

December 31, 2015

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 twenty-fifth Monthly Report in conformance with the requirements of its two EPA UIC permits (#s MI-163-1W-C010 & MI-163-1W-C011).

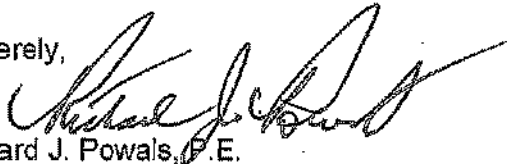
EGT is providing all of the attached information in the same sequence as required by both subject permits, i.e. Part II.D.1 (a - i), Part III, Attachment A, and Part III, Attachment E.G.2 & E.I.

EGT also hereby timely submits its eighth Injection Fluid Analyses (for November, 2015) 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 which EGT accepted in November.

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

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

Sincerely,



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

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

rlp123115/EGT EPA Monthly Report-November 2015

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2015CURRENT REPORTING MONTH NOVEMBERDate (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	282,659	0	282,659
Since facility first injected			3,764,430
MI-163-1W-C011, Well #2-12			
Current Month	8,068	0	8,068
Since facility first injected			1,873,677
		Lifetime Combined	5,638,107

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

CalculationsWhole number of months of injection 2525 lifetime number of months of injection × 43,830 minutes/month= 1,095,750 minutes of injectionLifetime combined injected volume 5,638,107 ÷ 1,095,750 minutes of injection= 5.2 gpm average injection rate

AVERAGE INJECTION RATE

Circle Chart Index

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

Chart Recorder #1

Channel #1

Blue Pen - Well 1 Injection Pressure

Channel #2

Red Pen - Well 1 Annulus Pressure

Channel #3

Green Pen - Well 1 Flow Rate

Channel #4

Black Pen - Well 1 Annulus Tank Level

Chart Recorder #2

Channel #1

Blue Pen - Well 2 Injection Pressure

Channel #2

Red Pen - Well 2 Annulus Pressure

Channel #3

Green Pen - Well 2 Flow Rate

Channel #4

Black Pen - Well 2 Annulus Tank Level

Chart Recorder #3

Channel #1

Blue Pen - Injection pH Well 1 & 2

Channel #2

Red Pen - Well 1 Monthly Volume

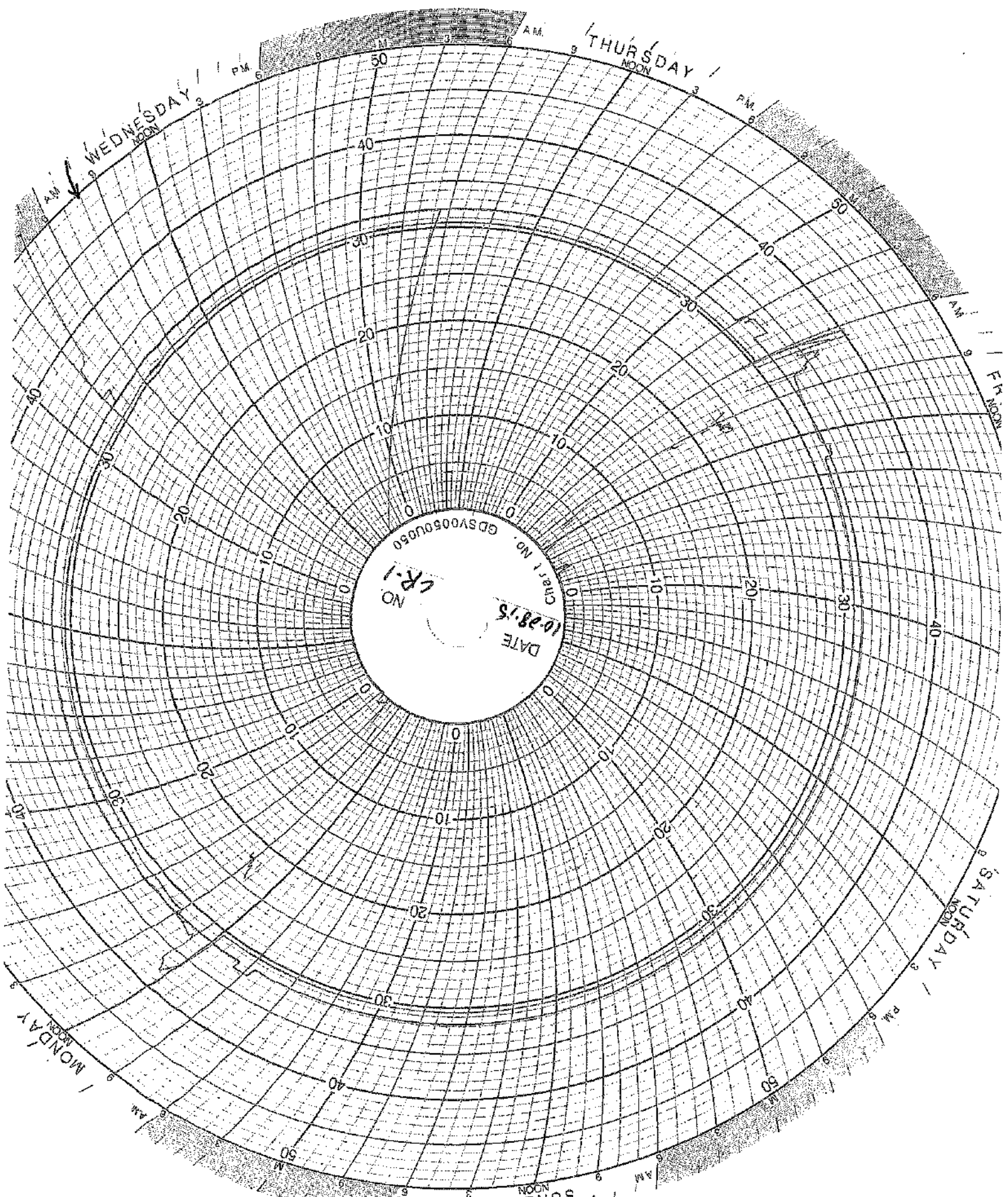
Channel #3

Green Pen - Well 2 Monthly Volume

Channel #4

Black Pen - Temperature

WELL 1 DATA



DATE 10-28-15
Chart No. GDSV0050450
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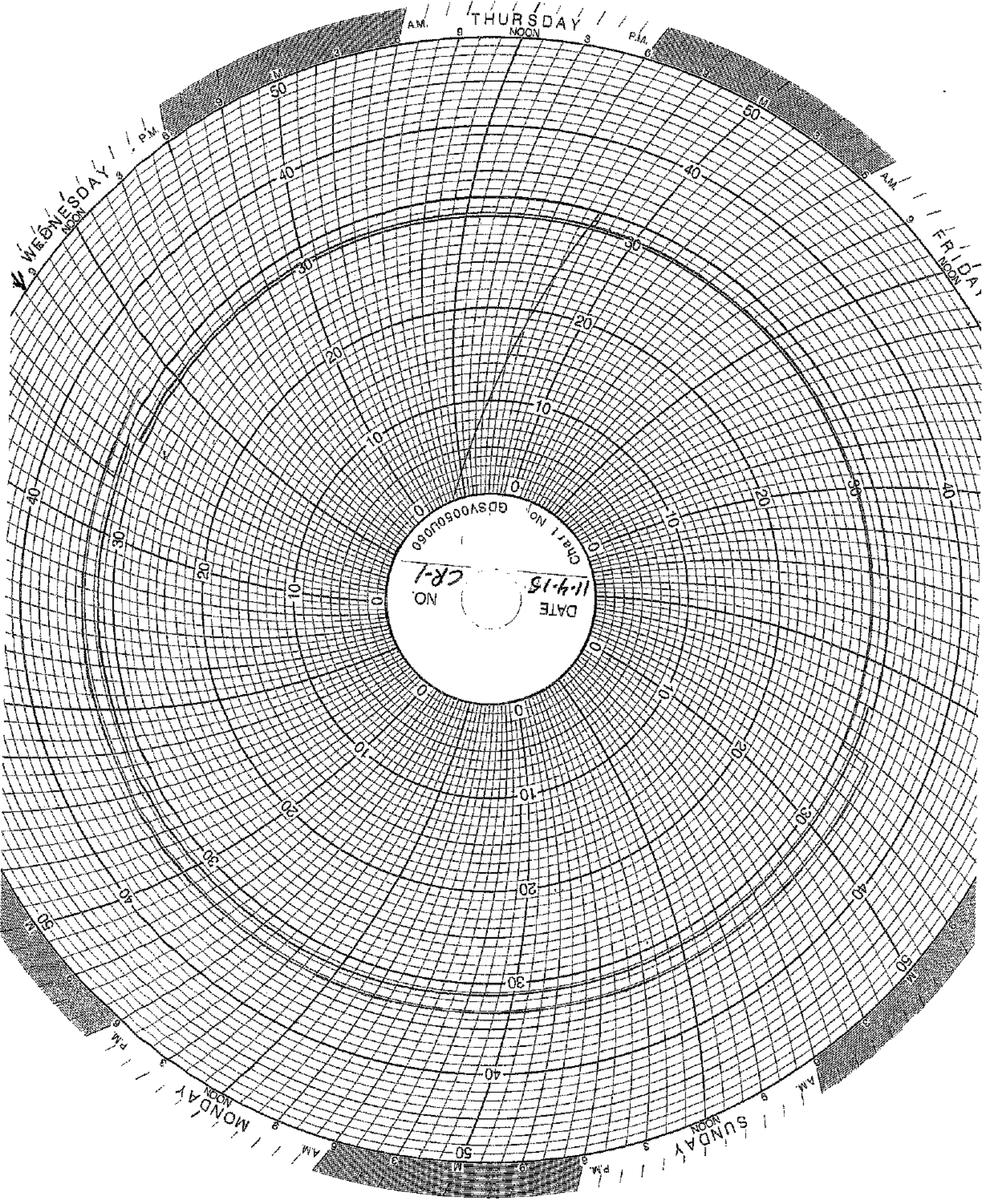
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A.M. 9 NOON 3 P.M. 6

Chart No. GDSV00504059
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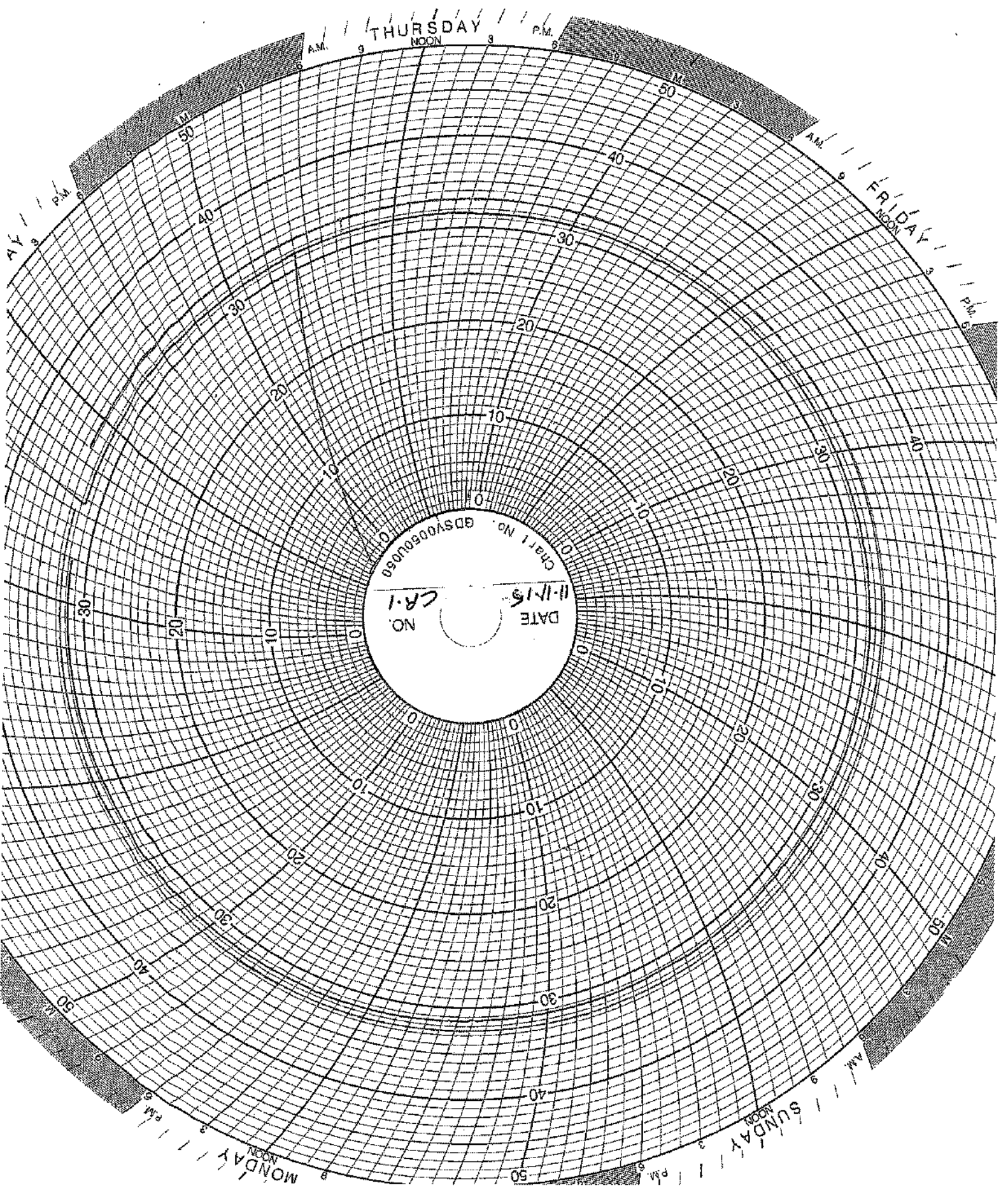
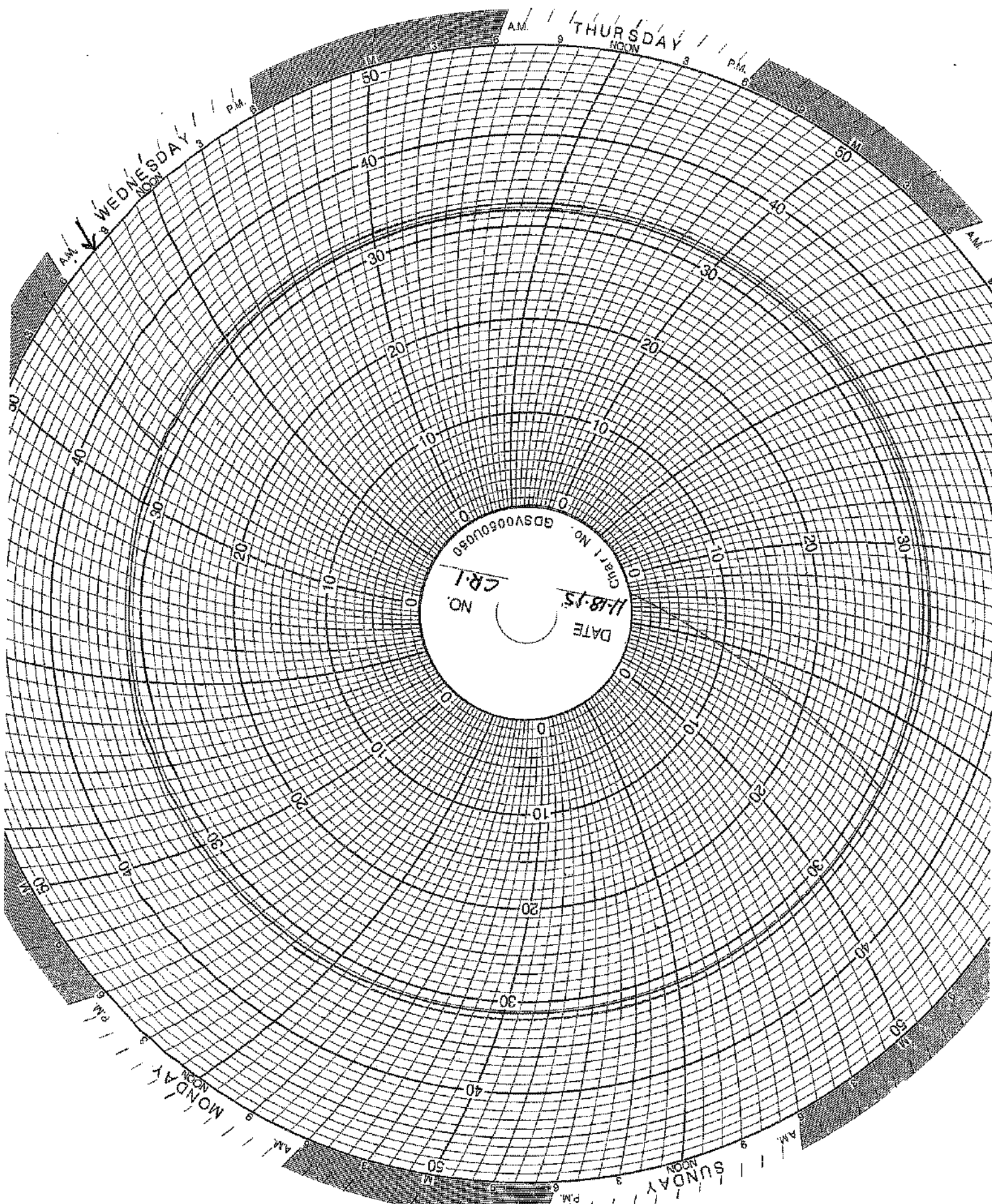


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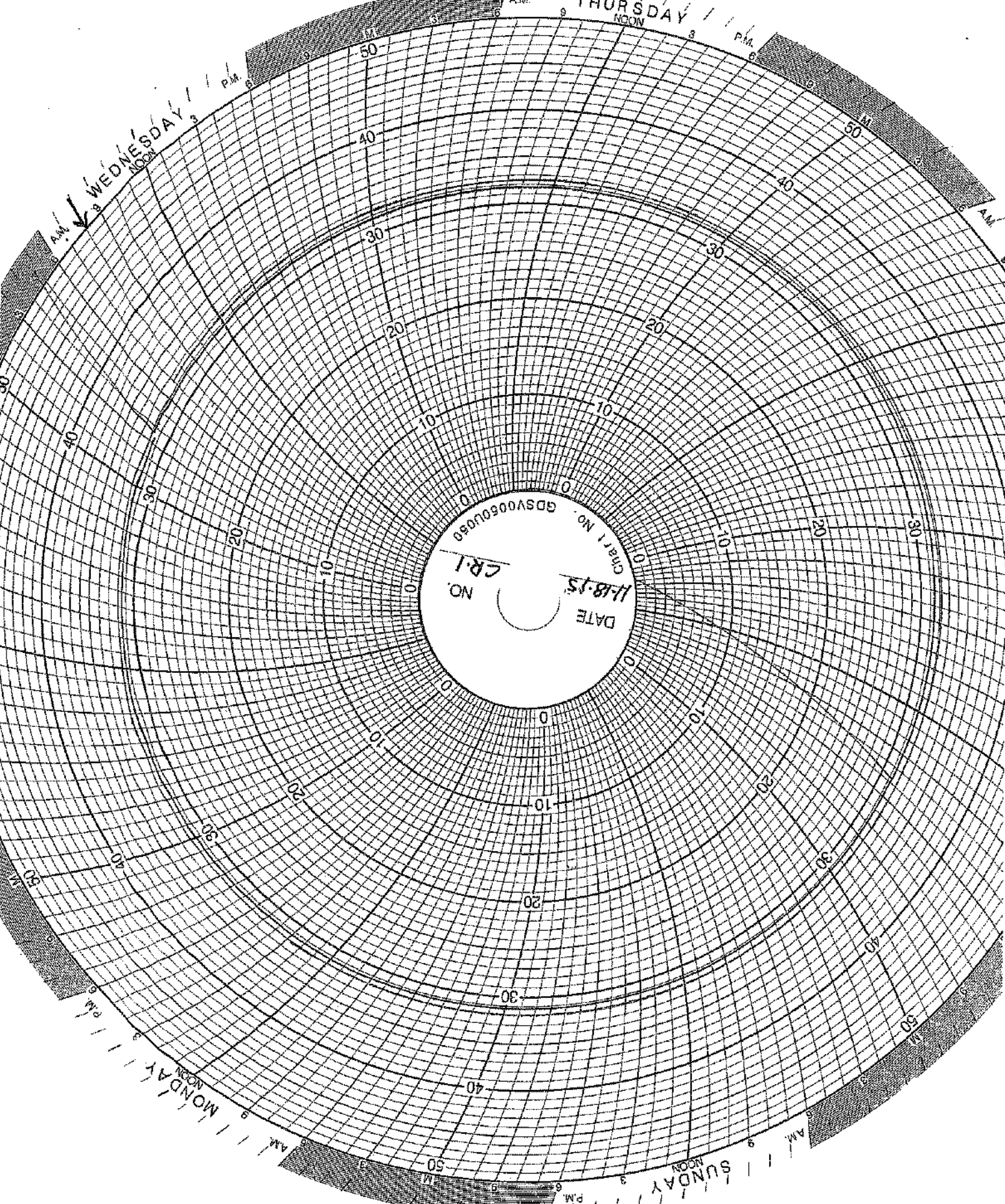
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P.M. 3

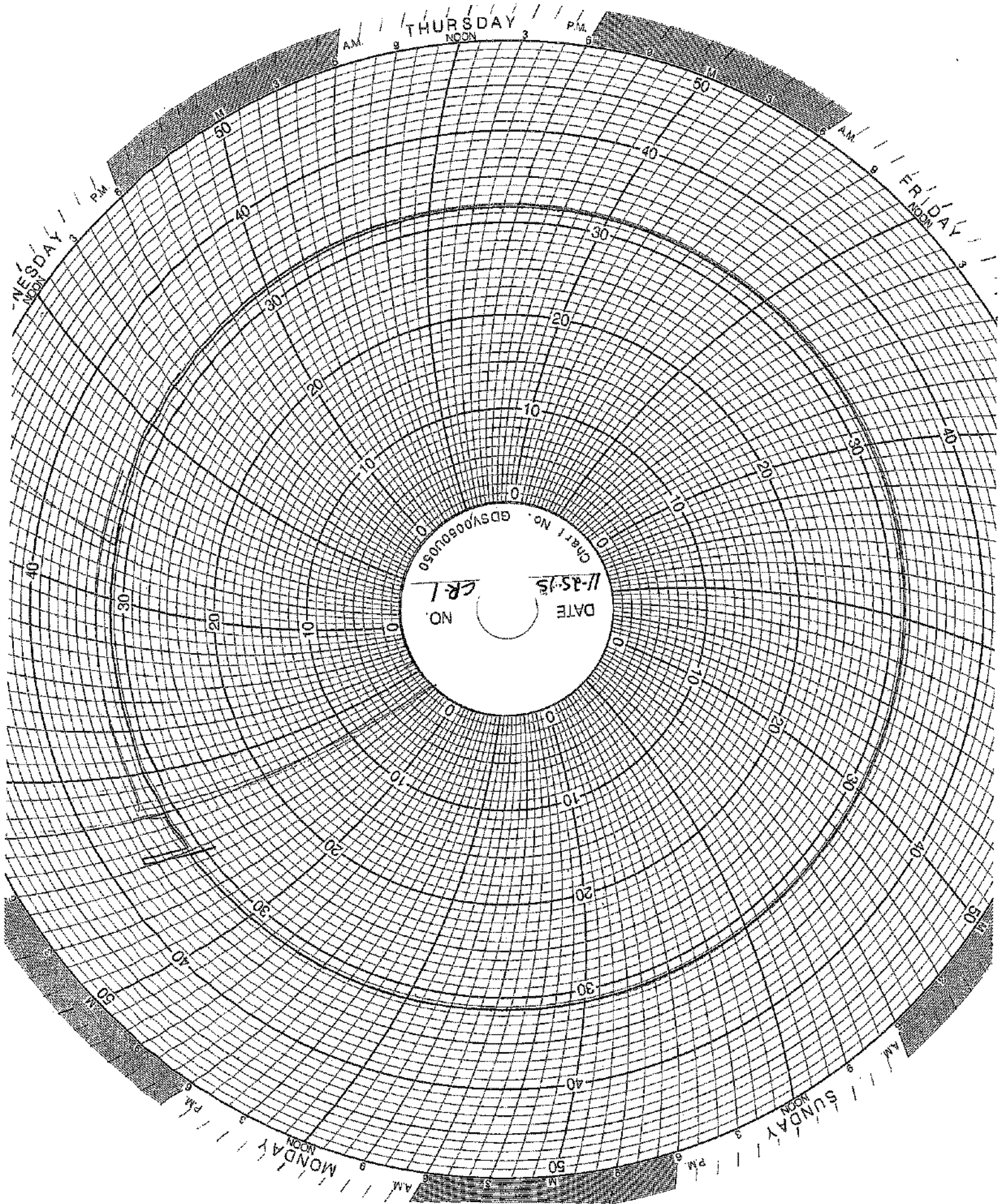
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Chart No. GDSV0080068
DATE 11-8-15
NO. CR-1





NO. DATE 11-25-15
GDSY0050050

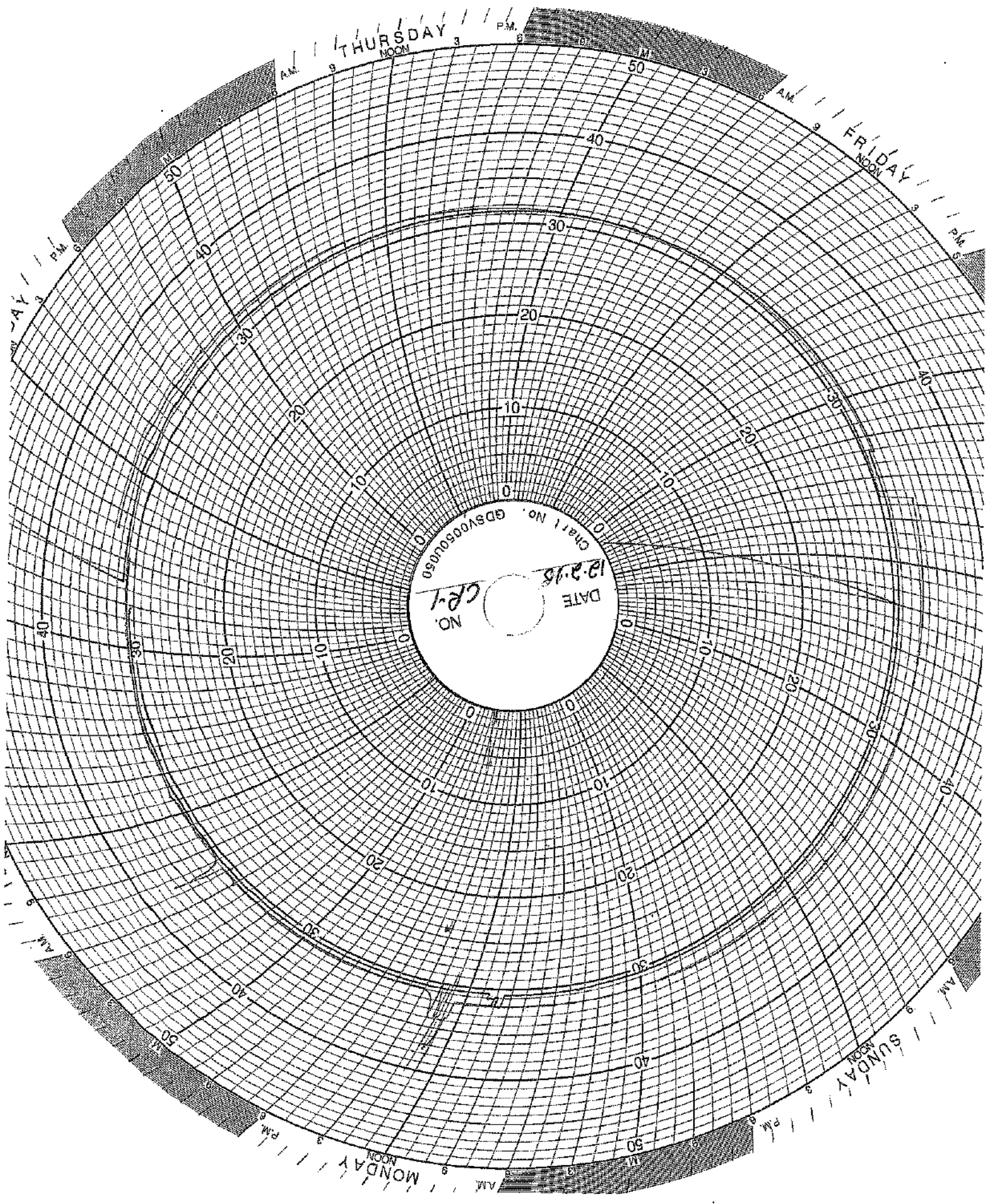


Chart No. GDSV0350450
DATE 12-2-75
NO. CR-1

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 Differential Pressure (PSIG)	Max Differential Pressure (PSIG)
11/1/2015	-6.0	-6.0	24.3	24.6	348.0	357.0	2.2	2.3	0.0	0.0	348.0	357.0
11/2/2015	-8.0	745.2	22.0	26.8	273.1	1205.9	1.8	3.2	0.0	180.8	270.6	1002.9
11/3/2015	-8.0	-7.3	24.3	25.0	358.0	379.4	3.2	3.5	0.0	0.0	365.4	387.3
11/4/2015	-7.5	-6.8	24.3	24.9	352.9	358.6	3.5	3.7	0.0	0.0	359.8	366.0
11/5/2015	-7.0	729.3	21.8	26.8	123.9	1200.7	3.0	5.0	0.0	109.8	125.8	1008.7
11/6/2015	-10.0	745.3	21.8	27.4	299.8	1200.1	2.7	3.0	0.0	105.4	248.0	964.7
11/7/2015	-10.0	-5.5	24.3	24.9	300.0	405.6	2.5	2.7	0.0	0.0	308.4	413.9
11/8/2015	-5.7	-5.4	24.2	24.3	364.5	375.6	2.4	2.5	0.0	0.0	369.9	381.2
11/9/2015	-10.0	733.9	21.3	27.3	266.4	1205.6	2.3	4.5	0.0	201.1	271.5	1023.6
11/10/2015	-10.0	720.6	13.8	26.6	298.3	1207.0	2.4	3.1	0.0	118.3	241.5	1022.1
11/11/2015	8.5	748.7	21.5	26.3	320.3	1198.5	2.6	3.2	0.0	104.3	298.2	977.8
11/12/2015	-10.0	747.6	21.3	24.8	349.0	1204.1	2.1	2.9	0.0	122.8	230.5	1016.5
11/13/2015	-10.0	743.6	20.8	25.8	300.1	1201.4	1.9	2.4	0.0	154.1	239.8	1015.9
11/14/2015	-10.0	-6.8	23.7	23.8	346.9	380.9	2.3	2.4	0.0	0.0	353.8	390.9
11/15/2015	-7.0	-5.6	23.7	23.8	339.0	347.5	2.4	2.4	0.0	0.0	344.6	354.5
11/16/2015	-7.5	719.9	20.6	25.5	288.7	1200.3	2.4	3.2	0.0	113.9	281.4	1010.7
11/17/2015	-10.0	742.9	20.6	25.7	297.8	1203.7	2.6	3.5	0.0	142.8	262.2	1017.4
11/18/2015	-10.0	734.5	20.3	25.8	248.6	1197.8	2.9	3.8	0.0	181.1	205.5	1015.8
11/19/2015	-3.8	1.5	23.2	23.4	336.7	381.9	3.4	4.1	0.0	0.6	340.4	380.4
11/20/2015	-10.0	726.9	20.3	25.1	299.8	1200.3	3.4	3.8	0.0	107.5	285.6	974.0
11/21/2015	-10.0	-8.3	22.8	23.4	328.5	358.1	3.6	3.7	0.0	0.0	336.8	368.1
11/22/2015	-8.5	-7.3	23.0	23.1	318.9	328.8	3.6	3.7	0.0	0.0	326.2	337.2
11/23/2015	-10.0	733.8	19.9	27.2	286.6	1203.3	2.9	7.7	0.0	127.8	228.2	1006.5
11/24/2015	-7.8	-4.7	21.8	22.5	300.1	406.2	3.6	3.7	0.0	0.0	306.5	412.5
11/25/2015	-7.3	740.0	19.0	24.0	294.9	1205.9	3.7	4.8	0.0	131.4	267.5	970.1
11/26/2015	-8.6	-7.1	21.6	21.7	332.8	371.4	4.5	4.5	0.0	0.0	341.3	378.6
11/27/2015	-8.6	-7.6	21.6	21.7	321.5	333.2	4.5	4.6	0.0	0.0	329.1	341.7
11/28/2015	-7.7	-7.1	21.2	21.9	313.8	322.1	4.6	4.6	0.0	0.0	320.9	329.8
11/29/2015	-7.2	-6.7	21.5	21.6	307.4	314.3	4.5	4.6	0.0	0.0	314.2	321.5
11/30/2015	-6.9	734.1	18.9	23.5	279.7	1204.4	3.5	4.6	0.0	113.1	141.7	885.0

Circle Chart Index

Chart Recorder #1

Channel #1
Blue Pen - Well 1 Injection Pressure

Channel #2

Red Pen - Well 1 Annulus Pressure

Channel #3

Green Pen - Well 1 Flow Rate

Channel #4

Black Pen - Well 1 Annulus Tank Level

Chart Recorder #2

Channel #1

Blue Pen - Well 2 Injection Pressure

Channel #2

Red Pen - Well 2 Annulus Pressure

Channel #3

Green Pen - Well 2 Flow Rate

Channel #4

Black Pen - Well 2 Annulus Tank Level

Chart Recorder #3

Channel #1

Blue Pen - Injection pH Well 1 & 2

Channel #2

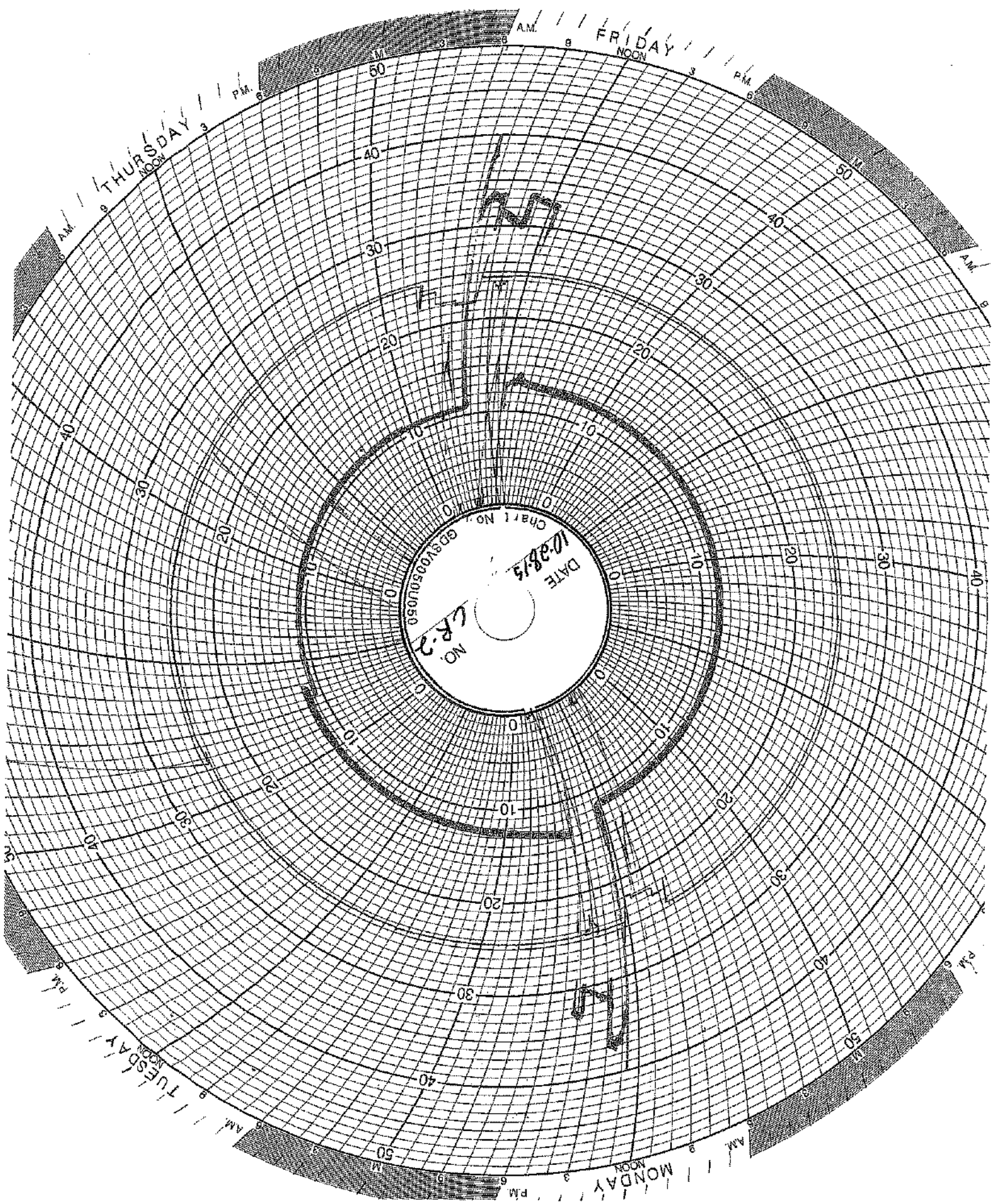
Red Pen - Well 1 Monthly Volume

Channel #3

Green Pen - Well 2 Monthly Volume

Channel #4

Black Pen - Temperature



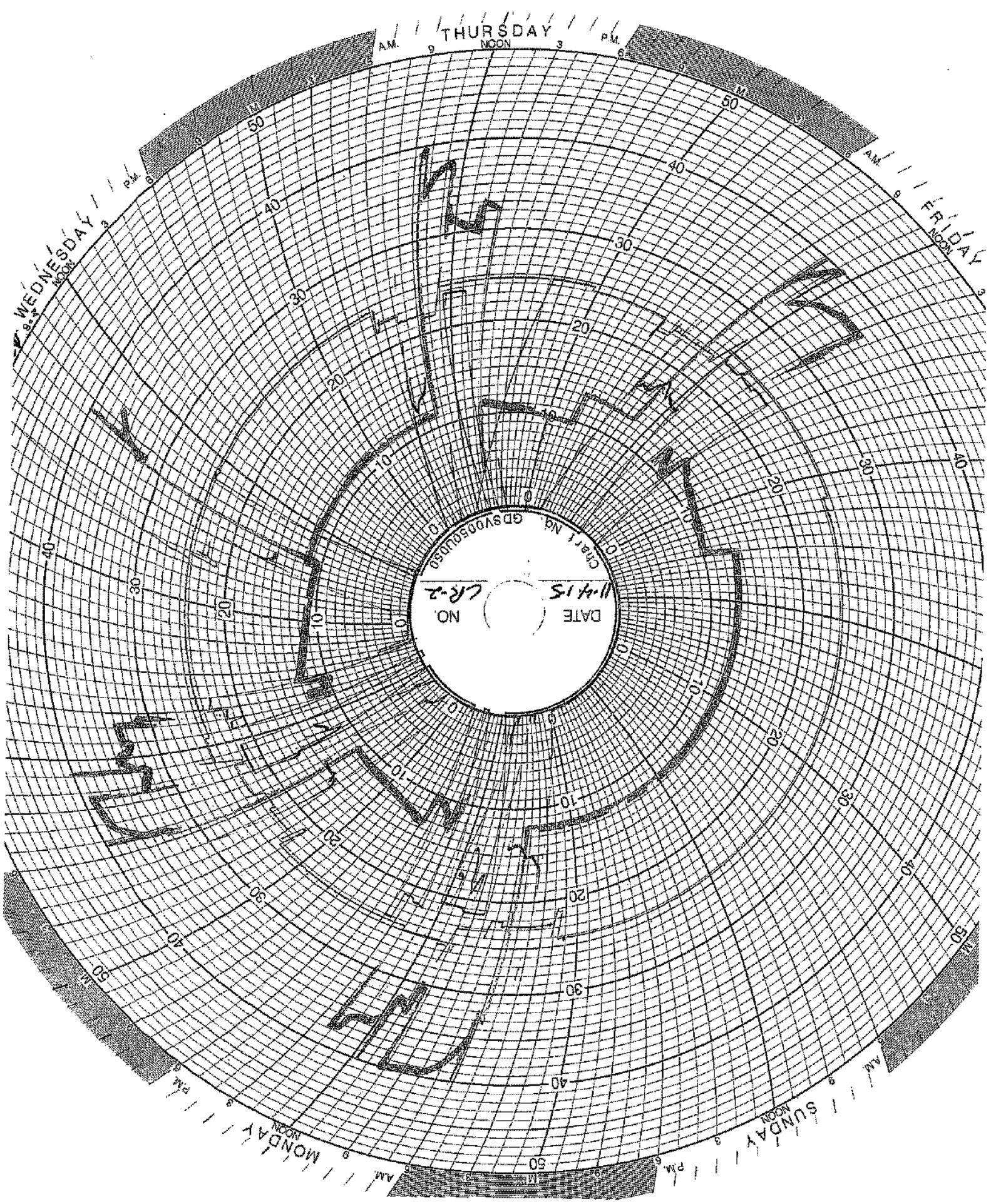
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DATE 10-28/5
Chart No. 689100501050

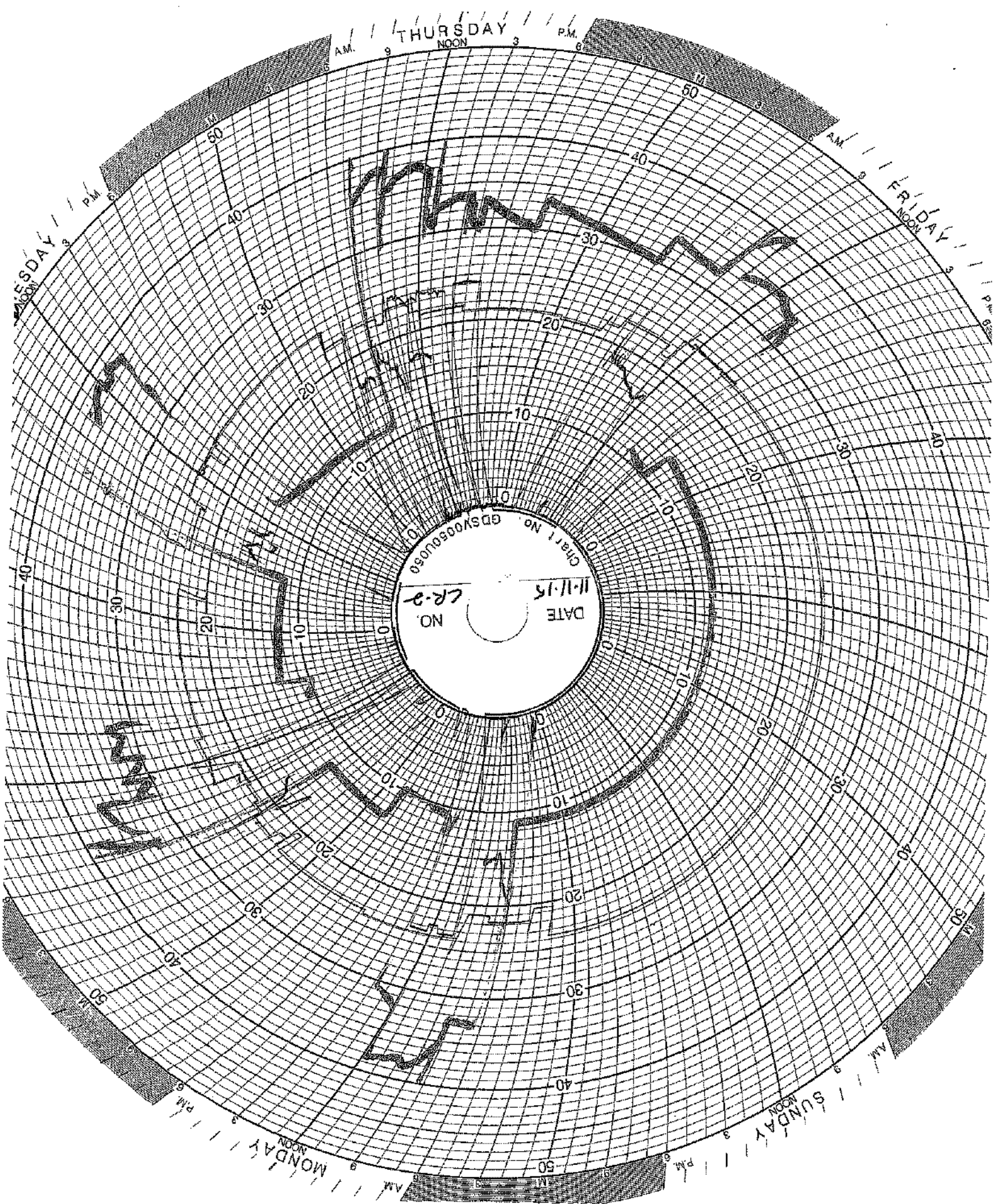
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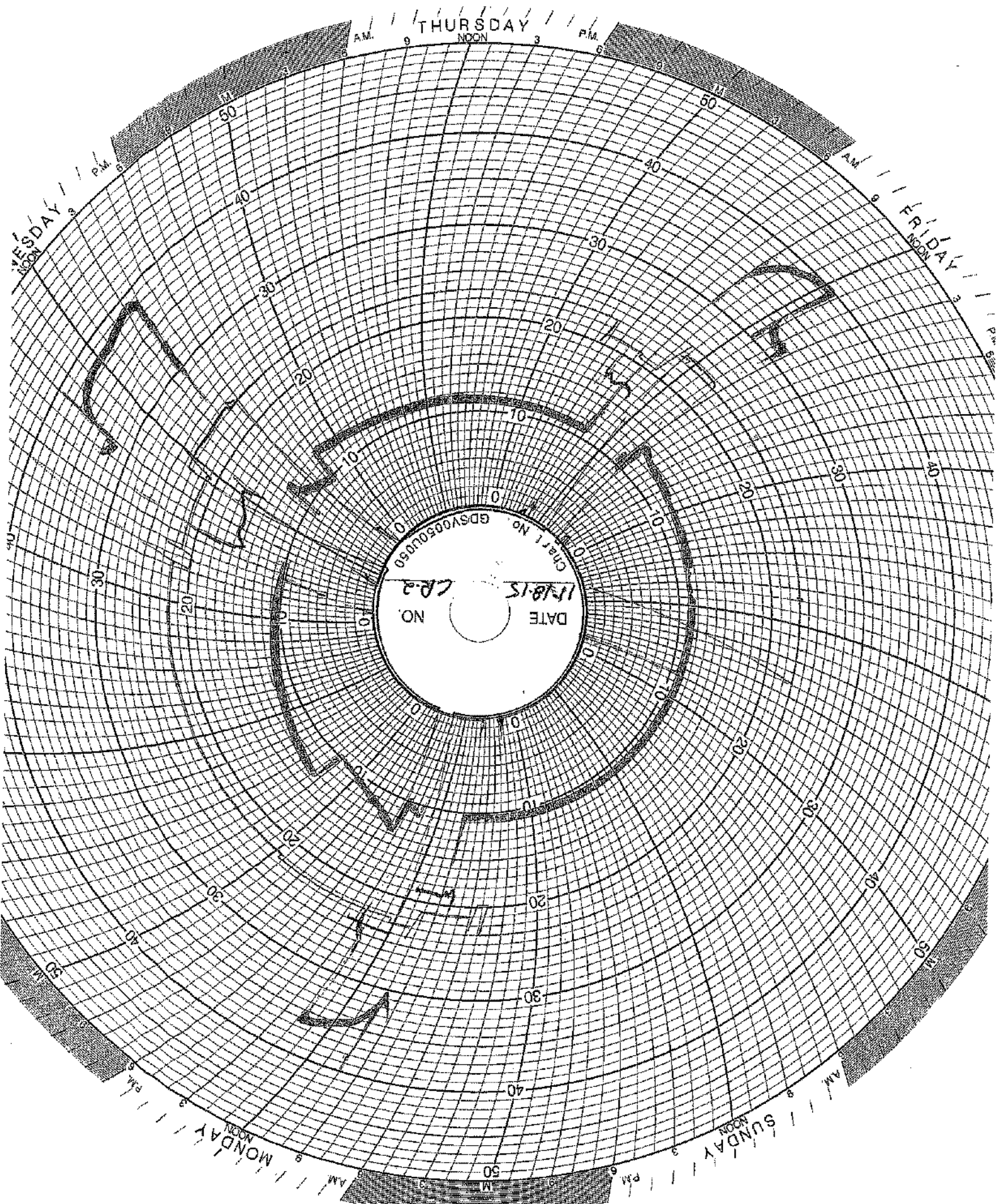
FRIDAY
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THURSDAY
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CHIEF No. GDSV00501050

DATE 11-18-15
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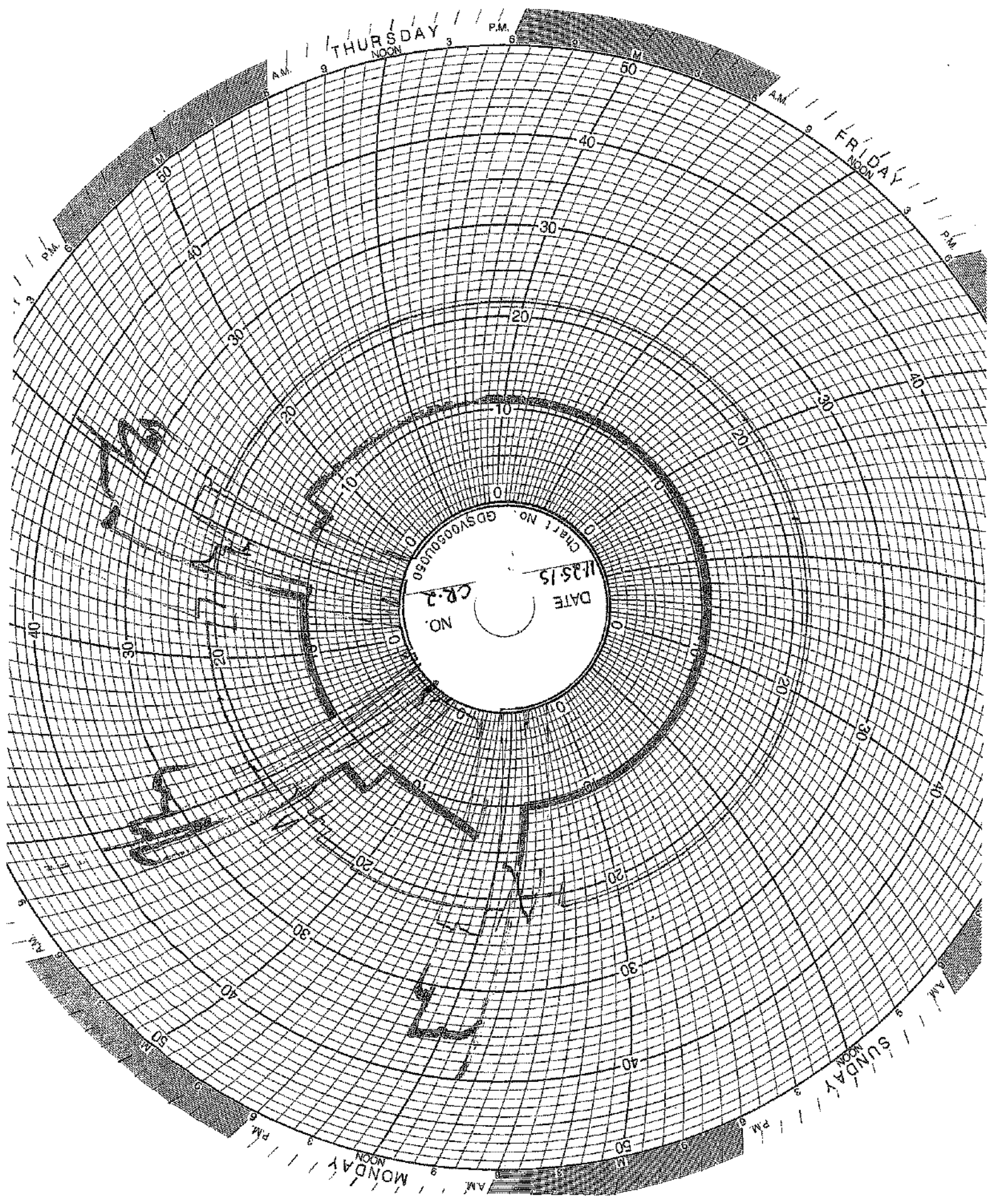
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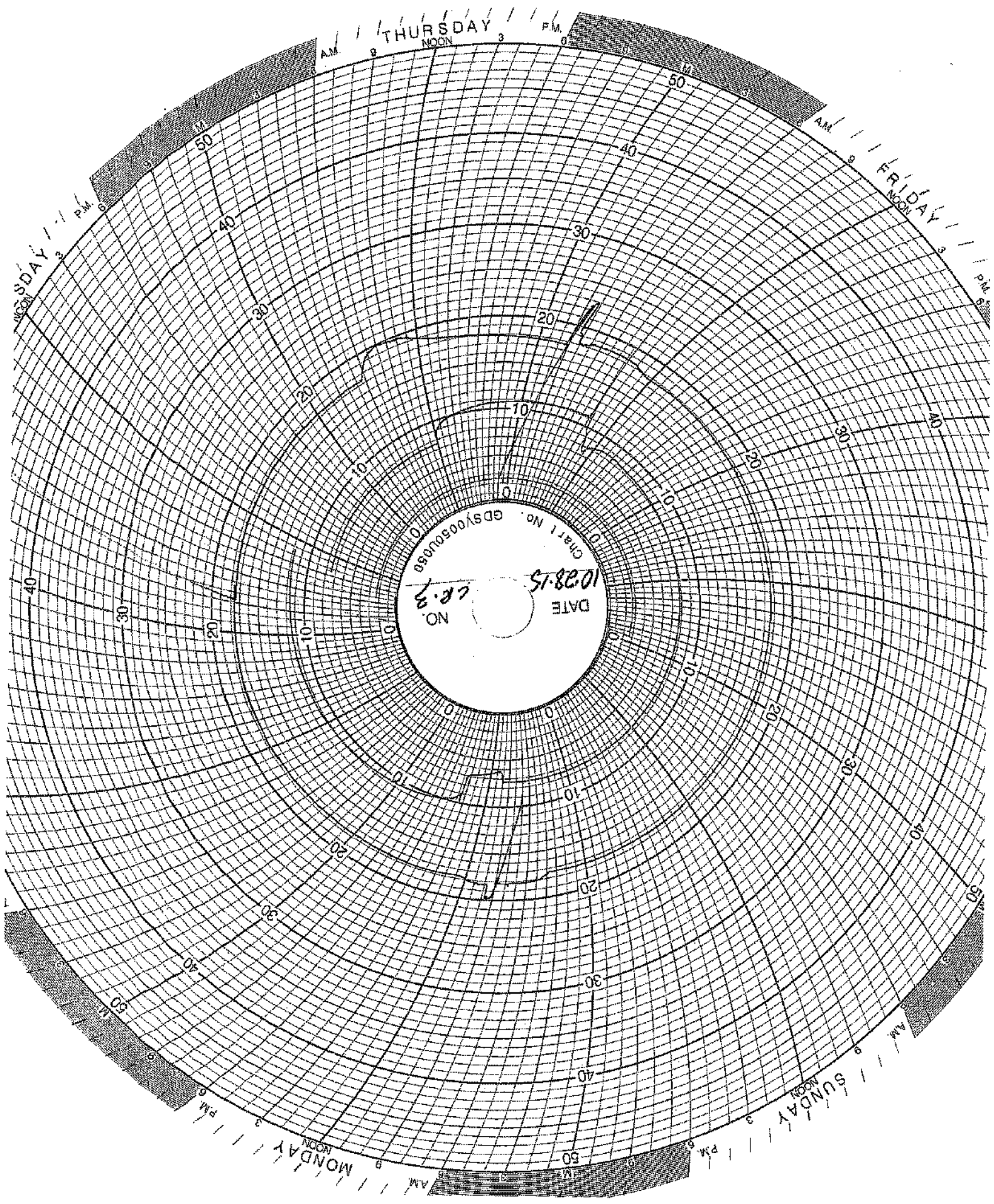
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DATE 11/25/15
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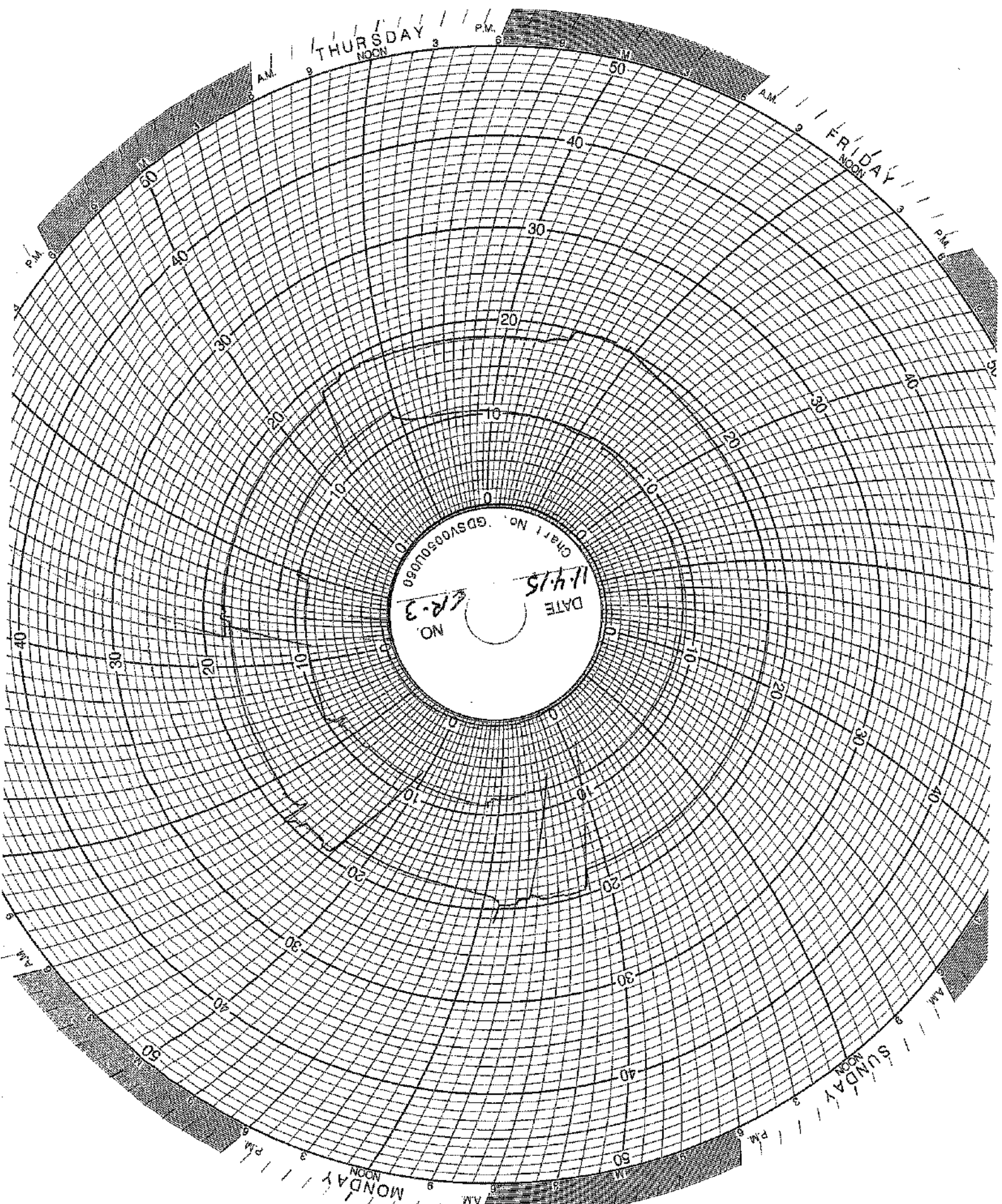
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Chart No. GDSY0050988



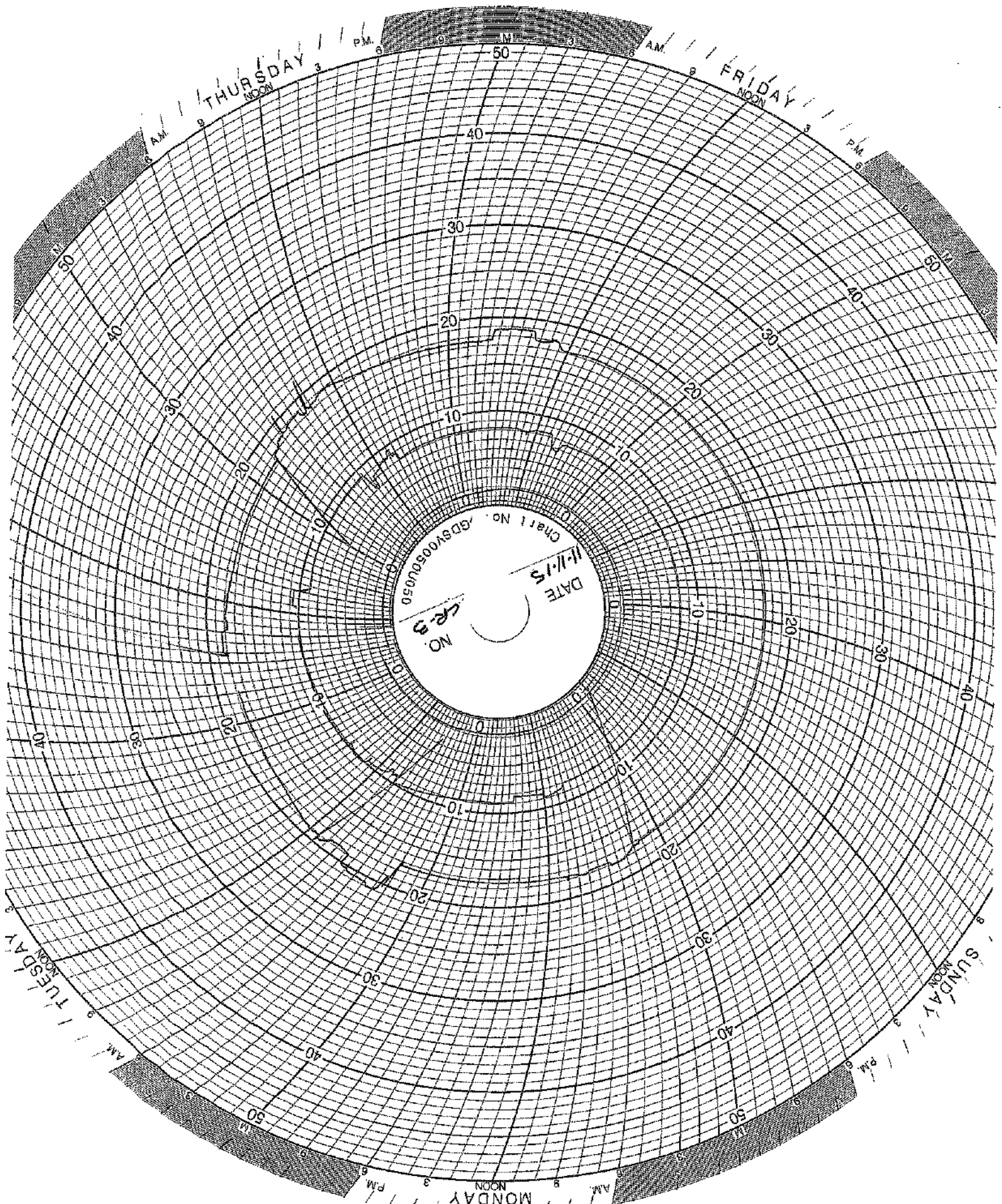
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DATE 11-4-15
NO. 48-3



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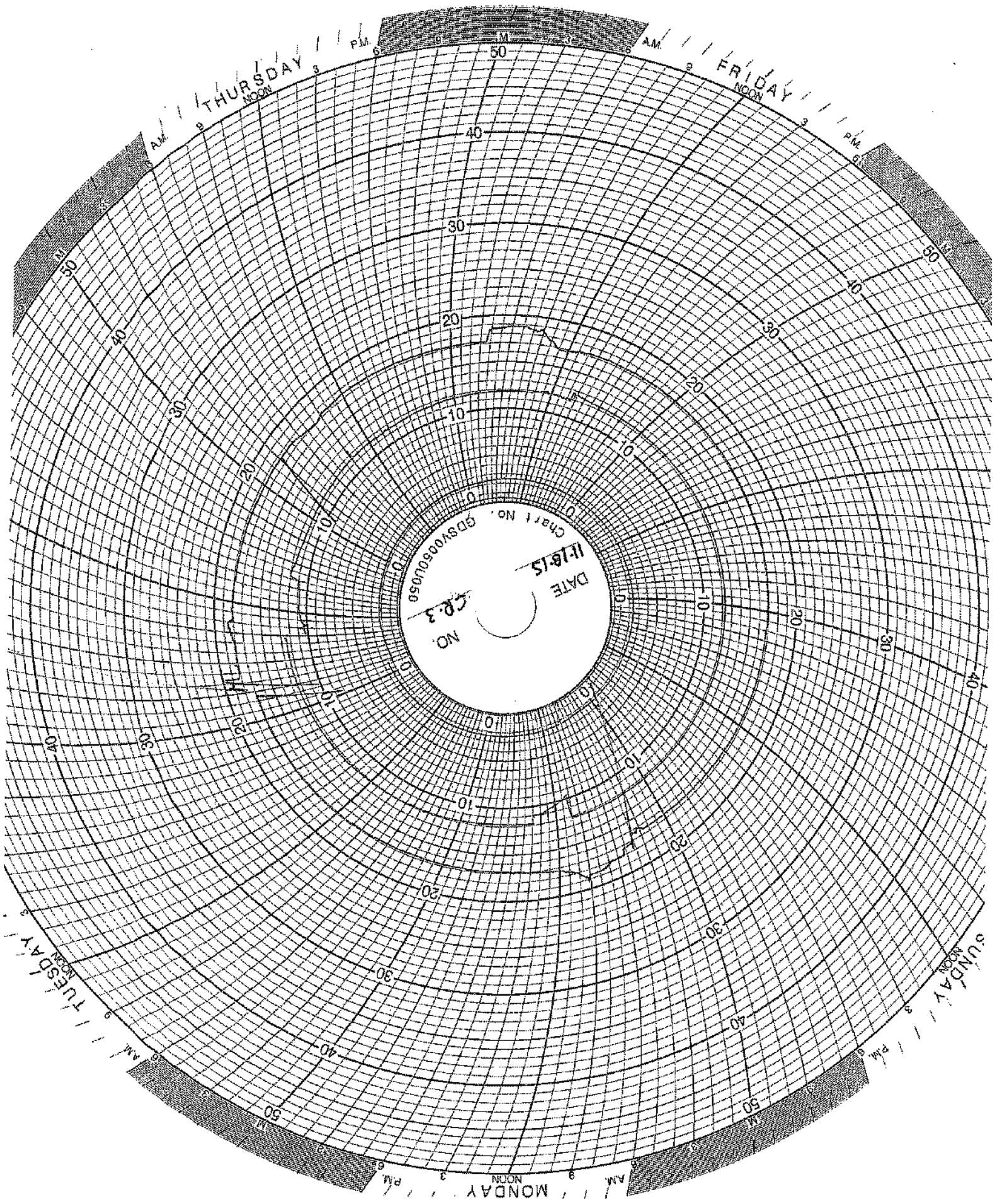
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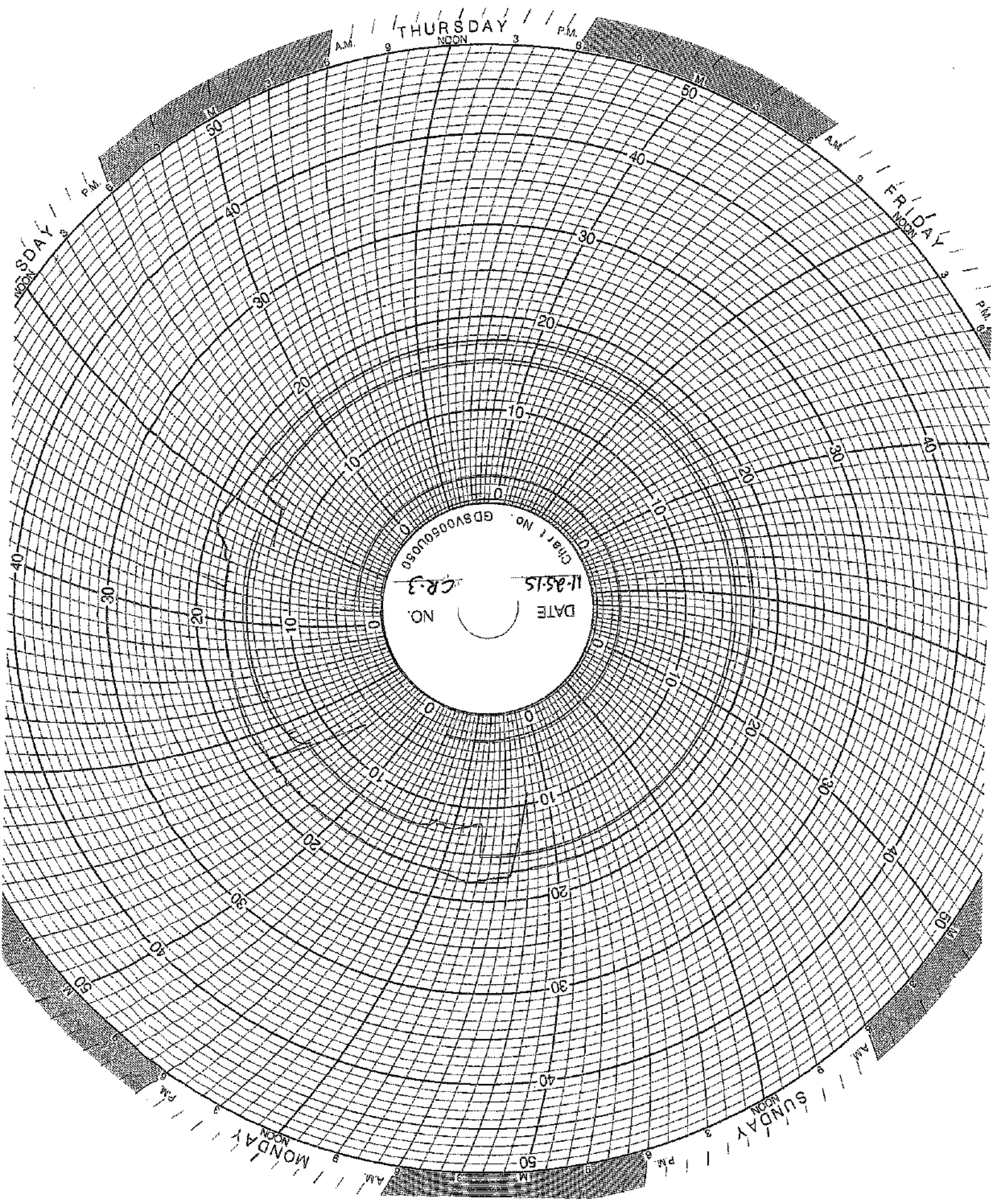
THURSDAY

FRIDAY

SUNDAY

MONDAY

NO. 11815
DATE 11/8/15
Chart No. 8DSV0050U050



THURSDAY

FRIDAY

SUNDAY

MONDAY

Chart No. GDSV0080U050

NO. CR-3

DATE 11-25-15

DATE

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P.M.

A.M.

P.M.

A.M.

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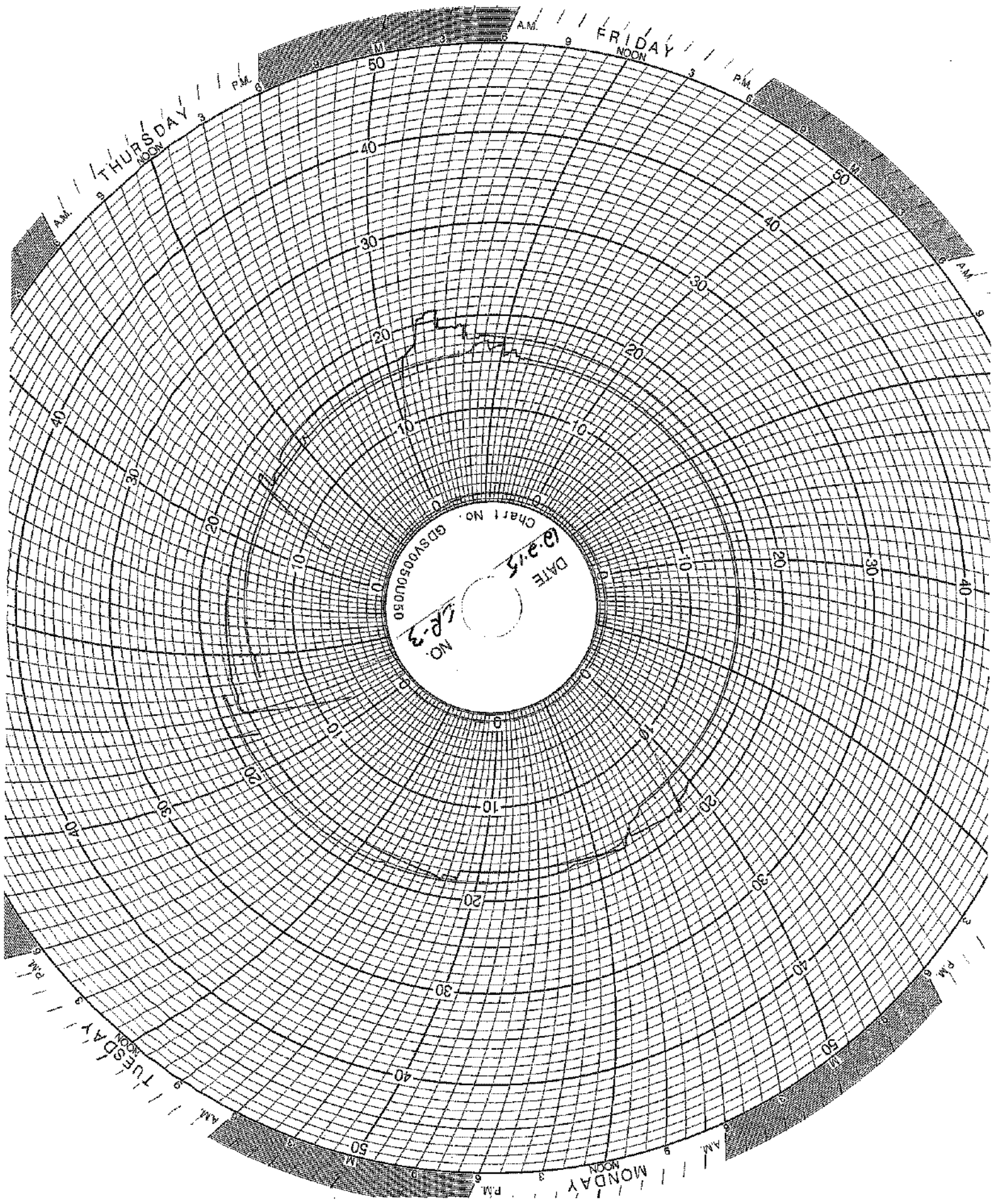
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DATE 10-2-75
Chart No. GDSV00500680
NO. 48-3

MAINTENANCE LOG

UIC Monthly Maintenance Log

11/16/2015	Coupon Mount	A new coupon holder needed to be installed. When removed for monthly inspection and evaluation the mount broke and needed to be replaced.
------------	--------------	---

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

November 16, 2015

Fiberglass Coupon

The observation is the same as last Month. The coupon is dark orange (rust) in color with similar semi-smooth textures on both sides. There is less of a black coating on the coupon than there was in September. Its cut edges appear sanded. The coupon is free of pits, cracks, swelling, wicking and blemishes.

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 is silver in color with a pock-marked and corroded surface.

CORROSION MONITORING PLAN
COUPON SUMMARY

Date	Hastelloy	Stainless Steel	Fiberglass	
	(C267)	(316L)	(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	
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	



Progress Through Innovation, Technology and Customer Satisfaction

October 22, 2015

TEST REPORT

PN 125322

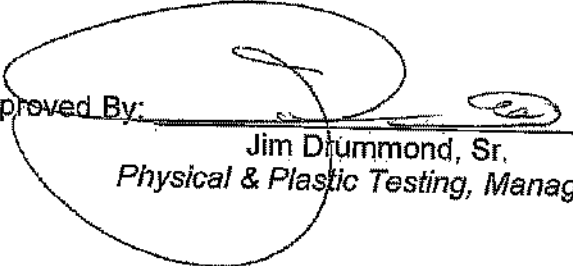
PO 00154

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



An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 255.01 & 255.02
ISO 9001:2008 Registered



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October 22, 2015

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN 125322

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

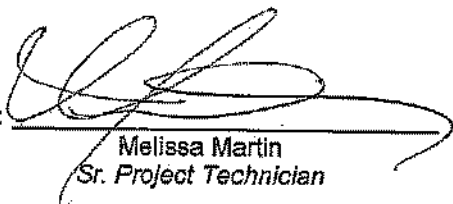
BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

Results

Barcol Hardness, Instant

96

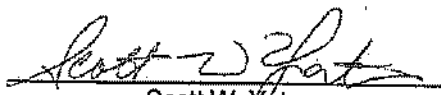
Prepared By:



Melissa Martin
Sr. Project Technician

to

Approved By:



Scott W. Yates
Plastics Testing Assistant Manager

GHEsqUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 855-3535
FAX (313) 855-1771

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. C. #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

	<u>Hardness</u>
Specimen 1	90

Specimen is being returned with this report for further evaluation.

GHEsqUIERE PLASTIC TESTING, INC.


M. W. Ghesquiere
President

MWG/kni

GHESEQUIERE PLASTIC TESTING, INC.

20460 HARPER AVENUE
HARPER WOODS, MI 48226
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.

GHESEQUIERE PLASTIC TESTING, INC.

M. W. Ghesquiere
President

MWG/am

GHESEQUIERE 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:

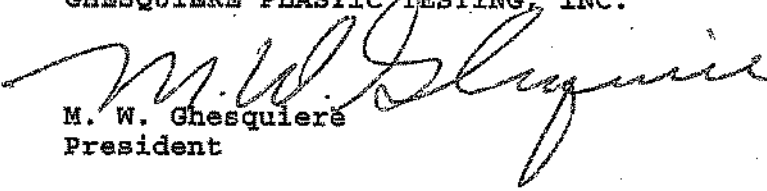
The following determination was made based upon the above test:

BARCOL HARDNESS

	<u>Hardness</u>
Specimen 1	85

Specimen was returned to the client June 16, 2014.

GHESEQUIERE 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



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ISO 9001:2008 Registered



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www.ardl.com

2887 Gilchrist Rd. | Akron, Ohio 44305 | answers@ardl.com
Toll Free (800) 830-ARDL | Worldwide (330) 794-6600 | Fax (330) 794-6610



October 2, 2014

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN118325

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:

A handwritten signature in black ink, appearing to read 'Malissa Martin', is written over a horizontal line. Below the line, the name and title are printed.

Malissa Martin
Sr. Project Technician

st

Approved By:

A handwritten signature in black ink, appearing to read 'Scott W. Yates', is written over a horizontal line. Below the line, the name and title are printed.

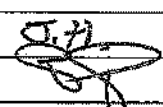
Scott W. Yates
Plastics Testing Assistant Manager

**INJECTION
FINGERPRINTS**

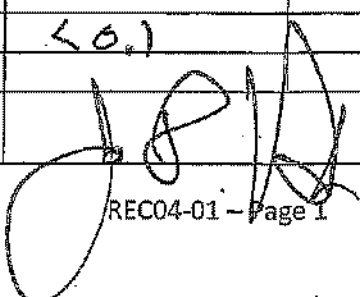
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/2/15
Receiving ID#	L11021501
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	
Sampled by	

COPY

LAB INFORMATION All Waste Shipments		FIELD TESTS 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.)	1.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.20	TDS	26.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	71°F		
Conductivity	> 400.0 mS		
% Solids	26.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

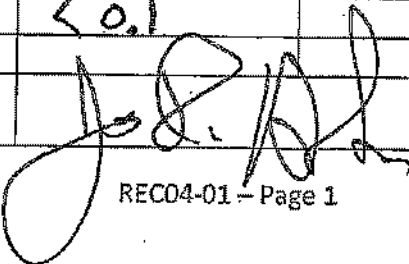
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/5/13
Receiving ID#	T.11051501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	ML

COPY

LAB INFORMATION		All Waste Shipments		© Field Bases 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.)	1.0	Sodium Chloride			
Cyanides? (mg/L)		Bicarbonate			
Sulfides? (ppm)		Carbonate			
Specific Gravity	1.07	TDS		8.47	
Physical Description		Resistivity			
Stream Consistency	Yes No	Sulfate			
Oil in Sample	Yes No				
Temperature	68°F				
Conductivity	167.6 µS				
% Solids	8.4				
Turbidity	Yes No				
Color (visual)					
TSS (%)	< 0.1				
Radiation Screen (as needed)					
Lab Signature					

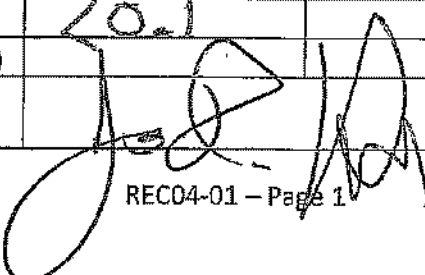
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/6/13
Receiving ID#	L11061501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	J.H.

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LAB INFORMATION		Oilfield/Drifts Only	
All Waste Streams			
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	1.12	TDS	8.2%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	71°F		
Conductivity	163.3 mS		
% Solids	8.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	10.1		
Radiation Screen (as needed)			
Lab Signature			

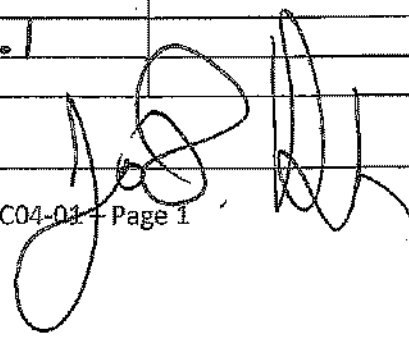
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/6/15
Receiving ID#	L11061502
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	ML

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LAB INFORMATION		Oilfield Brines Only	
No Waste Shipments			
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	1.15	TDS	7.72
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	72°F		
Conductivity	152.5 mS		
% Solids	7.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

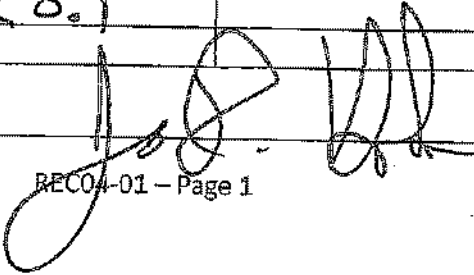
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/9/15
Receiving ID#	T.11091501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	J.P.

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.)	0.8	Sodium Chloride			
Cyanides? (mg/L)		Bicarbonate			
Sulfides? (ppm)		Carbonate			
Specific Gravity	1.15	TDS		13.57	
Physical Description		Resistivity			
Stream Consistency	Yes No	Sulfate			
Oil in Sample	Yes No				
Temperature	72°F				
Conductivity	271.0 mS				
% Solids	13.5				
Turbidity	Yes No				
Color (visual)					
TSS (%)	< 0.1				
Radiation Screen (as needed)					
Lab Signature					

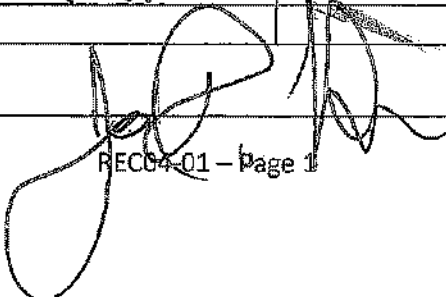
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/9/15
Receiving ID#	T.1109/502
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	ES

COPY

LAB INFORMATION		Other/Brines/Other	
All Waste Streams			
Compatible? (RT#)	<input checked="" type="checkbox"/> 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	1.18	TDS	8.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	71°F		
Conductivity	172.4 mS		
% Solids	8.9		
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	11/16/15
Receiving ID#	T. 1001501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.A.
Sampled by	[Signature]

COPY

LAB INFORMATION		On field tests only	
All Wastes & Solvents			
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	1.17	TDS	7.67
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	68°F		
Conductivity	151.8 mS		
% Solids	7.6		
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	11/10/15
Receiving ID#	L 11101502
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.T.
Sampled by	


COPY

LAB INFORMATION		Other Binies @	
All Waste Shipments			
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	1.06	TDS	3.7%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	72.8 mS		
% Solids	3.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

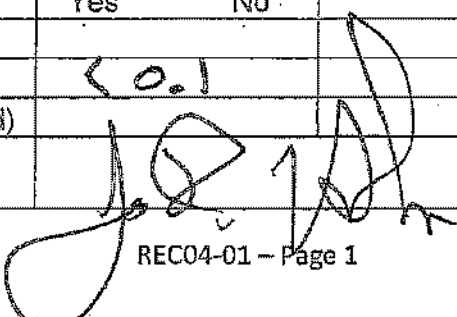
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/11/15
Receiving ID#	T.1111501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	

COPY

LAB INFORMATION		Clients 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.)	2.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonete	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.07	TDS	3.97
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	64°F		
Conductivity	69.5 mS		
% Solids			
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

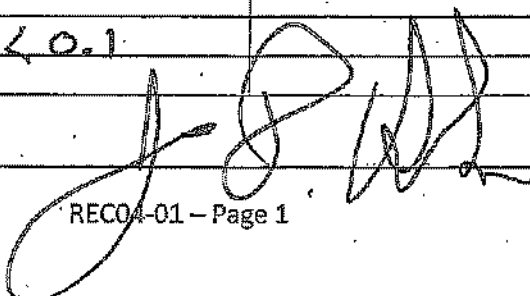
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/11/15
Receiving ID#	J.1111508
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

TEST INFORMATION		Chemicals 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.)	1.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	5.1%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	102.1 mS		
% Solids	5.1		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

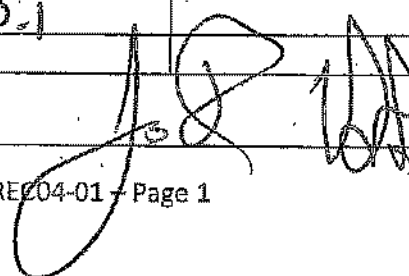
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/12/13
Receiving ID#	T.11121501
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	S.H.
Sampled by	SP

COPY

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.)	2.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.09	TDS	4.5%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65°F		
Conductivity	90.2 mS		
% Solids	4.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

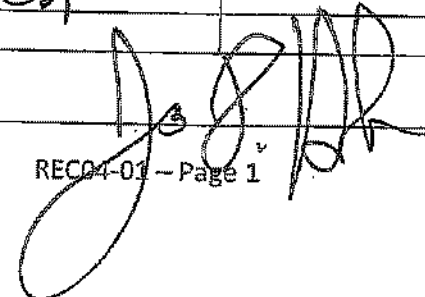
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/12/15
Receiving ID#	IL11121508
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	RF


COPY

LAB INFORMATION		Oil Ref. Blanks only	
Waste Stream			
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140	Magnesium	
pH (S.U.)	1.5	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.12	TDS	6.29
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	122.6 μS		
% Solids	6.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

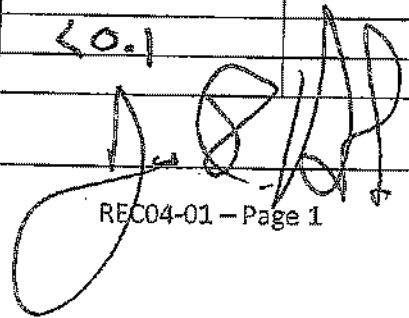
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/13/15
Receiving ID#	JT 1113/501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval#	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	

COPY

LAB INFORMATION		Oil Ref. # 1113/501	
Oil Waste Shipments			
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	1.13	TDS	7.52
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	68°F		
Conductivity	150.2 μS		
% 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

RECEIVING INFORMATION	
Date	11/13/13
Receiving ID#	T1113/502
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		Oil and Grease 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	1.02	TDS	16.6%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	65°F		
Conductivity	330.0ms		
% Solids	16.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	20.1		
Radiation Screen (as needed)			
Lab Signature	[Signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/16/15
Receiving ID#	J 11161501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	
Sampled by	

COPY

LAB INFORMATION		Other Parameters	
All Waste Shipments		Drilled 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.)	0.6	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.13	TDS	14.7.2
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	290.0 mS		
% Solids	14.7		
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	11/17/15
Receiving ID#	IL 0171501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	<i>[Signature]</i>
Sampled by	<i>[Signature]</i>

LAB INFORMATION		Oilfield Bases Only	
All Waste Subjects			
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	1.17	TDS	8.07
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	77°F		
Conductivity	159.7 mS		
% Solids	8.0		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature	<i>[Signature]</i>		

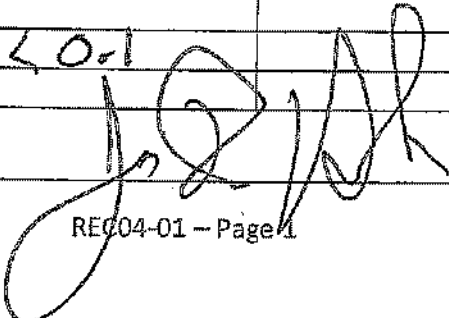
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/18/15
Receiving ID#	JT 11181501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval#	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	J.H.

COPY

LAB INFORMATION		ANALYSIS	
All Waste Shipments		On/Off Site	
Compatible? (RT#)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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	1.10	TDS	13.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65°F		
Conductivity	264.2 mS		
% Solids	13.2		
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	11/18/15
Receiving ID#	TU1815D2
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		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.)	0.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.1	TDS	8.3
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	68°F		
Conductivity	162.6 μS		
% Solids	8.3		
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	11/20/15
Receiving ID#	T 11201501
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		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.)	1.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	5.7%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	67°F		
Conductivity	113.2 mS		
% Solids	5.7		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature	[Signature]		

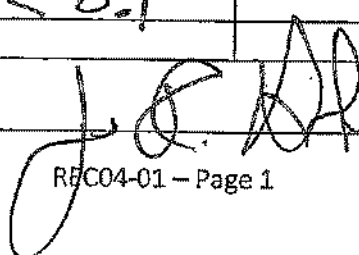
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/23/15
Receiving ID#	T. 11231501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H
Sampled by	RT

COPY

LAB INFORMATION		Oil Spills/Brines Only	
All Waste Shipments			
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	1.10	TDS	14.27
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	66°F		
Conductivity	283.5 mS		
% Solids	14.2		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

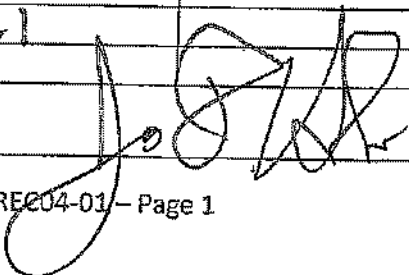
FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/25/13
Receiving ID#	L11251501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J. T.
Sampled by	ES

COPY

LAB INFORMATION		Official Dishes Only	
All Waste Shipments			
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	1.14	TDS	27.87
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	64°F		
Conductivity	> 400.0 mS		
% Solids	27.8		
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	11/25/15
Receiving ID#	L11251502
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	<i>[Signature]</i>
Sampled by	<i>[Signature]</i>

COPY

LAB INFORMATION		Oilfield Brines Only	
All Waste Shipments			
Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> 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	1.08	TDS	4.6
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	69°F		
Conductivity	91.9 μS		
% Solids	4.6		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature	<i>[Signature]</i>		

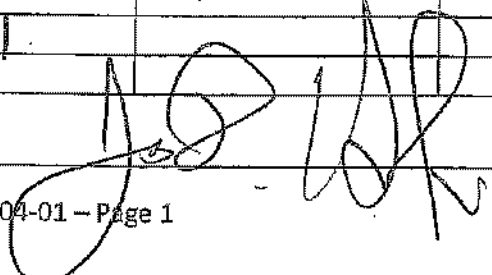
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ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/30/13
Receiving ID#	T. 1130/501
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	JS

COPY

LAB INFORMATION		Oilfield Brines Only	
All Waste Shipments			
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	1.14	TDS	31.5%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	65°F		
Conductivity	> 400.0 mS		
% Solids	31.5		
Turbidity	Yes No		
Color (visual)			
TSS (%)	< 0.1		
Radiation Screen (as needed)			
Lab Signature			

**WASTE STREAMS
CHARACTERIZATIONS**

GENERATOR INFORMATION

Name: [REDACTED] USEPA ID # [REDACTED]
 Facility Address: [REDACTED] SIC/NAICS Code: [REDACTED] State Code: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Contact: [REDACTED] Title: [REDACTED] Phone: [REDACTED] Fax: [REDACTED]

BILLING INFORMATION SAME AS ABOVE

Company Name: [REDACTED]
 Address: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Attention: [REDACTED] Phone: [REDACTED] Fax: [REDACTED]

WASTE INFORMATION

Name of Waste/Common Chemical Name:
HOUGHTON PHOS. ACID CHERNERS

Process Generating Waste (Please be specific, incomplete information may delay the approval process):
EXPIRED SHELF LIFE - VICGIN FORMULA

USEPA / STATE WASTE IDENTIFICATION

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

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input checked="" type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input type="checkbox"/> Other _____	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> BI-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input type="checkbox"/> 1.3 - 1.4 Exact / Other _____	acceptable 110315
--	--	---	---	----------------------

pH: NA ≤ 2 2 - 4 4 - 8 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
<u>SEE ATTACHED</u>					

26140 HOUGHTO-PHOS 5540

DOT: UN1760, CORROSIVE LIQUID, N.O.S., (CONTAINS PHOSPHORIC ACID), 8, PGII

Corrosive Flammable Oxidizer Health 3 Flammability 0 Reactivity 1

Special Blending Instructions: Add water, then phos (slowly), zinc slowly, then calcium slow (heat & bubbling will occur) then add steps 5-7 Sod. Hydroxide will splatter add SLOWLY. Continue mixing until all particles are dissolved. Allow to COOL to 100°F then add Peroxide, product will

Comment:

Actual	MSDS Range	Odor: Acidic	Created: 5/26/2009
Gravity: 1.390	1.38 1.40	Color: Light Green	Modified: 5/26/2009
pH: 1.0	0 3.	Modified: LAB	Flash Point: No Flash
Active:		PEL/TLV: N/E N/E	LEL: N/E
Pound Based: <input checked="" type="checkbox"/>		V.O.C.:	UEL: N/E
Cost: \$8.08 gal	\$0.6966 lb		

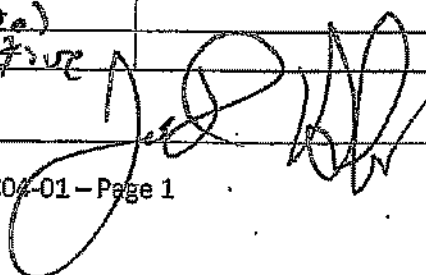
Step	Size	Raw Material	Quantity	Percent	Cost
1	1000	Water (LBS)	289.6 Pounds	28.96%	\$3
2	1000	Phosphoric Acid 75%	360.4 Pounds	36.04%	\$189
3	1000	Zinc Oxide (LT)	29.0 Pounds	2.90%	\$31
4	1000	Calcium Carbonate	6.0 Pounds	0.60%	\$9
5	1000	Manganese Nitrate 50%	85.0 Pounds	8.50%	\$221
6	1000	Nickel Nitrate 14%	90.0 Pounds	9.00%	\$181
7	1000	Sodium Hydroxide, 50% Liquid/Caustic	120.0 Pounds	12.00%	\$18
8	1000	Hydrogen Peroxide 35%	2.0 Pounds	0.20%	\$1
9	1000	Fluoboric Acid 48%	12.0 Pounds	1.20%	\$42
10	1000	Ferrous Sulfate (HEPTO)	6.0 Pounds	0.60%	\$2
11	1000	LAB CHECK - BRING TO LAB	0.0 Pounds	0.00%	\$0
			0 Gallons	100.00%	\$697
			1000 Pounds		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12/3/15
Receiving ID#	[REDACTED]
Manifest# Line:	
Land Ban. Cert Included	Yes No
EGT Approval #	
Generator	[REDACTED]
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	Client

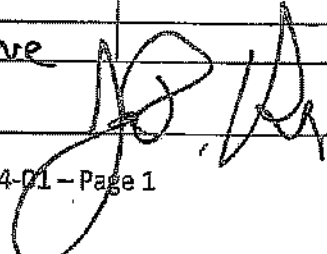
LAB INFORMATION	ANALYSIS	CLIENT INFORMATION
Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium
TOC (ppm)(CC Waste Only)?	N/A	Total Iron
Flash Point (°F)	> 140	Magnesium
pH (S.U.)	13.9	Sodium Chloride
Cyanides? (mg/L)	< 30	Bicarbonate
Sulfides? (ppm)	< 200	Carbonate
Specific Gravity	1.023	TDS
Physical Description	Liquid	Resistivity
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate
Oil in Sample	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Temperature	68°F	
Conductivity	> 400.0ms	
% Solids	34.4	
Turbidity	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Color (visual)	Brown	
TSS (%)	< 0.1	
Radiation Screen (as needed)	Negative	
Lab Signature		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	11/3/15
Receiving ID#	[REDACTED]
Manifest# Line:	[REDACTED]
Land Ban Cert included	Yes No
EGT Approval #	
Generator	[REDACTED]
Client	
Transporter	
Time in	
Time out	
Received by	J.H.
Sampled by	CLINT

WASTE SUBMITTALS		OIL AND GREASE ONLY	
Compatible? (RT#)	<input checked="" type="radio"/> Yes <input type="radio"/> 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.)	1.8	Sodium Chloride	
Cyanides? (mg/L)	< 30	Bicarbonate	
Sulfides? (ppm)	< 200	Carbonate	
Specific Gravity	1.43	TDS	
Physical Description	liquid	Resistivity	
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate	
Oil in Sample	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Temperature	67°F		
Conductivity	57.7 mS		
% Solids	49.1		
Turbidity	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Color (visual)	Green		
TSS (%)	< 0.1		
Radiation Screen (as needed)	Negative		
Lab Signature			

GENERATOR INFORMATION

Name: [REDACTED] USEPA ID #: [REDACTED]
 Facility Address: [REDACTED] SIC/NAICS Code: _____ State Code: _____
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Contact: [REDACTED] Title: [REDACTED] Phone: [REDACTED] Fax: () _____

BILLING INFORMATION

SAME AS ABOVE
 Company Name: [REDACTED]
 Address: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: 48356
 Attention: [REDACTED] Phone: [REDACTED] Fax: () _____

WASTE INFORMATION

Name of Waste/Common Chemical Name: IOM 0013-ED
 Process Generating Waste (Please be specific, incomplete information may delay the approval process):
from washing parts before coating

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: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other _____	Suspended Solids <input type="checkbox"/> 0-1 % <input type="checkbox"/> 3-5 % <input checked="" type="checkbox"/> 1-3 % <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other _____	acceptable 112515
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pH: NA ≤ 2 2-4 4-8 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
(Potassium Hydroxide)	6	35			

MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: [REDACTED]
PRODUCT CODE: [REDACTED]

HMS	
Health:	3
Flammability:	0
Reactivity:	0

MANUFACTURER: [REDACTED]
TELEPHONE: [REDACTED]
ADDRESS: [REDACTED]

SECTION II - COMPOSITION, INFORMATION ON HAZARDOUS INGREDIENTS

Ingredients	CAS	Percent	OSHA PEL	ACGIH TLV	SARA III
Potassium Hydroxide	1310-58-3	< 85%	2 mg/m3	2 mg/m3	<input type="checkbox"/>
Proprietary Surfactant	N/A	< 10%	N/E	N/E	<input type="checkbox"/>
Phosphoric Acid	7664-38-2	< 5%	1 mg/m3	1 mg/m3	<input checked="" type="checkbox"/>
Deflocculant & Sequestant	N/A	< 2%	N/E N/E	N/E N/E	<input checked="" type="checkbox"/>

SECTION III - HAZARDS IDENTIFICATION

May be harmful if swallowed. May cause skin and eye irritation. Eye protection and rubber gloves are recommended when handling this product.

SECTION IV - FIRST AID MEASURES

In case of eye or skin contact flush with large amounts of water for 15 minutes. If irritation persists, see physician. In case of ingestion, do not induce vomiting; drink large quantities of water to dilute product. Get medical attention at once.

SECTION V - FIRE FIGHTING MEASURES

FLASHPOINT: No Flash LEL: N/E UEL: N/E
GENERAL HAZARD: Does not propose a significant fire hazard.
EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide

SECTION VI - ACCIDENTAL RELEASE MEASURES

Notify the appropriate authorities immediately. Avoid uncontrolled release of this material to environment. Contain spilled liquid with sand, earth or absorbent material. Transfer to secure chemical waste container.

SECTION VII - HANDLING AND STORAGE

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials and flame, heat or other source of ignition. Do not reuse empty containers without commercial cleaning.



SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

- EYE PROTECTION:** Wear chemical resistant safety glasses, splash goggles or face shield.
- SKIN PROTECTION:** Wear chemical resistant rubber gloves.
- RESPIRATORY PROTECTION:** For most conditions, no respiratory protection should be needed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|--------------------------------|---|
| PHYSICAL STATE: Liquid | SPECIFIC GRAVITY: 1.16 to 1.18 |
| COLOR: Brown | pH: 12.0 to 14.0 |
| ODOR: Non-Objectionable | BOILING POINT: 212° F |
| SOLUBILITY: 100% | VAPOR PRESSURE: 24 mm Hg @ 75° F |

SECTION X - STABILITY AND REACTIVITY

- GENERAL:** This product is stable and hazardous polymerization will not occur.
- INCOMPATIBILITY:** Strong oxidizing agents. Do not mix with other chemicals.
- DECOMPOSITION:** None.

SECTION XI - TOXICOLOGICAL INFORMATION

No data available.

SECTION XII - ECOLOGICAL INFORMATION

No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to federal, state and/or local requirements and your company policy. Safety precautions listed on this MSDS also apply to empty containers.

SECTION XIV - TRANSPORT INFORMATION

DOT Hazard Class: NA1760, Compounds, cleaning liquid (Contains POTASSIUM HYDROXIDE), 8, PGI1

SECTION XV - REGULATORY INFORMATION

Component chemicals are subject to the reporting requirements of SECTION 313 of SARA TITLE III. Please see MSDS Section II for exposure levels. The listed percent should be used to determine reporting requirements.

SECTION XVI - OTHER INFORMATION

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.



Generator Waste Profile

00739 (P)

GENERATOR INFORMATION

Name: [REDACTED] USEPA ID: [REDACTED]
 Facility Address: [REDACTED] SIC/NAICS Code: [REDACTED] State Code: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Contact: [REDACTED] Title: [REDACTED] Phone: [REDACTED] Fax: [REDACTED]

BILLING INFORMATION

[] SAME AS ABOVE
 Company Name: [REDACTED]
 Address: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Attention: [REDACTED] Phone: [REDACTED] Fax: [REDACTED]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Sulfuric acid & rinse water
 Process Generating Waste (Please be specific, incomplete information may delay the approval process):
residual product sulfuric acid & water from cleaning storage tank & delivery pipes

USEPA / STATE WASTE IDENTIFICATION

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

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input checked="" type="checkbox"/> White/Clear <input type="checkbox"/> Black/Green <input type="checkbox"/> Other	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 3-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> >5%	Layer: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other	<i>acceptable</i> <i>11/2/15</i>
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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 (LAST OR 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	99	99	Sulfuric acid	1	1
		%			%
		%			%
		%			%
		%			%

NOTE: Indicate if this waste contains any of the following metals. If Generator knowledge provides backup

Lab Analysis		Generator Knowledge		TCLP		TOTAL	
Not Present	Concentration	Not Present	Concentration				
PCB	X _____ ppm	Aromatic Amine	X _____ ppm	Antimony (As)	DD04	X = 5	ppm
Dioxin	X _____ ppm	Benzo(a)pyrene	X _____ ppm	Boron (B)	DD05	X = 100	ppm
Cyanides Residual	X _____ ppm	Benzo(b)fluoranthene	X _____ ppm	Chromium (Cr)	DD06	X = 1	ppm
Cyanide Total	X _____ ppm	Benzo(k)fluoranthene	X _____ ppm	Chromium (Cr)	DD07	X = 5	ppm
Sulfides Residual	X _____ ppm	Benzo(e)pyrene	X _____ ppm	Lead (Pb)	DD08	X = 5	ppm
Sulfide Total	X _____ ppm	Benzo(g)perylene	X _____ ppm	Mercury (Hg)	DD09	X = 0.2	ppm
		Benzo(i)perylene	X _____ ppm	Selenium (Se)	DD10	X = 1	ppm
		Benzo(a)anthracene	X _____ ppm	Silver (Ag)	DD11	X = 5	ppm

TCLP Organics DD12 - DD43 above regulatory limits Present Not Present X

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-Potential Carcinogens
 NESHAP Volatiles (Benzene, etc.)
 Biological
 None Apply

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? X Yes No

2. Reportable Quantity (RQ) in pounds _____

3. DOT Shipping Name: UN1780, Waste corrosive liquids, N.O.S. Hazard Class 8 UNNA

PG II ERG _____ Hazardous Constituents for "I.O.S." _____

4. Method of Shipment: X Bulk Tanker Van Truck Rail Car Barge Totes

5. Number of Units to Ship Now: 5000 pallets 6. Anticipated Volume / Units per Year: _____ or X One Time

7. 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 or is to be made 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 considered with the results of the sample characterization analysis to determine materiality.

Printed Name: _____ Title: _____

Generator's Signature: _____ Date: _____

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 4-quart sample of the waste described in the above referenced Characterization Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods used in 40 CFR 301-Appendix 2. 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.*

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

Material Safety Data Sheet

SULFURIC ACID 35%

SECTION I - IDENTIFICATION

MANUFACTURER'S NAME
MANUFACTURER'S ADDRESS
PHONE NUMBER
EMERGENCY PHONE NUMBER
EFFECTIVE DATE
TRADE NAME
CHEMICAL FAMILY.....SULFURIC ACID 35%
Inorganic Mineral Acid Blend

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	OSHA PEL	TLV (Units)	CAS NUMBER
Sulfuric Acid (35% by weight)	Not Established	1 mg/m3 Ceiling	7664-93-9

SECTION III - PHYSICAL DATA

BOILING POINT.....275°F
FREEZING POINT.....-80°F
VAPOUR PRESSURE.....Negligible
VAPOUR DENSITY (air=1).....Not Applicable
SOLUBILITY IN H₂O.....Completely
ODOUR AND APPEARANCE.....Clear, Colorless to Slightly Black Liquid; Odorless
SPECIFIC GRAVITY.....1.84 at 20°C
pH.....Not Established

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT AND METHOD OF DETERMINATION.....Not Flammable
LOWER EXPLOSIVE LIMIT (% by Volume).....Not Applicable
UPPER EXPLOSIVE LIMIT (% by Volume).....Not Applicable
MEANS OF EXTINCTION.....As for Surrounding Fires
SPECIAL FIRE FIGHTING PROCEDURES.....Wear self contained, positive pressure breathing apparatus and full fire fighting protective clothing.
UNUSUAL FIRE HAZARD.....Sulfuric Acid will not burn, but is capable of igniting finely divided combustible materials on contact. Flammable and potentially explosive hydrogen gas can be generated inside metal drums and storage tanks.

SECTION V - HEALTH HAZARD DATA

CARCINOGENICITY, REPRODUCTIVE EFFECTS.....None
NTP?.....No
IARC MONOGRAPHS?.....No
OVER EXPOSURE EFFECTS.....Irritation (redness); headache; coughing
PRIMARY ROUTE(S) OF ENTRY.....Skin Contact
SPECIFIC FIRST AID PROCEDURES.....If inhaled: Remove to fresh air. In case of contact: Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes. If swallowed: Induce

Material Safety Data Sheet

EXPOSURE AGGRAVATED MEDICAL
CONDITIONS

vomiting immediately by giving two glasses of water and sticking finger
down-throat. Never give anything by mouth to an unconscious person.
None Currently Known

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY Stable
CONDITIONS TO AVOID Not Applicable
INCOMPATIBLE MATERIALS Alkalis, aldehydes, organic materials; gas forming salts, e.g. carbides, most
metals.
HAZARDOUS DECOMPOSITION PRODUCTS Sulfur trioxide-gas, sulfur dioxide, hydrogen sulfide
HAZARDOUS POLYMERIZATION Will Not Occur
POLYMERIZATION AVOID Not Applicable

SECTION VII - SPILL OR LEAK PROCEDURE

LEAK AND SPILL PROCEDURES Contain spill. Dilute cautiously with 5 or 6 volumes of water and neutralize
gradually with soda ash or lime. DO NOT allow unneutralized acid to get into
sewers containing sulfides. Soak up with inert material; sweep into marked
containers for disposal.
WASTE DISPOSAL Dispose of spilled or waste product, contaminated soil and other contaminated
materials in licensed landfill or treatment facility in accordance with all
federal, state and local regulations.

SECTION VIII - SPECIAL PROTECTION

RESPIRATORY PROTECTION Generally not required. For emergency use a respirator approved by NIOSH
for sulfuric acid.
VENTILATION To maintain vapors below TLV's.
PROTECTIVE GLOVES Rubber or other impervious materials.
EYE PROTECTION Chemical splash proof goggles.
OTHER PROTECTIVE EQUIPMENT A safety shower and eye bath should be available. For operations where spills
or splashing may occur, use an impervious body covering and boots.
HANDLING PROCEDURES AND EQUIPMENT Store in cool, dry place. Keep containers closed when not in use.

SECTION IX - SPECIAL PRECAUTIONS

HAZARD CLASS Corrosive, 8, PG II
DOT SHIPPING NAME BATTERY ACID, FLUID
UN NUMBER UN2796
REPORTABLE QUANTITY (RQ) 2800lbs.

REFERENCES

SULACD35 HMIS H-3, R-0, R-2

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

28470 Citrus Dr, Romulus, MI 48174. Telephone 734 946 1000 Fax 734 946 1002

Generator Waste Profile

00740



GENERATOR INFORMATION

Name: [REDACTED] USEPA ID: [REDACTED]
 Facility Address: [REDACTED] SIC/NAICS Code: [REDACTED] State Code: [REDACTED]
 City: [REDACTED] State: MI Zip Code: [REDACTED]
 Contact: [REDACTED] Title: [REDACTED] Phone: [REDACTED] Fax: () [REDACTED]

BILLING INFORMATION SAME AS ABOVE

Company Name: [REDACTED]
 Address: [REDACTED]
 City: [REDACTED] State: [REDACTED] Zip Code: [REDACTED]
 Attention: [REDACTED] Title: [REDACTED] Phone: [REDACTED] Fax: () [REDACTED]

WASTE INFORMATION

Name of Waste/Common Chemical Name: Sodium hydroxide & rinse water

Process Generating Waste (Please be specific, incomplete information may delay the approval process):
residual product sodium hydroxide & water from cleaning storage tank & delivery pipe.

USEPA/STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (POB, etc.)
- UN/ALL Applicable Waste Code: D002

PHYSICAL CHARACTERIZATION OF WASTE

Color: <input checked="" type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input type="checkbox"/> Other _____	Suspended Solids <input checked="" type="checkbox"/> 0-1% <input type="checkbox"/> 2-5% <input type="checkbox"/> 1-3% <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> < 0.8 <input checked="" type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input type="checkbox"/> 1.2 - 1.4 Exact / Other _____	<i>acceptable</i> <i>11/15</i>
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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
water	95	95	Sodium hydroxide	5	2

**MATERIAL
SAFETY DATA**

Sodium Hydroxide Solution, 50%

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Δ **Manufacturer's name and address:**
[REDACTED]

Supplier's name and address:
[REDACTED]

Product Name: Sodium Hydroxide Solution, 50%
CAS#: 1310-73-2
MSDS Code: NaOH(50)-E
Synonyms: Caustic soda liquid 50%, Soda lye, Lye, Liquid Caustic, Sodium Hydrate
Product Use: Neutralizing agent, industrial cleaner, pulping and bleaching, soap manufacturing

Preparation date (M/D/Y): 10/02/08
Revision date (M/D/Y): 02/08/11

Emergency Contacts (24 hr.)

FOR INFORMATION REGARDING ON SITE CHEMICAL EMERGENCIES INVOLVING A SPILL OR LEAK, CALL

Δ **Canada: 1-800-567-7455**
U.S.: 1-800-424-9300 - CHEMTREC

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Δ

Hazardous Ingredient(s)	% (w/w)	ACGIH	CAS NO.
Sodium Hydroxide	49 - 52	2 mg/m ³ (TLV-C)	1310-73-2

SECTION 3 - HAZARD IDENTIFICATION

Emergency Overview: Odorless, clear, non-volatile liquid. **EXTREMELY CORROSIVE!** Causes severe burns on contact. Can cause blindness, permanent scarring and death. Aerosols can cause lung injury - effects may be delayed. Highly reactive. Can react violently with water and numerous commonly encountered materials, generating enough heat to ignite nearby combustible materials. Contact with many organic and inorganic chemicals may cause fire or explosion. Reacts with some metals to liberate hydrogen gas, which can form explosive mixtures with air. Will not burn. Harmful to aquatic life. Read the entire MSDS for a more thorough evaluation of the hazards.

Potential Health Effects:

Δ **Routes of exposure:** Inhalation, skin contact, eye contact and ingestion.



MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 2 of 10

Inhalation: Sodium hydroxide does not readily form a vapor and Inhalation exposure is likely to occur as an aerosol. Due to its corrosive nature, sodium hydroxide aerosols could cause pulmonary edema (severe, life-threatening lung injury). The development of pulmonary edema may be delayed up to 48 hours after exposure. The early symptoms of pulmonary edema include shortness of breath and tightness in the chest.

Skin Contact: **EXTREMELY CORROSIVE!** Sodium hydroxide is capable of causing severe burns with deep ulceration and permanent scarring. It can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration (solutions) and the duration of exposure. Burns may not be immediately painful; onset of pain may be delayed minutes to hours. Several human studies and case reports describe the corrosive effects of sodium hydroxide. A 4% solution of sodium hydroxide, applied to a volunteer's arm for 15 to 180 minutes, caused damage which progressed from destruction of cells of the hard outer layer of the skin within 15 minutes to total destruction of all layers of the skin in 60 minutes. Solutions as weak as 0.12% have damaged healthy skin within 1 hour.

Eye Contact: **EXTREMELY CORROSIVE!** The severity of injury increases with the concentration, the duration of exposure, and the speed of penetration into the eye. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions, which affect vision such as glaucoma and cataracts, are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue which may lead to permanent blindness.

Ingestion: **EXTREMELY CORROSIVE!** Severe pain; burning of the mouth, throat and esophagus; vomiting; diarrhea; collapse and possible death may result.

Chronic Effects: **SKIN:** Repeated or prolonged skin contact would be expected to cause drying, cracking, and inflammation of the skin (dermatitis).

Existing Medical Conditions Possibly Aggravated by Exposure: Asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. Skin irritation may be aggravated in individuals with existing skin disorders.

Carcinogenicity: Sodium hydroxide is not classified as a carcinogen by ACGIH (American Conference of Governmental Industrial Hygienists) or IARC (International Agency for Research on Cancer), not regulated as a carcinogen by OSHA (Occupational Safety and Health Administration), and not listed as a carcinogen by NTP (National Toxicology Program).

Other Important hazards: Refer to TOXICOLOGICAL INFORMATION (Section 11) for additional information.

SECTION 4 - FIRST AID MEASURES

General: If you feel unwell, **IMMEDIATELY** seek medical advice (show this document).

Inhalation: Move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. Give artificial respiration **ONLY** if breathing has stopped. Do not use mouth-to-mouth method if victim ingested or inhaled the substance: induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give Cardiopulmonary Resuscitation (CPR) only if there is no pulse **AND** no breathing. Obtain medical attention **IMMEDIATELY**. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.

Skin Contact: Immediately flush skin with lukewarm water for at least 20 minutes, and up to 60 minutes if necessary. Under lukewarm water remove contaminated clothing, jewelry, and shoes. If irritation persists, repeat flushing. Obtain medical attention immediately. Discard contaminated clothing and shoes in a manner which limits further exposure.

MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 3 of 10

Eye Contact: Immediately flush eyes with lukewarm water for at least 20 minutes, and up to 60 minutes if necessary. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

Ingestion: DO NOT INDUCE VOMITING. If victim is alert and not convulsing, rinse mouth and give as much water as possible to dilute material (8 to 10 oz. or 240 to 300 mL). If spontaneous vomiting occurs, have victim lean forward with head down, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility.

SECTION 5 - FIRE FIGHTING MEASURES

Flammability	Not applicable. Not combustible (does not burn).
Flash Point (method)	Not applicable.
Flammable Limits (Lower)	Not applicable
Flammable Limits (Upper)	Not applicable
Auto Ignition Temperature	Not applicable
Combustion and Thermal Decomposition Products	Sodium oxide fumes
Rate of Burning	Not applicable
Explosive Power	Not applicable
Sensitivity to Mechanical Impact	Not sensitive ; stable material
Sensitivity to Static Charge	Not applicable

Fire and Explosion Hazards: Sodium hydroxide will not burn or support combustion. The reaction of sodium hydroxide with water and a number of commonly encountered materials (see Section 10) can generate sufficient heat to ignite nearby combustible materials. Sodium hydroxide can react with metals, such as aluminum, tin and zinc, to form flammable hydrogen gas.

Extinguishing Media: Use extinguishing media suitable for the surrounding fire. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to sodium hydroxide.

Special Information: Evacuate area and fight fire from a safe distance or a protected location. Approach fire from upwind. If possible, isolate materials not involved in the fire and protect personnel. Move containers from fire area if it can be done without risk.

Water can be used with extreme caution to extinguish a fire in an area where sodium hydroxide is stored. The water must not come into contact with the sodium hydroxide. Water can be used in flooding quantities as a spray or fog to keep fire-exposed containers cool and absorb heat. At high temperatures, fuming may occur, giving off a strong, corrosive gas. Do not enter without wearing specialized protective equipment suitable for the situation.

Evacuation: If tank or tank truck involved in a fire, ISOLATE and consider evacuation of one-half (1/2) mile (800 meters) in all directions.

Fire Fighting Protective Equipment: Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. Chemical resistant clothing (e.g. chemical splash suit) and positive pressure self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) may be necessary.

NOTE: Also see "Section 10 - Stability and Reactivity"

MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 4 of 10

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spills, Leaks, or Releases:

- Restrict access to area until completion of clean up. Ensure trained personnel conduct clean up. Ventilate area.
- Wear adequate personal protective equipment (See Section 8). Do not touch spilled material.
- Prevent entry into sewers or waterways.
- Land spill of sodium hydroxide: Solutions should be contained by diking with inert material, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralized with acids such as acetic acid or hydrochloric acid.
- Water spill: Neutralize with dilute acid.
- Comply with Federal, Provincial/State and local regulations on reporting releases.

Deactivating Chemicals: Weak acid solutions (acetic, hydrochloric or sulfuric acid).

Waste Disposal Methods: Dispose of waste material at an approved waste treatment/disposal facility, in accordance with applicable regulations. Do not dispose of waste with normal garbage or to sewer systems.

- Note**
- Clean-up material may be a RCRA Hazardous Waste on disposal.
 - Spills are subject to CERCLA reporting requirements: RQ = 1000 lbs. (454 kg).

SECTION 7 - HANDLING AND STORAGE

Precautions: EXTREMELY CORROSIVE! Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Wear appropriate Personal Protection Equipment (Refer to Section 8). People working with this chemical should be properly trained regarding its hazards and its safe use.

Handling Procedures and Equipment: Use smallest possible amounts in designated areas with adequate ventilation. Keep containers closed when not in use. Empty containers may contain hazardous residues. Avoid generating mists. Transfer solutions using equipment, which is corrosion-resistant. Cautiously, transfer into sturdy containers made of compatible materials. Never return contaminated material to its original container. Considerable heat is generated when diluted with water. Proper handling procedures must be followed to prevent vigorous boiling, splattering or violent eruption of the diluted solution. Never add water to a sodium hydroxide solution. **ALWAYS ADD SODIUM HYDROXIDE TO WATER** and provide agitation. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation.

Storage Requirements: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use and when empty. Protect from damage. Store away from incompatible materials such as strong acids, nitroaromatic, nitroparaffinic or organohalogen compounds. See Section 10 for Incompatibles. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area. Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated. Nickel is the preferred metal for handling this product. Plastics or plastic-lined steel, or FRP tanks of Derakane vinyl ester resin may be suitable. Container contents may develop pressure after prolonged storage. Drums may need to be vented. Trained personnel should only perform venting.

Storage Temperature: Avoid freezing. Do not expose sealed containers to temperatures above 40°C (104°F).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

PREVENTIVE MEASURES

Recommendations listed in this section indicate the type of equipment which will provide protection against over exposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact.

PERSONAL PROTECTIVE EQUIPMENT

Maintain eye wash fountain and quick-drench facilities in work area. Detailed requirements for personal protective equipment should be established on a site-specific basis.

Eye Protection: Wear full face-shield and chemical safety goggles when there is potential for contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact.

Guidelines for sodium hydroxide solutions, 30-70%:

RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber, natural rubber, neoprene rubber, nitrile rubber, polyethylene, polyvinyl chloride, Teflon™, Viton™, Saranex™, 4H™, Barricade™, CPF 3™, Responder™, Trelchem HPS™, Tychem 10000™.

NOT RECOMMENDED for use (resistance to breakthrough less than 1 hour): Polyvinyl alcohol.

Respiratory Protection:

Up to 10 mg/m³: Supplied Air Respirator (SAR) operated in a continuous-flow mode, eye protection needed; or full face-piece respirator with high-efficiency particulate filter(s); or powered air-purifying respirator with dust and mist filter(s), eye protection needed; or full face-piece Self-Contained Breathing Apparatus (SCBA); or full face-piece SAR.

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Positive pressure, full face-piece SAR; or positive pressure, full face-piece SAR with an auxiliary positive pressure SAR.

ESCAPE: Full face-piece respirator with high-efficiency particulate filter(s); or escape-type SCBA.

EXPOSURE GUIDELINES

PRODUCT: Sodium hydroxide:

ACGIH Ceiling Exposure Limit (TLV-C)	2 mg/m ³
Δ OSHA PEL-TWA	2 mg/m ³
NIOSH IDLH	10 mg/m ³
NIOSH REL:	C 2 mg/m ³

MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 6 of 10

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name(s)	Caustic soda liquid 50%, Soda lye, Lye, Liquid Caustic, Sodium Hydrate
Chemical Name	Sodium hydroxide
Chemical Family	Alkali hydroxide
Molecular Formula	NaOH
Molecular Weight	40.01
Physical State and Appearance	Clear-to-slightly turbid liquid
Odor	Odorless
pH	14.0 (Aqueous solution: 5%)
Vapor Pressure	0.2 kPa (1.5 mm Hg) at 20 °C (68°F) (50% solution)
Vapor Density (Air = 1)	Not applicable
Boiling Point	140 °C (284 °F) (50% solution)
Freezing Point	12 °C (53.6 °F) (50% solution)
Solubility (Water)	Soluble in all proportions
Specific Gravity	1.53 (50% solution) 15.5 °C (60°F)
Evaporation Rate	Not applicable
Viscosity (cp):	78.3 at 20 °C (68°F)
Bulk Density (lbs/cu ft):	95.5
Coefficient of Oil/Water Distribution	Essentially zero

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable at room temperature.

Hazardous Decomposition Products: Thermal decomposition: sodium oxide fumes

Conditions to Avoid: Water. Keep away from incompatibles.

Incompatibility with other Substances: Sodium hydroxide reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, nitroaromatic, nitroparaffin and organohalogen compounds, glycols and organic peroxides. Reacts violently with water generating significant heat and dangerously spattering corrosive sodium hydroxide. Violently polymerizes acetaldehyde, acrolein or acrylonitrile. Produces flammable and explosive hydrogen gas if it reacts with sodium tetrahydroborate or certain metals such as aluminum, tin, or zinc. Can form spontaneously flammable chemicals upon contact with 1,2-dichloroethylene, trichloroethylene or tetrachloroethane. Can produce carbon monoxide upon contact with solutions of sugars, such as fructose, lactose and maltose.

Corrosivity to Metals: Corrosive to aluminum, tin, zinc, copper, and most alloys in which they are present including brass and bronze. Corrosive to steel at elevated temperatures above 40°C(104°F).

Stability and Reactivity Comments: Slowly attacks glass at room temperature.

Hazardous Polymerization: Will not occur. However, it can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile.

MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 7 of 10

SECTION 11 - TOXICOLOGICAL INFORMATION

For more toxicological information, refer to Section 3.

TOXICOLOGICAL DATA:

Toxicological Data: Sodium hydroxide

Toxicity data: LDLo - Lowest published lethal dose oral rabbit 500 mg/kg ;
LD₅₀ Intrapertoneal mouse 40 mg/kg

Irritation data: Standard Draize Tests: 500 mg/24 hour(s) skin-rabbit severe;
400 µg eyes-rabbit mild; 1 percent eyes-rabbit severe;

Mutagenicity: There is no evidence of mutagenic potential.

Reproductive Effects: No information is available.

Teratogenicity and Fetotoxicity: No information is available.

Synergistic Materials: No information is available.

Skin and Respiratory Sensitization: No information is available.

Irritancy: Strong eye and skin irritant.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicological Information:

LC₁₀₀ Cyprinus Carpio 180 ppm/24 hr @ 25°C (77°F)

TLm mosquito fish 125 ppm/96 hr (fresh water);

TLm Bluegill 99 mg/L/48 hr (tap water)

Persistence and Degradation: Degrades readily by reacting with natural carbon dioxide in the air. Does not bioaccumulate.

SECTION 13 - DISPOSAL CONSIDERATIONS

Review federal, state and local government requirements prior to disposal.

Do not dispose of waste with normal garbage, or to sewer systems.

Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.

RCRA: Test waste material for corrosivity, D002, prior to disposal.

**MATERIAL
SAFETY DATA**

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 8 of 10

SECTION 14 - TRANSPORT INFORMATION

	TDC	DOT
Shipping Name	SODIUM HYDROXIDE SOLUTION	Sodium hydroxide, solution
Hazard Class/Division	8	8
Identification No.	UN1824	UN1824
Packing Group:	II	II
Reportable Quantity	Not Applicable	RQ: 1000 lbs. (454 kg)
ERAP	NONE	Not Applicable

- Δ **IATA/ICAO Shipping Description:** UN1824, Sodium hydroxide solution, Class 8, PG II is accepted for air transport.
- Δ **For Chemical Emergencies in Transportation Requiring Activation of Olin 24 Hour Emergency Response Plan Call:**
U.S. 1-800-424-9300 - Chemtrec
Canada 1-800-557-7455

SECTION 15 - REGULATORY INFORMATION

Δ **CANADIAN INFORMATION:**

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

Controlled Products Regulations (WHMIS) Classification:
E: Corrosive Material

CEPA / Canadian Domestic Substances List (DSL): Y

WHMIS Ingredient Disclosure List: Meets criteria for disclosure at 1% or greater.

Δ **USA INFORMATION:**

OSHA Classification: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

SARA Regulations sections 313 and 40 CFR 372: N

SARA Hazard Categories, SARA SECTIONS 311/312 (40 CFR 370.2):

ACUTE: Y

CHRONIC: N

FIRE: N

REACTIVE: Y

SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29 CFR 1910.119): N

CERCLA SECTION 103 (40 CFR 302.4): Y

Reportable Quantity (RQ) under CERCLA: 1000 lbs. (454 kg)

MATERIAL SAFETY DATA

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 9 of 10

TSCA Inventory Status: Y

This product does not contain nor is it manufactured with ozone depleting substances.

△ EUROPEAN ECONOMIC COMMUNITY (EEC) INFORMATION:

EINECS Number: 215-185-5

CALIFORNIA PROP 65 COMPONENTS:

This product is not listed, but it may contain elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact Olin Technical Services (800-299-6546)

SECTION 6 - OTHER INFORMATION

△ The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Olin will not be liable for any damages, losses, injuries or consequential damages that may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

Revision Indicators:

△ In the left margin indicates a revision or addition of information since the previous issue.

National Fire Protection Association (NFPA) Rating Hazardous Materials Identification System (HMIS) Rating

	NFPA	HMIS
HEALTH	3	3
FIRE	0	0
REACTIVITY / INSTABILITY	1	1
SPECIAL HAZARDS	N/Ap	N/Ap

4 = Extreme/Severe
3 = High/Serious
2 = Moderate
1 = Slight
0 = Minimum
W = Water Reactive
OX = Oxidizer
* = Chronic health hazard


△ REFERENCES:

1. Chemlist, STN Database, Chemical Abstract Service, 1999
2. "CHEMINFO", CCOHS, Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada, (2008).
3. DOSE, Royal Society of Chemistry, Aug 27, 1999.
4. HSDB- Hazardous Substances Data Bank, CCOHS, 2008.
5. RTECS-Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, Doris V. Sweet, Ed., National Institute for Occupational Safety and Health, U.S. Dept. of Health and Human Services, Cincinnati, Entry Update/ August 2007.
6. "2008 Threshold Limit Values and Biological Exposure Indices", American Conference of Government Industrial Hygienists, 2008.
7. Merck, 11th Edition, 1989

SODIUM HYDROXIDE SOLUTION, 50%
Update/Review: February 8, 2011

Page 10 of 10

A LEGEND:

- ACGIH - American Conference of Governmental Industrial Hygienists
 - AFFF - Aqueous Film Forming Foam
 - AIHA - American Industrial Hygiene Association
 - CAS# - Chemical Abstracts Service Registry Number
 - CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
 - CFR - Code of Federal Regulations
 - DOT - Department of Transportation
 - EINECS - European Inventory of Existing Chemical Substances
 - EPA - Environmental Protection Agency
 - ERAP - Emergency Response Assistance Plan
 - IATA - International Air Transportation Association
 - ICAO - International Civil Aviation Organization
 - FRP - Fiberglass Reinforced Plastic
 - HMIS - Hazardous Materials Identification System
 - IARC - International Agency for Research on Cancer
 - IDLH - Immediately Dangerous to Life and Health
 - LC50 - The concentration of material in air expected to kill 50% of a group of test animals
 - LD₅₀ - Lethal Dose expected to kill 50% of a group of test animals
 - MSHA - Mine Safety and Health Administration
 - N/Ap - Not Applicable
 - N/Av - Not Available
 - NFPA - National Fire Protection Association
 - NIOSH - National Institute for Occupational Safety and Health
 - NTP - National Toxicology Program
 - OSHA - Occupational Safety & Health Administration
 - PEL - Permissible Exposure Limit
 - PVC - Polyvinyl chloride
 - RCRA - Resource Conservation and Recovery Act
 - SARA - Superfund Amendments and Reauthorization Act of the U.S. EPA
 - STEL - Short Term Exposure Limit
 - TDG - Transportation of Dangerous Goods Act/Regulations
 - TLV - Threshold Limit Value
 - TSCA - Toxic Substances Control Act
 - TWA - Time Weighted Average
 - WEEL - Workplace Environmental Exposure Level
 - WHMIS - Workplace Hazardous Materials Identification System
- 

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC

28470 Citrin Dr, Romulus, MI 48174. Telephone 734 946 1000. Fax 734 946 1002

Generator Waste Profile

Profile #00741

GENERATOR INFORMATION

Name: [REDACTED] USEPA ID #: [REDACTED]
 Facility Address: [REDACTED] SIC/NAICS Code: _____ State Code: _____
 City: [REDACTED] State: MI Zip Code: [REDACTED]
 Contact: [REDACTED] Title: _____ Phone: [REDACTED] Fax: () _____

BILLING INFORMATION

SAME AS ABOVE

Company Name: [REDACTED]
 Address: [REDACTED]
 City: Highland State: MI Zip Code: [REDACTED]
 Attention: [REDACTED] Phone: [REDACTED] Fax: () _____

WASTE INFORMATION

Name of Waste/Common Chemical Name: Megum W-7025 & Fixodine M

Process Generating Waste (Please be specific, incomplete information may delay the approval process):
from washing parts before coating

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCBs, etc.)
- List ALL Applicable Waste Codes: 029L

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other _____	Suspended Solids <input type="checkbox"/> 0-1 % <input type="checkbox"/> 3-5 % <input checked="" type="checkbox"/> 1-3 % <input type="checkbox"/> > 5%	Layers: <input type="checkbox"/> Multi-Layered <input type="checkbox"/> Bi-Layered <input checked="" type="checkbox"/> Single Phase	Specific Gravity: <input type="checkbox"/> <0.8 <input checked="" type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 Exact / Other _____	<i>acceptable</i> <i>112515</i>
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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
Megum W-7025	20	25			%
Fixodine M	70	75			%
					%
					%
					%



Material Safety Data Sheet

NH
1. Total

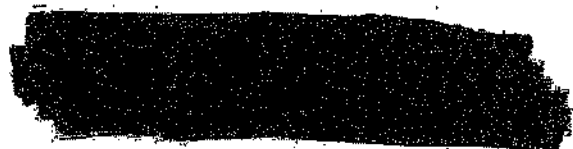
00741

1. PRODUCT AND COMPANY IDENTIFICATION

MEGUM W-7025

Revision Date: 09/26/2012

Supplier



For non-emergency information contact: 215-592-3000

Emergency telephone number
1 800 424 9300

Local emergency telephone number
989-636-4400

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Butadiene/styrene copolymer	Not Hazardous	3.0 - 5.0 %
Phenolic resin(s)	Not Hazardous	12.0 - 16.0 %
Titanium dioxide	13463-67-7	6.0 - 9.0 %
Aliphatic amine	Trade Secret	1.0 - 2.0 %
Propoxypropanol	1569-01-3	6.0 - 8.0 %
Carbon black	1333-88-4	< 0.7 %
Water	7732-18-5	63.0 - 67.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form: liquid, opaque

Colour: grey

Odour: Amine odor

Hazard Summary	<p>WARNING! INHALATION OF SOLVENT VAPOR OR MIST CAN CAUSE THE FOLLOWING: IRRITATION OF NOSE, THROAT, AND LUNGS MAY CAUSE EYE AND SKIN IRRITATION. PROLONGED OR REPEATED OVEREXPOSURE CAN CAUSE THE FOLLOWING: NARCOSIS LUNG EFFECTS CENTRAL NERVOUS SYSTEM (CNS) EFFECTS KIDNEY EFFECTS MAY CAUSE SENSITIZATION BY SKIN CONTACT.</p>
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Potential Health Effects**Primary Routes of Entry:**

Inhalation
 Eye contact
 Skin contact
 Dermal Absorption

Eyes: Material can cause the following:

Moderate irritation.

tearing
 reddening
 swelling

Skin: The solvent(s) in this material can cause the following:

Irritation

skin sensitization

The solvent(s) in this material can be absorbed through intact skin.

Ingestion: Material is possibly harmful if swallowed.

Inhalation: Inhalation of solvent vapor or mist can cause the following:

Irritation of nose, throat, and lungs

Repeated or prolonged exposure can cause the following:

anesthetic effects

narcosis

central nervous system (CNS) effects

Chronic Exposure: Prolonged or repeated overexposure to titanium dioxide may cause lung effects.

Prolonged or repeated overexposure to the solvent(s) in this material can cause the following:

central nervous system (CNS) effects

Prolonged or repeated overexposure to carbon black can cause lung effects.

Prolonged or repeated overexposure to aliphatic amine can cause kidney damage.

Carcinogenicity

Component	List	Classification
Titanium dioxide	IARC	Possible human carcinogen
Carbon black	IARC	Possible human carcinogen

4. FIRST AID MEASURES

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. Consult a physician.

Skin contact: Remove contaminated clothing. Wash off with soap and plenty of water. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

Notes to physician: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIREFIGHTING MEASURES

Flash point

Ignition temperature

Boiling point (212 °F)

no data available

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Specific hazards during firefighting: Closed containers may rupture via pressure build-up when exposed to fire or extreme heat. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

Further information: Move containers promptly out of fire zone. If removal is impossible, cool containers with water spray.

Remain upwind.

Avoid breathing smoke.

Contain run-off.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

MATERIAL IS A POTENTIAL SENSITIZER.

If exposed to material during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

Do not take clothing home to be laundered.

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations.

Environmental precautions

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Methods for cleaning up

Evacuate personnel to safe areas.

Ventilate the area.

Floor may be slippery; use care to avoid falling.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Sweep up or vacuum up spillage and collect in suitable container for disposal.

Avoid breathing vapor.

Avoid all contact.

7. HANDLING AND STORAGE**Handling**

This material is a potential sensitizer. See SECTION 8, Exposure Controls/Personal Protection, prior to handling. Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Wash after handling and shower at end of work period. NOTE: Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above the Rohm and Haas Co. recommended ceiling of 0.3 ppm. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Other data: STIR WELL BEFORE USE.

Storage

Storage conditions: Avoid temperature extremes during storage; ambient temperature preferred. Store out of direct sunlight in a cool place. Keep containers tightly closed in a cool, well-ventilated place.

Further Information:

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure limit(s)**

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Titanium dioxide	Rohm and Haas	TWA	1.5 mg/m ³
Titanium dioxide	Rohm and Haas	STEL	3 mg/m ³
Titanium dioxide	ACGIH	TWA	10 mg/m ³
Titanium dioxide	OSHA P1	TWA total dust	15 mg/m ³
Titanium dioxide	OSHA P0	TWA Total	10 mg/m ³
Titanium dioxide	NIOSH REL		
Aliphatic amine	Rohm and Haas	TWA	5 mg/m ³
Propoxypropanol	Rohm and Haas	TWA	50 ppm
Propoxypropanol	Rohm and Haas	STEL	75 ppm
Propoxypropanol	Rohm and Haas	Absorbed via skin	
Carbon black	ACGIH	TWA	3.5 mg/m ³
Carbon black	OSHA P1	TWA	3.5 mg/m ³
Carbon black	OSHA P0	TWA	3.5 mg/m ³
Carbon black	NIOSH REL	TWA	3.5 mg/m ³

Carbon black

NIOSH REL

TWA

0.1 mg/m³, PAHs**Exposure controls**

Engineering measures: Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures

Eye/face protection: Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): butyl-rubber. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact. Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 1000 ppm organic vapor: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full facepiece, airline respirator in the pressure demand mode. Above 1000 ppm organic vapor or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	liquid opaque
Colour	grey
Odour	Amine odor
pH	8-10
Boiling point/boiling range	no data available
Flash point	>100 °C (212 °F)
Evaporation rate	no data available
Vapour pressure	no data available

Relative vapour density	no data available
Water solubility	Soluble
Autoignition temperature	no data available
Density	1.11 g/cm ³
Viscosity, dynamic	<350 mPa.s
Percent volatility	72 - 74 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	This material is considered stable.
Materials to avoid	Avoid contact with the following: Strong Oxidizers Bases
Hazardous decomposition products	Thermal decomposition may yield the following: monomer vapors,
polymerisation	Product will not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: <u>Titanium dioxide</u>	
Acute oral toxicity	LD50 rat > 10,000 mg/kg
Component: <u>Aliphatic amine</u>	
Acute oral toxicity	LD0 rat > 2,000 mg/kg
Component: <u>Propoxypropanol</u>	
Acute oral toxicity	LD50 rat 2,504 mg/kg
Component: <u>Carbon black</u>	
Acute oral toxicity	LD50 rat > 8,000 mg/kg
Component: <u>Aliphatic amine</u>	
Acute inhalation toxicity	Dust may cause irritation to upper respiratory tract (nose and throat).
Component: <u>Carbon black</u>	
Acute inhalation toxicity	LC50 rat 1 Hour 27 mg/l
Component: <u>Titanium dioxide</u>	
Acute dermal toxicity	LD50 rabbit 10,000 mg/kg

- Component: Aliphatic amine
Acute dermal toxicity LD0 rat male and female > 2,000 mg/kg
- Component: Propoxypropanol
Acute dermal toxicity LD50 rabbit 3,550 mg/kg
- Component: Carbon black
Acute dermal toxicity LD50 rabbit > 8,000 mg/kg
- Component: Aliphatic amine
Skin irritation Prolonged contact may cause skin irritation with local redness.
- Component: Carbon black
Skin irritation rabbit No skin irritation
- Component: Aliphatic amine
Eye irritation May cause slight temporary eye irritation.
Corneal injury is unlikely.
- Component: Carbon black
Eye irritation rabbit No eye irritation
- Component: Aliphatic amine
Sensitisation May cause sensitization by skin contact. May cause sensitization by skin contact.
- Component: Aliphatic amine
Subchronic toxicity Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.
- Component: Aliphatic amine
Carcinogenicity: Did not cause cancer in laboratory animals.
- Component: Aliphatic amine
Reproductive toxicity
In animal studies, did not interfere with reproduction.
- Component: Aliphatic amine
Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals.
- Component: Aliphatic amine
Mutagenicity
inconclusive results
- Component: Carbon black
Carcinogenicity: In laboratory animals, evidence of carcinogenic activity was observed.
- Component: Carbon black
Teratogenicity
When maternal toxicity occurred slight fetotoxicity but no teratogenicity was also observed in these animals.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Titanium dioxide

Ecotoxicity effects

Toxicity to fish

LC50 *Pimephales promelas* (fathead minnow) 96 Hour
>1,000 mg/l

Toxicity to aquatic invertebrates

EC50 *Daphnia magna* 48 Hour
100 mg/l

Aliphatic amine

Elimination information (persistence and degradability)

Biodegradability

OECD Test Guideline 301C or Equivalent Readily biodegradable.
54 - 97 %

Bioaccumulation Ecotoxicity effects

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Toxicity to fish

flow-through test LC50 *Pimephales promelas* (fathead minnow) 96
Hour OECD Test Guideline 203 or Equivalent
49,800 mg/l

Toxicity to aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea) 48 Hour OECD Test
Guideline 202 or Equivalent
36,000 mg/l

Carbon black

Elimination information (persistence and degradability)

Biodegradability

Readily biodegradable

Ecotoxicity effects

Toxicity to aquatic invertebrates

EC50 *Daphnia magna* (Water flea) 24 Hour OECD Test Guideline 202
or Equivalent
>5,600 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Disposal

Waste Classification: When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP). For disposal, incinerate this material at a facility that complies with local, state, and federal regulations. (See 40 CFR 268)

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations.

15. REGULATORY INFORMATION

Workplace Classification

OSHA: This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

WHMIS: This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Acute Health Hazard
Chronic Health Hazard

SARA TITLE III: Section 313 Information (40CFR372)

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

CERCLA Information (40CFR302.4)

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

United States TSCA Inventory (US.TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components:	Formaldehyde	50-00-0
-------------	--------------	---------

California (Proposition 65)

This product contains a component or components known to the state of California to cause cancer:
 Components: Carbon black 1333-86-4

California (Proposition 65)

This product contains trace levels of a component or components known to the state of California to cause cancer:

Components: Acrylonitrile 107-13-1
 Formaldehyde 50-00-0

16. OTHER INFORMATION**HMIS Hazard Rating**

Health	Flammability	Physical Hazard
*2	1	0

* = Chronic Effects (See Hazards Identification)

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAC	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
	Bar denotes a revision from prior MSDS.

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

Layout 1011607-5

Version: 1.8
 Print Date: 05/28/2013

Material Safety Data Sheet

Material Name: FIXODINE M

ID: 230984DSF100 / IDH No. 611588

***** Section 1 - Chemical Product and Company Identification *****

Product Trade Name FIXODINE M
Manufacturer Information

***** Section 2 - Composition / Information on Ingredients *****

CAS #	Component	Percent
7722-88-5	Tetrasodium pyrophosphate	50-60
10124-54-8	Manganese phosphate	40-50

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Manganese compound (7438-96-5).

***** Section 3 - Hazards Identification *****

Emergency Overview:

CAUTION!

This product is irritating to the eyes, respiratory system and skin.

Eye Contact:

This product may cause irritation to the eyes.

Skin Contact:

Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.

Skin Absorption:

None expected.

Ingestion:

Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation:

This product may cause irritation to the respiratory system. This product may cause metal fume fever with resulting flu-like symptoms.

Medical Conditions Aggravated by Exposure:

Pre-existing eye, skin and respiratory disorders.

***** Section 4 - First Aid Measures *****

Eye Contact:

In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. If irritation persists get medical attention.

Skin Contact:

For skin contact, wash immediately with soap and water. If irritation persists, get medical attention.

Ingestion:

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

Inhalation:

If inhaled, immediately remove the affected person to fresh air. Call a physician if symptoms develop or persist.

First Aid: Notes to Physician

No additional information available.

***** Section 5 - Fire Fighting Measures *****

Material Safety Data Sheet

Material Name: **FIXODINE M**

ID: 230984DSF100 / IDH No. 611588

~~Flash Point:~~ Not applicable
Upper Flammable Limit (UFL): Not applicable

Method Used: Not applicable
Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not applicable

Fire & Explosion Hazards:
This material will not burn.

Decomposition Products:

Irritating and toxic gases or fumes may be released during a fire.

Extinguishing Media:

Use any media suitable for the surrounding fires.

Fire-Fighting Instructions:

Firefighters should wear full protective clothing including self contained breathing apparatus.

*** Section 6 - Accidental Release Measures ***

Containment Procedures:

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean-up.

Clean-Up Procedures:

Sweep up or gather material and place in appropriate container for disposal. Dispose of collected material according to regulation.

*** Section 7 - Handling and Storage ***

Handling Procedures:

Avoid contact with eyes, skin and clothing. Do not breathe dust from this material. For industrial use only.

Storage Procedures:

Keep the container tightly closed and in a cool, well-ventilated place.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines:

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

Tetrasodium pyrophosphate (7722-88-6)

ACGIH: 5 mg/m³ TWA

OSHA: 5 mg/m³ TWA

NIOSH: 5 mg/m³ TWA

Manganese phosphate (10124-54-6)

ACGIH: as Mn, 0.2 mg/m³ TWA (related to Manganese)

OSHA: fume, as Mn: 1 mg/m³ TWA (related to Manganese)

compounds, as Mn: C 5 mg/m³ (related to Manganese)

NIOSH: as Mn: 1 mg/m³ TWA (related to Manganese)

3 mg/m³ STEL (related to Manganese)

Engineering Controls:

Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

As prescribed in the OSHA Standard for Personal Protective Equipment (29 CFR 1910.132), employers must perform a Hazard Assessment of all workplaces to determine the need for, and selection of, proper protective equipment for each task performed.

Eyes/Face Protective Equipment:

Wear chemical goggles.

Material Safety Data Sheet

Material Name: FIXODINE M

ID: 230984DSF100 / IDH No. 611588

Skin Protection:

Use impervious gloves. Use of impervious apron and boots are recommended. Gloves should be tested to determine suitability for prolonged contact.

Respiratory Protection:

If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH/MSHA respiratory protection must be provided.

*** Section 9 - Physical & Chemical Properties ***

Physical State:	Solid	Appearance:	White granules
Odor:	None	Vapor Pressure:	Not applicable
Vapor Density:	Not applicable	Boiling Point:	Not applicable
Specific Gravity:	Not applicable	pH:	Not applicable
Viscosity:	Not applicable	VOC:	Not applicable
Solubility Water:	Appreciable	Evaporation Rate:	Not applicable
Percent Volatiles:	Not applicable	Percent Solids:	100%

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

None.

Incompatibility:

This product reacts with acids.

Decomposition Products:

None expected.

Hazardous Polymerization:

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity:

A: General Product Information

Inorganic phosphates are toxic to any organism ingesting excess quantities of the salts. Excess ingestion may upset the mineral balance in the body, adversely affecting the osmotic pressure of the body fluids and preventing absorption or utilization of necessary mineral nutrients. Overexposure to manganese may result in CNS effects, anemia and pneumonitis which increases the risk of pneumonia.

B: Component Analysis - LD50/LC50

Tetrasodium pyrophosphate (7722-88-5)

Oral LD50 Mouse: 2980 mg/kg

Oral LD50 Rat: 4 gm/kg

Manganese phosphate (10124-54-6)

Oral LD50 Rat: 9 gm/kg (related to Manganese)

Carcinogenicity:

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology:

No information available for the product.

Material Safety Data Sheet

Material Name: FIXODINE M

ID: 230984DSF100 / IDH No. 611588

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Tetrasodium pyrophosphate	7722-88-5	Yes	Yes	Yes	Yes	Yes	Yes
Manganese phosphate (* related to Manganese)	10124-54-6	Yes ¹	Yes ¹	Yes ²	Yes ¹	Yes ¹	Yes ¹

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Tetrasodium pyrophosphate	7722-88-5	Yes	Yes	Yes
Manganese phosphate	10124-54-6	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Tetrasodium pyrophosphate	7722-88-5	1% Item 1536 (1462)
Manganese phosphate	10124-54-6	1% Item 974 (1077) (related to Manganese)

*** Section 16 - Other Information ***

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

HMIS Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Henkel Surface Technologies bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Contact: Regulatory Affairs and Product Acceptance

Contact Phone: (248) 583-9300

This is the end of MSDS # 230984DSF100 / IDH No. 611588

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

<input type="checkbox"/> Lab Analysis	<input checked="" type="checkbox"/> Generator Knowledge	<input type="checkbox"/> TCLP	<input checked="" type="checkbox"/> TOTAL
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Silver (Ag)	D011	<input type="checkbox"/>	< 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
- NESHAPE Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name UN1760 "RQ" Waste corrosive liquid, N.O.S. Hazard Class 8 UNNA 1760
- PG III ERG 154 Hazardous Constituents for "n.o.s." Phosphoric acid & nitric acid
- Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
- Number of Units to Ship Now: _____ 6. Anticipated Volume / Units per Year: _____ or One Time
- Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

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

Printed Name: _____ Title: _____
 Generator's Signature: _____ Date: _____

GENERATOR'S CHAIN OF CUSTODY RECORD 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. _____ 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

Material Safety Data Sheet

Revision Number: 001.1

Issue date: 10/02/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:

IDH number:

Product use:

Region:

Contact information:

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state:

Liquid

Color:

Pink

Odor:

Mild

WHMIS hazard class:

D,2,A, E

DANGER-CORROSIVE! CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS.

Relevant routes of exposure:

Skin, Inhalation, Eyes

Potential Health Effects

Inhalation:

Mists, vapors or liquid may cause severe irritation or burns.

Skin contact:

Contact with liquid may produce severe skin irritation including redness, inflammation and chemical burns.

Eye contact:

This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion:

This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. This product may cause methemoglobinemia characterized by a reduction in oxygen carrying capacity of the blood with symptoms including headache, dizziness, flushed face, fatigue, nausea, vomiting, drowsiness, stupor, tremors, uneven heart action, coma and rarely death.

Existing conditions aggravated by exposure:

Eye, skin and respiratory disorders. Blood disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Manganese dihydrogen phosphate	18718-07-5	10-30
Sodium nitrate	7631-89-4	10-30
Phosphoric acid	7664-38-2	1-6
Sodium dihydrogen phosphate	7558-80-7	1-6

4. FIRST AID MEASURES

Inhalation:

If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

IDH number: 598100

Product name: BONDERITE M-MN LT-10 MU MANGANESE PHOSPHATE known as PARCO LUBRITE LT-10 MAKE-UP U

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get medical attention. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Notes to physician: If cyanosis is severe, intravenous injection of methylene blue, 1 mg/kg body weight, may be of value.

5. FIRE FIGHTING MEASURES

Flash point: Not applicable

Autoignition temperature: Not determined

Flammable/Explosive limits - lower: Not determined

Flammable/Explosive limits - upper: Not determined

Extinguishing media: Use media appropriate for surrounding material.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products: Irritating and toxic gases or fumes may be released during a fire.

Sensitivity to Mechanical Impact: Not available.

Sensitivity to static discharge: Not available.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists of this product. Do not take internally. Wash thoroughly after handling. For industrial use only.

Storage: For safe storage, store at or above 40 °F (4,4 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life contact Henkel Canada Customer Service at 800-283-5043.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Manganese dihydrogen phosphate	0.02 mg/m ³ TWA (as Mn) Respirable fraction. 0.1 mg/m ³ TWA (as Mn) Inhalable fraction.	5 mg/m ³ Ceiling (as Mn)	None	None
Sodium nitrate	None	None	None	None
Phosphoric acid	1 mg/m ³ TWA 3 mg/m ³ STEL	1 mg/m ³ PEL	None	None
Sodium dihydrogen phosphate	None	None	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Pink
Odor:	Mild
Color threshold:	Not available.
Vapor pressure:	Not determined
Boiling point/range:	> 210 °F (> 98.9 °C) calculated
Melting point/ range:	Not determined
Specific gravity:	1.34 - 1.37 at 60 °F (15.56 °C)
Vapor density:	Not determined
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not determined
Flammable/Explosive limits - upper:	Not determined
Autoignition temperature:	Not determined
Evaporation rate:	Not applicable
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not determined
VOC content:	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Decomposes with heat to produce oxides of nitrogen.
Incompatible materials:	This product may react with strong alkalis.
Conditions to avoid:	Prolonged exposure to heat.

11. TOXICOLOGICAL INFORMATION

Toxicologically synergistic products:	Not available.
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Refer to the following for Irritancy of Product, Sensitization to Product, Carcinogenicity, Reproductive Toxicity, Teratogenicity, and Mutagenicity.

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)	ACGIH Carcinogen
Manganese dihydrogen phosphate	No	No	No	Group A4
Sodium nitrate	No	No	No	No
Phosphoric acid	No	No	No	No
Sodium dihydrogen phosphate	No	No	No	No

Hazardous components	LD50s and LC50s	Health Effects/Target Organs
Manganese dihydrogen phosphate	None	Behavioral, Blood, Developmental, Irritant, Kidney, Lung, Mutagen, Nervous System, Reproductive, Respiratory
Sodium nitrate	Oral LD50 (RAT) = 1,257 mg/kg Oral LD50 (rabbit) = 1,500 mg/kg Oral LD50 (rabbit) = 1,955 mg/kg Oral LD50 (rabbit) = 2,880 mg/kg	Blood, Central nervous system, Corrosive, Gastrointestinal, Irritant
Phosphoric acid	Oral LD50 (RAT) = 1,830 mg/kg Dermal LD50 (rabbit) = 2,740 mg/kg	Irritant, Corrosive
Sodium dihydrogen phosphate	Oral LD50 (RAT) = 6,290 mg/kg Dermal LD50 (rabbit) > 7,940 mg/kg	Cardiac, Corrosive, Gastrointestinal, Irritant, Metabolic, Nervous System

12. ECOLOGICAL INFORMATION

Ecological information: No data available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. This chemical contains phosphates. This chemical contains heavy metals. This product contains a chelating agent.

14. TRANSPORT INFORMATION

Canada Transportation of Dangerous Goods - Ground

Proper shipping name: PHOSPHORIC ACID, LIQUID
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

International Air Transportation (ICAO/IATA)

Proper shipping name: Phosphoric acid, solution
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

Water Transportation (IMO/MDG)

Proper shipping name: PHOSPHORIC ACID SOLUTION
Hazard class or division: 8
Identification number: UN 1805
Packing group: III

15. REGULATORY INFORMATION

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: Reviewed MSDS. Reissued with new data.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the MSDS contains all the information required by the CPR.

Prepared by: [REDACTED]

DISCLAIMER: [REDACTED]
[REDACTED]
[REDACTED] prepared herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: [REDACTED]
PRODUCT CODE: [REDACTED]

HMS

Health:	2
Flammability:	0
Reactivity:	0

MANUFACTURER: [REDACTED]
TELEPHONE: [REDACTED]
ADDRESS: [REDACTED]

SECTION II - COMPOSITION, INFORMATION ON HAZARDOUS INGREDIENTS

<i>Ingredients</i>	<i>CAS</i>	<i>Percent</i>	<i>OSHA PEL</i>	<i>ACGIH TLV</i>	<i>SARA III</i>
Phosphoric Acid	7664-38-2	< 30%	1 mg/m3	1 mg/m3	<input checked="" type="checkbox"/>
[REDACTED]	7697-37-2	< 25%	2 ppm	2 ppm	<input checked="" type="checkbox"/>

SECTION III - HAZARDS IDENTIFICATION

May be harmful if swallowed. May cause skin and eye irritation. Eye protection and rubber gloves are recommended when handling this product.

SECTION IV - FIRST AID MEASURES

In case of eye or skin contact flush with large amounts of water for 15 minutes. If irritation persists, see physician. In case of ingestion, do not induce vomiting; drink large quantities of water to dilute product. Get medical attention at once.

SECTION V - FIRE FIGHTING MEASURES

FLASHPOINT: No Flash LEL: N/E UEL: N/E
GENERAL HAZARD: Does not propose a significant fire hazard.
EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide

SECTION VI - ACCIDENTAL RELEASE MEASURES

Notify the appropriate authorities immediately. Avoid uncontrolled release of this material to environment. Contain spilled liquid with sand, earth or absorbent material. Transfer to secure chemical waste container.

SECTION VII - HANDLING AND STORAGE

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials and flame, heat or other source of ignition. Do not reuse empty containers without commercial cleaning.





SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

EYE PROTECTION: Wear chemical resistant safety glasses, splash goggles or face shield.
SKIN PROTECTION: Wear chemical resistant rubber gloves.
RESPIRATORY PROTECTION: For most conditions, no respiratory protection should be needed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid	SPECIFIC GRAVITY: 1.51 to 1.55
COLOR: Pink	pH: 0 to 0.2
ODOR: Non-Objectionable	BOILING POINT: 212° F
SOLUBILITY: 100%	VAPOR PRESSURE: 24 mm Hg @ 75° F

SECTION X - STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur.
INCOMPATIBILITY: Strong oxidizing agents. Do not mix with other chemicals.
DECOMPOSITION: None.

SECTION XI - TOXICOLOGICAL INFORMATION

No data available.

SECTION XII - ECOLOGICAL INFORMATION

No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to federal, state and/or local requirements and your company policy. Safety precautions listed on this MSDS also apply to empty containers.

SECTION XIV - TRANSPORT INFORMATION


DOT Hazard Class: UN1760, Corrosive liquids, n.o.s., (Contains PHOSPHORIC ACID), 8, PGII

SECTION XV - REGULATORY INFORMATION

Component chemicals are subject to the reporting requirements of SECTION 313 of SARA TITLE III. Please see MSDS Section II for exposure levels. The listed percent should be used to determine reporting requirements.

SECTION XVI - OTHER INFORMATION

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.



Material Safety Data Sheet

Cardobond R 2236 TA

Version 1.0

Revision Date 04/01/2009

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name
MSDS Number

Company

Telephone
Telefax
Emergency telephone no

SECTION 2. HAZARDOUS COMPONENTS INFORMATION

Component	CAS-No.	Weight %
Zinc dihydrogen phosphate	13598-37-3	5.00 - 10.00
Phosphoric acid	7664-38-2	7.00 - 13.00
Manganese dihydrogenphosphate	18718-07-5	1.00 - 5.00
Manganese nitrate	10377-86-9	1.00 - 5.00
Trade secret registry	735517-5190P	10.00 - 30.00

Unidentified ingredients are considered not hazardous under Federal Hazard Communication Standard (29CFR 1910.1200).

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview

Form : liquid
Colour : pink
Odour : acrid
Hazard Summary : Harmful if swallowed. Harmful by inhalation. Causes severe burns.

Route(s) of Entry	Inhalation	Skin	Ingestion
	yes	yes	yes

Carcinogenicity:

NTP No substance in this product is listed by NTP as a carcinogen
IARC No substance in this product is listed by IARC as a carcinogen
OSHA No substance in this product is regulated by OSHA as a carcinogen

Material Safety Data Sheet

Gardobond® R 2236 TA

Version 1.0

Revision Date 04/01/2009

Print Date 06/12/2015

SECTION 4. FIRST AID MEASURES

- Inhalation : Remove to fresh air. If symptoms persist, call a physician. If breathing is irregular or stopped, administer artificial respiration.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Get medical attention immediately if irritation develops and persists
- Eye contact : Rinse immediately with plenty of water for at least 15 minutes. Keep eye wide open while rinsing. Get medical attention immediately
- Ingestion : Rinse mouth. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention immediately

SECTION 5. FIRE-FIGHTING MEASURES

- Flash-point : Note: does not flash
- Lower explosion limit : Note: Not applicable.
- Upper explosion limit : Note: Not applicable.
- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO2)
Foam
Water spray
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Ensure adequate ventilation.
- Methods for cleaning up : Ventilate area.
Neutralize with lime milk or soda and flush with plenty of water.
Clean up with inert absorbant material.
Keep in suitable, closed containers for disposal.
Flush with plenty of water.

N.D. Not Determined

2/6

N.A. Not Applicable

Material Safety Data Sheet

Cardobond® R-2236 TA

Version 1.0

Revision Date 04/01/2009

Print Date 06/12/2015

Additional advice : Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Handling

Handling : Add this product to surface of solution slowly to avoid spattering
Do not add large amounts of product to solution at any one time.
Use only with adequate ventilation.

Storage

Requirements for storage areas and containers : Keep containers dry and tightly closed to avoid moisture absorption and contamination.
Store indoors in a cool, well-ventilated place

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV (TWA)	OSHA PEL (TWA)
Zinc dihydrogen phosphate	N.D.	N.D.
Phosphoric acid	1 mg/m ³ N.D.	1 mg/m ³ N.D.
Manganese dihydrogenphosphate	N.D.	N.D.
Manganese nitrate	0.2 mg/m ³ as Mn N.D.	5.0 mg/m ³ as Mn, ceiling N.D.
Trade secret registry	N.D.	N.D.

Eye protection : Chemical resistant goggles must be worn.

Hand protection : Impervious gloves

Skin and body protection : Rubber or plastic apron

Respiratory protection : If the occupational exposure limits cannot be met, suitable respirator equipment should be worn.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wear suitable gloves and eye/face protection.
Wear suitable protective clothing.
Wash hands before breaks and immediately after handling the product.
Provide adequate ventilation.
Do not inhale fumes.

N.D. = Not Determined

8/6

N.A. = Not Applicable

Material Safety Data Sheet

Gardobond® R 2236 TA

Version 1.0
Revision Date 04/01/2009

Print Date 06/12/2015

Keep away from food and drink.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

pH : 2.5

Freezing point : -12 °C (10 °F)

Boiling point/boiling range : Note: no data available

Vapour pressure : Note: no data available

Bulk density : 11.51 lb/gal

Water solubility : Note: completely soluble

Partition coefficient: n-octanol/water : Note: no data available

Percent of Volatile by Weight excluding water : 0

Relative density : 1.382

Evaporation rate : 1
Note: Water = 1

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Direct sources of heat.

Materials to avoid : Bases
Reducing agents
Warning! Do not use together with other products. May release dangerous gases (chlorine).

Hazardous decomposition products : Nitrogen Oxides
Phosphorus Oxides
Hydrogen when reacts with certain metal.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity : Mixture; Not Determined.

Acute oral toxicity
Zinc dihydrogen phosphate : LD50, rat

Material Safety Data Sheet

Cardobond® R 2236 TA

Version 1.0
Revision Date 04/01/2009

Print Date 06/12/2015

	Dose: 1,990 mg/kg
Phosphoric acid	: LD50, rat Dose: 1,530 mg/kg
Monosodium phosphate	: LD50, rat Dose: 8,290 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Not Available

SECTION 13. DISPOSAL CONSIDERATIONS

Advice on Disposal : Refer to all federal, provincial, state and local regulation prior to disposition of container and unused contents by reuse, recycle or disposal.

SECTION 14. TRANSPORT INFORMATION

Refer to Bill of Lading.

SECTION 15. REGULATORY INFORMATION

TSCA Status	: All components of this material comply with US TSCA requirements.
SARA 313 Components	: Zinc dihydrogen phosphate CAS-No. 13598-37-3
	: Manganese dihydrogenphosphate CAS-No. 18718-07-5
SARA 313 Components	: Manganese nitrate CAS-No. 10377-68-9
	: N.D.
CERCLA Reportable Quantity	: Phosphoric acid 5,000 Pounds
California Prop. 65	: N.D
NFPA	: 3 0 0 Corrosive Acid
HMIS	: 3 0 0 J
WHMIS	: D2B: Toxic Material Causing Other Toxic Effects E: Corrosive Material

Material Safety Data Sheet

Cardobond® R 2236 TA

Version 1.0
Revision Date 04/01/2009

Print Date 06/12/2015

SECTION 16. OTHER INFORMATION

Further Information





290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9804
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. #E008-0
Report Date: 12/28/15
ATS SRF: 1202151

Sample Identification: Injection - November 2015

Sample Date:	12/1/15	QC Batch Number:	QCORG1203151-E
Laboratory Receipt Date:	12/2/15		B5L0054
Preparation Date:	12/3/15, 12/10/15	Sample Matrix:	Wastewater
Analysis Date:	12/16/15, 12/13/15	Dilution Factor:	500

<u>Parameter (CAS)</u>	<u>Method</u>	<u>Units</u>	<u>Result</u>	<u>Reporting Limit</u>
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	<0.00000000005	0.00000000005
Tetrachlorodibenzo-p-dioxins	EPA 1613B	mg/mL	<0.00000000004	0.00000000004

<u>Surrogates / Labeled Standards:</u>	<u>Method</u>	<u>Percent Recovery</u>	<u>Recovery Limits</u>
2-Fluorobiphenyl	EPA 8270 Mod	103.7	(50 - 150)
Nitrobenzene-d5	EPA 8270 Mod	106.5	(50 - 150)
p-Terphenyl-d14	EPA 8270 Mod	106.6	(50 - 150)
Tetrachloro-m-xylene (TCMX)	EPA 8270 Mod	54.5	(50 - 150)
13C-1,2,3,4,7,8-HxCDD	EPA 1613B	92.6	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	EPA 1613B	89.5	(28 - 130)
13C-1,2,3,7,8,9-HxCDD	EPA 1613B	95.3	(32 - 141)
13C-OCDF	EPA 1613B	85.9	(17 - 157)
13C-OCDD	EPA 1613B	86.8	(17 - 157)
13C-2,3,7,8-TCDD	EPA 1613B	84.6	(25 - 184)

Comments:

USEPA Analysis 1613B performed by Vista Analytical.

Revision Number: 003.3

Issue date: 09/30/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE M-ZN 1048 R4 HEAVY ZINC PHOSPHATE known as 1048 R4** IDH number: 598357
 Product type: Conversion coating
 Restriction of Use: None Identified
 Company address: [REDACTED] Region: United States
 Contact information: [REDACTED]

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: MAY BE CORROSIVE TO METALS.
 HARMFUL IF SWALLOWED.
 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
 MAY CAUSE AN ALLERGIC SKIN REACTION.
 MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
 MAY CAUSE RESPIRATORY IRRITATION.
 MAY CAUSE DROWSINESS OR DIZZINESS.
 MAY CAUSE GENETIC DEFECTS.
 MAY CAUSE CANCER.
 SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.
 CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
CORROSIVE TO METALS	
ACUTE TOXICITY ORAL	1
SKIN CORROSION	4
SERIOUS EYE DAMAGE	1C
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
GERM CELL MUTAGENICITY	1
CARCINOGENICITY	1B
REPRODUCTIVE TOXICITY	1A
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	2
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	3
	1

PICTOGRAM(S)



Precautionary Statements

IDH number: 598357

Product name: BONDERITE M-ZN 1048 R4 HEAVY ZINC PHOSPHATE known as 1048 R4
 Page 1 of 7

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe vapors, mist, or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection. Use personal protective equipment as required. In case of inadequate ventilation wear respiratory protection.

Response: If SWALLOWED: Immediately call poison control or physician if you feel unwell. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Storage: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. IF exposed or concerned: Get medical attention. Immediately call a poison control center or physician. If skin irritation or rash occurs: Get medical attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Disposal: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner. Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Zinc dihydrogen phosphate	13598-37-9	10-30
Calcium nitrate	10124-37-5	10-30
Zinc nitrate	7778-86-8	5-10
Phosphoric acid	7664-38-2	5-10
Nickel nitrate	13138-45-9	0.1-1

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use media appropriate for surrounding material.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards:

This product is an aqueous mixture which will not burn.

Hazardous combustion products:

Irritating and toxic gases or fumes may be released during a fire.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment. Do not allow product to enter sewer or waterways.

Clean-up methods:

Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:

Avoid contact with eyes, skin and clothing. Avoid breathing mists or aerosols of this product. Wash thoroughly after handling. Do not take internally. For industrial use only.

Storage:

For safe storage, store at or above 40 °F (4.4 °C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEL	OTHER
Zinc dihydrogen phosphate	None	None	None	None
Calcium nitrate	None	None	None	None
Zinc nitrate	None	None	None	None
Phosphoric acid	3 mg/m ³ STEL 1 mg/m ³ TWA	1 mg/m ³ PEL	None	None
Nickel nitrate	0.1 mg/m ³ TWA (as Ni) Inhalable fraction.	1 mg/m ³ PEL (as Ni) 1 mg/m ³ PEL (as Ni)	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Chemical resistant, impermeable gloves. The use of butyl rubber gloves is recommended. The use of polyvinyl chloride gloves is recommended. The use of neoprene gloves is recommended. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Color:
Odor:
Odor threshold:
pH:

Liquid
Green
Bland
Not available.

Vapor pressure:	Not determined
Boiling point/range:	> 100 °C (> 212°F) calculated
Melting point/range:	Not determined
Specific gravity:	1.52 - 1.58
Vapor density:	Not applicable
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not applicable
Flammable/Explosive limits - upper:	Not applicable
Autoignition temperature:	Not applicable
Evaporation rate:	Not determined
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not determined
VOC content:	Not applicable
Viscosity:	Not available.
Decomposition temperature:	Not available.

16. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Decomposes with heat to produce oxides of nitrogen.
Incompatible materials:	Explosive HYDROGEN GAS may be released if aqueous solutions of this material come into contact with reactive metals (IRON, ZINC, ALUMINUM).
Reactivity:	This product may react with strong alkalis.
Conditions to avoid:	Store away from incompatible materials.

17. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. This chemical contains heavy metals. This chemical contains phosphates.

Hazardous waste number: This product, if discarded, may be characterized as a RCRA corrosive waste, D002.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, Zinc nitrate)
Hazard class or division: 8
Identification number: UN 3264
Packing group: III
DOT Hazardous Substance(s): Zinc nitrate, Nickel nitrate

International Air Transportation (ICAO/IATA)

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, Zinc nitrate)
Hazard class or division: 8
Identification number: UN 3264
Packing group: III

Water Transportation (IMO/MDG)

Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, Zinc nitrate)
Hazard class or division: 8
Identification number: UN 3264
Packing group: III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 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 (40 CFR 372): Zinc dihydrogen phosphate (CAS# 13698-37-3), Zinc nitrate (CAS# 7779-88-6), Calcium nitrate (CAS# 10124-37-5), Nickel nitrate (CAS# 13138-45-9).

CERCLA Reportable quantity: Zinc nitrate (CAS# 7779-88-6) 1,000 lbs. (454 kg)
Nickel nitrate (CAS# 13138-45-9) 100 lbs. (45.4 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by:

Issue date:

