ENSOLUM

December 29, 2022

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: Closure Request Addendum
West Pearl 36 State CTB
Incident Number NAPP2216438339
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of COG Operating, LLC (COG), has prepared this *Closure Request Addendum* to provide an update to the additional soil sampling activities performed at the West Pearl 36 State CTB (Site). The purpose of the additional soil sampling activities was to address the denial by the New Mexico Oil Conservation Division (NMOCD) of an original *Closure Request*, dated November 1, 2022. In the denial, NMOCD expressed concern that the release was not adequately characterized for the source of the release. All of the release details regarding the incident, site characterization, and remediation conducted can be referenced in the original *Closure Request*. NMOCD denied the *Closure Request* on November 29, 2022, for the following reason:

> *Closure Report Denied. Per 19.15.29.11 A (5)(e)(ii)&(iii) - please identify the "various chemicals" released at the site. Soil sample analysis also needs to reflect those chemicals. Please include MSDS information on chemicals released at the site. Please resubmit a revised closure report to the OCD portal by December 29, 2022.*

In response, Ensolum has attached material safety data sheets (MSDS) for chemicals lost and conducted additional laboratory analysis of soil samples based on chemical composition.

ADDITIONAL DATA

According to COG, the following chemicals were released:

- Angry Orange (degreaser)
- PDO-602 (solvent)
- SFW-510 (surfactant)
- WTW-931 (corrosion inhibitor)

The MSDS information for those products is included as Appendix A. Based on review of the MSDS information, Ensolum identified the following applicable analyses for improved source characterization:

Product	Type	Ingredients	Proposed Chemical Analysis
Angry Orange	Degreaser	Sodium Hydroxide 2-butoxyethanol	pH VOCs
PDO-602	Solvent	Toluene Naphtha Isopropyl Alcohol 2-butoxyethanol	VOCs semi-VOCs glycol/alcohols
SFW-510	Surfactant	Methanol Acetic acid	Glycol/alcohols pH
WTW-931	Corrosion Inhibitor	Proprietary (acid stabilizer and VOCs)	VOCs

Notes:
VOCs: volatile organic compounds

Ensolum collected three new soil samples (FS01 through FS03) from the floor of the excavation at a depth of 0.75 feet bgs. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 1. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): VOCs following United States Environmental Protection Agency (EPA) Method 8260D; glycols by direct injection following EPA Method 8015D; and nonhalogenated organic compounds following EPA Method 8015D.

It should be noted that the original excavation confirmation soil samples FS01 through FS03 were analyzed for toluene and pH. As previously reported, analytical results for excavation samples FS01 through FS03 indicated no toluene or BTEX concentrations were detected. Analytical results for pH ranged from 8.2 to 8.7, indicating normal to slightly alkaline soil.

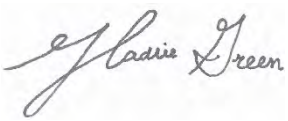
Laboratory analytical results for all three soil samples indicated no concentrations of identified COCs detected in any sample, except for 6.48 mg/kg of methanol in FS01. Methanol is completely soluble in water and consumed aerobically and anaerobically, which rarely makes it an environmental concern. No environmental or human health standard has been established for methanol by the New Mexico Environment Department (NMED). The EPA indicates methanol is hazardous to humans through inhalation or ingestion. No carcinogenic effects are identified. Exposure guildelines for methanol are identified by the American Industrial Hygiene Association, American Conference of Governmental and Industrial Hygeienists, and the National institute of Occupational Safety and Health. These limits are categorized as emergency response planning guidelines (ERPG 1), threshold limit values (TLV, expressed as a time-weighted average), lethal concentrations (LV_{50}, expressed as a concentration in air to which exposure for a specific length of time is expected to cause death in 50 percent of a defined animal population), and recommended exposure limit (REL, expressed as a time-weighted average). These values range from 260 to 83,894 milligrams per cubic meter (mg/m^3) (EPA Methanol Fact Sheet: https://www.epa.gov/sites/default/files/2016-09/documents/methanol.pdf), which is not directly applicable to concentrations in soil. However, mg/m^3 can be converted to parts per million (ppm) based on molecular weight and compared to the soil analytical results reported in mg/kg (also equivalent to ppm). The strictest health guideline for methanol, when converted to ppm, is 198 ppm, well above the detected concentration of 6.48 ppm. Laboratory analytical reports are are included in Appendix B.

CLOSURE REQUEST

Additional soil sampling and analysis for COCs were conducted at the Site to better characterize the source of the release. Based on soil analytical results from the additional analyses, COG respectfully requests closure for Incident Number NAPP2216438339. The Final C-141 is included in Appendix C.

If you have any questions or comments, please contact Ms. Kalei Jennings at (817) 683-2503 or kjennings@ensolum.com.

Sincerely,
Ensolum, LLC



Hadlie Green
Staff Geologist

Kalei Jennings
Senior Scientist

cc: Charles Beauvais, COG Operating, LLC
New Mexico State Land Office

Appendices:

Figure 1	Soil Sample Locations
Appendix A	Safety Data Sheets
Appendix B	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix C	Final C-141

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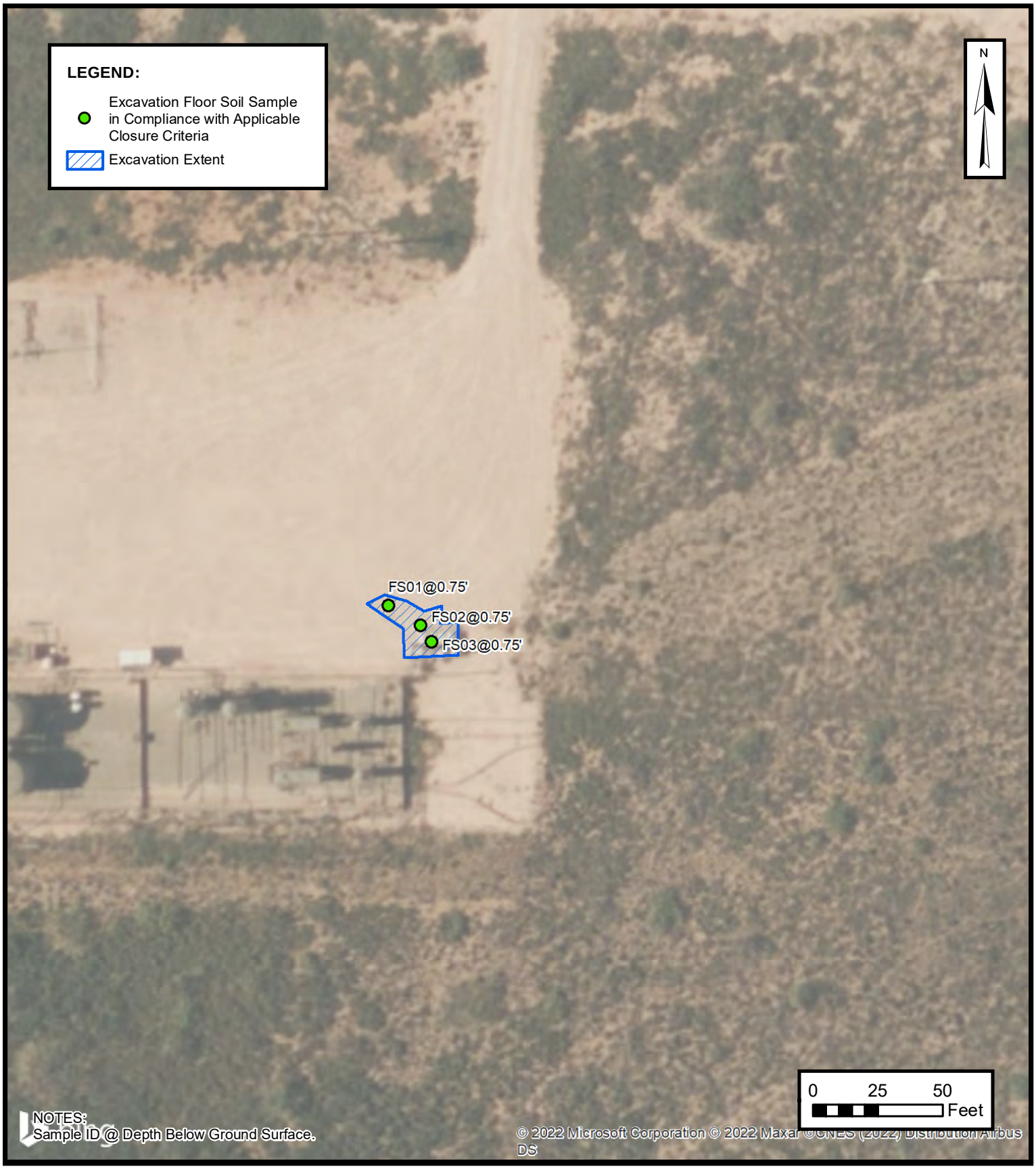
FIGURES



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

EXCAVATION SOIL SAMPLE LOCATIONS

COG OPERATING, LLC
WEST PEARL 36 STATE CTB
NAPP2216438339
Unit B, Section 36, T19S, R34E
Lea County, New Mexico

FIGURE

1

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APPENDIX A

Safety Data Sheets

SAFETY DATA SHEET

Issue Date 31-May-2015 **Revision Date** 18-Jun-2015 **Version** 1

1. IDENTIFICATION

Product identifier

Product Name Angry Orange Degreaser

Other means of identification

Product Code ANGRY ORANGE DEGREASER
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use No information available.
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address
WadeCo Specialties Inc.
P. O. Box 60634
Midland, TX 79706
USA

Emergency telephone number

Company Phone Number 1-432-563-4340
24 Hour Emergency Phone Number 1-432-563-4340
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage

Appearance		**Physical state**	liquid	**Odor**	None

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
May be harmful if swallowed

Unknown acute toxicity 0.014% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Mixture

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Chemical Name	CAS No.	Weight-%
Sodium metasilicate	6834-92-0	Proprietary
Sodium hydroxide	1310-73-2	Proprietary
2-Butoxyethanol	111-76-2	Proprietary

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice Immediately call a POISON CENTER or doctor/physician.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or

doctor/physician.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Ingestion Rinse mouth. Do NOT induce vomiting. Dilute by giving water and fruit juice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water. Foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Not determined.

Specific hazards arising from the chemical
No information available.

Hazardous combustion products Carbon monoxide.

Explosion data
Sensitivity to Mechanical Impact Not sensitive.
Sensitivity to Static Discharge Not sensitive.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing.

Other Information Not applicable.

Environmental precautions

Environmental precautions Prevent from entering soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Neutralize with Vinegar or Citric Acid. Collect spillage.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store at temperatures not exceeding 48 °C / 120 °F.

Incompatible materials Strong acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m^3	TWA: 2 mg/m^3 (vacated) Ceiling: 2 mg/m^3	IDLH: 10 mg/m^3 Ceiling: 2 mg/m^3
2-Butoxyethanol 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3

Appropriate engineering controls

Engineering Controls None under normal use conditions. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance
Color orange
Odor None
Odor threshold

Property	Values	Remarks • Method
pH	13.40	
Melting point/freezing point	Not determined / 30 °F	

Boiling point / boiling range	100 °C / 212 °F	
Flash point	No information available	Non-Flammable
Evaporation rate	>1	Water = 1
Vapor pressure	17 mmHg	
Vapor density	>1	Air=1
Specific Gravity	1.053 (Water = 1)	
Water solubility	completely soluble	
Solubility in other solvents	No information available	

Other Information

Density	8.78 lbs per gallon
Bulk density	8.78 lbs per gallon

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.
Moderate on soft metals such as aluminum

Chemical stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Extreme high heat.
Incompatible materials
Strong acids.
Hazardous Decomposition Products
Decompostion may produce Smoke, Carbon Dioxide, Carbon Monoxide, and Oxides of Nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The information below is for repeated and prolonged contact in an occupational setting. It does not apply to normal product use.

Inhalation May cause irritation.

Eye contact Irritating to eyes. May cause eye damage.

Skin contact Avoid contact with skin. May cause burns.

Ingestion Ingestion is not expected to be a primary route of exposure.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium metasilicate 6834-92-0	= 600 mg/kg (Rat)	-	-
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-
2-Butoxyethanol 111-76-2	= 470 mg/kg (Rat)	= 220 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h

Information on toxicological effects

Symptoms .

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Irritating to skin.
Serious eye damage/eye irritation Risk of serious damage to eyes. Irritating to eyes.
Irritation Irritating to eyes and skin.
Corrosivity Risk of serious damage to eyes.
Sensitization None known.
Germ cell mutagenicity None known.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
2-Butoxyethanol 111-76-2	A3	Group 3	-	-

Reproductive toxicity None known.
STOT - single exposure None known.
STOT - repeated exposure None known.
Aspiration hazard Not applicable.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

8.752% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium metasilicate 6834-92-0	-	210: 96 h Brachydanio rerio mg/L LC50 semi-static 210: 96 h Brachydanio rerio mg/L LC50	216: 96 h Daphnia magna mg/L EC50
Sodium hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-
2-Butoxyethanol 111-76-2	-	1490: 96 h Lepomis macrochirus mg/L LC50 static 2950: 96 h Lepomis macrochirus mg/L LC50	1698 - 1940: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
2-Butoxyethanol 111-76-2	0.81

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations. Do not reuse container.

Chemical Name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
2-Butoxyethanol - 111-76-2	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium hydroxide 1310-73-2	X	X	X
2-Butoxyethanol 111-76-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	**Health hazards**	2	**Flammability**	0	**Instability**	1	**Physical and Chemical Properties** -
HMIS	**Health hazards**	2	**Flammability**	0	**Physical hazards**	1	**Personal protection** C

Issue Date 31-May-2015
Revision Date 18-Jun-2015
Revision Note

New Format

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

IMPERATIVE
CHEMICAL PARTNERS

SAFETY DATA SHEET

Issue Date 06-Apr-2015 **Revision Date** 13-Feb-2019 **Version** 1

1. IDENTIFICATION

Product identifier
Product Name PDO-602

Other means of identification
Product Code FGPDO602
UN/ID no. UN1993
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use Solvent.
Uses advised against No information available

Details of the supplier of the safety data sheet
Supplier Address
Imperative Chemical Partners INC.
PO Box 60634
Midland, TX 79711
USA

Emergency telephone number
Company Phone Number 432-563-4340
24 Hour Emergency Phone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable liquids	Category 2

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Causes skin irritation
May cause cancer
Suspected of damaging fertility or the unborn child
May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Highly flammable liquid and vapor

Appearance No information available **Physical state** Liquid **Odor** Solvent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
Specific treatment (see Section 4 of SDS)
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Rinse mouth
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

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

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Toxic to aquatic life with long lasting effects Toxic to aquatic life

Unknown acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No.	Weight-%	Trade Secret
Toluene	108-88-3	Proprietary	*
Naphtha (petroleum), heavy aromatic	64742-94-5	Proprietary	*
Isopropyl alcohol	67-63-0	Proprietary	*
2-Butoxyethanol	111-76-2	Proprietary	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Ingestion If swallowed, call a poison control center or physician immediately. Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical, CO2, water spray or alcohol-resistant foam.

Unsuitable extinguishing media Not determined.

Specific hazards arising from the chemical
No information available.

Explosion data
Sensitivity to Mechanical Impact Eliminate all sources of ignition--heat, sparks, flame, electricity, impact and friction.
Sensitivity to Static Discharge May be ignited by friction, heat, sparks or flames. Take precautionary measures against static discharge.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing.

Other Information ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use spark-proof tools and explosion-proof equipment.

Environmental precautions

Environmental precautions Prevent from entering soil, ditches, sewers, waterways, and/or groundwater. See Section 12: Ecological Information. See Section 13: Disposal Considerations. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment as required. Soak up with inert absorbent material. Pick

up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible materials No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Toluene 108-88-3	TWA: 20 ppm	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m³ Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m³ STEL: 150 ppm STEL: 560 mg/m³
Isopropyl alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m³ STEL: 500 ppm STEL: 1225 mg/m³
2-Butoxyethanol 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m³ (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m³ (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m³

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Liquid	**Odor**	Solvent
Color	light yellow	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	No information available	Not applicable
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	16.6667 °C / 62 °F	ASTM D92
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	No information available	
Water solubility	Insoluble in water / Dispersible	
Solubility in other solvents	No information available	

Other Information

VOC Content (%)	No information available
Density	7.42 #/GAL
Bulk density	7.42 #/GAL

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Keep away from heat, sparks and open flame. Keep separated from incompatible substances.

Incompatible materials
No information available.

Hazardous Decomposition Products
No information available.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The information below is for repeated and prolonged contact in an occupational setting It does not apply to normal product use

Inhalation Avoid breathing vapors or mists.

Eye contact Avoid contact with eyes.

Skin contact Irritating to skin.

Ingestion Toxic if swallowed.

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50

Toluene 108-88-3	= 2600 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h
Naphtha (petroleum), heavy aromatic 64742-94-5	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m³ (Rat) 4 h
Isopropyl alcohol 67-63-0	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m³ (Rat) 4 h
2-Butoxyethanol 111-76-2	= 470 mg/kg (Rat)	= 99 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.

Chemical Name	ACGIH	IARC	NTP	OSHA
Toluene 108-88-3	-	Group 3	-	-
Isopropyl alcohol 67-63-0	-	Group 3	-	X
2-Butoxyethanol 111-76-2	A3	Group 3	-	-

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 720.00
ATEmix (dermal) 6,949.00
ATEmix (inhalation-dust/mist) 11.60
ATEmix (inhalation-vapor) 10,086.00

12. ECOLOGICAL INFORMATION

Ecotoxicity

3 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Toluene 108-88-3	433: 96 h Pseudokirchneriella subcapitata mg/L EC50 12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static	15.22 - 19.05: 96 h Pimephales promelas mg/L LC50 flow-through 12.6: 96 h Pimephales promelas mg/L LC50 static 54: 96 h Oryzias latipes mg/L LC50 static 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50
Naphtha (petroleum), heavy aromatic 64742-94-5	2.5: 72 h Skeletonema costatum mg/L EC50	19: 96 h Pimephales promelas mg/L LC50 static 2.34: 96 h Oncorhynchus mykiss mg/L LC50 1740: 96 h Lepomis macrochirus mg/L LC50 static 41: 96 h	0.95: 48 h Daphnia magna mg/L EC50

		Pimephales promelas mg/L LC50 45: 96 h Pimephales promelas mg/L LC50 flow-through	
Isopropyl alcohol 67-63-0	1000: 96 h Desmodesmus subspicatus mg/L EC50 1000: 72 h Desmodesmus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50	13299: 48 h Daphnia magna mg/L EC50
2-Butoxyethanol 111-76-2	-	1490: 96 h Lepomis macrochirus mg/L LC50 static 2950: 96 h Lepomis macrochirus mg/L LC50	1000: 48 h Daphnia magna mg/L EC50 1698 - 1940: 24 h Daphnia magna mg/L EC50
Dodecylbenzenesulfonic Acid 27176-87-0	29: 96 h Pseudokirchneriella subcapitata mg/L EC50	10.8: 96 h Oncorhynchus mykiss mg/L LC50 static 3.5 - 10: 96 h Brachydanio rerio mg/L LC50 static	5.88: 48 h Daphnia magna mg/L EC50

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
Toluene 108-88-3	2.7
Naphtha (petroleum), heavy aromatic 64742-94-5	2.9 - 6.1
Isopropyl alcohol 67-63-0	0.05
2-Butoxyethanol 111-76-2	0.81

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Toluene 108-88-3	U220	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151	-	U220

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Toluene 108-88-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of	-

			chlorine substitution.	

Chemical Name	California Hazardous Waste Status
Toluene 108-88-3	Toxic Ignitable
Isopropyl alcohol 67-63-0	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no.	UN1993
Proper shipping name	Flammable liquids, n.o.s.
Hazard Class	3
Packing Group	II
Reportable Quantity (RQ)	1,176 pounds based on Toluene
Special Provisions	IB2, T7, TP1, TP8, TP28
Description	UN1993, Flammable liquids, n.o.s. (Toluene), 3, II
Emergency Response Guide Number	128

IATA

UN/ID no.	UN1993
Proper shipping name	Flammable liquid, n.o.s.
Hazard Class	3
Packing Group	II
ERG Code	3H
Special Provisions	A3
Description	UN1993, Flammable liquid, n.o.s. (Toluene), 3, II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any

chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Toluene 108-88-3	1000 lb	X	X	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Toluene 108-88-3	1000 lb 1 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Issue Date 06-Apr-2015
Revision Date 13-Feb-2019
Revision Note
No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

IMPERATIVE
CHEMICAL PARTNERS

SAFETY DATA SHEET

Issue Date 29-Apr-2015 **Revision Date** 16-Feb-2019 **Version** 1

1. IDENTIFICATION

Product identifier
Product Name SFW-510

Other means of identification
Product Code FGSFW510
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use Surfactant.
Uses advised against No information available

Details of the supplier of the safety data sheet
Supplier Address
Imperative Chemical Partners INC.
PO Box 60634
Midland, TX 79711
USA

Emergency telephone number
Company Phone Number 432-563-4340
24 Hour Emergency Phone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
Causes damage to organs

Appearance No information available	**Physical state** Liquid	**Odor** Sweet

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see Section 4 of SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
May be harmful in contact with skin

Unknown acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No.	Weight-%	Trade Secret
Methanol	67-56-1	Proprietary	*
Acetic acid	64-19-7	Proprietary	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Ingestion If swallowed, call a poison control center or physician immediately. Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide (CO2). Foam. Dry chemical.

Unsuitable extinguishing media Not determined.

Specific hazards arising from the chemical
No information available.

Explosion data
Sensitivity to Mechanical Impact Eliminate all sources of ignition--heat, sparks, flame, electricity, impact and friction.
Sensitivity to Static Discharge May be ignited by friction, heat, sparks or flames. Take precautionary measures against static discharge.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing.

Other Information ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use spark-proof tools and explosion-proof equipment.

Environmental precautions

Environmental precautions Prevent from entering soil, ditches, sewers, waterways, and/or groundwater. See Section 12: Ecological Information. See Section 13: Disposal Considerations. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment as required. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Take

precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible materials No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m³ (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³
Acetic acid 64-19-7	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Liquid
Color amber

Odor Sweet
Odor threshold No information available

Property	Values	Remarks • Method
pH	2-3	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	°C °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	1.0186 S.G.	
Water solubility	Soluble in water	

Solubility in other solvents No information available

Other Information
VOC Content (%) No information available
Density 9.0 #/GAL
Bulk density 9.0 #/GAL

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Keep away from heat, sparks and open flame. Keep separated from incompatible substances.

Incompatible materials
No information available.

Hazardous Decomposition Products
No information available.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The information below is for repeated and prolonged contact in an occupational setting It does not apply to normal product use

Inhalation Avoid breathing vapors or mists.

Eye contact Avoid contact with eyes.

Skin contact Irritating to skin.

Ingestion Toxic if swallowed.

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Methanol 67-56-1	= 6200 mg/kg (Rat)	= 15800 mg/kg (Rabbit) = 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Acetic acid 64-19-7	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	1,822.00
ATEmix (dermal)	4,389.00
ATEmix (inhalation-dust/mist)	9.00

12. ECOLOGICAL INFORMATION

Ecotoxicity

5.328 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Acetic acid 64-19-7	-	79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static	65: 48 h Daphnia magna mg/L EC50 Static 47: 24 h Daphnia magna mg/L EC50
Methanol 67-56-1	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Chemical Name	Partition coefficient
Methanol 67-56-1	-0.77
Acetic acid 64-19-7	-0.31

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Methanol 67-56-1	-	Included in waste stream: F039	-	U154

Chemical Name	California Hazardous Waste Status
Methanol 67-56-1	Toxic Ignitable
Acetic acid 64-19-7	Toxic Corrosive Ignitable

14. TRANSPORT INFORMATION

DOT	Not regulated
Proper shipping name	D.O.T. Non Regulated
Description	D.O.T. Non Regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Acetic acid 64-19-7	5000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Methanol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

Acetic acid 64-19-7	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Issue Date 29-Apr-2015
Revision Date 16-Feb-2019
Revision Note
No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

IMPERATIVE
CHEMICAL PARTNERS

SAFETY DATA SHEET

Issue Date 24-Jan-2019 **Revision Date** 11-Feb-2019 **Version** 1

1. IDENTIFICATION

Product identifier
Product Name WTW-931

Other means of identification
Product Code FGWTW931
Synonyms None

Recommended use of the chemical and restrictions on use
Recommended Use No information available.
Uses advised against No information available

Details of the supplier of the safety data sheet
Supplier Address
Imperative Chemical Partners INC.
PO Box 60634
Midland, TX 79711
USA

Emergency telephone number
Company Phone Number 432-563-4340
24 Hour Emergency Phone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4

Label elements

Emergency Overview

Warning

Appearance No information available **Physical state** Liquid **Odor** Chlorine

Precautionary Statements - Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
Specific treatment (see Section 4 of SDS)
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
May be harmful if swallowed

Unknown acute toxicity	10% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.
Ingestion	If swallowed, call a poison control center or physician immediately. Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide (CO2). Foam. Dry chemical.

Unsuitable extinguishing media Not determined.

Specific hazards arising from the chemical
No information available.

Explosion data
Sensitivity to Mechanical Impact Eliminate all sources of ignition--heat, sparks, flame, electricity, impact and friction.

Sensitivity to Static Discharge May be ignited by friction, heat, sparks or flames. Take precautionary measures against static discharge.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing.

Other Information ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use spark-proof tools and explosion-proof equipment.

Environmental precautions

Environmental precautions Prevent from entering soil, ditches, sewers, waterways, and/or groundwater. See Section 12: Ecological Information. See Section 13: Disposal Considerations. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment as required. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible materials No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective gloves and protective clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Liquid	**Odor**	Chlorine
Color	light green	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	9-11	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	°C °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	1.0186 S.G.	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	

Other Information

VOC Content (%)	No information available
Density	8.500 #/GAL
Bulk density	8.500 #/GAL

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Keep away from heat, sparks and open flame. Keep separated from incompatible substances.

Incompatible materials
No information available.

Hazardous Decomposition Products
No information available.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The information below is for repeated and prolonged contact in an occupational setting It does not apply to normal product use

Inhalation Avoid breathing vapors or mists.

Eye contact Avoid contact with eyes.

Skin contact Irritating to skin.

Ingestion Toxic if swallowed.

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 2,062.00
ATEmix (dermal) 1,340.00
ATEmix (inhalation-dust/mist) 2.88

12. ECOLOGICAL INFORMATION

Ecotoxicity

10 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Trade Secret	-	100: 96 h Lepomis macrochirus mg/L LC50 static 100 - 500: 96 h Brachydanio rerio mg/L LC50 static 100: 96 h Oncorhynchus mykiss mg/L LC50 static	0.25 - 0.33: 48 h Daphnia magna mg/L EC50 Flow through 0.026: 48 h Daphnia magna mg/L EC50 0.012 - 0.018: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT	Not regulated
Proper shipping name	D.O.T. Non Regulated
Description	D.O.T. Non Regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Issue Date 24-Jan-2019
Revision Date 11-Feb-2019
Revision Note
No information available
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

ENSOLUM

APPENDIX B

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kalei Jennings
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/28/2022 3:06:41 PM Revision 1

JOB DESCRIPTION

West Pearl 36 State CTB

JOB NUMBER

890-3685-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

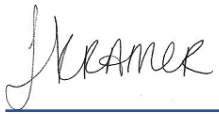
See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Revision 1

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Laboratory Job ID: 890-3685-1

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-3685-1
Project/Site: West Pearl 36 State CTB

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Job ID: 890-3685-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3685-1

REVISION

The report being provided is a revision of the original report sent on 12/27/2022. The report (revision 1) is being revised due to Incorrect methods were logged originally, needing Full List VOC, Alcohols, and Methanol.

Report revision history

Receipt
The samples were received on 12/20/2022 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 19.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3685-1), FS02 (890-3685-2) and FS03 (890-3685-3).

GC/MS VOA
Method 8260D: The following samples were diluted due to being rocks: (830-2725-A-1-B) and (830-2725-A-1-B MS). Elevated reporting limits (RL) are provided. Sample was prepped with methanol from a bulk jar.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-83379 and analytical batch 860-83354 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: Sample is a bulk jar.FS01 (890-3685-1), FS02 (890-3685-2) and FS03 (890-3685-3)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Client Sample ID: FS01
Date Collected: 12/20/22 11:55
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Lab Sample ID: 890-3685-1
Matrix: Solid

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Bromobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Bromochloromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Bromodichloromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Bromoform	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Bromomethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
2-Butanone	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Carbon tetrachloride	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Chlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Chloroethane	<0.0100	U	0.0100		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Chloroform	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Chloromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
4-Chlorotoluene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
cis-1,2-Dichloroethene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
cis-1,3-Dichloropropene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Dibromochloromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2-Dibromo-3-Chloropropane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2-Dibromoethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2-Dichlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,3-Dichlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,4-Dichlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Dichlorodifluoromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1-Dichloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2-Dichloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1-Dichloroethene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2-Dichloropropane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,3-Dichloropropane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
2,2-Dichloropropane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1-Dichloropropene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Ethylbenzene	<0.00100	U	0.00100		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Hexachlorobutadiene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Isopropylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Methylene Chloride	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
m,p-Xylenes	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
MTBE	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Naphthalene	<0.0100	U	0.0100		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
n-Butylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
N-Propylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
o-Xylene	<0.00100	U	0.00100		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
p-Cymene (p-Isopropyltoluene)	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
sec-Butylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Styrene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
tert-Butylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1,1,2-Tetrachloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1,2,2-Tetrachloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Tetrachloroethene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Toluene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
trans-1,2-Dichloroethene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1

Client Sample Results

Client: Ensolum
Job ID: 890-3685-1
Project/Site: West Pearl 36 State CTB

Client Sample ID: FS01
Lab Sample ID: 890-3685-1
Date Collected: 12/20/22 11:55
Matrix: Solid
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2,3-Trichlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2,4-Trichlorobenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1,1-Trichloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,1,2-Trichloroethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Trichloroethene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Trichlorofluoromethane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2,3-Trichloropropane	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,2,4-Trimethylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
1,3,5-Trimethylbenzene	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Vinyl chloride	<0.00501	U	0.00501		mg/Kg		12/27/22 14:09	12/27/22 18:24	1
Xylenes, Total	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*56 - 150*	*12/27/22 14:09*	*12/27/22 18:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*68 - 152*	*12/27/22 14:09*	*12/27/22 18:24*	*1*
Dibromofluoromethane (Surr)	*113*		*53 - 142*	*12/27/22 14:09*	*12/27/22 18:24*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*	*12/27/22 14:09*	*12/27/22 18:24*	*1*

Method: SW846 8015D - Glycols- Direct Injection (GC/FID) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	<5.01	U	5.01		mg/Kg			12/28/22 10:05	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methanol	**6.48**		5.01		mg/Kg			12/27/22 17:41	1
Isopropanol	<5.01	U	5.01		mg/Kg			12/27/22 17:41	1

Client Sample ID: FS02
Lab Sample ID: 890-3685-2
Date Collected: 12/20/22 12:05
Matrix: Solid
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Bromobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Bromochloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Bromodichloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Bromoform	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Bromomethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
2-Butanone	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Carbon tetrachloride	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Chlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Chloroethane	<0.00998	U	0.00998		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Chloroform	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Chloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
4-Chlorotoluene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
cis-1,2-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
cis-1,3-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1

Client Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Client Sample ID: FS02

Date Collected: 12/20/22 12:05
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Lab Sample ID: 890-3685-2

Matrix: Solid

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2-Dibromo-3-Chloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2-Dibromoethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,3-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,4-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Dichlorodifluoromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1-Dichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2-Dichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,3-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
2,2-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Ethylbenzene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Hexachlorobutadiene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Isopropylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Methylene Chloride	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
m,p-Xylenes	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
MTBE	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Naphthalene	<0.00998	U	0.00998		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
n-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
N-Propylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
o-Xylene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
p-Cymene (p-Isopropyltoluene)	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
sec-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Styrene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
tert-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1,1,2-Tetrachloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1,2,2-Tetrachloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Tetrachloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Toluene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
trans-1,2-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
trans-1,3-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2,3-Trichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2,4-Trichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1,1-Trichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,1,2-Trichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Trichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Trichlorofluoromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2,3-Trichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,2,4-Trimethylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
1,3,5-Trimethylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Vinyl chloride	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 18:46	1
Xylenes, Total	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 18:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*12/27/22 14:09*	*12/27/22 18:46*	*1*
4-Bromofluorobenzene (Surr)	*98*		*68 - 152*	*12/27/22 14:09*	*12/27/22 18:46*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Job ID: 890-3685-1
Project/Site: West Pearl 36 State CTB

Client Sample ID: FS02
Lab Sample ID: 890-3685-2
Date Collected: 12/20/22 12:05
Matrix: Solid
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*53 - 142*	*12/27/22 14:09*	*12/27/22 18:46*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*	*12/27/22 14:09*	*12/27/22 18:46*	*1*

Method: SW846 8015D - Glycols- Direct Injection (GC/FID) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	<4.98	U	4.98		mg/Kg			12/28/22 10:17	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methanol	<4.98	U	4.98		mg/Kg			12/27/22 17:55	1
Isopropanol	<4.98	U	4.98		mg/Kg			12/27/22 17:55	1

Client Sample ID: FS03
Lab Sample ID: 890-3685-3
Date Collected: 12/20/22 12:15
Matrix: Solid
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Bromobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Bromochloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Bromodichloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Bromoform	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Bromomethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
2-Butanone	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Carbon tetrachloride	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Chlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Chloroethane	<0.00998	U	0.00998		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Chloroform	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Chloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
4-Chlorotoluene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
cis-1,2-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
cis-1,3-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Dibromochloromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2-Dibromo-3-Chloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2-Dibromoethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,3-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,4-Dichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Dichlorodifluoromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1-Dichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2-Dichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,3-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
2,2-Dichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Ethylbenzene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 19:09	1

Client Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Client Sample ID: FS03
Date Collected: 12/20/22 12:15
Date Received: 12/20/22 13:30
Sample Depth: 0.75

Lab Sample ID: 890-3685-3
Matrix: Solid

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Isopropylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Methylene Chloride	<0.0200	U	0.0200		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
m,p-Xylenes	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
MTBE	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Naphthalene	<0.00998	U	0.00998		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
n-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
N-Propylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
o-Xylene	<0.000998	U	0.000998		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
p-Cymene (p-Isopropyltoluene)	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
sec-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Styrene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
tert-Butylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1,1,2-Tetrachloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1,2,2-Tetrachloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Tetrachloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Toluene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
trans-1,2-Dichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
trans-1,3-Dichloropropene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2,3-Trichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2,4-Trichlorobenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1,1-Trichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,1,2-Trichloroethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Trichloroethene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Trichlorofluoromethane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2,3-Trichloropropane	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,2,4-Trimethylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
1,3,5-Trimethylbenzene	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Vinyl chloride	<0.00499	U	0.00499		mg/Kg		12/27/22 14:09	12/27/22 19:09	1
Xylenes, Total	<0.00200	U	0.00200		mg/Kg		12/27/22 14:09	12/27/22 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*12/27/22 14:09*	*12/27/22 19:09*	*1*
4-Bromofluorobenzene (Surr)	*103*		*68 - 152*	*12/27/22 14:09*	*12/27/22 19:09*	*1*
Dibromofluoromethane (Surr)	*117*		*53 - 142*	*12/27/22 14:09*	*12/27/22 19:09*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*	*12/27/22 14:09*	*12/27/22 19:09*	*1*

Method: SW846 8015D - Glycols- Direct Injection (GC/FID) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	<5.00	U	5.00		mg/Kg			12/28/22 10:29	1

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methanol	<4.99	U	4.99		mg/Kg			12/27/22 18:10	1
Isopropanol	<4.99	U	4.99		mg/Kg			12/27/22 18:10	1

Surrogate Summary

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(56-150)	(68-152)	(53-142)	(70-130)
830-2725-A-1-B MS	Matrix Spike	80	100	99	95
890-3685-1	FS01	97	98	113	95
890-3685-2	FS02	100	98	112	96
890-3685-3	FS03	100	103	117	95
LCS 860-83354/3	Lab Control Sample	91	98	103	94
LCSD 860-83354/4	Lab Control Sample Dup	91	97	102	96
MB 860-83354/8	Method Blank	87	100	103	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-83354/8
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/Kg			12/27/22 15:24	1
Bromobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Bromochloromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Bromodichloromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Bromoform	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Bromomethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
2-Butanone	<0.0200	U	0.0200		mg/Kg			12/27/22 15:24	1
Carbon tetrachloride	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Chlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Chloroethane	<0.0100	U	0.0100		mg/Kg			12/27/22 15:24	1
Chloroform	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Chloromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
4-Chlorotoluene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
cis-1,2-Dichloroethene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
cis-1,3-Dichloropropene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Dibromochloromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2-Dibromo-3-Chloropropane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2-Dibromoethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2-Dichlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,3-Dichlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,4-Dichlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Dichlorodifluoromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1-Dichloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2-Dichloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1-Dichloroethene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2-Dichloropropane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,3-Dichloropropane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
2,2-Dichloropropane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1-Dichloropropene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Ethylbenzene	<0.00100	U	0.00100		mg/Kg			12/27/22 15:24	1
Hexachlorobutadiene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Isopropylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Methylene Chloride	<0.0200	U	0.0200		mg/Kg			12/27/22 15:24	1
m,p-Xylenes	<0.00200	U	0.00200		mg/Kg			12/27/22 15:24	1
MTBE	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Naphthalene	<0.0100	U	0.0100		mg/Kg			12/27/22 15:24	1
n-Butylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
N-Propylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
o-Xylene	<0.00100	U	0.00100		mg/Kg			12/27/22 15:24	1
p-Cymene (p-Isopropyltoluene)	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
sec-Butylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Styrene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
tert-Butylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1,1,2-Tetrachloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1,2,2-Tetrachloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Tetrachloroethene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Toluene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
trans-1,2-Dichloroethene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-83354/8
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2,3-Trichlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2,4-Trichlorobenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1,1-Trichloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,1,2-Trichloroethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Trichloroethene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Trichlorofluoromethane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2,3-Trichloropropane	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,2,4-Trimethylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
1,3,5-Trimethylbenzene	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Vinyl chloride	<0.00500	U	0.00500		mg/Kg			12/27/22 15:24	1
Xylenes, Total	<0.00200	U	0.00200		mg/Kg			12/27/22 15:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*56 - 150*		*12/27/22 15:24*	*1*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*		*12/27/22 15:24*	*1*
Dibromofluoromethane (Surr)	*103*		*53 - 142*		*12/27/22 15:24*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/27/22 15:24*	*1*

Lab Sample ID: LCS 860-83354/3
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0500	0.04039		mg/Kg		81	66 - 142
Bromobenzene	0.0500	0.04513		mg/Kg		90	75 - 130
Bromochloromethane	0.0500	0.04440		mg/Kg		89	71 - 130
Bromodichloromethane	0.0500	0.04596		mg/Kg		92	78 - 130
Bromoform	0.0500	0.04603		mg/Kg		92	63 - 136
Bromomethane	0.0500	0.04927		mg/Kg		99	60 - 140
2-Butanone	0.250	0.2206		mg/Kg		88	75 - 130
Carbon tetrachloride	0.0500	0.04884		mg/Kg		98	63 - 135
Chlorobenzene	0.0500	0.04242		mg/Kg		85	83 - 130
Chloroethane	0.0500	0.05254		mg/Kg		105	57 - 130
Chloroform	0.0500	0.04784		mg/Kg		96	74 - 130
Chloromethane	0.0500	0.04075		mg/Kg		82	58 - 130
4-Chlorotoluene	0.0500	0.04410		mg/Kg		88	83 - 130
cis-1,2-Dichloroethene	0.0500	0.04546		mg/Kg		91	72 - 131
cis-1,3-Dichloropropene	0.0500	0.04562		mg/Kg		91	74 - 135
Dibromochloromethane	0.0500	0.04450		mg/Kg		89	77 - 130
1,2-Dibromo-3-Chloropropane	0.0500	0.04147		mg/Kg		83	58 - 133
1,2-Dibromoethane	0.0500	0.04085		mg/Kg		82	73 - 130
1,2-Dichlorobenzene	0.0500	0.04434		mg/Kg		89	84 - 130
1,3-Dichlorobenzene	0.0500	0.04502		mg/Kg		90	84 - 130
1,4-Dichlorobenzene	0.0500	0.04433		mg/Kg		89	82 - 130
Dichlorodifluoromethane	0.0500	0.04225		mg/Kg		84	54 - 130
1,1-Dichloroethane	0.0500	0.04454		mg/Kg		89	73 - 130
1,2-Dichloroethane	0.0500	0.04292		mg/Kg		86	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-83354/3
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	0.0500	0.03982		mg/Kg		80	68 - 130
1,2-Dichloropropane	0.0500	0.04427		mg/Kg		89	75 - 130
1,3-Dichloropropane	0.0500	0.04224		mg/Kg		84	82 - 131
2,2-Dichloropropane	0.0500	0.05003		mg/Kg		100	67 - 137
1,1-Dichloropropene	0.0500	0.04428		mg/Kg		89	72 - 130
Ethylbenzene	0.0500	0.04299		mg/Kg		86	80 - 130
Hexachlorobutadiene	0.0500	0.05056		mg/Kg		101	77 - 130
Isopropylbenzene	0.0500	0.04747		mg/Kg		95	55 - 155
Methylene Chloride	0.0500	0.03842		mg/Kg		77	57 - 134
m,p-Xylenes	0.0500	0.04260		mg/Kg		85	78 - 130
MTBE	0.0500	0.04778		mg/Kg		96	64 - 148
Naphthalene	0.0500	0.04617		mg/Kg		92	53 - 150
n-Butylbenzene	0.0500	0.04766		mg/Kg		95	82 - 130
N-Propylbenzene	0.0500	0.04584		mg/Kg		92	84 - 131
o-Xylene	0.0500	0.04289		mg/Kg		86	79 - 130
p-Cymene (p-Isopropyltoluene)	0.0500	0.04806		mg/Kg		96	84 - 130
sec-Butylbenzene	0.0500	0.04818		mg/Kg		96	84 - 131
Styrene	0.0500	0.04458		mg/Kg		89	80 - 130
tert-Butylbenzene	0.0500	0.04822		mg/Kg		96	83 - 132
1,1,1,2-Tetrachloroethane	0.0500	0.04658		mg/Kg		93	81 - 130
1,1,2,2-Tetrachloroethane	0.0500	0.04302		mg/Kg		86	75 - 133
Tetrachloroethene	0.0500	0.04246		mg/Kg		85	79 - 130
Toluene	0.0500	0.04052		mg/Kg		81	74 - 130
trans-1,2-Dichloroethene	0.0500	0.03861		mg/Kg		77	63 - 130
trans-1,3-Dichloropropene	0.0500	0.04367		mg/Kg		87	73 - 130
1,2,3-Trichlorobenzene	0.0500	0.04683		mg/Kg		94	75 - 131
1,2,4-Trichlorobenzene	0.0500	0.04753		mg/Kg		95	79 - 130
1,1,1-Trichloroethane	0.0500	0.05012		mg/Kg		100	71 - 130
1,1,2-Trichloroethane	0.0500	0.04451		mg/Kg		89	75 - 131
Trichloroethene	0.0500	0.04330		mg/Kg		87	78 - 130
Trichlorofluoromethane	0.0500	0.05282		mg/Kg		106	71 - 148
1,2,3-Trichloropropane	0.0500	0.04122		mg/Kg		82	75 - 131
1,2,4-Trimethylbenzene	0.0500	0.04542		mg/Kg		91	60 - 159
1,3,5-Trimethylbenzene	0.0500	0.04555		mg/Kg		91	61 - 160
Vinyl chloride	0.0500	0.04725		mg/Kg		94	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*
4-Bromofluorobenzene (Surr)	*98*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 860-83354/4
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0500	0.04290		mg/Kg		86	66 - 142	6	25

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QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-83354/4
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromobenzene	0.0500	0.04646		mg/Kg		93	75 - 130	3	25
Bromochloromethane	0.0500	0.04792		mg/Kg		96	71 - 130	8	25
Bromodichloromethane	0.0500	0.04955		mg/Kg		99	78 - 130	8	25
Bromoform	0.0500	0.05093		mg/Kg		102	63 - 136	10	25
Bromomethane	0.0500	0.05452		mg/Kg		109	60 - 140	10	25
2-Butanone	0.250	0.2363		mg/Kg		95	75 - 130	7	25
Carbon tetrachloride	0.0500	0.04993		mg/Kg		100	63 - 135	2	25
Chlorobenzene	0.0500	0.04436		mg/Kg		89	83 - 130	4	25
Chloroethane	0.0500	0.05308		mg/Kg		106	57 - 130	1	25
Chloroform	0.0500	0.04971		mg/Kg		99	74 - 130	4	25
Chloromethane	0.0500	0.04800		mg/Kg		96	58 - 130	16	25
4-Chlorotoluene	0.0500	0.04564		mg/Kg		91	83 - 130	3	25
cis-1,2-Dichloroethene	0.0500	0.04735		mg/Kg		95	72 - 131	4	25
cis-1,3-Dichloropropene	0.0500	0.04867		mg/Kg		97	74 - 135	6	25
Dibromochloromethane	0.0500	0.04849		mg/Kg		97	77 - 130	9	25
1,2-Dibromo-3-Chloropropane	0.0500	0.04475		mg/Kg		90	58 - 133	8	25
1,2-Dibromoethane	0.0500	0.04468		mg/Kg		89	73 - 130	9	25
1,2-Dichlorobenzene	0.0500	0.04604		mg/Kg		92	84 - 130	4	25
1,3-Dichlorobenzene	0.0500	0.04601		mg/Kg		92	84 - 130	2	25
1,4-Dichlorobenzene	0.0500	0.04643		mg/Kg		93	82 - 130	5	25
Dichlorodifluoromethane	0.0500	0.04237		mg/Kg		85	54 - 130	0	25
1,1-Dichloroethane	0.0500	0.04677		mg/Kg		94	73 - 130	5	25
1,2-Dichloroethane	0.0500	0.04663		mg/Kg		93	70 - 130	8	25
1,1-Dichloroethene	0.0500	0.04211		mg/Kg		84	68 - 130	6	25
1,2-Dichloropropane	0.0500	0.04843		mg/Kg		97	75 - 130	9	25
1,3-Dichloropropane	0.0500	0.04527		mg/Kg		91	82 - 131	7	25
2,2-Dichloropropane	0.0500	0.05254		mg/Kg		105	67 - 137	5	25
1,1-Dichloropropene	0.0500	0.04489		mg/Kg		90	72 - 130	1	25
Ethylbenzene	0.0500	0.04532		mg/Kg		91	80 - 130	5	25
Hexachlorobutadiene	0.0500	0.05206		mg/Kg		104	77 - 130	3	25
Isopropylbenzene	0.0500	0.05100		mg/Kg		102	55 - 155	7	25
Methylene Chloride	0.0500	0.04091		mg/Kg		82	57 - 134	6	25
m,p-Xylenes	0.0500	0.04473		mg/Kg		89	78 - 130	5	25
MTBE	0.0500	0.05038		mg/Kg		101	64 - 148	5	25
Naphthalene	0.0500	0.04836		mg/Kg		97	53 - 150	5	25
n-Butylbenzene	0.0500	0.04909		mg/Kg		98	82 - 130	3	25
N-Propylbenzene	0.0500	0.04600		mg/Kg		92	84 - 131	0	25
o-Xylene	0.0500	0.04550		mg/Kg		91	79 - 130	6	25
p-Cymene (p-Isopropyltoluene)	0.0500	0.04934		mg/Kg		99	84 - 130	3	25
sec-Butylbenzene	0.0500	0.04900		mg/Kg		98	84 - 131	2	25
Styrene	0.0500	0.04679		mg/Kg		94	80 - 130	5	25
tert-Butylbenzene	0.0500	0.04976		mg/Kg		100	83 - 132	3	25
1,1,1,2-Tetrachloroethane	0.0500	0.04934		mg/Kg		99	81 - 130	6	25
1,1,2,2-Tetrachloroethane	0.0500	0.04430		mg/Kg		89	75 - 133	3	25
Tetrachloroethene	0.0500	0.04497		mg/Kg		90	79 - 130	6	25
Toluene	0.0500	0.04222		mg/Kg		84	74 - 130	4	25
trans-1,2-Dichloroethene	0.0500	0.03926		mg/Kg		79	63 - 130	2	25
trans-1,3-Dichloropropene	0.0500	0.04679		mg/Kg		94	73 - 130	7	25
1,2,3-Trichlorobenzene	0.0500	0.04913		mg/Kg		98	75 - 131	5	25

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-83354/4
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			0.0500	0.05018		mg/Kg		100	79 - 130	5	25
1,1,1-Trichloroethane			0.0500	0.05064		mg/Kg		101	71 - 130	1	25
1,1,2-Trichloroethane			0.0500	0.04796		mg/Kg		96	75 - 131	7	25
Trichloroethene			0.0500	0.04743		mg/Kg		95	78 - 130	9	25
Trichlorofluoromethane			0.0500	0.05235		mg/Kg		105	71 - 148	1	25
1,2,3-Trichloropropane			0.0500	0.04402		mg/Kg		88	75 - 131	7	25
1,2,4-Trimethylbenzene			0.0500	0.04690		mg/Kg		94	60 - 159	3	25
1,3,5-Trimethylbenzene			0.0500	0.04626		mg/Kg		93	61 - 160	2	25
Vinyl chloride			0.0500	0.04776		mg/Kg		96	60 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*
Dibromofluoromethane (Surr)	*102*		*53 - 142*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: 830-2725-A-1-B MS
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83379

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.0248	U	1.24	1.055		mg/Kg		85	71 - 119
Bromobenzene	<0.124	U	1.24	1.182		mg/Kg		95	84 - 123
Bromochloromethane	<0.124	U	1.24	1.106		mg/Kg		89	71 - 120
Bromodichloromethane	<0.124	U	1.24	1.125		mg/Kg		91	78 - 126
Bromoform	<0.124	U	1.24	0.9906		mg/Kg		80	63 - 136
Bromomethane	<0.124	U	1.24	1.062		mg/Kg		86	73 - 126
2-Butanone	<0.495	U F1	6.19	4.426	F1	mg/Kg		72	75 - 125
Carbon tetrachloride	<0.124	U	1.24	1.284		mg/Kg		104	63 - 135
Chlorobenzene	<0.124	U	1.24	1.119		mg/Kg		90	83 - 121
Chloroethane	<0.248	U	1.24	0.9500		mg/Kg		77	57 - 122
Chloroform	<0.124	U	1.24	1.236		mg/Kg		100	74 - 118
Chloromethane	<0.124	U	1.24	1.208		mg/Kg		98	58 - 110
4-Chlorotoluene	<0.124	U	1.24	1.303		mg/Kg		105	83 - 125
cis-1,2-Dichloroethene	<0.124	U	1.24	1.206		mg/Kg		97	72 - 131
cis-1,3-Dichloropropene	<0.124	U	1.24	1.134		mg/Kg		92	74 - 135
Dibromochloromethane	<0.124	U	1.24	1.049		mg/Kg		85	77 - 130
1,2-Dibromo-3-Chloropropane	<0.124	U	1.24	0.8437		mg/Kg		68	58 - 133
1,2-Dibromoethane	<0.124	U	1.24	0.9435		mg/Kg		76	73 - 125
1,2-Dichlorobenzene	<0.124	U	1.24	1.141		mg/Kg		92	84 - 121
1,3-Dichlorobenzene	<0.124	U	1.24	1.194		mg/Kg		96	84 - 124
1,4-Dichlorobenzene	<0.124	U	1.24	1.160		mg/Kg		94	82 - 120
Dichlorodifluoromethane	<0.124	U	1.24	1.097		mg/Kg		89	54 - 122
1,1-Dichloroethane	<0.124	U	1.24	1.167		mg/Kg		94	73 - 124
1,2-Dichloroethane	<0.124	U	1.24	1.004		mg/Kg		81	70 - 123
1,1-Dichloroethene	<0.124	U	1.24	1.033		mg/Kg		83	68 - 119
1,2-Dichloropropane	<0.124	U	1.24	1.135		mg/Kg		92	75 - 122
1,3-Dichloropropane	<0.124	U F1	1.24	0.9904	F1	mg/Kg		80	82 - 131

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 830-2725-A-1-B MS
Matrix: Solid
Analysis Batch: 83354

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 83379

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,2-Dichloropropane	<0.124	U	1.24	1.351		mg/Kg		109	67 - 137
1,1-Dichloropropene	<0.124	U	1.24	1.192		mg/Kg		96	72 - 118
Ethylbenzene	0.352		1.24	1.484		mg/Kg		91	80 - 123
Hexachlorobutadiene	<0.124	U	1.24	1.398		mg/Kg		113	77 - 130
Isopropylbenzene	0.276		1.24	1.574		mg/Kg		105	55 - 155
Methylene Chloride	<0.495	U	1.24	1.040		mg/Kg		84	57 - 134
m,p-Xylenes	1.19		1.24	2.263		mg/Kg		87	78 - 127
MTBE	<0.124	U	1.24	1.087		mg/Kg		88	64 - 148
Naphthalene	0.827		1.24	1.731		mg/Kg		73	53 - 162
n-Butylbenzene	0.839		1.24	2.082		mg/Kg		100	82 - 127
N-Propylbenzene	0.667		1.24	1.826		mg/Kg		94	84 - 131
o-Xylene	0.823		1.24	1.933		mg/Kg		90	79 - 125
p-Cymene (p-Isopropyltoluene)	0.133		1.24	1.431		mg/Kg		105	84 - 130
sec-Butylbenzene	0.182		1.24	1.476		mg/Kg		105	84 - 131
Styrene	0.568		1.24	1.641		mg/Kg		87	80 - 126
tert-Butylbenzene	<0.124	U	1.24	1.376		mg/Kg		111	83 - 132
1,1,1,2-Tetrachloroethane	<0.124	U	1.24	1.187		mg/Kg		96	81 - 127
1,1,2,2-Tetrachloroethane	<0.124	U	1.24	0.9663		mg/Kg		78	75 - 133
Tetrachloroethene	<0.124	U	1.24	1.128		mg/Kg		91	79 - 124
Toluene	<0.124	U	1.24	1.132		mg/Kg		85	74 - 122
trans-1,2-Dichloroethene	<0.124	U	1.24	1.013		mg/Kg		82	63 - 110
trans-1,3-Dichloropropene	<0.124	U	1.24	1.040		mg/Kg		84	73 - 125
1,2,3-Trichlorobenzene	<0.124	U	1.24	1.110		mg/Kg		90	75 - 131
1,2,4-Trichlorobenzene	<0.124	U	1.24	1.213		mg/Kg		98	79 - 128
1,1,1-Trichloroethane	<0.124	U	1.24	1.297		mg/Kg		105	71 - 124
1,1,2-Trichloroethane	<0.124	U	1.24	1.040		mg/Kg		84	75 - 131
Trichloroethene	<0.124	U	1.24	1.148		mg/Kg		93	78 - 119
Trichlorofluoromethane	<0.124	U F1	1.24	0.6375	F1	mg/Kg		52	71 - 148
1,2,3-Trichloropropane	<0.124	U F1	1.24	0.8897	F1	mg/Kg		72	75 - 131
1,3,5-Trimethylbenzene	1.13		1.24	2.280		mg/Kg		93	61 - 160
Vinyl chloride	<0.124	U	1.24	1.236		mg/Kg		100	60 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*56 - 150*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*
Dibromofluoromethane (Surr)	*99*		*53 - 142*
Toluene-d8 (Surr)	*95*		*70 - 130*

Method: 8015D - Glycols- Direct Injection (GC/FID)

Lab Sample ID: MB 860-83526/1-A
Matrix: Solid
Analysis Batch: 83525

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	<4.98	U	4.98		mg/Kg			12/28/22 09:40	1

QC Sample Results

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method: 8015D - Glycols- Direct Injection (GC/FID) (Continued)

Lab Sample ID: LCS 860-83526/2-A
Matrix: Solid
Analysis Batch: 83525

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2-Butoxyethanol			49.8	45.55		mg/Kg		92	70 - 130		

Lab Sample ID: LCSD 860-83526/3-A
Matrix: Solid
Analysis Batch: 83525

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butoxyethanol			50.1	46.37		mg/Kg		93	70 - 130	2	30

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 860-83430/1-A
Matrix: Solid
Analysis Batch: 83348

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methanol	<5.00	U	5.00		mg/Kg			12/27/22 11:48	1
Isopropanol	<5.00	U	5.00		mg/Kg			12/27/22 11:48	1

Lab Sample ID: LCS 860-83430/2-A
Matrix: Solid
Analysis Batch: 83348

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methanol			49.8	42.59		mg/Kg		86	70 - 130		
Isopropanol			49.8	44.26		mg/Kg		89	70 - 130		

Lab Sample ID: LCSD 860-83430/3-A
Matrix: Solid
Analysis Batch: 83348

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methanol			49.9	42.69		mg/Kg		86	70 - 130	0	30
Isopropanol			49.9	42.73		mg/Kg		86	70 - 130	4	30

QC Association Summary

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

GC/MS VOA

Analysis Batch: 83354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Total/NA	Solid	8260D	83445
890-3685-2	FS02	Total/NA	Solid	8260D	83445
890-3685-3	FS03	Total/NA	Solid	8260D	83445
MB 860-83354/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-83354/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-83354/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
830-2725-A-1-B MS	Matrix Spike	Total/NA	Solid	8260D	83379

Prep Batch: 83379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
830-2725-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	

Prep Batch: 83445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Total/NA	Solid	5035	
890-3685-2	FS02	Total/NA	Solid	5035	
890-3685-3	FS03	Total/NA	Solid	5035	

GC Semi VOA

Analysis Batch: 83348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Soluble	Solid	8015D	83430
890-3685-2	FS02	Soluble	Solid	8015D	83430
890-3685-3	FS03	Soluble	Solid	8015D	83430
MB 860-83430/1-A	Method Blank	Soluble	Solid	8015D	83430
LCS 860-83430/2-A	Lab Control Sample	Soluble	Solid	8015D	83430
LCSD 860-83430/3-A	Lab Control Sample Dup	Soluble	Solid	8015D	83430

Leach Batch: 83430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Soluble	Solid	DI Leach	
890-3685-2	FS02	Soluble	Solid	DI Leach	
890-3685-3	FS03	Soluble	Solid	DI Leach	
MB 860-83430/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 860-83430/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 860-83430/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 83525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Soluble	Solid	8015D	83526
890-3685-2	FS02	Soluble	Solid	8015D	83526
890-3685-3	FS03	Soluble	Solid	8015D	83526
MB 860-83526/1-A	Method Blank	Soluble	Solid	8015D	83526
LCS 860-83526/2-A	Lab Control Sample	Soluble	Solid	8015D	83526
LCSD 860-83526/3-A	Lab Control Sample Dup	Soluble	Solid	8015D	83526

Leach Batch: 83526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-1	FS01	Soluble	Solid	DI Leach	
890-3685-2	FS02	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

GC Semi VOA (Continued)

Leach Batch: 83526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3685-3	FS03	Soluble	Solid	DI Leach	
MB 860-83526/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 860-83526/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 860-83526/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Lab Chronicle

Client: Ensolum
Job ID: 890-3685-1
Project/Site: West Pearl 36 State CTB

Client Sample ID: FS01
Lab Sample ID: 890-3685-1
Date Collected: 12/20/22 11:55
Matrix: Solid
Date Received: 12/20/22 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	83445	12/27/22 14:09	MTMG	EET HOU
Total/NA	Analysis	8260D		1	5 mL	5 mL	83354	12/27/22 18:24	KLV	EET HOU
Soluble	Leach	DI Leach			9.99 g	10 mL	83430	12/27/22 15:53	CZT	EET HOU
Soluble	Analysis	8015D		1			83348	12/27/22 17:41	CZT	EET HOU
Soluble	Leach	DI Leach			9.99 g	10 mL	83526	12/28/22 07:59	CZT	EET HOU
Soluble	Analysis	8015D		1	1 mL	1 mL	83525	12/28/22 10:05	CZT	EET HOU

Client Sample ID: FS02
Lab Sample ID: 890-3685-2
Date Collected: 12/20/22 12:05
Matrix: Solid
Date Received: 12/20/22 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	83445	12/27/22 14:09	MTMG	EET HOU
Total/NA	Analysis	8260D		1	5 mL	5 mL	83354	12/27/22 18:46	KLV	EET HOU
Soluble	Leach	DI Leach			10.05 g	10 mL	83430	12/27/22 15:53	CZT	EET HOU
Soluble	Analysis	8015D		1			83348	12/27/22 17:55	CZT	EET HOU
Soluble	Leach	DI Leach			10.05 g	10 mL	83526	12/28/22 07:59	CZT	EET HOU
Soluble	Analysis	8015D		1	1 mL	1 mL	83525	12/28/22 10:17	CZT	EET HOU

Client Sample ID: FS03
Lab Sample ID: 890-3685-3
Date Collected: 12/20/22 12:15
Matrix: Solid
Date Received: 12/20/22 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	83445	12/27/22 14:09	MTMG	EET HOU
Total/NA	Analysis	8260D		1	5 mL	5 mL	83354	12/27/22 19:09	KLV	EET HOU
Soluble	Leach	DI Leach			10.02 g	10 mL	83430	12/27/22 15:53	CZT	EET HOU
Soluble	Analysis	8015D		1			83348	12/27/22 18:10	CZT	EET HOU
Soluble	Leach	DI Leach			10.00 g	10 mL	83526	12/28/22 07:59	CZT	EET HOU
Soluble	Analysis	8015D		1	1 mL	1 mL	83525	12/28/22 10:29	CZT	EET HOU

Laboratory References:
EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Ensolum
Job ID: 890-3685-1
Project/Site: West Pearl 36 State CTB

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-22-48	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015D		Solid	2-Butoxyethanol

Method Summary

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET HOU
8015D	Glycols- Direct Injection (GC/FID)	SW846	EET HOU
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET HOU
5035	Closed System Purge and Trap	SW846	EET HOU
DI Leach	Deionized Water Leaching Procedure	ASTM	EET HOU

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Ensolum
Project/Site: West Pearl 36 State CTB

Job ID: 890-3685-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3685-1	FS01	Solid	12/20/22 11:55	12/20/22 13:30	0.75
890-3685-2	FS02	Solid	12/20/22 12:05	12/20/22 13:30	0.75
890-3685-3	FS03	Solid	12/20/22 12:15	12/20/22 13:30	0.75

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Hadlie Green	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N. Marienfeld Street, Suite 400	Address:	
City, State ZIP:	Midland, TX 79701	City, State ZIP:	
Phone:	432-557-8895	Email:	Hgreen@ensolum.com; Kjennings@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project: NM
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	West Pearl 36 State CTB	Turn Around	
Project Number:	03D2024060	☐ Routine ☑ Rush	
Project Location:	32.6236, -103.5134	Due Date:	24 HR
Sampler's Name:	Chris Brown	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	03D2024060		

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	IR#8	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	20.0	
Total Containers:		Corrected Temperature:	19.8	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	2-butoxyethanol (EPA Method 8260)	Naphtha (EPA 8260)	Isopropyl Alcohol (8015)	Methanol (8015)
FS01	SL	12/20/2022	1155	0.75	Comp	2		X	X	X	X
FS02	SL	12/20/2022	1205	0.75	Comp	2		X	X	X	X
FS03	SL	12/20/2022	1215	0.75	Comp	2		X	X	X	X

Parameters

ANALYSIS REQUEST

890-3685 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

6 - 4 oz jars

24 HOUR RUSH

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		122022 1330	3		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM: Kramer Jessica	Carrier Tracking No(s):	COC No: 890-1073.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jessica.Kramer@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 890-3685-1
Address: 4145 Greenbriar Dr	Due Date Requested: 12/21/2022	Analysis Requested		Preservation Codes:
City: Stafford	TAT Requested (days):			A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			Other:
Email:	WO #:			
Project Name: west pearl 36 state ctb	Project #: 89000094			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D/1311_Z TCLP Acetone, MEK, Toluene	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
FS01 (890-3685-1)	12/20/22	11.55 Mountain		Solid			X	1	
FS02 (890-3685-2)	12/20/22	12:05 Mountain		Solid			X	1	
FS03 (890-3685-3)	12/20/22	12:15 Mountain		Solid			X	1	

Temp: 2.6 IR ID:HOU-343
C/F +0.3
Corrected Temp: 2.9

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: FedEx	Date/Time:	Company
Relinquished by: FedEx	Date/Time:	Company	Received by: Pedro Palmon	Date/Time: 12/21/2022 11 39	Company EX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3685-1
SDG Number:

Login Number: 3685
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3685-1
SDG Number:

Login Number: 3685
List Number: 3
Creator: Palmar, Pedro

List Source: Eurofins Houston
List Creation: 12/21/22 02:52 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3685-1
SDG Number:

Login Number: 3685
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 12/21/22 02:49 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

ENSOLUM

APPENDIX C

Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

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Page 2 Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.
☐ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 06/13/2022

Facility Name & Number:	West pearl 36 st com 3-6 Battery
rea:	Carlsbad
Release Discovery Date & Time:	6/4/2022 14:00
Release Type:	Other
Provide any known details about the event:	Totes caught fire and spilled chemical

Spill Calculation - On Pad Surface Pool Spill

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Deepest point in each of the areas (in.)	No. of boundaries of "shore" in each area	Estimated *Pool* Area (sq. ft.)	Estimated Average Depth (ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)
Rectangle A	5.0	3.0	0.50	1	15.000	0.042	0.111	0.002	0.111
Rectangle B					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle C					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle D					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle E					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle F					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle G					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle H					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle I					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle J					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
								Total Volume Release:	0.111

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 116242
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	6/13/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2216438339
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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State of New Mexico
Oil Conservation Division

Incident ID	NAPP2216438339
District RP	
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Printed Name: ___Charles Beauvais_____ Title: _Senior Environmental Engineer_____

Signature: Charles R. Beauvais II Date: __12/29/2022_____

email: _Charles.R.Beauvais@conocophillips.com _____ Telephone: ___575-988-2043_____

OCD Only

Received by: Jocelyn Harimon Date: 12/29/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2216438339
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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Printed Name: Charles Beauvais Title: Senior Environmental Engineer

Signature: Charles R. Beauvais II Date: 12/29/2022

email: Charles.R.Beauvais@conocophillips.com Telephone: 575-988-2043

OCD Only

Received by: Jocelyn Harimon Date: 12/29/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jennifer Nobui Date: 01/25/2023

Printed Name: Jennifer Nobui Title: Environmental Specialist A

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CONDITIONS

Action 171179

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 171179
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Approved.	1/25/2023