Environmental GEO-Technologies, LLC

September 28, 2017

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

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

Dear Mr. Batka:

Environmental Geo-Technologies, LLC ("EGT") hereby timely submits its forty-sixth Monthly Report in conformance with the requirements of its two EPA UIC permits (#s MI-163-1W-C010 & MI-163-1W-C011).

EGT 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.

EGT hereby timely submits its twenty-seventh Injection Fluid Analyses (for August, 2017) identified on both Pages A-3 of 3 also in conformance with EGT's two EPA UIC permits with the attached "Data Summary Sheet" from a contract laboratory, Ann Arbor Technical Services, Inc., and, those results demonstrate compliance with all of the limits for each of the chemical entities ("Names) identified on Page A-3 of 3 for F039 waste even though EGT did not accept any F039 waste for August 2017.

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 interim report satisfactory, however, if you have any questions or comments, please feel free to contact us.

Sincerely,

Richard J. Powals, P.E.
Vice-President

cc: J. Frost (EGT), T. Athans (EGT), P. Sullivan (EGT)

att. rjp092617/EGTEPAMonthlyReport-August, 2017

P 734-946-1000 F 734-946-1002 - 28470 Citrin Drive. Romulus, Michigan 48174
www.envgeotech.com

290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/996-0996 Fax. 734/996-3731
Michigan Laboratory ID: 9004
Wisconsin Laboratory ID: 998321720

Semivolatile Organic Compounds
Data Summary Sheet

For: Mr. Richard Powals
Environmental Geo-Technologies, Inc.
28470 Citrin Drive
Romulus, MI 48174

ATS Project: Environmental Geo-Technologies, Inc. #E008-000
Report Date: 9/29/17
ATS SRF: 0906171

Sample Identification: August Composite 2017

Sample Date:	9/5/17	QC Batch Number:	QCORG0907171-E B7I0110
Laboratory Receipt Date:	9/6/17		
Preparation Date:	9/7/17, 9/21/17	Sample Matrix:	Wastewater
Analysis Date:	9/22/17, 9/26/17	Dilution Factor:	500

Parameter (CAS)	Method	Units	Result	Reporting Limit
Aldrin (309-00-2)	EPA 8270 Mod	mg/mL	<0.00001	0.00001
Benzidine (92-87-5)	EPA 8270 Mod	mg/mL	<0.00075	0.00075
N-Nitrosodimethylamine (62-75-9)	EPA 8270 Mod	mg/mL	<0.0001	0.0001
Tetraethyl Lead (78-00-2)	EPA 8270 Mod	mg/mL	<0.00005	0.00005
Hexachlorodibenzo-p-dioxins	EPA 1613B	mg/mL	<0.00000000005	0.00000000005
Octachlorodibenzofuran (39001-02-0)	EPA 1613B	mg/mL	<0.00000000005	0.00000000005
Octachlorodibenzo-p-dioxin (3268-87-9)	EPA 1613B	mg/mL	0.0000000033	0.00000000005
Tetrachlorodibenzo-p-dioxins	EPA 1613B	mg/mL	<0.00000000004	0.00000000004

Surrogates / Labeled Standards:	Method	Percent Recovery	Recovery Limits
2-Fluorobiphenyl	EPA 8270 Mod	85.8	(50 - 150)
Nitrobenzene-d5	EPA 8270 Mod	80.0	(50 - 150)
p-Terphenyl-d14	EPA 8270 Mod	97.8	(50 - 150)
Tetrachloro-m-xylene (TCMX)	EPA 8270 Mod	104.4	(50 - 150)
13C-1,2,3,4,7,8-HxCDD	EPA 1613B	52.2	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	EPA 1613B	56.0	(28 - 130)
13C-1,2,3,7,8,9-HxCDD	EPA 1613B	63.2	(32 - 141)
13C-OCDF	EPA 1613B	60.6	(17 - 157)
13C-OCDD	EPA 1613B	47.4	(17 - 157)
13C-2,3,7,8-TCDD	EPA 1613B	37.7	(25 - 164)

Comments:
USEPA Analysis 1613B performed by Vista Analytical.

AVERAGE INJECTION RATE

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2017

CURRENT REPORTING MONTH August

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			721,089
Since facility first injected			12,103,589
MI-163-1W-C011, Well #2-12			
Current Month			0
Since facility first injected			4,648,736
		Lifetime Combined	16,752,325

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 45

45 lifetime number of months of injection × 43,830 minutes/month
= 1,972,350 minutes of injection

Lifetime combined injected volume 16,752,325 ÷ 1,972,350 minutes of injection
= 8.5 gpm average injection rate

WELL 1 DATA

WELL-01 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differentail Pressure (PSIG)	Max Differential Pressure (PSIG)
8/1/2017	197.4	752.1	15.1	15.4	875.1	1233.2	6.5	6.9	0.0	22.5	350.0	763.8
8/2/2017	108.5	752.3	15.2	15.4	680.1	1238.3	0.9	7.0	0.0	27.8	240.2	789.4
8/3/2017	-4.4	752.4	15.2	20.3	613.5	1177.5	0.6	6.8	0.0	77.0	229.8	780.9
8/4/2017	103.1	753.3	19.6	19.9	768.7	1300.4	6.8	6.8	0.0	38.7	505.6	843.3
8/5/2017	98.8	103.3	19.7	20.0	685.2	768.7	6.8	6.8	0.0	0.0	586.4	665.4
8/6/2017	97.5	737.6	19.7	19.9	665.1	1076.8	6.8	6.8	0.0	29.1	262.2	617.9
8/7/2017	118.6	752.1	19.8	20.0	810.6	1155.4	5.6	7.1	0.0	29.1	338.0	705.9
8/8/2017	273.9	752.1	19.9	20.2	898.4	1129.6	5.6	7.1	0.0	32.0	351.8	624.9
8/9/2017	30.5	754.7	20.1	20.4	659.7	1117.5	0.6	7.1	0.0	70.5	183.6	692.6
8/10/2017	-1.3	753.0	19.6	20.4	716.9	1135.1	0.4	0.7	0.0	72.1	231.6	772.8
8/11/2017	-6.3	753.6	19.7	20.1	692.4	1139.9	0.5	0.7	0.0	84.6	290.1	805.7
8/12/2017	106.0	110.5	19.9	20.1	618.0	692.4	0.7	1.0	0.0	0.0	512.0	581.9
8/13/2017	104.2	749.9	19.2	20.2	591.8	1161.3	7.1	7.1	0.0	39.9	169.2	664.4
8/14/2017	145.6	754.6	19.3	19.5	849.1	1180.4	6.8	7.5	0.0	30.4	366.6	712.0
8/15/2017	161.9	752.1	19.5	19.8	925.7	1210.9	6.9	7.3	0.0	25.9	380.8	764.6
8/16/2017	47.0	754.6	19.7	20.1	663.2	1197.4	1.2	6.9	0.0	55.8	252.0	748.6
8/17/2017	-7.2	754.6	20.0	20.3	623.1	1064.3	0.4	1.6	0.0	207.5	216.5	695.6
8/18/2017	27.4	753.4	19.6	20.4	623.4	1280.5	1.6	6.7	0.0	52.4	174.8	808.4
8/19/2017	100.8	105.9	19.8	20.1	627.0	732.5	6.7	6.7	0.0	0.0	526.2	626.7
8/20/2017	99.2	726.9	19.9	20.2	593.6	1030.9	6.8	6.8	0.0	25.3	205.0	550.3
8/21/2017	219.3	752.1	20.1	20.5	788.9	1146.6	6.8	7.0	0.0	25.3	311.7	622.9
8/22/2017	325.4	752.5	20.4	20.6	939.7	1142.9	7.0	7.1	0.0	19.9	306.4	614.3
8/23/2017	121.7	755.0	20.5	20.8	694.8	1062.2	7.1	7.5	0.0	23.5	239.9	605.6
8/24/2017	40.3	754.8	19.7	20.7	666.7	1097.1	0.8	7.1	0.0	48.3	174.4	672.2
8/25/2017	-7.6	753.7	19.2	20.1	689.1	1166.9	0.4	0.8	0.0	91.8	246.0	803.8
8/26/2017	113.7	119.2	19.4	19.7	684.4	734.3	0.8	0.8	0.0	0.0	570.7	615.2
8/27/2017	111.5	752.8	19.5	19.8	660.4	1054.4	0.8	6.3	0.0	48.1	245.6	570.7
8/28/2017	108.9	754.1	19.7	20.1	659.8	1124.3	6.3	7.3	0.0	37.7	189.2	684.3
8/29/2017	-8.0	755.0	19.5	20.1	592.7	1031.1	4.9	6.8	0.0	131.2	172.9	609.2
8/30/2017	-6.6	754.9	18.6	19.8	688.7	1255.2	0.6	6.8	0.0	82.7	219.8	838.8
8/31/2017	114.9	755.0	19.4	19.7	746.0	1236.1	6.0	6.8	0.0	29.8	375.7	764.5

Circle Chart Index

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

Chart Recorder #1

Channel #1

Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2

Red Pen – Well 1 Annulus Pressure (chart value x 30)

Channel #3

Green Pen – Well 1 Flow Rate (chart value x 4)

Channel #4

Black Pen – Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1

Blue Pen – Well 2 Injection Pressure (chart value x 30)

Channel #2

Red Pen – Well 2 Annulus Pressure (chart value x 30)

Channel #3

Green Pen – Well 2 Flow Rate (chart value x 4)

Channel #4

Black Pen – Well 2 Annulus Tank Level (chart value x 0)

Chart Recorder #3

Channel #1

Blue Pen – Injection pH Well 1 & 2 (chart value ÷ 3.3)

Channel #2

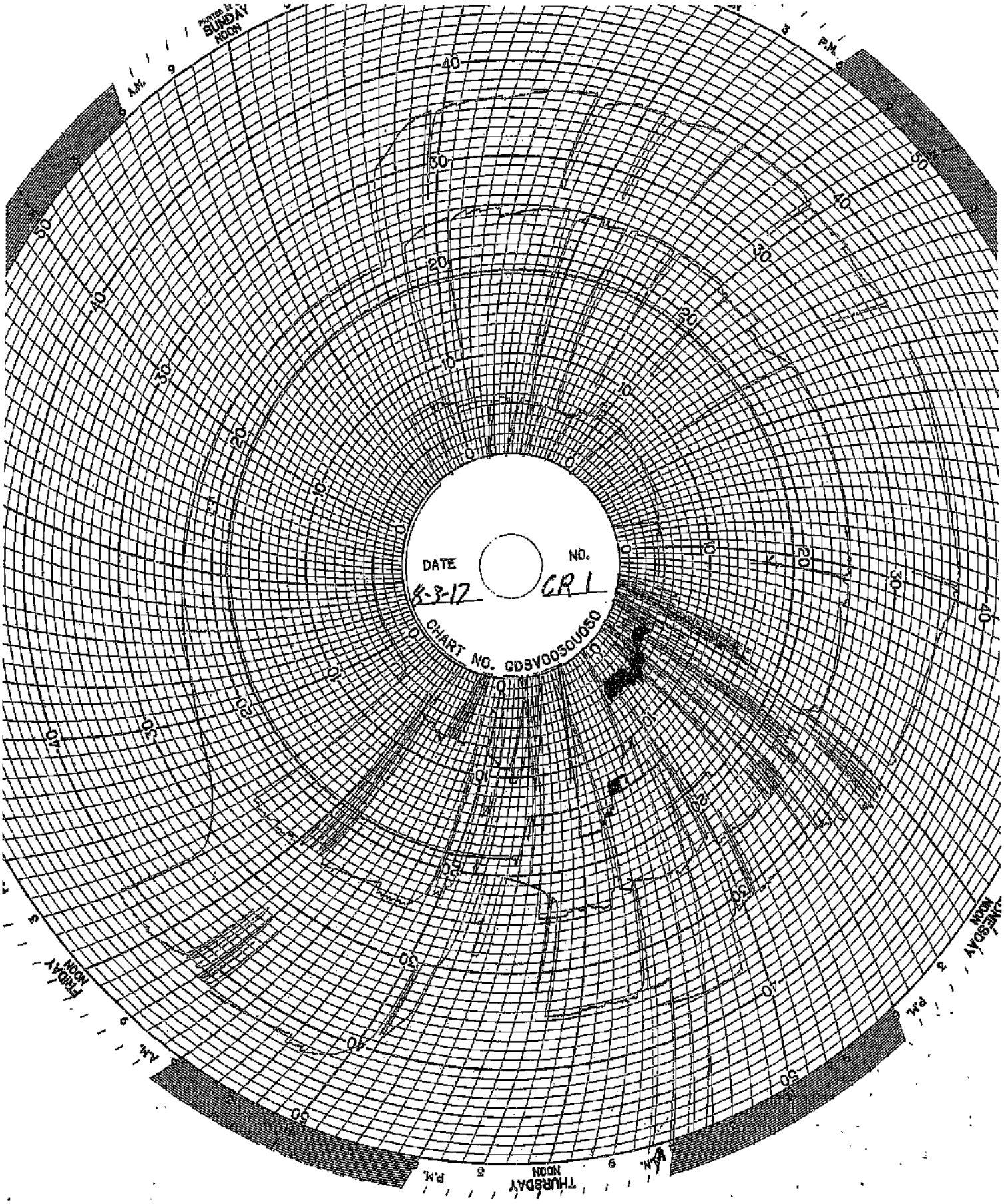
Red Pen – Well 1 Monthly Volume (chart value x 100,000)

Channel #3

Green Pen – Well 2 Monthly Volume (chart value x 100,000)

Channel #4

Black Pen – Temperature (chart value x 0)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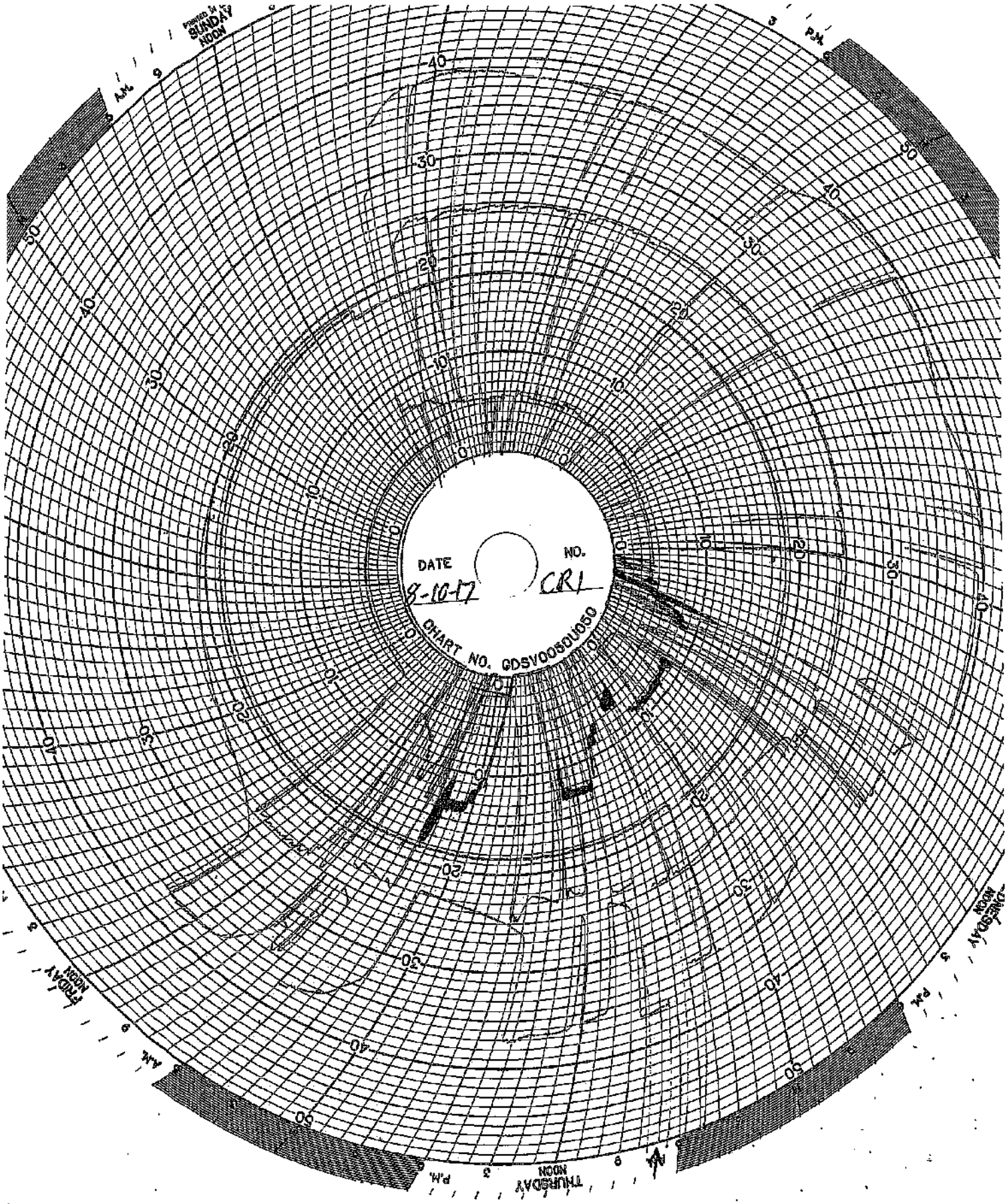
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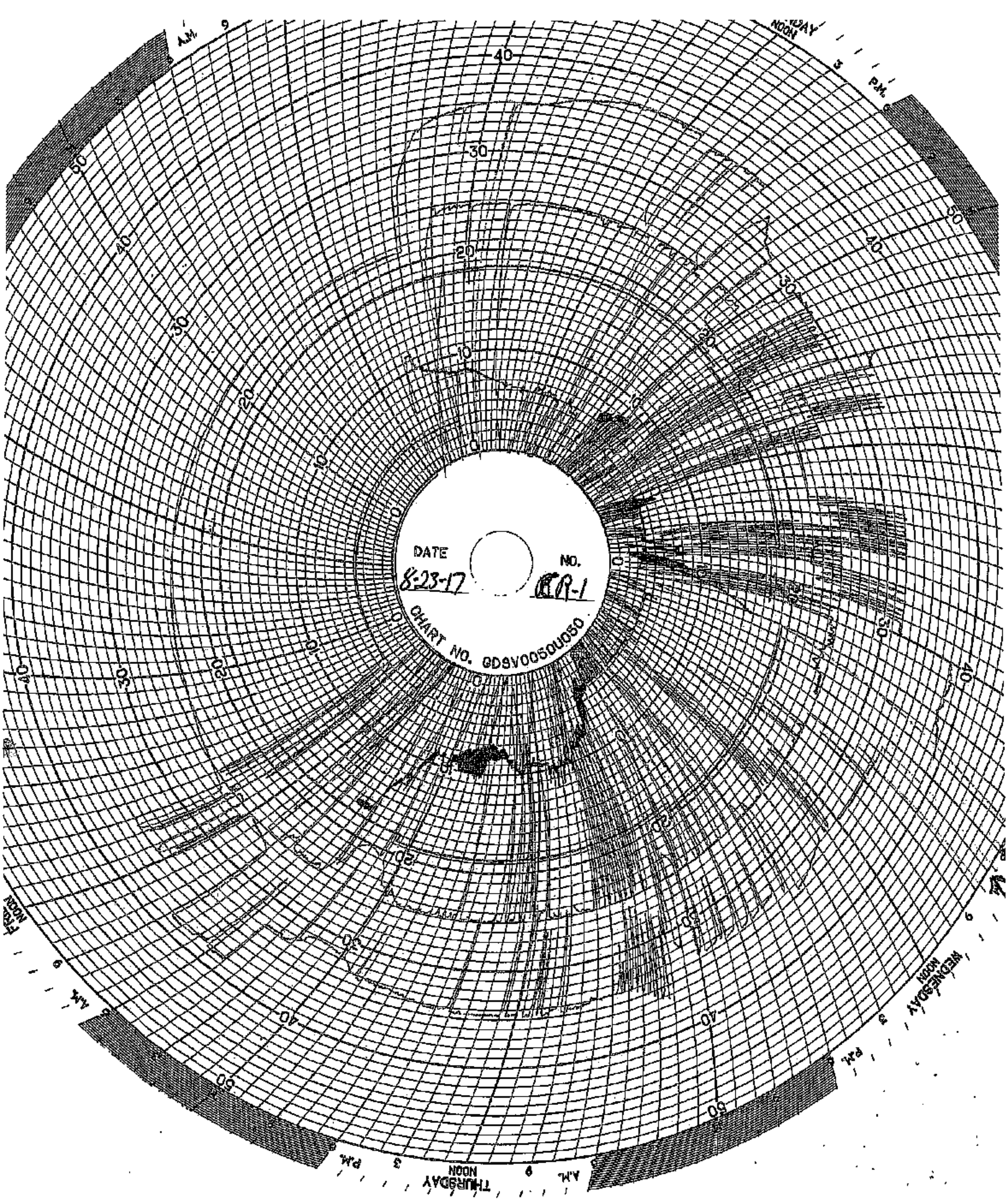
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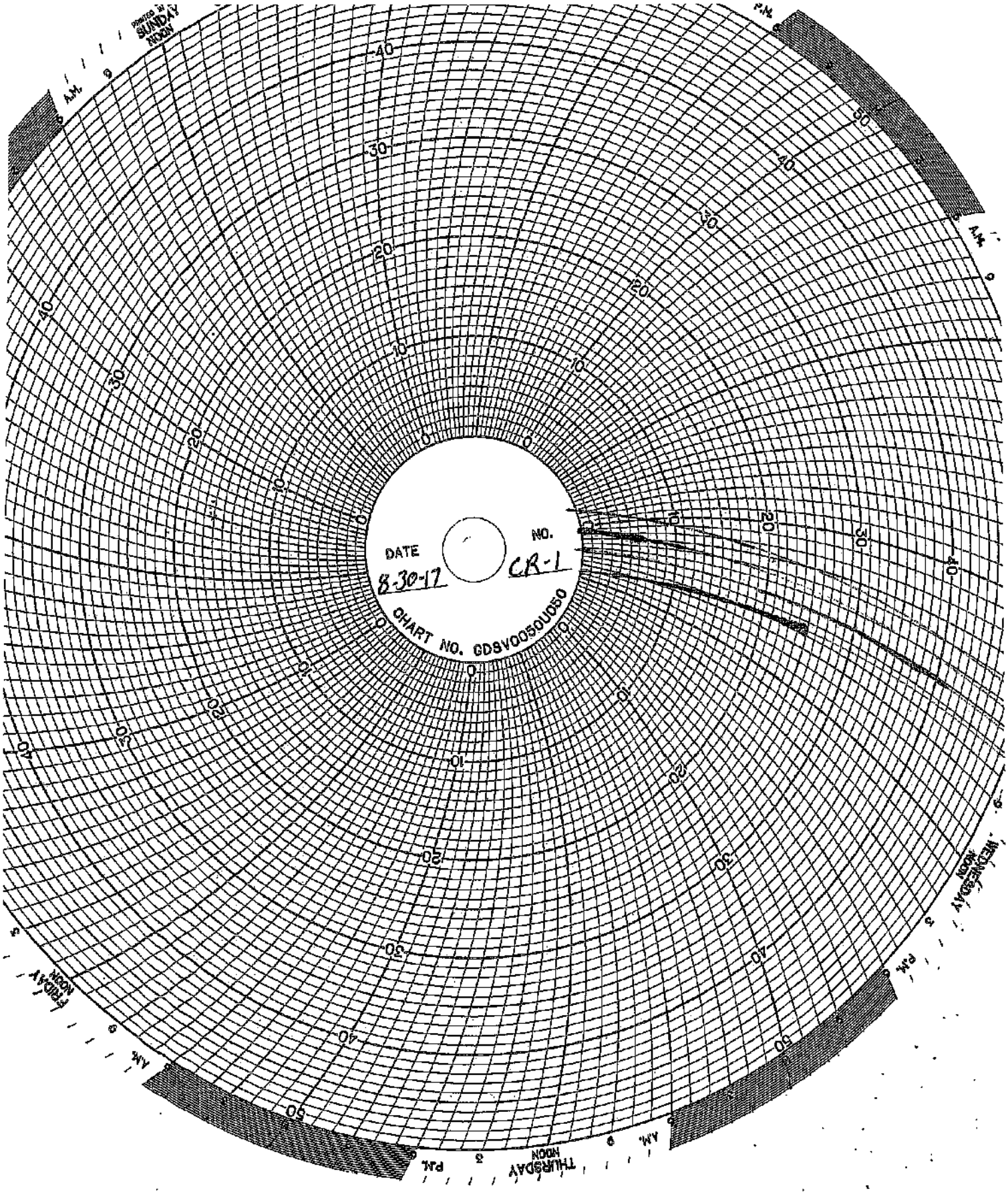
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WELL 2 DATA

Well 02 Monthly Data

Date	Min Injection Pressure (PSIG)	Max Injection Pressure (PSIG)	Min Sight Glass Level (in)	Max Sight Glass Level (in)	Min Annulus Pressure (PSIG)	Max Annulus Pressure (PSIG)	Min Injectate pH	Max Injectate pH	Min Flow Rate (GPM)	Max Flow Rate (GPM)	Min Differentail Pressure (PSIG)	Max Differential Pressure (PSIG)
8/1/2017	0.0	0.0	13.1	14.8	174.6	329.5	6.5	6.9	0.0	0.0	174.6	329.5
8/2/2017	0.0	0.0	13.1	14.0	205.6	274.9	0.9	7.0	0.0	0.0	205.6	274.9
8/3/2017	0.0	0.0	11.9	14.1	172.9	427.0	0.6	6.8	0.0	0.0	172.9	427.0
8/4/2017	0.0	0.0	12.2	12.5	300.3	392.0	6.8	6.8	0.0	0.0	300.3	392.0
8/5/2017	0.0	0.0	11.9	12.7	235.2	300.7	6.8	6.8	0.0	0.0	235.2	300.7
8/6/2017	0.0	0.0	12.2	12.4	193.4	235.5	6.8	6.8	0.0	0.0	193.4	235.5
8/7/2017	0.0	0.0	11.4	12.8	174.9	341.5	5.6	7.1	0.0	0.0	174.9	341.5
8/8/2017	0.0	0.0	11.1	11.9	264.6	317.4	5.6	7.1	0.0	0.0	264.6	317.4
8/9/2017	0.0	0.0	11.1	12.0	224.0	265.0	0.6	7.1	0.0	0.0	224.0	265.0
8/10/2017	0.0	0.0	11.0	11.9	194.0	224.3	0.4	0.7	0.0	0.0	194.0	224.3
8/11/2017	0.0	0.0	11.2	12.0	173.4	194.3	0.5	0.7	0.0	0.0	173.4	194.3
8/12/2017	0.0	0.0	11.4	11.6	158.9	174.0	0.7	1.0	0.0	0.0	158.9	174.0
8/13/2017	0.0	0.0	10.9	20.3	151.7	267.1	7.1	7.1	0.0	0.0	151.7	267.1
8/14/2017	0.0	0.0	19.9	20.6	221.0	254.6	6.8	7.5	0.0	0.0	221.0	254.6
8/15/2017	0.0	0.0	20.0	20.7	197.3	221.4	6.9	7.3	0.0	0.0	197.3	221.4
8/16/2017	0.0	0.0	19.9	20.6	180.7	197.9	1.2	6.9	0.0	0.0	180.7	197.9
8/17/2017	0.0	0.0	19.3	20.4	175.0	374.2	0.4	1.6	0.0	0.0	175.0	374.2
8/18/2017	0.0	0.0	19.0	19.7	291.2	332.5	1.6	6.7	0.0	0.0	291.2	332.5
8/19/2017	0.0	0.0	18.9	19.6	254.8	291.5	6.7	6.7	0.0	0.0	254.8	291.5
8/20/2017	0.0	0.0	18.9	19.7	226.1	255.4	6.8	6.8	0.0	0.0	226.1	255.4
8/21/2017	0.0	0.0	19.0	19.8	206.1	226.4	6.8	7.0	0.0	0.0	206.1	226.4
8/22/2017	0.0	0.0	19.1	19.5	190.3	206.7	7.0	7.1	0.0	0.0	190.3	206.7
8/23/2017	0.0	0.0	19.1	19.5	179.2	191.0	7.1	7.5	0.0	0.0	179.2	191.0
8/24/2017	0.0	0.0	18.3	19.3	174.5	350.1	0.8	7.1	0.0	0.0	174.5	350.1
8/25/2017	0.0	0.0	18.0	18.9	295.8	322.0	0.4	0.8	0.0	0.0	295.8	322.0
8/26/2017	0.0	0.0	18.0	18.8	275.6	296.5	0.8	0.8	0.0	0.0	275.6	296.5
8/27/2017	0.0	0.0	18.3	18.5	261.4	276.3	0.8	6.3	0.0	0.0	261.4	276.3
8/28/2017	0.0	0.0	18.3	18.5	256.9	261.7	6.3	7.3	0.0	0.0	256.9	261.7
8/29/2017	0.0	0.0	18.3	18.5	254.6	257.5	4.9	6.8	0.0	0.0	254.6	257.5
8/30/2017	0.0	0.0	18.3	18.5	253.9	255.3	0.6	6.8	0.0	0.0	253.9	255.3
8/31/2017	0.0	0.0	18.3	18.4	253.6	255.2	6.0	6.8	0.0	0.0	253.6	255.2

Circle Chart Index

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

Chart Recorder #1

Channel #1

Blue Pen - Well 1 Injection Pressure (chart value x 30)

Channel #2

Red Pen – Well 1 Annulus Pressure (chart value x 30)

Channel #3

Green Pen – Well 1 Flow Rate (chart value x 4)

Channel #4

Black Pen – Well 1 Annulus Tank Level (chart value x 0)

Chart Recorder #2

Channel #1

Blue Pen – Well 2 Injection Pressure (chart value x 30)

Channel #2

Red Pen – Well 2 Annulus Pressure (chart value x 30)

Channel #3

Green Pen – Well 2 Flow Rate (chart value x 4)

Channel #4

Black Pen – Well 2 Annulus Tank Level (chart value x 0)

Chart Recorder #3

Channel #1

Blue Pen – Injection pH Well 1 & 2 (chart value ÷ 3.3)

Channel #2

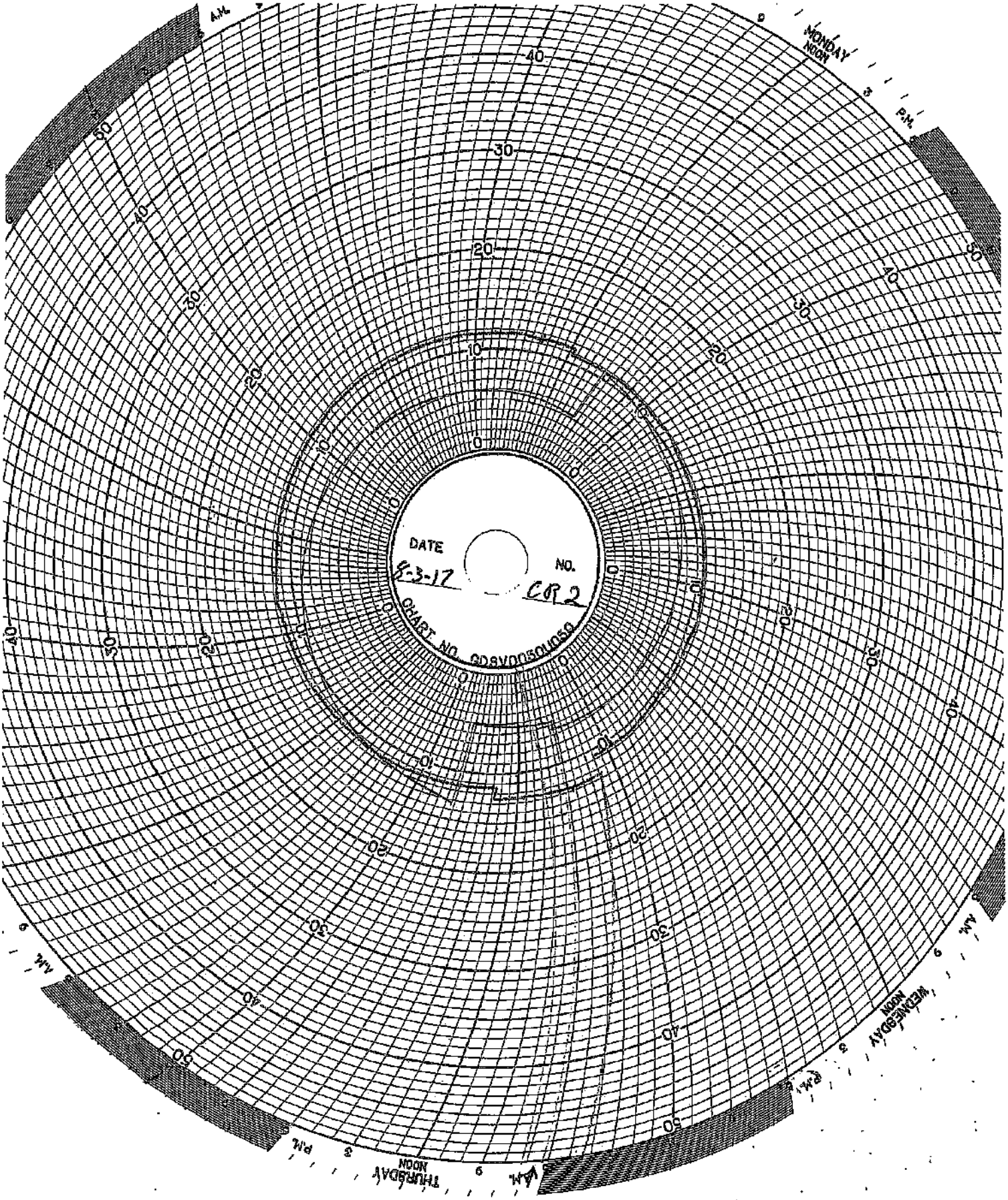
Red Pen – Well 1 Monthly Volume (chart value x 100,000)

Channel #3

Green Pen – Well 2 Monthly Volume (chart value x 100,000)

Channel #4

Black Pen – Temperature (chart value x 0)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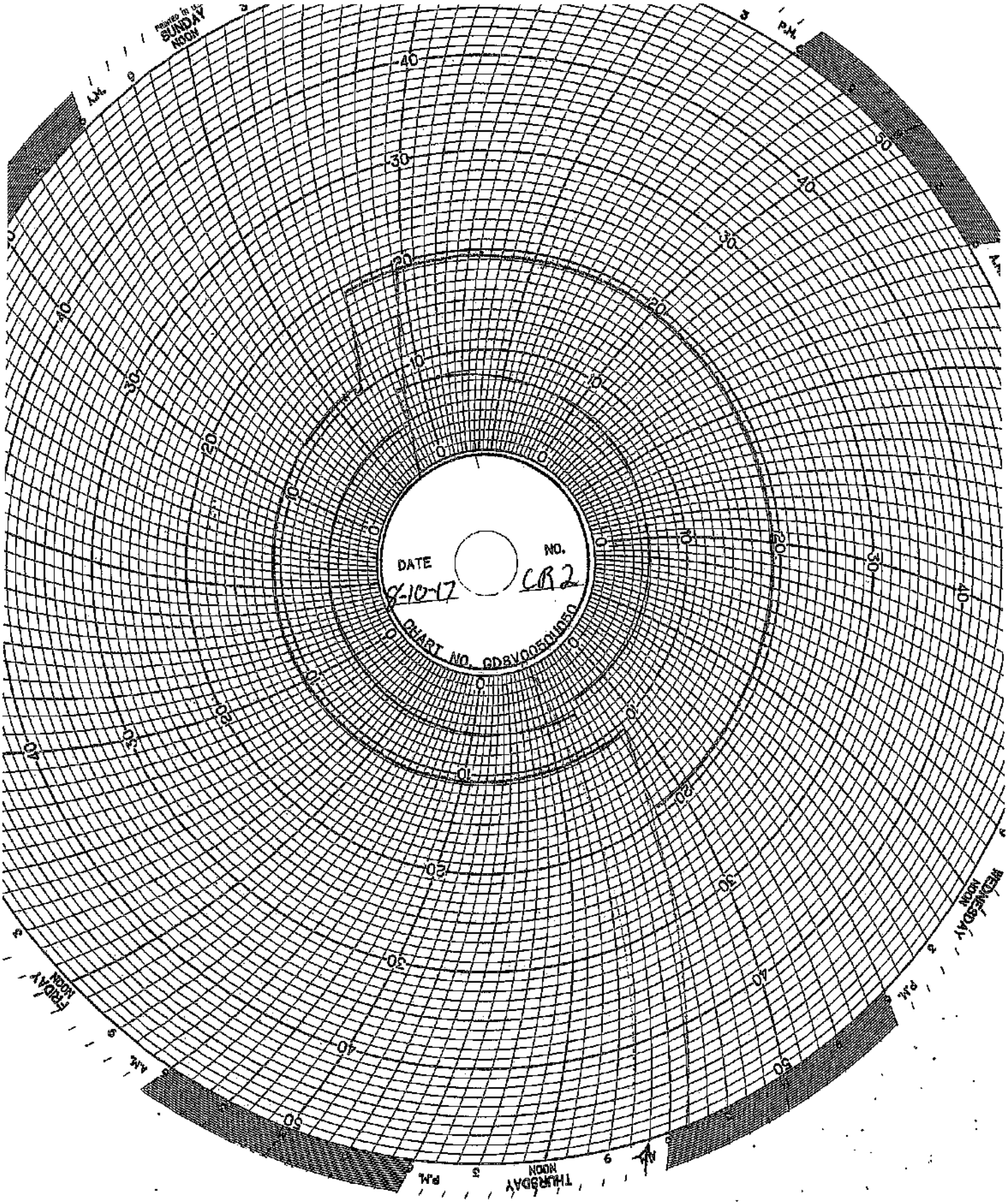
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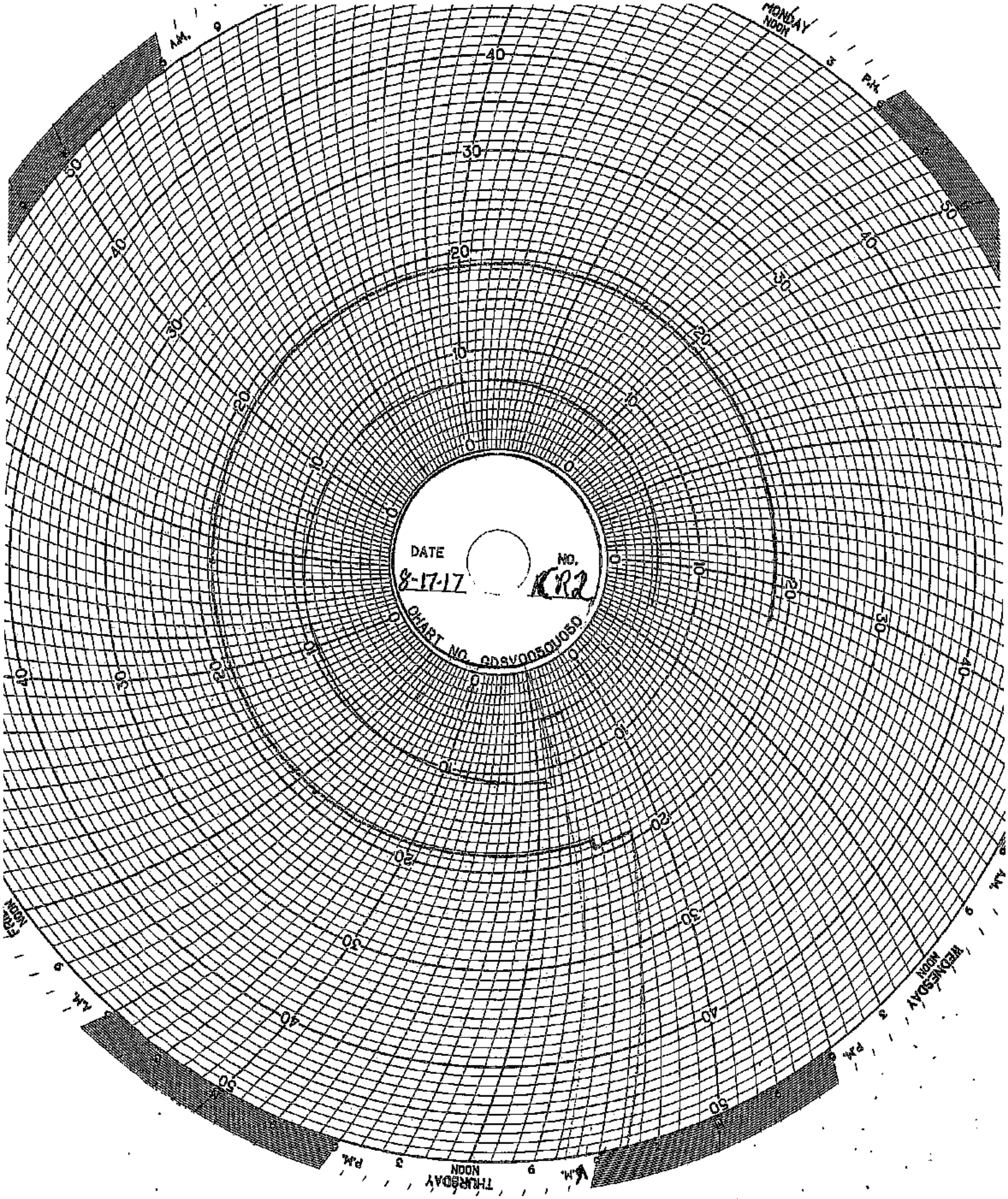
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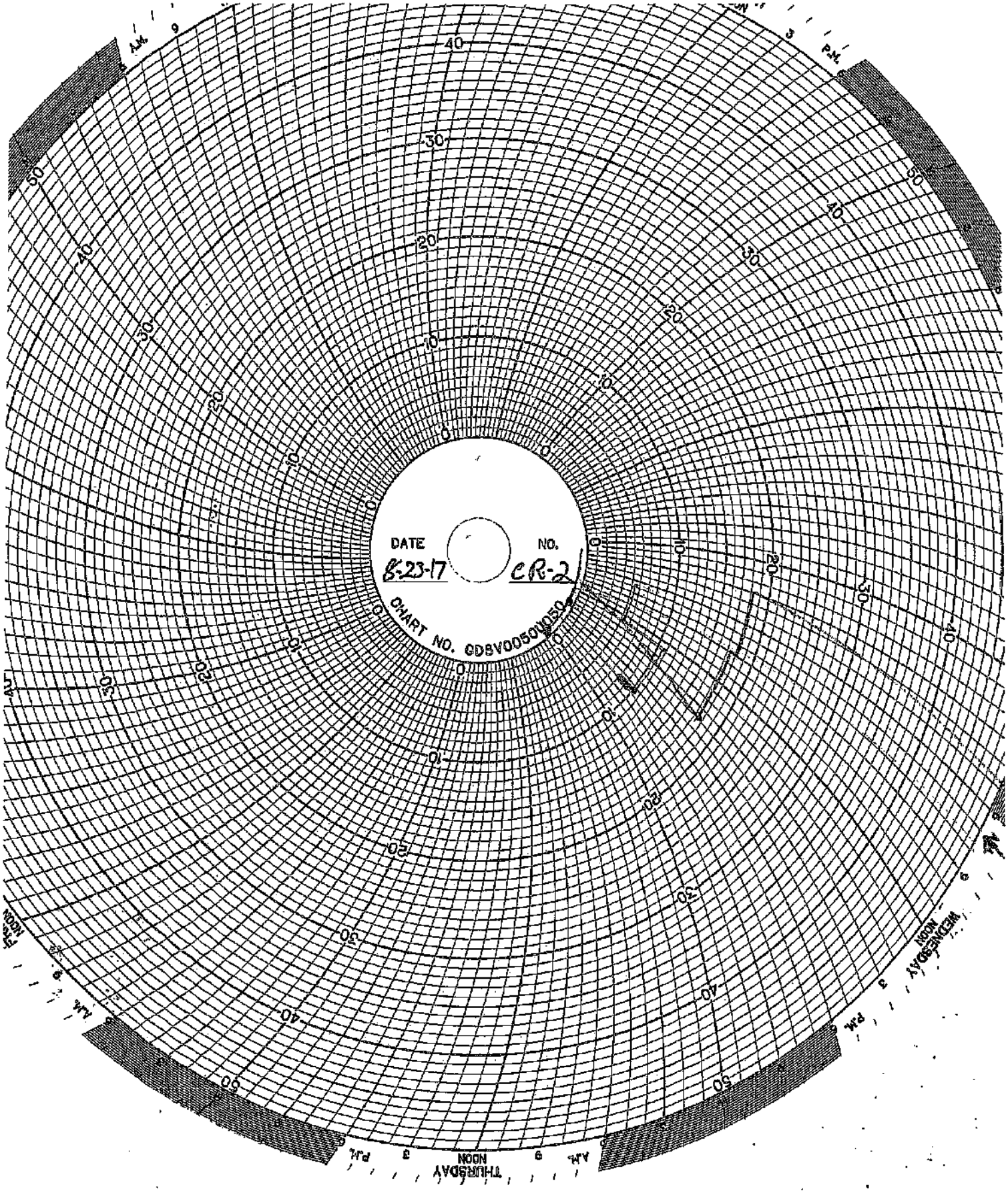
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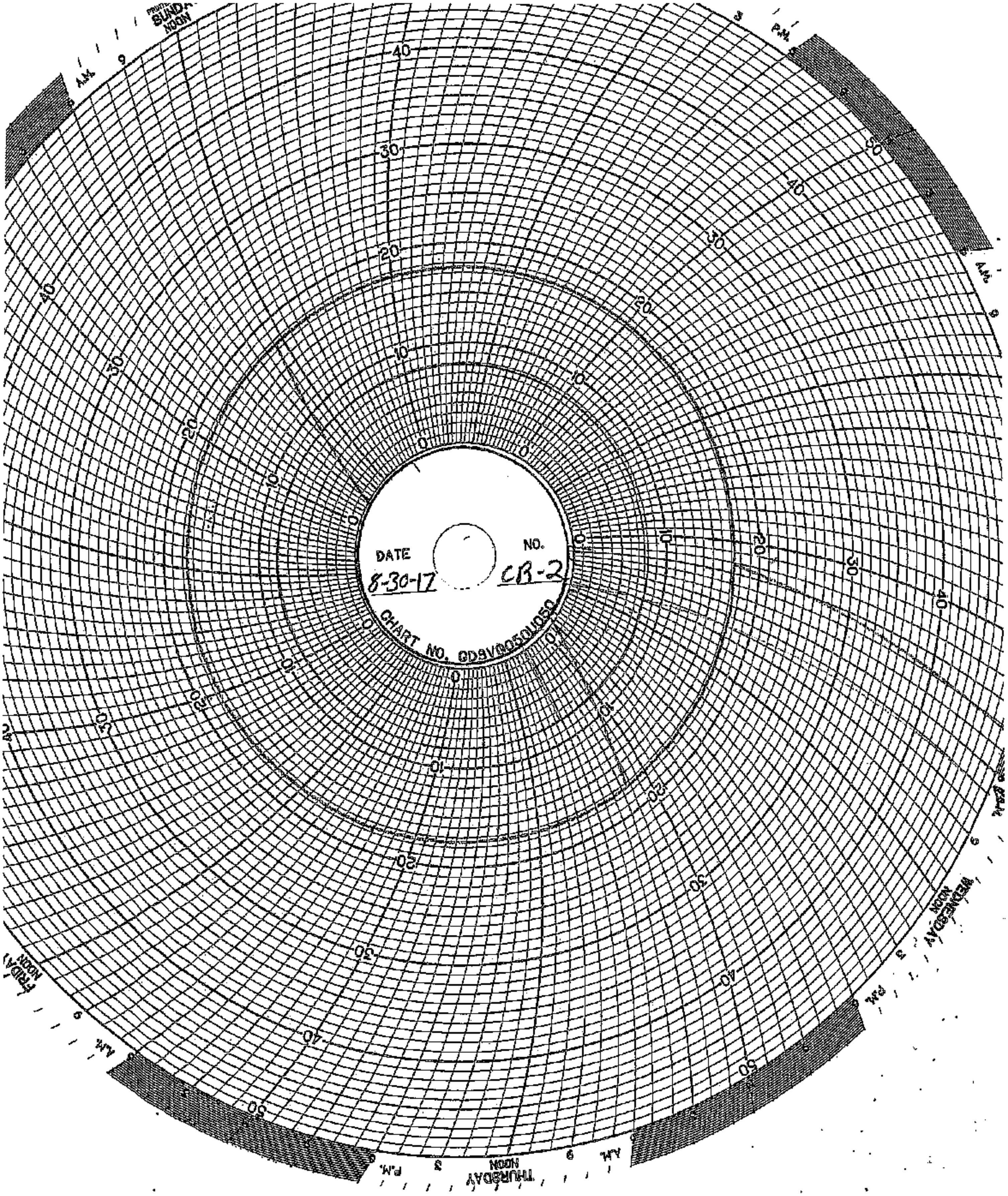
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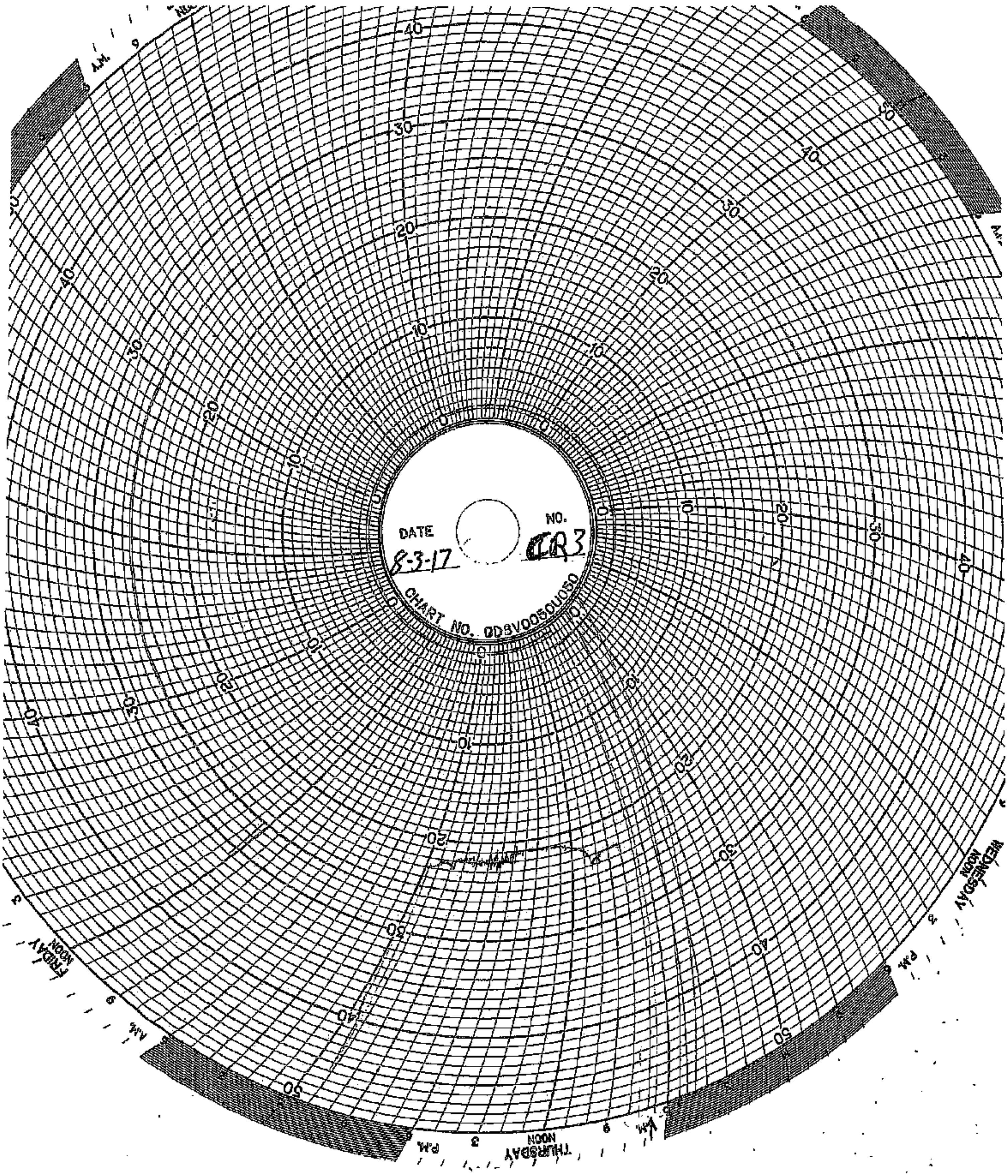

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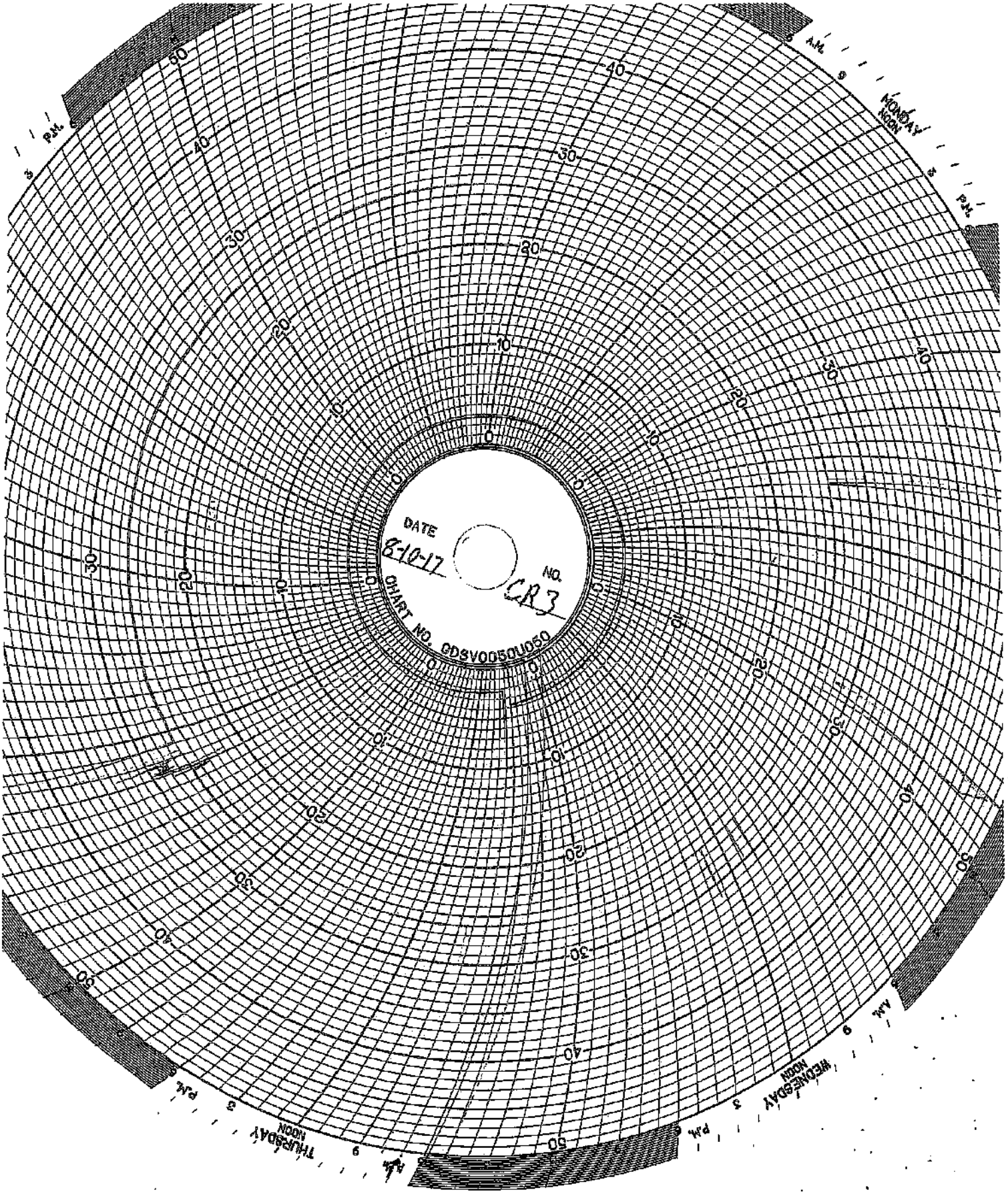
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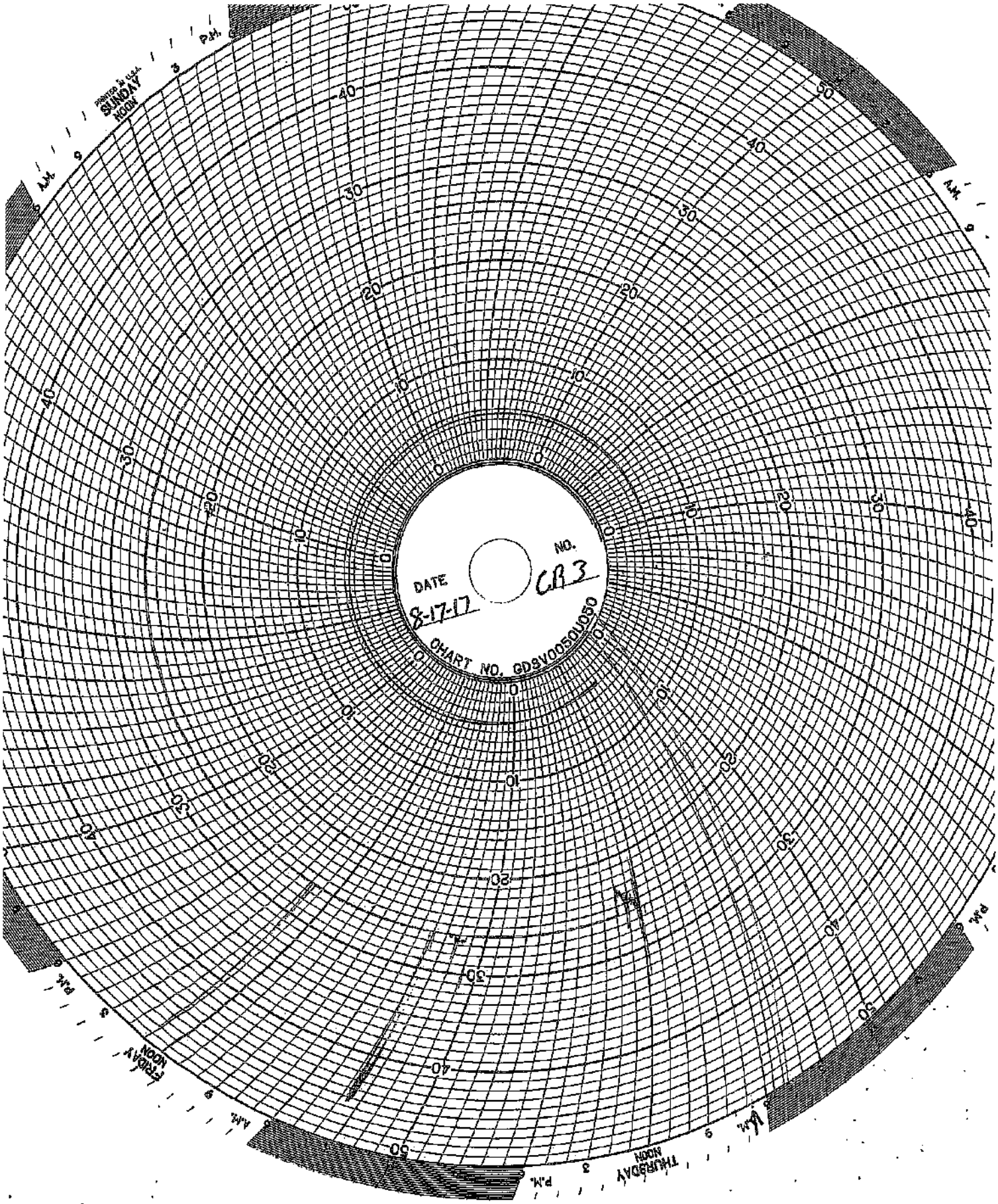
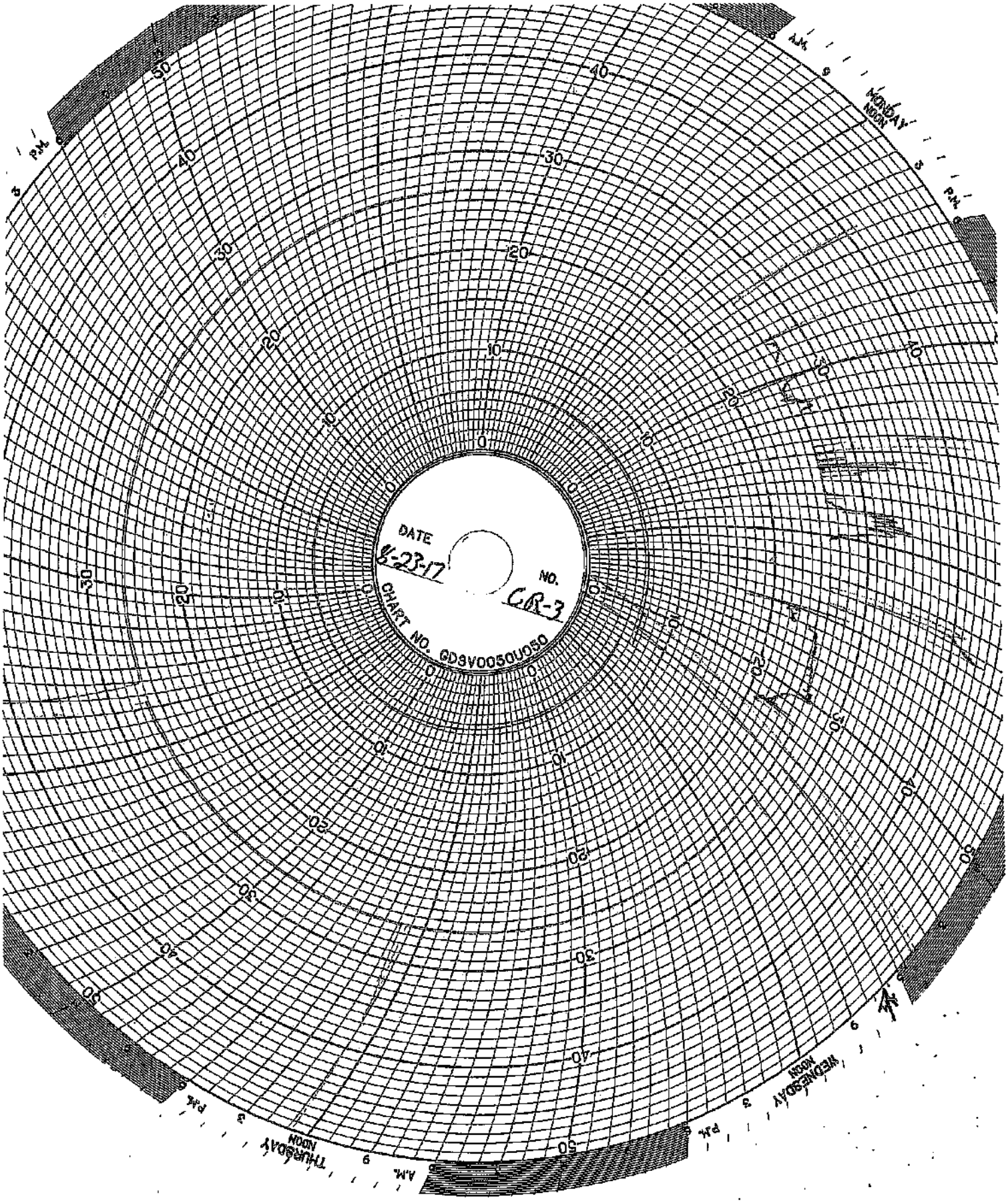
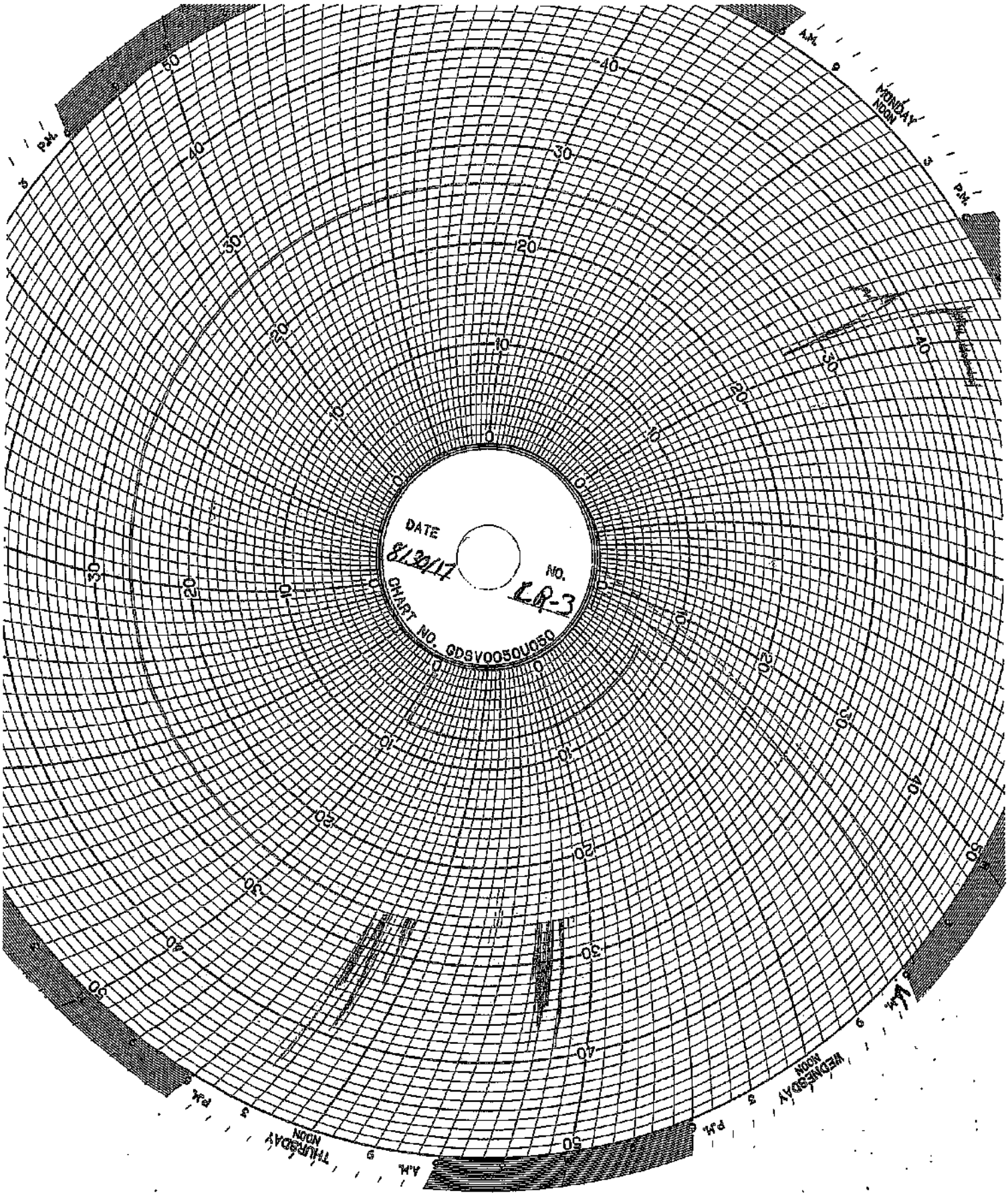
CHART NO. GDSV0050J050
MONDAY
NOON
TUESDAY
NOON
WEDNESDAY
NOON
THURSDAY
NOON
A.M.
P.M.


DATE
8-17-17
NO.
CB3
CHART NO. GDSV0050J050
SUNDAY
NOON
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
A.M.
P.M.


DATE
6-23-17
NO.
CR-3
CHART NO. GD3V0050U050
MONDAY
NOON
TUESDAY
NOON
WEDNESDAY
NOON
THURSDAY
NOON
AM
PM


DATE
8/30/17
NO.
LR-3
CHART NO. GDSV005QU050
A.M.
MONDAY
NOON
P.M.
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY

MAINTENANCE LOG

UIC Monthly Maintenance Log

No Maintenance Performed

CORROSION MONITORING

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.

CORROSION MONITORING COUPONS VISUAL DESCRIPTION

Aug 30, 2017

Fiberglass Coupon

The coupon was lost in the pipe, pump and filter system downstream from the coupon mounting location. The coupon mounting bolt may have broken or unthreaded. The coupon was likely caught in one of the filter baskets and disposed of with the filter. A new fiberglass coupon was installed with a weight of 18.105 grams. A picture of the new coupon is attached to this report.

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 appears to be no effect on this coupon.

Stainless Steel Coupon

The coupon had experienced substantial corrosion since last month. The coupon is seriously pitted and corroded. Continuous affect takes place with this coupon.

GHESQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 885-5535
FAX (313) 886-1771

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.

20460 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
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.

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

INJECTION FINGERPRINTS

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:05 am	08 / 01 / 17
Receiving ID#	T0801170\
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	S.H
Sampled by	AW

COPY

LABORATORY TESTING (Waste Characterization)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.59.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	30.5 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:22 pm	08/01/17
Receiving ID#	I08011702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LAB INFORMATION All Waste Streams		[illegible] Guidelines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.59
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	85°F		
Conductivity	30.1 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.5		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00am	08/02/17
Receiving ID#	I 0802 1701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION (Waste Shipments)		LAB INFORMATION (Brines Only)	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	7.5°F		
Conductivity	31.4 mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:30pm	06 / 02 / 17
Receiving ID#	I06021702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	S.H.
Sampled by	AW

COPY

LAB INFORMATION (All waste streams)		Guidelines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	7.52
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	150.2 mS		
% Solids	7.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 12:10am	08/03/17
Receiving ID#	EC0803 1701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H-
Sampled by	AW

LAB INFORMATION All Waste Shipments		Oilfield Sites Only	
Compatible? (RT#)	Yes (circled) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	7.5 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	148.3mS		
% Solids	7.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 10:00am	08/03/17
Receiving ID#	I-080317-02
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	S.H.
Sampled by	AW

COPY

LAB INFORMATION (All Waste Streams)		FIELD INFORMATION (Oil Field Other Only)	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	14.5 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	27°F		
Conductivity	289.7 mS		
% Solids	14.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 10:00pm	06 / 03 / 17
Receiving ID#	I08031703
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Files Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.6
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	30.8 mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

COPY

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00am	08/04/17
Receiving ID#	I08041701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JJ)
Sampled by	AH

LAB INFORMATION All Waste Shipments		[illegible] Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.52
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	31.4 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:30am	08/04/17
Receiving ID#	10804 1702
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.T
Sampled by	DM

LAB INFORMATION All Waste Streams		Metal Analysis	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	32.4 mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:20pm	08106/17
Receiving ID#	I0806170I
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION (All Waste Streams)		Oily Waste Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.72
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	33.2 ms		
% Solids	1.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	(0.)		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00cm	08/07/17
Receiving ID#	J080717OI
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.57.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	29.2 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 4:12 pm	08/07/17
Receiving ID#	F0807170Z
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	MB

COPY

LAB INFORMATION (All Waste Streams)		(Oilfield Brines Only)	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.57
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	88°F		
Conductivity	86.4 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:50 pm	08 / 07 / 17
Receiving ID#	J080717 03
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Streams		[illegible] Brine ONLY	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	5.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	6.29.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	123.1 mS		
% Solids	6.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:05am	08 / 08 / 17
Receiving ID#	I080817 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	5.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	6.0
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	123.3mS		
% Solids	6.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 1043	8 / 8 / 17
Receiving ID#	I0808170Z
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.T.
Sampled by	DB

LAB INFORMATION (Lab to Complete)			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.9%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	82°F		
Conductivity	38.1 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 9:05 pm	06 / 08 / 17
Receiving ID#	I0608 17 03
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Streams		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.47
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	76°F		
Conductivity	28.6 mS		
% Solids	1.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00 am	08 / 09 / 17
Receiving ID#	J08091701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

COPY

LAB INFORMATION All Waste Shipments		Oilfield Brine Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.5
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	79		
Conductivity	29.2 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 7:22 pm	08/09/17
Receiving ID#	I08091702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	MB

LAB INFORMATION All Waste Shipments		Oilfield [illegible] Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	5.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	176.6 mS		
% Solids	5.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	J. [signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

COPY

RECEIVING INFORMATION	
Date 12:10am	08 / 10 / 17
Receiving ID#	TO81017 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	SH
Sampled by	AW

LAB INFORMATION All Waste Shipments		Oilfield Brine Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	5.82
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	116.4mS		
% Solids	5.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:10 PM	08/10 / 17
Receiving ID#	I0810702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH.
Sampled by	AJ

LABORATORY INFORMATION All Waste Streams		Additional Parameters	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.12	TDS	28.7 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	76°F		
Conductivity	>400.0 mS		
% Solids	28.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:00 Am	08 / 11 / 17
Receiving ID#	08111701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	

LAB INFORMATION (Waste Streams)		LAB INFORMATION (Oilfield Brines Only)	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	21.32
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	>400.0 mS		
% Solids	21.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:17pm	08 / 13 / 17
Receiving ID#	I08131701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible] All Waste Streams		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	33.2mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:30am	08 / 11 / 17
Receiving ID#	T08 11 17 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW.

COPY

LAB INFORMATION [illegible]		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.67.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	32.8mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	10:56 am 8/14/17
Receiving ID#	I08141702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	MB

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.52
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	29.8 mS		
% Solids	1.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 10:30 pm	08 / 14 / 17
Receiving ID#	08141703
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION (All waste streams)		Office Use Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	70°F		
Conductivity	32.7 mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:00 am	08/15/17
Receiving ID#	T0815 17 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	D.H.
Sampled by	AW

COPY

LAB INFORMATION			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.66 g
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	32.5 mS		
% Solids	1.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 1:00Pm	08/15 /17
Receiving ID#	I08151702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	[signature]

COPY

LAB INFORMATION / Analyses			
Compatible? (RT#)	Yes (circled) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	77°F		
Conductivity	36.6mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

[illegible]	
Date 12:05am	08 / 16 / 17
Receiving ID#	I08161701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible] All Waste Shipments [illegible]		Oil Field Brines Only [illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	73°F		
Conductivity	38.2 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:30pm	08 / 16 / 17
Receiving ID#	Z08161702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION [illegible]		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	4.77
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	73°F		
Conductivity	94.7mS		
% Solids	4.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:05am	08 / 17 / 17
Receiving ID#	I08171701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

LAB INFORMATION All Waste Streams		Oilfield Brines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	4.29
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	73°F		
Conductivity	84.3mS		
% Solids	4.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11:00 05 / 19 / 17
Receiving ID#	D0817102
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	

LAB INFORMATION (Waste Shipments)		Oil & Gas Brines Only	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.03	TDS	5.62
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	77°F		
Conductivity	111.7 mS		
% Solids	5.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 7:17 pm	08/17/17
Receiving ID#	E0817703
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	MS

Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.11	TDS	26.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	77°F		
Conductivity	>400.0mS		
% Solids	26.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 9:00 AM	08 / 18 / 17
Receiving ID#	D08181702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	DH
Sampled by	DH

LAB INFORMATION (All waste streams)		Oilfield Brines Only	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.92
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	37.5 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING	
Date 8:30 am	08 / 18 / 17
Receiving ID#	20818701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	AW

LABORATORY		OIL ANALYSIS	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.7	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	35.3 ms		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING DATA	
Date 8:20 pm	08/20/17
Receiving ID#	20820170
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H
Sampled by	AN

COPY

LAB INFORMATION (Waste Profile)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	37.8 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

Revision 5.0
7/1/13

FINGERPRINT FORM

Environmental Geo-Technologies, LLC.

RECEIVING & APPROVAL FORM

[illegible]	
Date 12:05 am	08 / 21 / 17
Receiving ID#	208211701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

COPY

[illegible]			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	38.8 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

Environmental Geo-Technologies, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 1216	08 / 21 / 17
Receiving ID#	I 082117 82
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	Jim J

COPY

LAB INFORMATION All Waste Shipments		Oilfield Lines Only	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	86°F		
Conductivity	32.1 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING	
Date 11:40 pm	08/21/17
Receiving ID#	20821703
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	AW

LAB			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.9 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	74°F		
Conductivity	38.1 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

Revision 5.0
7/1/13

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

COPY

RECEIVING & APPROVAL FORM

Date 10:00am	08/22/17
Receiving ID#	I0822 1701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	JH
Sampled by	RW

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	38.2 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature	[signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:16PM	8/22/17
Receiving ID#	10822102
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	
Sampled by	

Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.8%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	85°F		
Conductivity	35.0 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

[illegible]	
Date 12:15am	08/28/17
Receiving ID#	I08231701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	DW

COPY

[illegible]		[illegible]	
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	74°F		
Conductivity	36.8		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 5:37 PM	08/23/17
Receiving ID#	I 08231702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH
Sampled by	BB

LABORATORY ANALYSIS / WASTE PROFILE			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	7.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.7 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	97°F		
Conductivity	32.9 mS		
% Solids	1.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 7'30AM	08124/17
Receiving ID#	I08241701
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	TE

TESTING INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	1.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	442
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	87.4 mS		
% Solids	4.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:14 PM	8/24/17
Receiving ID#	I08241702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	BB

COPY

LAB ANALYSIS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	1.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	5.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	104.3 mS		
% Solids	5.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 11:00 pm	08/24/17
Receiving ID#	EOT 241703
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	AW

LAB INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	19.3 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	386.4 mS		
% Solids	19.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 12:05am	08/25/17
Receiving ID#	E082517 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	

LABORATORY INFORMATION			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	19.32
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	383.0 mS		
% Solids	19.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	<0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 8:15pm	08/27/17
Receiving ID#	ID082717 01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.T.
Sampled by	AW

LABORATORY ANALYSIS		Filter Pack	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.12
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	41,500 S		
% Solids	2.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.4		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 12:05am	08 / 28 / 17
Receiving ID#	I08281701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	(J.T)
Sampled by	AW

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	7.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.42
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	48.9 mS		
% Solids	2.4		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.4		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 8:05am	08/28/17
Receiving ID#	I08281702
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	JH.
Sampled by	AW

COPY

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	7.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	2.0
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	75°F		
Conductivity	39.2 mS		
% Solids	2.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.4		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIPT INFORMATION	
Date 11:14 am	08/28/17
Receiving ID#	I08281702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	O.M
Sampled by	

LABORATORY INFORMATION (To be completed by Laboratory)			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	2.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.52	TDS	2.02.
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	84°F		
Conductivity	38.6 mS		
% Solids	2.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 3:28 AM	08291117
Receiving ID#	I-082917-01
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H.
Sampled by	T E

LAB INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	4.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	5.32
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	75°F		
Conductivity	105.0mS		
% Solids	7.3		
Turbidity	Yes No		
Color (visual)			
TSS (%)	2.0		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 1:20AM	08130117
Receiving ID#	I0830170 1
Manifest# : Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	T E

Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	0.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	6.2
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	73°F		
Conductivity	124.3 mS		
% Solids	6.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 11:07 AM	08/30/17
Receiving ID#	I08301702
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	MB

COPY

Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	83°F		
Conductivity	35.7 mS		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.5		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date 930 PM	08130/17
Receiving ID#	I0830103
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	J.H
Sampled by	T E

LAB INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.9 %
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	373 mS		
% Solids	1.9		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date 12:30	08/31/17
Receiving ID#	1708310701
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	AV

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	1.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	74°F		
Conductivity	37.1 ms		
% Solids	1.8		
Turbidity	Yes No		
Color (visual)			
TSS (%)	0.2		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

[illegible]		
Date	16:00	8 / 31 / 17
Receiving ID#		I08311702
Manifest# Line:		
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by		J.H
Sampled by		JH

COPY

[illegible]			[illegible]	
Compatible? (RT#)	(Yes) circled	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140		Magnesium	
pH (S.U.)	6.0		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.02		TDS	1.4 %
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	80°F			
Conductivity	28.2 mS			
% Solids	1.4			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	0.1			
Radiation Screen (as needed)				
Lab Signature	[signature]			

WASTE STREAMS
CHARACTERIZATIONS

[redacted]

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

Generator Waste Profile

Profile # 01194

GENERATOR INFORMATION

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: DBHPN Filtrate

Process Generating Waste (Please be specific, incomplete information may delay the approval process): A solid is precipitated out of the aqueous phase of the reaction mixture. The solid is filtered and washed w/ water. This stream is the liquid from the precipitate and wash water.

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 ☒ Black/Brown ☐ Other	☒ 0-1 % ☐ 3-5 % ☐ 1-3 % ☐ > 5%	☐ Multi-Layered ☐ Bi-Layered ☒ Single Phase	☐ <.8 ☐ 1.0 – 1.2 ☒ .8 – 1.0 ☐ 1.3 – 1.4 Exact / Other	acceptable AD 081617

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

actual pH - [illegible]

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	
Water	92	95	%	[illegible]	1	1	%
[illegible]	[illegible]	[illegible]	%				%
[illegible]	1	[illegible]	%	[illegible]	1	1	%
[illegible]		1	%				%
			%	Sodium [illegible]			%

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

	Not Present	Concentration		Not Present	Concentration
[illegible]	☒	___ ppm	[illegible]	☒	___ ppm
[illegible]	☒	___ ppm	[illegible]	☒	___ ppm
[illegible]	☒	___ ppm	[illegible]	☒	___ ppm
[illegible]	☒	___ ppm	[illegible]	☒	___ ppm
[illegible]	☒	___ ppm			
[illegible]	☒	___ 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: 1DL
3 DOT Shipping Name: Waste Corrosive Liquids, nos Hazard Class: 8 UN/NA: UN1760
PG: I ERG: 154 Hazardous Constituents for "n.o.s.": Bromide [illegible]-dibromo-3-hydroxy[illegible]
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. [illegible] Handling Requirements including PPE: ________

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information submitted [illegible] in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for obtaining the information, the information contained herein is true, accurate and complete to the best of my knowledge and belief. [illegible] to use [illegible] and processing of the waste material described herein. I understand that [illegible] may rely on this representation and warranty. [illegible] Technologies [illegible] to correct any inconsistencies. [illegible] If this box is checked ☐ [illegible] Environmental [illegible] of the sample [illegible] will be consistent with the results

[redacted]

GENERATOR'S CHAIN OF CUSTODY

The waste described in the above referenced Generator's Waste Profile [illegible] in an appropriate container. [illegible] one [illegible] using any of the applicable sampling methods [illegible] CFR 261 Appendix I. Fill in the sampling information in the [illegible] provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental [illegible] Technologies representative.

Composite
SAMPLING METHOD [illegible]

[redacted]

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

Relinquished by:	Date	Time	Received by: (Signature)	Date	Time
[redacted]					

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	8/14/17
Receiving ID#	DBHPNF-Nitrate
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval#	[redacted]
Transporter	
Time in	
Time out	
Received by	S.H.
Sampled by	Client

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.84	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	76°F		
Conductivity	96.8 mS		
% Solids	1.7		
Turbidity	Yes (No)		
Color (visual)	Yellow		
TSS (%)	<0.1		
Radiation Screen (as needed)	Negative		
Lab Signature			

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier: DBHPN Filtrate

Chemical Abstracts Registry No: MIXTURE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Research & Development

1.3. Details of the supplier of the safety data sheet:

Vertellus Integrated Pyridines LLC
201 North Illinois Street, Suite 1800
Indianapolis, IN 46204 USA
1-317-247-8141

e-mail Address: SDS@vertellus.com

1.4. Emergency telephone number: Vertellus: 1-317-247-8141
CHEMTREC (USA): +1-800-424-9300 (collect calls accepted)
CHEMTREC International: +1-703-527-3887 (collect calls accepted)
NRCC (Chn): +86 532 83889090

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture (According to Regulation (EC) No 1272/2008, 29 CFR 1910.1200 and the Globally Harmonized System)

Serious Eye Damage Category 1
Skin Corrosion Category 1
Specific Target Organ Systemic Toxicity Repeated Exposure Category 2 (US GHS)

2.2. Label elements

Hazard Symbols (Pictogram):

Signal Word: Danger

Hazard Precautions: H314 - Causes severe skin burns and eye damage.
H373 - May cause damage to organs through prolonged or repeated exposure.

Prevention Precautionary Statements: P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P314 – Get medical advice/attention if you feel unwell.
P363 - Wash contaminated clothing before reuse.
P310 - Immediately call a POISON CENTER or doctor/physician.

[redacted]

SAFETY DATA SHEET

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

Mixture Statement: Up to 10 % of this mixture contains components of unknown toxicity.

SECTION 3: Composition/Information on ingredients

3.1. Substances or 3.2. Mixtures:

Ingredient	CAS Number	Concentration (weight %)	EC Number	CLP Inventory/ Annex VI	EU CLP Classification (1272/2008)
Water	7732-18-5	92-95	231-791-2	Not listed.	Not classified.
4,6-Dibromo-3-hydroxypicolinonitrile	1869081-53-0	2-4	Not listed.	Not listed.	Eye Dam. 1; H318 Skin Corr. 1; H314 Acute Tox. 2; H310 Acute Tox. 4; H332 Acute Tox. 4; H302 STOT RE 2; H373
Hydrogen bromide	10035-10-6	1-3	233-113-0	Not listed.	Skin Corr. 1; H314 STOT SE 3; H335
Sodium Bisulfate	10034-88-5	1-3	600-069-2	Not listed.	Eye Dam. 1; H318
Cyano(Furan-2-yl) methanaminium bromide	1859081-50-7	1	Not listed.	Not listed.	Not applicable.
Sodium bisulfite	7631-90-5	1	231-548-0	Not listed.	Acute Tox. 4; H302
3-hydroxypicolinonitrile	1219849-86-9	1	Not listed.	Not listed.	Not applicable.
6-bromo3-hydroxypicolinonitrile	65717-46-8	1	Not listed.	Not listed.	Not applicable.

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable).

SECTION 4: First aid measures

4.1. Description of first aid measures:

Skin Contact: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 20 minutes. Get immediate medical attention. Hold eyelids apart periodically while flushing. Continue to rinse until medical personnel arrive.

Inhalation: Remove from exposure. If not breathing, give artificial respiration and call a physician.

Ingestion: If swallowed, do not induce vomiting. Get prompt medical attention. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Acute: Brief contact with skin causes burns, including redness, itching and pain. Causes severe eye irritation and burns, including tearing, redness and corneal injury. Ingestion causes irritation to the GI tract.

Delayed Effects: None known.

[redacted]

SAFETY DATA SHEET

4.3. Indication of any immediate medical attention and special treatment needed

Note to Physician:	Material is corrosive. It may not be advisable to induce vomiting. If the product is ingested, probable mucosal damage may contraindicate the use of gastric lavage. Treat the affected person appropriately.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media:	Dry chemical, Water spray, Carbon dioxide

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion:	During a fire, irritating and toxic gases, fumes and vapors may be generated.
Potential for Dust Explosion:	Not applicable
Special Flammability Hazards:	None known

5.3. Advice for firefighters

Basic Fire Fighting Guidance:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures:	Isolate the hazard area and deny entry to unnecessary and unprotected personnel.
Special Instructions:	See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

6.3. Methods and material for containment and cleaning up

Ventilate the area of spill or leak. Wear protective equipment during clean-up. Remove all ignition sources. For large spills, this area may require isolating the spill. Soak up spill with absorbent material which does not react with spilled chemical. Scoop up contaminated absorbents and place into suitable, covered chemical disposal containers. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

[redacted]

SAFETY DATA SHEET

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards:	Not applicable.
Practices to Minimize Risk:	Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.
Special Handling Equipment:	Not applicable.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations:	Store in a cool place in original container and protect from sunlight
Dangerous Incompatibility Reactions:	No data available.
Incompatibilities with Materials of Construction:	None known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Country	Occupational Exposure Limit
United States ACGIH & OSHA	3 ppm as 8-hour time-weighted average
Air Monitoring Method:	OSHA Method ID-165SG

8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

Other Engineering Controls:	All operations should be conducted in well-ventilated conditions. Local exhaust ventilation or containment should be provided.
Personal Protective Equipment:	Chemical goggles, impervious clothing and boots; PVC (or similar) coated gloves. Contact lenses should not be worn when handling this material. Where splashing, misting or contact with eyes is likely, wear a face shield.
Respirator Caution:	Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres.
Thermal Hazards:	Not applicable.
Environmental Exposure Controls:	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. 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.

[redacted]

SAFETY DATA SHEET

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties.

Appearance, State & Odor (ambient temperature):	Liquid		
Molecular Formula:	No data available.	Molecular Weight:	No data available.
Vapor Pressure:	No data available.	Evaporation Rate:	No data available.
Specific Gravity or Density:	No data available.	Vapor Density (air = 1):	No data available.
Boiling Point:	No data available.	Freezing / Melting Point:	No data available.
Solubility in Water:	No data available.	Octanol / Water Coefficient:	No data available.
pH:	< 3	Odor Threshold:	No data available.
Viscosity:	No data available.	Autoignition Temperature:	No data available.
Flash Point and Method:	No data available.	Flammable Limits:	No data available.
Flammability (solid, gas):	No data available.	Decomposition Temperature:	No data available.
Explosive Properties:	Not explosive	Oxidizing Properties:	Not oxidizing

SECTION 10: Stability and reactivity

10.1. Reactivity:	Not classified as dangerously reactive.
10.2. Chemical stability:	Stable under recommended storage or transport conditions.
10.3. Possibility of hazardous reactions:	Not expected to occur.
10.4. Conditions to avoid:	Elevated temperatures, sparks, flames
10.5. Incompatible materials:	No data available.
10.6. Hazardous decomposition products:	Have not been determined.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute Oral LD_{50}:	No data available on this mixture
Acute Dermal LD_{50}:	No data available on this mixture
Acute Inhalation LC_{50}:	No data available on this mixture
Skin Irritation:	Corrosive to skin.
Eye Irritation:	Corrosive to eyes.

SAFETY DATA SHEET

Skin Sensitization:	Not expected to be a sensitizer.
Mutagenicity:	No data available.
Reproductive / Developmental Toxicity:	No data available.
Carcinogenicity:	No data available.
Target Organs:	No data available.
Aspiration Hazard:	Not expected to be an aspiration hazard.
Primary Route(s) of Exposure:	Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.
Most important symptoms and effects, both acute and delayed	This material is considered corrosive to skin and eyes. Delayed Effects: None known
Additive or Synergistic effects:	None known.

SECTION 12: Ecological Information

12.1. Toxicity	No data available on this mixture
12.2. Persistence and degradability	No data available on this mixture
12.3. Bioaccumulative potential	No data available on this mixture
12.4. Mobility in soil	No data available on this mixture
12.5. Results of PBT and vPvB assessment	No data available on this mixture
12.6. Other adverse effects	No data available on this mixture

SECTION 13: Disposal considerations

13.1. Waste treatment methods

US EPA Waste Number:	Non-Hazardous
Waste Classification: (per US regulations)	The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal:	NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. DO NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SAFETY DATA SHEET

SECTION 16: Other Information

Key Data Sources: R&D SDS, ECHA

Classification Method: Calculation method

Legend of Abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
CFR = Code of Federal Regulations.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EINECS = European Inventory of Existing Commercial Chemical Substances.
ELINCS = European List of Notified Chemical Substances.
EU = European Union.
GHS = Globally Harmonized System.
LC = Lethal Concentration.
LD = Lethal Dose.
NFPA = National Fire Protection Association.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicology Program.
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limit.
RQ = Reportable Quantity.
SARA = Superfund Amendments and Reauthorization Act of 1986.
TLV = Threshold Limit Value.
WHMIS = Workplace Hazardous Materials Information System.

Important Note: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

Revision Date:	22 Apr 2017	**Original Date of Issue:**	Newly Issued
Issued by:	Regulatory Management Department	**Email:**	SDS@Vertellus.com
Revision Details:	Newly Issued		

SAFETY DATA SHEET

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number	UN1760	14.2. UN proper shipping name	Corrosive liquids, N.O.S., 4,6-Dibromo-3-hydroxypicolinonitrile, Hydrogen bromide
14.3. Transport hazard class(es)	8	14.4. Packing group	PG I
14.5. Environmental hazards	Not applicable		
NA Emergency Guidebook Numbers:	154	IMDG EMS:	Not applicable
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code			Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Inventory Lists:	Status:		
USA TSCA:	Not listed.	EINECS:	Not listed.
Canada(DSL/NDSL):	Not listed.	Japan:	Not listed.
Korea:	Not listed.	Australia:	Not listed.
China:	Not listed.	Philippines:	Not listed.
Taiwan:	Not listed.	New Zealand:	Not listed.
German Water Hazard Classification:	No data available.		
SARA 313:	Not listed.		
Reportable Quantities:	Sodium bisulfite = RQ 5000lbs		
State Regulations:	•This product contains chemicals listed on the Massachusetts Substance List for Right-to-Know Law. •This product contains chemicals listed on the Minnesota Hazardous Substances List. •This product contains chemicals listed on the New Jersey Department of Health Hazard Right-to-Know Program Hazardous Substance List. •This product contains chemicals listed on the New York State List of Hazardous Substances. •This product contains chemicals listed on the Pennsylvania Department of Labor and Industry Hazardous Substance List. •This product contains chemicals listed on the Rhode Island Hazardous Substance List.		
Other Regulatory Listings:	NOTE: Components of this material are not listed on the public US TSCA Inventory, and must be used by technically qualified individuals for research and development purposes ONLY.		

HMIS IV:

0

NFPA:

15.2. Chemical safety assessment

Not applicable.

TRACE
the science of compliance

phone 231 773 5998
toll-free 800.773.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc
2241 Black Creek Road
Muskegon, MI 49444-2673
info@trace-labs.com
www.trace-labs.com

May 12, 2017

[redacted]

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

For clients that require NELAC Accreditation, Trace certifies that these test results meet all requirements of the NELAC Standard, except for those analytes with a "N" notation. These analytes have not been evaluated by NELAC at Trace's discretion and will not be reported unless requested by client.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at gree@trace-labs.com.

Sincerely,

Gina M. Roe
Laboratory Manager

Enclosures

NJDEP Accreditation No. MI008

TRACE
the science of compliance

phone 231-773-5998
toll-free 800-733-5998
fax 231-773-6537

Trace Analytical Laboratories, Inc.
3441 Black Creek Road
Muskegon, MI 49444-2673
info@trace-labs.com
www.trace-labs.com

SAMPLE SUMMARY

[redacted]

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
T17E122-01	#1 Reaction Mixture Water Step	Aqueous	ched	05/02/17 14:00	05/04/17 14:10
T17E122-02	#2 DBHPN EthlAcetate	Aqueous	ched	05/02/17 14:15	05/04/17 14:10
T17E122-03	#3 DBHPN Filtrate	Aqueous	ched	05/02/17 14:15	05/04/17 14:10

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AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	The result for this analyte is not covered under our NJ NELAP Annual Certified Parameter List
NA	Indicates that the compound is not available.

NOTE: Samples for volatiles that have been extracted with a water miscible solvent were corrected for the total volume of the solvent/water mixture.

DATA QUALIFIERS

Trace ID: T17E122-02

Analysis: EPA 1010

Flashpoint	Note 900 : The sample flashed on the very first introduction of the igniter. The true flash point is below 17.6°F.

Analysis: EPA 7470A

Mercury	Note 621 : The laboratory could not ensure complete digestion of organic mercury compounds because more digestion reagent could not be added without raising the detection limit. The detection of organically-bound mercury may be impared.

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fax 231.773.6537
Trace Analytical Laboratories, Inc.
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Muskegon, MI 49444 2673
Info@trace-labs.com
www.trace-labs.com

[redacted]

ANALYTICAL RESULTS

Trace ID: T17E122-03
Sample ID: #3 DBHPN Filtrate

Date Collected: 05/02/17 14:15
Date Received: 05/04/17 14:10
Matrix: Aqueous

PARAMETERS	RESULTS	UNITS	RDL	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	MCL
METALS, TCLP										
Analysis Method: EPA 6010B *Batch: T069057*										
Arsenic	<0.30	mg/L	0.30	1	05/10/17	nws	05/12/17	nws		5.0
Barium	<1.0	mg/L	1.0	1	05/10/17	nws	05/12/17	nws		100
Cadmium	<0.10	mg/L	0.10	1	05/10/17	nws	05/12/17	nws		1.0
Chromium	<0.50	mg/L	0.50	1	05/10/17	nws	05/12/17	nws		5.0
Lead	<0.50	mg/L	0.50	1	05/10/17	nws	05/12/17	nws		5.0
Selenium	<0.60	mg/L	0.60	1	05/10/17	nws	05/12/17	nws		1.0
Silver	<0.10	mg/L	0.10	1	05/10/17	nws	05/12/17	nws		5.0
Analysis Method: EPA 7470A *Batch: T069093*										
Mercury	<0.010	mg/L	0.010	1	05/11/17	nws	05/12/17	nws		0.20
WET CHEMISTRY										
Analysis Method: EPA 1010 *Batch: T069023*										
Flashpoint	> 200	°F	1.0	1	05/09/17	kj	05/09/17	kj		
Analysis Method: EPA 9045C *Batch: T069098*										
Corrosivity-pH	0.680	pH Units		1	05/11/17	jek	05/11/17	jek	N	

CHAIN-OF-CUSTODY RECORD

TRACE ... the science of compliance

phone 231-773-5998 | toll-free 800-733-5998 | fax 231-773-6537

Trace Analytical Laboratories, Inc. [illegible]

[redacted]

Page 1 of ___ | TRACE ID NO. [illegible]

Logged By: [illegible] | Checked By: [illegible]

Received on ice: Yes No | Preservative Checked: Yes No [illegible]

Volatiles Preserved: MeOH Low Level Lab Sampling Time:

Turnaround Requirements: Standard ☒ | 3-Day* ☐ | 4-Day* ☐ | 48 Hour* ☐ | 24-Hour* ☐ | *Requires Prior Approval

Matrix Key: S = Soil/Solid, W = Water, SL = Sludge, OI = Oil, WI = Wipes, LW = Liquid Waste, A = Air, D = Drinking Water

ANALYSIS REQUESTED

Bill To: Billing Address (if different) ___ City, State, Zip Code ___ Attn: ___ Phone: ___ PO#: [illegible]

Request for Analytical Services

TRACE NO.	DATE TAKEN	TIME TAKEN	CLIENT SAMPLE ID	MATRIX	NUMBER OF CONTAINERS	Analysis requested	REMARKS
1	[illegible]	[illegible]	[illegible]		1	X X X X	
2	[illegible]	2:15	[illegible]		1	X X X	
3	[illegible]	[illegible]	[illegible]		1	X X X	

[redacted]

In executing this chain-of-custody, the client acknowledges acceptance of the terms and conditions of the agreement as set forth at [illegible]

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2241 Black Creek Road
Muskegon, MI 49444-2673
info@trace-labs.com
www.trace-labs.com

CERTIFICATE OF ANALYSIS

TRACE
the science of compliance
phone 231-773-5998
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SAMPLE LOG IN CHECKLIST

[redacted]

Cooler R

Cooler/samples delivered by: Trace courier ☒
Hand delivered ☐
Commercial courier ☐ UPS ☐ FED[illegible] ☐ US Mail ☐
Tracking Number: ☐ Not Applicable
Tracking #:
COC Seals present and intact on cooler? No ☐ Yes ☐ ☒ Not Applicable
Custody seals signed by Client? No ☐ Yes ☐ Client custody seal # (if applicable):

Coolant and Temperature

Type of Coolant Used

Slurry w/ crushed, cubed, or chip ice ☐
Multiple bags of ice around samples ☐
Ice Packs/ Blue Ice ☐
No Coolant Present: ☐
Ice still present upon receipt (circle one): Yes No N/A

Cooler Temperature

Correction Factors: •Digital Stick Thermometer CF = -0.6°C
•IR Thermometer CF = -0.4°C

Temperature Blank: 1.7 °C (Digital Stick Thermometer)
Range of 3 samples: [illegible] °C (IR Thermometer)
Melt Water: 1.4 W °C (Use Digital Stick Thermometer)

General

	Yes	No	NA	Comments
All bottles arrived unbroken with labels in good condition?	Yes			
Each sample bottle is in a sealed plastic bag?		No		
Labels filled out completely?	Yes			
All bottle labels agree with Chain of Custody (COC)?	Yes			
Sufficient sample to run tests requested?	Yes			
pH checked and samples at correct pH?			See Below	
Correct preservative added to samples?				
Air bubbles absent from VOAs?				
COC filled out properly and signed by client?				
COC signed in by TRACE sample custodian?				
Was project manager called and samples discussed?				

Notes:

[illegible] pH Strips
[illegible] pH 11 Soln
Lot#HC842328
Other
Lot# H0568733 verified 8/21/18 AY
Lot# H0571761 verified 8/21/18 AY

Form 70-A.29
Effective 4/24/17

TRACE Analytical Laboratories, Inc.

EnviroSolids, L.L.C.
6011 Wyoming Ave.
Dearborn, MI 48126
Phone 313-582-8032 Fax 313-582-1422

App # 01197

Generator Waste Profile

GENERATOR INFORMATION — BILLING INFORMATION

[redacted]

SHIPPING INFORMATION

Shipping Volume: 6000 gallons Frequency: ☐ One Time Only ☐ Semi-Monthly ☐ Weekly ☐ Yearly ☐ Quarterly ☒ Monthly ☐ Daily ☐ Semi-Annual

DOT Shipping Name: Non-DOT Regulated 0291

Packaging: ☐ Bulk Solid (yards³/tons) ☆ Drums/Totes ☐ Other (5 gal. pails, etc.) ☆ Bulk liquids (Gallons) ☐ CubicYard Boxes

PHYSICAL CHARACTERISTICS

Color: (describe) Green Odor: (describe) None

Physical state at 70F (check all that apply)
☐ Solid ☒ Liquid ☐ Sludge ☐ Powder/Dust

Phases/Layers (check all that apply) ☒ Single ☐ Bi-Layered ☐ Multi-Layered

Physical Composition
% Oil 0 % Water 100 % Solids [redacted] % Sludge 0

acceptable MD 08.16.17

MATERIAL DESCRIPTION

Common Name of Waste: Non-Regulated Waste

Provide a detailed description of the waste process generating this waste:

TSF accumulation. SPENT ELECTROLESS NICKEL SOLUTION USED TO PLATE NICKEL ONTO STEEL PARTS.

REGULATORY INFORMATION

Based upon RCRA waste regulations (40 CFR 261) and Michigan Act 451 Rules answer the following questions:

1 Is this an **EPA RCRA** listed hazardous waste (F, K, P, or U)? ☐ YES ☒ NO

2 Is this an **EPA RCRA** characteristic hazardous waste (D001- D043)? ☐ YES ☒ NO

3 Is this a **MICHIGAN** hazardous waste (other than RCRA)? ☐ YES ☒ NO

4 Is this a **MICHIGAN** Severly Toxic waste? ☐ YES ☒ NO

5 Is this a **MICHIGAN** Toxic waste? ☐ YES ☒ NO

6 What is the pH of this waste? ☐ ≤ 2.0 ☐ 2.1-5.0 ☒ 5.1 - 9.0 ☐ 9.1 - 12.49 ☐ ≥ 12.5 ☐ NA

7 What is the flashpoint of this waste? ☐ < 90F ☐ 90F - 139F ☐ 140F-199F ☒ ≥ 200F ☐ NA

8 Is this a **UNIVERSAL** waste? ☐ YES ☒ NO

9 Does this waste contain reactive cyanide ≥ 250 ppm? ☐ YES ☒ NO

10 Does this waste contain reactive sulfides ≥ 500 ppm? ☐ YES ☒ NO

11 Does this waste contain any detectable PCBs? ☐ YES ☒ NO

12 Is this a **MICHIGAN** nonhazardous liquid industrial waste? ☒ YES ☐ NO

13 Is this waste for solidification? ☒ YES ☐ NO ☐ UNKNOWN

14 Is this waste for wastewater treatment? ☐ YES ☒ NO ☐ UNKNOWN

15 Is this waste a recoverable petroleum product other than Used Oil? ☐ YES ☒ NO

16 Is this waste a used oil as defined by 40 CFR Part 279? ☐ YES ☒ NO **IF YES FILL OUT BELOW**

OIL RECYCLING

OIL (%): _____ WATER (%): _____ SOLIDS (%): _____

Heat Value (BTU/lb): _____ Total Halogens: _____ ppm -0- VOCs

The total halogens in the oil exceeds 1,000 ppm and I certify that the oil was not mixed with a hazardous waste.

Signature: _____

CERTIFICATION

I certify that all information (including attachments) is complete and factual and is an accurate representation of the known and suspected hazards, pertaining to the waste described herein. I authorize EnviroSolids, LLC to obtain a sample from any waste shipment for purposes of verification and confirmation. Generator agrees to indemnify and holds EnviroSolids, LLC harmless for any claims, liabilities, damages, and costs including, but not limited to, attorney's fees arising out of or in any way related to breach of the above certification by the Generator. I am a duly authorized representative of the Generator.

ENVIROSOLIDS, L.L.C.

MATERIAL SAFETY DATA SHEET

MSDS Number	3613-300	ENPLATE NI-434A
MSDS Date	09/10/98	
Spsds Date	08/17/93	
Page Number	1 of 6	

SECTION I - Product and Company Information

Product Name	**ENPLATE NI-434A**
HMIS Hazard Rating	Health: 2 Fire: 0 Reactivity: 0
Company Identification	ENTHONE-OMI INC. P.O. Box 1900 New Haven CT 06508
Contact	Regulatory Affairs
Telephone/Fax	(203)934-8611 / (203)799-8179
Emergency	CHEMTREC (800)424-9300
Preparer	Earl R. Darr Corporate Safety Engineer

ENPLATE is a registered trademark of Enthone-OMI Inc.

SECTION II - Ingredient and Hazard Information

Ingredient Name	CAS Number	Percent	TSCA
WATER	7732-18-5	< 80.0	Y
NICKEL(II) SULFATE	7786-81-4	< 25.0	Y
SODIUM TETRABORATE PENTAHYDRATE	12179-04-3	< 5.0	Y

All ingredients comply with applicable rules or orders under TSCA.

Weight percents listed above are within 5% of the actual value.

Carcinogen:
Epidemiological studies of workers exposed to nickel powder and to dust and fume generated in the production of nickel alloys and of stainless steel have not shown a significant increase in respiratory cancer. NIOSH has concluded that there is no evidence that nickel and its inorganic compounds are carcinogenic when ingested.

Reference:
Nickel: IARC-1, NIOSH-X, NTP-2A, 2B

SECTION III - Hazards Identification

Inhalation:
Mist or vapor may irritate respiratory tract.

Skin Contact:
Sensitivity to nickel may cause skin irritation ("nickel itch").
Eye Contact:
Can cause severe irritation, damage to eyes.
Ingestion:
Can cause irritation to mouth, throat, esophagus, and stomach.
Chronic:
General discomfort, irritation and possible sensitization.
May cause cancer.

SECTION IV - First Aid Measures

Skin Contact:
Immediately wash contaminated skin with plenty of water for 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse. Discard footwear if it cannot be decontaminated. Seek immediate medical attention.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes holding lids apart to ensure flushing of entire surface. Washing eyes within several seconds of exposure is essential to minimize damage. Seek immediate medical attention.
Ingestion:
Never give anything by mouth to an unconscious person, obtain immediate medical attention. If vomiting occurs spontaneously, keep airway clear. If swallowed DO NOT INDUCE VOMITING, give large amounts of water.
Seek immediate medical attention.
Inhalation:
Remove person from contaminated area. If breathing has stopped, resuscitate and administer oxygen if available.
Seek immediate medical attention.

SECTION V - Fire-Fighting Measures

[redacted] Not Applicable

Special Fire-Fighting Procedures:
Wear NIOSH approved full protective clothing and self-contained breathing apparatus. Keep containers cool to prevent rupture and release of material.
Unusual Fire-Fighting Hazards:
Thermal decomposition may yield toxic sulfur, nitrogen and carbon oxides.
Extinguishing Media:
This product is not combustible.

As appropriate for surrounding fire.

SECTION VI - Accidental Release Measures

Avoid contact with skin, eyes and clothing. Wear protective equipment (see Section VIII). Do not breathe mist or vapors. Contain spill and soak up in suitable absorbent. Shovel into plastic lined steel containers. Dilute residual material with large amounts of water and neutralize. Dispose of in accordance with Local, State and Federal regulations.

SECTION VII - Handling and Storage

Store in a cool, dry place. Keep away from alkalies and oxidizers. Loosen cover cautiously when opening.

Additional Information:
Wash thoroughly after handling.

Work/Hygienic Practices:
Emergency eye wash and safety shower should be available. Wash thoroughly after handling.

SECTION VIII - Exposure Controls and Personal Protection

Occupational Exposure Limits

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
WATER	NA	NA	NA	NA	NA
NICKEL(II) SULFATE	0.10 mg/M3	NA	NA	NA	1.00 mg/M3
SODIUM TETRABORATE PENTAHYDRATE	1.00 mg/M3	NA	NA	NA	NA

Exposure limits for soluble nickel compounds are as Ni, inhalable fraction.

Respirator:
Use NIOSH approved respirator when air concentration is greater than the TLV or PEL.
Use cartridge filter for acid mist.

Eye Protection:
Chemical safety goggles recommended.
Face shield recommended.

Protective Clothing or Equipment:

Chemically resistant coveralls, hat, and shoes or boots.
Neoprene gloves.
Natural rubber gloves.
Ventilation:
Local exhaust recommended.

SECTION IX - Physical and Chemical Properties

Form	Liquid
Color	Green
Odor	None
Solubility	Complete
[redacted]	[redacted]
Boiling Point	214.0°F
Vapor Pressure (mmHg)	Not Available
Melting Point	28.0°F
Evaporation Rate	Unavailable
% Volatile By Weight	Not Available
[redacted]	[redacted]

SECTION X - Stability and Reactivity

Stability:
Stable under normal conditions. See Incompatibility Information.
Incompatibility (Materials to Avoid):
Oxidizing agents, alkalis.
Hazardous Decomposition Products:
In a fire, toxic gases, including oxides of carbon, sulfur, and nitrogen.
Hazardous Polymerization:
Hazardous polymerization will not occur.
Conditions to Avoid:
NA

SECTION XI - Toxicological Information

Route	Species	Exposure and Dose
NICKEL(II) SULFATE		
Intraperitoneal	Rat, adult	LD50 500.0 mg/kg

SECTION XII - Ecological Information

Ecological information on this product is not available.

MATERIAL SAFETY DATA SHEET

SECTION XIII - Disposal Considerations

For waste disposal of spent, spilled, or contaminated product contact a permitted TSDF (Treatment, Storage and Disposal Facility). Dispose of in accordance with all applicable Local, State, and Federal regulations.

SECTION XIV - Transport Information

Please contact the Regulatory Affairs Department at (203) 799-4917 for the most current shipping information.

SECTION XV - Regulatory Information

SARA TITLE III SECTION 313:
This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372:

Ingredient Name	CAS Number	Percent
NICKEL(II) SULFATE	7786-81-4	< 25.0

-PROP 65 (CARCINOGEN)
WARNING: This product contains a chemical known to the state of California to cause cancer.

Ingredient Name	CAS Number	Percent
NICKEL(II) SULFATE	7786-81-4	< 25.0

SECTION XVI - Other Information

WARNING: This product contains a chemical known to the State of California to cause cancer. However the concentration is less than 0.1%, and therefore OSHA does not require this hazard information on the material safety data sheet (MSDS) and label (29CFR1910.1200). (This statement is necessary to comply with California Statute (Section 25249.6]).

Disclaimer:
This Material Safety Data Sheet may be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Enthone-OMI Inc. furnishes the data contained herein in good faith at customer's request without liability or legal responsibility for same whatsoever, and no warranty or guarantee, express or implied, is made with respect

#49

MATERIAL SAFETY DATA SHEET

MSDS Number	3614-055	ENPLATE NI-434B
MSDS Date	07/29/98	
Spads Date	05/12/92	
Page Number	1 of 6	

SECTION I - Product and Company Information

Product Name	ENPLATE NI-434B
HMIS Hazard Rating	Health: 2 Fire: 0 Reactivity: 1
Company Identification	ENTHONE-OMI INC. P.O. Box 1900 New Haven CT 06508
Contact	Regulatory Affairs
Telephone/Fax	(203)934-8611 / (203)799-8179
Emergency	CHEMTREC (800)424-9300
Preparer	James P. Link Regulatory Consultant

ENPLATE is a registered trademark of Enthone-OMI Inc.

SECTION II - Ingredient and Hazard Information

Ingredient Name	CAS Number	Percent	TSCA
WATER	7732-18-5	< 70.0	Y
SODIUM HYPOPHOSPHITE	7681-53-0	< 15.0	Y
PROPRIETARY ADDITIVE(S)	------	< 10.0	Y
MALIC ACID	6915-15-7	< 10.0	Y
AMMONIUM HYDROXIDE	1336-21-6	< 2.0	Y
SODIUM TETRABORATE PENTAHYDRATE	12179-04-3	< 2.0	Y

All ingredients comply with applicable rules or orders under TSCA.

Weight percents listed above are within 5% of the actual value.
Carcinogen:
Not listed by NTP, IARC, OSHA.
Reference:
NA

SECTION III - Hazards Identification

Inhalation:
Mist or vapor may irritate respiratory tract.
Skin Contact:
Can cause irritation.
Eye Contact:
Can cause severe irritation, damage to eyes.
Ingestion:
Can cause irritation to mouth, throat, esophagus, and stomach.
Chronic:
Chronic exposure effects not established.

SECTION IV - First Aid Measures

Skin Contact:
Immediately wash contaminated skin with plenty of water for 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse. Discard footwear if it cannot be decontaminated. Seek immediate medical attention.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes holding lids apart to ensure flushing of entire surface. Washing eyes within several seconds of exposure is essential to minimize damage. Seek immediate medical attention.
Ingestion:
Never give anything by mouth to an unconscious person, obtain immediate medical attention. If vomiting occurs spontaneously, keep airway clear. If swallowed DO NOT INDUCE VOMITING, give large amounts of water.
Seek immediate medical attention.
Inhalation:
Remove person from contaminated area. If breathing has stopped, resuscitate and administer oxygen if available.
Seek immediate medical attention.

SECTION V - Fire-Fighting Measures

Flash Point [redacted] Not Applicable

Special Fire-Fighting Procedures:
Wear NIOSH approved full protective clothing and self-contained breathing apparatus. Keep containers cool to prevent rupture and release of material.
Unusual Fire-Fighting Hazards:
Heating of dried salts to temperatures above 475 degrees F may release toxic and spontaneously flammable phosphine gas.

Extinguishing Media:
This product is not combustible.
As appropriate for surrounding fire.

SECTION VI - Accidental Release Measures

Avoid contact with skin, eyes, and clothing. Wear protective equipment (see Section VIII). Do not breathe mist or vapors. Contain spill and soak up in suitable absorbent. Shovel up into plastic-lined steel containers and cover. Dispose of in accordance with Local, State and Federal regulations.

SECTION VII - Handling and Storage

Store in a cool, dry place. Keep away from alkalies and oxidizers. Loosen cover cautiously when opening.
Additional Information:
Wash thoroughly after handling.
Work/Hygienic Practices:
Emergency eye wash and safety shower should be available. Wash thoroughly after handling.

SECTION VIII - Exposure Controls and Personal Protection

Occupational Exposure Limits

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
WATER	NA	NA	NA	NA	NA
SODIUM HYPOPHOSPHITE	NA	NA	NA	NA	NA
PROPRIETARY ADDITIVE(S)	NA	NA	NA	NA	NA
MALIC ACID	NA	NA	NA	NA	NA
AMMONIUM HYDROXIDE	25.00 PPM	NA	35.00 PPM	NA	50.00 PPM
SODIUM TETRABORATE PENTAHYDRATE	1.00 mg/M3	NA	NA	NA	NA

Exposure limits for ammonium hydroxide are shown as ammonia (NH3).

Respirator:
Use NIOSH approved respirator when air concentration is greater than the TLV or PEL.
Use cartridge filter for ammonia and amines.
Eye Protection:
Chemical safety goggles recommended.
Face shield recommended.
Protective Clothing or Equipment:
Chemically resistant coveralls, hat, and shoes or boots.
Neoprene gloves.
Natural rubber gloves.
Ventilation:
Local exhaust recommended.

SECTION IX - Physical and Chemical Properties

Form	Liquid
Color	Colorless
Odor	Slightly sweet
Solubility	Complete
Boiling Point	214.0°F
Vapor Pressure (mmHg)	Not Available
Melting Point	27.0°F
Evaporation Rate	Unavailable
% Volatile By Weight	Not Available

SECTION X - Stability and Reactivity

Stability:
Stable under normal conditions. See Incompatibility Information.
Incompatibility (Materials to Avoid):
Oxidizing agents, alkalis.
Hazardous Decomposition Products:
Toxic gases including ammonia, spontaneously flammable phosphine and oxides of nitrogen and phosphorus.
Hazardous Polymerization:
Hazardous polymerization will not occur.
Conditions to Avoid:
NA

SECTION XI - Toxicological Information

Route	Species	Exposure and Dose
SODIUM HYPOPHOSPHITE		
Intraperitoneal	Mouse	LD50 1584.0 mg/kg
MALIC ACID		
Intraperitoneal	Rat, adult	LD50 100.0 mg/kg
AMMONIUM HYDROXIDE		
Oral	Rat, adult	LD50 350.0 mg/kg

SECTION XII - Ecological Information

Ecological information on this product is not available.

SECTION XIII - Disposal Considerations

For waste disposal of operating solutions consult Enthone-OMI Waste Disposal Procedures. For major spills consult Enthone-OMI for disposal assistance. Dispose of in accordance with Local, State, and Federal regulations.

SECTION XIV - Transport Information

Please contact the Regulatory Affairs Department at (203) 799-4917 for the most current shipping information.

SECTION XV - Regulatory Information

SARA TITLE III SECTION 313:
This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372:

Ingredient Name	CAS Number	Percent
AMMONIUM HYDROXIDE	1336-21-6	< 2.0

SECTION XVI - Other Information

WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. However, the concentration is less than 0.1%, and therefore OSHA does not require this hazard information on the material safety data sheet

(MSDS) and label (29CFR1910.1200). (This statement is necessary to comply with California Statute [Section 25249.6]).

Disclaimer:

This Material Safety Data Sheet may be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Enthone-OMI Inc. furnishes the data contained herein in good faith at customer's request without liability or legal responsibility for same whatsoever, and no warranty or guarantee, express or implied, is made with respect to such data; nor does Enthone-OMI Inc. grant permission, recommendation, or inducement to infringe any patent whether owned by Enthone-OMI Inc. or others. The data is offered solely for your information and consideration. Since conditions of use are beyond Enthone-OMI's control, User assumes all responsibility and risk.

CAS=Chemical Abstract Service
IARC=International Agency for Research on Cancer
NA=Not Applicable
NI=No Relevant Information Available
NTP=National Toxicology Program
PEL=Permissible Exposure Limit
SDT=Standard Draize Test
STEL=Short Term Exposure Limit
TLV=ACGIH Threshold Limit Value
TLV-C=ACGIH Threshold Limit Value, Ceiling
TRADE SECRET=Claimed As Allowed Under 29 CFR 1910.1200

The Environmental Quality Company
Detroit Laboratory
1923 Frederick Street
Detroit, MI 48211-2603

LAB SAMPLE RESULTS

Sample ID: DE07249

[redacted]

TCLP Metals for Chem Fix

Analyte Name	Result	Reporting Limit	Regulatory Limit	Units	Analysis Date
Antimony	Less Than	5.0	1.18	mg/L	03/16/2015
Arsenic	Less Than	10	5	mg/L	03/16/2015
Barium	Less Than	5.0	21	mg/L	03/16/2015
Beryllium	Less Than	5.0	1.22	mg/L	03/16/2015
Cadmium	Less Than	5.0	0.11	mg/L	03/16/2015
Chromium	Less Than	5.0	0.6	mg/L	03/16/2015
Copper	Less Than	5.0		mg/L	03/16/2015
Lead	Less Than	5.0	0.75	mg/L	03/16/2015
Mercury	Less Than	0.025	0.025	mg/L	03/16/2015
Nickel	160000	1000	11	mg/L	03/16/2015
Selenium	Less Than	5.0	1	mg/L	03/16/2015
Silver	Less Than	5.0	0.14	mg/L	03/16/2015
Thallium	Less Than	5.0	0.20	mg/L	03/16/2015
Vanadium	Less Than	5.0	1.6	mg/L	03/16/2015
Zinc	Less Than	5.0	4.3	mg/L	03/16/2015

Validated By:

James C. Bahen
Lab Supervisor

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	8/17/17
Receiving ID#	Electroless Nickel
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
[redacted]	
Transporter	
Time In	
Time out	
Received by	RJP
Sampled by	EQ-D/ESI

Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?	NA	Calcium	
TOC (ppm)(CC Waste Only)?	NA	Total Iron	
Flash Point (°F)	>140	Magnesium	
pH (S.U.)	5.3	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.24	TDS	
Physical Description	Transparent	Reactivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	Ambient		
Conductivity	—		
% Solids	29		
Turbidity	Yes No		
Color (visual)	Green		
TSS (%)	<1		
Radiation Screen (as needed)	Negative		
Lab Signature	[signature]		

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

Generator Waste Profile
Profile: 01199

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name:

SODIUM HYPOCHLORITE

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

DISCARDED OFF SPEC MATERIAL

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	accepted
☐ Black/Brown	☐ 1-3 % ☐ > 5%	☐ Bi-Layered	☐ 0.8 – 1.0 ☒ 1.2 – 1.4	08.25.17
☒ Other YELLOW		☐ 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
SODIUM HYDROXIDE	10	20 %			%
SODIUM HYPOCHLORITE	10	20 %			%
WATER	60	80 %			%
		%			%
		%			%

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			

Metal	Code			
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 WASTE CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. Hazard Class 8 UN/NA 3266

PG II ERG 154 Hazardous Constituents for "n.o.s." SODIUM HYDROXIDE, SODIUM HYPOCHLORITE

4. Method of Shipment: ☒ Bulk Tanker ☐ Van truck ☐ Rail Car ☐ Drums ☐ Totes
5. Number of Units to Ship Now: 10,000 gals 5. Anticipated Volume / Units per Year: 20,000 gals 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 [redacted]

GENERATOR'S [redacted]

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. ____________ SAMPLING METHOD 2. ____________ 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

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

Generator Waste Profile
Profile: 01200

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name:
SPENT HYDROCHLORIC ACID

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

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 ☐ Black/Brown ☒ Other PURPLE	☒ 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 ____	accepted 09.25.17

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
HYDROCHLORIC ACID	7	15 %			%
DISSOLVED TITANIUM	3	5 %			%
WATER	80	91 %			%
		%			%
		%			%

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 WASTE HYDROCHLORIC ACID Hazard Class 8 (UN/NA 1789
PG II ERG 157 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: 10,000 gals Anticipated Volume / Units per Year: 120,000 gals/yr ☐ 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.

[redacted]

GENERATOR'S OR [illegible] RECOMMENDED INSTRUCTIONS: Please collect a representative 1-quart sample of 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. ____ SAMPLING METHOD 2. ____ 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

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

Generator Waste Profile
Profile # 01803

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name: POTASSIUM HYDROXIDE SOLUTION

Process Generating Waste (Please be specific, incomplete information may delay the approval process): THE POST PROCESS NEUTRALIZATION STEP OF A PROPRIETARY SYNTHETIC LUBRICANT

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 ☐ Black/Brown ☒ Other YELLOW	☐ 0-1 % ☐ 3-5 % ☐ 1-3 % ☒ > 5% 3 - 8%	☐ Multi-Layered ☐ Bi-Layered ☒ Single Phase	☐ <0.8 ☒ 1.0 – 1.2 ☐ 0.8 – 1.0 ☐ 1.3 – 1.4 Exact / Other ____	acc [illegible] 083117

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 - < 500 ppm 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	
ALKYL ALUMINUM SALTS	1	4	%				%
DECANE AND OLIGOMERS OF DECENE	1	5	%				%
			%				%
POTASSIUM HYDROXIDE	5	10	%				%
WATER	81	93	%				%

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 WASTE CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., Hazard Class 8 UNNA UN3264
PG II ERG _____ Hazardous Constituents for "n.o.s." POTASSIUM HYDROXIDE
4. Method of Shipment: ☐ Bulk Tanker ☐ Vac truck ☐ Rail Car ☐ Drums ☐ Totes
5. Number of Units to Ship Now: 5,000 6. Anticipated Volume / Units per Year: 5,000 gals or ☐ One Time
8. Special Handling Requirements including PPE: 2 MONTHS

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and are 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-

[redacted]

using an appropriate
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. _____ 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

Date	9/22/17
Receiving ID#	
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	[redacted]
Transporter	
Time in	
Time out	
Received by	
Sampled by	

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.)	13.4	Sodium Chloride	
Cyanides? (mg/L)	<30	Bicarbonate	
Sulfides? (ppm)	<200	Carbonate	
Specific Gravity	1.02	TDS	
Physical Description	Liquid	Resistivity	
Stream Consistency	(Yes) No	Sulfate	
Oil in Sample	Yes (No)		
Temperature	78°F		
Conductivity	147 mS		
% Solids	6%		
Turbidity	Yes (No)		
Color (visual)	CLEAR		
TSS (%)	20.1%		
Radiation Screen (as needed)	NEGATIVE		
Lab Signature			

organic TECHNOLOGIES

Material Safety Data Sheet

Potassium Hydroxide Solution

MSDS No. 000441T

Date of Preparation: 09-09-13

Supersedes: 03-20-12

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Potassium Hydroxide Solution
Chemical Formula: Solution
CAS Number: Solution
Other Designations: No information found.
General Use: No information found.
Manufacturer: Organic Technologies, 1245 South 6th Street, Coshocton, Ohio 43812 Telephone number (740)622-0755. Fax number (740)622-3231. 24 Hour Emergency Telephone number (800)633-8253. International number (801)629-0667.

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	%wt *or* %vol
Water		
Potassium Hydroxide	7732-18-5	>85%
Decene and Oligomers of Decene	1310-58-3	5-10%
Alkyl Aluminum Salts	872-05-9	1-5%
		1-4%

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Water	None established	None established	None established	None established	None established	None established	None established
Potassium Hydroxide	None established	2 mg/m^3	None established	None established	2 mg/m^3	None established	None established
Decene and Oligomers of Decene	None established	None established	100 ppm	None established	None established	None established	None established
Alkyl Aluminum Salts	None established	None established	None established	None established	None established	None established	None established

Section 3 - Hazards Identification

Emergency Overview

HMIS
H 3
F 0
R 0
PPE†
†See 8

Potential Health Effects

Primary Entry Routes: Body contact.
Target Organs: All human tissue damaged on contact.
Acute Effects
Inhalation: Can cause irritation.
Eye: Can cause irritation.
Skin: Can cause irritation.
Ingestion: Can cause irritation.
Carcinogenicity: IARC, NTP, and OSHA do not list the components at concentrations above 0.1% which are considered as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: No information found.
Chronic Effects: To the best of our knowledge the toxicological properties of this material have not been fully investigated.

Section 4 - First Aid Measures

Inhalation: Move person to fresh air. If problems persist, seek appropriate medical attention.
Eye Contact: Wash with copious amounts of water for at least fifteen minutes. Seek appropriate medical attention.
Skin Contact: Wash with copious amounts of water for at least fifteen minutes. If problems persist, seek appropriate medical attention.
Ingestion: Rinse mouth out with water. Never give liquids to an unconscious person. If problems persist, seek appropriate medical attention.
Note to Physicians: This material is an alkali (caustic). Treat accordingly.
Special Precautions/Procedures: No information found.

Section 5 - Fire-Fighting Measures

Flash Point: >200° F
Flash Point Method: No information found.
Burning Rate: No information found.
Autoignition Temperature: No information found.
LEL: No information found.
UEL: No information found.
Flammability Classification: No information found.
Extinguishing Media: Dry chemical, carbon dioxide, appropriate foam, water fog.
Unusual Fire or Explosion Hazards: No information found.
Hazardous Combustion Products: Carbon monoxide, carbon dioxide.
Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill /Leak Procedures:
Small Spills: Cover with absorbent, pick up, and place in a suitable container.
Large Spills
Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.
Cleanup: Follow all applicable local, state, and federal regulations during decon.
Regulatory Requirements: Follow all applicable local, state, and federal regulations.

Section 7 - Handling and Storage

Handling Precautions: Wear all appropriate personal protective equipment.
Storage Requirements: Store material in D.O.T. approved containers.
Regulatory Requirements: Follow all applicable local, state, and federal regulations.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:
Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.
Administrative Controls:
Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State: Liquid.

Appearance and Odor: Clear to tan liquid with characteristic odor.

Odor Threshold: No information found.

Vapor Pressure: No information found.

Vapor Density (Air=1): No information found.

Formula Weight: No information found.

Density: No information found.

Specific Gravity (H_2O=1, at 4 °C): No information found.

pH: >12.5

Water Solubility: No information found.

Other Solubilities: No information found.

Boiling Point: No information found.

Freezing/Melting Point: No information found.

Viscosity: No information found.

Refractive Index: No information found.

Surface Tension: No information found.

% Volatile: No information found.

Evaporation Rate: No information found.

Section 10 - Stability and Reactivity

Stability: This material is stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Potassium hydroxide reacts in the presence of strong acids, aluminum, tin, zinc, and generates flammable hydrogen gas.

Conditions to Avoid: No information found.

Hazardous Decomposition Products: Thermal oxidative decomposition of this material can produce carbon monoxide, carbon dioxide.

Section 11- Toxicological Information

Toxicity Data:

Eye Effects:
Potassium Hydroxide: Eye, Rabbit, Eye Irritation: 24 h

Skin Effects:
Potassium Hydroxide: Skin, Rabbit, Severe Skin Irritation: 24 h

Acute Inhalation Effects:
No information found.

Acute Oral Effects:
Potassium Hydroxide: Oral, Rat, LD50: 273 mg/kg.

Chronic Effects: No information found.

Carcinogenicity: No information found.

Mutagenicity: No information found.

Teratogenicity: No information found.

Section 12 - Ecological Information

Ecotoxicity: Potassium Hydroxide: Toxicity to Fish, Gambusia affinis (Mosquito fish), LD50: 80 mg/l -- 96h

Environmental Fate: No information found.

Environmental Degradation: No information found.

Soil Absorption/Mobility: No information found.

Section 13 - Disposal Considerations

Disposal: Follow all applicable all applicable local, state, and federal regulations.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Corrosive liquid, basic, inorganic, n.o.s.
Shipping Symbols: 8
Hazard Class: 8
ID No.: UN3262
Packing Group: II
Label: Corrosive

Section 15 - Regulatory Information

EPA Regulations:

SARA 311/312 Codes:
Acute: Yes.
Chronic: No.
Fire: No.
Reactive: No.
Sudden Release: No.

SARA Toxic Chemical (40 CFR 372.65): Not listed.
SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed.

SARA Section 313 Supplier Notification: This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372):

CAS Number	Chemical Name	De Minimis Limit
None	None	None

This information must be included in all MSDS's that are copied and distributed for this material.

OSHA Regulations:
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Component listed.

Section 16 - Other Information

Prepared By: The Safety Department.
Revision Notes: The information of this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200 and shall not be used for any other purpose.

Disclaimer: The information contained herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Organic Technologies makes no representations as to its accuracy and sufficiency. Conditions of use are beyond Organic Technologies control and therefore users are responsible to verify this data is accurate under their own operating conditions to determine whether the product is suitable for their particular purposes. The user assumes all risks for their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process. Organic Technologies and its employees shall not be liable for any loss or damage arising out of the use thereof.

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC
23470 Cliff Dr, Romulus, MI 48174, Telephone 734 946 1000, Fax 734 946 1002

Generator Waste Profile

Profile # 01207

[redacted]

WASTE INFORMATION

Name of Waste/Common Chemical Name:

KG Waste Water

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

Rinse Water of KG Material off vehicle tires.

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: 03IL

PHYSICAL CHARACTERISTICS OF WASTE

Color	Suspended Solids	Layers:	Specific Gravity:	
☐ White/Clear ☐ Black/Brown ☒ Other Yellow	☐ 0-1 % ☐ 1-5 % ☐ 5-9 % ☐ > 5%	☐ Multi-Layered ☐ Bi-Layered ☒ Single Phase	☐ <0.8 ☒ 1.0 – 1.2 ☐ 0.8 – 1.0 ☐ 1.2 – 1.4 Exact / Other:	accurate @ 09317

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: Ø 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
Water	95	60 %			%
Rubber, Lbs	5	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			

Metal	Code		TCLP		Total
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 Non-Hazardous, Non-Regulated Liquid Waste. Hazard Class NA UN/NA NA
PG NA ERG NA Hazardous Constituents for "n.o.s." NA
4. Method of Shipment ☒Bulk Tanker ☐Van truck ☐Rail Car ☐Drums ☐Totes
5. Number of Units to Ship Now: 30,000 gal 5. Anticipated Volume / Units per Year: 360,000 or ☐ One Time
6. Special Handling Requirements Including PPE: N/A

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 [redacted] the waste described in the above referenced GENERATORS WASTE PROFILE REPORT using an appropriate container. A representative [redacted] 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. ______ SAMPLING METHOD 2. ______ 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

[redacted]

SAFETY DATA SHEET

Issuing Date 30-Jul-2014 Revision Date 01-May-2015 Revision Number 1

1. Product and Company Identification

GHS product identifier

[redacted]

Recommended use of the chemical and restrictions on use

Recommended Use	In its molten liquid state for removing paint, carbon, organics from select metal components
Uses advised against	Avoid contact with strong reducing agents and pyrophoric metals

[redacted]

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

Acute Oral Toxicity	Category 4	
Skin Corrosion/Irritation	Category 1	Subcategory 1A
Serious Eye Damage/Eye Irritation	Category 1	

Emergency Overview

Signal Word: DANGER

Hazard Statements:
Harmful in contact with skin
Causes severe skin burns and eye damage
May intensify fires - oxidizer

Appearance: light green/purple Physical State: Solid bead/flake. Odor: odorless

[redacted]

Revision Date 01-May-2015

[redacted]TION continued

Precautionary Statements

Prevention	• Wash face, hands, and any exposed skin thoroughly after handling • Do not eat, drink, or smoke when using this product • Do not breathe dust/fume/gas/mist/vapors/spray. • Wear protective gloves/protective clothing/eye protection/face protection. • Keep /store away from clothing / other combustible materials • Take any precaution to avoid mixing with combustibles
General Advice	• Immediately call a POISON CENTER or doctor/physician. • Specific treatment (see supplemental first aid instructions on this label)
Eyes	• If in EYE: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • Immediately call a POISON CENTER or doctor/physician.
Skin	• IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. • Wash contaminated clothing before reuse.
Inhalation	• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. • Rinse mouth • Do NOT induce vomiting
Fire	• See Section 5 for SPECIAL FIRE FIGHTING PRECAUTIONS • In case of fire (for as-received, solid product) use CO2, dry chemical , or foam for extinction.
Storage	• Store locked up
Disposal	• Dispose of content/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC) • Not applicable

Other Information • Harmful to aquatic life with long lasting effects

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Sodium hydroxide	1310-73-2	15 - 40	*
Potassium hydroxide	1310-58-3	30 - 60	*
Sodium nitrate	7631-99-4	15 - 40	*
Potassium permanganate	7722-64-7	.1 - 1	*

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

[redacted]

Revision Date 01-May-2015

Description of necessary first-aid measures

Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Consult a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If symptoms persist, call a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
Ingestion	Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects: No information available.

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

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

[SPECIAL FIREFIGHTING WARNING]

DO NOT USE WATER IN THE VICINITY OF THIS PRODUCT WHEN IN ITS MOLTEN STATE!

Introduction of water or other volatile liquids on or in the molten salt bath may result in violent expulsion of the molten salt.

This material is basically nonflammable and will not burn.

Suitable Extinguishing Media

Use water, CO2, or dry chemical extinguishers to fight fires in storage areas only.

Unsuitable Extinguishing Media

See warnings above.

Specific Hazards Arising from the Chemical

All water solutions of this product will be highly alkaline.

Explosion Data

Sensitivity to Mechanical Impact: None.
Sensitivity to Static Discharge: None.

Protective Equipment and Precautions for Firefighters

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

North American Emergency Response Guide No. 154.

[redacted]

Revision Date 01-May-2015

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Evacuate personnel to safe areas. Ensure adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions	See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	In case of accidental spill or leak, material should be shoveled up into steel containers for proper disposal. After cleaning, flush away traces with water.

7 HANDLING AND STORAGE

Precautions for safe handling

Handling	Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Do not take internally. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible Products	Reducing agents. Water. Magnesium. tin. Zinc. Aluminum

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m³	TWA: 2 mg/m³ (vacated) Ceiling: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m³	(vacated) Ceiling: 2 mg/m³	Ceiling: 2 mg/m³
Potassium permanganate 7722-64-7	TWA: 0.2 mg/m³ Mn	(vacated) Ceiling: 5 mg/m³ Ceiling: 5 mg/m³ Mn	IDLH: 500 mg/m³ Mn TWA: 1 mg/m³ Mn STEL: 3 mg/m³ Mn

Appropriate engineering controls

Engineering Measures	• Showers • Eyewash stations • Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Face-shield. Goggles.
Skin and Body Protection	Manufacturer recommended gloves for handling corrosive materials should be worn. Impervious clothing. Safety shoes. Rubber boots.

[redacted]

Revision Date 01-May-2015

8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

Respiratory Protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State:	Solid beads/flake	Appearance:	light green/purple
Odor:	odorless	Odor Threshold:	No information

Property	Values	Remarks/ - Method
pH	All water solutions strongly alkaline	None known
Melting Point / Range	210° C / 410° F	None known
Boiling Point/Boiling Range	1390° C / 2534° F	None known
Flash Point	none	None known
Evaporation rate	Not volatile	None known
Flammability (solid, gas)	nonflammable	None known
Vapor Pressure	Not applicable	None known
Vapor Density	Not applicable	None known
Density	2.2 g/cc @ 20° C / 68° F	None known
Water Solubility	complete	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	Nonflammable	None known
Decomposition Temperature	> 593° C / 1100° F	None known
Viscosity	~ 1 @ 400° C / 750° F	None known
Flammable Properties	Not flammable	None known
Explosive Properties	Nonexplosive	None known
Oxidizing Properties	Strong oxidizer when molten	None known

Other Information

VOC Content (%) 0

10. STABILITY AND REACTIVITY

Reactivity	• No data available.
Chemical stability	• Stable under recommended storage conditions.
Possibility of hazardous reactions	• None under normal processing.
Hazardous Polymerization	• Hazardous polymerization does not occur.
Conditions to avoid	• Incompatible products.
Incompatible materials	• Reducing agents. Acids. Water. Organic material. Magnesium Tin. Zinc. Aluminum.
Hazardous decomposition products	• None known based on information supplied.

[redacted]

Revision Date 01-May-2015

[redacted]TION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye Contact	Causes serious eye damage. Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Corrosive. Harmful in contact with skin. Causes severe skin burns.
Ingestion	Harmful if swallowed. Can burn mouth, throat, and stomach.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium hydroxide	214 mg/kg (Rat)	-	-
Sodium nitrate	1267 mg/kg (Rat)	-	-
Sodium hydroxide	-	1350 mg/kg (Rabbit)	-
Potassium permanganate	= 750 mg/kg (Rat)	-	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	No information available.

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

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium nitrate		-		-

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration Hazard	No information available.

Numerical measures of toxicity - Product

Acute Toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity

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

LD50 Oral	653 mg/kg	Acute toxicity estimate
LD50 Dermal	4767 mg/kg	Acute toxicity estimate

[redacted]

Ecotoxicity Harmful to aquatic life with long lasting effects

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Potassium Hydroxide 1310-58-3		LC50 96 h: 80 mg/L static (Gambusia affinis)		
Sodium nitrate 7631-99-4		LC50 96 h: 664.4-1107 mg/L static (Oncorhynchus mykiss) LC50 96 h = 2000 mg/L static (Lepomis macrochirus)		
Sodium hydroxide 1310-73-2		LC50 96 h = 45.4 mg/L static (Oncorhynchus mykiss)		
Potassium permanganate 7722-64-7		LC50 96 h: 0.758-1.27 mg/L static (Oncorhynchus mykiss) LC50 96 h: 1.08-1.38 mg/L (Oncorhynchus mykiss) LC50 96 h: 1.9-2.9 mg/L static (Lepomis macrochirus) LC50 96 h: 2.97-3.11 mg/L (Cyprinus carpio) LC50 96 h: 3.19-3.77 mg/L (Cyprinus carpio) LC50 96 h: 3.5-5.53 mg/L static (Carassius auratus) LC50 96 h: 2.5 mg/L flow-through (Lepomis macrochirus) LC50 96 h: 2.7 mg/L (Lepomis macrochirus)		

Persistence and Degradability: No information available.

Bioaccumulation

Chemical Name	Log Pow
Sodium nitrate	-3.9
Potassium hydroxide	0.83

Other Adverse Effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with federal, state, and local regulations

Contaminated Packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

UN-Number	UN3098
Proper shipping name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
Description	UN3098, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II
Emergency Response Guide No.	140

TDG

UN-Number	UN3098
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
Description	UN3098, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

[redacted]

14. TRANSPORT INFORMATION - continued

MEX

UN-Number	UN3085
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

ICAO

UN-Number	UN3085
Proper shipping name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

IATA

UN-Number	UN3085
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
ERG Code	5C
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

IMDG/IMO

UN-Number	UN3085
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Subsidiary Class	8
Packing Group	II
EmS No.	F-A, S-Q
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

RID

UN-Number	UN3085
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Packing Group	II
Classification Code	OC2
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II
ADR/RID-Labels	8

ADR

UN-Number	UN3085
Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Packing Group	II
Classification Code	OC2
Tunnel Restriction Code	(E)
Description	UN3085, Oxidizing solid, corrosive, n.o.s. (Sodium nitrate, Sodium & Potassium hydroxides), 5.1 (8), II

[redacted]

Revision Date 01-May-2015

14. TRANSPORT INFORMATION (continued)

ADN

Proper Shipping Name	Oxidizing solid, corrosive, n.o.s.
Hazard Class	5.1
Packing Group	II
Classification Code	OC2
Special Provisions	274
Description	UN3085, Oxidizing solid, corrosive, n.o.s (Sodium silicate, Sodium & Potassium hydroxides), 5.1 (8), II
Hazard Labels	8
Limited Quantities	1 kg

15. REGULATORY INFORMATION

International Inventories

TSCA – United States Toxic Substances Control Act Section 8(b) Inventory	Complies
DSL – Canadian Domestic Substances List / Non-Domestic Substance List	Complies

U.S. Federal Regulations

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

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

Clean Water Act

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

Chemical Name	CWA Reportable Quantities	CWA Toxic Pollutants	CWA Priority Pollutants	CWA Hazardous Substances
Sodium hydroxide	1000 lb			X
Potassium hydroxide	1000 lb			X
Potassium permanganate	100 lb			X

CERCLA

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

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Sodium hydroxide	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Potassium hydroxide	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Potassium permanganate	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

[redacted]

Revision Date 01-May-2015

15. REGULATORY INFORMATION

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Sodium hydroxide	X	X	X		X
Sodium nitrate		X	X		X
Potassium hydroxide	X	X	X		X
Potassium Pentaborate	X	X	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health Hazard 3	Flammability 0	Instability 1	Physical and Chemical Hazards O X
HMIS	Health Hazard 3	Flammability 0	Physical Hazard 1	Personal Protection X

Prepared By Product Stewardship | 23 British American Blvd. | Latham, NY 12110 | 1-800-572-6501

Issuing Date 30-Jul-2014
Revision Date 01-May-2015
Revision Note Reformatted SDS. Revised by James C Malloy VP-CTO Kolene Corporation

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

End of Safety Data Sheet