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RCRA PROGRAMS BRANCH

Grenada Manufacturing, LLC

"A Global Leader in Metal Fabrication"

635 Hwy 332
Grenada, Ms 38901

662-226-1161
662-226-1166 Fax

April 10, 2002

Mr. Narindar M. Kumar
RCRA Programs Branch – Waste Management Division
US EPA Region IV
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: Certification of Closure of RCRA SWMU 14 – Chromium Destruct Pit
Permit No.: HW-007-037-278
Grenada Manufacturing, LLC
Grenada, Mississippi

Dear Mr. Kumar:

Grenada Manufacturing, LLC. is pleased to provide this certification of closure for the above-referenced Chromium Destruct Pit (SWMU 14) located at the Grenada Manufacturing, LLC facility in Grenada, Mississippi. This certification is being provided in accordance with the requirements of MHWMR 264.115 for the owner/operator of the facility to provide certification of closure. I hereby certify that the closure activities were observed and that closure of the Chrome Destruct Pit was conducted in accordance with the specifications in the approved Revised Closure Plan, Chromium Destruct Pit, Grenada Manufacturing LLC, Version 2.1, Global Environmental Solutions, Inc., September, 2001.

Very truly yours,
Grenada Manufacturing, LLC.

Don Williams
Environmental, Health, and Safety Coordinator

Docket Number 450900

Eco•Systems, Inc.
Consultants, Engineers and Scientists

April 12, 2002

Mr. Narindar M. Kumar
RCRA Programs Branch – Waste Management Division
US EPA Region IV
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: Certification of Closure of RCRA SWMU 14 – Chromium Destruct Pit
Permit No.: HW-007-037-278
Grenada Manufacturing, LLC
Grenada, Mississippi

Dear Mr. Kumar:

Eco-Systems, Inc. is pleased to provide this certification of closure for the above-referenced Chromium Destruct Pit (SWMU 14) located at the Grenada Manufacturing, LLC facility in Grenada, Mississippi. This certification is being provided in accordance with the requirements of MHWMR 264.115 for an independent, registered professional engineer to provide certification of closure. I hereby certify that the closure activities were observed and reviewed, and that closure of the Chrome Destruct Pit was conducted in accordance with the specifications in the approved Revised Closure Plan, Chromium Destruct Pit, Grenada Manufacturing LLC, Version 2.1, Global Environmental Solutions, Inc., September, 2001. The fieldwork for the closure was completed on April 5, 2002 for clean closure as a tank system.

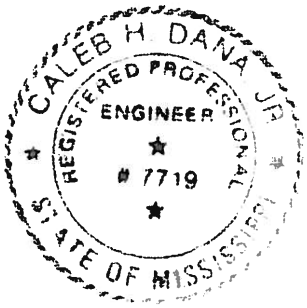
Very truly yours,
Eco-Systems, Inc.

Caleb H. Dana, Jr.

Caleb H. Dana, Jr., P.E., CHMM
Senior Principal Engineer

Engineering License: Caleb H. Dana, Jr
Mississippi
07719

Engineering Seal:



Cc: Don Webster, US EPA Region IV
Louis Crawford, MS DEQ
Don Williams, Grenada Manufacturing, LLC
John Devic, Collins & Aikman Products Co.
Gregory Mackin, Collins & Aikman Products Co.
Brian Soucy, Global Environmental Solutions, Inc.

4294 Lakeland Drive, Suite 200 • Jackson, MS 39208 • Phone (601) 936-4440 • Fax (601) 936-4463

Grenada Manufacturing, LLC
Grenada, Mississippi

Meeting Agenda
United States EPA, Region 4, Federal Center
61 Forsyth Street, Atlanta, Georgia - Room 10C
April 18, 2002; 10:00 am

Attendees
- Don Webster - US EPA, Region 4.
- Don Williams - Grenada Manufacturing, LLC.
- Greg Mackin - Collins & Aikman.
- Brian Soucy, Chuck Schendl - GESI

Discussion of work completed
- Equipment removal and cleaning.
- Sampling activities.

Sampling Results
- Destruct pit.
- Plating line area.

Status of site
- Closure of destruct pit.
- Plating line area.

Clean closure requirements
- Destruct pit - Report of clean closure as a tank submitted.
- Plating line area - PRG's versus RBC's.

Discussion of work to be completed

Schedule of remaining activities

Collins & Aikman

Chromium Destruct Pit Clean Closure and Status of Plating Line Closure

Grenada Manufacturing Facility - Grenada, MS

April 18, 2002

Collins & Aikman

Discussion of Work Completed

- Equipment removal and cleaning
  - Liquid Hazardous Waste
    - » Shipments - 12 tank trucks
  - Solid Hazardous Waste
    - » Consisted mostly of sludge and plastic
    - » Shipments - 6 lined and covered roll-off boxes

Collins & Aikman

Discussion of Work Completed (cont.)

- Equipment removal and cleaning
  - Sampling Activities
    - » Background samples
      - 6 boring locations, pH only
    - » Destruct pit samples
      - Closure plan called for 5 initial boring locations
      - Samples taken at 11 boring locations
    - » Plating line area samples
      - Closure plan called for 6 initial boring locations
      - Additional 3 boring locations inside plating line pits

Sampling Results

- Destruct Pit
  - All samples below US EPA Region IX Preliminary Remediation Goals (PRGs)

- Plating Line Area
  - 6 boring locations with samples above US EPA Region IX PRGs

Status of Site

- Closure of destruct pit
  - Backfilled and compacted with sandy soil
  - Surface capped with concrete level with surrounding surface
  - Professional engineer closure certification
  - Facility closure certification
  - Clean closure as a tank

Status of Site (cont.)

- Plating Line Area
  - New SWMU notification
  - Closure activities
  - PRGs versus RBCs

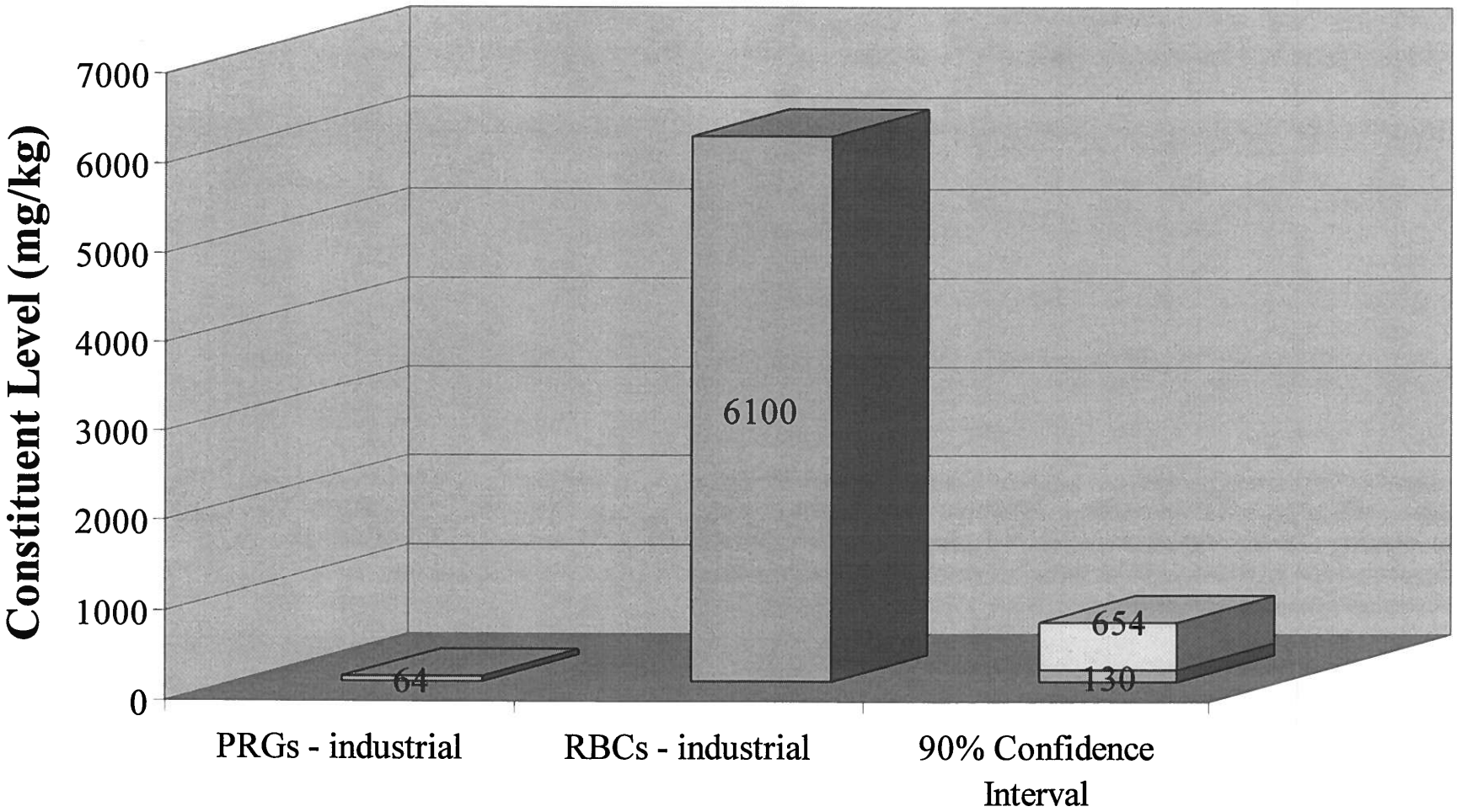
EXPOSURE PATHWAYS USED TO DETERMINE PRELIMINARY REMEDIATION GOALS (PRGs) & RISK BASED CONCENTRATIONS (RBCs)

EXPOSURE PATHWAYS	PRGs	RBCs
Ingestion (soils)[a]	X	X
Ingestion (residential water)	X	X
Ingestion (edible fish)		X
Inhalation (particulate)[b]	X	X
Inhalation (volatiles)[b]	X	X
Dermal Absorption	X	

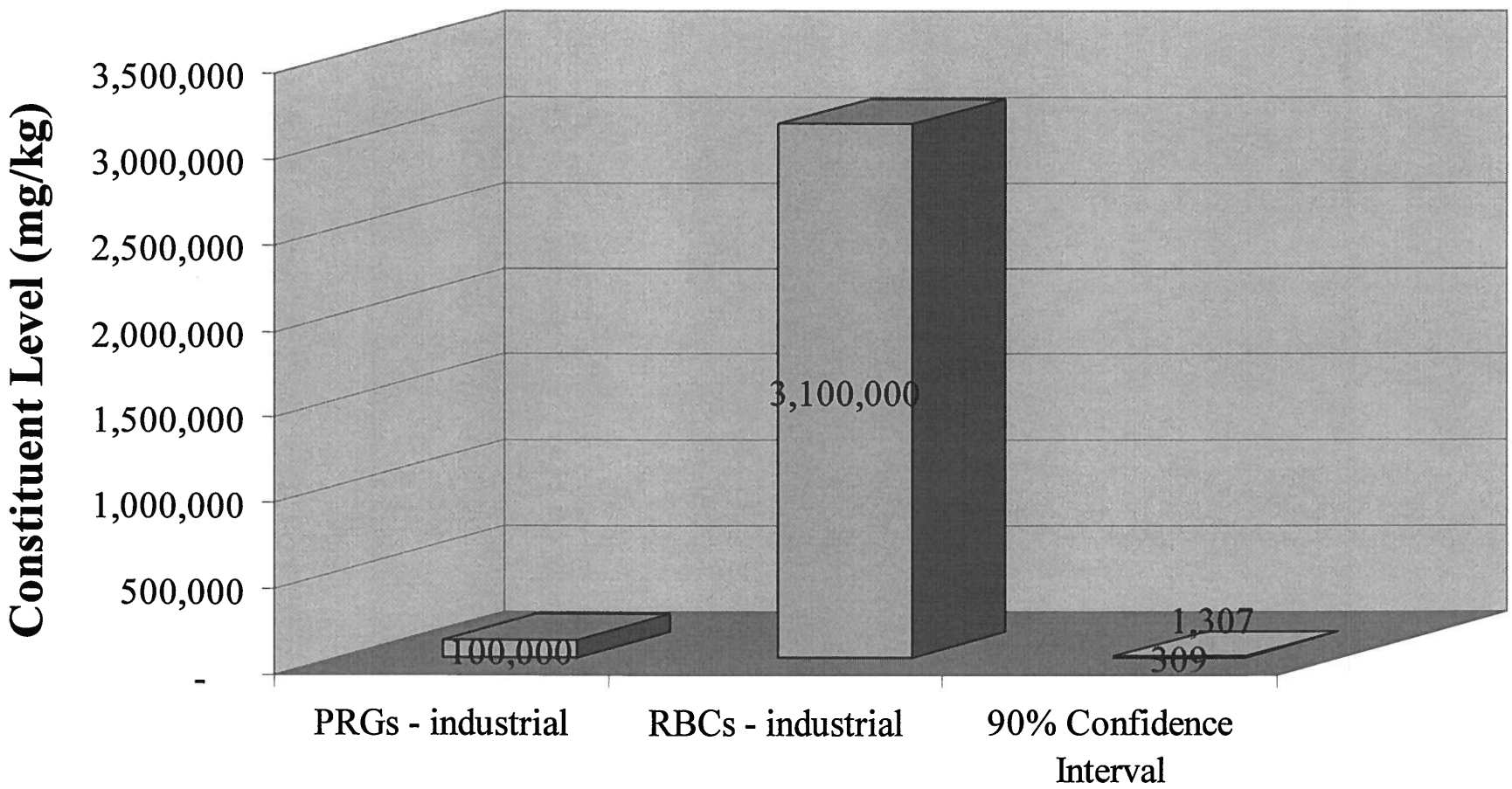
[a] **Risk to children not assessed when determining industrial soil ingestion RCBs on carcinogens. For residential soil ingestion, RCBs for carcinogens were based on based on combined childhood & adult exposure. Risk to children is factored into both residential & industrial soil ingestion PRGs. For both PPGs & RBCs, numbers for non-carcinogens were based on childhood exposures only.**

[b] **Transfers from soil to air were specifically excluded from consideration when determining RBCs. Soil PRGs are designed to address the soil-to-air pathway**

Comparison of Hexavalent Chromium Cleanup Levels for Plating Line Area



Comparison of Trivalent Chromium Cleanup Levels for Plating Line Area



Clean Closure of Plating Line Area

- Area is inside the building and will be beneath concrete slab
- Site is industrial
- Hexavalent chromium substantially less than Industrial RBC but somewhat higher than PRG
- Hexavalent chromium is unstable in the environment - will convert to trivalent
- Trivalent chromium substantially less than RBC and PRG

worst is < 6,100 mg/kg RBC

This is leading to some type of closure

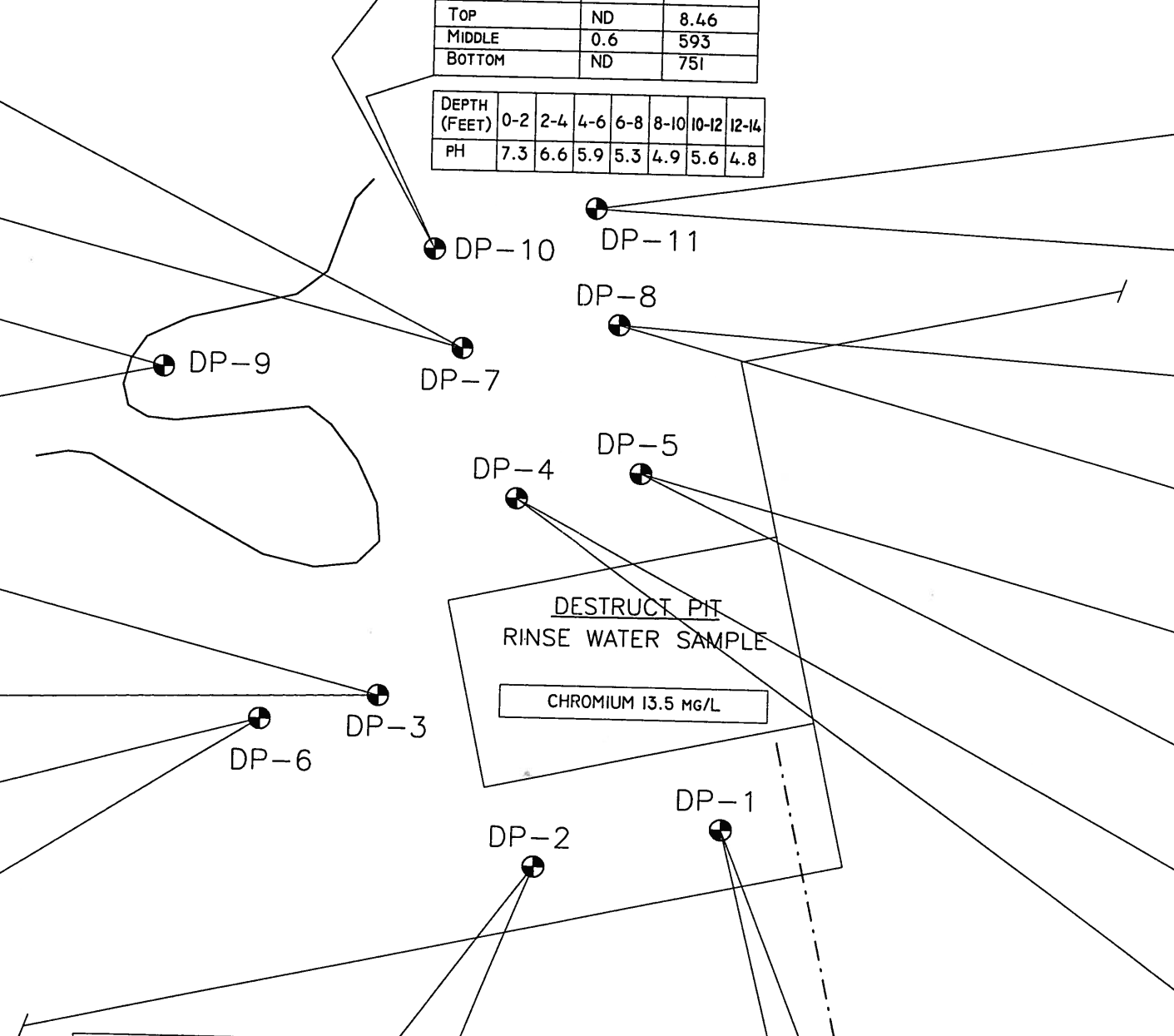
Collins & Aikman

Discussion of Work to be Completed

- Destruct Pit
  - Closure complete
- Plating Line Area
  - Notification of new SWMU - issued
  - Closure Requirements

LEGEND

- BORING LOCATION (APPROXIMATE)
- UNDERGROUND CHROMIUM DRAINAGE PIPING (LOCATION IS APPROXIMATE)



DP-10 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	8.46
Middle	0.6	593
Bottom	ND	751

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	7.3	6.6	5.9	5.3	4.9	5.6	4.8

DP-11 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	9.78
Middle	1.0	9.64
Bottom	1.4	6.95

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	6.0	6.0	6.3	6.2	6.9	6.6	7.1

DP-8 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	80.1
Middle	ND	57.9
Bottom	ND	7.19

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	5.8	6.2	6.4	6.6	6.9	6.8	7.2

DP-5 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	27.7
Middle	ND	6.59
Bottom	ND	8.14

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12
PH	6.8	6.9	6.9	7.0	6.9	7.1

DP-4 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	12.8
Middle	ND	7.55
Bottom	ND	9.16

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	7.7	7.8	7.8	7.8	8.0	7.8	7.6

DP-1 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	228
Middle	ND	10.8
Bottom	0.2	17.2

Depth (Feet)	0-2	2-4	4-6	6-8
PH	8.2	8.0	8.0	8.2

DP-2 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	6.2	26.1
Middle	ND	9.66
Bottom	4.2	293

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12
PH	8.6	8.2	8.0	8.2	8.0	8.1

DP-6 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	0.4	12.0
Middle	1.0	6.69
Bottom	0.2	8.87

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	7.6	7.3	7.6	7.4	8.0	7.8	8.0

DP-3 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	8.70
Middle	ND	9.41
Bottom	ND	9.53

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	8.2	8.4	8.2	7.9	8.1	8.2	8.0

DP-9 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	7.12
Middle	ND	10.1
Bottom	0.2	6.30

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
PH	7.1	7.4	7.5	7.3	7.6	7.6	7.9

DP-7 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	8.36
Middle	0.2	8.74
Bottom	ND	758

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12
PH	6.9	6.8	6.9	7.2	7.3	5.6

GRAPHIC SCALE IN FEET

0 5 10 20 30

10

NOTES:

1.) BORING LOCATIONS AND DEPTHS ARE APPROXIMATE

2.) "TOP" REFERS TO SAMPLE LOCATION AT THE TOP OF THE BORING, BELOW THE SOIL SURFACE.

3.) "BOTTOM" REFERS TO SAMPLE LOCATION ABOVE GROUNDWATER.

4.) "MIDDLE" REFERS TO SAMPLE LOCATION BETWEEN "TOP" AND "BOTTOM".

5.) REGION IX PRELIMINARY REMEDIATION GUIDELINES (PRGS) FOR INDUSTRIAL SOIL:
CHROME (HEXAVALENT) 64 mg/Kg
CHROME (TRIVALENT) 10,000 mg/Kg

6.) TARGET LEVEL FOR DESTRUCT PIT RINSE WATER:
CHROMIUM 38 mg/L

GRENADA MANUFACTURING, LLC
GRENADA, MISSISSIPPI

PREPARED BY:

GESI Global Environmental Solutions, Inc.
2621 Sandy Plains Road, Suite 102
Marietta, GA 30066
T 770.579.6097 F 770.579.6099

DESTRUCTION PIT BORING LOCATION MAP AND ANALYTICAL RESULTS

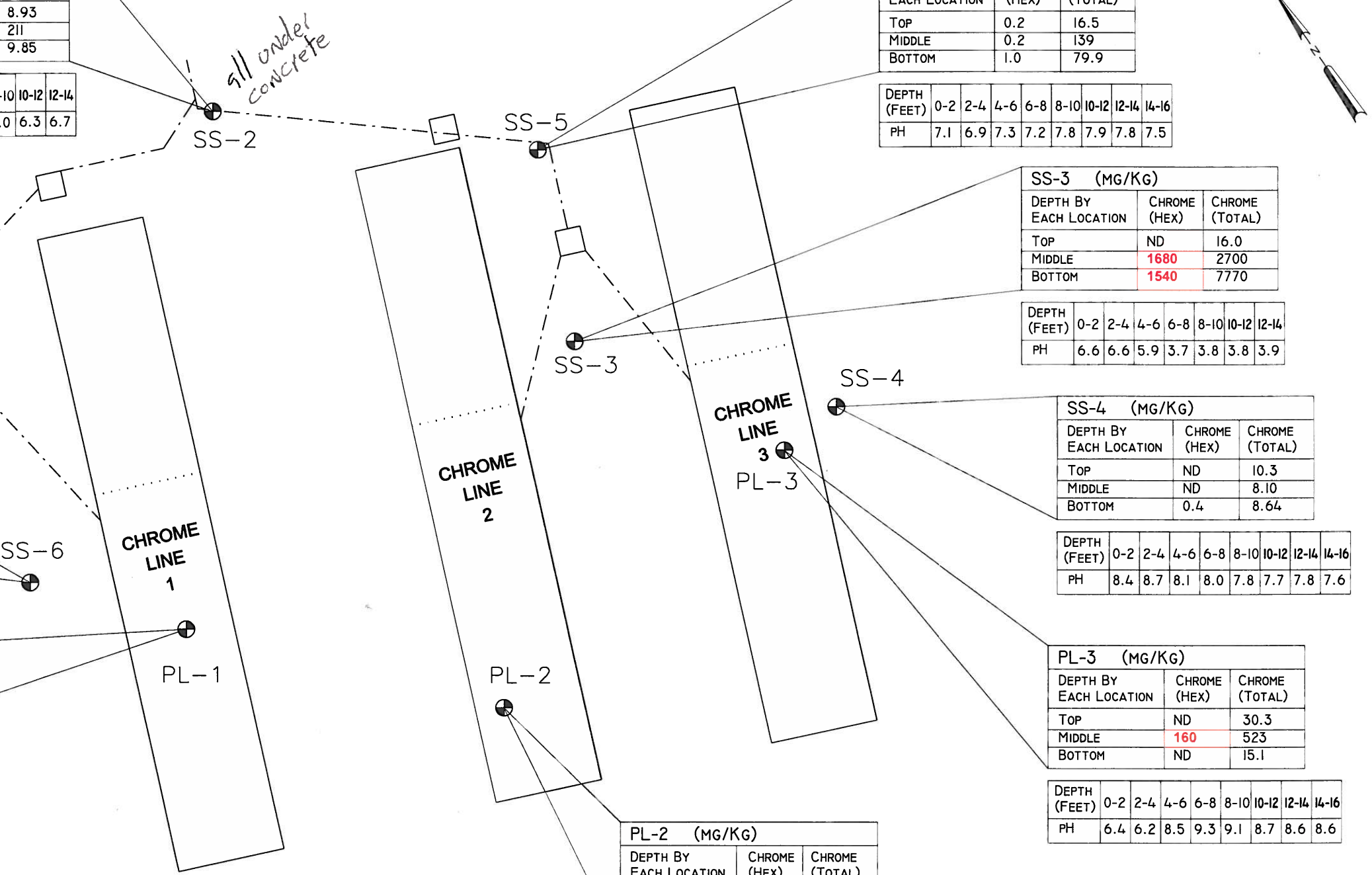
PROJECT NO. 98537.01

FIGURE NO. 2

DWG: F:\...GESI\TEXTRON\GRENADA\SITE LAYOUT MAP-TG PLOT: 03/08/02

LEGEND

- BORING LOCATION (APPROXIMATE)
- MANHOLE (APPROXIMATE)
- DIVIDING WALL IN CONTAINMENT DIKE
- UNDERGROUND CHROMIUM DRAINAGE PIPING (LOCATION IS APPROXIMATE)



SS-2 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	8.93
Middle	70	211
Bottom	0.4	9.85

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	5.6	5.7	5.6	5.4	6.0	6.3	6.7

SS-5 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	0.2	16.5
Middle	0.2	139
Bottom	1.0	79.9

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	7.1	6.9	7.3	7.2	7.8	7.9	7.8	7.5

SS-1 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	9.21
Middle	138	355
Bottom	7.0	24.4

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	5.2	5.4	5.8	5.4	5.8	5.5	6.0

SS-3 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	16.0
Middle	1680	2700
Bottom	1540	7770

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	6.6	6.6	5.9	3.7	3.8	3.8	3.9

SS-4 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	10.3
Middle	ND	8.10
Bottom	0.4	8.64

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	8.4	8.7	8.1	8.0	7.8	7.7	7.8	7.6

SS-6 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	9.24
Middle	42	431
Bottom	2.2	121

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20
pH	7.1	7.6	7.3	7.8	6.9	6.0	5.8	6.0	5.4	6.3

PL-3 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	30.3
Middle	160	523
Bottom	ND	15.1

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	6.4	6.2	8.5	9.3	9.1	8.7	8.6	8.6

PL-1 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	600	2480
Middle	480	858
Bottom	0.4	148

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	8.2	7.5	7.8	5.4	5.4	5.1	5.3

PL-2 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	2220	6100
Middle	2680	7340
Bottom	960	2970

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	4.2	3.3	3.9	4.1	3.5	4.0	3.7

GRAPHIC SCALE IN FEET

0 10 20 40 60

20

NOTES:

1.) BORING LOCATIONS AND DEPTHS ARE APPROXIMATE

2.) "TOP" REFERS TO SAMPLE LOCATION AT THE TOP OF THE BORING, BELOW THE SOIL SURFACE.

3.) "BOTTOM" REFERS TO SAMPLE LOCATION ABOVE GROUNDWATER.

4.) "MIDDLE" REFERS TO SAMPLE LOCATION BETWEEN "TOP" AND "BOTTOM".

5.) REGION IX PRELIMINARY REMEDIATION GUIDELINES (PRGS) FOR INDUSTRIAL SOIL:
CHROME (HEXAVALENT) 64 mg/Kg
CHROME (TRIVALENT) 10,000 mg/Kg

6.) PLATING LINE PITS ARE APPROXIMATELY 4 FEET BELOW PLANT FLOOR.

GRENADA MANUFACTURING, LLC
GRENADA, MISSISSIPPI

PREPARED BY:

GESI Global Environmental Solutions, Inc.
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PLATING LINE/DRAIN PIPING BORING LOCATION MAP AND ANALYTICAL RESULTS

PROJECT NO. 98537.01

FIGURE NO. 3

DWG: F:\...GESI\TEXTRON\GRENADA\SITE LAYOUT MAP-TG PLOT: 03/07/02