any Client sample(s) upon SDA.
l. Initiate analysis within established holding times – so long as SDA occurred within 48 hours of collection or the first half of the maximum allowed holding time.
m. Indemnify Client for any claims, damages, losses, expenses*, etc. to the extent they were caused by Lab's breach of these Terms, negligence or willful misconduct, or the negligence and willful misconduct of persons for whom Lab is legally responsible.
n. Warrant the results, with the express understanding that this warranty is exclusive and does not extend to any merchantability or fitness for a particular purpose.

4. Lab's Discretionary Actions:

Lab may:

a. Cease all services, including any release of data, if Client does not pay as agreed
b. Reject or rescind any SDA if Lab decides sample poses any risk or hazard
c. Charge or bill Client directly for:
   i. Any supplies (including containers) that are not used or returned
   ii. Expedited outbound/return shipping for any sample that is not time-sensitive
   iii. Disposal of any air samples that have not been reclaimed within seven (7) days of Lab's SDA thereof
   iv. Disposal of any other sample not been reclaimed within 21 days of Lab's SDA thereof, or as otherwise required
   v. A minimum fee for invoicing and/or handling any sample

2225 Riverside Dr
Asheville, NC 28804
Phone: 828-254-7176
Fax: 828-252-4618

vi. A sample that underwent SDA, but was not analyzed, at Client's direction
vii. Additional shipping and handling as deemed necessary
viii. Change in scope and/or rescheduling fees
ix. Minimum fees or additional surcharges as necessary
x. Reasonable attorneys' fees
xi. Project resampling related to missed deliveries, etc.
xii. Off cycle pricing increase dictated by the market
xiii. Any request for re-analysis following release of the report if the results are within the variability of the method (or acceptable parameters)

d. Return unused portions of samples found or suspected to be hazardous to Client, at Client's cost.
e. Retain Client's unreleased data and/or cancel Client's web portal access pending payment in full.
f. Increase prices on an annual basis to support market-driven cost-increases.

5. Multiple Dilutions: Lab will report a single value for each analyte based on the most appropriate analysis or dilution for that analyte. Based on general screening where appropriate, samples will be reported on a dilution-only basis due to concentrations of target analytes present. Lab may attempt a 10-fold more concentrated analysis if practicable. Client may also request and pay for additional dilutions if practicable.

6. Dry Weight Correction / Percent (%) Moisture: Consistent with all applicable reporting methods, Lab will automatically analyze any solid sample (soil) for % moisture to allow for dry weight correction and charge accordingly. If "wet weight" reporting is requested by the client or the regulatory agency, Lab will maintain the charge for dry weight correction even if the results were not corrected for the applicable reporting criteria.

7. Confidentiality: The Parties agree that they will take all reasonable precautions to prevent the unauthorized disclosure of any proprietary or confidential information of each other and that they will not disclose such information except to those employees, subcontractors, or agents who have expressly agreed to maintain confidentiality.

8. Governing Law: These Terms shall be construed and interpreted pursuant to the laws of the State of Minnesota without giving effect to the principles of conflicts of law thereof.

9. Term: The Parties shall perform the services identified in the applicable purchase order or other agreement until completed or terminated in accordance with Section 10 below

10. Termination:
a. Either party may terminate these Terms upon 30 days' prior written notice.
b. Lab may immediately terminate for any breach by Client, including its failure to pay within 60 days of Lab's dated invoice.

11. Limitation of Liability:
a. If a court of competent jurisdiction finds that Lab failed to meet applicable standards and if Client suffers damages as a result, Lab's aggregate liability for its negligence or unintentional breach of contract shall not exceed the total fee paid for its services.
b. This limitation shall not apply to any Client losses arising from Lab's negligence or willful misconduct, so long as Client:
i. Notifies Lab of any issue within thirty (30) days of receiving applicable invoice, and
ii. Allows Lab to defend its data, even to a regulatory agency that may have previously rejected same.
c. Notwithstanding the foregoing, neither Lab nor Client shall be liable to the other for special, incidental, consequential, or punitive damages.

12. Amendment/Change Order: Any attempt to modify, vary, supplement, or clarify any provision of these Terms is of no effect unless reduced to writing and signed by both Parties.

13. Storage of Data: Following final report issuance, Lab will retain back-up data and final test reports for ten (10) years in a format from which the data and/or test report can be reproduced.

14. Intellectual Property: Lab shall retain sole ownership of any new method, procedure, or equipment it develops or discovers while performing services for Client pursuant to these Terms. Lab may, however, grant a license to the Client for its use of same.

15. Non-competition: Client shall not solicit or recruit any Lab personnel for at least 12 months following the termination of the services governed by these Terms.

16. Non-assignment: Neither party may assign or transfer any right or obligation existing under these Terms without prior written notice to the other party, except that Lab may freely transfer the services to another Lab location or, with Client's permission, subcontract the services to a third-party.

17. Insurance: Lab carries insurance with the limits of coverage as indicated below and will, upon Client's request, submit certificates of insurance showing same.
a. General Liability - $1,000,000 each occurrence; $2,000,000 general aggregate;
b. Personal and Advertising Injury - $1,000,000;
c. Automobile Liability - $1,000,000 combined single limit;
d. Excess Liability Umbrella - $5,000,000 aggregate; $5,000,000 each occurrence;
e. Worker's Compensation Insurance - statutory limits; and

2225 Riverside Dr
Asheville, NC 28804
Phone: 828-254-7176
Fax: 828-252-4618

f. Professional Liability $5,000,000 aggregate, $5,000,000 per claim.

18. Miscellaneous Provisions:

a. In the absence of an executed agreement between the Parties, the SDA will constitute acceptance of these Terms by Client.
b. The Parties may use and rely upon electronic signatures and documents for the execution and delivery of these Terms and any amendments, notices, records, disclosures, or other documents of any type sent or received in accordance with these Terms.
c. The Parties are at all times acting and performing as independent contractors; neither one shall ever be considered an agent, servant, employee, or partner of the other.
d. These Terms shall be binding upon, and inure to the benefit of, the Parties and their respective successors and assigns.
e. Lab's compliance with a subpoena or other order shall not violate any requirement for confidentiality between the Parties.
f. If any Term herein is invalidated or deemed unenforceable, it shall not affect the validity or enforceability of the other Terms.

IN WITNESS WHEREOF, Client and Lab have executed this Agreement through their duly authorized representatives as of the last date below:

[Client] _____

By:_____
Name:_____
Title:_____
Date:_____

Pace Analytical

By:_____
Name:_____
Title:_____
Date:_____

*May include reasonable attorney's fees

Quote Prepared by:

Marissa Hancock marissa.hancock@pacelabs.com

QUOTE

HercRentals™

R.A. No. 56638370

BRANCH: 247	BILL TO CUSTOMER:	SHIPPING ADDRESS
HERC SOUTH GREENVILLE SC 121 HURRICANE CREED RD PIEDMONT, SC 29673 864-740-6024	**HERC** 121 HURRICANE CREEK RD. PIEDMONT, SC 29673 SC HERC	**HERC** 121 HURRICANE CREEK RD PIEDMONT, SC 29673 864-740-6024

DESCRIPTION/CHARGES

EST START: 2/05/25 8:00 **EST RETURN:** 2/06/25 8:00 DROP DATE: _____

SHIPPED BY: 99 ORDERED BY: DROP TIME: _____

ORDER DATE: 2/05/25 SALESPERSON: 399 SALES COORDINATOR:

PO# / JOB#: /

Rates subject to availability

Herc Rentals offers peace of mind when you purchase Rental Protection Plan ("RPP") at the start of your rental. This optional program limits your responsibility when accidental damage or theft occurs on covered equipment. You will be charged the RPP fee if you choose to purchase RPP or until you provide an acceptable certificate of insurance. View the benefits, details, and exclusions to RPP by visiting our website at https://www.hercrentals.com/services/rpp-rental-protection-plan/terms-and-conditions.html or contact your Herc Rentals servicing location for more information.

Qty	Equipment #		Hrs/ Min	Hour	Day	Week	4 Week	Amount
1	COMPACT TRACK LOADER 2800LB & OVER ROPS		8/ 506.00		506.00	1361.00	3103.00	506.00
	2001470							
	HR CHG:							
	EMISSIONS & ENV SURCHARGE	EMISSIONS						10.02
	SC PROPERTY TAX RECOVERY FEE	2217999900						12.65
	RENTAL PROTECTION PLAN							75.90
1	WB LOADER ATTACHMENT FORKS		8/ 30.00		30.00	77.00	222.00	30.00
	2901060							
	HR CHG:							
	SC PROPERTY TAX RECOVERY FEE	2217999900						.75
	RENTAL PROTECTION PLAN							4.50

SALES ITEMS:

Qty	Item number	Unit Price	
1	TRANS SRVC SURCHARGE	46.750	46.75
	3710000001 - TRANS SERVICE SURCHARGE		

CONTINUED

CAREFULLY READ THE TERMS AND CONDITIONS THAT APPEAR BELOW AND ON REVERSE SIDE OF THIS PAGE ("TERMS")

RENTAL PROTECTION PLAN. Customer must either show proof of Property Insurance as required in Section 8 on reverse side hereof or purchase Rental Protection Plan ("RPP"). Herc Rentals Inc. or its affiliate ("Herc") may offer RPP for a fee to Customer on certain Equipment and for certain types of loss or damage to limit Customer's liability for property loss or damage to such Equipment for such loss or damage. RPP is not offered on all types of Equipment. NOTWITHSTANDING PAYMENT OF THE RPP FEE, RPP DOES NOT APPLY, AND CUSTOMER IS LIABLE FOR, ALL DAMAGES TO OR REPLACEMENT COST OF, THE EQUIPMENT, AS APPLICABLE, AND ANY ADMINISTRATIVE FEES AND EXPENSES OF HERC: (1) CAUSED BY THE EQUIPMENT BEING USED OR OPERATED IN VIOLATION OF ANY OF THE TERMS; (2) IN CASE OF NEGLIGENCE, AS DETERMINED IN HERC'S SOLE DISCRETION; AND/OR (3) IF COVERAGE IS EXCLUDED UNDER THE RPP TERMS AND CONDITIONS POSTED ON HERC'S WEBSITE. Upon accepting RPP, Customer agrees to pay an RPP fee. Customer must review the RPP Terms and Conditions posted on Herc's website at https://www.hercrentals.com/services/rpp-rental-protection-plan/terms-and-conditions.html before deciding whether to accept RPP. If Herc offers RPP to Customer for certain Equipment and Customer accepts RPP and pays Herc the RPP fee, in return for the RPP fee, if at the time of the claim, RPP covers such repair or replacement, Herc agrees to waive certain claims for accidental damages to or theft of such covered Equipment occurring during normal and careful use. Customer remains liable for all other damages as set forth in the Terms. RPP IS NOT INSURANCE. TO THE EXTENT HERC DOES NOT OFFER RPP TO CUSTOMER, OR CUSTOMER DOES NOT ACCEPT RPP, CUSTOMER MUST MAINTAIN THE PROPERTY INSURANCE COVERAGE REQUIRED BY PARAGRAPH 8. PLEASE BE AWARE THAT IF CUSTOMER DOES NOT ELECT TO TAKE RPP AND IT ELECTS TO MAINTAIN PROPERTY INSURANCE COVERAGE, AND IF THE CERTIFICATE OF INSURANCE PROVIDED TO HERC TO EVIDENCE SUCH INSURANCE COVERAGE IS UNACCEPTABLE TO HERC OR THE APPLICABLE POLICIES EXPIRE, CUSTOMER AGREES THAT HERC MAY CHARGE RPP FOR ALL APPLICABLE RENTALS UNTIL SUCH TIME AS AN ACCEPTABLE AND VALID CERTIFICATE OF INSURANCE IS PROVIDED AND SUCH MATTERS ARE CORRECTED TO HERC'S REASONABLE SATISFACTION. NOTWITHSTANDING ANY NOTATION ON THE RENTAL RECORD, RPP IS NOT OFFERED ON OR AVAILABLE FOR THE RENTAL OF PASSENGER MOTOR VEHICLES AND CERTAIN OTHER EQUIPMENT LISTED ON HERC'S WEBSITE.

A detailed description of fees and surcharges that may be applicable to Customer's rental can be found on Herc's website at https://www.hercrentals.com/services-associated-charges.html Customer agrees to pay, in addition to all rental charges, all fees and charges set forth above and, the following charges as applicable: (i) based on Customer's possession and/or use of the Equipment, all consumables, fees, licenses, present and future taxes and any other governmental charges; (ii) additional charges for more than one shift use; (iii) freight, delivery, pick up, transportation charges; (iv) transportation service surcharges; (v) repairs and replacement per this contract; (vi) cleaning charge for Equipment returned with excessive dirt, concrete and/or paint; (vii) fees for lost keys; (viii) refueling service charges; (ix) fines for use of dyed diesel fuel in on road Equipment; (x) preventative maintenance charges, (xi) emissions and environmental surcharges and fees; (xii) vehicle license fees. HERC COLLECTS THESE FEES AND CHARGES AS REVENUE AND USES THEM AT ITS DISCRETION.

THE EQUIPMENT IS RENTED BY HERC TO THE CUSTOMER PURSUANT TO THE TERMS. CUSTOMER REPRESENTS HAVING READ AND AGREED TO SAME.

PARAGRAPH 11 ON THE BACK OF THIS PAGE IS IN LIEU OF (I) ALL WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; AND (II) ALL OBLIGATIONS ON THE PART OF HERC TO CUSTOMER FOR DAMAGES.

CUSTOMER WAIVES ALL INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, INCLUDING WITHOUT LIMITATION, THE RENTAL, MAINTENANCE, USE, OPERATION, STORAGE, ERECTION, DISMANTLING OR TRANSPORTATION OF THE EQUIPMENT.

Customer is obligated to return the Equipment in a good, clean, and uncontaminated condition, free of any and all hazardous substances.

Quote Valid For 30 Days From Order Date

Terms are due upon receipt Not valid without Barcode

Customer Name _____ Title _____

Customer Signature _____ Date _____

QUOTE

HercRentals™

R.A. No. 56638370

BRANCH: 247	BILL TO CUSTOMER:	SHIPPING ADDRESS
HERC SOUTH GREENVILLE SC 121 HURRICANE CREED RD PIEDMONT, SC 29673 864-740-6024	**HERC** 121 HURRICANE CREEK RD. PIEDMONT, SC 29673 SC HERC	**HERC** 121 HURRICANE CREEK RD PIEDMONT, SC 29673 864-740-6024

DESCRIPTION/CHARGES

EST START: 2/05/25 8:00 **EST RETURN:** 2/06/25 8:00 DROP DATE: _____

SHIPPED BY: 99 ORDERED BY: DROP TIME: _____

ORDER DATE: 2/05/25 SALESPERSON: 399 SALES COORDINATOR: LUKE SHELDON

Rates subject to availability

PO# / JOB#: /

Qty	Equipment #	Hrs/	Min	Hour	Day	Week	4 Week	Amount
SALES ITEMS:								
Qty	Item number	Unit	Price					
1	TRANS SRVC SURCHARGE		46.750					46.75
	3710000001 - TRANS SERVICE SURCHARGE							
	DELIVERY CHARGE							212.50
	PICKUP CHARGE							212.50
							Sub-total:	1077.92
							Rental Protection Plan:	80.40
	Taxable Sub-total: 1144.92						Tax:	80.15
							Total:	1238.47

CAREFULLY READ THE TERMS AND CONDITIONS THAT APPEAR BELOW AND ON REVERSE SIDE OF THIS PAGE ("TERMS")

RENTAL PROTECTION PLAN. Customer must either show proof of Property Insurance as required in Section 8 on reverse side hereof or purchase Rental Protection Plan ("RPP"). Herc Rentals Inc. or its affiliate ("Herc") may offer RPP for a fee to Customer on certain Equipment and for certain types of loss or damage to limit Customer's liability for property loss or damage to such Equipment for such loss or damage. RPP is not offered on all types of Equipment. NOTWITHSTANDING PAYMENT OF THE RPP FEE, RPP DOES NOT APPLY, AND CUSTOMER IS LIABLE FOR, ALL DAMAGES TO OR REPLACEMENT COST OF, THE EQUIPMENT, AS APPLICABLE, AND ANY ADMINISTRATIVE FEES AND EXPENSES OF HERC: (1) CAUSED BY THE EQUIPMENT BEING USED OR OPERATED IN VIOLATION OF ANY OF THE TERMS; (2) IN CASE OF NEGLIGENCE, AS DETERMINED IN HERC'S SOLE DISCRETION; AND/OR (3) IF COVERAGE IS EXCLUDED UNDER THE RPP TERMS AND CONDITIONS POSTED ON HERC'S WEBSITE. Upon accepting RPP, Customer agrees to pay an RPP fee. Customer must review the RPP Terms and Conditions posted on Herc's website at https://www.hercrentals.com/services/rpp-rental-protection-plan/terms-and-conditions.html before deciding whether to accept RPP. If Herc offers RPP to Customer for certain Equipment and Customer accepts RPP and pays Herc the RPP fee, in return for the RPP fee, if at the time of the claim, RPP covers such repair or replacement, Herc agrees to waive certain claims for accidental damages to or theft of such covered Equipment occurring during normal and careful use. Customer remains liable for all other damages as set forth in the Terms. RPP IS NOT INSURANCE. TO THE EXTENT HERC DOES NOT OFFER RPP TO CUSTOMER, OR CUSTOMER DOES NOT ACCEPT RPP, CUSTOMER MUST MAINTAIN THE PROPERTY INSURANCE COVERAGE REQUIRED BY PARAGRAPH 8. **PLEASE BE AWARE THAT IF CUSTOMER DOES NOT ELECT TO TAKE RPP AND IT ELECTS TO MAINTAIN PROPERTY INSURANCE COVERAGE, AND IF THE CERTIFICATE OF INSURANCE PROVIDED TO HERC TO EVIDENCE SUCH INSURANCE COVERAGE IS UNACCEPTABLE TO HERC OR THE APPLICABLE POLICIES EXPIRE, CUSTOMER AGREES THAT HERC MAY CHARGE RPP FOR ALL APPLICABLE RENTALS UNTIL SUCH TIME AS AN ACCEPTABLE AND VALID CERTIFICATE OF INSURANCE IS PROVIDED AND SUCH MATTERS ARE CORRECTED TO HERC'S REASONABLE SATISFACTION.** NOTWITHSTANDING ANY NOTATION ON THE RENTAL RECORD, RPP IS NOT OFFERED ON OR AVAILABLE FOR THE RENTAL OF PASSENGER MOTOR VEHICLES AND CERTAIN OTHER EQUIPMENT LISTED ON HERC'S WEBSITE.

A detailed description of fees and surcharges that may be applicable to Customer's rental can be found on Herc's website at https://www.hercrentals.com/services-associated-charges.html Customer agrees to pay, in addition to all rental charges, all fees and charges set forth above and, the following charges as applicable: (i) based on Customer's possession and/or use of the Equipment, all consumables, fees, licenses, present and future taxes and any other governmental charges, (ii) additional charges for more than one shift use; (iii) freight, delivery, pick up, transportation charges; (iv) transportation service surcharges, (v) repairs and replacement per this contract; (vi) cleaning charge for Equipment returned with excessive dirt, concrete and/or paint; (vii) fees for lost keys; (viii) refueling service charges; (ix) fines for use of dyed diesel fuel in on road Equipment; (x) preventative maintenance charges; (xi) emissions and environmental surcharges and fees; (xii) vehicle license fees. HERC COLLECTS THESE FEES AND CHARGES AS REVENUE AND USES THEM AT ITS DISCRETION.

THE EQUIPMENT IS RENTED BY HERC TO THE CUSTOMER PURSUANT TO THE TERMS. CUSTOMER REPRESENTS HAVING READ AND AGREED TO SAME.

PARAGRAPH 11 ON THE BACK OF THIS PAGE IS IN LIEU OF (i) ALL WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; AND (ii) ALL OBLIGATIONS ON THE PART OF HERC TO CUSTOMER FOR DAMAGES.

CUSTOMER WAIVES ALL INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, INCLUDING WITHOUT LIMITATION, THE RENTAL, MAINTENANCE, USE, OPERATION, STORAGE, ERECTION, DISMANTLING OR TRANSPORTATION OF THE EQUIPMENT.

Customer is obligated to return the Equipment in a good, clean, and uncontaminated condition, free of any and all hazardous substances.

Quote Valid For 30 Days From Order Date

Customer Name _____ Title _____

Terms are due upon receipt Not valid without Barcode

Customer Signature _____ Date _____

SUNBELT RENTALS

PC#: 0514
1700 PEARMAN DAIRY RD
ANDERSON, SC 29625 5353
TELEPHONE: 864-224-8881

SUNBELT RENTALS, INC.
Salesman: 051400 ANDERSON HOUSE ACCOU

Typed By: TPERRY2

Job Site:
LYONS, WILLIAM
113 ODELL RD
LIBERTY, SC 29657 9214

C#: 864-979-7862 J#: 864-979-7862

Customer: SC 003273192
LYONS, WILLIAM
177 BETHEL GROVE CHURCH RD
GRAY COURT, SC 29645

QUOTE

Contract #.. 164949026
Contract dt. 2/05/25
Date out.... 4/15/25 8:00 AM
Est return.. 4/16/25 8:00 AM
Job Loc..... LYONS, WILLIAM;113 ODELL RD;LIBE
Job No.....
P.O. #..... PENDING
Ordered By.. LYONS, WILLIAM
NET DUE UPON RECEIPT

QTY	EQUIPMENT #	Min	Day	Week	4 Week	Amount
1.00	2100-2800LB TRACK SKIDSTEER CA 0480635 Must set up Commercial Account to Rent This Size Unit, Quote only	685.00	685.00	1745.00	3930.00	685.00
1.00	PALLET FORKS - LARGE SKID 0490002	54.00	54.00	136.00	368.00	54.00
1.00	SKIDSTEER LOADER BUCKET					N/C

SALES ITEMS:

Qty	Item number	Unit	Price	
1	DLPKSRCHG TRANSPORTATION SURCHARGE	EA	81.600	81.60
1	ENVIRONMENTAL 2133XXX000 ENVIRON/HAZMAT/DISPOSAL FEE	EA	14.350	14.35
1	SCHERS5 SC 2.5% HEAVY EQUIP. RENTAL SURCHARGE	EA	18.480	18.48
	RENTAL PROTECTION PLAN			110.85
	DELIVERY CHARGE			240.00
	PICKUP CHARGE			240.00

IF THE EQUIPMENT DOES NOT WORK PROPERLY, NOTIFY THE OFFICE AT ONCE | **MULTIPLE SHIFTS OR OVERTIME RATES MAY APPLY** | **CUSTOMER IS RESPONSIBLE FOR REFUELING, DAMAGES AND REPAIRS**

1. The total charges are an estimate based on the estimated rental period and other information provided by Customer.
2. Customer assumes all risks associated with the Equipment during the Rental Period, including injury and damage to persons, property and the Equipment.
3. Customer is responsible for and shall only permit properly trained, Authorized Individuals to use the Equipment.
4. If the Equipment does not operate properly, is not suitable for Customer's intended use, does not have operating and safety instructions or Customer has any questions regarding use of the Equipment, Customer shall not use the Equipment and shall contact Sunbelt immediately.
5. Equipment misuse or using damaged or malfunctioning Equipment may result in serious bodily injury or death and Customer agrees that Customer (i) assumes all risk associated thereunder, and (ii) indemnifies Sunbelt Entities for all claims or damages as a result of misuse or use of damaged or malfunctioning Equipment.
6. Customer has received, read, understands and agrees to the estimated charges and all the terms on this page, plus all sections on the reverse side of this Contract ("Sections"), including Release and Indemnification in Section 8 and Environmental Fee in Section 16, which can also be found at www.sunbeltrentals.com/rentalcontract. *Delivery/Pickup Surcharge fee explanation is available at www.sunbeltrentals.com/surcharge.
7. Customer must contact Sunbelt to request pickup of Equipment, retain the Pick-Up Number given by Sunbelt and will be responsible for Equipment until actually retrieved by Sunbelt.
8. Customer waives its right to a jury trial in any dispute as set forth in Section 19.
9. At the election of Sunbelt or Customer, Customer agrees to submit every dispute to arbitration and waives any right to bring a class action as set forth in Section 20.

Customer is declining Rental Protection Plan (see reverse side for details) _____ (Customer Initials)

Continued on the next page...

United Rentals

RENTAL QUOTE

BRANCH 701
1724 PEARMAN DAIRY RD
ANDERSON SC 29625-5353
864-226-1200

244168898

Customer #	: 1229520
Quote Date	: 02/05/25
Estimated Out	: 03/24/25 09:00 AM
Estimated In	: 03/25/25 09:00 AM
UR Job Loc	: 113 ODELL RD, LIBERT
UR Job #	: 98
Customer Job ID:	
P.O. #	:
Ordered By	: WILL LYONS
Written By	: JEFFERY HENDERSON
Salesperson	: MICHAEL GALLOWAY

Job Site

OLD GAS STATION / DOLLAR GEN
113 ODELL RD
LIBERTY SC 29657-9214

Office: 864-236-9010

ENVIROSOUTH INC
3440 AUGUSTA RD
ACCOUNTS PAYABLE
GREENVILLE SC 29605-2150

This is not an invoice
Please do not pay from this document

RENTAL ITEMS:

Qty	Equipment	Description	Minimum	Day	Week	4 Week	Estimated Amt.
1	9030590	SKID STEER TRACK LOADER 2800-3399#		604.00	1,491.00	3,466.00	604.00
1	903/5410	SKID STEER FORK ATTACHMENT					N/C

Rental Subtotal: 604.00

SALES/MISCELLANEOUS ITEMS:

Qty	Item		Price	Unit of Measure	Extended Amt.
1	SC HEAVY EQUIPMENT RENTAL FEE	[DRSURSC/MCI]	15.100	EACH	15.10
1	ENVIRONMENTAL SERVICE CHARGE	[ENV/MCI]	12.080	EACH	12.08
1	DELIVERY CHARGE		233.500	EACH	233.50
1	PICKUP CHARGE		233.500	EACH	233.50

Sales/Misc Subtotal: 494.18

Agreement Subtotal: 1,098.18
Tax: 75.83
Estimated Total: 1,174.01

COMMENTS/NOTES:

CONTACT: WILL LYONS
CELL#: 864-979-7862

TO SCHEDULE EQUIPMENT FOR PICKUP, CALL 800-UR-RENTS (800-877-3687)
WE ARE AVAILABLE 24/7 TO SUPPLY YOU WITH A CONFIRMATION #
IN ORDER TO CLOSE THIS CONTRACT

This proposal may be withdrawn if not accepted within 30 days. The above referenced Rental Protection Plan, environmental, and tax charges are estimates and are subject to change.

NOTICE: This is not a rental agreement. The rental of equipment and any items listed above is subject to availability and subject to the terms and conditions of the Rental and Service Agreement, which are available at https://www.unitedrentals.com/legal/rental-service-terms-US and which are incorporated herein by reference. A COPY OF THE RENTAL AND SERVICE AGREEMENT TERMS ARE AVAILABLE IN PAPER FORM UPON REQUEST.

ENVIROSOUTH
Environmental Consultants

May 2, 2025

Ms. Gina Carney
South Carolina Department of
Environmental Services (SCDES)
Underground Injection Control Coordinator
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

Re: Underground Injection Control
Permit Application and Attachments
Former Station
113 O'Dell Road
Liberty, South Carolina
UST Permit #20120
EnviroSouth Job No.3159

Dear Ms. Carney:

EnviroSouth, Inc., on behalf of Ms. June Nix, is pleased to provide you with this application for your approval to perform corrective action at the locations described in the attachments.

The proposed injection points are for remediation of petroleum hydrocarbons associated with the former operation of an underground storage tank (UST) system on the site. Further details are included within the attachments to the application.

If you have any questions, or require additional information, please do not hesitate to contact us.

Sincerely,

EnviroSouth, Inc.
UST Contractor No. 257

Thomas F. Donn, P.G.
Principal Hydrogeologist
S.C. Registration No. 908

attachments

cc: Mr. Zach Griffith, SCDES UST Management
Ms. June Nix
Ms. Courtney Milledge, SCDES Bureau of Water

Prepared for:

Ms. June Nix
236 Amberwood Road
Pickens, South Carolina 29671

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION AND ATTACHMENTS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

Job No. 3159
SCDES UST ID #20120

Prepared by:

EnviroSouth, Inc.
3440 Augusta Road
Liberty, South Carolina 29605

UST Contractor #257

May 2, 2025

A report prepared for:

Ms. June Nix
236 Amberwood Road
Pickens, South Carolina 29671

UNDERGROUND INJECTION CONTROL PERMIT
APPLICATION AND ATTACHMENTS
FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

EnviroSouth Job No. 3159
SCDES UST Permit No. 20120

Prepared by:

Trevor Hudson
Environmental Engineer

Reviewed by:

Thomas F. Donn, P.G.
Principal Hydrogeologist
S.C. Registration No. 908

EnviroSouth, Inc.
3440 Augusta Road
Liberty, South Carolina 29605
864-236-9010

UST Contractor #257

May 2, 2025

Form I UIC	D H E C Underground Injection Control Permit Application Ground-Water Protection Division (Collected under the Authority of Title 48 Chapter I of the 1976 South Carolina Code of Laws)	I. EPA ID NUMBER		
			T/A	C
		U		

Read attached instructions before starting.
For OfficialUse Only

Application Approved month day year	Date Received month day year	Permit Well Number

Comments

II. Facility Name and Address	III. Owner/Operator and Address
Facility Name Former Station	Owner/OperatorName June F. Nix
Street Address 113 O'Dell Road	Street Address 236 Amberwood Road
City: Liberty; State: South Carolina; Zip Code: 29657	City: Pickens; State: South Carolina; Zip Code: 29671

IV. Ownership Status (Select One)

☐ A. Federal ☐ B. State ☒ C. Private
☐ D. Public ☐ E. Other (Explain)

V. SIC Codes

5331

VI. Well Status (Select A, B or C)

☐ A. Operating — Date Started *(MM/DD/YYYY)*
☐ B. Modification/Conversion ☒ C. Proposed

VII. Type of Permit Requested - Class and Type of Well (see reverse)

A. Class(es) enter code(s)	B. Type(s) enter code(s)	C. If class is "other" or type is code 'Y', explain	D. Number of Wells per type
V.A	I		99

VIII. Location of Wells or Approximate Center of field or Project

C	A. Latitude				B. Longitude			
I		Deg	Min	Sec		Deg	Min	Sec
		34	49	49.5444		-82	42	16.2426

IX. Attachments

Complete the following questions on a separate sheet(s) and number accordingly; see instructions for Classes 11, 111, and V, complete and submit on a separate sheet(s) attachments A-U as appropriate. Attach maps where required. List attachments by letter which are applicable and include with your application.

X. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

A. Name (Type or Print)	Title	B. Phone No.
June F. Nix	Owner	(864) 640-5679
C. Signature: June F Nix		D. Date Signed (MM/DD/YYYY): 04/30/2025

DHEC2502(08/1997)

ATTACHMENT A: ACTIVITY FOR REVIEW

SUMMARY

EnviroSouth, Inc. has completed the Corrective Action Plan and Underground Injection Control Application for the former gas station facility as requested by the South Carolina Department of Environmental Services (SCDES) in a letter dated March 24, 2025. This document outlines the plan for targeted scope corrective action to mitigate petroleum hydrocarbon impact to the water table portion of the surficial aquifer in the vicinity of monitoring well MW-4 at the facility.

The facility is located in the town of Liberty, Pickens County, South Carolina at the location displayed on Figure 1. The site address is 113 O'Dell Road, Liberty, South Carolina. This facility is in a light commercial/rural area of Liberty, South Carolina. The site is located on a portion of an active discount store property. The targeted scope corrective action plan outlines the strategy to achieve regulatory closure at the facility.

SUMMARY OF ASSESSMENT

Based upon review of project history, it appears that the facility was formerly a gas station that ceased operations around 1972. A release from the previous underground storage tank (UST) system was confirmed in May 2022 and identified as release number one by the South Carolina Department of Environmental Services (SCDES, formerly known as the SCDHEC). A Tier I assessment was conducted by EnviroSouth, Inc. in March 2023. One or more petroleum constituents were documented above regulatory limits during the Tier I assessment. Based on the results of the Tier I assessment, the SCDES requested an additional assessment that included the installation of three (3) shallow monitoring wells and two (2) deep monitoring wells. The purpose of that assessment was to delineate the horizontal and vertical extent of the contaminant plume. A comprehensive sampling event was performed in March 2024. Based on the results of the comprehensive sampling event, the SCDES calculated site-specific target levels (SSTLs) and requested a Strategy to Closure in a letter dated January 15, 2025. Following review of the Strategy to Closure document, the SCDES requested this Corrective Action Plan in a letter dated March 24, 2025.

PROPOSED CORRECTIVE ACTION

Corrective action is proposed to reduce contaminant mass by in-situ chemical oxidation (ISCO) followed by enriched carbon treatment of the remaining contaminant mass. The ISCO and enriched carbon technologies will be applied in the vicinity of the on-site monitoring well MW-4. This permit application details the planned injection of PersulfOx®, PetroFix®, and sodium bicarbonate in the vicinity of well MW-4.

The source area has been determined through assessment activities to be approximately 1,500 square feet.

Two (2) application rounds of injection for in-situ chemical oxidation are proposed for the groundwater and vadose zone soils in the vicinity of well MW-4. Each application will consist of twenty-five (25) temporary injection points located on eight-foot centers within a grid. The second set of gridded application points will be offset by four feet from the original set of application points to maximize chemical distribution within the source area.

One (1) application round of injection is proposed for the enriched carbon treatment for the groundwater in the vicinity of well MW-4. The application will consist of forty-four (44) temporary injection points located on six-foot centers within a grid.

Injection Product

In-situ chemical oxidation (ISCO) for the reduction of petroleum hydrocarbon mass is proposed. The product that will be used is a sodium persulfate-based reagent known as PersulfOx® manufactured by Regenesis.

Enriched carbon treatment is proposed for the reduction of remaining petroleum hydrocarbon mass after ISCO. The products that will be used are an enriched carbon-based reagent known as PetroFix® manufactured by Regenesis and sodium bicarbonate (baking soda).

Safety data sheets (SDS) and specification sheets provided by Regenesis for the proposed

injectates are provided on the following pages.

ISCO – PersulfOx® Treatment

The remediation strategy proposed in the vicinity of monitoring well MW-4 is by direct contact with a solution of water and PersulfOx® placed by underground injection wells followed by injection of PetroFix® approximately three (3) months after the completion of initial mass reduction.

The two (2) injection events will each utilize twenty-five (25) temporary injection wells and will be performed approximately six (6) weeks apart.

The treatment area is approximately 1,500 square feet, and the injection interval extends from 10 to 30 feet below ground surface (Figures 3 and 4). Approximately 19,616 pounds of PersulfOx® mixed with 21,155 gallons of potable water will be necessary to meet the stoichiometric demands of the planned ISCO approach.

One (1) comprehensive intermittent sampling event will be performed two (2) months following the end of the second PersulfOx® injection event to generate remedial progress data prior to the follow-up PetroFix® application. All monitoring wells and surface water locations will be sampled for benzene, toluene, ethylbenzene, xylene (total), methyl-tert-butyl ether, naphthalene (BTEXMN), 1,2-dichloroethane (1,2-DCA), and eight (8) oxygenates by EPA Method 8260 and 1,2-dibromoethane (EDB) by EPA Method 8011.

Enriched Carbon – PetroFix® Treatment

Following the initial mass reduction achieved by the two (2) rounds of PersulfOx®, injection of the enriched carbon, PetroFix®, will be necessary to accomplish satisfactory contaminant reduction to meet SSTLs.

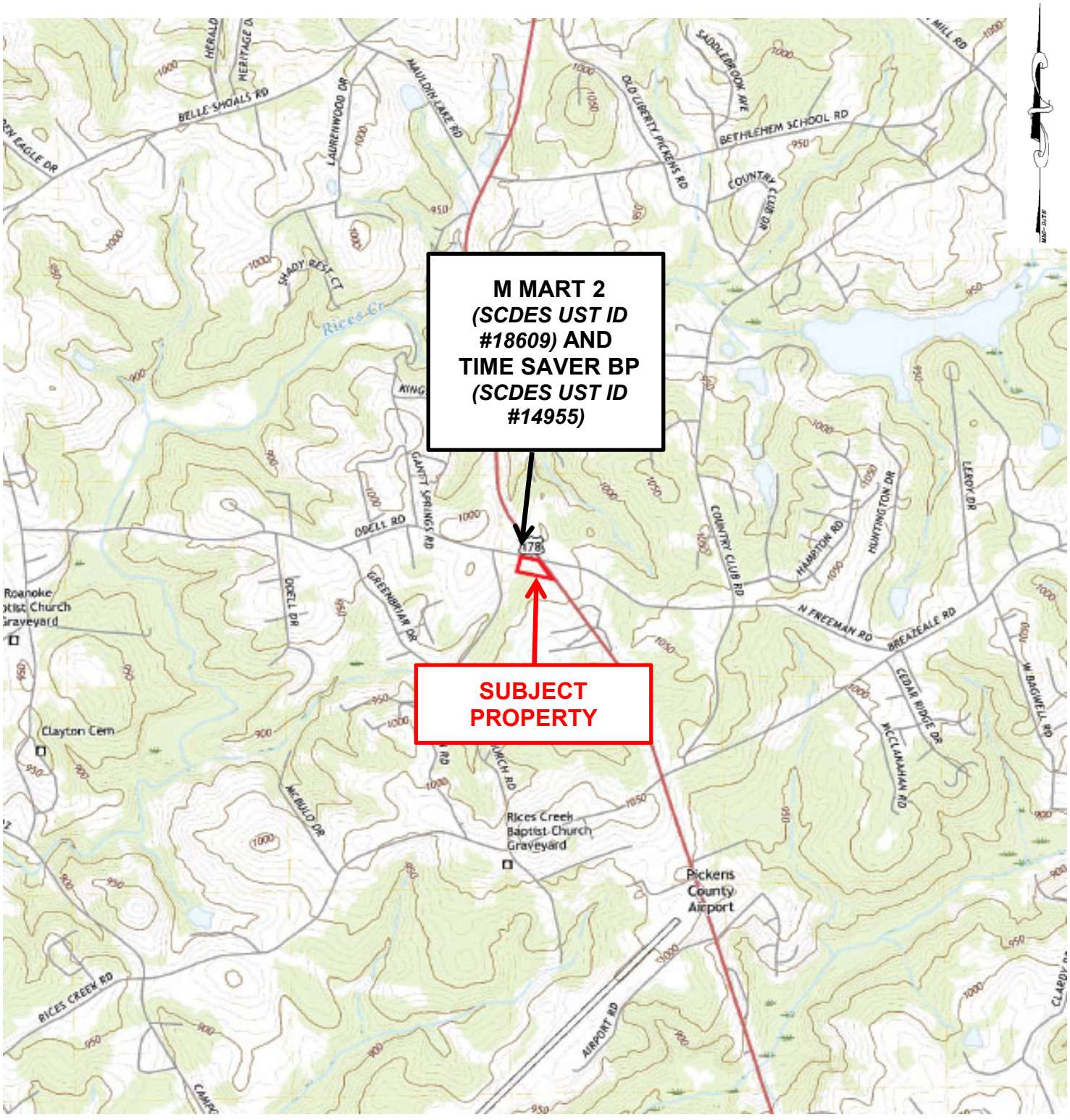
One (1) injection event will utilize forty-four (44) temporary wells and will be performed approximately three (3) months after the last PersulfOx® injection application.

The treatment area will be the same 1,500 square foot area, and the injection interval extends from 15 to 30 feet bgs (Figure 5). Approximately 4,800 pounds of PetroFix®, 240 pounds of PetroFix® electron acceptor blend, 4,800 pounds of sodium bicarbonate, and 12,974 gallons of water will be mixed and applied during the injection event.

The temporary injection wells will be installed using a Geoprobe 7822DT drill rig with 1.5-inch diameter probe rods and a five-foot length of injection rod utilizing a bottom-up injection technique. Figure 6 is a schematic diagram showing the injection well details.

Maximum Groundwater Injection Depth

The maximum injection depth will be 30 feet bgs. The injection zone for PersulfOx® injection will be from 10 to 30 feet bgs. The injection zone for PetroFix® injection will be from 15 to 30 feet bgs.



SOURCE: USGS 7.5' QUADRANGLE MAP 2020, LIBERTY, SC

ENVIROSOUTH
Environmental Consultants

SITE VICINITY MAP

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

JOB NO.: 3159	CHECKED BY: TFD	FIGURE: 1
SCALE: NOT SHOWN	DRAWN BY: BD	DATE: 06/07/2023

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL

MW-8D = DEEPER AQUIFER MONITORING WELL

SW-1 = SURFACE WATER SAMPLE LOCATION

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

O'DELL ROAD

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HWY

MW-5

MW-2

MW-8D

MW-4

MW-6

MW-7

MW-9D

MW-3

MW-1

DOLLAR GENERAL
113 O'DELL ROAD

CONCRETE DUMPSTER PAD

DETENTION POND

SW-2

SW-1

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE 10/03/2023	DRAWN BY BD	CHECKED BY TFD	SCALE AS SHOWN	JOB NO. 3159	FIGURE 2

ENVIROSOUTH Environmental Consultants

SITE MAP

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 1ST ROUND INJECTION WELL LOCATION

= GIS PROPERTY LINE

MW-4

8'

8'

5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	3

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 1ST ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 2ND ROUND INJECTION WELL LOCATION

– – – – – – – = GIS PROPERTY LINE

MW-4

8'

8'

5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	4

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 2ND ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

EXPLANATION

MW-4 = SHALLOW AQUIFER MONITORING WELL

= 3RD ROUND INJECTION WELL LOCATION

– – – – – – – = GIS PROPERTY LINE

MW-4

6'

6'

5' 10' 15' 20'

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/01/2025	BD	TFD	AS SHOWN	3159	5

ENVIROSOUTH Environmental Consultants

SITE MAP WITH 3RD ROUND INJECTION WELL LOCATIONS

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

REGENESIS

Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier	**PersulfOx®**
Other means of identification	None.
Recommended use	Soil and Groundwater Remediation.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Regenesis
Address	1011 Calle Sombra San Clemente, CA 92673
Telephone	949-366-8000
E-mail	CustomerService@regenesis.com
Emergency phone number	CHEMTREC® at 1-800-424-9300 (International)

2. Hazard(s) identification

Physical hazards	Oxidizing solids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement May intensify fire; oxidizer. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Precautionary statement

Prevention Keep away from heat. Keep/Store away from clothing and other combustible materials. Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Silicic Acid, sodium salt, sodium silicate	1344-09-8	≤10
Sodium Persulfate	7775-27-1	≥90

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water spray, fog (flooding amounts).

Unsuitable extinguishing media Do not use water unless flooding amounts are available. Material reacts with water. Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates.

Specific hazards arising from the chemical Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed. Combustion products may include: sulfur oxides.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

Specific methods Cool containers exposed to flames with water until well after the fire is out. Avoid dust formation.

General fire hazards May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Stop the flow of material, if this is without risk. Spillage collected should be monitored for signs of reaction or decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water.

Large Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Minimize dust generation and accumulation. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Place all material into loosely covered plastic containers for later disposal. For waste disposal, see section 13 of the SDS. Wear appropriate protective equipment and clothing during clean-up.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from heat. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Avoid contamination. Wear appropriate personal protective equipment (See Section 8). Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS). Recommended storage temperature: less than 40°C.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium Persulfate (CAS 7775-27-1)	TWA	0.1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use dust-tight, unvented chemical safety goggles when there is potential for eye contact.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Frequent change is advisable. Rubber, neoprene or PVC gloves are recommended.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Respirator type: approved respirator with P100 filters.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Free-flowing powder
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	11.5 (10% suspension/water) (10 % solution, 77 °F (25 °C))
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Oxidizer.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.5 - 1.8 (68 °F (20 °C))

Solubility(ies)

Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Decomposition will occur upon heating.
Viscosity	Not available.

Other information

Flammability	Non-combustible.

10. Stability and reactivity

Reactivity	Greatly increases the burning rate of combustible materials.
Chemical stability	Decomposes on heating.
Possibility of hazardous reactions	Oxidizing, avoid contact with reducing agents.
Conditions to avoid	Heat. Contact with incompatible materials. Avoid dust formation.
Incompatible materials	Acids. Bases. Combustible material. Reducing agents. Metals. Organic compounds.
Hazardous decomposition products	Oxygen. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Dust may irritate respiratory system.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Dusts may irritate the respiratory tract, skin and eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May cause allergic respiratory and skin reactions. May cause respiratory irritation.

Components	Species	Test Results
Silicic Acid, sodium salt, sodium silicate (CAS 1344-09-8)		
Acute		
Oral		
LD50	Rat	1280 mg/kg
Sodium Persulfate (CAS 7775-27-1)		
Acute		
Dermal		
LD50	Rabbit	> 10000 mg/kg
Inhalation		
LC50	Rat	> 5.1 mg/l, 4 Hours
Oral		
LD50	Rat	895 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Silicic Acid, sodium salt, sodium silicate (CAS 1344-09-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	247 mg/l, 4.2 days
Sodium Persulfate (CAS 7775-27-1)			
Aquatic			
Crustacea	EC50	Daphnia	133 mg/l, 48 hours
Fish		Bluegill (Lepomis macrochirus)	771 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Label(s)	5.1
Packing group	III
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	62, IB8, IP3, T1, TP33
Packaging exceptions	152
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN1479
UN proper shipping name	Oxidizing solid, n.o.s. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	III
Environmental hazards	No
ERG Code	5L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1479
UN proper shipping name	OXIDIZING SOLID, N.O.S. (Sodium Persulfate Mixture)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-Q
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - Yes

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium Persulfate (CAS 7775-27-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	12-February-2015
Revision date	02-April-2015
Version #	02
Further information	HMIS® is a registered trade and service mark of the American Coatings Association (ACA).
HMIS® ratings	Health: 2* Flammability: 0 Physical hazard: 1
NFPA ratings	
Disclaimer	Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

PersulfOx® Technical Description

PersulfOx is an *In Situ* Chemical Oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through powerful, yet controlled, chemical reactions. A sodium persulfate-based technology (figure 1), PersulfOx employs a patented catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface.

Typically, sodium persulfate is activated with the addition of heat, chelated metals, hydrogen peroxide, or base in order to generate sulfate radicals. These activation processes are inherently complex, costly and can pose additional health and safety risks. In comparison, PersulfOx is a relatively safe and easy-to-use ISCO agent with a built-in catalyst which activates the persulfate component, generating contaminant-destroying free radicals without the need for the addition of a separate activator. The equation below shows the net complete oxidation of toluene, a constituent of gasoline, by PersulfOx:

Example of PersulfOx

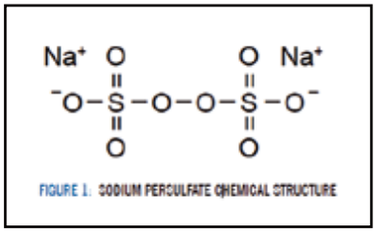


FIGURE 1: SODIUM PERCULFATE CHEMICAL STRUCTURE

For a list of treatable contaminants with the use of PersulfOx, view the Range of Treatable Contaminants Guide

Chemical Composition

- Sodium Persulfate - CAS #7775-27-1
- Sodium Silicate - CAS #1344-09-8

Properties

- pH - 7 to 11.5 at 25°C
- Appearance – White, free-flowing powder, clear to cloudy when mixed with water
- Odor – Not detectable
- Vapor Pressure – None
- Chemical Hazard Classification - Class 5.1 Oxidizer

Storage and Handling Guidelines

Storage
Store locked up
Keep away from heat
Store in a cool, dry place out of direct sunlight

Handling
Minimize dust generation and accumulation
Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces

PersulfOx® Technical Description

Storage (continued)
Store in original tightly closed container
Store in a well-ventilated place
Do not store near combustible materials
Store away from incompatible materials
Recommended to store at less than 40°C
Provide appropriate exhaust ventilation in places where dust is formed

Handling (continued)
Avoid mixing with combustibles
Avoid contamination
Keep away from clothing and other combustible materials
Wear appropriate personal protective equipment
Avoid breathing dust
Avoid contact with eyes, skin, and clothing
Avoid prolonged exposure
Do not taste or swallow
When using, do not eat, drink or smoke
Wear appropriate personal protective equipment
Wash hands thoroughly after handling
Observe good industrial hygiene practices

Applications

- PersulfOx is mixed with water at a rate of 5% to 20% prior to application.
- For most applications, REGENESIS suggests a 10-15% solution. The resulting mixture has viscosity similar to water.
- Injects into formation through direct push injection points, injection wells or other injection delivery systems.

Application instructions for this product are contained here PersulfOx Application Instructions.

Health and Safety

Material is relatively safe to handle; however, avoid contact with eyes, skin and clothing. OSHA Level D personal protection equipment including: vinyl or rubber gloves, eye protection, and dust mask are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: PersulfOx SDS.

©2015 All rights reserved. Regenesis and PersulfOx® are registered trademarks of Regenesis Bioremediation Products. All other trademarks are the property of their respective owners.

SAFETY DATA SHEET

1. Identification

Product identifier **PetroFix Electron Acceptor Blend**

Other means of identification None.

Recommended use Remediation of soils and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Regenesis

Address 1011 Calle Sombra
San Clemente, CA 92673 USA

General information 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

USA, Canada, Mexico 1-800-424-9300

International 1-703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2B

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement Causes eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium sulfate	7783-20-2	40 - 60
Sodium nitrate	7631-99-4	40 - 60

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: nitrogen oxides, sulfur oxides, ammonia.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid contact with eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection	Unvented, tight fitting goggles should be worn in dusty areas.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Wear NIOSH approved respirator appropriate for airborne exposure at the point of use. Appropriate respirator selection should be made by a qualified professional. Recommended use: Wear respirator with dust filter.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Powder.
Color	White.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	This material will not burn.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Heat.
Incompatible materials	Strong reducing agents. Strong acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Causes eye irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Further information	Nitrate poisoning resulting in methemoglobinemia manifested as cyanosis is rare, but possible for people with specific susceptibility traits.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	The product solely consists of inorganic compounds which are not biodegradable.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ammonium sulfate	7783-20-2	40 - 60
Sodium nitrate	7631-99-4	40 - 60

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

US. New Jersey Worker and Community Right-to-Know Act

Sodium nitrate (CAS 7631-99-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

US. Rhode Island RTK

Ammonium sulfate (CAS 7783-20-2)
Sodium nitrate (CAS 7631-99-4)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15-August-2018

Revision date -

Version # 01

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

1. Identification

Product identifier **PetroFix**

Other means of identification None.

Recommended use Remediation of contaminants in soil and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name REGENESIS

Address 1011 Calle Sombra
San Clemente, CA 92673 USA

General information 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number For Hazardous Materials Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:

USA, Canada 1-800-424-9300

International 1-703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Activated carbon <10 µm	7440-44-0	>25
Calcium sulfate dihydrate	10101-41-4	<10
Additive	-	<2

Composition comments All concentrations are in percent by weight unless otherwise indicated.
Components not listed are either non-hazardous or are below reportable limits.
Chemical ingredient identity and/or concentration information withheld for some or all components present is confidential business information (trade secret), and is being withheld as permitted by 29 CFR 1910.1200(i).

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, nitrogen oxides, sulfur oxides, calcium oxide.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	This material will not burn until the water has evaporated. Residue can burn. When dry may form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Activated carbon <10 µm (CAS 7440-44-0)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Activated carbon <10 µm (CAS 7440-44-0)	TWA	2 mg/m3	Respirable fraction.
Calcium sulfate dihydrate (CAS 10101-41-4)	TWA	10 mg/m3	Inhalable fraction.

Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Aqueous suspension.
Color	Black.
Odor	Odorless.
Odor threshold	Not available.
pH	8 - 10
Melting point/freezing point	32 °F (0 °C).
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Vapor pressure	Property has not been measured.
Vapor density	Property has not been measured.
Relative density	Property has not been measured.
Solubility(ies)	
Solubility (water)	Not determined.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture. Not applicable, product is a mixture.
Auto-ignition temperature	Property has not been measured.
Decomposition temperature	Property has not been measured.
Viscosity	Not available.
Other information	
Density	Property has not been measured.
Explosive properties	Not explosive.
Flammability	This material will not burn until the water has evaporated.
Kinematic viscosity	Property has not been measured.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

Conditions to avoid	May generate combustible dust if material dries. Contact with incompatible materials. Avoid drying out product.
Incompatible materials	Acids. Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Spray mist may irritate the respiratory system. For dry material: Dust may irritate respiratory system.
Skin contact	Prolonged or repeated exposure may cause minor irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Activated carbon <10 µm (CAS 7440-44-0)		
Acute		
Oral		
LD50	Rat	> 10000 mg/kg

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation. Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer. Based on available data, the classification criteria are not met.
Skin sensitization	This product is not expected to cause skin sensitization. Based on available data, the classification criteria are not met.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Based on available data, the classification criteria are not met.
Carcinogenicity	Not classifiable as to carcinogenicity to humans. Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects. Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Not classified. Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Not classified. Based on available data, the classification criteria are not met.
Aspiration hazard	Not an aspiration hazard. Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)	All components of the mixture on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Calcium sulfate dihydrate (CAS 10101-41-4)

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Activated carbon <10 µm (CAS 7440-44-0)
Calcium sulfate dihydrate (CAS 10101-41-4)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 15-February-2018

Revision date 02-December-2021

Version # 02

HMIS® ratings

Health: 1
Flammability: 1
Physical hazard: 0
Personal protection: B

NFPA ratings

Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

PetroFix™ Specification Sheet

PetroFix Technical Description

PetroFix is a new remedial technology designed to treat petroleum fuel spills in soil and groundwater. A simple-to-use fluid that can be applied under low pressure into the subsurface or simply poured into open excavations, PetroFix offers a cost-effective solution for environmental practitioners and responsible parties to address petroleum hydrocarbon contaminants quickly and effectively.

PetroFix has a dual function; quickly removing hydrocarbons from the dissolved phase, by absorbing them onto the activated carbon particles, while added electron acceptors stimulate hydrocarbon biodegradation in-place. PetroFix does not require high pressure "fracking" for application and can be applied with ease using readily available equipment associated with direct push technology.

The remedial fluid is a highly concentrated water-based suspension consisting of micron-scale activated carbon and biostimulating electron acceptors. PetroFix has a viscosity higher than water and is black in appearance. Its environmentally-compatible formulation of micron-scale activated carbon (1-2 microns) is combined with both slow and quick-release inorganic electron acceptors. A blend of additional electron acceptors is included along with the PetroFix fluid. Practitioners can select between a sulfate and nitrate combination blend (recommended), or sulfate only for the additional electron acceptors required.

PetroFix Design Assistant

REGENESIS has developed a proprietary web-based design assistant called PetroFix Design Assistant™ that provides environmental professionals the ability to input their site parameters, determine the required product amount, and order the product through REGENESIS' customer service. The PetroFix Design Assistant includes defaults and warnings throughout the process to guide users toward effective designs that will offer best results.

To access the PetroFix Design Assistant, create an account and login at www.PetroFix.com

PetroFIX™ Remediation Fluid

PetroFix Fluid Chemical Composition	Properties
Activated Carbon - CAS 7440-44-0 > 30% Calcium Sulfate Dihydrate - CAS 10101-41-4 < 10%	**Appearance:** Black Fluid **Viscosity:** 1500-3500 cP (corn syrup-like) **pH:** 8-10

PetroFix Electron Acceptor Powder Chemical Composition	Properties
OPTION 1 - EA Blend (preferred) Sodium Nitrate - CAS 7631-99-4, 50% Ammonium Sulfate - CAS 7783-20-2, 50% OPTION 2 - EA Blend NF Potassium Sulfate - CAS 7778-80-5, 50% Ammonium Sulfate - CAS 7783-20-2, 50%	**Appearance:** White Powder

Storage and Handling Guidelines

Storage:

- Store away from incompatible materials
- Store in original closed container
- Store at temperatures between 40°F and 95°F
- Do not allow material to freeze or store in direct sunlight.
- Freezing and hot weather technical memo can be accessed at www.petrofix.com/resources or at this ***link*** here.
- Dispose of waste and residues in accordance with local authority requirements

Handling:

- Never add additives to solution prior to mixing with water
- Wear appropriate personal protective equipment
- Do not taste or ingest
- Observe good industrial hygiene practices
- Wash hands after handling

Applications

PetroFix is mixed with water on-site and easily applied onto the sub-surface using low pressure injections, or mixed in excavations. PetroFix is compatible with and can be used with ORC Advanced® to expedite rates of biodegradation. For more information about co-application with ORC Advanced, contact REGENESIS.

REGENESIS®

Corporate Headquarters
1011 Calle Sombra, San Clemente, CA 92673 USA
Tel: +1 949.366.8000

European Offices (UK, Ireland, Belgium and Italy)
Email: europe@regenesis.com
Tel: +44 (0) 1225 61 81 61

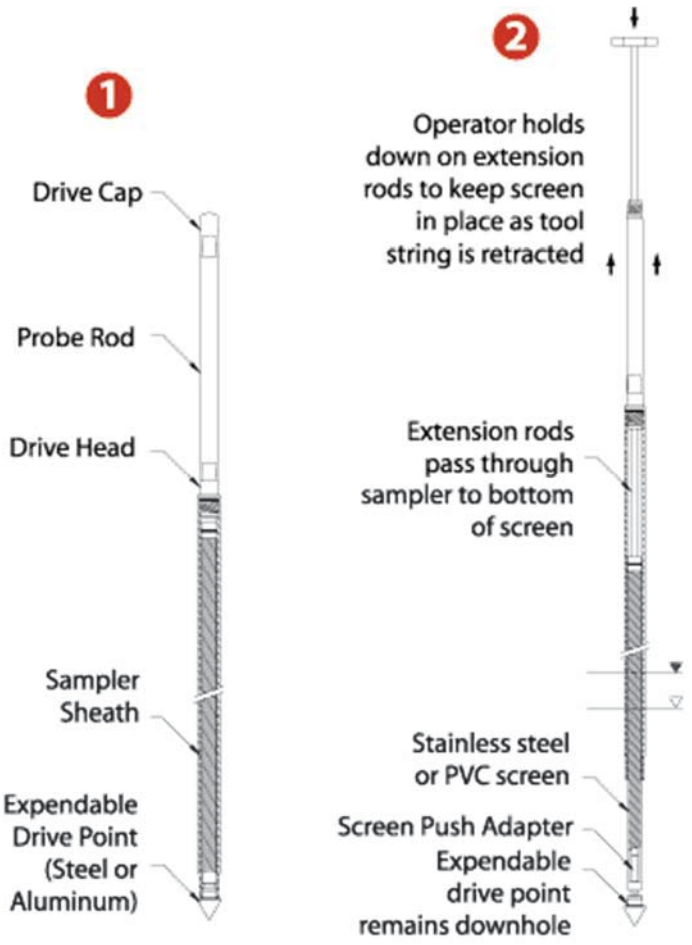
www.regenesis.com

©2020 All rights reserved. REGENESIS is a registered trademark and PetroFix and the PetroFix Design Assistant are trademarks of REGENESIS Bioremediation Products.

ATTACHMENT B: WELL CONSTRUCTION DETAILS

The temporary injection wells for the planned ISCO and enriched carbon treatments will consist of 1.5-inch diameter probe rods and a 1.5-inch diameter by 5-foot-long ported screen driven to the terminal depth of 30 feet below ground surface (bgs).

Each injection well will be abandoned immediately after injection completion. Well abandonment will consist of grouting the borehole with a neat cement/bentonite grout. See the attached Figure 6 for the construction details of all temporary injection wells.


1
Drive Cap
Probe Rod
Drive Head
Sampler Sheath
Expendable Drive Point (Steel or Aluminum)
2
Operator holds down on extension rods to keep screen in place as tool string is retracted
Extension rods pass through sampler to bottom of screen
Stainless steel or PVC screen
Screen Push Adapter
Expendable drive point remains downhole

ATTACHMENT C: OPERATION DATA

1. PersulfOx® Treatment:
   Average daily injection = 2,215 gallons water
   1,965 pounds of PersulfOx®

2. PetroFix® Treatment
   Average Daily Injection = 61.25 gallons of PetroFix®
   600 pounds of sodium bicarbonate
   1,623 gallons water

3. Average injection pressure: 30-50 psi
   Maximum injection pressure: 250 psi

4. Temporary injection through points installed by a direct-push rig and injection pump in the source area.

5. NA (no contaminants to be injected)

6. All injection related activities are expected to be completed within one (1) year after startup.

ATTACHMENT D: MONITORING PROGRAM

1. Throughout and after the injection project, fluid chemistry, fluid flow properties and aquifer properties will be monitored. Monitoring parameters and locations are shown on the following table.

Category	**Monitoring Parameter**	**Monitoring Location**
Fluid chemistry	Field parameters [pH, Dissolved oxygen, Oxidation-reduction potential (ORP)] Contaminants [petroleum products (benzene, toluene, ethylbenzene, xylenes, methyl-tert-butyl ether, naphthalene, 1,2-dichloroethane, oxygenates and 1,2-dibromoethane)]	Monitoring wells: Monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8D, MW-9D Surface water samples SW-1 and SW-2. Two (2) months after the second PersulfOx® application.
Fluid flow properties	Pressure (during injection only)	Injection point
Aquifer Properties	Water levels	Monitoring wells

2. One (1) interim sampling event utilizing monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8D, MW-9D and surface water samples SW-1 and SW-2 will be sampled for the parameters listed above approximately two (2) months after the second application of PersulfOx®

3. Four (4) comprehensive sampling events will be performed in the four (4) quarters following the PetroFix® application. All samples (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8D, MW-9D, SW-1, and SW-2) will be analyzed for benzene, toluene, ethylbenzene, xylene (total), methyl-tert-butyl ether, naphthalene (BTEXMN), 1,2-dichloroethane (1,2-DCA), and eight (8) oxygenates by EPA Method 8260 and 1,2-dibromoethane (EDB) by EPA Method 8011.

4. Additionally, monitoring wells MW-4, MW-6, and MW-7 will be analyzed for the following Regenesis-recommended parameters: sulfate, nitrate, nitrite, total and dissolved iron and manganese, and total aluminum and calcium. These wells will be sampled prior to the start of any injection-related activities to determine a baseline and during all comprehensive sampling events.

ATTACHMENT E: EXISTING OR PENDING STATE/FEDERAL PERMITS

SCDES UST Site ID No: 20120

ATTACHMENT F: DESCRIPTION OF BUSINESS

Currently there is a Dollar General discount store at the site.

ATTACHMENT G: AREA OF REVIEW

See Figure 7 on the following page.

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL

MW-8D = DEEPER AQUIFER MONITORING WELL

SW-1 = SURFACE WATER SAMPLE LOCATION

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

MACHINING FACILITY

SELF STORAGE FACILITY

O'DELL ROAD

GAS STATION

COMMERCIAL

COMMERCIAL

RESIDENTIAL

RESIDENTIAL

1,000 FEET RADIUS

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HIGHWAY

DOLLAR GENERAL
113 O'DELL ROAD

RESIDENTIAL

RESIDENTIAL

RICES CREEK CHURCH ROAD

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE 05/02/2025	DRAWN BY BD	CHECKED BY TFD	SCALE AS SHOWN	JOB NO. 3159	FIGURE 7

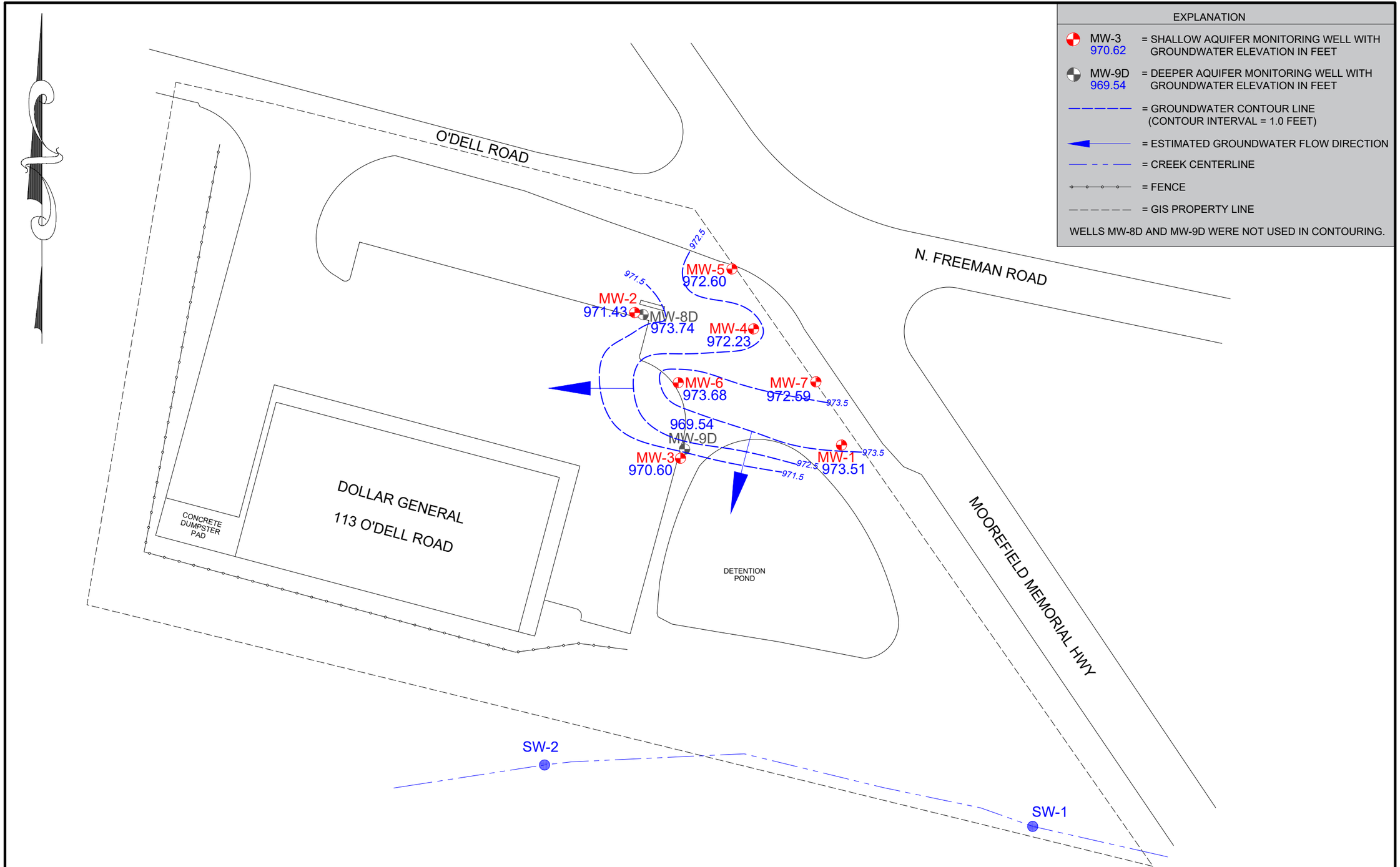
ENVIROSOUTH Environmental Consultants

SITE MAP WITH AREA FOR REVIEW

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

ATTACHMENT H: MAPS OF WELLS AND AREA OF REVIEW

See Figures 8 and 9 on the following pages documenting April 2024 groundwater elevations and concentrations.



GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/08/2024	BD	TFD	AS SHOWN	3159	8

ENVIROSOUTH Environmental Consultants

GROUNDWATER ELEVATION MAP
(Measured on March 25, 2024)

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

O'DELL ROAD

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HWY

DOLLAR GENERAL
113 O'DELL ROAD

CONCRETE DUMPSTER PAD

DETENTION POND

MW-4	
B	**733**
T	**1,230**
E	372
X	791
M	<10.0
N	**42.7**
D	**41.3**
C	**22.8**

MW-5 BRL

BRL MW-2

MW-8D BRL

MW-4

MW-6 BRL

MW-7 BRL

BRL MW-9D

MW-3 BRL

MW-1 BRL

BRL SW-2

SW-1 BRL

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL WITH CONCENTRATIONS IN MICROGRAMS PER LITER

MW-8D = DEEPER AQUIFER MONITORING WELL WITH CONCENTRATIONS IN MICROGRAMS PER LITER

SW-1 = SURFACE WATER SAMPLE LOCATION WITH CONCENTRATIONS IN MICROGRAMS PER LITER

B = BENZENE

T = TOLUENE

E = ETHYLBENZENE

X = XYLENES

M = METHYL-TERT-BUTYL ETHER

N = NAPHTHALENE

D = 1,2-DIBROMOETHANE

C = 1,2-DICHLOROETHANE

BRL = BELOW REPORTING LIMIT

BOLDED VALUES EXCEED SCDES RBSLs

= ESTIMATED EXTENT OF HYDROCARBON CONTAMINATION

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

NOTE: THE VALUES DISPLAYED FOR WELL MW-4 ARE THE HIGHEST LABORATORY VALUE BETWEEN WELL MW-4 AND THE CORRESPONDING DUPLICATE.

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE	DRAWN BY	CHECKED BY	SCALE	JOB NO.	FIGURE
	05/08/2024	BD	TFD	AS SHOWN	3159	9

ENVIROSOUTH Environmental Consultants

GROUNDWATER CONCENTRATION MAP
(Sampled on March 25, 2024)

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

ATTACHMENT I: CROSS SECTIONS/DIAGRAMS

Cross-sectional diagrams (Figures 10 through 12) for the contaminant plume area are included on the following pages.

EXPLANATION

MW-3 = SHALLOW AQUIFER MONITORING WELL

MW-8D = DEEPER AQUIFER MONITORING WELL

SW-1 = SURFACE WATER SAMPLE LOCATION

= CROSS SECTION TRANSECT LINE

= CREEK CENTERLINE

= FENCE

= GIS PROPERTY LINE

O'DELL ROAD

N. FREEMAN ROAD

MOOREFIELD MEMORIAL HWY

DOLLAR GENERAL
113 O'DELL ROAD

CONCRETE DUMPSTER PAD

DETENTION POND

X

X'

Y

Y'

MW-5

MW-2

MW-8D

MW-4

MW-6

MW-7

MW-9D

MW-3

MW-1

SW-2

SW-1

GRAPHIC SCALE

0 50 100 150

DWG: CONSTRUCTION SUPPORT SERVICES 2023 SURVEY	DATE 10/03/2023	DRAWN BY BD	CHECKED BY TFD	SCALE AS SHOWN	JOB NO. 3159	FIGURE 10

ENVIROSOUTH Environmental Consultants

CROSS SECTION TRANSECT

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA
SCDES UST ID #20120

NORTH
X

CROSS-SECTION X-X'

SOUTH
X'

O'DELL ROAD

MW-5

MW-4

MW-6

MW-9D

MW-3

145' TO UNNMAED CREEK

SAPROLITE

?? BEDROCK ??

Elevation (feet above mean sea level, ft amsl)

990 988 986 984 982 980 978 976 974 972 970 968 966 964 962 960 958 956 954 952 950 948 946 944 942 940

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175

Distance (feet)

MW-5
B = <1.0
T = <1.0
E = <1.0
X = <1.0
M = <1.0
N = <1.0
D = <0.021
C = <1.0

MW-4
B = **733**
T = **1,230**
E = 372
X = 791
M = <10.0
N = **42.7**
D = **41.3**
C = **22.8**

MW-6
B = <1.0
T = <1.0
E = <1.0
X = <1.0
M = <1.0
N = <1.0
D = <0.020
C = <1.0

MW-3
B = <1.0
T = <1.0
E = <1.0
X = <1.0
M = <1.0
N = <1.0
D = <0.020
C = <1.0

MW-9D
B = <1.0
T = <1.0
E = <1.0
X = <1.0
M = <1.0
N = <1.0
D = <0.020
C = <1.0

Ground Elevation

Water Level Elevation

Screen Interval

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylene

M = Methyl-Tert-Butyl Ether

N = Naphthalene

D = 1,2-Dibromoethane (EDB)

C = 1,2-Dichloroethane

All values reported in micrograms per liter (ug/l)

Bolded values exceed Maximum Contaminant Levels (MCLs)

ENVIROSOUTH
Environmental Consultants

NORTH-SOUTH HYDROGEOLOGIC CROSS-SECTION

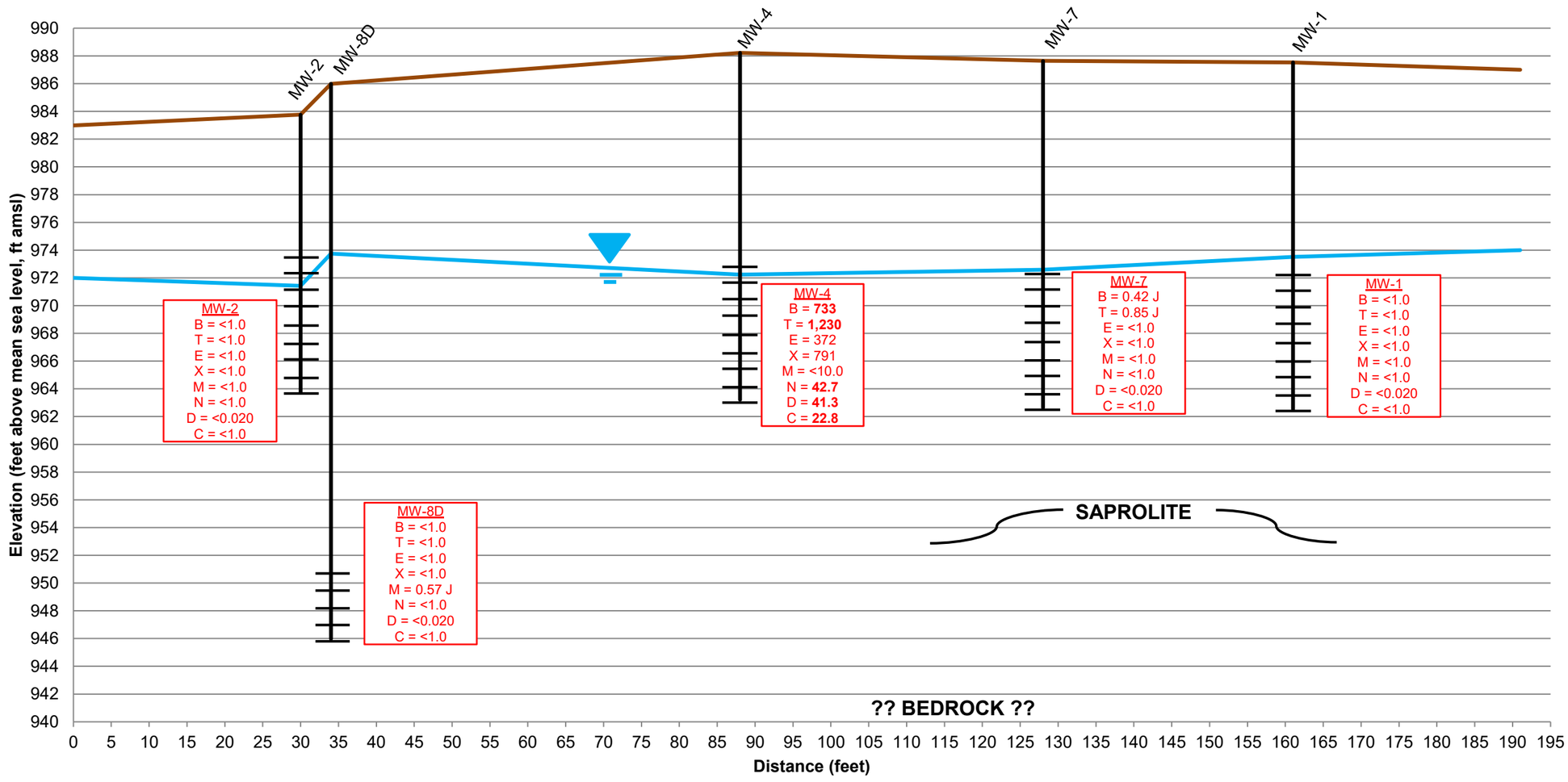
FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

JOB NO.: 3159	CHECKED BY: TFD	FIGURE: 11
SCALE: AS SHOWN	DRAWN BY: BD	DATE: 05/02/2025

CROSS-SECTION Y-Y'

WEST
Y

EAST
Y'



Ground Elevation

Water Level Elevation

Screen Interval

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylene

M = Methyl-Tert-Butyl Ether

N = Naphthalene

D = 1,2-Dibromoethane (EDB)

C = 1,2-Dichloroethane

Bolded values exceed Maximum Contaminant Levels (MCLs)

All values reported in micrograms per liter (ug/l)

J = Estimated value detected below reporting limit

ENVIROSOUTH
Environmental Consultants

WEST-EAST HYDROGEOLOGIC CROSS-SECTION

FORMER STATION
113 O'DELL ROAD
LIBERTY, SOUTH CAROLINA

JOB NO.: 3159	CHECKED BY: TFD	FIGURE: 12
SCALE: AS SHOWN	DRAWN BY: BD	DATE: 05/02/2025

ATTACHMENT J: NAME AND DEPTH OF UNDERGROUND SOURCES OF DRINKING WATER (USDW)

Currently, there are no drinking water wells in the area.

The injection fluid at the proposed injection points will enter the dry vadose soils (10 to 15 feet bgs) above the water table and below the water table (15 to 30 feet bgs) in the treatment area. The injectate solution will degrade by a variety of biological and geochemical processes, so no spreading is expected beyond a distance of 10 to 20 feet from the injection wells.

ATTACHMENT K: HYDRAULIC CONTROL

Groundwater transmissivity, conductivity, and effective porosity are low and in the typical range for Piedmont soils ($K=1x10^{-5}$ cm/sec range). Hydraulic control of the injected fluid will occur as a result of rapid bio- and geo-chemical breakdown within the immediate area of injection.