

March 23, 2018

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 fifty-second Monthly Report ("MR") 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 did not accept any F039 waste in February, 2018 so no Page A-3 of 3 laboratory analyses are necessary to be submitted as part of this MR.

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

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

Sincerely,



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

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

att.

rjp032318/EGTEPAMonthlyReport-February, 2018

AVERAGE INJECTION RATE

Calculation of Average Injection Rate

CURRENT REPORTING YEAR 2018

CURRENT REPORTING MONTH MARCH

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

NOV 2013

CURRENT MONTH (all volumes in gallons)

	Injected Waste	Injected Non-Waste	Total injected
MI-163-1W-C010 , Well #1-12			
Current Month	122,136	0	122,136
Since facility first injected			13,663,928
MI-163-1W-C011, Well #2-12			
Current Month	0	0	0
Since facility first injected			4,648,736
		Lifetime Combined	18,312,664

Conversion factors

365.25 days per year ÷ 12 months per year = 30.4375 days per month

30.4375 days per month × 1440 minutes per day = 43,830 minutes per month

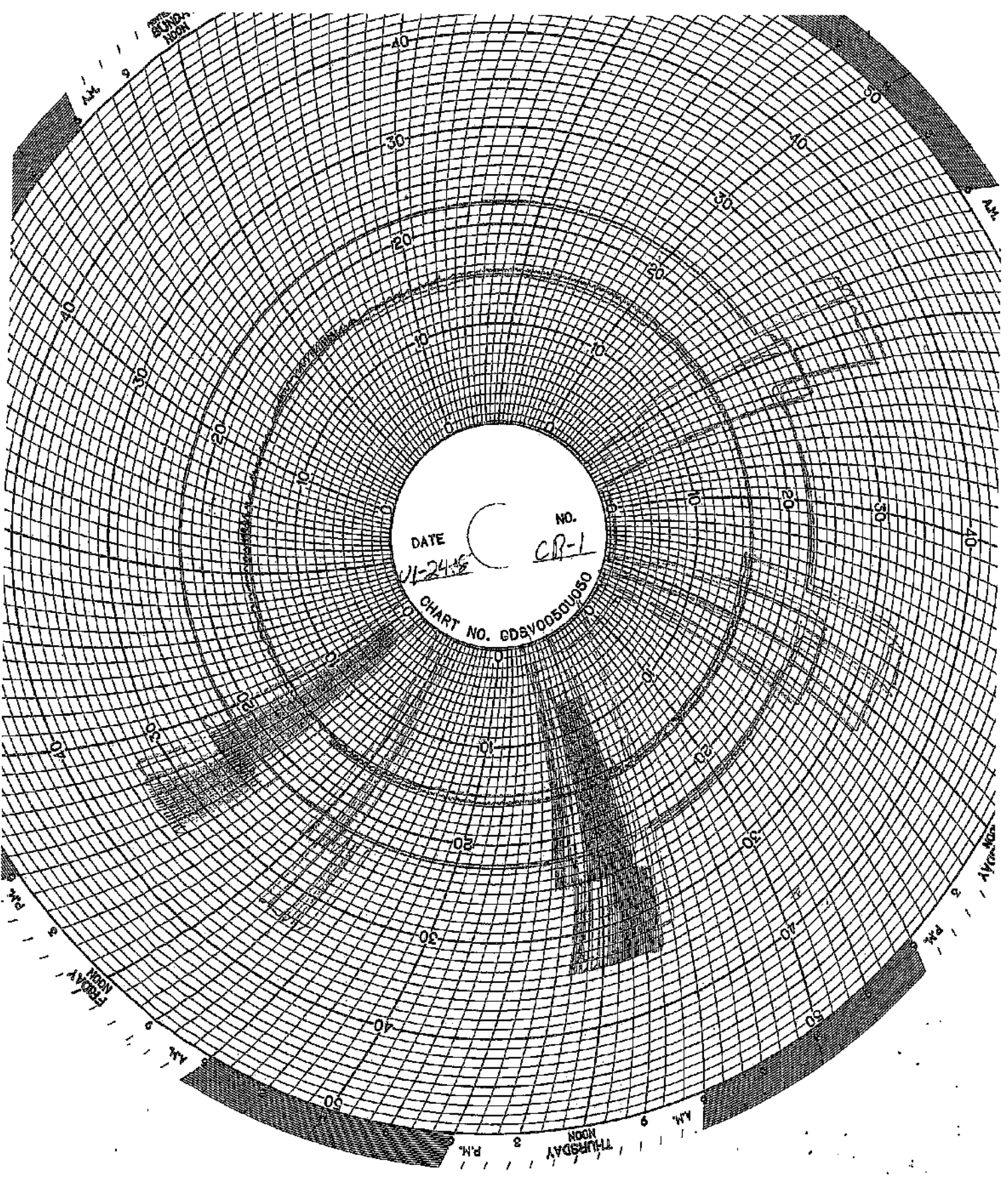
Calculations

Whole number of months of injection 51

51 lifetime number of months of injection × 43,830 minutes/month
= 2,235,330 minutes of injection

Lifetime combined injected volume 18,312,664 ÷ 2,235,330 minutes of injection
= 8.2 gpm average injection rate

WELL 1 DATA



DATE

11-24-68

NO.

CR-1

CHART NO. GDSV0050U80

40

30

20

10

0

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AM

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AM

3

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AM

30

40

FRIDAY

3

NOON

AM

50

THURSDAY

PM

3

NOON

9

AM

MONDAY
NOON

PM

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30

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10

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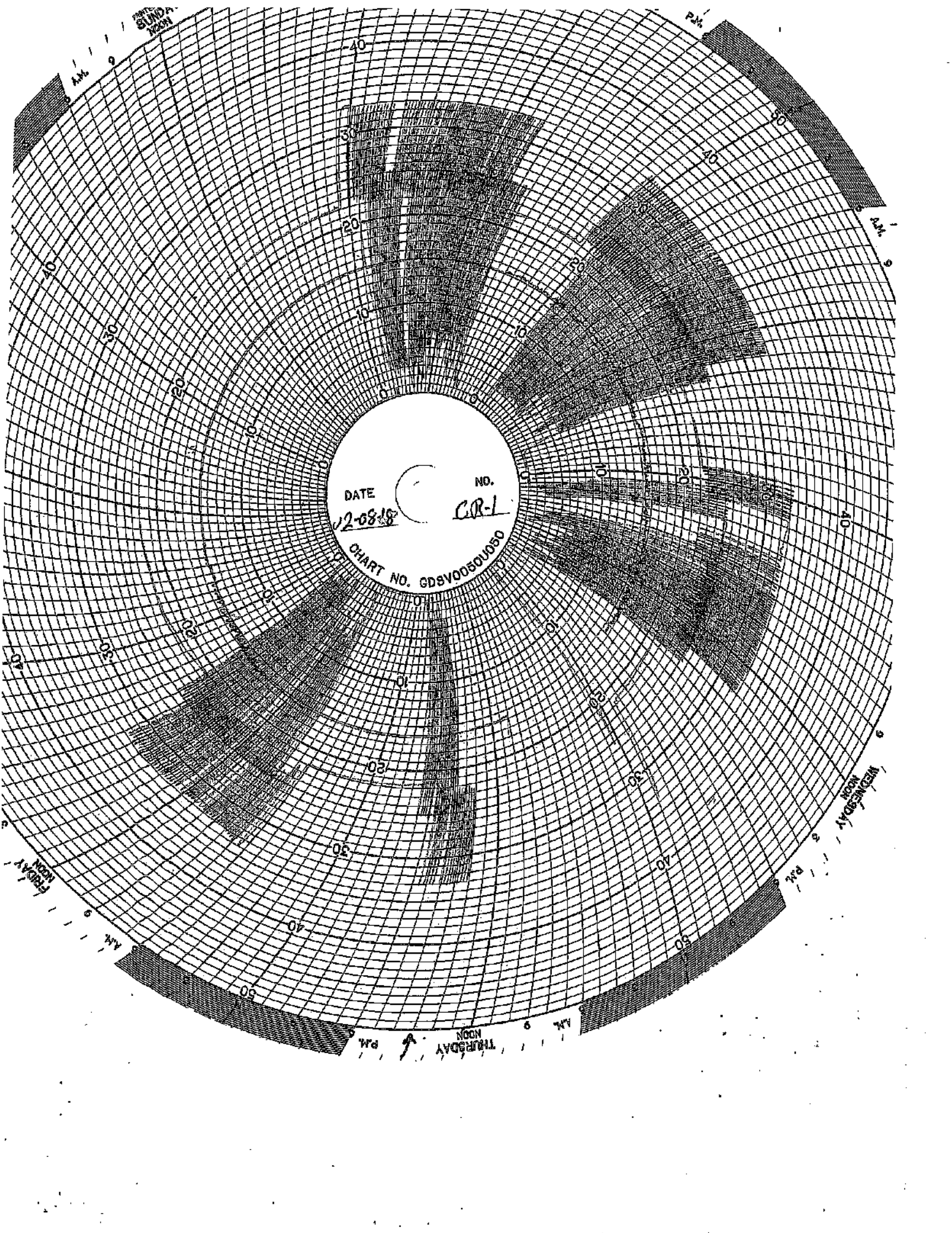
60

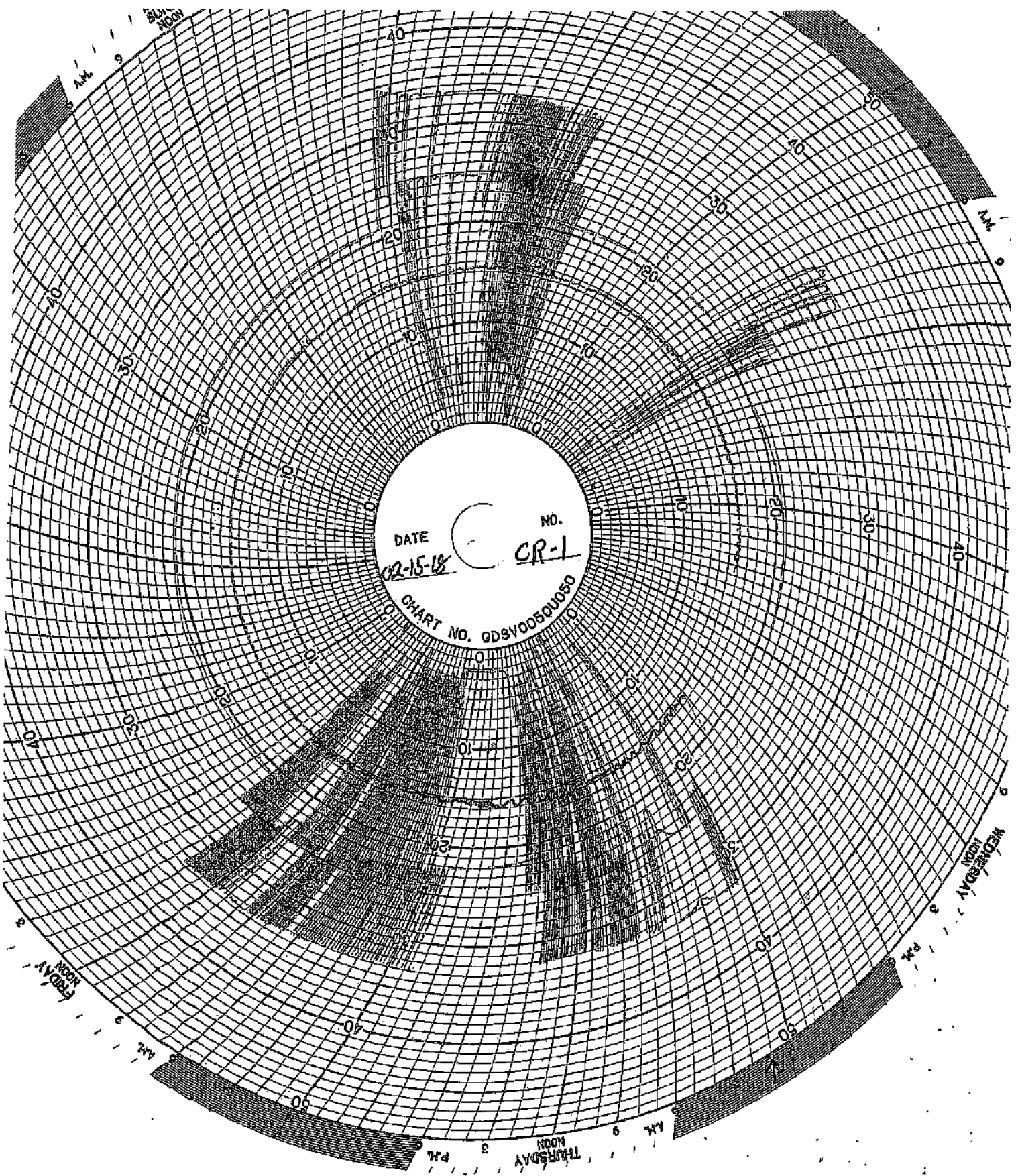
70

80

90

DATE 12-08-48 NO. CR-1
CHART NO. GDSV0050050





DATE 02-15-18
NO. CR-1
CHART NO. GDSV0050U050

AM 9
NOON

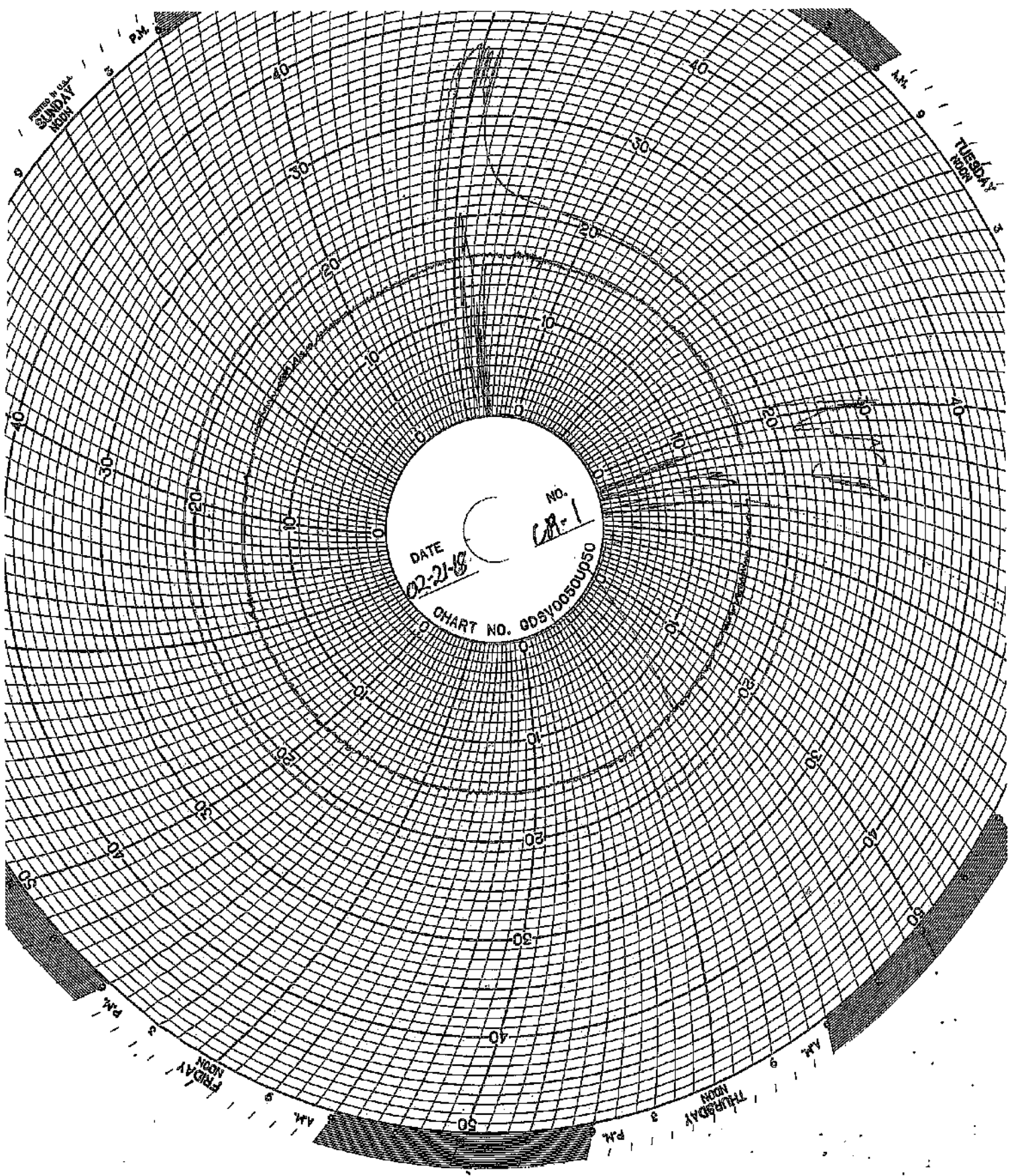
AM 6

PM 3
THURSDAY

PM 3
THURSDAY

PM 9

AM 9



9 AM
SUNDAY
NOON

9 AM
TUESDAY
NOON

DATE
02-21-68

NO.
CA-1

CHART NO. 00510050UP50

9 AM
FRIDAY
NOON

9 AM
THURSDAY
NOON

WELL 2 DATA

Circle Chart Index

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

Chart Recorder #1

Channel #1

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

Channel #2

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

Channel #3

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

Channel #4

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

Chart Recorder #2

Channel #1

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

Channel #2

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

Channel #3

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

Channel #4

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

Chart Recorder #3

Channel #1

Blue Pen - Injection pH Well 1 & 2 (chart value + 3.3)

Channel #2

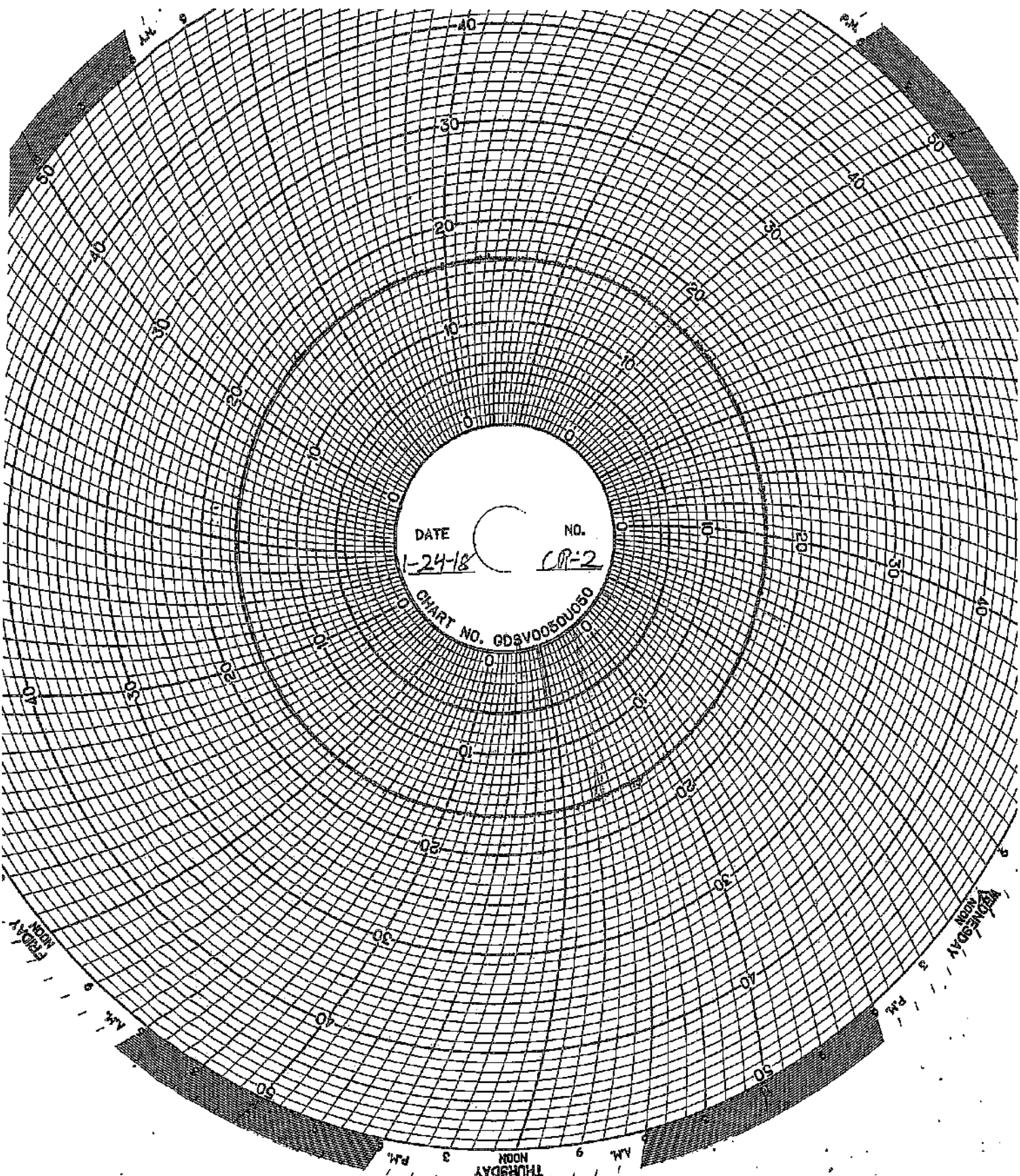
Red Pen - Well 1 Monthly Volume (chart value x 100,000)

Channel #3

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

Channel #4

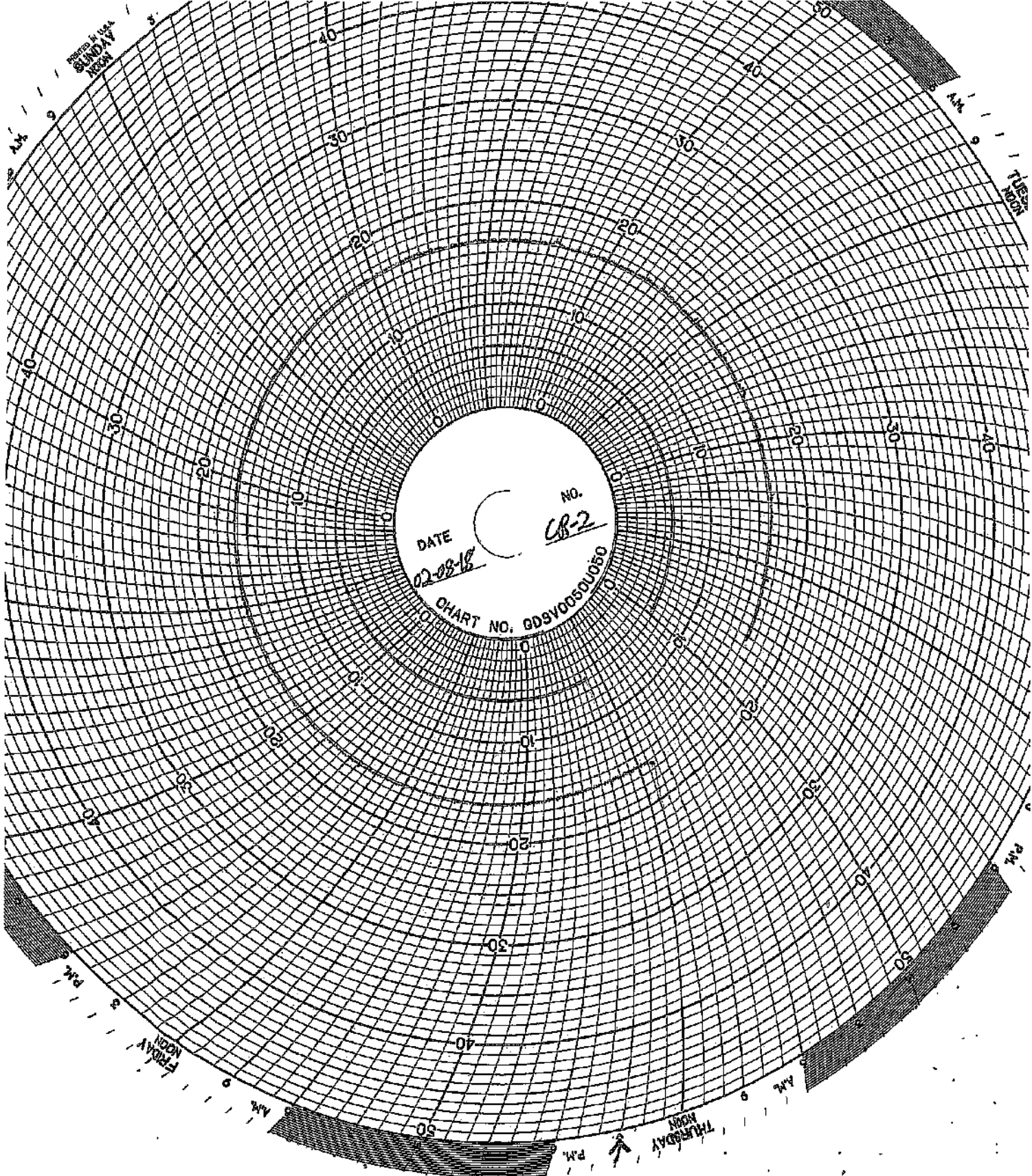
Black Pen - Temperature (chart value x 0)



DATE 1-24-18 NO. CR-2

CHART NO. GDSV00501030

THURSDAY 9 AM 3 PM 9 AM 3 PM 9 AM 3 PM 9 AM 3 PM



PRINTED IN U.S.A.
SUNDAY
NOON

THURSDAY
NOON

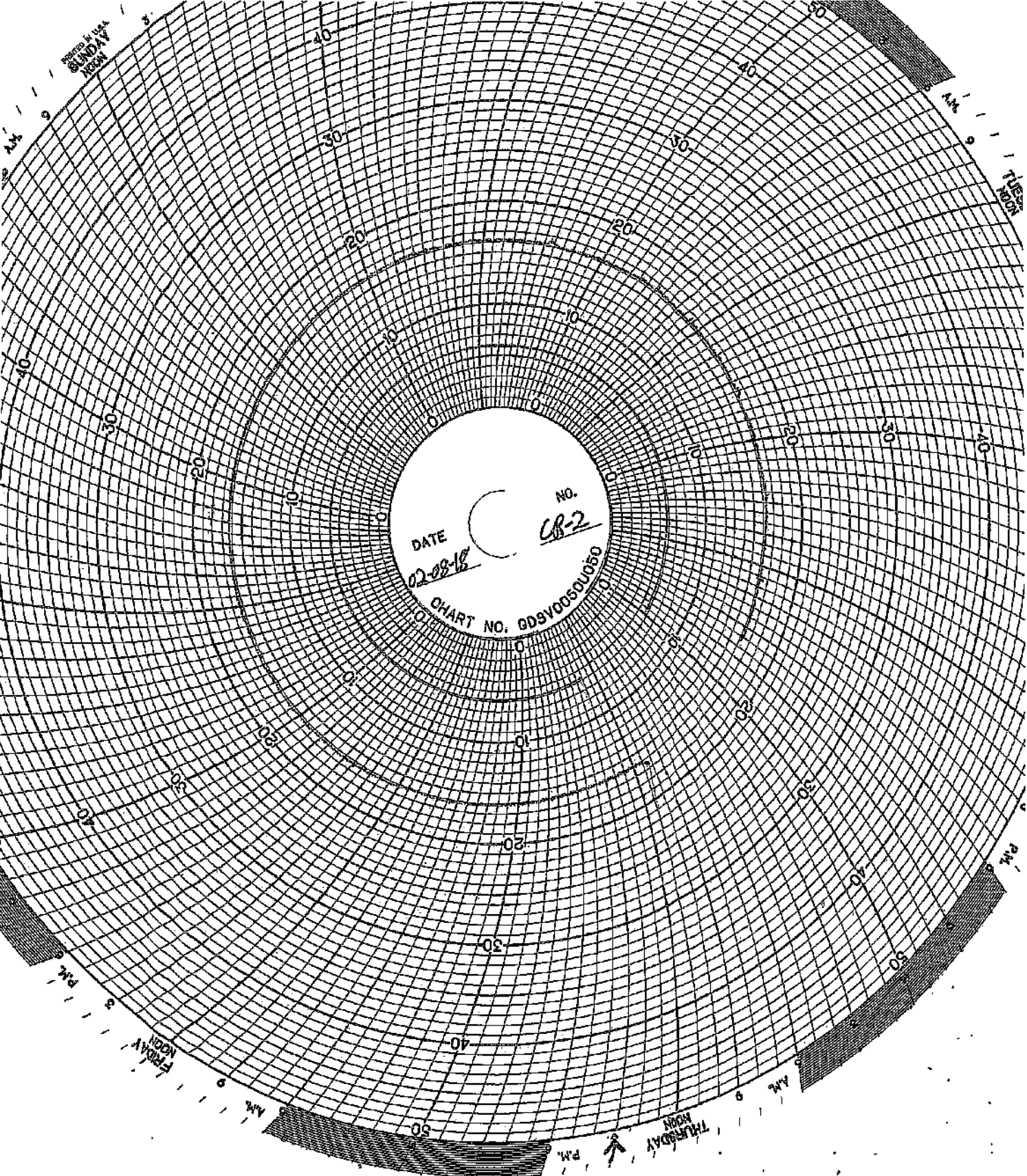
DATE

02-08-18

NO.

68-2

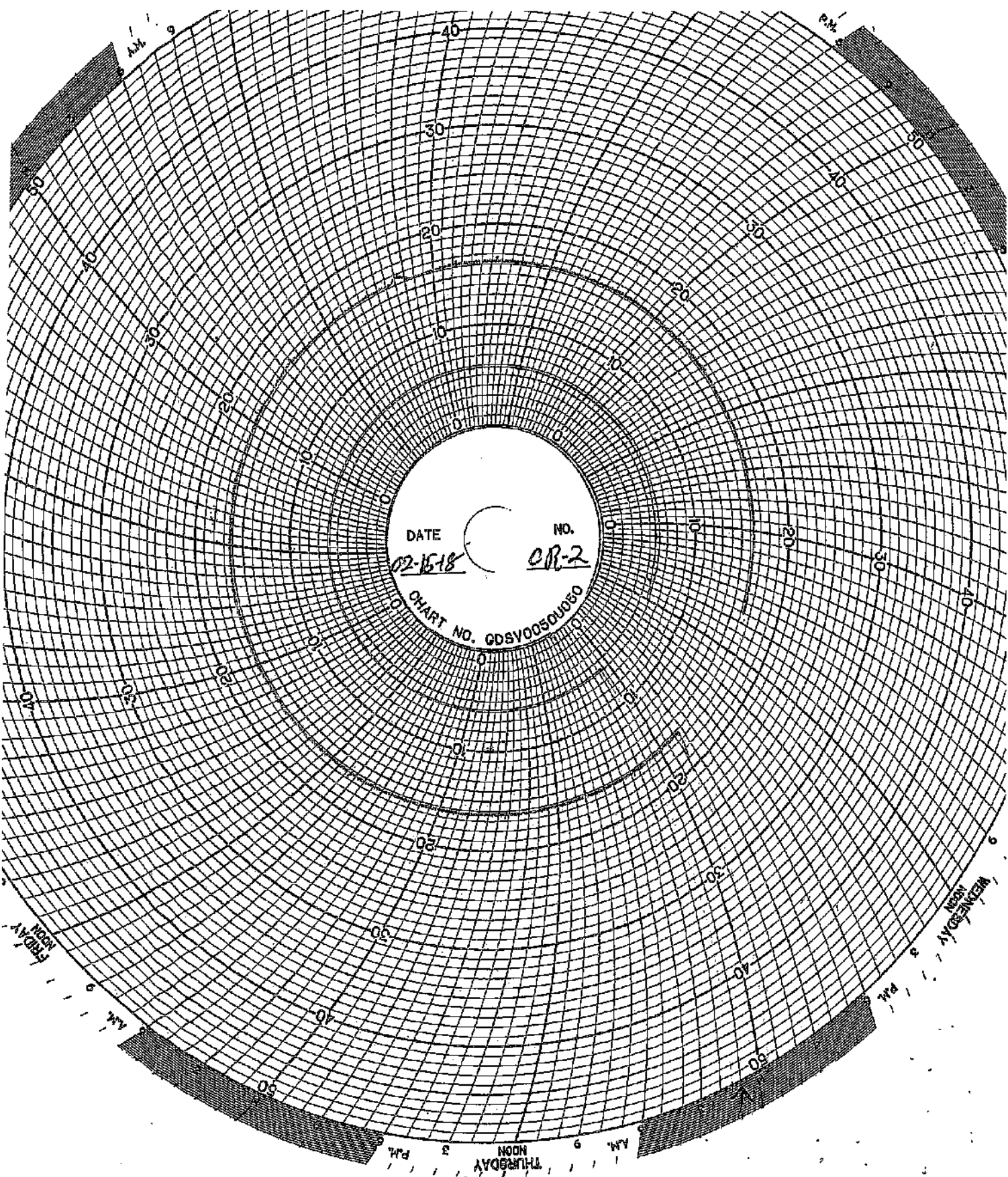
CHART NO. 80SV0050U060



FRIDAY
NOON

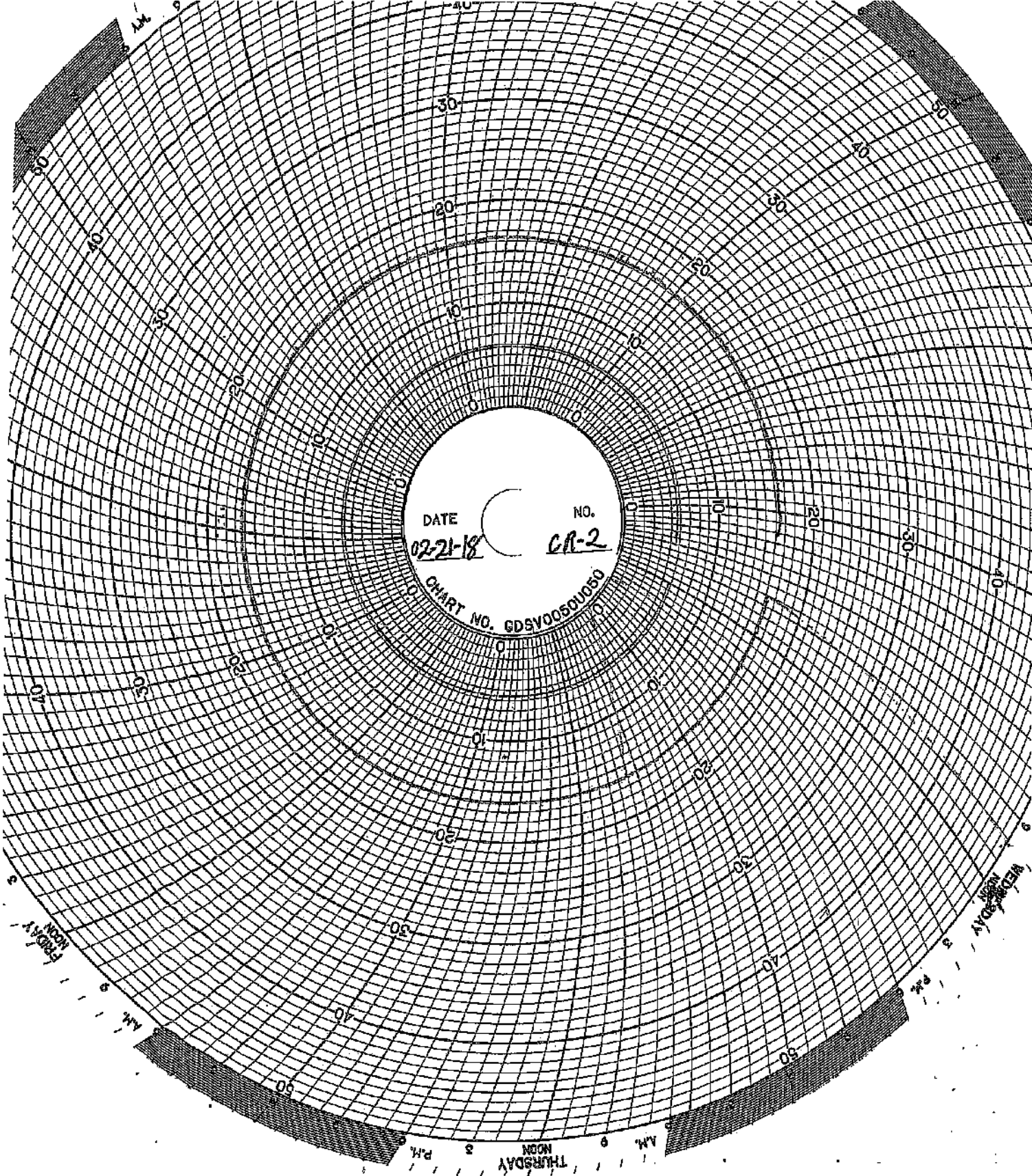
THURSDAY
NOON

P.M.



DATE 02-15-18 NO. 011-2
CHART NO. GDSV0050050

THURSDAY 9 AM 3 PM
FRIDAY 9 AM 3 PM
SATURDAY 9 AM 3 PM
SUNDAY 9 AM 3 PM



DATE 02-21-18 NO. CR-2

CHART NO. GDSV0050JDS0

THURSDAY
WEDNESDAY
FRIDAY
SATURDAY
SUNDAY
MONDAY
TUESDAY

PRINTED BY
SUNDAY
MORNING

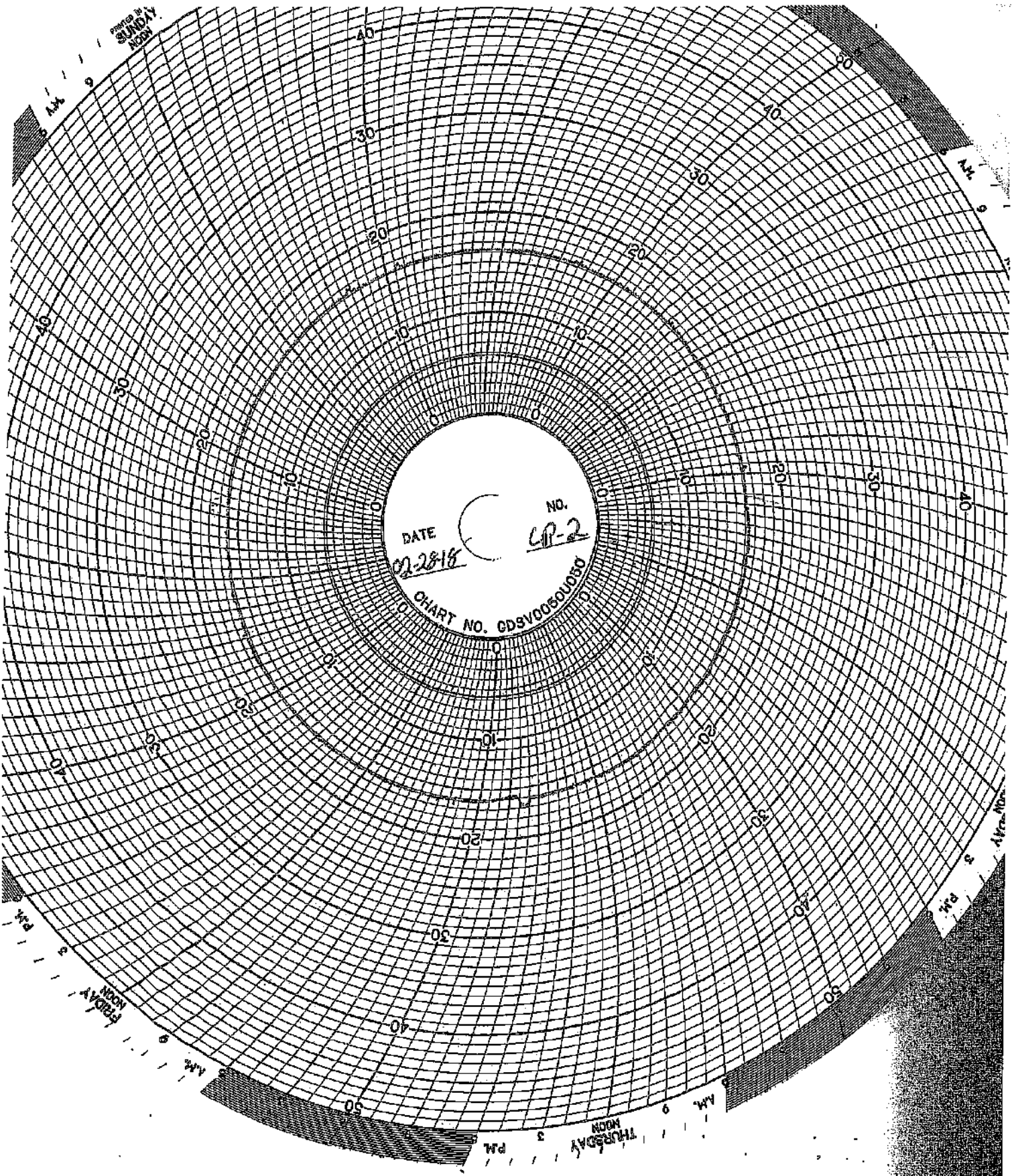
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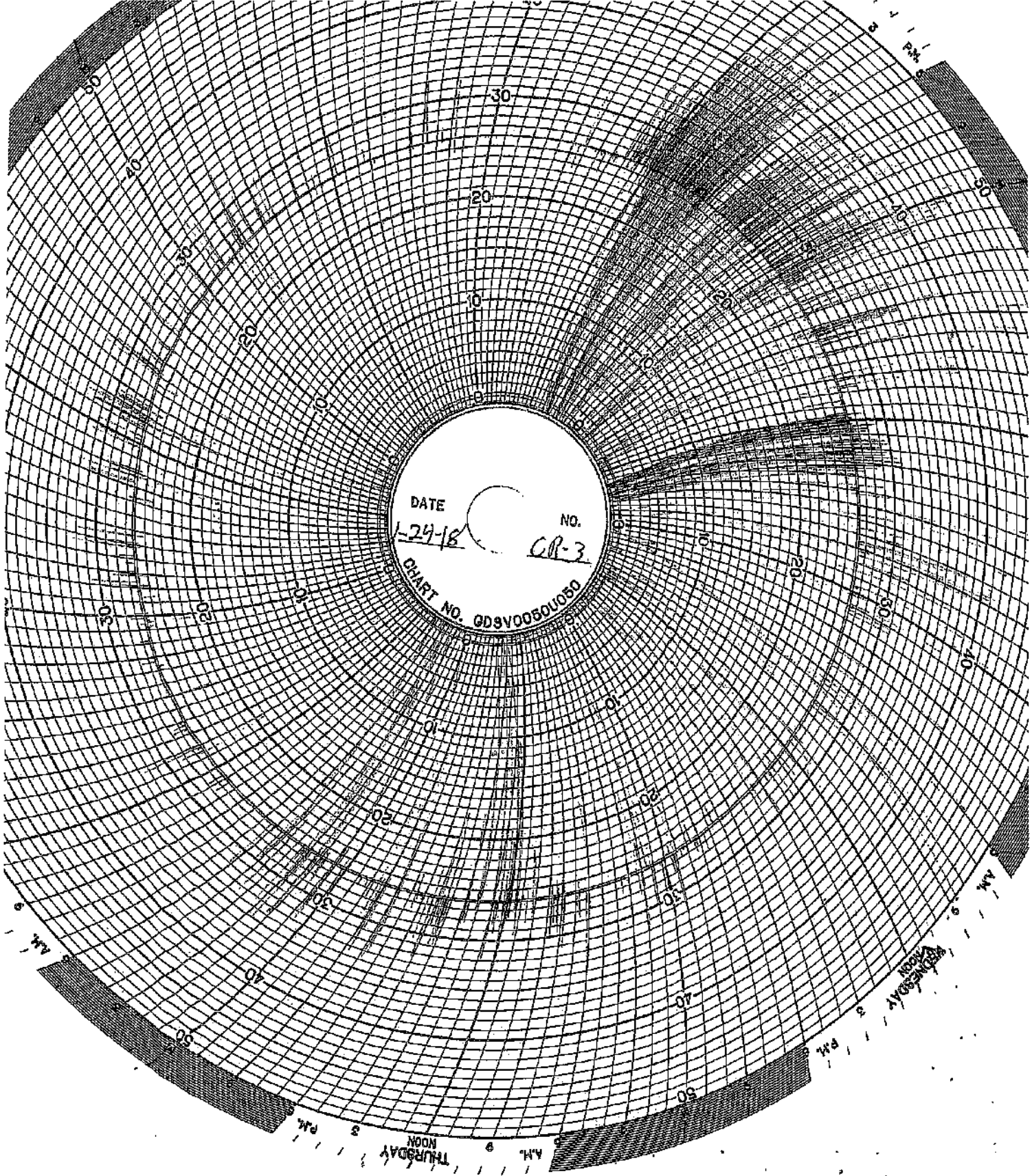
02-28-18

NO.

LP-2

CHART NO. GDSV0050U080





DATE 1-24-18 NO. CR-3
CHART NO. GDSV0050U050

THURSDAY

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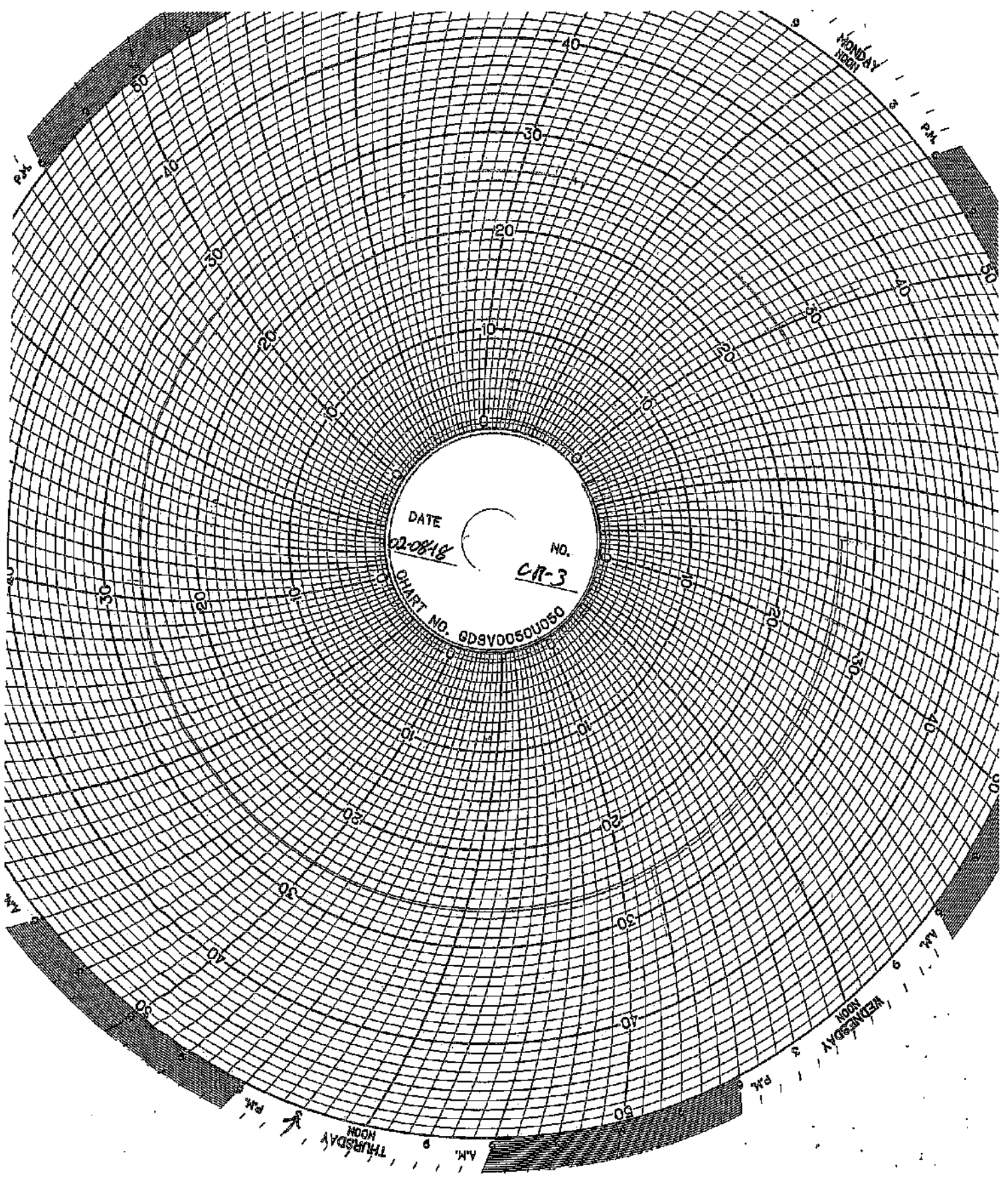
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MONDAY
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WEDNESDAY
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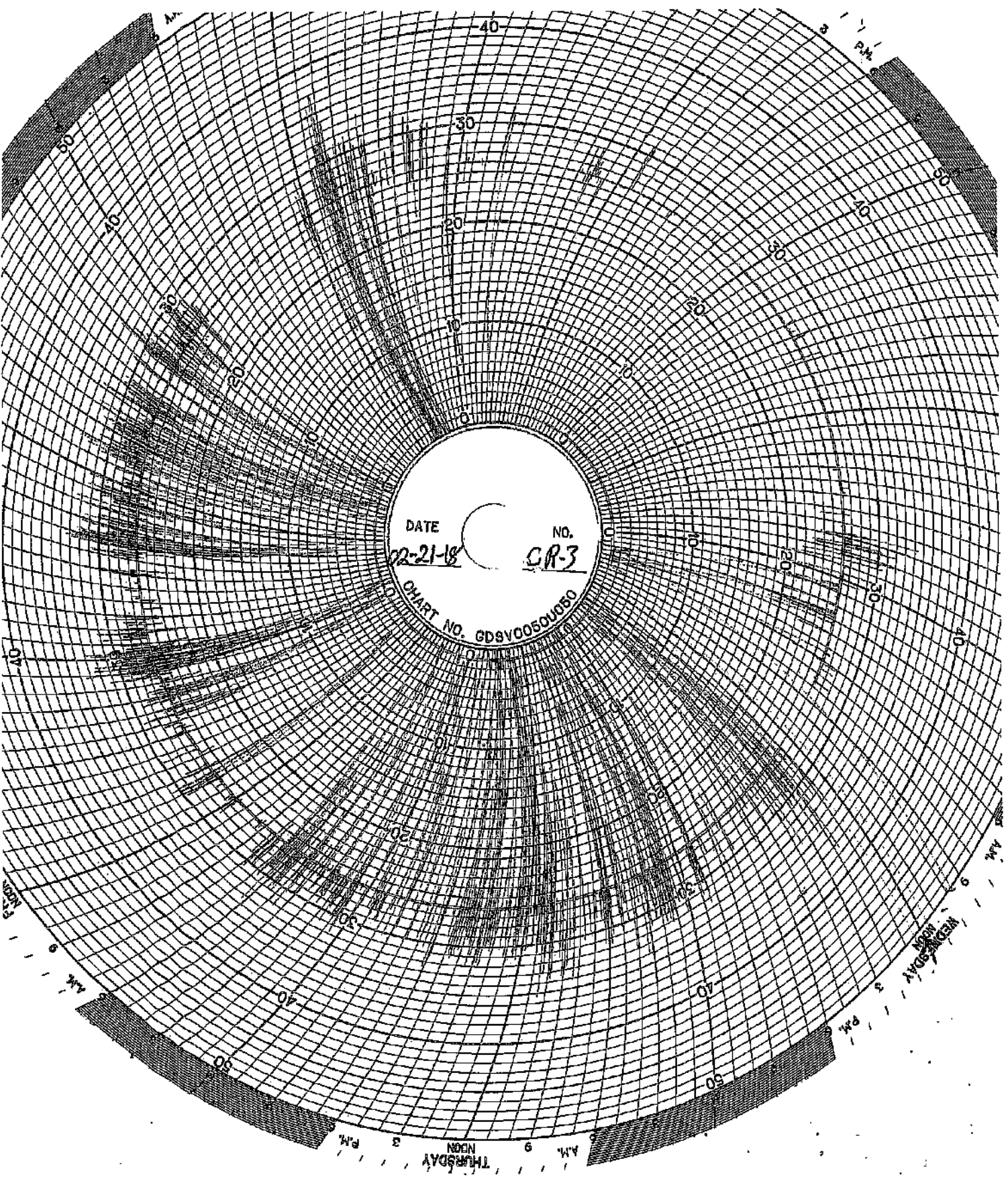
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DATE 12-21-18 NO. CR-3
CHART NO. GDSV0050U0650

THURSDAY

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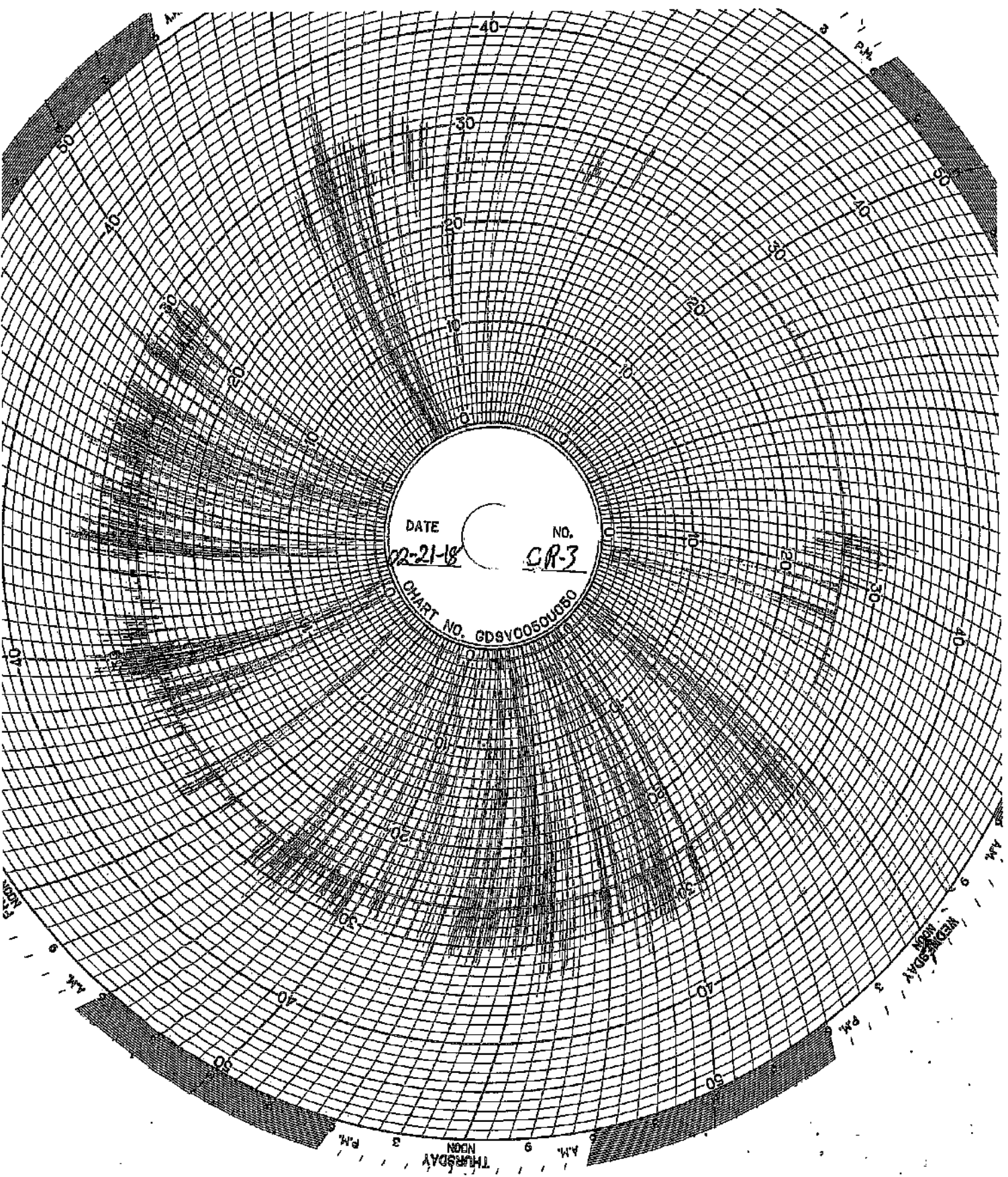
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PM. 3

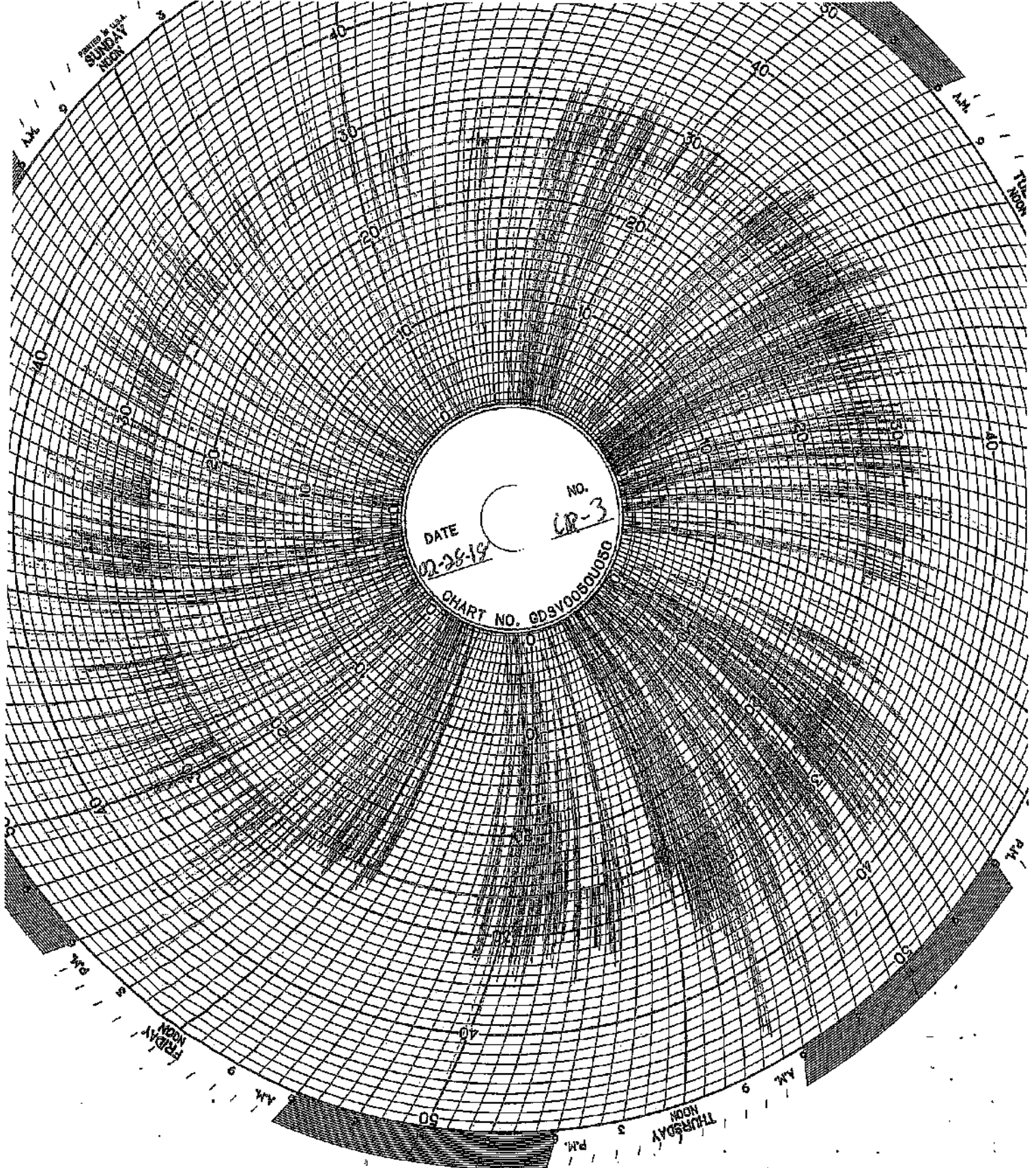
PM. 3

PM. 3

PM. 3



PRINTED IN U.S.A.
SUNDAY
MIDNIGHT



DATE 12-28-19
No. CP-3
CHART NO. 035103050350

THURSDAY 3 PM.

FRIDAY 9 AM.

SATURDAY 3 PM.

SUNDAY 9 AM.

MAINTENANCE LOG

JIC Monthly Maintenance Log

2/26/2018	Well 1	
2/27/2018	Well 1	Replaced a rubber seal in the the injection pump Replaced a valve springs in the injection pump

CORROSION MONITORING

CORROSION MONITORING COUPONS VISUAL DESCRIPTION

February 9, 2018

Fiberglass Coupon

The coupon is dark orange (rust) in color with similar semi-smooth textures on both sides. 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 new coupon has not experienced any corrosion in its first month of exposure.

**CORROSION MONITORING PLAN
COUPON SUMMARY**

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

**CORROSION MONITORING PLAN
COUPON SUMMARY**

Date	Hastelloy	Stainless Steel	Fiberglass	
1/29/2018	13.326 g	10.930 g	18.027 g	New stainless steel coupon
2/9/2018	13.325 g	10.932 g	18.044 g	

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.

GHSQUIERE PLASTIC TESTING, INC.

20450 HARPER AVENUE
HARPER WOODS, MI 48225
PHONE (313) 883-3535
FAX (313) 886-1771

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

Report #1310-77651
Performed for:
Environmental Geo-Technologies
28470 Citrix 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:

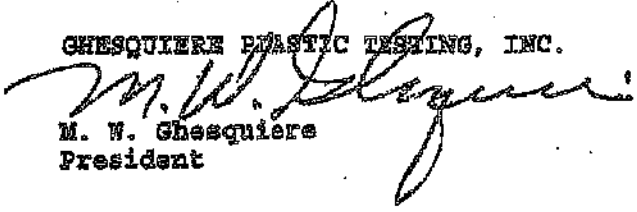
The following determination was made based upon the above test:

BARCOL HARDNESS

	<u>Hardness</u>
Specimen 1	90

Specimen is being returned with this report for further evaluation.

GHSQUIERE PLASTIC TESTING, INC.


M. W. Ghesquiere
President

MMG/kni

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TOTAL 1 PAGES

GHESEQUIERE PLASTIC TESTING, INC.

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

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

Report #1402-78036
Performed for:
Environmental Geo-Technologies
28470 Citrin Drive
Roxulus, 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/can

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TOTAL 1 PAGES

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

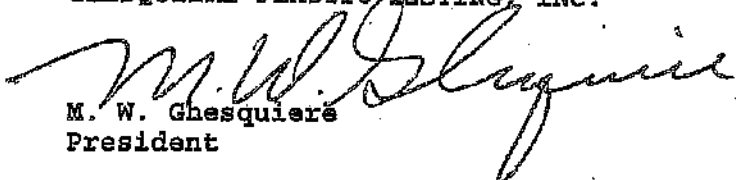
Hardness

Specimen 1

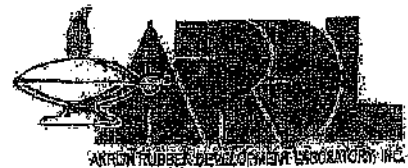
85

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:

Missa Martin
Sr. Project Technician

Approved By:

Jim Drummond
Physical & Plastics Testing, Manager



An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 255.01 & 255.02
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www.arld.com

2887 Gilchrist Rd. | Akron, Ohio 44305 | answers@ardl.com
Toll Free (800) 636-ARDEL | Worldwide (330) 734-6580 | Fax (330) 794-8610



Testing. Development. Problem Solving.

October 2, 2014

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN118326

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

RECEIVED: One arhal section identified as; Fiberglass Coupon.

BARCOL HARDNESS ASTM D 2583-13a

Results

Barcol Hardness, Instant

97

Prepared By:


Melissa Martin
Sr. Project Technician

Approved By:


Scott W. Yates
Plastics Testing Assistant Manager

www.ardl.com

2887 Gilchrist Rd. | Akron, Ohio 44305 | answ@ardl.com
Toll Free: (800) 830-ARDL | Worldwide: (330) 734-6600 | Fax: (330) 734-6610



Progress Through Innovation, Technology and Customer Satisfaction

October 22, 2015


• TEST REPORT •

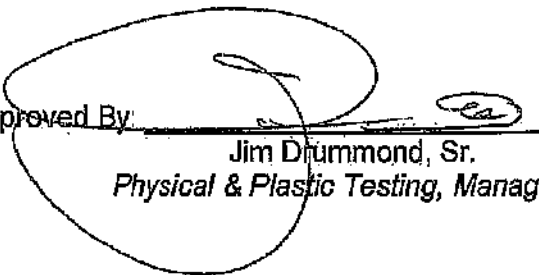
PN 125322
PO 00154

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, 2016

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.

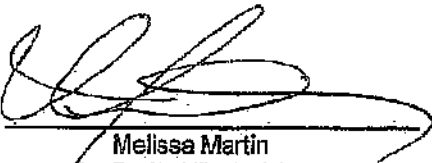
BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

Results

Barcol Hardness, Instant

96

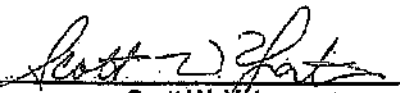
Prepared By:



Melissa Martin
Sr. Project Technician

to

Approved By:



Scott W. Yates
Plastics Testing Assistant Manager



Progress Through Innovation, Technology and Customer Satisfaction

December 12, 2016


TEST REPORT

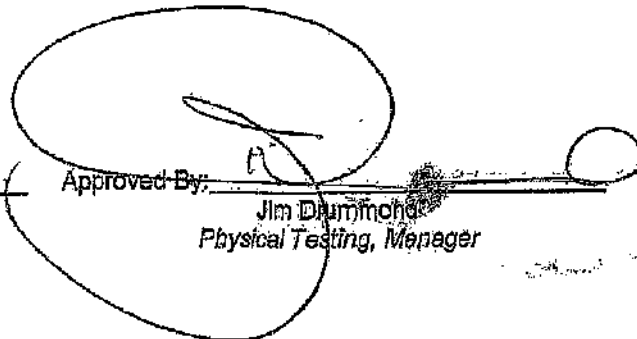
PN 132662
PO

PLASTICS TESTING DEPARTMENT

Prepared For:

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

Prepared By: 
Melissa Martin
Senior Project Technician

Approved By: 
Jim Dumfries
Physical Testing, Manager

Rev 041916



An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 265.01 & 265.02
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December 12, 2016

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN 132662

SUBJECT: Barcol Hardness on one (1) material.


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

BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

RESULTS

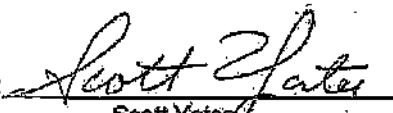
Barcol Hardness, Instant 96

Prepared By:



Melissa Martin
Senior Project Technician

Approved By:



Scott Yates
Plastics Testing, Assistant Manager

wk

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



Progress Through Innovation, Technology and Customer Satisfaction

December 13, 2017


TEST REPORT


PN 139140
PO#

PLASTIC TESTING DEPARTMENT

Prepared For:

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

Prepared By: 
Melissa Martin
Sr Project Technician

Approved By: 
Jim Drummond
Rubber & Plastic Testing, Manager

Rev 041918



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December 13, 2017

John Frost
Environmental Geo-Technologies, LLC

Page 2 of 2
PN 139140

SUBJECT: Barcol Hardness on one material.

RECEIVED: One small section identified as; Fiberglass Coupon.

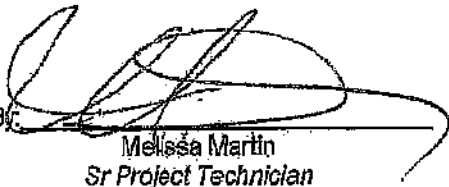
BARCOL HARDNESS ASTM D 2583-13a
Instant Reading

Results

Barcol Hardness, Instant

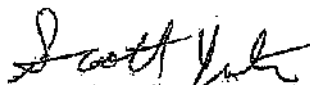
96

Prepared By:



Melissa Martin
Sr Project Technician

Approved By:



Scott Yates
Plastics Testing, Assistant Manager

90

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**INJECTION
FINGERPRINTS**

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	9:40 AM	02-01-18
Receiving ID#	102011901	
Manifest#	Line:	
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	PS	
Sampled by	TE	

COPY

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°F		Magnesium	
pH (S.U.)	2.4		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.08		TDS	1670
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	60°F			
Conductivity	99 μS			
% Solids	1670			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	1190			
Radiation Screen (as needed)				
Lab Signature	Pan			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	11:30AM	2-6-18
Receiving ID#	102061801	
Manifest# Line:		
Land Ban Cert Included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	B	
Sampled by	[Signature]	

COPY

Lab Signature	Client Signature	Chemical	Concentration
Compatible? (RT#)	Yes	No	Barium
PCBs (ppm)(Oil Waste Only)?			Calcium
TOC (ppm)(CC Waste Only)?			Total Iron
Flash Point (°F)	740°F		Magnesium
pH (S.U.)	1.7		Sodium Chloride
Cyanides? (mg/L)			Bicarbonate
Sulfides? (ppm)			Carbonate
Specific Gravity	1.06		TDS
Physical Description			Resistivity
Stream Consistency	Yes	No	Sulfate
Oil in Sample	Yes	No	
Temperature	60°F		
Conductivity	31mS		
% Solids	11%		
Turbidity	Yes	No	
Color (visual)			
TSS (%)	11%		
Radiation Screen (as needed)			
Lab Signature	[Signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	9:00 AM	02-7-18
Receiving ID#	K02071801	
Manifest# Line:		
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	PS	
Sampled by	[Signature]	

COPY

ANALYSIS	RESULTS	ANALYSIS	RESULTS
Compatible? (RT#)	Yes	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	2140°F	Magnesium	
pH (S.U.)	2.0	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	890
Physical Description		Resistivity	
Stream Consistency	Yes	Sulfate	
Oil In Sample	Yes		
Temperature	60°F		
Conductivity	1mS		
% Solids	890		
Turbidity	Yes		
Color (visual)			
TSS (%)	< 1%		
Radiation Screen (as needed)			
Lab Signature	[Signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	9:30 AM 2-8-18
Receiving ID#	T020819
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	PS
Sampled by	Jim

COPY

LABORATORY ANALYSIS			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140°F	Magnesium	
pH (S.U.)	3.3	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.05	TDS	1670
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	62°F		
Conductivity	90 uS		
% Solids	1670		
Turbidity	Yes No		
Color (visual)			
TSS (%)	1170		
Radiation Screen (as needed)			
Lab Signature	Pa		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12:20am 02/12/18
Receiving ID#	I 02121801
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time In	
Time out	
Received by	PS
Sampled by	AW

COPY

SOLUBLE SOLIDS		OTHER SOLIDS OR	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	71402F	Magnesium	
pH (S.U.)	0.9	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.06	TDS	1890
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	620F		
Conductivity	79mS		
% Solids	1890		
Turbidity	Yes No		
Color (visual)			
TSS (%)	2190		
Radiation Screen (as needed)			
Lab Signature	Pa		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12:10 AM	02-13-18
Receiving ID#	EGT131801	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time In		
Time out		
Received by	DS	
Sampled by	T/E	

COPY

Compatible? (RT#)	Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	7140 AF		Magnesium	
pH (S.U.)	0.8		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.10		TDS	1990
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	62°F			
Conductivity	44µS			
% Solids	19%			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	21%			
Radiation Screen (as needed)				
Lab Signature	[Signature]			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12/15/09 20/14/1801
Receiving ID#	702141801
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	AS
Sampled by	AW

COPY

ANALYSIS INFORMATION			
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)	2140°F	Magnesium	
pH (S.U.)	6.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.04	TDS	1570
Physical Description		Resistivity	
Stream Consistency	<input type="radio"/> Yes <input type="radio"/> No	Sulfate	
Oil in Sample	<input type="radio"/> Yes <input type="radio"/> No		
Temperature	63°F		
Conductivity	29mS		
% Solids	15%		
Turbidity	<input type="radio"/> Yes <input type="radio"/> No		
Color (visual)			
TSS (%)	21%		
Radiation Screen (as needed)			
Lab Signature	Pa		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12:20 AM 02-15-18
Receiving ID#	02-151801
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS TE
Sampled by	

COPY

PHYSICAL PROPERTIES		CHEMICALS	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	7140°F	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.10	TDS	890
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	63°F		
Conductivity	112 mS		
% Solids	890		
Turbidity	Yes No		
Color (visual)			
TSS (%)	4190		
Radiation Screen (as needed)			
Lab Signature	P		


FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12:10 AM 02-15-18
Receiving ID#	102151802
Manifest#	Line:
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS
Sampled by	TE

COPY

LAB TEST RESULTS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	MIN > 140 °F	Magnesium	
pH (S.U.)	0.8	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.08	TDS	1390
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	64 °F		
Conductivity	86 mS		
% Solids	1390		
Turbidity	Yes No		
Color (visual)			
TSS (%)	190		
Radiation Screen (as needed)			
Lab Signature			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	12:16AM 02-19-18
Receiving ID#	202191801
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS
Sampled by	TE

COPY

LAB TEST RESULTS			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	2140°F	Magnesium	
pH (S.U.)	0.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.16	TDS	2490
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	63°F		
Conductivity	76µS		
% Solids	24%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	21%		
Radiation Screen (as needed)			
Lab Signature	Pm		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	10105A 02-20-18
Receiving ID#	F02201801
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS [Signature]
Sampled by	[Signature]

COPY

ANALYSIS INFORMATION			
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	> 140°F	Magnesium	
pH (S.U.)	0.1	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.16	TDS	2290
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	64°F		
Conductivity	340µS		
% Solids	2290		
Turbidity	Yes No		
Color (visual)			
TSS (%)	2190		
Radiation Screen (as needed)			
Lab Signature	[Signature]		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING REGISTRATION	
Date	10:35 AM 2-26-18
Receiving ID#	I 02261801
Manifest#	Line:
Land Ban Cert Included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	PS
Sampled by	JM

COPY

ANALYSIS			
Compatible? (RT#)	(Yes) No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	2140°F	Magnesium	
pH (S.U.)	0.4	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.32	TDS	4490
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil in Sample	Yes No		
Temperature	63°F		
Conductivity	13mS		
% Solids	44%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	21%		
Radiation Screen (as needed)			
Lab Signature	JM		

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	12:05 AM	02-28-18
Receiving ID#	F02281801	
Manifest#	Line:	
Land Ban Cert included	Yes	No
EGT Approval #		
Generator		
Client		
Transporter		
Time in		
Time out		
Received by	PS	
Sampled by	TE	

COPY

Compatible? (RT#)	Yes	No	Barium	
PCBs (ppm)(Oily Waste Only)?			Calcium	
TOC (ppm)(CC Waste Only)?			Total Iron	
Flash Point (°F)	>140°F		Magnesium	
pH (S.U.)	0.4		Sodium Chloride	
Cyanides? (mg/L)			Bicarbonate	
Sulfides? (ppm)			Carbonate	
Specific Gravity	1.12		TDS	22%
Physical Description			Resistivity	
Stream Consistency	Yes	No	Sulfate	
Oil in Sample	Yes	No		
Temperature	61°F			
Conductivity	12mS			
% Solids	21% 22%			
Turbidity	Yes	No		
Color (visual)				
TSS (%)	21%			
Radiation Screen (as needed)				
Lab Signature	Pm			

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

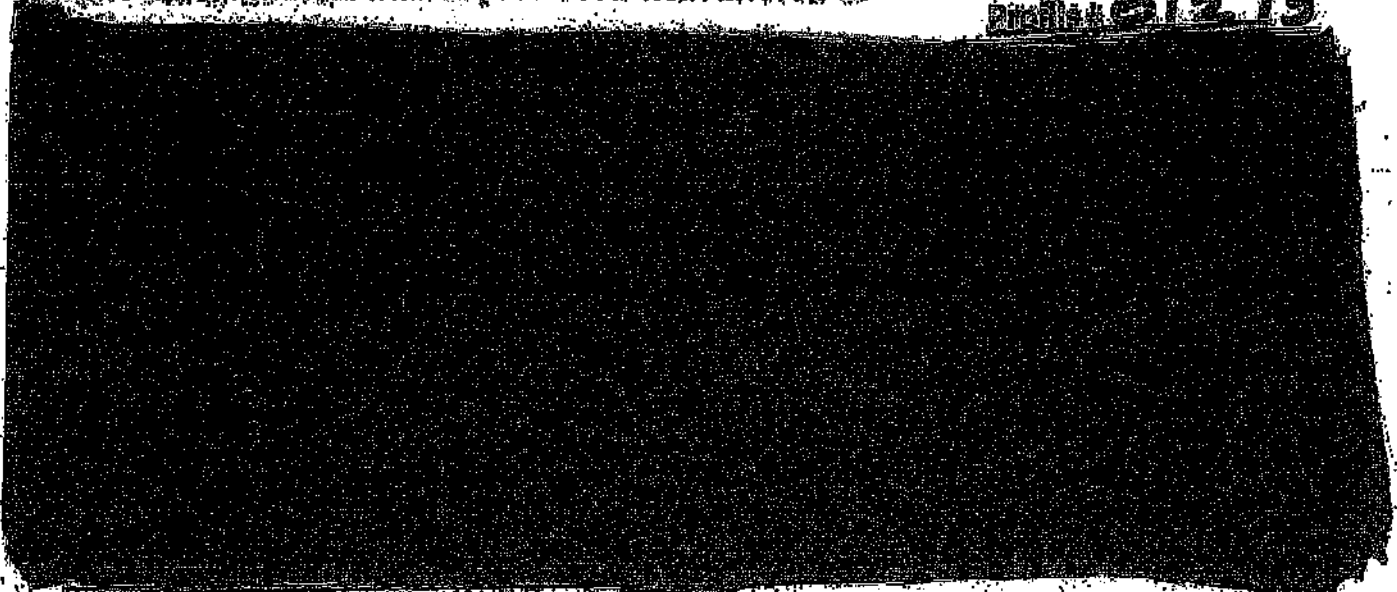
RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	5:20p 2-28-18
Receiving ID#	102281802
Manifest# Line:	
Land Ban Cert included	Yes No
EGT Approval #	
Generator	
Client	
Transporter	
Time in	
Time out	
Received by	B
Sampled by	Am

COPY

PHYSICAL & CHEMICAL ANALYSIS		PHYSICAL & CHEMICAL ANALYSIS	
Compatible? (RT#)	Yes No	Barium	
PCBs (ppm)(Oily Waste Only)?		Calcium	
TOC (ppm)(CC Waste Only)?		Total Iron	
Flash Point (°F)	>1400F	Magnesium	
pH (S.U.)	1.2	Sodium Chloride	
Cyanides? (mg/L)		Bicarbonate	
Sulfides? (ppm)		Carbonate	
Specific Gravity	1.02	TDS	17%
Physical Description		Resistivity	
Stream Consistency	Yes No	Sulfate	
Oil In Sample	Yes No		
Temperature	63°F		
Conductivity	23mS		
% Solids	18%		
Turbidity	Yes No		
Color (visual)			
TSS (%)	1%		
Radiation Screen (as needed)			
Lab Signature	Pin		

**WASTE STREAMS
CHARACTERIZATIONS**



WASTE INFORMATION

Name of Waste/Common Chemical Name:

High Speed Chrome 25-010

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

Tank Wash Change

USEPA / STATE WASTE IDENTIFICATION

- This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
- Regulated by TSCA? Yes No (PCs, etc)
- List ALL Applicable Waste Codes: D002 D007 D008

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input checked="" type="checkbox"/> Black/Brown <input type="checkbox"/> Other	Specific Gravity: <input type="checkbox"/> 0.1% <input type="checkbox"/> 1-3% <input type="checkbox"/> 3-5% <input type="checkbox"/> 5-10% <input type="checkbox"/> 10-15% <input type="checkbox"/> 15-20% <input type="checkbox"/> 20-25%	Layers: <input type="checkbox"/> Well Layered <input type="checkbox"/> 2 Layers <input checked="" type="checkbox"/> Single Phase	Spacing Layer: <input type="checkbox"/> 0-3 <input type="checkbox"/> 3-10 <input type="checkbox"/> 10-12 <input type="checkbox"/> 12-14 <input type="checkbox"/> 14-16 <input type="checkbox"/> 16-18 <input type="checkbox"/> 18-20 <input type="checkbox"/> 20-25	<i>Acceptable</i> <u>02.06.18</u>
---	---	---	---	--------------------------------------

pH: NA < 2 2-4 4-6 8-9 9-10 10-12.5 > 12.5

Liquid Flash Point: < 75°F 75-100°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>Chromium Acid</u>					
<u>Styrene</u>					
<u>Chloride</u>					

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

	Not Present	Concentration	Not Present	Concentration	Assting (As)	DOT	ppm	ppm
PCB	<input type="checkbox"/>	ppm	Arsenic (As)	<input type="checkbox"/>	ppm	DOT4	ppm	ppm
Dioxin	<input type="checkbox"/>	ppm	Barium (Ba)	<input type="checkbox"/>	ppm	DOT5	ppm	ppm
Cyanides Reactive	<input type="checkbox"/>	ppm	Bismuth (Bi)	<input type="checkbox"/>	ppm	DOT6	ppm	ppm
Cyanides Total	<input type="checkbox"/>	ppm	Chromium (Cr)	<input type="checkbox"/>	ppm	DOT7	ppm	ppm
Sulfides Reactive	<input type="checkbox"/>	ppm	Lead (Pb)	<input type="checkbox"/>	ppm	DOT8	ppm	ppm
Sulfides Total	<input type="checkbox"/>	ppm	Mercury (Hg)	<input type="checkbox"/>	ppm	DOT9	ppm	ppm
			Plutonium	<input type="checkbox"/>	ppm	DOT10	ppm	ppm
			Uranium	<input type="checkbox"/>	ppm	DOT11	ppm	ppm

TCLP Organics DOT 2-0943 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-Poisoning Carcinogens NESHAP Wastes (Benzene, etc.) Biological None Apply

SHIPPING INFORMATION

- Is this DOT Hazardous Material (49 CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds 10 *new solution*
- DOT Shipping Name Chromium Trioxide, solution Hazard Class OXNA 5.1
- Method of Shipment: Tank Truck Motor Vehicle Rail Car Drums Other
- Number of Units to Ship Now 3 Anticipated Volume / Units per Year 3,600/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 to make this information misleading. Unbiased workers may rely on this representation and warranty in the handling and processing of the waste material described herein. If this box is checked, request Environmental Lab. Technologies not to cover any information. All other information will be consistent with the results of the sampling.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Preserve a representative 1 quart sample of the waste described in the above referenced Generator Manifest Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods listed 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 our Environmental Lab-Technologies

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

RECEIVING INFORMATION	
Date	2/2/18
Receiving ID#	
Manifest# Line:	
Land Ban Cert Included	Yes No
EGT Approval #	
	
Time in	
Time out	
Received by	PS
Sampled by	

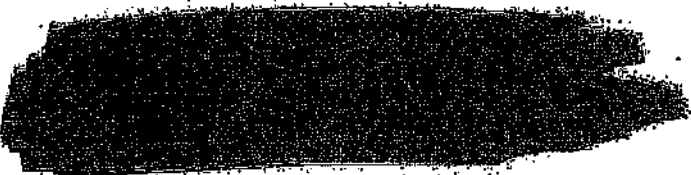
TEST INFORMATION			
Compatible? (RT#) ^{AS-45}	<input checked="" type="radio"/> Yes <input type="radio"/> No	Barium	
PCBs (ppm)(Oily Waste Only)?	N/A	Calcium	
TOC (ppm)(CC Waste Only)?	N/A	Total Iron	
Flash Point (°F)	2140°F	Magnesium	
pH (S.U.)	1.2	Sodium Chloride	
Cyanides? (mg/L)	230	Bicarbonate	
Sulfides? (ppm)	2200	Carbonate	
Specific Gravity	1.04	TDS	
Physical Description	liquid	Resistivity	
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate	
Oil in Sample	Yes <input checked="" type="radio"/> No <input type="radio"/>		
Temperature	51°F		
Conductivity	10µmS		
% Solids	12.70		
Turbidity	<input checked="" type="radio"/> Yes <input type="radio"/> No		
Color (visual)	dark gold		
TSS (%)	1.2%		
Radiation Screen (as needed)	negative		
Lab Signature	Pier		

Plating International Inc.

11142 Addison Ave.
Franklin Park, IL 60131
(847) 451 2101

SOLUTION TEST REPORT

November 14, 2016



Hexavalent Chromium Plating Solution

Tank number:
Solution volume:

Tank 1
1200 Gallons

Date sampled: 11/11/16
Date received: 11/11/16

ANALYSIS RESULTS:

MATERIAL	RESULTS	STD. ANALYSIS	TARGET	COMMENTS
Chromic Acid (CrO ₃)	88.4	28.86 oz/gal	93.0 oz/gal	Customer Req. 88
Sulfate (SO ₄)	0.88	28.86 oz/gal	0.89 oz/gal	Customer Req. 88
Ratio (CrO ₃ /SO ₄)	1.199		100:1	
Catalyst (%)	43		100%	
Copper (ppm)	200			
Iron (ppm)	5860			
Total	5760		<7500	
Divalent (ppm)	8	45 ppm		HIGH
Trivalent (oz/gal)	1.24	<2%	<1%	HIGH

RECOMMENDATIONS:

Chromic Acid Addition	0	lbs
Sulfate Acid Addition	0	mls
Sulfate Reducer Addition	3.8	lbs

MATERIAL SAFETY DATA SHEET

Date: 23-Feb-2006

Revision Number: 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code: HSC-26-DX-110
Product name: High Speed Chrome 25 D X
Synonyms: No information Available
Chemical characterisation: Metal oxide.
Supplier: Plating International
2755 W Lake Street
Melrose Park IL 60160
TELEPHONE: 773-297-6300
HOURS: 9:00am - 4:30pm EST

Emergency telephone number

SPILLS AND TRANSPORT CHEMTREC: 800-424-9300

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER
OXIDIZER
CORROSIVE
TOXIC

This material is considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This material is a controlled product under WHMIS.

Potential health & environmental effects

Properties affecting health: The product causes burns of eyes, skin and mucous membranes. Toxic by inhalation. Toxic in contact with skin. Also toxic if swallowed. Possible carcinogen.

Principle routes of exposure: Eyes. Skin. Respiratory system. Gastrointestinal tract.

Skin contact: Corrosive. Causes severe irritation and burns. Toxic in contact with skin. Large exposures may be fatal. May cause systemic poisoning. May cause sensitization by skin contact.

Eye contact: Corrosive to the eyes and may cause severe damage including blindness.

Inhalation: Corrosive. Causes severe irritation and burns. Very toxic by inhalation. Can cause ulceration of mucous membranes. May cause bronchospasms. May cause sensitization by inhalation.

Ingestion: Corrosive. Causes severe irritation and burns. Toxic if swallowed. May cause systemic poisoning. Liver and kidney injuries may occur.

Physico-chemical properties: Contact with combustible material may cause fire.

Potential environmental effects: Dangerous for the environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product name: CHROMIC ACID ULTRA

INGREDIENTS (BY WEIGHT PERCENT)

Components	CAS-No	Weight %
Chromium trioxide (CrO ₃)	1333-82-0	80 - 100

This product may contain component (s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above de minimus disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

4. FIRST AID MEASURES

- General advice:** Immediate medical attention is required.
- Skin contact:** Immediate medical attention is required. Rinse immediately with plenty of water and seek medical advice. Remove and wash contaminated clothing before re-use.
- Inhalation:** Immediate medical attention is required. Move to fresh air. Artificial respiration and/or oxygen may be necessary.
- Eye contact:** Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Ingestion:** Immediate medical attention is required. Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
- Notes to physician:** Overexposure to this product could lead to kidney failure and death. It has been reported that there is little value from chelating agents; however death has been avoided in several such cases through the use of early renal dialysis. Ascorbic acid by mouth or intravenously has been shown to be effective (converting Chromé VI to Chromé III) in preventing renal tubular failure. Skin ulcers may be treated by removal from exposure, daily cleaning, debridement, and application of antibiotic cream and dressing. Continue to monitor for respiratory distress for 72 hours.
- Protection of first-aiders:** Wear personal protective equipment.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use dry chemical, CO₂, water spray or "alcohol" foam.
- Extinguishing media which must not be used for safety reasons:** DO NOT use combustible materials such as sawdust.
- Special protective equipment for firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear. Use personal protective equipment.
- Specific hazards:** Oxidizing agent. In the event of fire, the following can be released, chromium oxides, oxygen. Contact with combustible material may cause fire.
- Unusual hazards:** Containers may explode when involved in fire. Chromic acid reacts strongly with materials which are readily oxidized. May sustain a fire involving easily oxidizable material.
- Specific methods:** Water mist may be used to cool closed containers. Dike and collect water used to fight fire. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Flash Point:** Not flammable
- Flash point test method:** Not applicable.
- Autoignition temperature:** Not applicable.

Flammability Limits in Air:

- Lower: Not applicable.
- Upper: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Use personal protection recommended in Section 8. Isolate area and deny entry to unauthorized and/or unprotected personnel.
Environmental precautions:	Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Discharge to a public sewerage authority should coincide with all applicable local permits and notification requirements. May be hazardous to aquatic life if released to open waters.
Methods for containment:	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up:	Spills should be cleaned up immediately to prevent dispersion of airborne mists and dusts. For a spill involving a solid material, clean up promptly by scoop or vacuum. Avoid dust formation. Do not dry sweep. Clean spills using wet clean up methods (i.e., misting, etc.) or with a HEPA vacuum. Dike spilled liquid material with suitable inert absorbent (ex: sand, soil, vermiculite) and place in a clean dry container for later recycle or disposal. Keep in suitable, closed containers for disposal. Run off water may be corrosive and / or toxic. Dispose of in accordance with all local, state, provincial, and federal regulations.

7. HANDLING AND STORAGE

Handling

Technical measures/precautions:	Use only in area provided with appropriate exhaust ventilation.
Safe handling advice:	Handle in accordance with good industrial hygiene and safety practice. Do not contact with skin, eyes, or clothing. Do not breathe vapors/dust. Do not ingest. Avoid dust formation. Remove and wash contaminated clothing before re-use. Keep away from combustible material.

Storage

Technical measures/storage conditions:	Keep tightly closed in a dry, cool and well-ventilated place. Store away from ignition sources, combustible, organic, or other readily oxidizable materials. Protect from moisture.
Incompatible products:	Combustible, organic, other readily oxidizable materials. Corrosive in contact with metals.
Shelf Life (days):	1000 Days

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Respiratory protection:	Use NIOSH approved respiratory equipment when airborne concentrations are equal to or may exceed exposure limits. For emergency or other conditions where exposure levels are not known or may be uncontrolled, use a positive pressure air-supplied or self-contained breathing apparatus (SCBA).
Hand protection:	Consult glove manufacturer to determine the most suitable chemical resistant glove for user's application. Consideration must be given to durability and permeation resistance.

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect. Impervious clothing, Chemical resistant apron, Boots. Consult glove/clothing manufacturer to determine the most suitable chemical resistant glove/clothing for user's application. Consideration must be given to durability and permeation resistance.

Eye protection: Tightly fitting safety goggles. Face shield. An emergency eye wash must be readily accessible to the work area.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Components	OSHA PEL (mg/m ³)			NIOSH REL (mg/m ³)		
	TWA	STEL	Ceilings	TWA	STEL	Ceilings
Chromium trioxide (CrO ₃) 1333-82-0	0.05 mg/m ³			1 mg/m ³		0.1 mg/m ³

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid	Color:	Dark red
Odor:	None	Specific gravity:	>1
pH:	<2 (1% aqueous solution)	Boiling point:	Not applicable.
Melting point:	384.8 °F 196 °C	Bulk density:	100 lbs/cf
Evaporation rate:	Not applicable.	Vapor density:	Not applicable.
Vapor pressure:	Not applicable.	VOC content(%):	Not applicable.
Solubility in water:	Complete	Solubility in other solvents:	No information available

Flash Point:	Not flammable	Flash point test method:	Not applicable.
Autoignition temperature:	Not applicable.	Decomposition temperature:	384.8 °F 196 °C

Explosion limits:

- Upper: Not applicable.
- Lower: Not applicable.

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.

Materials to avoid: Readily oxidizable or combustible material. Metals.

Conditions to avoid: Incompatible products. Extremes of temperature and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.

Hazardous decomposition products: Chromium oxides, oxygen.

Polymerization: None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

Components Chromium trioxide (CrO ₃) - 1333-82-0	LD50/oral/rat 52 mg/kg	LC50/inhalation/6h/rat No information available	LD50/dermal/rabbit No information available
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Product Information

LC50/inhalation/4hr/rat = 217 mg/m³
LD50/dermal/rabbit = 57 mg/kg
LD50/oral/rat = 52 mg/kg

Local effects

- Skin Irritation:** Corrosive. Causes burns. Toxic in contact with skin. Chrome VI penetrates undamaged skin and reduces to Chrome III which forms a skin allergen by combining with proteins or other skin components. Chrome sores most commonly occur at breaks in the skin, nail roots, creases over knuckles, finger webs, backs of hands, and on forearms. Direct contact can cause sensitization, severe burns, and external ulcers (chrome sores). Liver and kidney injuries may occur.
- Eye Irritation:** Corrosive to the eyes and may cause severe damage including blindness. Can cause chronic conjunctival inflammation. May cause discoloration of cornea.
- Inhalation:** Corrosive. Causes severe burns. Inhaled corrosive substances can lead to a toxic edema of the lungs. Can cause ulceration of mucous membranes. May cause bronchospasms. Repeated or prolonged inhalation may cause ulceration and perforation of the nasal septum.
- Ingestion:** Corrosive. Ingestion causes burns of the upper digestive and respiratory tracts. Toxic if swallowed. Harmful or fatal if swallowed.
- Sensitization:** May cause sensitization by inhalation and skin contact.
- Chronic toxicity:** Repeated inhalation of chromic acid causes nasal perforation, skin ulceration, chronic rhinitis, pharyngitis, kidney and liver damage, inflammation of the larynx, changes in the blood and lung cancer. Transfer to the eyes from the fingers or droplets in the air can cause chronic conjunctival inflammation and occasionally a brown band in the cornea. This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Specific effects

- Carcinogenic effects:** The National Toxicology Program (NTP) has designated Hexavalent Chromium Compounds as Known Human Carcinogens. The International Agency for Research on Cancer (IARC) has identified Hexavalent Chromium Compounds as Carcinogenic to Humans (group 1). The American Conference of Governmental Industrial Hygienists (ACGIH) has identified Water-Soluble Hexavalent Chromium Compounds as Confirmed Carcinogens.
- Mutagenic effects:** No information available
- Reproductive toxicity:** No information available
- Target organ effects:** Eyes, Skin, Kidneys, Respiratory system, Liver.

Carcinogens

Components	NTP:	IARC:	OSHA	ACGIH
Chromium trioxide (CrO ₃)	Known Carcinogen (Listed under Chromium hexavalent compounds)	1	Present	A1 - Confirmed Human Carcinogen

12. ECOLOGICAL INFORMATION

Environmental Hazards

- Ecotoxicity effects:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Toxic to wildlife and domestic animals.

Aquatic toxicity: Hexavalent chromium may remain unchanged or change slowly in many natural waters due to the low concentration of reducing matter. Hexavalent chrome in water will eventually be reduced to trivalent chrome by organic matter. The residence time of chromium in lake water has been estimated to be 4.6 to 18 years.

Mobility: This product is soluble in water. Chromium may be transported from soil through runoff and leaching of water and through aerosol formation. The organic matter present in soil is expected to reduce soluble chromate to insoluble chromic oxide.

Bioaccumulative potential: Bioaccumulation from soil to above ground parts of plants is unlikely. There is no indication of biomagnification along the terrestrial food chain (soil-plant-animal).

Components	Freshwater Algae	Freshwater Fish Species
Chromium trioxide (CrO ₃) - 1333-82-0		96 h LC50 (striped catfish) = 200 mg/L 96 h LC50 (fathead minnow) = 36.2 mg/L 96 h LC50 (rainbow trout) = 7.6 mg/L

Components	Microtoxicity	Water Flea
Chromium trioxide (CrO ₃) 1333-82-0		24 h LC50 = 435 µg/L

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of in accordance with federal, provincial, state, and local regulations.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT
Proper shipping name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1
Subsidiary Class:: 8.6.1
UN-No: 1463
Packing group: II
DOT RQ (kg): 4.54
Description: CHROMIUM TRIOXIDE, ANHYDROUS, 5.1(8.6.1), UN 1463, PGII, RQ, (TOXIC)

TDG (Canada)
Proper shipping name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1
Subsidiary Class:: 8.6.1
UN-No: 1463
Packing group: II
Description: CHROMIUM TRIOXIDE, ANHYDROUS, 5.1(8.6.1), UN 1463, PGII, RQ, (TOXIC)

IMO / IMDG
Proper shipping name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1
Subsidiary Class:: 8.6.1
UN-No: 1463

Packing group: II
Description: CHROMIUM TRIOXIDE, ANHYDROUS, 5.1(8.6.1), UN 1463, PGII, RQ, (TOXIC)

IATA
Proper shipping name: CHROMIUM TRIOXIDE, ANHYDROUS
Hazard Class: 5.1
Subsidiary Class:: 8.6.1

Packing group:
Description:
ERG Code:

UN-No: 1463
II
CHROMIUM TRIOXIDE, ANHYDROUS, 5.1(8,8.1), UN 1463, PGII, RQ, (TOXIC)
5C

15. REGULATORY INFORMATION

International Inventories

All of the components in this product are on or exempt from the following inventories:
U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

International Inventory Legend

TSCA: Toxic Substances Control Act
DSL: Domestic Substance List
NDSL: Non-Domestic Substance List
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: EU List of Notified Chemical Substances
ECL: Existing Chemicals List aka Existing and Evaluated Chemical Substances
AICS: Inventory of Chemical Substances
ENCS: Existing and New Chemical Substances
PICCS: Philippines Inventory of Chemicals and Chemical Substances

U.S. Regulations:

HAZARDOUS COMPONENTS

Components	CA PROP 65 SARA 302	SARA 313	CERCLA RQ	TSCA 12(b)	CWC	DEA
Chromium trioxide (CrO3)	X	X	5000 lb	X		

U.S. Regulations Legend

CA PROP 65: California Proposition 65 - Carcinogens List
TSCA 12(b): TSCA Section 12(b) - Export Notification
SARA 302: CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs and TPCs
SARA 313: CERCLA/SARA - Section 313 - Emission Reporting
CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities
CWC: Chemical Weapons Convention - Annex on Chemicals
DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and / or Essential Chemicals

Canada

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

WHMIS Controlled List

HAZARDOUS COMPONENTS

Components	CAS-No	WHMIS Call out threshold
Chromium trioxide (CrO3)	1333-82-0	0.1 %
SARA 311		
Acute Health Hazard		YES
Chronic Health Hazard		YES
Fire Hazard		YES
Sudden Release of Pressure Hazard		NO
Reactive Hazard		NO

WHMIS hazard class:

- C Oxidizing materials
- E Corrosive material
- D1B Toxic materials
- D2A Very toxic materials

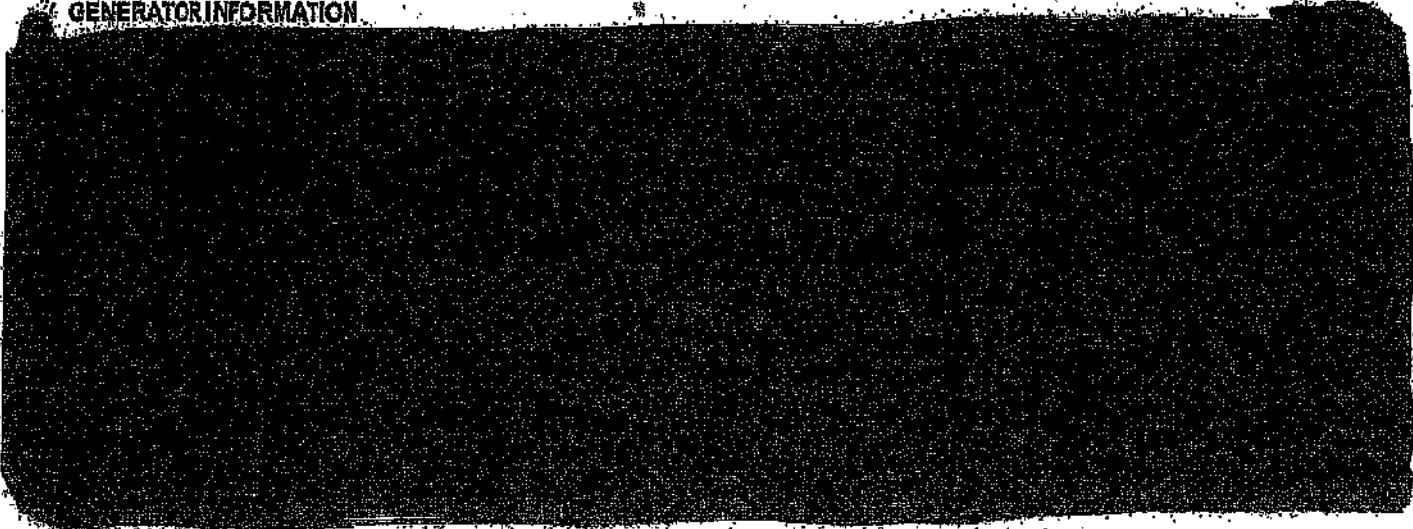
16. OTHER INFORMATION

NFPA: Health: 3 Flammability: 0 Instability: 1 Other data: Oxy

CAREFULLY READ THE FOLLOWING: The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al. at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.

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GENERATOR INFORMATION



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Electroless Nickel Solution

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

Spent electroless nickel from the plating of plastic automotive parts

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: D007

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>varies</u>	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 type="checkbox"/> 1.0-1.2 <input type="checkbox"/> 0.8-1.0 <input type="checkbox"/> 1.3-1.4 <input type="checkbox"/> Exact/ Other: _____	<i>acceptable</i> <u>02.18.18</u>
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pH: NA ≤ 2 2-4 4-6 6-8 8-10 10-12.5 ≥12.5

Liquid Flash Points: <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
electroless nickel solution	99	99.9			
Chromium	1	1			

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

<input type="checkbox"/> Lab Analysis	<input type="checkbox"/> Generator Knowledge	<input checked="" type="checkbox"/> TCLP	<input type="checkbox"/> TOTAL	
---------------------------------------	--	--	--------------------------------	--

Not Concentration		Not Concentration							
Present	ppm	Present	ppm						
<input checked="" type="checkbox"/>	_____	Aromatic Amine	<input checked="" type="checkbox"/> _____	Arsenic (As)	D004	<input checked="" type="checkbox"/>	< 5	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____	Pesticides	<input checked="" type="checkbox"/> _____	Barium (Ba)	D008	<input checked="" type="checkbox"/>	< 100	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____	Rodenticides	<input checked="" type="checkbox"/> _____	Cadmium (Cd)	D009	<input checked="" type="checkbox"/>	< 1	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____	Fungicides	<input checked="" type="checkbox"/> _____	Chromium (Cr)	D007	<input type="checkbox"/>	< 6	ppm	18 ppm
<input checked="" type="checkbox"/>	_____			Lead (Pb)	D006	<input checked="" type="checkbox"/>	< 5	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____			Mercury (Hg)	D008	<input checked="" type="checkbox"/>	< 0.2	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____			Selenium (Se)	D010	<input checked="" type="checkbox"/>	< 1	ppm	_____ ppm
<input checked="" type="checkbox"/>	_____			Silver (Ag)	D011	<input checked="" type="checkbox"/>	< 5	ppm	_____ ppm

TCLP Organics D012 - D048 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

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

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds 10
3. DOT Shipping Name Hazardous Waste, Liquid, n.o.s. Hazard Class 9 UN/NA NA308
- PG III ERG 171 Hazardous Constituents for "n.o.s." Chromium
4. Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
5. Number of Units to Ship Now: 2400 6. Anticipated Volume / Units per Year _____ or One Time
6. Special Handling Requirements including PPE: _____

CERTIFICATION STATEMENT

I hereby represent and warrant that I have personally examined and am familiar with the information contained and submitted in this and all attached documents. Based on my inquiry and personal knowledge of those individuals responsible for supplying or obtaining the information, the information contained herein is true, accurate, and complete to the best of my knowledge and belief. Furthermore, no material fact has been omitted as to make this information misleading. I understand that others may rely on this representation and warrant 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 analysis and/or regulatory requirements.


GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-quart sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 261-Appendix 1. Fill in the sampling information in the spaces provided below. If you have problems obtaining a representative sample of your waste, please contact your Environmental Geo-Technologies representative.

FINGERPRINT FORM

ENVIRONMENTAL GEO-TECHNOLOGIES, LLC.

RECEIVING & APPROVAL FORM

Date	2/7/18
Receiving ID#	
Manifest# Line:	
Land Ban Cert Included:	Yes No
[REDACTED]	
Transporter	
Time in	
Time out	
Received by	PS
Sampled by	

Compatible? (RT# ^{bases} _{Acid-Base})	<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°F	Magnesium	
pH (S.U.)	8.5	Sodium Chloride	
Cyanides? (mg/L)	< 30	Bicarbonate	
Sulfides? (ppm)	< 200	Carbonate	
Specific Gravity	1.10	TDS	
Physical Description	liquid	Resistivity	
Stream Consistency	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sulfate	
Oil in Sample	Yes <input checked="" type="radio"/> No		
Temperature	61°F		
Conductivity	126 µS		
% Solids	21%		
Turbidity	Yes <input checked="" type="radio"/> No		
Color (Visual)	blue		
TSS (%)	< 1%		
Radiation Screen (as needed)	negative		
Lab Signature			

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

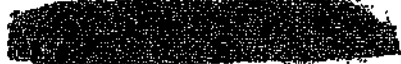
TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4400 Fax
www.trace-labs.com

February 01, 2018



RE: Trace Project T18A347
Client Project 8WV012418-M



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

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

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

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

Sincerely,

Jon Mink
Senior Project Manager
Enclosures



NJDEP Accreditation No. M1008

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888-979-4469 Fax
www.trace-labs.com

SAMPLE SUMMARY



Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
T18A347-01	001-E. NI Bath Soln.	Liquid Waste	Client	01/24/18 15:00	01/25/18 12:15

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www.trace-labs.com

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

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.

NOTE: Samples for volatiles that have been extracted with a water miscible solvent were corrected for the total volume of the solvent/water mixture.
Solid matrices Method Blanks are at 100% solids as such results are the same wet or dry.

CERTIFICATE OF ANALYSIS

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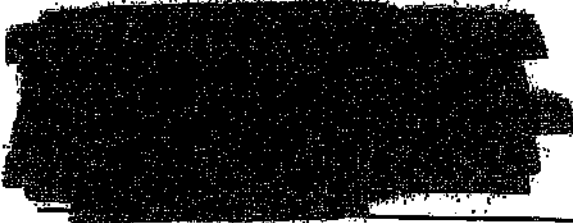
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 2241 Black Creek Road
 Muskegon, MI 49444-2673

TRACE

ANALYTICAL LABORATORIES, INC.

231-773-5996 Phone
 658-878-4469 Fax
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ANALYTICAL RESULTS



Date Collected: 01/24/18 16:00 Matrix: Liquid Waste
 Date Received: 01/26/18 12:19

PARAMETERS	RESULTS UNITS	RDL	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	MCL
METALS, TCLP									
Analysis Method: EPA 6010B									
Batch: 7074729									
Arsenic	<0.30 mg/L	0.30	1	01/31/18	nws	02/01/18	nws		5.0
Barium	2.0 mg/L	1.0	1	01/31/18	nws	02/01/18	nws		100
Cadmium	<0.10 mg/L	0.10	1	01/31/18	nws	02/01/18	nws		1.0
Chromium	19 mg/L	0.50	1	01/31/18	nws	02/01/18	nws		5.0
Lead	0.68 mg/L	0.50	1	01/31/18	nws	02/01/18	nws		5.0
Selenium	<0.80 mg/L	0.80	1	01/31/18	nws	02/01/18	nws		1.0
Silver	<0.10 mg/L	0.10	1	01/31/18	nws	02/01/18	nws		5.0
Analysis Method: EPA 7470A									
Batch: 7074726									
Mercury	<0.010 mg/L	0.010	1	01/31/18	nws	02/01/18	nws		0.20

CERTIFICATE OF ANALYSIS

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231-773-5993 Phone
 888-678-4459 Fax
 www.trace-labs.com

TRACE ANALYTICAL LABORATORIES, INC.

Trace Analytical Laboratories, Inc.
 2241 Black Creek Road
 Muskegon, MI 49444-2673

RUSH
 Due Date: **7/24/11**

QUALITY CONTROL RECORD

13940 Michigan, Suite 201 • Livonia, MI 48150
 Phone 734-457-9650 • Fax 734-457-9651

ITEM #	SAMPLE ID	DATE SAMPLED	TIME	SAMPLE DESCRIPTION	REMARKS		
					LABORATORY	ANALYST	DATE
1	001	11/21/10	15:00	E. NI TRADA SOLID			
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

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SAMPLE LOG IN CHECKLIST



Cooler Receipt

Cooler/samples delivered by: Trace courier Hand delivered Commercial courier

Name of delivery person: Edna Brown

UPS FED EX US Mail

Tracking Number: Not Applicable
 Tracking #: _____

COO seals present and intact on cooler? Not Applicable No Yes

Custody seals signed by client? No Yes Client custody seal # (if applicable): _____

Coolant and Temperature

Type of Coolant Used

Slurry w/ crushed, cubed, or chip ice?

Multiple bags of ice around samples?

Ice Pack/ Blue Ice:

No Coolant Present:

Ice still present upon receipt (circle one):
 Yes No NA

Coolant Temperature

Correction Factors: Digital Stick Thermometer CF = -0.2°C
 IR Thermometer CF = -0.8°C

Representative Sample Temperature: 16 °C (check one below)

Temp Blank (Stick Thermometer)
 Client Sample (IR Thermometer)

Melt Water: Y/N/A °C (Use Digital Stick Thermometer)

General

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

Notes: _____

EMD pH Test Strips Used:

pH 0-2.5 Lot: H0579059 pH 11.0-12.0 Lot: H0547328

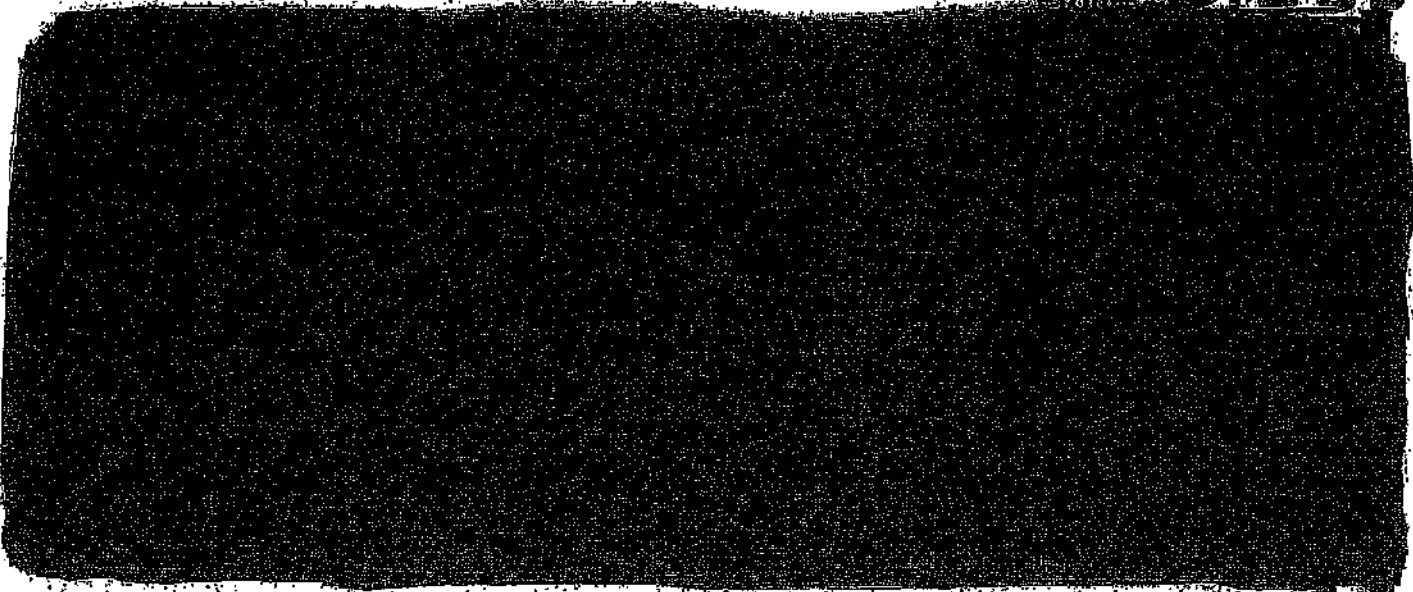
Other: _____

Form 70-A22
 Effective 10/2/17

TRACE Analytical Laboratories, Inc.

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WASTE INFORMATION

Name of Waste/Common Chemical Name:

Sulfuric Acid

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

H₂SO₄ used to wash graphite

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 checked="" type="checkbox"/> Other <u>VARIES</u>	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 type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input type="checkbox"/> 1.3 - 1.4 Exact / Other <u>>1.60</u>	Acceptable 02.22.18
---	---	---	--	------------------------

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
<u>Sulfuric Acid</u>	<u>95</u>	<u>85</u>			
<u>Water</u>	<u>10</u>	<u>5</u>			
<u>Graphite</u>	<u>2</u>	<u>0</u>			

Metals: 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	Code	Limit	Unit
PCB	<input type="checkbox"/>	ppm	Aromatic Amine	<input type="checkbox"/>	ppm	D004	< 5	ppm
Dioxins	<input type="checkbox"/>	ppm	Pesticides	<input type="checkbox"/>	ppm	D005	< 100	ppm
Cyanides Reactive	<input type="checkbox"/>	ppm	Rodenticides	<input type="checkbox"/>	ppm	D006	< 1	ppm
Cyanides Total	<input type="checkbox"/>	ppm	Fungicides	<input type="checkbox"/>	ppm	D007	< 5	ppm
Sulfides Reactive	<input type="checkbox"/>	ppm				D008	< 5	ppm
Sulfides Total	<input type="checkbox"/>	ppm				D009	< 0.2	ppm
						D010	< 1	ppm
						D011	< 5	ppm

TCLP Organics D012 - D049 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

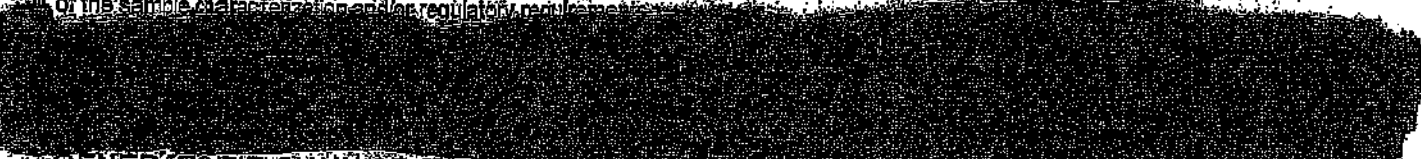
- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Positive Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

SHIPPING INFORMATION

- Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
- Reportable Quantity (RQ) in pounds _____
- DOT Shipping Name Sulfonic Acid with more than 51% Acid Hazard Class 8 UN 1830
- PG II ERG 137 Hazardous Constituents for "n.o.s." _____
- Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Totes
- Number of Units to Ship Now: _____ 6. Anticipated Volume / Units per Year: Varies 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.

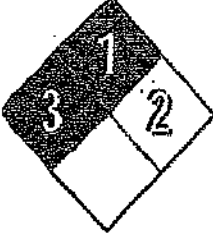



GENERATOR'S CHAIN OF CUSTODY (REGULATORY INSTRUCTIONS): PLEASE collect a representative 1-quart sample of the waste described in the above referenced GENERATOR'S WASTE PROFILE REPORT using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited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



MATERIAL SAFETY DATA SHEET



NFPA	HMIS	PPE	Symbol(s)
		 Regulated	
Current Issue Date: March 1, 2014		Revision Number: 2	
1. PRODUCT AND COMPANY IDENTIFICATION			
Product Name: Other/Generic Names: Recommended Use:	Sulfuric Acid, Spent Spent Alkylation Acid Industrial		
Manufacturer:	Chemtrade Solutions LLC 90 East Halsey Road Parsippany, NJ 07054 Chemtrade Chemicals Canada Ltd. 90 East Halsey Road Parsippany, NJ 07054		
For More Information:	Customer Service US ONLY: 800-631-8050 (Monday – Friday 9:00AM – 4:30PM) Customer Service CANADA ONLY: 866-543-3896 (Monday – Friday 9:00AM – 4:30PM)		
Emergency Telephone Number:	US ONLY - CALL CHEMTREC: 800-424-9300 (24 Hours/Day, 7 Days/Week) OUTSIDE THE US – CALL CHEMTREC: 703-527-3887 (24 Hours/Day, 7 Days/Week) CANADA ONLY - CALL CANUTEC: 613-996-6666 (24 Hours/Day, 7 Days/Week)		
2. HAZARDS IDENTIFICATION			
EMERGENCY OVERVIEW:	Light yellow to brown corrosive liquid. Causes severe skin burns. Causes severe eye burns. Causes burns of the mouth, throat and stomach.		
OSHA Status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)		
Potential Health Affects			
Skin:	Causes severe burns.		
Eyes:	Liquid contact can cause irritation, corneal burns, and conjunctivitis. May result in severe or permanent injury. May cause blindness.		
Inhalation:	Inhalation of fumes or mist can cause irritation or corrosive burns to the upper respiratory system, including the nose, mouth and throat. May irritate the lungs. May cause pulmonary edema.		
Ingestion:	Causes burns of the mouth, throat and stomach. May be fatal if swallowed. Hazards are also applicable to dilute solutions.		
Delayed Effects:	Erosion of teeth, lesions of the skin, tracheo-bronchitis, mouth inflammation, conjunctivitis and gastritis. IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen. This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions. The basis for the classifications rests on several epidemiology studies which have several deficiencies. These studies did not account for exposure to other substances, some known to be animal or potential human carcinogens, social influences (smoking or alcohol consumption) and included small numbers of subjects. Based on the overall weight of evidence from all human and chronic animal		

SULFURIC ACID, SPENT

studies, no definitive causal relationship between sulfuric acid mist exposure and respiratory tract cancer has been shown.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Sulfuric acid	7664-93-9	>90
Mixed hydrocarbons	NOT APPLICABLE	<10

4. FIRST AID MEASURES

Eye Contact	Immediately flush eyes with water for at least 15 minutes. Get medical attention immediately.
Skin Contact	Flush with plenty of water, removing contaminated clothing. Get medical attention immediately.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	Do not induce vomiting. Immediately give large quantities of water. Get medical attention immediately.
Notes to Physician	Treat symptomatically

5. FIRE FIGHTING MEASURES

FLASH POINT:	>200°F (>93°C)
FLASH POINT METHOD:	Open cup
AUTOIGNITION TEMPERATURE:	>450°F (>232°C)
UPPER FLAME LIMIT (VOLUME % IN AIR):	8%
LOWER FLAME LIMIT (VOLUME % IN AIR):	1%
FLAME PROPAGATION RATE (SOLIDS):	No information available
OSHA FLAMMABILITY CLASS:	Not flammable
SUITABLE EXTINGUISHING MEDIA:	Water spray or fog may be used to knock down the corrosive vapor cloud. Water may be applied to the sides of the containers exposed to flames provided the water does not come in contact with the tank contents.
UNSUITABLE EXTINGUISHING MEDIA:	No information available

HAZARDOUS COMBUSTION PRODUCTS	No information available
Impact sensitivity	No information available
Sensitivity to static discharge	No information available
SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	Contact with steel releases hydrogen gas which is highly flammable and can cause explosions. Concentrated sulfuric acid can ignite combustible materials on contact.
PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS	Wear approved positive-pressure self-contained breathing apparatus (SCBA) and full protective equipment. Water may be applied to the sides of the containers exposed to flames provided the water does not come in contact with the tank contents. Acid reacts violently with water and is corrosive to most metals.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR RELEASE	Neutralize small spills or leaks cautiously with soda ash or other alkaline materials. Carbon dioxide may evolve if neutralized with carbonates (e.g., soda ash). Contain large spills and block storm drains. Collect liquid and/or residue and dispose of in accordance with applicable regulations.
------------------------------------	--

SULFURIC ACID, SPENT

7. HANDLING AND STORAGE					
Handling	Wear personal protective equipment. Use adequate ventilation. When diluting always add acid to water. Dispose contaminated clothing.				
Storage	Keep storage containers tightly closed. Store in a cool, dry, ventilated area or cabinet. Isolate from incompatible substances. Protect from physical damage and from freezing.				
8. EXPOSURE CONTROLS/PERSONAL PROTECTION					
Component	ACGIH TLV	OSHA PEL	Ontario TWA/ELV	Mexico OEL (TWA)	NIOSH IDLH
Sulfuric acid	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	15 mg/m ³
Engineering Measures	Use local exhaust to keep airborne concentrations below the permissible exposure limits.				
9. PHYSICAL AND CHEMICAL PROPERTIES					
Appearance	Light yellow to brown liquid				
Color	Light yellow to brown				
Chemical Formula	H ₂ SO ₄ and hydrocarbons in water				
Odor	Negligible				
Odor Threshold	No information available				
Physical State	Liquid				
pH	0.9 (1% solution)				
Flash Point	>200°F (>93°C)				
Autoignition Temperature	>450°F (>232°C)				
Boiling Point/Range	~626°F (~330°C)				
Melting Point/Range	~30°F (~-1°C)				
Flammability Limits in Air	Upper 8%		Lower 1%		
Explosive Properties	No information available				
Oxidizing Properties	No information available				
Evaporation Rate	Not applicable				
Vapor Pressure	Negligible				
Vapor Density	Not applicable				
Specific Gravity	~1.84				
Partition Coefficient (n-octano/water)	No information available				
Viscosity	No information available				
Molecular Weight	98.08 (H ₂ SO ₄)				
Water Solubility	100				

SULFURIC ACID, SPENT

10. STABILITY AND REACTIVITY					
Chemical Stability	Normally stable.				
Conditions to Avoid	Avoid high temperatures. Elevated temperatures yield sulfur trioxide gas, which is toxic, corrosive and an oxidizer.				
Incompatible Products	Nitro compounds, carbides, dienes, alcohols (when heated): causes explosions. Oxidizing agents, such as chlorates and permanganates: causes fires and possible explosions. Allyl compounds and aldehydes: undergoes polymerization, possibly violent. Alkalis, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: causes strong exothermic reactions. Carbonates, cyanides, sulfides, sulfites, metals such as copper: yields toxic gases.				
Hazardous Decomposition Products	At elevated temperatures, hydrocarbon fragments and sulfur trioxide gas may be formed. Also a fire risk if in contact with organic materials.				
Possibility of Hazardous Reactions	Will not occur.				
11. TOXICOLOGICAL INFORMATION					
Acute Toxicity					
Component Information					
Component	LD50 Oral	LD50 Dermal		LC50 Inhalation	
Sulfuric acid	2,140 mg/kg (rat)			510 mg/m ³ /2 hr (rat) 320 mg/m ³ /2 hr (mouse)	
Irritation	No information available				
Corrosivity	No information available				
Sensitization	No information available				
Chronic Toxicity					
Carcinogenicity	This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group 1), potentially carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)				
Component	ACGIH	IARC	NTP	OSHA	Mexico
Sulfuric acid	A2	Group 1	Known	X	A2
Mutagenic Effects	No information available				
Reproductive Effects	No information available				
Developmental Effects	No information available				
Teratogenicity	No information available				
Target Organ Effects	No information available				
Other Adverse Effects	DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as known as human carcinogens. No definitive casual relationship between sulfuric acid mist exposure and respiratory cancer has been shown.				
Endocrine Disruptor Information	No information available				
12. ECOLOGICAL INFORMATION					
Ecotoxicity					
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.					
Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea	
Sulfuric acid		LC50 > 500 mg/L Brachydenio rerio 96 h		EC50 = 29 mg/L 24 h	

SULFURIC ACID, SPENT

Persistence and Degradability	No information available
Bioaccumulation	No information available
Mobility in Environmental Media	No information available
Other adverse affects	<u>Sulfuric acid component:</u> 24.5 ppm/24 hr/ bluegill/lethal/fresh water; 42.5 ppm/48 hr/prawn/LC50/salt water

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose of waste in accordance with all federal, state, and local regulations.
Contaminated Packaging	Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT	Regulated
Proper Shipping Name	Sulfuric acid, spent
Hazard Class	8
UN-No	UN1832
Packing Group	PGII
IDG	Regulated
Hazard Class	8
UN-No	UN1832
Packing Group	PGII

REGULATORY INFORMATION

International Inventories	
TSCA	Yes
DSL	Yes
NDSL	No
ELINCS	No
EINECS	Yes
ENCS	Yes
CHINA	Yes
KECL	Yes
PICCS	Yes
AICS	Yes

U.S. Federal Regulations

SARA 313


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

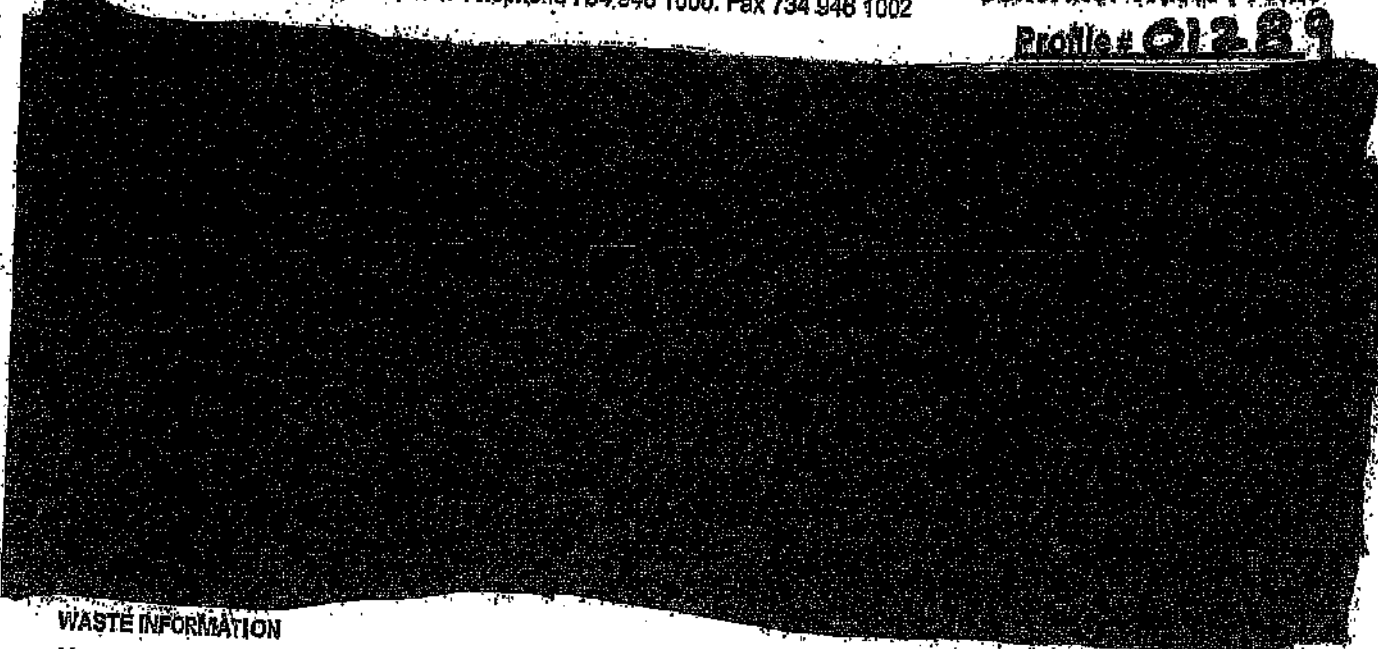
Component	CAS-No	Weight %	SARA 313-Threshold Values
Sulfuric acid (mists)	7664-93-9	>90	1.0

SARA 311/312 Hazardous Categorization

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

SULFURIC ACID, SPENT

CLEAN WATER ACT					
Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	
Sulfuric acid 7664-93-9 (9.5)	1000 lb			X	
CERCLA					
Component	CERCLA RQ (lb)	SARA EHS TPQ (lb)			
Sulfuric acid	1000 lb	1000 lb			
Releases above the RQ require immediate reporting to the National Response Center at (800) 424-8802 and to the state and/or local emergency planning committees.					
U.S. State Regulations					
California Proposition 65					
"Strong inorganic acid mists containing sulfuric acid" has been listed on California's Proposition 65 as a cancer-causing agent.					
Component	CAS No	California Prop. 65			
Sulfuric acid	7664-93-9	Carcinogen			
State Right-to-Know					
Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X
Other International Regulations					
Mexico	No information available				
Canada	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.				
WHMIS Hazard Class					
E Corrosive material					
D1A Very toxic materials					
6. OTHER INFORMATION					
Current Issue Date:	March 1, 2014				
Previous Issue Date:	March 28, 2013				
Revision Summary:	Company Name Change				
Disclaimer: All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "Information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness for a particular purpose or any other matter, including, without limitation, that the practice or application of any such information is free of patent infringement or other intellectual property misappropriation. Chemtrade Logistics Inc. and its affiliates (collectively, "Chemtrade") are not engaged in the business of providing technical, operational, engineering or safety information for a fee, and, therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. Chemtrade shall not be responsible or liable for the use, application or implementation of the information provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors and agents.					
End of MSDS					



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Sodium Bisulfite Solution

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

Virgin unused product

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: None

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <u>Yellow/Clear</u>	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 type="checkbox"/> 1.0 - 1.2 <input type="checkbox"/> 0.8 - 1.0 <input checked="" type="checkbox"/> 1.3 - 1.4 Exact / Other _____	acceptable 03.19.18
--	---	---	--	------------------------

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
<u>Water</u>	<u>60</u>	<u>25</u>			
<u>Sodium bisulfite</u>	<u>5</u>	<u>48</u>			

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

Not Concentration Present		Not Concentration Present					
Pb	0 ppm	Aromatic Amine	0 ppm	Arsenic (As)	D004	< 5 ppm	ppm
Dioxins	0 ppm	Pesticides	0 ppm	Barium (Ba)	D005	< 100 ppm	ppm
Cyanides Reactive	0 ppm	Resolins	0 ppm	Cadmium (Cd)	D006	< 1 ppm	ppm
Cyanides Total	0 ppm	Fungicides	0 ppm	Chromium (Cr)	D007	< 5 ppm	ppm
Sulfides Reactive	0 ppm			Lead (Pb)	D008	< 5 ppm	ppm
Sulfides Total	0 ppm			Mercury (Hg)	D009	< 0.2 ppm	ppm
				Selenium (Se)	D010	< 1 ppm	ppm
				Silver (Ag)	D011	< 5 ppm	ppm

TCLP Organics D012 - D043 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

- Radioactive
- Water Reactive
- Oxidizer
- Shock Sensitive
- Reactive (other)
- DOT Explosives
- NIOSH Human-Possible Carcinogens
- NESHAP 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 5000
- DOT Shipping Name Arsulfates, aqueous solutions n.o.s. Hazard Class 8 UN/NA 2693
- PG III ERG 1541 Hazardous constituents for "n.o.s." contains Sodium Bisulfate
- Method of Shipment: Bulk Tanker Vac truck Rail Car Drums Pallets
- Number of Units to Ship Now: 15 drums & Anticipated Volume / Units per Year: As needed 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 analysis.

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please collect a representative 1-gallon sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 201-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.

MATERIAL SAFETY DATA SHEET

Product(s): ACCO Sodium Bisulfite-L

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product

Chemical Name: Sodium Bisulfite
Synonyms: Sodium Acid Sulfite; Sodium Hydrogen Sulfite
CAS Number: 7631-90-5
Chemical Family: Sulfite Reducing Agent
Formula: 40% NaHSO₃
Issue Date: May 25, 2011

Company Identification

Supplier

ACCO Unlimited Corporation
5300 NW 55 Avenue
Johnston, IA 50131
(515) 278-0487

FOR CHEMICAL EMERGENCY, CALL CHEMTREC (24 HOURS): 1-800-424-9300

SECTION 2: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! CORROSIVE. May cause severe irritation or burns to the eyes, skin and respiratory tract. Harmful or fatal if swallowed. Harmful if inhaled. May cause an allergic reaction to skin, respiratory tract or if swallowed. May cause central nervous system depression.

Physical State: Liquid.

Color: Clear. Yellow.

Odor: Sulfur dioxide odor.

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion.

Target Organs: Eyes. Skin. Respiratory System. Mucous Membranes.

Eye Contact: May be corrosive to the eyes. Severe irritation and burns may result. Liquid or mist may cause: discomfort. Tearing, redness, pain, blurred vision. If left untreated, may cause: burns, corneal damage, blindness.

Skin Contact: May be corrosive to the skin. Severe irritation and burns may result. Contact may cause: discomfort, rash, redness, swelling, scaling, blistering, allergic reaction in some individuals. Effects may be delayed.

Skin Absorption: No data available.

Inhalation: May be corrosive to the respiratory tract. Severe irritation and burns may result. May irritate or damage: nose, throat, mucous membranes, respiratory tract. May cause: coughing, shortness of breath. Allergic reaction in some individuals. Effects may be delayed.

Ingestion: May be corrosive to the gastrointestinal tract. Severe irritation and burns may result. Large amounts may cause: nausea, stomach upset, vomiting, diarrhea, abdominal pain, central nervous system depression, violent colic, death. May cause an allergic reaction in some individuals. Effects may be delayed. Estimated fatal dose for Sodium Bisulfite is 10 grams.

Medical Conditions Aggravated by Exposure to Product: Asthma. Lung disorders. Some individuals are said to be dangerously sensitive to minute amounts of sulfites in foods. Symptoms may include broncho constriction, shock, gastrointestinal disturbances, angio edema, flushing and tingling sensations. Once allergy develops, future exposures can cause asthma attacks with shortness of breath, wheezing and cough.

Other: May cause severe allergic reaction in some asthmatics and sulfite sensitive individuals. The potential for exposure to sulfur dioxide must always be considered as well, particularly when the solution may become overheated. **SULFUR DIOXIDE GIVEN OFF BY THIS PRODUCT HAS BEEN SHOWN TO CAUSE BREATHING DIFFICULTIES IN ASTHMATICS.**

Cancer Information: This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC or OSHA.

Potential Environmental Effects: See Section 12.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Water	7732-18-5	60 %
Sodium Bisulfite	7631-90-5	40 %

SECTION 3: FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Wipe off excess. Discard footwear which cannot be decontaminated.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. **GET MEDICAL ATTENTION IMMEDIATELY.**

Ingestion: If swallowed, call a physician immediately. **DO NOT** induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Give water or milk to dilute. If vomiting occurs spontaneously, keep airway clear and give more water.

Note to Physicians: The decision of whether to induce vomiting or not should be made by a physician.

SECTION 4: FIRE FIGHTING MEASURES

Extinguishing Media: For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Foam.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Cool containers that are exposed to flame with streams of water until fire is out. Do not use solid water streams near ruptured tanks or spills. Neutralize run-off with lime, soda ash or other suitable neutralizing agents. Run-off from fire control may cause pollution.

Fire and Explosion Hazards: Toxic fumes, gases or vapors may evolve on burning.

Hazardous Combustion Products: Toxic vapors. Sulfur oxides. Sulfur dioxide. Sodium sulfide may be formed after dried solution residues are heated. This is an explosive hazard and strongly alkaline in contact with water.

SECTION 5: ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: **CORROSIVE MATERIAL.** Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Eliminate all sources of ignition. Shut off source of leak if safe to do so. Contain spill, place into drums for proper disposal. Neutralize with an alkali (sodium carbonate, lime, etc.) Sulfur dioxide and carbon dioxide may be released during neutralization. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

SECTION 6: HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists or dust. Do not eat, drink or smoke in work area. Wash thoroughly after handling. Empty containers retain product residues; observe all warnings and precautions listed for the product. Do not handle near an open flame, heat or other sources of ignition.

Storage: **CORROSIVE MATERIAL.** Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Store away from all sources of heat and ignition to prevent decomposition and release of sulfur dioxide gas. Do not freeze. Store above 50°F to avoid crystallization. Protect containers against physical damage. Tanks should be vented into an alkaline fume recovery system or scrubber. Storage tanks should be protected from water ingress, and maintained structurally in a safe and reliable condition. Store in corrosion-resistant container.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
No components found.	

ACGIH Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
Sodium Bisulfite	5 mg/m ³ TWA

Note: Sulfur Dioxide gas may be released. The Exposure Limits for Sulfur Dioxide are: 5 ppm-TWA (OSHA); 2 ppm-TWA, 5 ppm-STEL (ACGIH) (Vacated 1989 OSHA PELs).

CONTINUED SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation, process enclosures or other engineering controls are imperative when handling or using this product to avoid overexposure. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Impermeable, Neoprene, Rubber, Polyvinyl chloride.

Respiratory Protection: Respiratory protection must be worn when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved respirator for dusts, mists and/or SO₂ vapors as conditions indicate. NIOSH-Approved air-purifying respirator with: Acid gas cartridge. NIOSH-Approved self-contained breathing apparatus. NIOSH-Approved positive pressure supplied air respirator. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Full body suit. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear, Yellow.

Odor: Sulfur dioxide odor.

Boiling Point (deg. F): ~ 220

Freezing Point (deg. F): 45

Melting Point (deg. F): N.D.

Vapor Pressure (mm Hg): ~9@20C (SO₂)

Vapor Density (air=1): N.D.

Solubility in Water: Complete

pH: 4

Specific Gravity: 1.33 @ 25C

% Volatile (wt%): N.D.

Evaporation Rate (nBuAc = 1): N.D.

VOC (wt%): 0

VOC (lbs/gal): 0

Viscosity: ~ 3 cP @ 30 C; ~ 4.5 cP @ 15.6 C

Flash Point: Not combustible.

Flash Point Method: N.A.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Autoignition Temperature: No Data

Fire Point: N.D.

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Avoid contact with heat, sparks, electric arcs, other hot surfaces and open flames. Avoid other ignition sources. Temperatures at or near boiling point causes evolution of Sulfur dioxide. Avoid excess exposure to air. On exposure to air, the product will lose some Sulfur dioxide and gradually oxidize to sulfate.

Incompatible Materials: Acids. Mineral acids. Oxidizing agents.

Hazardous Decomposition Products: Sulfur dioxide gas. Sulfur oxides. Toxic vapors.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Oxidizing agents may cause exothermic reactions. Both acidification and heating accelerate the release of Sulfur dioxide fumes.

SECTION 11: TOXICOLOGICAL INFORMATION**Component**

Sodium Bisulfite

Oral LD50

Rat: 1420 mg/kg

Dermal LD50

No Data

Inhalation LC50

No Data

This product has been shown to be positive in mutagenicity assays.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological Information: Sodium Bisulfite Solution: LC50 Mosquito Fish (96 hours): 240 ppm

Chemical Fate Information: Products of Biodegradation: Sulfur oxides (SO₂, SO₃). Some metallic oxides. The products of degradation are toxic.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazardous Waste Number: N.A.

Disposal Method: Dispose of in accordance with all local, state and federal regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Since emptied containers retain product residue, follow label warnings even after container is emptied. The information offered here is for the product as shipped. Use and/or alteration to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

SECTION 14: TRANSPORT INFORMATION

DOT (Department of Transportation):

Identification Number: UN2693
Proper Shipping Name: Bisulfites, Aqueous Solutions, N.O.S. (Contains Sodium Bisulfite)
Hazard Class: 8
Packing Group: III
Label Required: CORROSIVE
Reportable Quantity (RQ): 5000# (Sodium Bisulfite)

SECTION 15: REGULATORY INFORMATION

TSCA Inventory Status: This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category Hazards:

<u>Immediate (Acute)</u>	<u>Delayed (Chronic)</u>	<u>Fire Hazard</u>	<u>Pressure Release</u>	<u>Reactive</u>
Yes	No	No	No	No

Regulated Components:

<u>Component</u>	<u>CAS Number</u>	<u>CERCLA-RO</u>	<u>SARA-EHS</u>	<u>SARA-313</u>	<u>U.S.-HAP</u>	<u>WI-HAP</u>	<u>Prop 65</u>
Sodium Bisulfite	7631-90-5	Yes	No	No	No	Yes	No

Clean Water Act: This product contains one or more components designated as hazardous substances or toxic pollutants pursuant to the Federal Clean Water Act (40 CFR 116.4 Table A; 40 CFR 401.15). Any unpermitted introduction of this product into a facility stormwater or wastewater discharge may constitute a violation of the Clean Water Act. Facilities must notify the appropriate permitting agency prior to introducing this product into the aforementioned discharges.

NSF/ANSI Standard 60 Maximum Use Level: 46 mg/L.

SECTION 16: OTHER INFORMATION**Hazard Rating System**

Health: 2

Flammability: 0

Reactivity: 0

* = Chronic Health Hazard

NEPA Rating System

Health: 2

Flammability: 0

Reactivity: 0

Special Hazard: None

MSDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

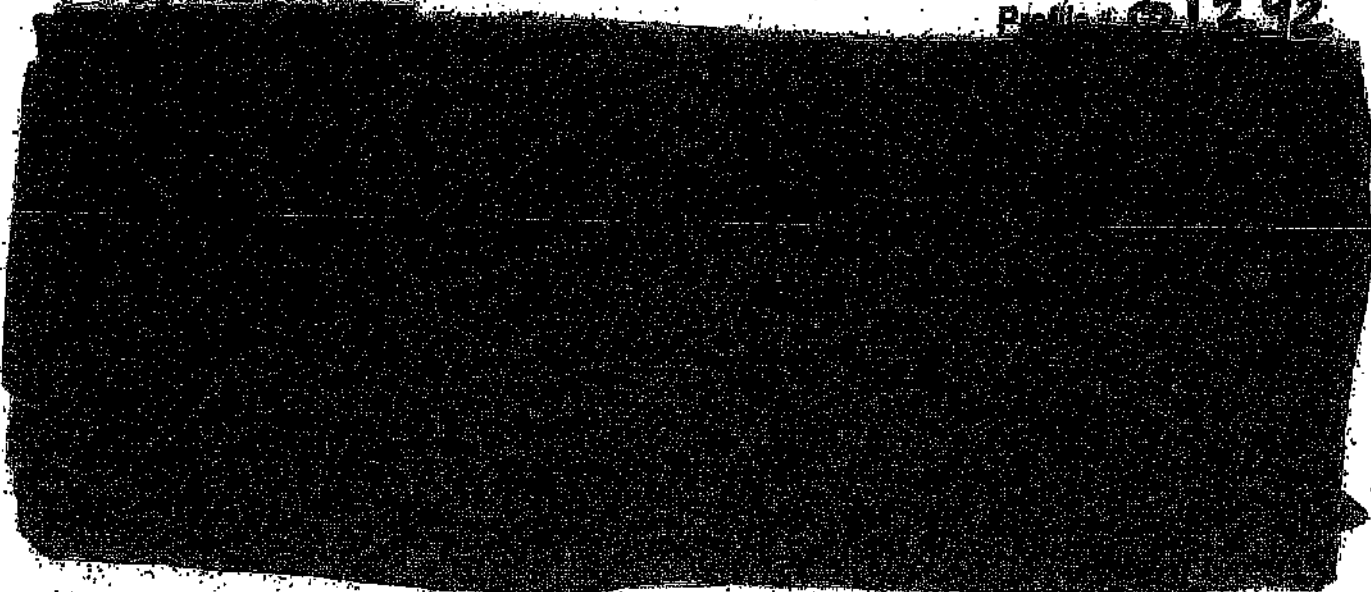
HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, ACCO Unlimited Corporation makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. Accordingly, ACCO Unlimited Corporation will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representations, or warranties, either express or implied, or merchantability fitness for a particular purpose or of any other nature are made hereunder with respect to the information set forth herein or to the product to which the information refers.



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Urea Solution

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

TSD accumulation for storage and transfer off site.

USEPA / STATE WASTE IDENTIFICATION

1. This waste is considered to be: Non Hazardous Liquid Industrial Waste Hazardous Waste
2. Regulated by RCRA? Yes No (PCBs, etc.)
3. List ALL Applicable Waste Codes: None

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"/> 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"/> 1.3 - 1.4 Exapt / Other _____	<u>acceptable</u> <u>02/21/92</u>
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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
<u>Urea</u>	<u>48</u>	<u>52</u>			
<u>Water</u>	<u>52</u>	<u>48</u>			

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

Lab Analysis Generator Knowledge TCLP TOTAL **8 505**

Not Present		Concentration	Not Present		Concentration		
FCB	<input type="checkbox"/>	0 ppm	Aromatic Amine	<input type="checkbox"/>	0 ppm	Arsenic (As)	D004 <input type="checkbox"/> < 5 ppm
Dioxins	<input type="checkbox"/>	0 ppm	Pesticides	<input type="checkbox"/>	0 ppm	Barium (Ba)	D006 <input type="checkbox"/> < 100 ppm
Cyanides Reactive	<input type="checkbox"/>	0 ppm	Rodenticides	<input type="checkbox"/>	0 ppm	Cadmium (Cd)	D008 <input type="checkbox"/> < 1 ppm
Cyanides Total	<input type="checkbox"/>	0 ppm	Fungicides	<input type="checkbox"/>	0 ppm	Chromium (Cr)	D007 <input type="checkbox"/> < 5 ppm
Sulfides Reactive	<input type="checkbox"/>	0 ppm				Lead (Pb)	D008 <input type="checkbox"/> < 0.2 ppm
Sulfides Total	<input type="checkbox"/>	0 ppm				Mercury (Hg)	D009 <input type="checkbox"/> < 0.2 ppm
						Selenium (Se)	D010 <input type="checkbox"/> < 1 ppm
						Silver (Ag)	D011 <input type="checkbox"/> < 5 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-Possible Carcinogens
- NESHAP Wastes (Benzene, etc.)
- Biological
- None Apply

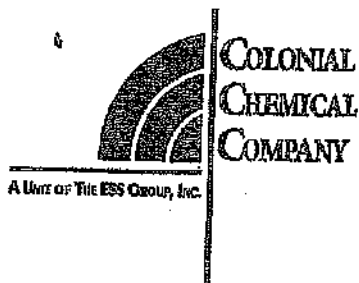
SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
2. Reportable Quantity (RQ) in pounds _____
3. DOT Shipping Name WASTE NON-RCRA, NON-DOT MATERIAL Hazard Class UN/NA
- PG ERG Hazardous Constituents for "h.o.s." _____
4. Method of shipment: Bulk Tanker Vac truck Rail Car Drums Totes
5. Number of Units to Ship Now: 4000 gal 6. Anticipated Volume / Units per Year: as needed or One Time
8. 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 so 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 laboratory regulatory analysis.

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



MATERIAL SAFETY DATA SHEET

This MSDS conforms to ANSI Z400.1 and is in compliance with 29CFR 1910

Date: Revised January 4, 2011

Section 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: Urea Solution, 50%

Manufacture's Name and Contact Information: Colonial Chemical Company
78 Carranza Rd.
Tabernacle, NJ 08088
Telephone: 609-268-1200
Emergency Telephone: CMB 800-457-4280

Section 2: COMPOSITION

Composition:	<u>Ingredient</u>	<u>Percent</u>
	Urea	48 to 52 CAS # 000 057 136
	Demineralized Water	48 to 52

Section 3: HAZARD INFORMATION

This product is an aqueous solution of Urea. Urea is a normal product of protein metabolism in the human body and is not considered to be a hazardous material.

Section 4: FIRST AID MEASURES

Inhalation: Move to fresh air; keep at rest; provide artificial respiration if needed
Skin Contact: Wash contacted skin with soap and water; if there is a rash or other symptoms contact a physician.
Eye Contact: Flush eyes immediately with water for 15 minutes
Ingestion: **Do Not Induce Vomiting.** If possible drink milk. If milk is not available, drink water. In all cases, seek advice of a physician.

Section 5: FIRE FIGHTING MEASURES

Product is not flammable or combustible. If burned in a fire may emit ammonia, carbon dioxide, or carbon monoxide fumes. Wear personal protective equipment. Avoid breathing fumes. Use water spray or dry chemical or CO₂ fire extinguisher to extinguish fire.

Section 6: ACCIDENTAL RELEASE MEASURES

Absorb with inert material such as sand or saw dust, shovel into suitable container, and dispose of in accordance with local regulations.

Section 7: HANDLING & STORAGE

Handle in accordance with good industrial hygiene and safety practices. Wear personal protective equipment including safety glasses and rubber/latex gloves. Do not mix with nitric acid or other strong acids or bases. Store between 80 and 100°F.

Section 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

Use in a well ventilated area. Wear rubber gloves and safety glasses.

Section 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance:	clear liquid
Odor:	slight ammoniacal odor
pH	7-10
Specific Gravity	1.135 @ 80°F
Crystallization Point:	65°F
Water Solubility:	Miscible

Section 10: STABILITY & REACTIVITY

Stable at normal temperatures and pressures
Ammonia may evolve over time at high temperatures.
Reacts strongly with nitrites, and hypochlorites
Hazardous polymerization will not occur

Section 11: TOXICOLOGICAL INFORMATION

LD50/oral/rat >2000 mg/kg
Inhalation may cause irritation of respiratory tract
May be irritating to skin and eyes

Section 12: ECOLOGICAL INFORMATION

Soluble in water
Readily biodegradable

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations

Section 14: TRANSPORT INFORMATION

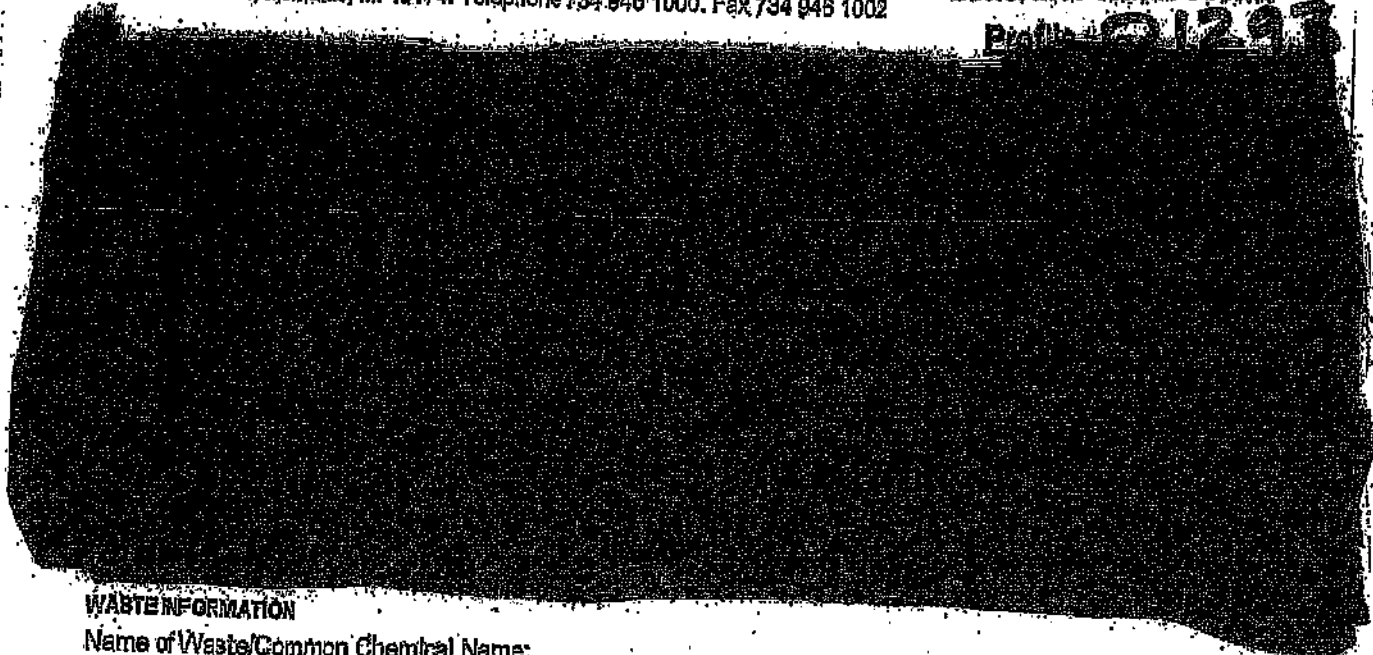
Not a hazardous material per DOT standards

Section 15: REGULATORY INFORMATION

Not determined

Section 16: OTHER INFORMATION

None



WASTE INFORMATION

Name of Waste/Common Chemical Name:

Aerobic Pickling waste

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

TSP accumulation of spent aerobic pickling waste used in etching glass, brass, and bronze.

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: *D001 D005 D010*

PHYSICAL CHARACTERISTICS OF WASTE

Color: <input type="checkbox"/> White/Clear <input type="checkbox"/> Black/Brown <input checked="" type="checkbox"/> Other <i>Dark Blue</i>	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 Excl/ Other:	<i>acceptable</i> 02.22.18
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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 COMPLETE)

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

CONSTITUENT	MAX	MIN	CONSTITUENT	MAX	MIN
<i>Water</i>		<i>95-98</i>	<i>Water</i>		
<i>Hydrogen Peroxide</i>	<i>18,000 ppm</i>				
<i>Chloric Acid</i>	<i>1</i>	<i>5</i>			
<i>Copper Sulfate</i>					
<i>Lead</i>	<i>1.2 ppm</i>				

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

Not Concentration Present		Not Concentration Present					
PCB	0 ppm	Aromatic Amine	0 ppm	Arsenic (As)	D024	4 5 ppm	ppm
Dioxins	0 ppm	Pesticides	0 ppm	Barium (Ba)	D008	4 100 ppm	ppm
Cyanides Reactive	0 ppm	Rodenticides	0 ppm	Cadmium (Cd)	D008	4 1 ppm	ppm
Cyanides Total	0 ppm	Fungicides	0 ppm	Chromium (Cr)	D007	4 5 ppm	ppm
Sulfides Reactive	0 ppm			Lead (Pb)	D008	4 5 ppm	9.7 ppm
Sulfides Total	0 ppm			Mercury (Hg)	D009	4 0.2 ppm	ppm
				Selenium (Se)	D010	4 1 ppm	16.000 ppm
				Silver (Ag)	D011	4 5 ppm	ppm

TCLP Organics D012 - D045 above regulatory limits: Present Not Present

IS WASTE ANY OF THE FOLLOWING?

At Least One Box Must Be Checked.

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

SHIPPING INFORMATION

1. Is this a DOT Hazardous Material (49CFR 172.101 & 173 Subpart D)? Yes No
 2. Reportable Quantity (RQ) in pounds: 100 lbs 002
 3. DOT Shipping Name waste Concrete ligands, acetate, inorganic Hazard Class 8 UNNA 1481267
 PG 11 ERG 154 Hazardous Constituents for "n.o.s." phosphate 2000
 4. Method of Shipment: Bulk Tanker Van truck Rail Car Drums Totes
 5. Number of Units to Ship Now: 2 6. Anticipated Volume / Units per Year: 2 or One Time
 6. Special Handling Requirements including PPE:

CERTIFICATION STATEMENT

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

GENERATOR'S CHAIN OF CUSTODY RECORD INSTRUCTIONS: Please allow a representative to collect a representative sample of the waste described in the above referenced Generator's Waste Profile Report using an appropriate container. A representative sample is one obtained using any of the applicable sampling methods cited in 40 CFR 201.205 (a) (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.