December 27, 2019

Mr. Allan Batka
United States Environmental Protection Agency
Region 5 (WU-16J)
77 West Jackson Blvd.
Chicago, Illinois 60604

Re: RIES Monthly Report (in conformance with MI-163-1W-C010 & MI-163-1W-C011)

Dear Mr. Batka:

Republic Industrial and Energy Solutions, LLC. ["RIES", formerly Environmental Geo-Technologies, LLC ("EGT")] hereby timely submits its seventy-third Monthly Report ("MR") in conformance with the requirements of its two EPA UIC permits (#s MI-163-1W-C010 & MI-163-1W-C011).

RIES is providing all of the attached information in the same sequence as required by both subject permits, i.e. Part II.D.1 (a-i), Part III, Attachment A, and Part III, Attachment E.G.2 & E.I. As for last month, there are a few computerized sheets absent from this report because the computer systems continue to be upgraded, and once completed, I will forward them (both September, October and November 2019 summary sheets) on to you. RIES did not accept any F039 waste in November, 2019 so no Page A-3 of 3 laboratory analyses are necessary to be submitted as part of this MR.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

We trust that you find this report satisfactory, however, if you have any questions or comments, please feel free to contact us.

Sincerely,

Richard J. Powals, P.E.

cc: J. Frost (RIES)

att.

rjp122719/RIESEPAMonthlyReport-November, 2019

Republic Industrial and Energy Solutions
28470 Citrin Drive
Romulus, MI 48174
734 946.1000
www.republicservices.com

AVERAGE INJECTION RATE

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2019

CURRENT REPORTING MONTH NOVEMBER

Date (month, year) of the first injection into either well at the Citrin Road Facility

Nov 2013

CURRENT MONTH (all volumes in gallons)

	Injected Waste	Injected Non-Waste	Total injected
MI-163-1W-C010 , Well #1-12			
Current Month	46,318	0	46,318
Since facility first injected			14,567,965
MI-163-1W-C011, Well #2-12			
Current Month	0	0	0
Since facility first injected			4,648,736
		Lifetime Combined	19,216,701

Conversion factors
365.25 days per year ÷ 12 months per year = 30.4375 days per month
30.4375 days per month × 1440 minutes per day = 43,830 minutes per month

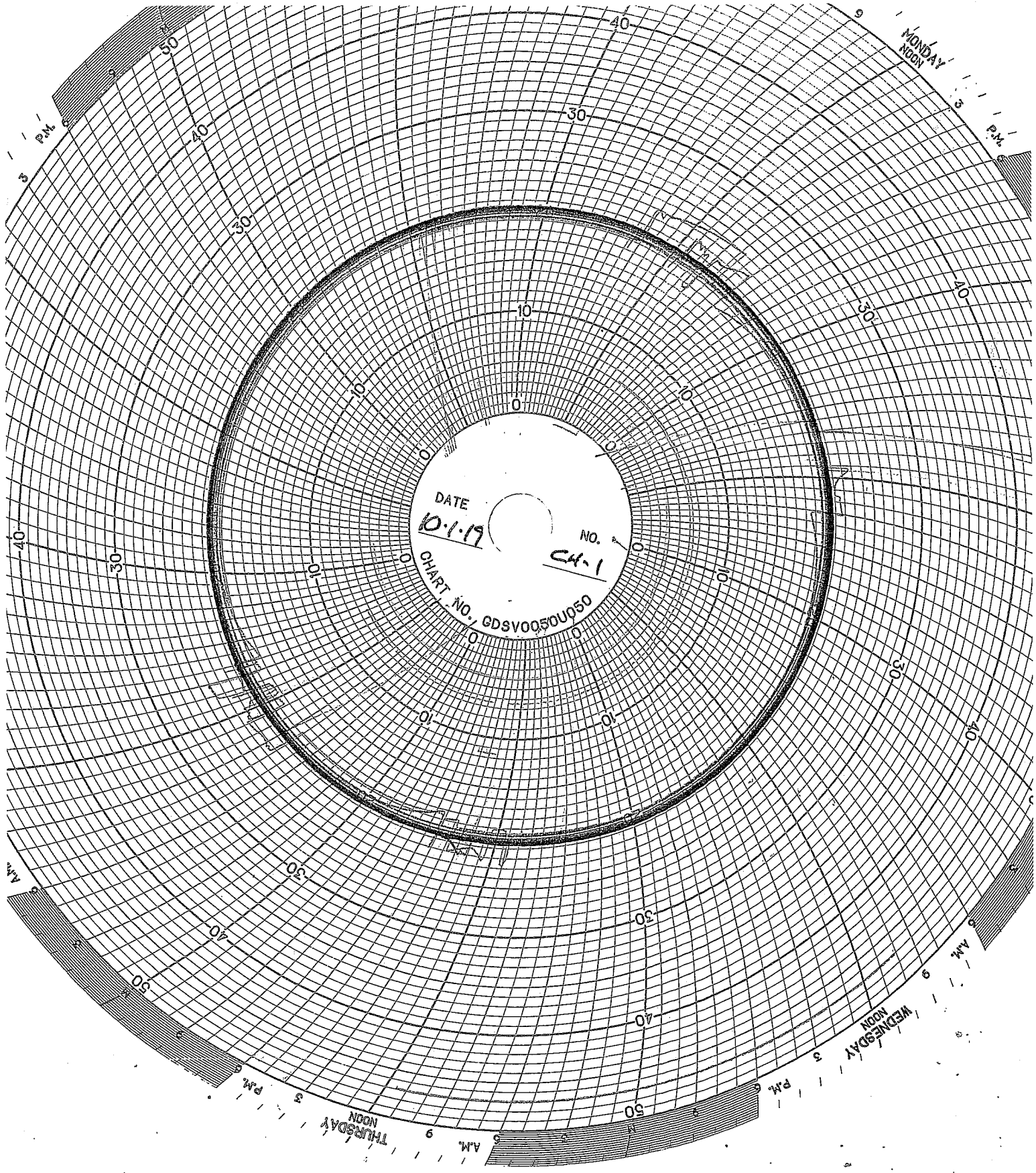
Calculations
Whole number of months of injection 71

_____ lifetime number of months of injection × 43,830 minutes/month
= 3,111,930 minutes of injection

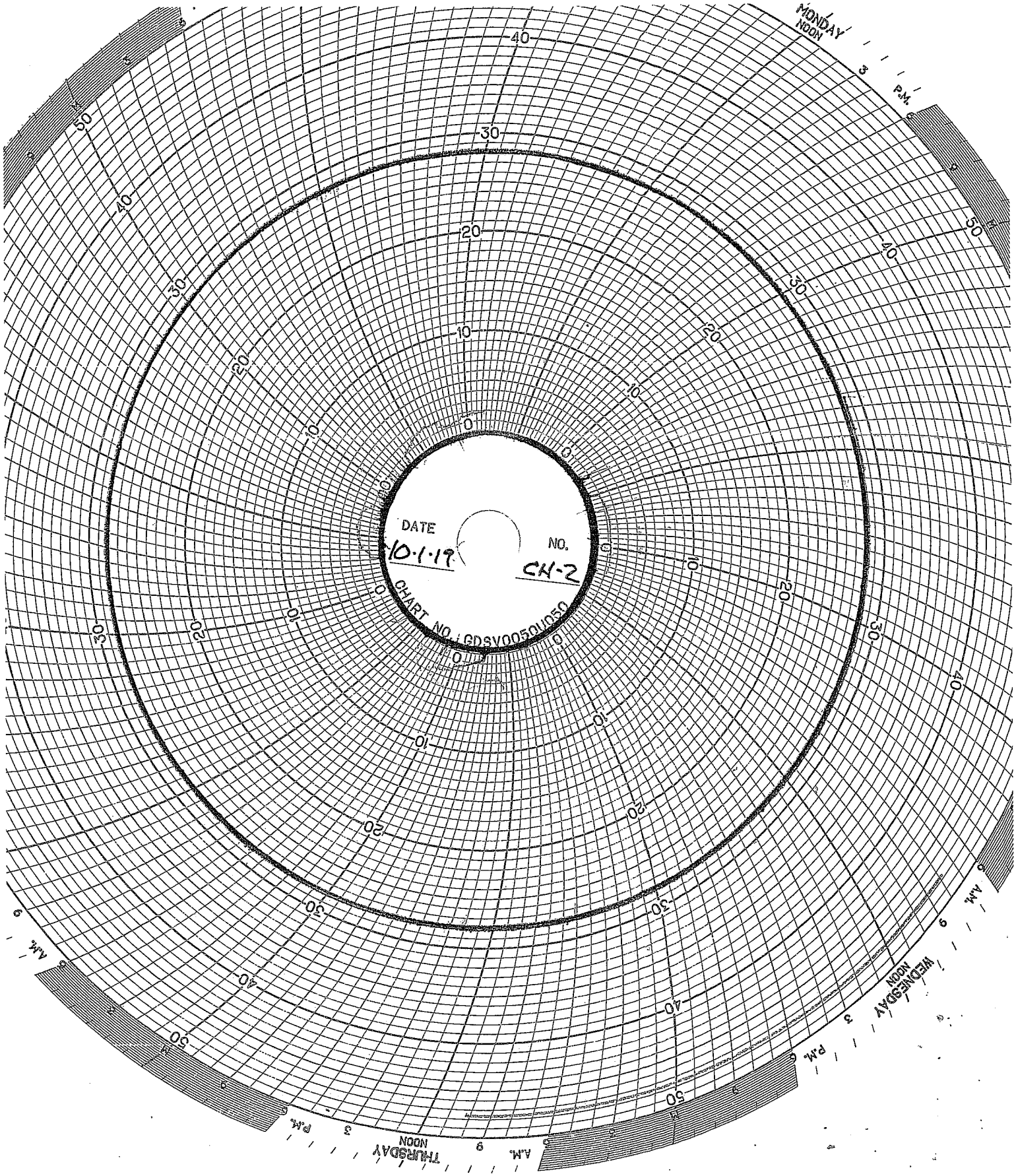
Lifetime combined injected volume 19,216,701 ÷ 3,111,930 minutes of injection
= 6.2 gpm average injection rate

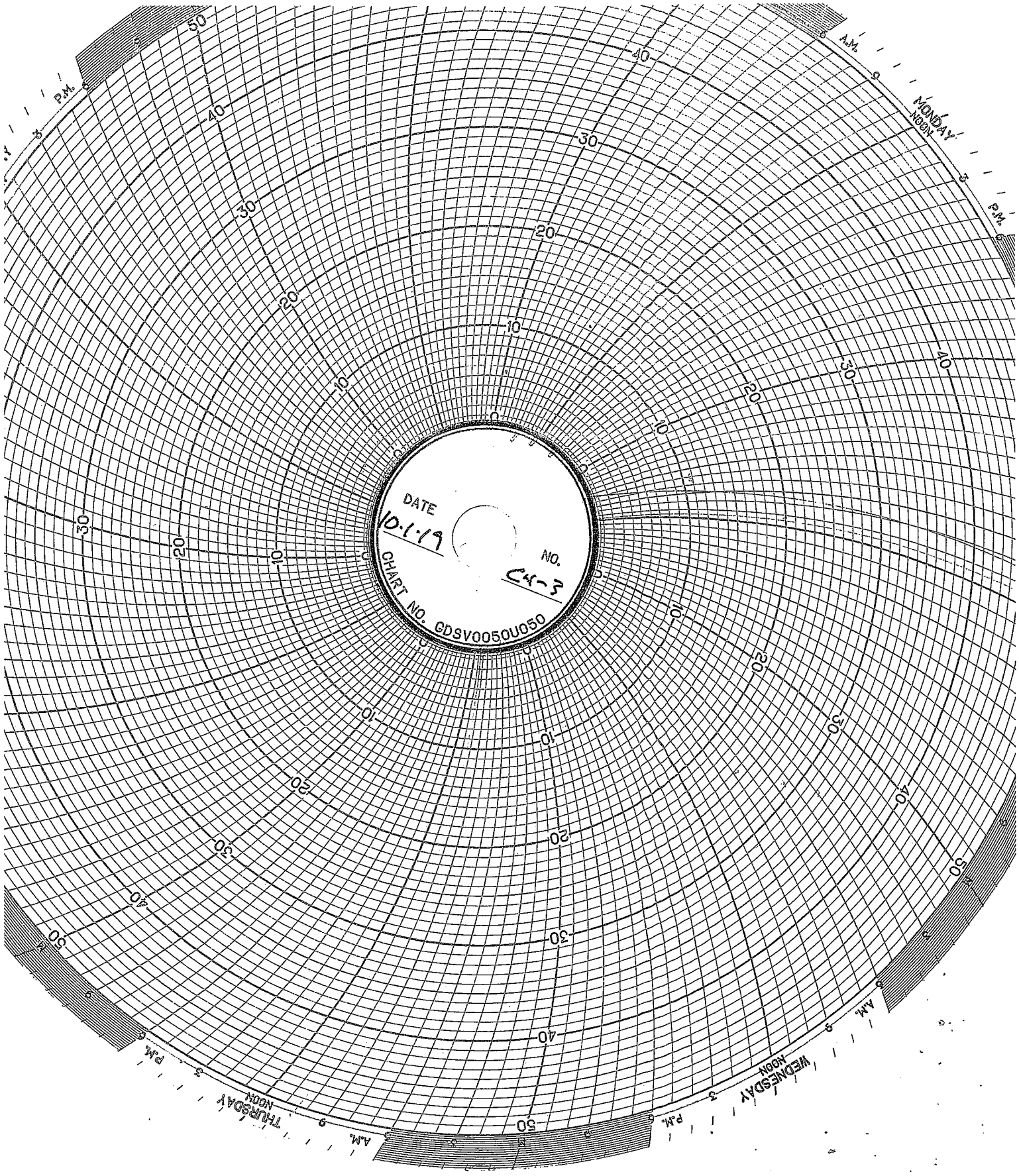
DATA DESCRIPTION

In the month of November 2019 no waste was received, and limited injection into well I was performed to clean out tank volume for inspection. There is no tabulated data in this report because the SCADA operating system is being upgraded and rebuilt. The tabulated data is still being recorded on the old hard drive but needs to be specifically retrieved by a programmer.


DATE
10·1·19
NO.
C4-1
CHART NO. GDSV005OU050
MONDAY
NOON
TUESDAY
NOON
WEDNESDAY
NOON
THURSDAY
NOON
A.M.
P.M.
-10
0
10
20
30
40
50

WELL 2 DATA


MONDAY
NOON
3
P.M.
6
9
A.M.
TUESDAY
NOON
3
P.M.
6
9
A.M.
WEDNESDAY
NOON
3
P.M.
6
9
A.M.
THURSDAY
NOON
3
P.M.
6
9
A.M.
DATE
10-1-19
NO.
CH-2
CHART NO. GDSV0050/050


DATE
10-1-19
NO.
CH-3
CHART NO. GDSV0050U050
MONDAY
NOON
A.M.
P.M.
TUESDAY
NOON
WEDNESDAY
NOON
THURSDAY
NOON
10
20
30
40
50

MAINTENANCE LOG

UIC Monthly Maintenance Log

No Maintenance This Month

CORROSION MONITORING PLAN
Coupon Summary

Date	Hastelloy	Stainless Steel	Fiberglass
11/18/2019	13.326 g	10.848 g	18.032 g

CORROSION MONITORING PLAN
COUPON SUMMARY

Date	Hastelloy (C267)	Stainless Steel (316L)	Fiberglass (Redbox)	
12/19/2013	13.330 g	10.848 g	7.309 g	Initial Mass @ start up
2/21/2014	13.329 g	10.846 g	7.306 g	
3/10/2014	13.327 g	10.845 g	7.300 g	
4/18/2014	13.324 g	10.841 g	7.272 g	
5/30/2014	13.328 g	10.818 g	7.226 g	
6/30/2014	13.321 g	10.337 g	7.196 g	
7/11/2014	13.323 g	10.304 g	7.196 g	
8/12/2014	13.328 g	10.045 g	7.182 g	
9/17/2014	13.321 g	9.997 g	7.090 g	
10/30/2014	13.321 g	9.387 g	7.075 g	
11/21/2014	13.320 g	9.386 g	7.069 g	
12/19/2014	13.321 g	9.315 g	7.084 g	
1/12/2015	13.321 g	9.289 g	7.063 g	
2/23/2015	13.339 g	9.286 g	7.005 g	New hastelloy coupon
3/31/2015	13.339 g	9.286 g	7.005 g	
4/27/2015	13.335 g	9.130 g	6.852 g	
5/21/2015	13.336 g	9.124 g	6.809 g	
6/12/2015	13.334 g	9.126 g	6.819 g	
7/27/2015	13.337 g	9.127 g	6.818 g	
8/26/2015	13.337 g	9.022 g	6.780 g	
9/21/2015	13.336 g	8.987 g	6.792 g	
10/19/2015	13.335 g	8.985 g	6.797 g	
11/16/2015	13.334 g	8.982 g	6.788 g	
12/17/2015	13.334 g	8.933 g	6.791 g	
1/29/2016	13.334 g	8.931 g	6.788 g	
2/16/2016	13.332 g	8.799 g	6.757 g	
3/31/2016	13.339 g	9.286 g	7.005 g	
4/22/2016	13.333 g	8.590 g	6.744 g	
5/31/2015	13.334 g	6.084 g	6.784 g	
6/30/2016	13.328 g	10.942 g	6.793 g	New stainless steel coupon
8/3/2016	13.326 g	10.529 g	6.743 g	
8/29/2016	13.325 g	10.020 g	6.723 g	
10/27/2016	13.325 g	8.765 g	6.708 g	
11/29/2016	13.327 g	8.571 g	6.740 g	
12/12/2016	13.323 g	8.223 g	6.717 g	
1/3/2017	13.325 g	8.059 g	6.712 g	
2/28/2017	13.324 g	7.634 g	6.727 g	
3/24/2017	13.325 g	7.370 g	6.732 g	
4/28/2017	13.325 g	6.736 g	6.736 g	
5/11/2017	13.323 g	7.352 g	6.689 g	
6/12/2017	13.323 g	7.357 g	6.689 g	
7/5/2017	13.323 g	7.355 g	6.689 g	
8/30/2017	13.324 g	7.353 g	18.105 g	New Fiberglass coupon
9/28/2017	13.325 g	7.352 g	18.060 g	
10/11/2017	13.324 g	7.350 g	18.038 g	
11/16/2017	13.325 g	7.363 g	18.047 g	
12/12/2017	13.326 g	7.308 g	18.307 g	

CORROSION MONITORING PLAN
COUPON SUMMARY

Date	Hastelloy	Stainless Steel	Fiberglass	
1/29/2018	13.326 g	10.930 g	18.027 g	New stainless steel coupon
2/9/2018	13.325 g	10.932 g	18.044 g	
3/19/2018	13.325 g	10.926 g	18.030 g	
4/16/2018	13.336 g	10.863 g	18.068 g	
5/17/2018	13.325 g	10.858 g	18.037 g	
6/20/2018	13.325 g	10.855 g	18.029 g	
7/12/2018	13.326 g	10.852 g	18.032 g	
8/21/2018	13.326 g	10.854 g	18.031 g	
9/14/2018	13.326 g	10.852 g	18.036 g	
10/10/2018	13.326 g	10.851 g	18.031 g	
11/20/2018	13.326 g	10.853 g	18.032 g	
12/11/2018	13.326 g	10.852 g	18.033 g	
1/14/2019	13.326 g	10.852 g	18.033 g	
2/20/2019	13.326 g	10.850 g	18.033 g	
3/15/2019	13.326 g	10.850 g	18.033 g	
4/10/2019	13.326 g	10.848 g	18.031 g	
5/17/2019	13.326 g	10.849 g	18.036 g	
6/5/2019	13.326 g	10.848 g	18.031 g	
7/8/2019	13.326 g	10.845 g	18.032 g	
8/12/2019	13.326 g	10.845 g	18.032 g	
9/8/2019	13.326 g	10.842 g	18.029 g	

COOROSION MONITORING COUPONS VISUAL DESCRIPTION

Nov,2019

Fiberglass Coupon

The coupon is dark orange (rust) in color with a semi-smooth texture on both sides. Its cut edges appear sanded. The coupon is free of cracks, pitting, swelling, blemishes, and corrosion. There is no obvious effect on this coupon since last month.

Hastelloy Coupon

This coupon is identified as C276 with Serial Number 5. The coupon is silver in color with a lightly sandblasted texture. It is clean and free of pits, cracks, and blemishes. There is no effect to this coupon.

Stainless Steel Coupon

No change to this coupon since last month. There has been no significant pumping on the wells and no significant exposure to hazardous waste since October 2018.

CORROSION MONITORING COUPONS BASELINE VISUAL DESCRIPTION

November 4, 2013

Fiberglass

The fiberglass coupon is Red Box 2000 type and is 2-1/2 inches long by 1/2 inch wide and 1/4 inches thick. It is a dark orange (rust) in color with a glossy shine on one side a polished look on the opposite side and the cut edges look sanded.

Hastelloy

The hastelloy coupon is identified as C276 with serial number 1. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

Stainless Steel

The stainless steel coupon is identified as 316L with serial number C1562. The dimensions of the coupon are 3 inches long by 1/2 inch wide and 1/4 inch thick. The coupon is silver in color with a lightly sandblasted surface.

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-3535
FAX (313) 885-1771

Report Date: November 15, 2013
Test Date: October 15 - November 14, 2013

Report #1310-77651
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

	Hardness
Specimen 1	90

Specimen is being returned with this report for further evaluation.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/kni

TOTAL 1 PAGES

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-3535
FAX (313) 885-1771

Report Date: February 17, 2014
Test Date: February 14 - 17, 2014

Report #1402-78036
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

	Hardness
Specimen 1	90

Specimen was returned to the client on February 17, 2014.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/dm

TOTAL 1 PAGES

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-3535
FAX (313) 885-1771

Report Date: June 16, 2014
Test Date: June 13 - 16, 2014

Report #1406-78499
Performed for:
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Attention: Mr. Don Anderson

WORK REQUESTED:

Perform Barcol Hardness test on sample submitted.

DESCRIPTION OF SAMPLE:

Sample submitted was identified as a fiberglass test coupon.

(P. O. #Credit Card).

WORK PERFORMED:

Test specimen was prepared as necessary and conditioned for a minimum of 24 hours at standard laboratory conditions prior to testing.

Barcol Hardness test was performed in accordance with the procedures of ASTM D2583-13. One specimen was tested.

RESULTS:

The following determination was made based upon the above test:

BARCOL HARDNESS

	Hardness
Specimen 1	85

Specimen was returned to the client June 16, 2014.

GHESQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/dm

October 2, 2014

- TEST REPORT -

PN 118325

PO Attn:John Frost

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Jim Drummond
Physical & Plastics Testing, Manager

October 2, 2014

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.
PO# Attn;John Frost

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a

	Results
Barcol Hardness, Instant	97

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Scott W. Yates
Plastics Testing Assistant Manager

st

October 22, 2015

· TEST REPORT ·

PN 125322

PO 00154

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr. Project Technician

Approved By: _____
Jim Drummond, Sr.
Physical & Plastic Testing, Manager

October 22, 2015

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	Results
Barcol Hardness, Instant	96

Prepared By: Melissa Martin
Sr. Project Technician

Approved By: Scott W. Yates
Plastics Testing Assistant Manager

tc

December 12, 2016

-TEST REPORT-

PN 132662
PO

PLASTICS TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Senior Project Technician

Approved By: _____
Jim Drummond
Physical Testing, Manager

Rev 041916

December 12, 2016

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one (1) material.

RECEIVED: One (1) small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	RESULTS
Barcol Hardness, Instant	96

Prepared By: _____
Melissa Martin
Senior Project Technician

Approved By: Scott Yates
Scott Yates
Plastics Testing, Assistant Manager

wk

ARDL is ISO 17025 accredited by A2LA for the test methods listed on the certificates referenced on page one. **NOTE: Non-ISO 17025 accredited test methods are designated with the ^ symbol to differentiate from ISO 17025 accredited methods in the body of the test report.**

December 13, 2017

-TEST REPORT-

PN 139140

PO#

PLASTIC TESTING DEPARTMENT

Prepared For:

John Frost
Environmental Geo-Technologies, LLC
28470 Citrin Drive
Romulus, MI 48174

Prepared By: _____
Melissa Martin
Sr Project Technician

Approved By: _____
Jim Drummond
Rubber & Plastic Testing, Manager

Rev 041916

December 13, 2017

John Frost
Environmental Geo-Technologies, LLC

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

	Results
Barcol Hardness, Instant	96

Prepared By: _____
Melissa Martin
Sr Project Technician

Approved By: _____
Scott Yates
Plastics Testing, Assistant Manager

sc

ARDL is ISO 17025 accredited by A2LA for the test methods listed on the certificates referenced on page one. NOTE: Non-ISO 17025 accredited test methods are designated with the ^ symbol to differentiate from ISO 17025 accredited methods in the body of the test report.

INJECTION
FINGERPRINTS

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11-7-19
Receiving ID#	I1107190I
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	8.2	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.0	TDS	
Physical Description	LIQUID	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	70°F		
Conductivity	9mS		
% Solids	3%		
Turbidity	Yes (No)		
Color (visual)	NONE WATER		
TSS (%)	<0.1		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11.21.19
Receiving ID#	T11211901
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	4.3	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.0	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	71°F		
Conductivity	83 mS		
% Solids	8%		
Turbidity	(Yes) No		
Color (visual)	GREY		
TSS (%)	0.2		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11.25.19
Receiving ID#	I1125190I
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Streams		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	4.5	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.0	TDS	
Physical Description	LIQUID	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	70°F		
Conductivity	48mS		
% Solids	7%		
Turbidity	(Yes) No		
Color (visual)	GREY		
TSS (%)	<0.1		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

WASTE STREAMS
CHARACTERIZATIONS

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr. Romulus, MI 48174 Telephone 734.946.1000 Fax 734.946.1002

Generator Waste Profile

Profile # 01420

GENERATOR INFORMATION

Name: [redacted] USEPA ID #: [redacted]

Facility Address: [redacted] SIC/NAICS Code: State Code:

City: [redacted] State: [redacted] Zip Code: [redacted]

Contact: [redacted] Title: [redacted] Phone: [redacted] Fax: ( )

BILLING INFORMATION ☐ SAME AS ABOVE

Company Name: [redacted]

Address: [redacted]

City: [redacted] State: [redacted] Zip Code: [redacted]

Attention: [redacted] Phone: [redacted] Fax: ( )

WASTE INFORMATION

Name of Waste/Common Chemical Name:

E&P Exempt Rinsewater and Caustic Cleaner

Process Generating Waste (Please be specific, incomplete information may delay the approval process):

E&P Exempt Rinsewater from a storage line at a natural gas compressor station. A small amount of glycol and cleaner are mixed in (cleaner SDS attached).

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☐ Non Hazardous Liquid Industrial Waste ☒ Hazardous Waste
2. Regulated by TSCA? ☐ Yes ☒ No (PCBs, etc)
3. List All Applicable Waste Codes: D002

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids:	Layers:	Specific Gravity:	
☒ White/Clear	☒ 0-1 % ☐ 3-5 %	☐ Multi Layered	☐ <0.8 ☐ 1.0 – 1.2	acceptable @ 112719
☐ Black/Brown	☐ 1-3 % ☐ > 5%	☐ Bi-Layered	☒ 0.8 – 1.0 ☐ 1.3 – 1.4	
☐ Other		☒ Single Phase	Exact / Other	

pH: ☐ NA ☐ ≤ 2 ☐ 2 – 4 ☐ 4 – 6 ☐ 6 – 8 ☐ 8 – 10 ☒ 10 – 12.5 ☒ ≥ 12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☐ 141 – 200°F ☒ >200°F ☐ None ☐ Closed Cup ☐ Open Cup

VOC CONCENTRATION: -0- PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >= 0.1%)

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
RCRA Exempt Rinsewater		90 %			%
Glycol	10	5 %			%
2116 NHE UTR Flush	10	5 %			%

Metals: Indicate if this waste contains any of the following metals. If generator knowledge provide backup
☐ Lab Analysis ☐ Generator Knowledge ☒ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☐	____ ppm	Aromatic Amine	☐	____ ppm
Dioxins	☐	____ ppm	Pesticides	☐	____ ppm
Cyanides Reactive	☐	____ ppm	Rodenticides	☐	____ ppm
Cyanides Total	☐	____ ppm	Fungicides	☐	____ ppm
Sulfides Reactive	☐	____ ppm			
Sulfides Total	☐	____ ppm			

Arsenic (As)	D004	☐	≤ 5	ppm	____	ppm
Barium (Ba)	D005	☐	≤ 100	ppm	____	ppm
Cadmium (Cd)	D006	☐	≤ 1	ppm	____	ppm
Chromium (Cr)	D007	☐	≤ 5	ppm	____	ppm
Lead (Pb)	D008	☐	≤ 5	ppm	____	ppm
Mercury (Hg)	D009	☐	≤ 0.2	ppm	____	ppm
Selenium (Se)	D010	☐	≤ 1	ppm	____	ppm
Silver (Ag)	D011	☐	≤ 5	ppm	____	ppm

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked*

☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives
☐ NIOSH Human Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☒ Yes ☐ No
2. Reportable Quantity (RQ) in pounds: 58,418 #; D002
3. DOT Shipping Name: Waste Corrosive Liquids, toxic, n.o.s. Hazard Class: 8 ID/NA: UN1719
PG: II ERG: 154 Hazardous Constituents for "n.o.s": Sodium Hydroxide
4. Method of Shipment: ☒ Bulk Tanker ☐ Vac truck ☐ Rail Car ☐ Drums ☐ Totes
5. Number of Units to Ship Now: 7,000 gallons 6. Anticipated Volume / Units per Year: _____ or ☒ One Time
6. Special Handling Requirements including PPE:

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

Printed Name: [redacted] Title: [redacted]
Generator's Signature: [redacted] Date: 11/8/19

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

PLEASE collect a representative 1-quart sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261 Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

1. Representative, grab 2. Totes
SAMPLING METHOD COLLECTION POINT
3. [redacted]
SAMPLE COLLECTOR'S NAME (PRINT) AFFILIATION
4. Sample No: [redacted] Preservation: Yes ☐ No ☒
5. CHAIN OF CUSTODY *Each person who handles the sample must sign below when the sample passes from one to another.*

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[redacted]	10/30/19	10:45 am			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11-27-19
Receiving ID#	[redacted]
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	[redacted]
Client	
Transporter	
Time In	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Shipments		Oilfield Sites Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	12.2	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.06	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	69°F		
Conductivity	10.2 mS		
% Solids	9.9%		
Turbidity	(Yes) No		
Color (visual)	Brown		
TSS (%)	<0.1%		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

DISTINCTIVE DETAILS™ PREMIUM RECONDITIONING PRODUCTS

BE GREAT!.... BE DISTINCTIVE!

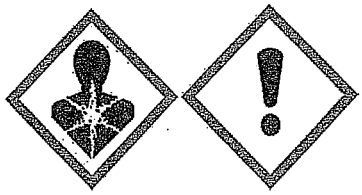
SAFETY DATA SHEET - SDS

SECTION 1 PRODUCT INFORMATION

Product Name: 2116 NHE UTR Flush
Date of preparation: August 8, 2019
Product Use: CLEANING COMPOUND, N.O.I.
Supplier: DISTINCTIVE DETAILS, INC
1253 Lower Elkton Road
Columbiana, OH 44408
412.431.3904 412.431.0418 fax
EMERGENCY PHONE: CHEM-TREC CCN6739 1.800.424.9300 (outside USA 703.527.3887)
This product contains no phosphates
This product contains no NPEO (nonylphenol polyethoxylate)

SECTION 2 HAZARDS IDENTIFICATION

GHS – Classification

Classification	Eye Irritant Skin Irritant	
GHS label elements Hazard pictograms		
Signal word	WARNING	
Hazard statements	H315 & H320 H333	May cause skin and eye irritation May be harmful if inhaled
Precautionary statements	P102 P103 P281 P331	Keep out of the reach of children Read product label before using Use person protective equipment as required Do not induce vomiting

Route of Entry:

Target Organs:
English: No available information
Español: No hay nada información
Français: Aucun renseignement disponible

Inhalation:
English: May cause mild irritation.
Español: Es posible causar irritación suave.
Français: Peut irriter la peau.

Skin Contact:
English: Skin Irritant
Español: Irritante de Piel
Français: Irritant de Peau

Eye Contact:
English: May cause severe irritation.
Español: Puede causar la irritación severa.
Français: Peut provoquer l'irritation sévère.

Ingestion:
English: May cause irritation to the mucous membranes.
Español: Es posible causar irritación a las mucosas.
Français: Peut irriter les membranes muqueuses.

SECTION 3 COMPOSITION INFORMATION ON INGREDIENTS

Ingredient/Chemical Name	CAS #
Water	7732-18-5
Sodium Hydroxide	1310-73-2
Butyl Cellusolve	111-76-2
Nonylphenol polyethylene glycol ether	127087-87-0
Proprietary Surfactant Blend	Trade Secret

SECTION 4 FIRST AID MEASURES

Inhalation:
English: If breathing is difficult or irritating, move person to fresh air immediately.
Español: Si respiración está difícil o irritante, se mueva la persona al aire fresco inmediatamente.
Français: En cas de difficultés respiratoires ou d'irritation, transporter immédiatement la personne à l'air frais.

Skin Contact:
English: Rinse area with soap and water.
Español: Enjuaga el área con jabon y agua.
Français: La région de rinçage avec le savon et l'eau.

Eye Contact:
English: Flush immediately with large amounts of clean water for a minimum of 15 minutes, lifting upper and lower lids occasionally. Do not rub eyes. If any irritation

persists, seek medical attention.

Español: Vacie inmediatamente con mucho agua limpio por un mínimo de 15 minutos, levantándose los párpados superiores y inferiores de vez en cuando. No se frote los ojos. Si la irritación persiste, busque la atención médica inmediatamente.

Français: Rincer immédiatement à grande eau propres pendant au moins 15 minutes, en soulevant les paupières inférieures et supérieures de temps à autre. Ne pas se frotter les yeux. Si uneirritation persiste, chercher l'attention médicale.

Ingestion:

English: Do not induce vomiting. If the person is conscious, give two glasses of water to dilute the ingested material. Follow up with several glasses of fruit juice or very dilute vinegar or carbonated soda to neutralize the alkaline material. Small amounts that may have accidentally entered the mouth should be rinsed out thoroughly with water. Seek medical attention immediately.

Español: No induzca vómitos. Si la persona está consciente, dé dos gafas del echar agua para diluir el material ingerido. Siga varias gafas de zumo de fruta o vinagre muy diluido o soda carbónica para neutralizar la substancia alcalina. Las pequeñas cantidades que pueden haber entrado por casualidad en la boca deberían ser aclaradas a fondo con el echar agua. Busque la asistencia médica inmediatamente.

Français: Ne pas faire vomir. Si la personne est consciente, lui donner plusieurs verres d'eau pourdiluer les matériaux absorbés. Les petites quantités qui peuvent avoir pénétré la bouche doivent être rincées avec de l'eau. En cas d'irritation persistante, contacter immédiatement un médecin.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point (° F): > 240° UEL: NA LEL: NA
Extinguishing Media: CO2, dry chemical, foam
Special Firefighting Procedures: Wear a self-contained breathing apparatus
Unusual Fire and Explosion Hazards: None

SECTION 6 ACCIDENTAL RELEASE MEASURES

English: Contain large spills with dikes to prevent entry to waterways and sanitary sewers and transfer the material to appropriate containers for reclamation or disposal. Absorb/trap remaining material or small spills with inert material (dirt, sand, industrial absorbent) and then place in a chemical waste containers. Flush residual spill area with large amounts of water. Dispose of all clean up materials in accordance with all applicable federal, state, and local health and environmental regulations.

Español: Contenga los derramamientos grandes con diques para prevenir la entrada a los canales y alcantarillas sanitarias y transferir el material a los contenedores para recuperación o disposición. Absorber / trampa material restante o pequeños derrames con material inerte material (tierra, arena, absorbente industrial) y luego en un recipiente para residuos químicos. Lavar el área del derrame residual con grandes cantidades de agua. Deseche todos los materiales de la limpieza de acuerdo con las leyes federales, estatales y de salud local y medio ambiente.

Français: Contenir les déversements majeurs avec des digues afin d'éviter qu'ils ne pénètrent les voies d'eau et les égouts sanitaires. Transférer les matériaux dans des conteneurs appropriés aux fins de réclamation ou d'élimination. Absorber/cerner les matériaux restants ou les déversements mineurs avec des matériaux inertes (impuretés, sable, absorbant industriel) et les placer ensuite dans des conteneurs pour déchets chimiques. Rincer la zone de déversement résiduel à grande quantité d'eau Procéder à la mise au rebut des matériaux de nettoyage conformément à toutes les réglementations sanitaires et environnementales au niveau national, régional et local.

SECTION 7 HANDLING AND STORAGE

Handling Precautions:

English: Wear proper Personal Protective Equipment when handling.
Español: Lleve puesto el Equipo Protector Personal apropiado manejando.
Français: Portez l'Équipement Protecteur Personnel nécessaire en manipulant.

Storage Requirements:

English: Do not store below 32 degrees F. Do not store in direct sunlight. Keep away from heat, open flames or other sources of ignition. Keep away from children. Keep containers tightly closed.

Español: No almacene debajo de 32 F grados. No almacene en la luz directa del sol. Consérvese lejos de calor, llamas abiertas u otras fuentes de la ignición. Mantiene a distancia los niños. Mantiene que los contenedores están cerrados muy bien.

Français: Ne pas entreposer à des températures inférieures à 0 °C (32 °F). Ne pas entreposer directement à la lumière du jour. Tenez éloigné de la chaleur, les flames ouvertes ou d'autres sources d'ignition. Tenir à l'écart des enfants. Bien fermer les conteneurs. Les matériaux exposés à l'air peuvent absorber l'eau.

SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Controls

English: Local exhaust recommended.
Español: Extractor local está recommendado
Français: Évacuation locale recommandée.

Protective Equipment:

English: Rubber, neoprene, vinyl, nitrile, butyl or PVC coated gloves recommend ed. Safety glasses or goggles recommended.

Español: El caucho, el neopreno, el vinilo, el nitrile, el butilo o los guantes cubierto con PVC están recommendados. Gafas de seguridad o anteojos están recommendados.

Français: Le caoutchouc, le néoprène, le vinyle, nitrile, le butyle ou les gants enduits de polychlorue de vinyle recommandés. Les verres de sécurité ou les lunettes de protection recommandées.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Boiling Point: +212 F
Vapor Pressure: ND
Appearance and odor: Thin, clear liquid, no fragrance
Specific Gravity: 1.0-1.2
Evaporation Rate: ND

Vapor Density:	ND	pH: 12.0 – 13.0
Solubility in water:	Soluble	Freeze Point: 32° F
V.O.C.	0.0 g/L	

SECTION 10 STABILITY AND REACTIVITY

Stability:
English: Yes
Español: Si
Français: Oui

Conditions to avoid:
English: Nothing Known.
Español: Nada conocido.
Français: Rien de su.

Materials to avoid (incompatibility):
English: Reacts with magnesium, aluminum, zinc, tin, bronze, chromium, brass
Español: Reacciona con magnesio, aluminio, zinc, lata, bronce, cromo, latón
Français: Réagit avec le magnésium, l'aluminium, le zinc, l'étain, le bronze, le chrome, le laiton

Hazardous Decomposition products:
English: Carbon Monoxide and other hazardous chemicals.
Español: Monóxido de carbono y otros productos químicos arriesgados.
Français: Oxyde de carbone et d'autres produits chimiques les hasardeux.

Hazardous Polymerization"
English: Will not occur
Español: No ocurirá
Français: Aucun risqué

SECTION 11 TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation:
Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:
Gastrointestinal Irritation:
Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

SECTION 12 ECOLOGICAL INFORMATION

English: There is no data available for this product
Español: No hay nada data
Français: Aucun renseignement

SECTION 13 DISPOSAL CONSIDERATIONS

English: Dispose of in accordance with local, state, and federal regulations.
Español: Disponga de acuerdo con las regulaciones locales, estadas y federales.
Français: Conformément à toutes les réglementations locales, régionales et gouvernementales.

The information in this SDS pertains only to the product as shipped.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty and clean product containers may be disposed as non-hazardous waste. Consult your specific regulations and service providers to determine available options and requirements.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product: Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14 TRANSPORT INFORMATION

DOT Transportation Data (49 CFR 172.101):
DOT Classification: Corrosive liquids, toxic, N.O.S., 8, UN1719, PGII, sodium hydroxide
UN Number: 1719 UN Shipping Name: Corrosive liquids, toxic
Class & Subsidiary risk: 8 Packing Group: II
Special Precautions for user: None. See section 5,6,7 & 8 for any associated handling and precautions.

SECTION 15 REGULATORY INFORMATION

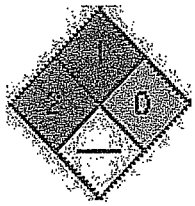
U.S. Federal Regulations

SARA 313 toxic chemical notification and release reporting:	No products were found.
Clean Water Act (CWA) 307:	No products were found.
Clean Water Act (CWA) 311:	No products were found.
Clean Air Act (CAA) 112 regulated toxic substances:	No products were found.

All Components of this product are listed or exempt from listing on TSCA Inventory.

State Regulations
California Prop 65 — No products were found.

SECTION 16 OTHER INFORMATION



NFPA

Health	2
Fire	1
Reactivity	0

English:	Do not allow this product to freeze.
Español:	No permita que este producto congelar.
Français:	Ne laissez pas ce produit fige.

Disclaimer:

English: To the best of our knowledge, this SDS conforms to the requirements of US OSHA 29 CFR 1910.1200. The information contained herein is based on data considered accurate to the best of our knowledge at the date of its publication. However, no warranty is expressed or implied regarding the accuracy, completeness, or adequacy of the information contained herein. The manufacturer and/or supplier shall not be held liable (regardless of fault) to the user or third persons, or anyone for any direct, indirect, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy or furnishing of such information. Each user must review this SDS in the context of how the product will be handled and used in the workplace. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company so we can attempt to obtain additional information from our suppliers.

The conditions or methods of handling, storage, use, and/or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for any loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

Please carefully read and understand all labels before using product.

Español: Renuncia de responsabilidad:
Español: A lo mejor de nuestros conocimientos, este SDS se ajusta a las exigencias de Estados Unidos OSHA 29 CFR 1910.1200. La información contenida en este documento se basa en datos consideradas precisas a lo mejor de nuestros conocimientos en la fecha de su publicación. Sin embargo, ninguna garantía es expresa o implícita con respecto a la exactitud, integridad o adecuación de la información contenida en este documento. El fabricante o el proveedor no se hace responsable (independientemente de la culpa) para el usuario o terceras personas o cualquier persona por los daños directos, indirectos, especiales o consecuentes derivados de o en relación con la exactitud, integridad, adecuación o suministro de dicha información. Cada usuario debe revisar este SDS en el contexto de cómo el producto se controlan y se utilizará en el lugar de trabajo. Si aclaraciones o información adicional es necesaria para garantizar que se puede realizar una evaluación adecuada del riesgo, el usuario debe ponerse en contacto con esta empresa por lo que nosotros podemos intentar obtener información adicional de nuestros proveedores.

Por favor, cuidadosamente leer y entender todas las etiquetas antes de utilizar el product Avis de non-responsabilité.

Français: Le meilleur de notre connaissance, cette fiche signalétique est conforme aux exigences de la US OSHA 29 CFR 1910.1200. Les informations contenues dans le présent document sont basées sur les données considérées comme exactes au meilleur de notre connaissance à la date de sa publication. Cependant, aucune garantie est exprimée ou implicite concernant l'exactitude, l'exhaustivité ou l'adéquation des informations contenues dans les présentes. Le fabricant ou le fournisseur ne peut être tenue responsable (indépendamment de la panne) à l'utilisateur ou des tiers ou quiconque des dommages directs, indirects, spéciaux ou consécutifs, découlant d'ou en relation avec la précision, l'exhaustivité, pertinence ou à la fourniture de ces informations. Chaque utilisateur doit examiner cette fiche signalétique dans le contexte de comment le produit est traité et utilisé en milieu de travail. Si clarification ou complément d'information est nécessaire pour garantir qu'une évaluation appropriée du risque peut être effectuée, l'utilisateur doit contacter cette société afin de nous pouvons tenter d'obtenir des informations complémentaires auprès de nos fournisseurs.

Veuillez lire attentivement et comprendre toutes les étiquettes avant d'utiliser le produit

End of SDS document Fin del documento SDS Fin de la fiche signaletique du document

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # 01423

GENERATOR INFORMATION

Name: [redacted] USEPA ID # [redacted]

Facility Address: [redacted] SIC/NAICS Code: [redacted] State Code: _____

City: [redacted] State: [redacted] Zip Code: [redacted]

Contact: [redacted] Title: [redacted] Phone: [redacted] Fax: [redacted]

BILLING INFORMATION

☐ SAME AS ABOVE

Company Name: [redacted]

Address: [redacted]

City: [redacted] State: [redacted] Zip Code: [redacted]

Attention: [redacted] Phone: [redacted] Fax: [redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Zn/Ni plating bath

Process Generating Waste (Please *be specific, incomplete information may delay the approval process):* generated from plating baths (Zinc/Nickel) used to plate automotive fasteners

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☐ Non Hazardous Liquid Industrial Waste ☒ Hazardous Waste
2. Regulated by TSCA? ☐ Yes ☒ No (PCBs, etc.)
3. List ALL Applicable Waste Codes: D002 D007

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids	Layers:	Specific Gravity:	
☐ White/Clear ☐ Black/Brown ☒ Other dark amber	☒ 0-1 % ☐ 3-5 % ☐ 1-3 % ☐ > 5%	☐ Multi-Layered ☐ Bi-Layered ☐ Single Phase	☐ <0.8 ☐ 1.0 – 1.2 ☐ 0.8 –1.0 ☐ 1.3 – 1.4 Exact / Other _____	acceptable D 112719

pH: ☐ NA ☐ ≤ 2 ☐ 2 – 4 ☐ 4 – 6 ☐ 6 – 8 ☐ 8 – 10 ☐ 10 – 12.5 ☒ ≥12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☐ 141 – 200°F ☒ >200°F ☐ None ☐ Closed Cup ☐ Open Cup

VOC CONCENTRATION - 0 PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >/= 0.1%)*

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
Enviralloy NIB	4 %			- %	
Enviralloy NID	.3 %			- %	
Enviralloy NiR	1 %			- %	
NaOH	16 %			- %	
Water	78.7 %			- %	

Metals: Indicate if this waste contains any of the following metals,. If Generator knowledge provide backup
☐ Lab Analysis ☐ Generator Knowledge ☐ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☒	____ppm	Aromatic Amine	☐	____ ppm
Dioxins	☐	____ppm	Pesticides	☐	____ ppm
Cyanides Reactive	☐	____ppm	Rodenticides	☐	____ ppm
Cyanides Total	☐	____ppm	Fungicides	☐	____ ppm
Sulfides Reactive	☐	____ppm			
Sulfides Total	☐	____ppm			

Arsenic (As)	D004	☐ < 5 ppm	____ ppm		
Barium (Ba)	D005	☐ <100 ppm	____ ppm		
Cadmium (Cd)	D006	☐ < 1 ppm	____ ppm		
Chromium (Cr)	D007	☐ < 5 ppm	>5 ppm		
Lead (Pb)	D008	☐ < 5 ppm	____ ppm		
Mercury (Hg)	D009	☐ < 0.2 ppm	____ ppm		
Selenium (Se)	D010	☐ < 1 ppm	____ ppm		
Silver (Ag)	D011	☐ < 5 ppm	____ ppm		

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*
☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives
☐ NIOSH Human-Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☒Yes ☐No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name ___ Waste Corrosive Liquids, Basic, Inorganic, n.o.s.__ ____ Hazard Class __8__UN/NA __3266_____

PG _III____ ERG __171___ Hazardous Constituents for "n.o.s."___Nickel_____

4. Method of Shipment: ☒Bulk Tanker ☐Vac truck ☐Rail Car ☐Drums ☐Totes
5. Number of Units to Ship Now: ____5000_____ 6. Anticipated Volume / Units per Year: _____ or ☐ One Time
6. Special Handling Requirements including PPE:_____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

Printed Name: [redacted] Title: [redacted]

Generator's Signature [redacted] Date: 10/10/19

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

PLEASE collect a representative 1-quart sample o the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

1. [redacted] 2. [redacted]
SAMPLING METHOD COLLECTION POINT

[redacted]
SAMPLE COLLECTOR'S NAME, TITLE, EMPLOYER

4. Sample No. _____ Preservation: Yes ☐ No ☒

5. CHAIN OF CUSTODY *Each person who handles the sample must sign below when the sample passes from one to another.*

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11-27-19
Receiving ID#	Zn Plate Bath
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	[redacted]
Client	
Transporter	
Time in	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Shipments		Profile Lines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	12.8	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.21	TDS	
Physical Description	LiquiD	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	70°F		
Conductivity	195.8		
% Solids	23%		
Turbidity	(Yes) No		
Color (visual)	PURPLE		
TSS (%)	0.2%		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

MacDermid Enthone

Safety Data Sheet

Section 1. Identification

Product name : **ENVIRALLOY NI 12-15 NIR**

Product code : 187282

Uses advised against : Consumer, private households, general public

Product type : Liquid.

Date of issue/Date of revision : June 1 2018.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
MacDermid, Inc. MacDermid Enthone Inc. 245 Freight Street Waterbury, CT 06702	Tel: (203) 575-5700	UNITED STATES AND CANADA: Tel: 800-424-9300 INTERNATIONAL, CALL Tel: +1 703-527-3887 (collect calls accepted)
MacDermid Enthone de Mexico S.A. De C.V. Norte 59 No. 896 Col. Industrial Vallejo Mexico, D.F. 02300 Mexico	Tel: 52 55 5078 3904	Tel: 01 800 002 1400 Tel: (55) 5559 1588
Anion Química Industrial S.A. Rua Eli Valter Cesar, 110 - Jardim Alvorada, CEP: 06612-130, Jandira, SP Brasil	Tel: + 55 11 4789-8585	Tel: 0800 707 7022 Tel: 0800 172 020
RevestSul Produtos Químicos Ltda. Rua Antônio Rasteiro Filho, 500 Parque Industrial José Garcia Gimenes CEP: 86183-751, Cambé, PR Brasil	Tel.: +55 043 3223 3550	Tel: 0800 707 7022 Tel: 0800 172 020
MacDermid Performance Solutions Canada Inc. 4530 Eastgate Parkway Mississauga, Ontario L4W 3W6 Canada	Tel: (905) 624-1065	DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (central nervous system (CNS)) - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

Section 2. Hazards identification

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
May damage the unborn child.
Suspected of causing genetic defects.
Causes damage to organs. (central nervous system (CNS))
Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : Collect spillage. Get medical attention if you feel unwell. IF exposed: Call a POISON CENTER or physician. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or 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 physician.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Do not taste or swallow. Wash thoroughly after handling.

Hazards not otherwise classified : Causes digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Nickel Salt	20-30	-
Aliphatic amine.	1-10	-
Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	1-10	10101-97-0
2,2',2"-nitrilotriethanol	1-10	102-71-6
Amine	0.1-1.0	-
3,6-diazaoctanethylenediamin	0.1-1.0	112-24-3
3,6,9,12-tetra-azatetradecamethylenediamine	0.1-1.0	4067-16-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Section 4. First aid measures

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Storage temperature: 5 to 40°C (41 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before

Section 7. Handling and storage

handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Nickel Salt	**ACGIH TLV (United States, 2/2005). Notes: Inhalable** TWA: 0.1 mg/m³ 8 hours. Form: As Nickel **OSHA PEL (United States, 2/2005).** TWA: 1 mg/m³ 8 hours. Form: As Nickel **OSHA PEL (United States, 6/2016).** TWA: 1 mg/m³, (as Ni) 8 hours. **ACGIH TLV (United States, 3/2017). Notes: as Ni** TWA: 0.1 mg/m³, (as Ni) 8 hours. Form: Inhalable fraction **OSHA PEL 1989 (United States, 3/1989). Notes: as Ni** TWA: 0.1 mg/m³, (as Ni) 8 hours. Form: Soluble **NIOSH REL (United States, 10/2016). Notes: as Ni** TWA: 0.015 mg/m³, (as Ni) 10 hours.
Aliphatic amine.	**AIHA WEEL (United States, 10/2011). Absorbed through skin. Skin sensitizer.** TWA: 5 mg/m³ 8 hours.
Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	**NIOSH REL (United States, 10/2016).** TWA: 0.015 mg/m³, (as Ni) 10 hours. **ACGIH TLV (United States, 3/2017).** TWA: 0.1 mg/m³, (as Ni) 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 6/2016).** TWA: 1 mg/m³, (as Ni) 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 0.1 mg/m³, (as Ni) 8 hours. Form: Soluble
2,2',2"-nitrilotriethanol	**ACGIH TLV (United States, 3/2017).** TWA: 5 mg/m³ 8 hours.
Amine	**OSHA PEL 1989 (United States, 3/1989).** TWA: 3 ppm 8 hours. TWA: 15 mg/m³ 8 hours. TWA: 15 mg/m³ 8 hours. Form: All forms TWA: 3 ppm 8 hours. Form: All forms **NIOSH REL (United States, 10/2016).** TWA: 3 ppm 10 hours. TWA: 15 mg/m³ 10 hours. **NIOSH REL (United States, 6/2001).** TWA: 15 mg/m³ 10 hours. Form: All forms TWA: 3 ppm 10 hours. Form: All forms **ACGIH TLV (United States, 3/2017). Absorbed through skin.** TWA: 1 mg/m³ 8 hours. Form: Inhalable fraction and vapor **ACGIH TLV (United States, 2/2003). Absorbed through skin. Notes: 1994-1995 Adoption** TWA: 2 mg/m³ 8 hours. Form: All forms TWA: 0.46 ppm 8 hours. Form: All forms
3,6-diazaoctanethylenediamin	**AIHA WEEL (United States, 10/2011). Absorbed through skin.** TWA: 1 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Blue-green]

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : 6.5

Melting point : Not available.

Boiling point : >100°C (>212°F)

Flash point : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Section 9. Physical and chemical properties

Relative density : 1.31

Solubility : Not available.

VOC : 0.19 g/l

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Aerosol product

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Incompatibility with various substances : Reactive or incompatible with the following materials: oxidizing materials, acids, alkalis and moisture.
Oxidizers

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Nickel Salt	LD50 Oral	Rat	264 mg/kg	-
Aliphatic amine.	LD50 Oral	Rat	3990 mg/kg	-
Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	LD50 Oral	Rat	264 mg/kg	-
2,2',2''-nitrilotriethanol	LD50 Oral	Rat	7.39 g/kg	-
Amine	LD50 Dermal	Rabbit	8180 mg/kg	-
	LD50 Oral	Mouse	3300 mg/kg	-
	LD50 Oral	Rabbit	2200 mg/kg	-
	LD50 Oral	Rat	680 mg/kg	-
3,6-diazaoctanethylenediamin	LD50 Dermal	Rabbit	805 mg/kg	-
	LD50 Dermal	Rabbit	805 mg/kg	-
	LD50 Oral	Mouse	1600 mg/kg	-
	LD50 Oral	Rabbit	5500 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-
3,6,9,12-tetra-azatetradecamethylenediamine	LD50 Oral	Rat	1600 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Nickel Salt	Skin - Mild irritant	Woman	-	48 hours 5 Percent	-
Aliphatic amine.	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	5 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Severe irritant	Rabbit	-	495 milligrams	-
2,2',2"-nitrilotriethanol	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Human	-	72 hours 15 milligrams Intermittent	-
	Skin - Severe irritant	Mouse	-	50 Percent	-
	Skin - Mild irritant	Rabbit	-	24 hours 560 milligrams	-
Amine	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	5500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	50 milligrams	-
3,6-diazaoctanethylenediamin	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	49 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Severe irritant	Rabbit	-	490 milligrams	-

Sensitization

Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Nickel Salt	-	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic	Positive
	-	Subject: Mammalian-Animal	Positive
3,6-diazaoctanethylenediamin	-	Subject: Bacteria	Positive
	-	Subject: Mammalian-Animal	Positive
	-	Subject: Mammalian-Animal	Positive

Carcinogenicity

No applicable toxicity data

Additional information:

Classification

Product/ingredient name	OSHA	IARC	NTP
Nickel Salt	-	1	-
Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	-	1	-
2,2',2"-nitrilotriethanol	-	3	-
Amine	-	2B	-

Reproductive toxicity

Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Amine	Positive	-	Positive	Rat - Female	Subcutaneous: 1500 mg/kg	9 days During Pregnancy; 6 hours per day
	-	Positive	-	Rat - Male	Oral: 2500 ppm	13 weeks; 7 days per week
3,6-diazaoctanethylenediamin	Equivocal	-	-	Rat	Oral: 9130 mg/kg	-
	Equivocal	-	-	Rat	Oral: 17430 mg/kg	-

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
3,6-diazaoctanethylenediamin	Equivocal - Oral Equivocal - Dermal	Rat Guinea pig	8715 mg/kg 3667 mg/kg	- -

Specific target organ toxicity

Name	Category	Route of exposure	Target organs
Nickel Salt	Category 1	Not determined	central nervous system (CNS)

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Sulfuric acid, nickel(2+) salt, hydrate (1:1:6) Amine	Category 1 Category 2	Not determined Not determined	Not determined blood system, kidneys and liver

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Amine	Chronic TD50 Oral Chronic TD50 Oral	Mouse Rat	1000 mg/kg 25 mg/kg	- -

General : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : Suspected of causing genetic defects.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral Dermal Inhalation (vapors)	1231.4 mg/kg 7293.2 mg/kg 32.69 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Nickel Salt	Acute IC50 7.28 mg/l Marine water	Algae - Phaeodactylum tricornutum - Exponential growth phase	72 hours
	Acute IC50 4.59 mg/l Marine water	Algae - Phaeodactylum tricornutum - Exponential growth phase	96 hours
	Acute LC50 39177.81 µg/l Fresh water	Crustaceans - Stenocypris major - Adult	48 hours
	Acute LC50 180 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 589.9 µg/l Fresh water	Fish - Danio rerio - Larvae	96 hours
2,2',2"-nitrilotriethanol	Acute EC50 609.98 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 11800000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 16000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Amine	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 28800 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 100 mg/l	Daphnia	96 hours
	Acute LC50 >100 mg/l	Daphnia	96 hours
	Acute LC50 2150 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 100 mg/l	Fish	96 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Acute LC50 1370 mg/l	Fish	96 hours
	Acute LC50 1480 mg/l	Fish	96 hours
3,6-diazaoctanethylenediamin	Acute EC50 3700 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 33900 µg/l Fresh water	Daphnia - Daphnia magna	48 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Nickel Salt	-	5613	high
2,2',2"-nitrilotriethanol	-1	<3.9	low
Amine	-1.43	-	low
3,6-diazaoctanethylenediamin	-1.66 to -1.4	-	low
3,6,9,12-tetra-azatetradecamethylenediamine	-3.67	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

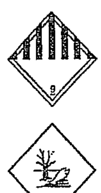
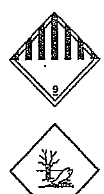
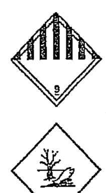
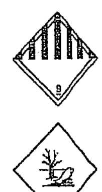
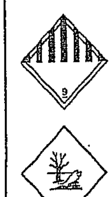
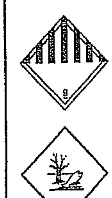
Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a

Section 13. Disposal considerations

safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. CONTAINS NICKEL SULFATE
Transport hazard class(es)	9 	9 	9 	9 	9 	9 
Packing group	III	III	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.

Additional information - TDG Classification	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Additional information - Mexico Classification	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Additional information - UN Classification	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Additional information - IMDG Classification	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Additional information - IATA Classification	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
TSCA 12(b) one-time export notification: No products were found.
TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Nickel Salt Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	- 10101-97-0	20-30 1-10
Supplier notification	Nickel Salt Sulfuric acid, nickel(2+) salt, hydrate (1:1:6)	- 10101-97-0	20-30 1-10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

International lists

National inventory

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	0
Physical hazards	0

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Resp. Sens. 1, H334	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341	Calculation method
Carc. 1A, H350	Calculation method
Repr. 1B, H360 (Unborn child)	Calculation method
STOT SE 1, H370 (central nervous system (CNS))	Calculation method
STOT RE 1, H372	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

History

Date of issue/Date of revision : June 1 2018.

Date of previous issue : No previous validation.

Version : 1

Prepared by : **Regulatory Affairs Department**
enthone.msds@macdermidenthone.com

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MacDermid Enthone

Safety Data Sheet

Section 1. Identification

Product name : **ENVIRALLOY NI 12-15 PART D**

Product code : 174354

Uses advised against : Consumer, private households, general public

Product type : Liquid.

Date of issue/Date of revision : June 1 2018.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
MacDermid, Inc. MacDermid Enthone Inc. 245 Freight Street Waterbury, CT 06702	Tel: (203) 575-5700	UNITED STATES AND CANADA: Tel: 800-424-9300 INTERNATIONAL, CALL Tel: +1 703-527-3887 (collect calls accepted)
MacDermid Enthone de Mexico S.A. De C.V. Norte 59 No. 896 Col. Industrial Vallejo Mexico, D.F. 02300 Mexico	Tel: 52 55 5078 3904	Tel: 01 800 002 1400 Tel: (55) 5559 1588
Anion Química Industrial S.A. Rua Eli Valter Cesar, 110 - Jardim Alvorada, CEP: 06612-130, Jandira, SP Brasil	Tel: + 55 11 4789-8585	Tel: 0800 707 7022 Tel: 0800 172 020
RevestSul Produtos Químicos Ltda. Rua Antônio Rasteiro Filho, 500 Parque Industrial José Garcia Gimenes CEP: 86183-751, Cambé, PR Brasil	Tel.: +55 043 3223 3550	Tel: 0800 707 7022 Tel: 0800 172 020
MacDermid Performance Solutions Canada Inc. 4530 Eastgate Parkway Mississauga, Ontario L4W 3W6 Canada	Tel: (905) 624-1065	DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Do not eat, drink or smoke when using this product.

Response : Get medical attention if you feel unwell.

Section 2. Hazards identification

Storage : Keep container tightly closed. Store in cool/well-ventilated place.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Storage temperature: 5 to 40°C (41 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 8. Exposure controls/personal protection

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Clear, water white to straw.
Odor	: Little to none
Odor threshold	: Not available.
pH	: 6
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Not available.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.007
Solubility	: Not available.
VOC	: 0 g/l
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.

Aerosol product

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Incompatibility with various substances	: Oxidizers.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Section 11. Toxicological information

Not available.

Mutagenicity

Not available.

Carcinogenicity

No applicable toxicity data

Additional information:

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Conclusion/Summary : Not Determined

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
TSCA 12(b) one-time export notification: No products were found.
TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Not applicable.

Canada

Canada : At least one component is not listed in DSL but all such components are listed in NDSL.

International lists

National inventory

Europe : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	0
Physical hazards	0

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision : June 1 2018.

Date of previous issue : No previous validation.

Version : 1

Prepared by : **Regulatory Affairs Department**
enthone.msds@macdermidenthone.com

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MacDermid Enthone

Safety Data Sheet

Section 1. Identification

Product name : **ENVIRALLOY NI 12-15 PART B**

Product code : 174352

Uses advised against : Consumer, private households, general public

Product type : Liquid.

Date of issue/Date of revision : June 1 2018.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
MacDermid, Inc. MacDermid Enthone Inc. 245 Freight Street Waterbury, CT 06702	Tel: (203) 575-5700	UNITED STATES AND CANADA: Tel: 800-424-9300 INTERNATIONAL, CALL Tel: +1 703-527-3887 (collect calls accepted)
MacDermid Enthone de Mexico S.A. De C.V. Norte 59 No. 896 Col. Industrial Vallejo Mexico, D.F. 02300 Mexico	Tel: 52 55 5078 3904	Tel: 01 800 002 1400 Tel: (55) 5559 1588
Anion Química Industrial S.A. Rua Eli Valter Cesar, 110 - Jardim Alvorada, CEP: 06612-130, Jandira, SP Brasil	Tel: + 55 11 4789-8585	Tel: 0800 707 7022 Tel: 0800 172 020
RevestSul Produtos Químicos Ltda. Rua Antônio Rasteiro Filho, 500 Parque Industrial José Garcia Gimenes CEP: 86183-751, Cambé, PR Brasil	Tel.: +55 043 3223 3550	Tel: 0800 707 7022 Tel: 0800 172 020
MacDermid Performance Solutions Canada Inc. 4530 Eastgate Parkway Mississauga, Ontario L4W 3W6 Canada	Tel: (905) 624-1065	DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye irritation.

Section 2. Hazards identification

Precautionary statements

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

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

Storage : Keep container tightly closed. Store in cool/well-ventilated place.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
surfactant	50-60	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Section 4. First aid measures

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Storage temperature: 5 to 40°C (41 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 8. Exposure controls/personal protection

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Clear, water white to light straw]

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : 10

Melting point : <1.66°C (<35°F)

Boiling point : Not available.

Flash point : Closed cup: >100°C (>212°F)

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.037

Solubility : Not available.

VOC : 0 g/l

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Section 9. Physical and chemical properties

Decomposition temperature : Not available.

Viscosity : Not available.

Aerosol product

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Incompatibility with various substances : Unknown

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
surfactant	LD50 Oral	Rat	11200 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

No applicable toxicity data

Additional information:

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Section 11. Toxicological information

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Conclusion/Summary : Not Determined

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
surfactant	-2.08	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
TSCA 12(b) one-time export notification: No products were found.
TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

Section 15. Regulatory information

SARA 311/312

Classification : Immediate (acute) health hazard

Canada

Canada : All components are listed or exempted.

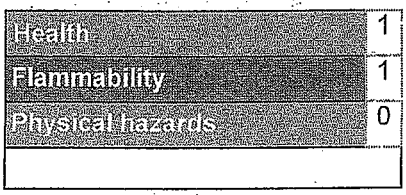
International lists

National inventory

Australia	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: All components are listed or exempted.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Procedure used to derive the classification

Classification	Justification
Eye Irrit. 2A, H319	Calculation method

History

Date of issue/Date of revision	: June 1 2018.
Date of previous issue	: No previous validation.
Version	: 1
Prepared by	: **Regulatory Affairs Department** **enthone.msds@macdermidenthone.com**

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile # 0125

GENERATOR INFORMATION

Name: [redacted] USEPA ID # [redacted]

Facility Address: [redacted] SIC/NAICS Code: ____ State Code: ____

City: [redacted] State: [redacted] Zip Code: [redacted]

Contact: [redacted] Title: [redacted] Phone: [redacted] Fax: ( ) ____

BILLING INFORMATION ☐ SAME AS ABOVE

Company Name: [redacted]

Address: [redacted]

City: [redacted] State: [redacted] Zip Code: [redacted]

Attention: [redacted] Phone: [redacted] Fax [redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Washout water

Process Generating Waste (Please *be specific, incomplete information may delay the approval process):* Generator makes small batches of cleaners and metal-working fluids, no soluble oils are present. Washout water (Detroit city water) is used to clean small batch tanks. Some Nickel and Zinc are present. pH is always between 7-8.

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: ☒ Non Hazardous Liquid Industrial Waste ☐ Hazardous Waste
2. Regulated by TSCA? ☐Yes ☐No (PCBs, etc.)
3. List ALL Applicable Waste Codes: ____

PHYSICAL CHARACTERISTICS OF WASTE

Color:	Suspended Solids	Layers:	Specific Gravity:	
☐ White/Clear ☐ Black/Brown ☒ Other brown/clear	☒ 0-1 % ☐ 3-5 % ☐ 1-3 % ☐ > 5%	☐ Multi-Layered ☐ Bi-Layered ☒ Single Phase	☐ <0.8 ☒ 1.0 – 1.2 ☐ 0.8 –1.0 ☐ 1.3 – 1.4 Exact / Other 1.09	acceptable 11/27/19

pH: ☐ NA ☐ ≤ 2 ☐ 2 – 4 ☐ 4 – 6 ☒ 6 – 8 ☐ 8 – 10 ☐ 10 – 12.5 ☐ ≥12.5

Liquid Flash Point: ☐ <73°F ☐ 73 – 100°F ☐ 101 – 140°F ☒ 141 – 200°F ☒ >200°F ☒ None ☒ Closed Cup ☐ Open Cup

VOC Concentration - ~0~ PPM (MUST BE COMPLETED)

TOTAL COMPOSITION OF WASTE - *MUST BE EQUAL TO OR GREATER THAN 100% (LIST EACH CONSTITUENT >/= 0.1%)* See attached

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
	%			%	
	%			%	
	%			%	
	%			%	
	%			%	

Metals: Indicate if this waste contains any of the following metals,. If Generator knowledge-provide backup

☐ Lab Analysis ☒ Generator Knowledge ☐ TCLP ☐ TOTAL

	Not Present	Concentration		Not Present	Concentration
PCB	☒	____ppm	Aromatic Amine	☒	____ ppm
Dioxins	☒	____ppm	Pesticides	☒	____ ppm
Cyanides Reactive	☒	____ppm	Rodenticides	☒	____ ppm
Cyanides Total	☒	____ppm	Fungicides	☒	____ ppm
Sulfides Reactive	☒	____ppm			
Sulfides Total	☒	____ppm			

Arsenic (As)	D004	☒	< 5	ppm	____ ppm
Barium (Ba)	D005	☒	<100	ppm	____ ppm
Cadmium (Cd)	D006	☒	< 1	ppm	____ ppm
Chromium (Cr)	D007	☒	< 5	ppm	____ ppm
Lead (Pb)	D008	☒	< 5	ppm	____ ppm
Mercury (Hg)	D009	☒	< 0.2	ppm	____ ppm
Selenium (Se)	D010	☒	< 1	ppm	____ ppm
Silver (Ag)	D011	☒	< 5	ppm	____ ppm

TCLP Organics D012 – D043 above regulatory limits: Present ☐ Not Present ☒

IS WASTE ANY OF THE FOLLOWING? *At Least One Box Must Be Checked.*

☐ Radioactive ☐ Water Reactive ☐ Oxidizer ☐ Shock Sensitive ☐ Reactive (other) ☐ DOT Explosives

☐ NIOSH Human-Positive Carcinogens ☐ NESHAP Wastes (Benzene, etc.) ☐ Biological ☒ None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? ☐Yes ☒No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name ___N/A___ _____ Hazard Class ____

PG _____ ERG ____ Hazardous Constituents for "n.o.s." _____

4. Method of Shipment: ☐Bulk Tanker ☒Vac truck ☐Rail Car ☐Drums ☐Totes
5. Number of Units to Ship Now: _____ 6. Anticipated Volume / Units per Year: _____ or ☐ One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked ☐, I request Environmental Geo-Technologies not to correct any inconsistencies. Any corrections Environmental Geo-Technologies makes will be consistent with the results of the sample characterization and/or regulatory requirements.

Printed Name: [redacted] Title: [redacted]

Generator's Signature: [redacted] Date: 11/14/19

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS:

PLEASE collect a representative 1-quart sample o the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

1. _____ 2. _____
SAMPLING METHOD COLLECTION POINT

3. _____
SAMPLE COLLECTOR'S NAME, TITLE, EMPLOYER

4. Sample No. _____ Preservation: Yes ☐ No ☐

5. CHAIN OF CUSTODY *Each person who handles the sample must sign below when the sample passes from one to another.*

Relinquished by: (Signature)	*Date*	*Time*	Received by: (Signature)	Date	Time

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11-27-19
Receiving ID#	Comp 13, 15, 16
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	[redacted]
Client	
Transporter	
Time In	
Time out	
Received by	JKF
Sampled by	JKF

LAB INFORMATION All Waste Shipments		Oilfield Entities Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140°F	Magnesium	
pH (S.U.)	8.2	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.09	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	70°F		
Conductivity	64.8		
% Solids	1.5%		
Turbidity	(Yes) No		
Color (visual)	Brown		
TSS (%)	<0.1%		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature	John Foos		

ALS Environmental

26-Nov-2019

[redacted]

Re: [redacted] Work Order: 1911313

Dear [redacted]

ALS Environmental received 2 samples on 16-Nov-2019 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 21.

If you have any questions regarding this report, please feel free to contact me.

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Gary Byar

Electronically signed by Gary Byar

Gary Byar
Project Manager

ALS Group, USA

Date: 26-Nov-19

Client: [redacted]
Project:
Work Order: 19111313

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19111313-01	[redacted]	Water		11/14/2019 12:30	11/16/2019 09:45	☐
19111313-02		Tclp Extract		11/14/2019 12:30	11/16/2019 09:45	☐

ALS Group, USA Date: *26-Nov-19*

Client: [redacted]
Project:
Sample ID:
Collection Date: 11/14/2019 12:30 PM

Work Order: 19111313
Lab ID: 19111313-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLASHPOINT/IGNITABILITY ANALYSIS			**SW1010A**			Analyst: **ATS**
Flashpoint/Ignitability	*>200*		50.0	°F	1	11/21/2019 10:30 AM
PH (LABORATORY)			**A4500-H B-11**			Analyst: **DNW**
pH (laboratory)	7.11	H	0.100	s.u.	1	11/22/2019 03:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA Date: *26-Nov-19*

Client: [redacted]
Project:
Sample ID:
Collection Date: 11/14/2019 12:30 PM

Work Order: 19111313
Lab ID: 19111313-02
Matrix: TCLP EXTRACT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY BY CVAA			**SW7470A**		Prep: SW7470 11/21/19 12:53	Analyst: **RSH**
Mercury	ND		0.0020	mg/L	1	11/21/2019 02:15 PM
TCLP METALS ANALYSIS BY ICP-MS			**SW6020A**		Prep: SW3005A 11/22/19 09:26	Analyst: **STP**
Arsenic	ND		0.050	mg/L	1	11/22/2019 05:48 PM
Barium	ND		0.050	mg/L	1	11/22/2019 05:48 PM
Cadmium	ND		0.020	mg/L	1	11/22/2019 05:48 PM
Chromium	ND		0.050	mg/L	1	11/22/2019 05:48 PM
Lead	ND		0.050	mg/L	1	11/22/2019 05:48 PM
Selenium	ND		0.050	mg/L	1	11/22/2019 05:48 PM
Silver	ND		0.050	mg/L	1	11/22/2019 05:48 PM
TCLP SEMI-VOLATILE ORGANICS			**SW8270D**		Prep: SW3510 11/22/19 16:32	Analyst: **EEW**
1,4-Dichlorobenzene	ND		100	µg/L	1	11/26/2019 01:40 AM
2,4,5-Trichlorophenol	ND		100	µg/L	1	11/26/2019 01:40 AM
2,4,6-Trichlorophenol	ND		100	µg/L	1	11/26/2019 01:40 AM
2,4-Dinitrotoluene	ND		100	µg/L	1	11/26/2019 01:40 AM
Hexachloro-1,3-butadiene	ND		100	µg/L	1	11/26/2019 01:40 AM
Hexachlorobenzene	ND		100	µg/L	1	11/26/2019 01:40 AM
Hexachloroethane	ND		100	µg/L	1	11/26/2019 01:40 AM
m-Cresol	ND		100	µg/L	1	11/26/2019 01:40 AM
Nitrobenzene	ND		100	µg/L	1	11/26/2019 01:40 AM
o-Cresol	ND		100	µg/L	1	11/26/2019 01:40 AM
p-Cresol	ND		100	µg/L	1	11/26/2019 01:40 AM
Pentachlorophenol	ND		100	µg/L	1	11/26/2019 01:40 AM
Pyridine	ND		200	µg/L	1	11/26/2019 01:40 AM
Surr: 2,4,6-Tribromophenol	*66.9*		*27-83*	*%REC*	1	11/26/2019 01:40 AM
Surr: 2-Fluorobiphenyl	*64.0*		*26-79*	*%REC*	1	11/26/2019 01:40 AM
Surr: 2-Fluorophenol	*27.6*		*13-56*	*%REC*	1	11/26/2019 01:40 AM
Surr: 4-Terphenyl-d14	*52.8*		*43-106*	*%REC*	1	11/26/2019 01:40 AM
Surr: Nitrobenzene-d5	*64.0*		*29-80*	*%REC*	1	11/26/2019 01:40 AM
Surr: Phenol-d6	*16.0*		*10-35*	*%REC*	1	11/26/2019 01:40 AM
TCLP VOLATILE ORGANICS			**SW8260C**		Leachate: SW1311 / 11/21/19	Analyst: **JNS**
1,1-Dichloroethene	ND		20	µg/L	20	11/22/2019 08:35 AM
1,2-Dichloroethane	ND		20	µg/L	20	11/22/2019 08:35 AM
2-Butanone	ND		100	µg/L	20	11/22/2019 08:35 AM
Benzene	68		20	µg/L	20	11/22/2019 08:35 AM
Carbon tetrachloride	ND		20	µg/L	20	11/22/2019 08:35 AM
Chlorobenzene	ND		20	µg/L	20	11/22/2019 08:35 AM
Chloroform	ND		20	µg/L	20	11/22/2019 08:35 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: [redacted]
Project:
Work Order: 19111313

Case Narrative

Batch 146023 Sample 19111313-02A MS TCBA_8270_S The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: Pentachlorophenol Client Sample ID: [redacted]

Batch 146023 Sample 19111313-02A MSD TCBA_8270_S The RPD between the MS and MSD was outside the control limit. The corresponding result in the parent sample should be considered estimated for this analyte: Petnachlorophenol Client Sample ID: [redacted]

Batch R276027 Sample LCS-R276027 Sample was processed for pH outside of holding time, as the
analysis is a field test and holding time is defined as 15 minutes. Client Sample ID: [redacted]

ALS Group, USA

Date: 26-Nov-19

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 145974 Instrument ID HG4 Method: SW7470A

MBLK	Sample ID: MBLK-145974-145974			Units: mg/L			Analysis Date: 11/21/2019 12:59 PM			
Client ID:	Run ID: HG4_191121A			SeqNo: 6074816			Prep Date: 11/21/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS	Sample ID: LCS-145974-145974			Units: mg/L			Analysis Date: 11/21/2019 01:01 PM			
Client ID:	Run ID: HG4_191121A			SeqNo: 6074817			Prep Date: 11/21/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001954	0.00020	0.002	0	97.7	80-120	0			

MS	Sample ID: 19111397-01AMS			Units: mg/L			Analysis Date: 11/21/2019 01:06 PM			
Client ID:	Run ID: HG4_191121A			SeqNo: 6074819			Prep Date: 11/21/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.01945	0.0020	0.02	-0.00001	97.3	75-125	0			

MSD	Sample ID: 19111397-01AMSD			Units: mg/L			Analysis Date: 11/21/2019 01:08 PM			
Client ID:	Run ID: HG4_191121A			SeqNo: 6074820			Prep Date: 11/21/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.01873	0.0020	0.02	-0.00001	93.7	75-125	0.01945	3.77	20	

The following samples were analyzed in this batch: 19111313-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146014 Instrument ID ICPMS3 Method: SW6020A

MBLK Sample ID: MBLK-146014-146014 Units:mg/L Analysis Date: 11/22/2019 05:30 PM
Client ID: Run ID: ICPMS3_191122A SeqNo:6079459 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Cadmium	ND	0.0020								
Chromium	ND	0.0050								
Lead	ND	0.0050								
Selenium	ND	0.0050								
Silver	ND	0.0050								

LCS Sample ID: LCS-146014-146014 Units:mg/L Analysis Date: 11/22/2019 05:32 PM
Client ID: Run ID: ICPMS3_191122A SeqNo:6079460 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1016	0.0050	0.1	0	102	80-120	0			
Barium	0.09942	0.0050	0.1	0	99.4	80-120	0			
Cadmium	0.1007	0.0020	0.1	0	101	80-120	0			
Chromium	0.1007	0.0050	0.1	0	101	80-120	0			
Lead	0.09996	0.0050	0.1	0	100	80-120	0			
Selenium	0.1034	0.0050	0.1	0	103	80-120	0			
Silver	0.09615	0.0050	0.1	0	96.2	80-120	0			

MS Sample ID: 19111602-01EMS Units:mg/L Analysis Date: 11/22/2019 05:52 PM
Client ID: Run ID: ICPMS3_191122A SeqNo:6079471 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1102	0.0050	0.1	0.003886	106	75-125	0			
Barium	0.1254	0.0050	0.1	0.02455	101	75-125	0			
Cadmium	0.09626	0.0020	0.1	0.000005	96.2	75-125	0			
Chromium	0.09997	0.0050	0.1	-0.000083	100	75-125	0			
Lead	0.1024	0.0050	0.1	0.000033	102	75-125	0			
Selenium	0.1148	0.0050	0.1	0.000354	114	75-125	0			
Silver	0.09064	0.0050	0.1	-0.000225	90.9	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146014 Instrument ID ICPMS3 Method: SW6020A

MSD Sample ID: 19111602-01EMSD Units: mg/L Analysis Date: 11/22/2019 05:53 PM
Client ID: Run ID: ICPMS3_191122A SeqNo: 6079472 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1094	0.0050	0.1	0.003886	106	75-125	0.1102	0.67	20	
Barium	0.1268	0.0050	0.1	0.02455	102	75-125	0.1254	1.11	20	
Cadmium	0.09958	0.0020	0.1	0.000005	99.6	75-125	0.09626	3.4	20	
Chromium	0.09779	0.0050	0.1	-0.000083	97.9	75-125	0.09997	2.21	20	
Lead	0.1027	0.0050	0.1	0.000033	103	75-125	0.1024	0.288	20	
Selenium	0.1116	0.0050	0.1	0.000354	111	75-125	0.1148	2.84	20	
Silver	0.09333	0.0050	0.1	-0.000225	93.6	75-125	0.09064	2.92	20	

The following samples were analyzed in this batch: 19111313-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146023 Instrument ID SVMS8 Method: SW8270D

MBLK Sample ID: SBLKW1-146023-146023 Units: µg/L Analysis Date: 11/25/2019 10:09 PM
Client ID: Run ID: SVMS8_191125A SeqNo: 6085764 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Hexachloro-1,3-butadiene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachloroethane	ND	5.0								
m-Cresol	ND	5.0								
Nitrobenzene	ND	5.0								
o-Cresol	ND	5.0								
p-Cresol	ND	5.0								
Pentachlorophenol	ND	5.0								
Pyridine	ND	10								
Surr: 2,4,6-Tribromophenol	*29.27*	0	*50*	0	*58.5*	*27-83*		0		
Surr: 2-Fluorobiphenyl	*32.99*	0	*50*	0	*66*	*26-79*		0		
Surr: 2-Fluorophenol	*15.66*	0	*50*	0	*31.3*	*13-56*		0		
Surr: 4-Terphenyl-d14	*33.96*	0	*50*	0	*67.9*	*43-106*		0		
Surr: Nitrobenzene-d5	*33.97*	0	*50*	0	*67.9*	*29-80*		0		
Surr: Phenol-d6	*8.33*	0	*50*	0	*16.7*	*10-35*		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146023 Instrument ID SVMS8 Method: SW8270D

LCS Sample ID: SLCSW1-146023-146023 Units: µg/L Analysis Date: 11/25/2019 10:30 PM
Client ID: Run ID: SVMS8_191125A SeqNo: 6085766 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	12.08	5.0	20	0	60.4	12-85	0			
2,4,5-Trichlorophenol	13.95	5.0	20	0	69.8	47-84	0			
2,4,6-Trichlorophenol	13.68	5.0	20	0	68.4	45-83	0			
2,4-Dinitrotoluene	14.91	5.0	20	0	74.6	54-93	0			
Hexachloro-1,3-butadiene	12.66	5.0	20	0	63.3	11-83	0			
Hexachlorobenzene	14.77	5.0	20	0	73.8	53-89	0			
Hexachloroethane	11.88	5.0	20	0	59.4	10-85	0			
m-Cresol	8.31	5.0	20	0	41.6	24-70	0			
Nitrobenzene	14.55	5.0	20	0	72.8	38-86	0			
o-Cresol	9.51	5.0	20	0	47.6	29-76	0			
p-Cresol	8.31	5.0	20	0	41.6	24-70	0			
Pentachlorophenol	11.25	5.0	20	0	56.2	37-94	0			
Pyridine	4.82	10	20	0	24.1	10-50	0			J
Surr: 2,4,6-Tribromophenol	*35.39*	0	*50*	0	*70.8*	*27-83*	0			
Surr: 2-Fluorobiphenyl	*35.86*	0	*50*	0	*71.7*	*26-79*	0			
Surr: 2-Fluorophenol	*15.85*	0	*50*	0	*31.7*	*13-56*	0			
Surr: 4-Terphenyl-d14	*32.51*	0	*50*	0	*65*	*43-106*	0			
Surr: Nitrobenzene-d5	*36.42*	0	*50*	0	*72.8*	*29-80*	0			
Surr: Phenol-d6	*8.78*	0	*50*	0	*17.6*	*10-35*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146023 Instrument ID SVMS8 Method: SW8270D

MS Sample ID: 19111313-02A MS Units: µg/L Analysis Date: 11/26/2019 12:58 AM
Client ID: Labtech TCLP Run ID: SVMS8_191125A SeqNo: 6085768 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	248.8	100	400	0	62.2	12-85	0			
2,4,5-Trichlorophenol	320.6	100	400	0	80.2	47-84	0			
2,4,6-Trichlorophenol	330	100	400	0	82.5	45-83	0			
2,4-Dinitrotoluene	291.4	100	400	0	72.8	54-93	0			
Hexachloro-1,3-butadiene	274.8	100	400	0	68.7	11-83	0			
Hexachlorobenzene	310.4	100	400	0	77.6	53-89	0			
Hexachloroethane	211.4	100	400	0	52.8	10-85	0			
m-Cresol	181.2	100	400	16.2	41.2	24-70	0			
Nitrobenzene	304.4	100	400	0	76.1	38-86	0			
o-Cresol	223.8	100	400	0	56	29-76	0			
p-Cresol	181.2	100	400	16.2	41.2	24-70	0			
Pentachlorophenol	101	100	400	0	25.2	37-94	0			S
Pyridine	147.2	200	400	0	36.8	10-50	0			J
Surr: 2,4,6-Tribromophenol	*717.2*	0	*1000*	0	*71.7*	*27-83*	0			
Surr: 2-Fluorobiphenyl	*756.6*	0	*1000*	0	*75.7*	*26-79*	0			
Surr: 2-Fluorophenol	*369.6*	0	*1000*	0	*37*	*13-56*	0			
Surr: 4-Terphenyl-d14	*667.4*	0	*1000*	0	*66.7*	*43-106*	0			
Surr: Nitrobenzene-d5	*753.2*	0	*1000*	0	*75.3*	*29-80*	0			
Surr: Phenol-d6	*212*	0	*1000*	0	*21.2*	*10-35*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: 146023 Instrument ID SVMS8 Method: SW8270D

MSD Sample ID: 19111313-02A MSD Units: µg/L Analysis Date: 11/26/2019 01:19 AM

Client ID: Labtech TCLP Run ID: SVMS8_191125A SeqNo: 6085770 Prep Date: 11/22/2019 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dichlorobenzene	232	100	400	0	58	12-85	248.8	6.99	30	
2,4,5-Trichlorophenol	302.4	100	400	0	75.6	47-84	320.6	5.84	30	
2,4,6-Trichlorophenol	288.6	100	400	0	72.2	45-83	330	13.4	30	
2,4-Dinitrotoluene	282.4	100	400	0	70.6	54-93	291.4	3.14	30	
Hexachloro-1,3-butadiene	254	100	400	0	63.5	11-83	274.8	7.87	30	
Hexachlorobenzene	286.6	100	400	0	71.6	53-89	310.4	7.97	30	
Hexachloroethane	188.6	100	400	0	47.2	10-85	211.4	11.4	30	
m-Cresol	160	100	400	16.2	36	24-70	181.2	12.4	30	
Nitrobenzene	279.2	100	400	0	69.8	38-86	304.4	8.64	30	
o-Cresol	201.2	100	400	0	50.3	29-76	223.8	10.6	30	
p-Cresol	160	100	400	16.2	36	24-70	181.2	12.4	30	
Pentachlorophenol	366.4	100	400	0	91.6	37-94	101	114	30	R
Pyridine	142	200	400	0	35.5	10-50	147.2	0	30	J
Surr: 2,4,6-Tribromophenol	*710.8*	0	*1000*	0	*71.1*	*27-83*	717.2	*0.896*	*40*	
Surr: 2-Fluorobiphenyl	*686.8*	0	*1000*	0	*68.7*	*26-79*	756.6	*9.67*	*40*	
Surr: 2-Fluorophenol	*318.8*	0	*1000*	0	*31.9*	*13-56*	369.6	*14.8*	*40*	
Surr: 4-Terphenyl-d14	*601.6*	0	*1000*	0	*60.2*	*43-106*	667.4	*10.4*	*40*	
Surr: Nitrobenzene-d5	*669*	0	*1000*	0	*66.9*	*29-80*	753.2	*11.8*	*40*	
Surr: Phenol-d6	*186.2*	0	*1000*	0	*18.6*	*10-35*	212	*13*	*40*	

The following samples were analyzed in this batch: 19111313-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: R275955A Instrument ID VMS11 Method: SW8260C

MBLK	Sample ID: VBLKW2-191121-R275955A			Units: µg/L			Analysis Date: 11/22/2019 01:54 AM			
Client ID:	Run ID: VMS11_191121B			SeqNo: 6076908		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
2-Butanone	ND	5.0								
Benzene	ND	1.0								
Carbon tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
Tetrachloroethene	ND	1.0								
Trichloroethene	ND	1.0								
Vinyl chloride	ND	1.0								
Surr: 1,2-Dichloroethane-d4	*20.21*	0	*20*	0	*101*	*75-120*		0		
Surr: 4-Bromofluorobenzene	*20.11*	0	*20*	0	*101*	*80-110*		0		
Surr: Dibromofluoromethane	*19.39*	0	*20*	0	*97*	*85-115*		0		
Surr: Toluene-d8	*19.5*	0	*20*	0	*97.5*	*85-110*		0		

LCS	Sample ID: VLCSW2-191121-R275955A			Units: µg/L			Analysis Date: 11/22/2019 12:47 PM			
Client ID:	Run ID: VMS11_191121B			SeqNo: 6076938		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	21.75	1.0	20	0	109	70-145		0		
1,2-Dichloroethane	20.12	1.0	20	0	101	78-125		0		
2-Butanone	20.1	5.0	20	0	100	55-150		0		
Benzene	19.9	1.0	20	0	99.5	70-130		0		
Carbon tetrachloride	19.85	1.0	20	0	99.2	65-140		0		
Chlorobenzene	18.66	1.0	20	0	93.3	80-120		0		
Chloroform	20.66	1.0	20	0	103	66-135		0		
Tetrachloroethene	19.07	1.0	20	0	95.4	68-166		0		
Trichloroethene	20.71	1.0	20	0	104	77-125		0		
Vinyl chloride	21.01	1.0	20	0	105	50-136		0		
Surr: 1,2-Dichloroethane-d4	*19.76*	0	*20*	0	*98.8*	*75-120*		0		
Surr: 4-Bromofluorobenzene	*20.78*	0	*20*	0	*104*	*80-110*		0		
Surr: Dibromofluoromethane	*20.97*	0	*20*	0	*105*	*85-115*		0		
Surr: Toluene-d8	*19.41*	0	*20*	0	*97*	*85-110*		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: [redacted]
Work Order:
Project:

QC BATCH REPORT

Batch ID: R275955A Instrument ID VMS11 Method: SW8260C

MS	Sample ID: 19111148-01A MS				Units: µg/L			Analysis Date: 11/22/2019 10:04 AM			
Client ID:		Run ID: VMS11_191121B			SeqNo: 6076933		Prep Date:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1-Dichloroethene	252.7	10	200	0	126	70-145	0				
1,2-Dichloroethane	205.1	10	200	0	103	78-125	0				
2-Butanone	202.6	50	200	0	101	55-150	0				
Benzene	217.4	10	200	0	109	70-130	0				
Carbon tetrachloride	216.7	10	200	0	108	65-140	0				
Chlorobenzene	195.4	10	200	0	97.7	80-120	0				
Chloroform	214.3	10	200	0	107	66-135	0				
Tetrachloroethene	213.5	10	200	0	107	68-166	0				
Trichloroethene	225.9	10	200	0	113	77-125	0				
Vinyl chloride	255.2	10	200	0	128	50-136	0				
Surr: 1,2-Dichloroethane-d4	*194.9*	0	*200*	0	*97.4*	*75-120*	0				
Surr: 4-Bromofluorobenzene	*206.5*	0	*200*	0	*103*	*80-110*	0				
Surr: Dibromofluoromethane	*204*	0	*200*	0	*102*	*85-115*	0				
Surr: Toluene-d8	*194.8*	0	*200*	0	*97.4*	*85-110*	0				

MSD	Sample ID: 19111148-01A MSD				Units: µg/L			Analysis Date: 11/22/2019 10:26 AM			
Client ID:		Run ID: VMS11_191121B			SeqNo: 6076935		Prep Date:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1-Dichloroethene	246.5	10	200	0	123	70-145	252.7	2.48	30		
1,2-Dichloroethane	204.8	10	200	0	102	78-125	205.1	0.146	30		
2-Butanone	195.9	50	200	0	98	55-150	202.6	3.36	30		
Benzene	212.5	10	200	0	106	70-130	217.4	2.28	30		
Carbon tetrachloride	217.1	10	200	0	109	65-140	216.7	0.184	30		
Chlorobenzene	196.8	10	200	0	98.4	80-120	195.4	0.714	30		
Chloroform	215.4	10	200	0	108	66-135	214.3	0.512	30		
Tetrachloroethene	212.4	10	200	0	106	68-166	213.5	0.517	30		
Trichloroethene	229.7	10	200	0	115	77-125	225.9	1.67	30		
Vinyl chloride	245.7	10	200	0	123	50-136	255.2	3.79	30		
Surr: 1,2-Dichloroethane-d4	*190.1*	0	*200*	0	*95*	*75-120*	194.9	*2.49*	*30*		
Surr: 4-Bromofluorobenzene	*204.7*	0	*200*	0	*102*	*80-110*	206.5	*0.875*	*30*		
Surr: Dibromofluoromethane	*204.7*	0	*200*	0	*102*	*85-115*	204	*0.343*	*30*		
Surr: Toluene-d8	*192.5*	0	*200*	0	*96.2*	*85-110*	194.8	*1.19*	*30*		

The following samples were analyzed in this batch: 19111313-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.