ARCADIS
Infrastructure, environment, facilities

Imagine the result

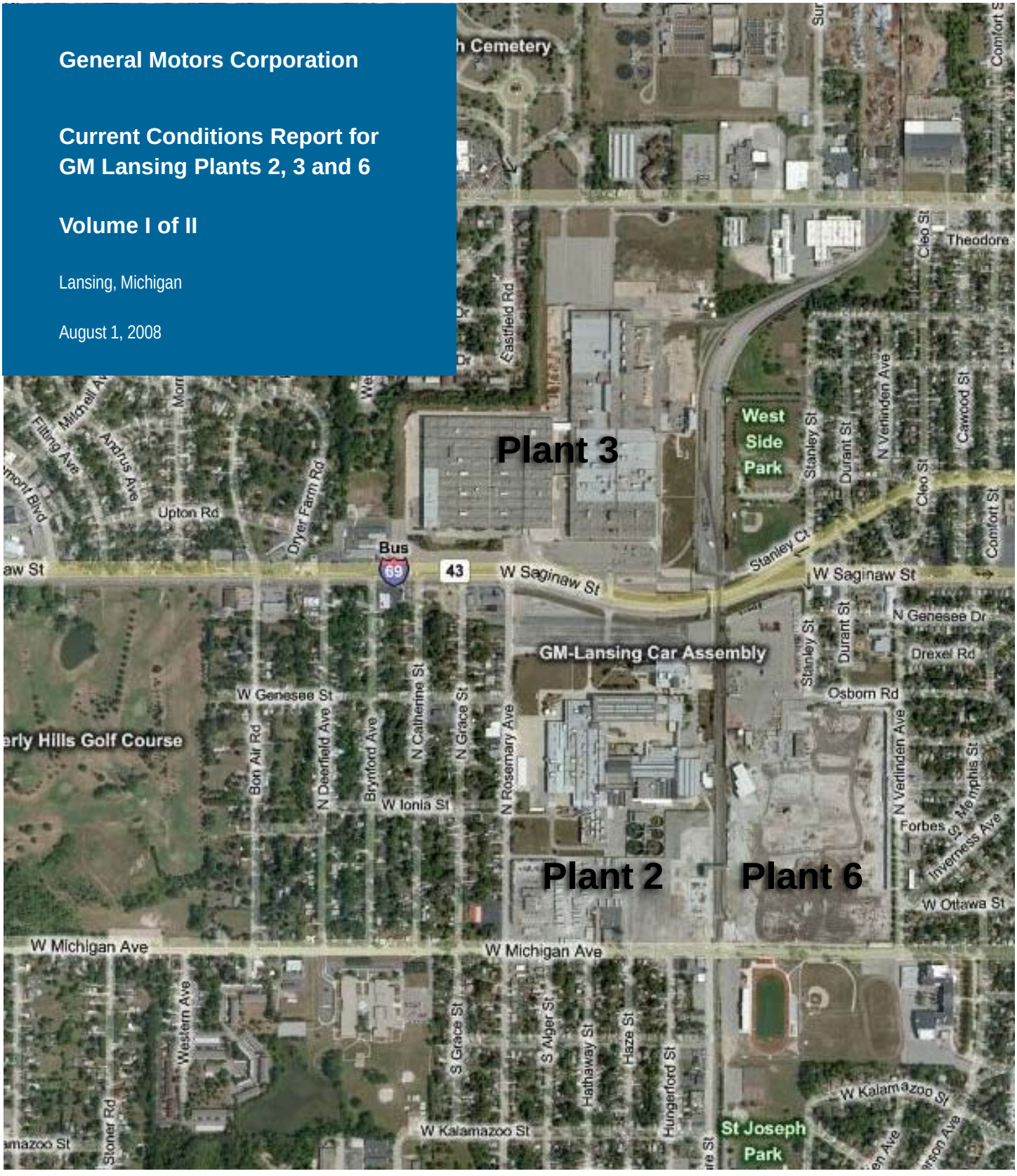
General Motors Corporation

Current Conditions Report for GM Lansing Plants 2, 3 and 6

Volume I of II

Lansing, Michigan

August 1, 2008



ARCADIS

Amy L. Hoeksema, P.G.
Certified Project Manager

Matt Stuk
Project Geologist

Jim Heading
Staff Designer

Current Conditions Report (CCR) for GM Lansing Plants 2, 3 and 6

Lansing, Michigan

Prepared for:
General Motors Corporation

Prepared by:
ARCADIS
10559 Citation Drive
Suite 100
Brighton
Michigan 48116
Tel 810.229.8594
Fax 810.229.8837

Our Ref.:
B0064479
B0064480
B0064481

Date:
August 1, 2008

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.

Table of Contents

Volume I

Acronyms and Abbreviations 1

1. Introduction 4

1.1 General 4

1.2 Areas of Interest 5

1.3 Purpose and Scope 6

1.4 Document Organization 7

2. Regional Site Setting 10

2.1 Land Use and Zoning 10

2.2 Location and Demographics 10

2.3 Climate 10

2.4 Regional Geology 11

2.4.1 Overburden Geology 11

2.4.2 Bedrock Geology 11

2.5 Regional Hydrogeology 11

2.6 Regional Hydrology 12

2.7 Regional Ecology and Recreational Uses 13

2.8 Regional Water Supply and Groundwater Use 13

3. Preliminary Conceptual Site Model and Data Screening Process 15

3.1 Preliminary Conceptual Site Model 15

3.2 Data Screening Process 18

4. Description of Plant 2 19

4.1 Plant 2 Location 19

4.2 Plant 2 Current and Historical Operations 19

4.2.1 Current Operations 19

4.2.2 Historical Operations 19

4.3 Plant 2 Historical Mapping and Aerial Photographs 19

4.4 Plant 2 RCRA Regulatory History 20

4.5 Plant 2 Historical and Current Waste Management Practices 21

4.5.1 Plant 2 Historical Waste Management Practices 21

4.5.2 Plant 2 Current Waste Management Practices 22

4.6 Plant 2 Geology 23

4.7 Plant 2 Hydrogeology 23

4.8 Plant 2 Hydrology 24

4.9 Plant 2 Ecology 24

5. Plant 2 Areas of Interest Defined in the USEPA's PA/VSI Report 25

5.1 AOI 2-1 SWMU 1 Wastewater Treatment System (WWTS) 25

5.1.1 Historical and Current Operations 25

5.1.2 Previous Investigations and Remedial Actions 25

5.1.3 Current Status 26

5.2 AOI 2-2 SWMU 2 – Plant 2 Hazardous Waste CSA 26

5.2.1 Historical and Current Operations 26

5.2.2 Previous Investigations and Remedial Actions 26

5.2.3 Current Status 27

5.3 AOI 2-3 SWMU 3 – Flammable Waste Storage Shed 27

5.3.1 Historical and Current Operations 27

5.3.2 Previous Investigations and Remedial Actions 27

5.3.3 Current Status 27

5.4 AOI 2-4 SWMU 4 – Used Oil AST 28

5.4.1 Historical and Current Operations 28

5.4.2 Previous Investigations and Remedial Actions 28

5.4.3 Current Status 28

5.5 AOI 2-5 SWMU 5 – Used Oil UST 29

5.5.1 Historical and Current Operations 29

5.5.2 Previous Investigations and Remedial Actions 29

5.5.3 Current Status 29

5.6 AOI 2-6 SWMU 6 – Former Plant 2 Oily Waste Treatment System 29

5.6.1 Historical and Current Operations 30

5.6.2 Previous Investigations and Remedial Actions 30

5.6.3 Current Status 30

5.7 AOI 2-7 SWMU 7 – Building 242 Former Drum Storage Area 30

5.7.1 Historical and Current Operations 30

5.7.2 Previous Investigations and Remedial Actions 31

5.7.3 Current Status 31

5.8 AOI 2-8 SWMU 8 – Former Outdoor Storage Area 31

5.8.1 Historical and Current Operations 31

5.8.2 Previous Investigations and Remedial Actions 31

5.8.3 Current Status 32

5.9 AOI 2-9 SWMU 9 – Former Paint Sludge Storage Area 32

5.9.1 Historical and Current Operations 32

5.9.2 Previous Investigations and Remedial Actions 32

5.9.3 Current Status 32

5.10 AOI 2-10 SWMU 10 –Waste Thinner Storage Area 32

5.10.1 Historical and Current Operations 33

5.10.2 Previous Investigations and Remedial Actions 33

5.10.3 Current Status 33

5.11 AOI 2-11 SWMU 11 – Former Gondola Storage Areas 33

5.11.1 Historical and Current Operations 33

5.11.2 Previous Investigations and Remedial Actions 34

5.11.3 Current Status 34

5.12 AOI 2-12 SWMU 12 – Former Empty CSA 34

5.12.1 Historical and Current Operations 34

5.12.2 Previous Investigations and Remedial Actions 34

5.12.3 Current Status 35

5.13 AOI 2-14 SWMU 14 – Former Scrap Metal Storage Areas 35

5.13.1 Historical and Current Operations 35

5.13.2 Previous Investigations and Remedial Actions 35

5.13.3 Current Status 35

5.14 AOI 2-15 AOC 1 – Building 225 UST Farm 35

5.14.1 Historical and Current Operations 36

5.14.2 Previous Investigations and Remedial Actions 36

5.14.3 Current Status 36

5.15 AOI 2-16 AOC 3 – Building 250 USTs 36

5.15.1 Historical and Current Operations 37

5.15.2 Previous Investigations and Remedial Actions 37

5.15.3 Current Status 37

6. Plant 2 Newly Identified Areas of Interest 38

6.1 AOI 2-23 Acid House 38

6.1.1 Historical and Current Operations 38

6.1.2 Previous Investigations and Remedial Actions 38

6.1.3 Current Status 38

6.2 AOI 2-52 Pickling Room 39

6.2.1 Historical and Current Operations 39

6.2.2 Previous Investigations and Remedial Action 39

6.2.3 Current Status 39

7. Description of Plant 3 40

7.1 Plant 3 Location 40

7.2 Plant 3 Current and Historical Operations 40

7.2.1 Current Operations 40

7.2.2 Historical Operations 40

7.3 Plant 3 Aerial Photographs 40

7.4 Plant 3 RCRA Regulatory History 41

7.5 Plant 3 Historical and Current Waste Management Practices 42

7.5.1 Plant 3 Historical Waste Management Practices 42

7.5.2 Plant 3 Current Waste Management Practices 44

7.6 Plant 3 Geology 44

7.7 Plant 3 Hydrogeology 45

7.8 Plant 3 Hydrology 47

7.9 Plant 3 Ecology 47

8. Plant 3 Areas of Interest Defined in the USEPA PA/VSI Report 48

8.1 AOI 3-1 SWMU 15 – Plant 3 East Side Hazardous Waste CSA 48

8.1.1 Historical and Current Operations 48

8.1.2 Previous Investigations and Remedial Actions 48

8.1.3 Current Status 49

8.2 AOI 3-2 SWMU 16 – Plant 3 Oily Waste Treatment System 49

8.2.1 Historical and Current Operations 49

8.2.2 Previous Investigations and Remedial Actions 49

8.2.3 Current Status 49

8.3 AOI 3-3 SWMU 17 – Scrap Metal Pits and Bins 50

8.3.1 Historical and Current Operations 50

8.3.2 Previous Investigations and Remedial Actions 50

8.3.3 Current Status 50

8.4 AOI 3-4 SWMU 18 – Machining Residue Storage Area 50

8.4.1 Historical and Current Operations 50

8.4.2 Previous Investigations and Remedial Actions 51

8.4.3 Current Status 51

8.5 AOI 3-5 SWMU 19 – Plant 3 Clarifier 51

8.5.1 Historical and Current Operations 51

8.5.2 Previous Investigations and Remedial Actions 51

8.5.3 Current Status 51

8.6 AOI 3-6 SWMU 20 – Former Electroplating Waste Treatment System 52

8.6.1 Historical and Current Operations 52

8.6.2 Previous Investigations and Remedial Actions 52

8.6.3 Current Status 52

8.7 AOI 3-7 SWMU 21 – Former Electroplating Waste Treatment Sludge Storage Area 52

8.7.1 Historical and Current Operations 53

8.7.2 Previous Investigations and Remedial Actions 53

8.7.3 Current Status 53

8.8 AOI 3-8 SWMU 22 – Building 301A Container Storage Area (CSA) 53

8.8.1 Historical and Current Operations 53

8.8.2 Previous Investigations and Remedial Actions 54

8.8.3 Current Status 54

8.9 AOI 3-9 AOC 2 – Building 301 UST Farm 54

8.9.1 Historical and Current Operations 54

8.9.2 Previous Investigations and Remedial Actions 54

8.9.3 Current Status 55

8.10 AOI 3-10 AOC 4 – Plant 3 Former Electroplating Area 55

8.10.1 Historical and Current Operations 55

8.10.2 Previous Investigations and Remedial Actions 55

8.10.3 Current Status 61

8.11 AOI 3-11 SWMU 14 - Former Scrap Metal Storage Areas 61

8.11.1 Historical and Current Operations 61

8.11.2 Previous Investigations and Remedial Actions 61

8.11.3 Current Status 61

9. Plant 3 Newly Defined Areas of Interest 62

10. Description of Plant 6 63

10.1 Plant 6 Location 63

10.2 Plant 6 Current and Historical Operations 63

10.2.1 Current Operations 63

10.2.2 Historical Operations 63

10.3 Plant 6 Historical Mapping and Aerial Photographs 63

10.4 Plant 6 RCRA Regulatory History 64

10.5 Plant 6 Historical and Current Waste Management Practices 64

10.5.1 Plant 6 Historical Waste Management Practices 64

10.5.2 Plant 6 Current Waste Management Practices 66

10.6 Plant 6 Geology 67

10.7 Plant 6 Hydrogeology 69

10.8 Plant 6 Hydrology 70

10.9 Plant 6 Ecology 70

11. Plant 6 Areas of Interest Defined in the USEPA's PA/VSI Report 71

11.1 AOI 6-1 SWMU 1 – Original Hazardous Waste Storage Area 71

11.1.1 Historical and Current Operations 71

11.1.2 Previous Investigations and Remedial Actions 71

11.1.3 Current Status 71

11.2 AOI 6-2 SWMU 2 – Former Hazardous Waste Storage Area 72

11.2.1 Historical and Current Operations 72

11.2.2 Previous Investigations and Remedial Actions 72

11.2.3 Current Status 72

11.3 AOI 6-3 SWMU 3 – Current Hazardous Waste Storage Area 72

11.3.1 Historical and Current Operations 73

11.3.2 Previous Investigations and Remedial Actions 73

11.3.3 AOI 6-3 ceased operations in 2007 and was properly decommissioned. Current Status 73

11.4 AOI 6-5 SWMU 5 – Waste Thinner Tank and Waste Thinner Release 73

11.4.1 Historical and Current Operations 73

11.4.2 Previous Investigations and Remedial Actions 73

11.4.3 Current Status 74

11.5 AOI 6-6 SWMU 6 – Hazardous Waste Satellite Accumulation Areas 74

11.5.1 Historical and Current Operations 74

11.5.2 Previous Investigations and Remedial Actions 74

11.5.3 Current Status 74

11.6 AOI 6-7 SWMU 7 – Former Wastewater Treatment Unit 75

11.6.1 Historical and Current Operations 75

11.6.2 Previous Investigations and Remedial Actions 75

11.6.3 Current Status 75

11.7 AOI 6-9 SWMU 9 – Nonhazardous Waste Roll Off Boxes 75

11.7.1 Historical and Current Operations 75

11.7.2 Previous Investigations and Remedial Actions 76

11.7.3 Current Status 76

11.8 AOI 6-10 SWMU 10 – Nonhazardous Waste Consolidation Area 76

11.8.1 Historical and Current Operations 76

11.8.2 Previous Investigations and Remedial Actions 76

11.8.3 Current Status 76

11.9 AOI 6-11 SWMU 11 – Wastewater Cistern 77

11.9.1 Historical and Current Operations 77

11.9.2 Previous Investigations and Remedial Actions 77

11.9.3 Current Status 77

11.10 AOI 6-12 SWMU 12 –APCS Incinerator 77

11.10.1 Historical and Current Operations 77

11.10.2 Previous Investigations and Remedial Actions 78

11.10.3 Current Status 78

11.11 AOI 6-13 SWMU 13 – Propane Burner Stove 78

11.11.1 Historical and Current Operations 78

11.11.2 Previous Investigations and Remedial Actions 78

11.11.3 Current Status 78

11.12 AOI 6-14 SWMU 14 – Oil Accumulation Area 79

11.12.1 Historical and Current Operations 79

11.12.2 Previous Investigations and Remedial Actions 79

11.12.3 Current Status 79

11.13 AOI 6-15 SWMU 15 – Nonhazardous Waste Accumulation Area 79

11.13.1 Historical and Current Operations 79

11.13.2 Previous Investigations and Remedial Actions 80

11.13.3 Current Status 80

11.14 AOI 6-16 AOC 1 – Tanks 5 and 6 80

11.14.1 Historical and Current Operations 80

11.14.2 Previous Investigations and Remedial Actions 80

11.14.3 Current Status 81

11.15 AOI 6-17 AOC 2 – USTs 1 and 3 81

11.15.1 Historical and Current Operations 81

11.15.2 Previous Investigations and Remedial Actions 81

11.15.3 Current Status 82

12. Plant 6 Newly Identified Areas of Interest 83

12.1 AOI 6-18 Lead in Soil Area 83

12.1.1 Historical and Current Operations 83

12.1.2 Previous Investigations and Remedial Actions 84

12.1.3 Current Status 84

12.2 AOI 6-19 Process Wastewater Tunnel 85

12.2.1 Historical and Current Operations 85

12.2.2 Previous Investigations and Remedial Actions 85

12.2.3 Current Status 85

12.3 AOI 6-21 Former Solder Repair Pit 85

12.3.1 Historical and Current Operations 86

12.3.2 Previous Investigations and Remedial Actions 86

12.3.3 Current Status 86

12.4 AOI 6-30 New Weld Pit 86

12.4.1 Historical and Current Operations 87

12.4.2 Previous Investigations and Remedial Action 87

12.4.3 Current Status 87

12.5 AOI 6-31 New Drive Unit Pit 87

12.5.1 Historical and Current Operations 87

12.5.2 Previous Investigations and Remedial Action 88

12.5.3 Current Status 88

12.6 AOI 6-32 Truck Leveler Process Storage Tanks 88

12.6.1 Historical and Current Operations 88

12.6.2 Previous Investigations and Remedial Action 88

12.6.3 Current Status 89

12.7 AOI 6-33 Tank Farm 89

12.7.1 Historical and Current Operations 89

12.7.2 Previous Investigations and Remedial Action 89

12.7.3 Current Status 89

12.8 AOI 6-40 Parts Washer Solvent Tank 90

12.8.1 Historical and Current Operations 90

12.8.2 Previous Investigations and Remedial Action 90

12.8.3 Current Status 90

12.9 AOI 6-41 Hoists 91

12.9.1 Historical and Current Operations 91

12.9.2 Previous Investigations and Remedial Action 91

12.9.3 Current Status 91

12.10 AOI 6-42 Stormceptor® Oil and Sediment Separator 92

12.10.1 Historical and Current Operations 92

12.10.2 Previous Investigations and Remedial Action 92

12.10.3 Current Status 92

12.11 AOI 6-43 Stormceptor® Oil and Sediment Separator 92

12.11.1 Historical and Current Operations 93

12.11.2 Previous Investigations and Remedial Action 93

12.11.3 Current Status 93

12.12 AOI 6-47 Leaking Industrial Wastewater Line 93

12.12.1 Historical and Current Operations 93

12.12.2 Previous Investigations and Remedial Action 94

12.12.3 Current Status 94

12.13 AOI 6-48 Former Coal Pile 94

12.13.1 Historical and Current Operations 94

12.13.2 Previous Investigations and Remedial Action 94

12.13.3 Current Status 95

12.14 AOI 6-49 Second Lacquer Booth 95

12.14.1 Historical and Current Operations 95
12.14.2 Previous Investigations and Remedial Action 95
12.14.3 Current Status 96
12.15 AOI 6-59 Stormceptor® Oil and Sediment Separator 96
12.15.1 Historical and Current Operations 96
12.15.2 Previous Investigations and Remedial Action 96
12.15.3 Current Status 96
12.16 AOI 6-60 Paint Mix Room 97
12.16.1 Historical and Current Operations 97
12.16.2 Previous Investigations and Remedial Action 97
12.16.3 Current Status 97
12.17 AOI 6-63 Sump 97
12.17.1 Historical and Current Operations 98
12.17.2 Previous Investigations and Remedial Action 98
12.17.3 Current Status 98
12.18 AOI 6-66 Sump 98
12.18.1 Historical and Current Operations 98
12.18.2 Previous Investigations and Remedial Action 99
12.18.3 Current Status 99
12.19 AOI 6-68 Sump 99
12.19.1 Historical and Current Operations 99
12.19.2 Previous Investigations and Remedial Action 99
12.19.3 Current Status 100
12.20 AOI 6-78 Former PCB Transformers 100
12.20.1 Historical and Current Operations 100
12.20.2 Previous Investigations and Remedial Action 100
12.20.3 Current Status 100

12.21 AOI 6-81 Former Paint Shop Area 101

12.21.1 Historical and Current Operations 101

12.21.2 Previous Investigations and Remedial Action 101

12.21.3 Current Status 101

12.22 AOI 6-82 Coal Chute Building 101

12.22.1 Historical and Current Operations 102

12.22.2 Previous Investigations and Remedial Action 102

12.22.3 Current Status 102

12.23 AOI 6-83 Power Plant Building and Former WWTP 102

12.23.1 Historical and Current Operations 102

12.23.2 Previous Investigations and Remedial Action 103

12.23.3 Current Status 103

12.24 AOI 6-87 Oil Water Separator 103

12.24.1 Historical and Current Operations 103

12.24.2 Previous Investigations and Remedial Action 103

12.24.3 Current Status 104

12.25 AOI 6-88 Parking Lot Exceedance 104

12.25.1 Historical and Current Operations 104

12.25.2 Previous Investigations and Remedial Action 104

12.25.3 Current Status 105

12.26 AOI 6-90 ELPO AST Release 105

12.26.1 Historical and Current Operations 105

12.26.2 Previous Investigations and Remedial Action 105

12.26.3 Current Status 106

12.27 AOI 6-91 Dock 9 Hydraulic Oil Release 106

12.27.1 Historical and Current Operations 106

12.27.2 Previous Investigations and Remedial Action 106

12.27.3 Current Status 106

13. References 107

Tables

Table 1 GM Lansing Plant 2 AOIs

Table 2 GM Lansing Plant 3 AOIs

Table 3 GM Lansing Plant 6 AOIs

Table 4 Scenarios for Potential Human Exposure

Figures

Figure 1 Facility Location Map

Figure 2 GM Lansing Plant 2 Site Layout

Figure 3 GM Lansing Plant 3 Site Layout

Figure 4 GM Lansing Plant 6 Site Layout

Figure 5 GM Lansing Plant 2 AOI Locations

Figures 6 GM Lansing Plant 3 AOI Locations

Figure 7 GM Lansing Plant 6 AOI Locations

Figure 8 Plant 3 Site Layout and Geologic Cross Section Location Map

Figure 9 Plant 3 Geologic Cross Sections A-A' and B-B'

Figure 10 Plant 6 Site Layout and Geologic Cross Section Locator Map

Figure 11 Plant 6 Geologic Cross Sections A-A' and B-B'

Figure 12 Soil Screening Levels

Figure 13 Groundwater Screening Levels

Figures 14-17 Plant 2 Historical Data Box Figures

Figures 18-26 Plant 3 Historical Data Box Figures

Figures 27-43 Plant 6 Historical and Site Assessment Data box Figures

Volume II

Appendices

Appendix A	Scenarios for Potential Human Exposure, GM Lansing Plants 2, 3 and 6
Appendix B	Groundwater Usage Support Data
Appendix C	November 2005 Site Assessment Support Data
Appendix D	Summary of Historical Sanborn Maps and Aerial Photographs
Appendix E	Plant 2 Production Well Logs
Appendix F	Plants 2, 3 and 6 Storm Water Flow Maps
Appendix G	ARCADIS and O'Brien and Gere Visual Inspection Forms and Pictures
Appendix H	Restrictive Covenants
Appendix I	Miscellaneous Items
Appendix J	Boring Logs
Appendix K	Earth Metal Analytical Data Tables

Acronyms and Abbreviations

BBL	Blasland, Bouck & Lee, Inc.
AOC	Area of Concern
AOI	area of interest
AST	Above Ground Storage Tank
BWL	Board of Water and Light
CCR	Current Conditions Report
CFR	Code of Federal Regulation
Cf	cubic feet
cfm	cubic feet per minute
cfs	cubic feet per second
cm/sec	centimeters per second
COC	contaminants of concern
CRPR	Certification Regarding Potential Release
CSA	Container Storage Area
cy	cubic yards
DSA	drum storage area
EDI	EDI Engineering and Science, Inc.
ELPO	electro deposition painting
ENVIRON	ENVIRON International Corporation
ERD	Environmental Response Division
ESE	Environmental Science and Engineering, Inc.
F^o	Fahrenheit
ft amsl	feet above mean sea level
ft bgs	feet below ground surface
FSP	Field Sampling Plan
FPA	Former Plating Area

GM	General Motors Corporation
gpm	gallons per minute
GSI	groundwater surface water interface
LAD	Lansing Automotive Division
LCA	Lansing Car Assembly
MCL	maximum contaminant level
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
µg/L	micrograms per liter
NPS	National Parks Service
NOD	Notice of Deficiency
NOV	Notice of Violation
PA/VSI	Preliminary Assessment/Visual Site Assessment
PCBs	Polychlorinated Biphenols
PID	Photoionization Detector
PRC	PRC Environmental Management, Inc.
QAPP	Quality Assurance Project Plan
RBSLs	Risk Based Screening Levels
RCRA	Resource Conservation and Recovery Act
RDW	Residential Drinking Water Criteria
RFAR	*Revised Final Assessment Report*
SAWP	Site Assessment Work Plan
SVIA	Soil Vaporization to Indoor Air
SWMU	Solid Waste Management Units
SVOCs	Semi- Volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List

VOCs	Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
URS	URS Consultants, Inc.
USGS	United States Geological Survey
UST	underground storage tanks
WMU	Western Michigan University
WWES	WW Engineering and Science, Inc.
WWTP	waste water treatment plant
WWTS	Waste Water Treatment System

1. Introduction

This *Current Conditions Report* (CCR) describes the current conditions and historical waste management practices at the General Motors Corporation (GM) Lansing Plant 2 (United States Environmental Protection Agency [USEPA] ID MID 980 700 827), Plant 3 (USEPA ID MID 980 700 827), and Plant 6 (USEPA ID MID 005 356 928), hereafter, referred to as "the Facility," in Lansing, Michigan.

1.1 General

This CCR has been prepared for GM and ENCORE, a wholly-owned subsidiary of GM as part of the initial step in the Resource Conservation and Recovery Act (RCRA) corrective action program being implemented at the Facility. In support of corrective action activities for GM and ENCORE, a project team has been developed for the Facility. This project team is currently made up of ARCADIS of New York, Inc. (ARCADIS) providing the project management lead, Conestoga-Rovers & Associates (CRA) providing data validation and data management, ENVIRON International Corporation (ENVIRON) providing the human health risk assessment support, and Exponent Inc. (Exponent) providing the ecological risk assessment support.

Plants 2, 3, and 6 have been combined into one CCR because the plants share common boundaries, and Plants 2 and 3 share the same MID number. Additionally, waste handling units such as waste water treatment operations have been shared between these Plants.

Plants 2, 3, and 6 are located at 2801 West Saginaw Street, 2800 West Saginaw Street, and 401 North Verlinden Street, respectively, in Lansing, Michigan. Plant 2 encompasses approximately 63 acres of land, Plant 3 encompasses approximately 104 acres of land, and Plant 6 encompasses approximately 72 acres of land. The locations of Plants 2, 3, and 6 are shown on Figure 1.

The buildings comprising Plant 2 were constructed between 1900 and 1910. Past plant operations have included automobile parts manufacturing, foundry operations, and welding operations. Most recently, Plant 2 assembled the Chevrolet SSR. With the exception of the wastewater treatment plant (WWTP), Plant 2 ceased operations on March 17, 2006 and is currently being decommissioned. A building layout map for Plant 2 is shown on Figure 2.

The buildings comprising Plant 3 were constructed in the 1930s. Past plant operations at Plant 3 have included stamping and electroplating bumpers, general machining of crankshafts and connecting rods, and machining, welding, and stamping of automobile parts. In May 1987, electroplating operations at Plant 3 ceased. Most recently, Plant 3 manufactured various automobile parts by stamping, welding, and grinding. Plant 3 ceased operations in November, 2006 and is currently being decommissioned and demolished. A building layout map for Plant 3 is shown on Figure 3.

Plant 6 has been used to manufacture automobiles and automobile parts since 1921. The plant previously manufactured the bodies for the Pontiac Grand Am and Chevrolet Classic, and is currently considered part of Lansing Car Assembly (LCA). Plant 6 has recently been decommissioned and demolition is underway. A building layout map for Plant 6 is shown on Figure 4.

1.2 Areas of Interest

This section presents an overview of the areas of interest (AOIs) evaluated in this CCR. For the RCRA Corrective Action at the Facility, areas identified during prior investigations using terms such as Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) identified by agencies, as well as additional areas identified by GM have been designated as AOIs.

New AOIs were identified by ARCADIS by conducting the following scope of work:

- ARCADIS reviewed Facility historical drawings in both hardcopy and electronic format to obtain information on historical operations and hazardous waste and material management;
- ARCADIS conducted interviews of Facility personnel with knowledge of the past and present operations; and
- ARCADIS conducted Facility reconnaissance including Facility walkthroughs to evaluate the presence of AOIs.

The following AOIs were identified as a result of the above:

- 15 AOIs (13 SWMUs and 2 AOCs) were identified at Plant 2 by PRC Environmental Management, Inc. (PRC) in the *Lansing Plants 2 and 3 USEPA Preliminary Assessment/Visual Site Inspection (PA/VSI) Report*

(PRC, 1994) with 2 additional AOIs identified at Plant 2 during the review of historical information for Plant 2;

- 11 AOIs (9 SWMUs and 2 AOCs) were identified at Plant 3 by PRC in the *Lansing Plants 2 and 3 USEPA PA/VSI Report (PRC, 1994)* with no additional AOIs identified at Plant 3 during the review of historical information for Plant 3; and

- 15 AOIs (13 SWMUs and 2 AOCs) were identified by PRC in the *Lansing Plant 6 USEPA PA/VSI Report (PRC, 1993)* with 27 additional AOIs identified at Plant 6 during the review of historical information for Plant 6.

The AOIs for each plant have been numbered according to their respective plant number and AOI number. For example, the second AOI at Plant 3 would be labeled "3-2." Plant 2 AOIs are summarized in Table 1and the locations are presented on Figure 5. Plant 3 AOIs are summarized in Table 2 and locations are presented on Figure 6. Plant 6 AOIs are summarized in Table 3 and the locations are presented on Figure 7. The initial strategy was to have the AOIs sequentially numbered. However, through additional research and review of historical records, the AOI numbering could not remain sequential. The development of the AOI list is further discussed in Sections 5, 6, 8, 9, 11 and 12.

1.3 Purpose and Scope

The Michigan Department of Environmental Quality (MDEQ) and GM have discussed a Voluntary Corrective Action Agreement (VCAA) for the Facility, under which GM would voluntarily investigate and, as necessary, stabilize and remediate releases of hazardous wastes, hazardous constituents, and hazardous substances at or from the Facility in accordance with RCRA and relevant USEPA corrective action guidance documents. This CCR is the first deliverable pursuant to the VCAA.

The following activities have been completed as part of the corrective action process:

- prepared an overview of the pertinent features of the Facility

- prepared a summary of the regional setting of the Facility

- reviewed available information concerning the current and historical uses of the Facility for the treatment, storage, or disposal of solid and hazardous wastes, hazardous constituents or hazardous substances
- summarized previous investigations conducted at the Facility
- summarized remedial activities conducted at the Facility
- evaluated existing data to identify AOIs at the Facility, and to support the determination of whether a release of hazardous waste, hazardous constituents or hazardous substances may have occurred at an AOI that would warrant further action
- prepared justification for no further action at AOIs identified in this CCR that do not warrant further investigation or evaluation

1.4 Document Organization

This CCR is organized as follows:

Table of Contents

Acronyms and Abbreviations

Section 1 Introduction

This section presents the background, scope, and organization of the document.

Section 2 Regional Setting

This section presents regional information pertaining to the Facility, including surrounding land use, demographics, climate, geology, hydrogeology, drinking water source hydrology, and ecology.

Section 3 Preliminary Conceptual Site Model and Data Screening Process

This section presents the preliminary Conceptual Site Model for human exposure and data screening process.

Section 4 Description of Plant 2

This section presents a description of Plant 2, including its location, historical and current operations, historical and current waste management practices, and plant-specific geology, hydrogeology, hydrology and ecology.

Section 5 Plant 2 Areas of Interest Defined in the USEPA's PA/VSI Report

This section describes and summarizes the 15 AOIs identified at Plant 2 in the USEPA's Plants 2 and 3 PA/VSI Report (PRC, 1994), including AOI locations, historical operations, previous investigations and remedial actions, and current status.

Section 6 Plant 2 Newly Identified Areas of Interest

This section presents information on the additional two AOIs identified in the Plant 2 area from the review of historical information, including AOI locations, historical operations, previous investigations and remedial actions, and current status.

Section 7 Description of Plant 3

This section presents a brief description of Plant 3, including its location, historical and current operations, historical and current waste management practices, and plant-specific geology, hydrogeology, hydrology and ecology.

Section 8 Plant 3 Areas of Interest Defined in the USEPA's PA/VSI Report

This section describes and summarizes the 11 AOIs identified at Plant 3 in the USEPA's Plants 2 and 3 PA/VSI Report (PRC, 1994), including location, historical operations, previous investigations and remedial actions, and current status.

Section 9 Plant 3 Newly Identified Areas of Interest

After a review of historical drawings, interviews with plant personnel, and plant reconnaissance, no additional newly defined AOIs were identified.

Section 10 Description of Plant 6

This section presents a brief description of Plant 6, including its location, historical and current operations, historical and current waste management practices, and plant-specific geology, hydrogeology, hydrology and ecology.

Section 11 Plant 6 Areas of Interest Defined in the USEPA's PA/VSI Report

This section describes and summarizes the 17 AOIs identified in the USEPA's Plant 6 PA/VSI Report (PRC, 1993), including AOI locations, historical operations, previous investigations and remedial actions, and current status.

Section 12 Plant 6 Newly Identified Areas of Interest

This section presents information on the additional 26 AOIs identified in the Plant 6 area from the review of historical information, including AOI locations, historical operations, previous investigations and remedial actions, and current status.

Section 13 References

This section lists the references used in this CCR.

Tables and figures for each plant are included at the end of this CCR. The tables and figures are referenced throughout this document and provide additional supporting information.

2. Regional Site Setting

2.1 Land Use and Zoning

Local land use for the areas adjacent to the Facility is mixed as described in the *PA/VSI* (PRC, 1994). The CSX Railroad is located in the central portion of the Facility. The Facility is bordered to the north by St. Joseph Cemetery and residential properties. Residential neighborhoods also exist east, west, and south of the Facility. Sexton High School is present south of the Facility. The Facility is currently zoned as heavy industrial according to the City of Lansing and Township of Lansing Zoning Maps included in Appendix A. The fate of the future Facility is not known at this time. Zoning of adjacent properties is business and residential.

2.2 Location and Demographics

The City of Lansing, Michigan is located in the south-central portion of the state and is positioned within three counties; the northwest corner of Ingham County, the northeast corner of Eaton County, and the south-central portion of Clinton County. The Facility is located within the portion of the city that lies within Ingham County. Ingham County has a population of approximately 279,500 (2000 U.S. Census Data) of which 43% reside in the City.

2.3 Climate

The climate of the City of Lansing area was generalized in the *Revised Final Assessment Report (RFAR)* (URS, 2001) as "…having a continental climate. These continental conditions dominate when there is little wind or the wind direction minimizes influence from the Great Lakes. Occasionally, semi-marine conditions result when weather patterns project Great Lakes' conditions inland. Due to the influence of the Great Lakes, Lansing generally has milder winters and cooler summers than areas west of the Great Lakes at the same latitude."

In winter, the average temperature is 23.4 degrees Fahrenheit (ºF) with an average monthly minimum temperature of 13.5ºF (January). In summer, the average temperature is 68.5ºF with an average monthly maximum temperature of 82.6ºF (July) (www.worldclimate.com). The average yearly precipitation for the City of Lansing is 31.53 inches. Monthly precipitation values are fairly distributed, with the greatest amount of precipitation between April and September. June, August, and September have the highest average precipitation (i.e., between 3.4 and 3.5 inches per month).

Snowfall is moderate, averaging 49.20 inches per year. The prevailing wind is from the southwest (BBL, 2005a).

2.4 Regional Geology

The physiographic province of the greater Lansing area is the Eastern Lake Section of the Central Lowlands Province, Interior Plains Region (United States Geological Survey [(USGS]) and National Parks Service [NPS], 2000). The topography of this area can be described as a combination of level to gently rolling lowlands (glacial ground moraine) and flat outwash plains (McNab, 1996). Surface elevations range from 830 to 890 feet (ft) above mean sea level (ft amsl), with the lower elevations corresponding to the Grand River drainage. The regional stratigraphy is composed of both overburden (i.e., unconsolidated deposits) and bedrock formations.

2.4.1 Overburden Geology

Overburden deposits across the region consist of glacial drift soils (tills) associated with glacial ground moraines and outwash plains. These tills are predominately composed of clays and silts, with discontinuous layers of sand, silty sand, and gravels (WMU, 1981). The thickness and continuity of the units varies.

2.4.2 Bedrock Geology

The Pennsylvanian-age Grand River and Saginaw bedrock formations underlie the overburden deposits in the Lansing area. The depth to bedrock ranges from 20 to over 100 feet below ground surface (ft bgs) and range in thickness from less than 10 feet to more than 700 ft, but are typically less than 300ft (USGS, 2000). The Grand River and Saginaw formations are comprised primarily of sandstone and shale with some minor coal seams and limestone layers. The Saginaw Formation represents cyclic deposition of stream and river channel sands, floodplain silts and clays, marine clays and carbonates, and some minor coal layers (Dorr and Eschman, 1970). The Grand River Formation consists of filled erosional valleys of the underlying Saginaw Formation (USGS, 2000).

2.5 Regional Hydrogeology

The primary aquifer in the Lansing area is the Grand River-Saginaw aquifer, which is a major supplier of water for municipal, industrial and domestic use in the Lansing area (USGS, 2000) as further discussed in Section 2.8. Because the sandstone of the

Grand River Formation was formed within erosional valleys of the Saginaw Formation, the two formations are hydraulically connected, and thereby comprise one aquifer known as the Grand River-Saginaw aquifer (USGS, 2000). The principal source of recharge of the Grand River-Saginaw aquifer is the unconsolidated overburden deposits (USGS, 2000). However, known outcroppings of these formations exist along the Grand River, where recharge could occur as well.

As observed across the Facility and at nearby properties (GM Plant 1 to the south), groundwater may be present in relatively more permeable units (i.e., sand and gravel) within the glacial clay till. These "perched" water units are typically discontinuous and vary in elevation and thickness (BBL, 2005a). Because flow within perched water units is primarily controlled by gravity, flow direction within these units varies. Groundwater in the perched water units may ultimately flow downward toward the bedrock aquifer or horizontally through relatively permeable material.

2.6 Regional Hydrology

The Grand River watershed consists of more than 5,500 square miles in 19 counties and is the largest watershed with one common river in the state of Michigan (Cannon Township, 2006). The Grand River itself flows for approximately 270 miles from Hillsdale and Jackson Counties in the southern portion of the state to Grand Haven in Ottawa County, where it empties into Lake Michigan (Cannon Township, 2006). With the exception of a small portion of the southeast corner, Ingham County is completely covered by the watershed (approximately 1,230 square miles) (Cannon Township, 2006). Mean annual stream flow for the Grand River at Lansing is approximately 1,000 cubic ft per second (cfs) (USGS, 2006). River flow is highly variable due to precipitation and runoff throughout the year and seasonal changes.

It should be noted that, in the Lansing area, the Grand River is not used as a drinking water supply (MDEQ electronic communication).

South of the Facility, the Grand River flows west to east through the City of Lansing. The Grand River changes flow direction several times through Lansing and finally leaves the city, northwest of the Facility, in a westerly direction (BBL, 2005b).

The major tributary to the Grand River in the greater Lansing area is the Red Cedar River (Cannon Township, 2006). The Red Cedar River flows east to west from Livingston County, through East Lansing and the east-central portion of the City of

Lansing. The Red Cedar River enters the Grand River where that river starts its south to north flow through the City of Lansing south of the Facility.

2.7 Regional Ecology and Recreational Uses

The areas adjacent to the Facilities consist of a mixture of industrial and commercial development, and residential areas. Animal species that inhabit this area may include various reptiles and amphibians, birds, and small mammals, especially those types that can coexist with humans.

There is little to no direct association between the Facilities and the Grand River and the system of tributaries that make up the Grand River watershed and the associated riparian corridor which is approximately 0.5 miles to the North at the nearest stretch. It should be noted that, in the Lansing area, the Grand River is used for recreation (MDEQ electronic communication).

2.8 Regional Water Supply and Groundwater Use

Groundwater from the deep wells completed approximately 400 ft bgs in the Grand River-Saginaw aquifer is used for potable and non-potable sources in the Lansing Area and is supplied by the Lansing Board of Water and Light (BWL). BWL transports groundwater through large transmission lines to two water-conditioning plants located within the city limits (URS Consultants, Inc. [URS], 2001). A map of the BWL groundwater production wells in the vicinity of Facility is presented in Figure A-1 included in Appendix B. The closest groundwater production well is well 3300006187 owned by the BWL located approximately 200 ft north of the Facility. The Facility is located within the City of Lansing Well Head Protection Area and the Township of Lansing Well Head Protection Area. A map of the Facility showing the approximate plant locations and the City of Lansing and Township of Lansing Well Head Protection Areas is included in Appendix B.

Data submitted by the BWL in January 2004 are provided in Appendix B and represents the data measured at the water conditioning plant over the period July 1998 through 1999. Aluminum groundwater concentrations ranged from <20 micrograms per liter (µg/L) to 140 µg/L. Arsenic groundwater concentrations ranged from <1 µg/L to <5 µg/L. Barium groundwater concentrations ranged from 140 µg/L to 280 µg/L. Cadmium groundwater concentrations ranged from <0.2 µg/L to <2.4 µg/L. Calcium groundwater concentrations ranged from 83,000 µg/L to 140,000 µg/L. Chromium groundwater concentrations ranged from <4.2 µg/L to 11 µg/L. Copper groundwater

concentrations ranged from <20 µg/L to 510 µg/L. Iron groundwater concentrations ranged from 140 µg/L to 700 µg/L. Lead groundwater concentrations were typically <3 µg/L, with one exception (8.7 µg/L). Magnesium groundwater concentrations ranged from 32,000 µg/L to 44,000 µg/L. Mercury groundwater concentrations ranged from <0.2 µg/L to <0.21 µg/L. Nickel groundwater concentrations ranged from <25 µg/L to 86 µg/L. Selenium groundwater concentrations ranged from <1 µg/L to 5 µg/L. Silver groundwater concentrations ranged from <0.2 µg/L to <5 µg/L. Sodium groundwater concentrations ranged from 9,100 µg/L to 17,000 µg/L.

According to the BWL 2005 Annual Water Quality Report included in Appendix B, barium, fluoride, and nitrite were measured at the water conditioning plant. The concentrations of barium ranged from 30 to 33 µg/L. The concentrations of fluoride were 900 µg/L. The concentrations of nitrite ranged from 59 to 61 ppb.

No local ordinance is currently in place restricting installation of water supply wells in the unconsolidated formation; however, no municipal wells are installed in this formation. In addition, no Facility supply wells are installed in the unconsolidated or bedrock formations.

3. Preliminary Conceptual Site Model and Data Screening Process

3.1 Preliminary Conceptual Site Model

Based on available information regarding land and groundwater use at and adjacent to the Facility, as described in Sections 1.1, 2.1, 2.5, 2.6, 2.8, 3.7, 3.8, 6.7, 6.8, 9.7 and 9.8, a preliminary Conceptual Site Model for potential human exposure at Plants 2, 3, and 6 was developed. This preliminary Conceptual Site Model identifies potentially exposed populations under current and reasonably expected future land use, potential routes of exposure, and environmental media to which these populations may become exposed. The preliminary Conceptual Site Model for these Facilities is provided as Table 4.

The discussion below presents the reasonably expected exposure scenarios at the Facility as summarized in the preliminary Conceptual Site Model.

<u>On-Facility</u>

Plants 2, 3 and 6 have ceased operations, been decommissioned and demolition is underway. Plant 6 has recently been decommissioned and demolition is underway.

Reasonably expected future use at the Facilities is expected to remain commercial/industrial. However, because GM is also considering other options for redevelopment, future residential use has been included in the preliminary Conceptual Site Model as a hypothetical future exposure scenario.

As a result, potentially exposed populations in on-Facility areas under current or future conditions are reasonably expected to include:

- Routine Workers
- Trespassers
- Maintenance Workers
- Construction Workers
- Residents

Routine workers consist of persons who typically spend most of the work day indoors conducting industrial or commercial activities. As noted above, routine workers are currently not present at Plants 2, 3 or 6. Routine workers could be exposed to volatile constituents in subsurface soil or in shallow groundwater via vapor migration into indoor air in locations where buildings exist or may exist in the future. Exposure of such workers to groundwater via potable or non-potable use is not likely. As discussed in Section 2.8, there are no on-facility withdrawal wells (e.g., production wells) for non-potable uses and none of the groundwater at the Facilities is used for potable or non-potable purposes. In addition, GM plans to implement a restriction on-facility to prohibit any groundwater use in the future. When outdoors intermittently, routine workers can be exposed to surface soil in areas currently without cover (e.g., pavement, buildings) or in areas where cover may be removed and left uncovered in the future.

Maintenance workers consist of a fraction of the workers at the Facility who may conduct occasional subsurface construction or maintenance activities (i.e., installation or repair of underground utilities, removal or repair of pavement, or repair or maintenance of storm water management systems). Subsurface activities could result in exposures to subsurface soil and shallow groundwater. Potential exposures to sediment and water are possible during repair or maintenance of storm water management drains.

As with routine workers, trespassers could be potentially exposed to surface soil in areas currently without cover or in areas where cover may be removed in the future and left uncovered.

Facility decommissioning and demolition activities are currently being conducted at Plants 2, 3 and 6. As a result, a construction worker may be exposed to surface soil in areas which are uncovered or may become uncovered in the future. Given that decommissioning and demolition activities may also include subsurface activities, such as slab and soil removal, construction workers also may be exposed to subsurface soil and shallow groundwater.

Residents are not currently present on the Facility. If, hypothetically, the Facility is developed for residential land use in the future, residents may be exposed to surface soil in areas without cover. Residents could be exposed to volatile constituents in soil and shallow groundwater via vapor migration into indoor air in locations where on-facility residential buildings may exist in the future.

Exposure of workers and hypothetical future residents to groundwater via potable or non-potable use is not likely. As discussed in Section 2.8, on-facility drinking water is currently provided by the municipal water supply and there is no on-facility water with-draw wells for non-potable uses. As noted above, GM plans to implement a restriction on-facility to prohibit any groundwater use in the future.

Off-Facility

The potentially exposed populations in off-facility areas include:

- Residents
- Routine Workers
- Maintenance Workers
- Recreational Users

No Facility-related soil contamination is known to exist in off-facility areas, however, residents and off-facility routine workers may be exposed to constituents in soil from the Facility due to windblown dust and vapors emanating from areas currently without cover or from areas which may be uncovered in the future. If off-facility groundwater were found to be impacted by Facility-related releases, off-facility residents and workers may also be exposed to volatile constituents in shallow groundwater via vapor migration into indoor air.

Off-facility residents and off-facility routine workers adjacent to and near the Facilities are not expected to be exposed via potable or non-potable use of on-facility groundwater, because a municipal water supply is available for these locations. The preliminary Conceptual Site Model considers potential potable and non-potable use of groundwater in the future, however, because withdrawals and use of off-facility groundwater are possible, given the absence of institutional and/or regulatory controls that otherwise preclude such uses. In addition, as stated in Section 2.8, production wells used to obtain potable water for BWL are present off-facility. The closest BWL well is 200 ft north of Plant 3.

In addition to being exposed to soil constituents via wind-blown dust and vapors from areas at the Facilities (as described for residents and routine workers above), off-facility maintenance workers may be exposed to shallow groundwater during

occasional subsurface construction or maintenance activities (i.e., installation or repair of underground utilities, or removal or repair of pavement).

3.2 Data Screening Process

Appendix A describes the data screening process used to evaluate all soil and groundwater data collected at the Facilities to date. The screening results are used to assess whether hazardous substances have been released to the environment, as discussed in future sections for each individual AOI. Analytical results for aluminum, iron, magnesium, and sodium were not considered in the screening process. These earth-metals are naturally occurring and are not related to Facility-related activities.

Analytical data from all previous investigations are summarized in tables in Appendix A.

- Table 4 summarizes the applicable scenarios for potential human exposure on-Facility and off-Facility.
- Table A-2a presents a summary of soil screening against residential and water protection criteria;
- Table A-2b presents a summary of soil screening against nonresidential criteria;
- Table A-2c presents the samples for soil at Plant 2 that exceed one or more of the screening criteria;
- Table A-3a summarizes the groundwater screening results summary;
- Table A-3b presents the samples for groundwater that exceed one or more of the screening criteria;

Selected analytical data from previous investigations are also shown on data box Figures 14 through 43. The data box figures for groundwater show the site-wide spatial distribution of chemicals in each hydrogeologic unit with concentrations that exceed screening levels. The data box figures for soil show the local distribution of chemicals with concentrations that exceed screening levels. Appendix A describes the methodology used to develop these data box figures.

4. Description of Plant 2

4.1 Plant 2 Location

Plant 2 is located on approximately 63 acres of land in a mixed residential, commercial, and industrial area at 2801 West Saginaw Street, Lansing, Michigan. Plant 2 is located in Township 04N, Range 02W, and Section 18 and is bordered by the GM Lansing Plant 3 to the north, the GM Lansing Plant 6 to the east, and residential buildings to the south and west. A site layout of Plant 2 is shown on Figure 2.

4.2 Plant 2 Current and Historical Operations

4.2.1 Current Operations

Plant 2 ceased operations on March 17, 2006 and is currently undergoing decommissioning and demolition. Operations just prior to plant cessation consisted of assembly of the Chevrolet SSR.

4.2.2 Historical Operations

Buildings comprising Plant 2 were originally constructed between 1900 and 1910. Early Plant 2 operations involved multiple aspects of automobile manufacturing. Major production operations included gear manufacturing, steel and cast iron machining, heat treating, and assembly. In addition, a foundry (Building 242) was used and operated to melt steel into bar stock for forging operations. Foundry operations ceased between 1978 and 1980. Rear axles were produced at Plant 2 between 1945 and 1985. In August 1985 rear axle manufacturing stopped, at which point Plant 2 was converted to manufacture the Buick Reatta. Production of the Reatta occurred between 1987 and 1990. After the production of the Reatta, Plant 2 was inactive except for Building 207, Building 250, and the wastewater treatment system. Building 207 was used for welding operations, while Building 250 was used for car and truck maintenance operations. The wastewater treatment system treated process waste water for Plants 2 and 6, which included electro-deposition (ELPO) primer wastes.

4.3 Plant 2 Historical Mapping and Aerial Photographs

Historical Sanborn maps and aerial photographs from the Plant 2 records were reviewed and a detailed summary of the information obtained from these documents is provided in Appendix D. In general, the Sanborn map and aerial photograph reviews

show a progression of development of Plant 2 from 1938 to 1998. Prior to the acquisition of the property by GM, the area was primarily used for residential and agricultural purposes.

4.4 Plant 2 RCRA Regulatory History

The information pertaining to the Plant 2 RCRA regulatory history presented in this section was obtained from the Lansing Plant 2 and 3 USEPA PA/VSI Report (PRC, 1994),

A Notification of Hazardous Waste Activity form for Plant 2 along with Plant 3 was submitted to the USEPA in August 1980. Plant 2 along with Plant 3 submitted a RCRA Part A permit application in November 1980 in accordance with 40 Code of Federal Regulation (CFR) Part 270. The Part A permit application indicates that 92,600 gallons of container storage (S01); 123,960 gallons of tank storage (S02); 805,100 gallons per day of treatment in tanks (T01); and 2,200 gallons per day of other treatment (T04) involving electroplating evaporators existed at Plants 2 and 3.

SWMUs identified at Plants 2 and 3 in the Part A permit application included the Building 242 Former Drum Storage Area (DSA) (SWMU 7 – AOI 2-7), Former Outdoor Storage Area (SWMU 8 – AOI 2-8), Plant 3 East Side Hazardous Waste Container Storage Area (CSA) (SWMU 15 – AOI 3-1), Former Electroplating Waste Treatment System (SWMU 20 – AOI 3-6), and Former Electroplating Waste Treatment Sludge Storage Area (SWMU 21 – AOI 3-7). The application also listed the following wastes as being generated at Plants 2 and 3: ignitable waste (D001), corrosive waste (D002), reactive waste (D003), spent halogenated solvents used in degreasing (F001), spent cyanide plating bath solutions (F007), plating bath residues (F008), spent stripping and cleaning bath solutions (F009), 2,4-dichlorophenol (F015), dichloromethane (U080), trichlorofluoromethane (U121), and methyl chloroform (U226).

Plant 2 along with 3 submitted a revised Part A permit application in October 1988. The revised application indicates that an additional 15,840 gallons and 136 cubic yards (cy) of S01 existed at Plants 2 and 3. The revised application listed the following wastes: D001, lead (D008), F001, spent halogenated solvents (F002), spent non-halogenated solvents (F005), and wastewater treatment sludge (F006).

Plant 2 completed a Certification Regarding Potential Release from the SWMU form and submitted it to the USEPA in June 1985. Three types of SWMUs were identified at Plant 2: underground storage tanks (USTs), CSAs, and wastewater treatment units.

In December 1987, Plant 2 submitted a Michigan Natural Resources and Environmental Protection Act 64 (Act 64; Hazardous Waste Management Act) closure plan. The closure plan addressed the Plant 2 Hazardous Waste CSA (SWMU 2 – AOI 2-2). The Michigan Department of Natural Resources (MDNR) issued Notices of Violation (NOVs) to Plant 2 for the closure plan in September 1988. Plant 2 responded with a revised closure plan, which was approved with stipulations in December 1988. Plant 2 submitted a closure plan certification report to the MDNR in December 1990. Soil borings were completed and sampling was performed in the vicinity of SWMU 2 (AOI 2-2) as part of closure activities. Laboratory analytical results did not indicate the presence of metal or organic chemical contamination in exceedance of Michigan Environmental Response Act 307 (Act 307) Risk Assessment Type B soil and groundwater cleanup criteria. The MDNR released Plant 2 from financial responsibility for SWMU 2 (AOI 2-2) in May 1992. The MDNR also acknowledged the closure of Plant 2 in accordance with Act 307 Type B criteria in May 1992.

4.5 Plant 2 Historical and Current Waste Management Practices

4.5.1 Plant 2 Historical Waste Management Practices

The Lansing Plant 2 and 3 USEPA *PA/VSI* (PRC, 1994) was reviewed for information pertaining to historical waste management practices at Plant 2. In the past, Plant 2 and 3 have generated various waste streams in the following general categories: painting wastes; waste solvents and oils; and scrap metal.

Hazardous waste streams were generated at Plant 2 as a result of solvent-based painting and other operations. Solvent-based painting was commonly used at Plant 2. Waste paint thinner was accumulated in metal totes in the Former Waste Thinner Storage Area (SWMU 10 – AOI 2-10) and the Plant 2 Hazardous Waste CSA (SWMU 2 – AOI 2-2). This waste was periodically transported by tanker truck to an off-site licensed disposal facility. Hazardous paint sludge from spray painting booths was stored in drums in SWMU 2 (AOI 2-2).

Several other hazardous waste streams were generated from Plant 2 operations. These wastes consisted of spent solvents, paint solvents, waste adhesives and sealers, waste lapping compound, and paint rags, gloves, and masking material. These wastes were stored in the Plant 2 Hazardous Waste CSA (SWMU 2 – AOI 2-2). Drummed wastes generated from rear axle manufacturing in Plant 2 (such as paint waste, spent solvents, and used oils) may have been accumulated in the Building 242 Former DSA (SWMU 7 – AOI 2-7) or the Former Outdoor Storage Area (SWMU 8 –

AOI 2-8). Empty chemical containers from Plant 2 were accumulated in the Former Empty CSA (SWMU 12 – AOI 2-11). These empty containers were transported in bulk to an off-site reconditioner and recycler.

Used water-insoluble oil generated from various Plant 2 operations was treated in the Former Plant 2 Oily Waste Treatment System (SWMU 6 – AOI 2-6). After treatment, used oil was pumped into tanker trucks and disposed of at Environmental Waste Control, Inc. and General Oil Company. Used water-soluble oil generated at Plant 2 was pumped to Plant 3 and treated in the Plant 3 Oily Waste Treatment System (SWMU 16 – AOI 3-2). Used oil and oily sludge generated from this unit were managed as hazardous waste (D007 and D008) in tanks that were part of the unit.

Non-hazardous waste streams were generated as a result of painting activities, the use of water-soluble oil, the generation of oil filter residue, and the accumulation of scrap metal. In early 1991, GM began using water-based paints, which generated nonhazardous paint sludge. This nonhazardous paint sludge was accumulated in roll-off boxes in the Former Paint Sludge Storage Area (SWMU 9 – AOI 2-9). When a roll-off box was full, this waste was transported to Art Schultz's Oil Service for solidification and then to Granger Landfill for disposal as documented in the Lansing Plant 2 and 3 USEPA PA/VSI (PRC, 1994).

The plant-generated non-hazardous oil filter residue from machining operations throughout Plant 2 until rear axle manufacturing operations ceased in 1985. These "wet" oily filter residues were accumulated in 1- to 3-cy metal boxes in the Former Gondola Storage Areas (SWMU 11 – AOI 2-11). Residues were held until a sufficient quantity (20 to 40 cy) was accumulated. This waste was then disposed of at the Granger Landfill.

Scrap metal was generated from rear axle manufacturing operations at Plant 2. Scrap metal was accumulated in gondolas, in roll off boxes, in concrete pits, or on the concrete or asphalt pavement at various Former Scrap Metal Storage Areas (SWMU 14 – AOI 2-14) located throughout Plant 2. The scrap metal was picked up by a scrap metal recycler.

4.5.2 Plant 2 Current Waste Management Practices

Plant 2 ceased operations on March 17, 2006 and is currently undergoing decommissioning and demolition. The most recent waste management practices are discussed below.

Plant 2 most recently generated several wastes, including: ballasts, aerosols, water-based paint, used electric lamps, paints and thinners, rags and debris, used oil, cafeteria grease, solvent rags, used batteries, newspaper, mixed flammable auto fluids, heavy copper fines, computer equipment, weld collection dust, robot covers, clear coat, robot covers base coat, paint sludge, phosphate sludge and debris, empty paint pails, steam booth sludge, drained aerosols, mercury debris, reacted foam, ELPO filter and phosphate sludge, and adhesive/sealer and debris. Each of the waste streams was accumulated in designated areas throughout Plant 2.

Wastes generated at Plant 2 were transported from the plant by contractors to private licensed disposal sites.

4.6 Plant 2 Geology

Soil borings and monitoring wells were installed at Plant 2 for the assessment and closure of the Building 225 and 250 tank farms, AOIs 2-15 and 2-16, respectively (Sections 5.15 and 5.16). Based on these investigations, two types of unconsolidated deposits were encountered in shallow soil borings completed at Plant 2 from ground surface to 15 ft bgs:

- gray sand, often with gravel; and,
- gray clay (Environmental Science and Engineering, Inc. [ESE], 1995).

Bedrock production wells installed by GM in 1941 and 1944 were completed from 410 to 427 ft bgs and have been abandoned (Appendix E). Based on the logs for these wells, the overburden deposits range in thickness from 60 to 70 ft in the general area of Plant. Where encountered, bedrock consisted predominately of sandstone with some shales and limestones. The lithologic descriptions suggest that the bedrock encountered is the Grand River and/or Saginaw Formation.

4.7 Plant 2 Hydrogeology

The shallow monitoring wells installed at Plant 2 to assess the Building 225 and 250 UST areas indicated that groundwater was encountered between 7 and 8 ft bgs. There are no active production wells at Plant 2; however, as discussed above, former production wells appear to have been completed in the Grand River-Saginaw aquifer at depths of approximately 400 ft bgs. Static water levels in these former production wells were measured at approximately 60 ft bgs.

4.8 Plant 2 Hydrology

Paved surfaces, parking lots, and structures cover the majority of the property. Surface runoff is collected and directed into the City of Lansing storm sewer system. The Plant 2 Storm Water Flow Map is included in Appendix F. The nearest surface-water body to Plant 2 is the Grand River, which is more than 1 mile to the south, approximately 1 mile to the north, and 1.5 miles to the east. The Grand River has been shown to be a losing river locally, such that it acts as a recharge zone for the bedrock aquifer, as opposed to a gaining river that would act as a discharge point for the groundwater in the area (USEPA, 2006).

4.9 Plant 2 Ecology

Plant 2 is located within an industrial/manufacturing plant setting where the majority of the surface is paved (asphalt and/or concrete) parking lots and building structures. A minimal area adjacent to parking lots and building structures consists of maintained landscaping and remnant native vegetation. Animals that may exist at Plant 2 include birds, small mammals, and scavengers, especially those types that can coexist with humans.

5. Plant 2 Areas of Interest Defined in the USEPA's PA/VSI Report

This section describes and summarizes the 15 AOIs identified at the Facility in the *Lansing Plants 2 and 3 USEPA PA/VSI Report (PRC, 1994)*, including location, historical operations, previous investigations and remedial actions, and current status. The AOIs are summarized in Table 1 and are shown on Figure 5. Table 1 also includes the previous investigations and remedial actions, the substances handled at each AOI, and the CCR's recommendations of further or no further action. Decisions regarding the need for further action were made based on professional judgment, screening results, and other factors. Historical screening data is summarized in Appendix A and shown on data box Figures 14-17.

5.1 AOI 2-1 SWMU 1 Wastewater Treatment System (WWTS)

AOI 2-1 is located south of Building 204 and consists of 15 steel process tanks that were used to treat up to 1.75 million gallons per day of wastewater containing ELPO paint, oil, suspended solids, and heavy metals. The tanks range in capacity from 1,000 gallons to 1.75 million gallons. Two 75-foot-diameter clarifiers and three 1.75-million-gallon wastewater holding tanks are located outside, while the remaining 10 tanks, associated pumps, and equipment are located inside. The unit began operations in late 1986. This AOI is estimated to be at grade level.

5.1.1 Historical and Current Operations

AOI 2-1 treated wastewater generated from Plant 6 automobile assembly and painting operations. From 1987 to 1990, wastewater generated from Plant 2 painting operations and floor drains was also treated. Sludge generated from treatment operations contained trace amounts of lead, zinc, copper, and nickel, but is excluded from being a hazardous waste (40 CFR, Part 261, Subpart E, Appendix IX). At the time of the ARCADIS Plant 2 walk-through (June 2006) the WWTS was processing a minimal quantity of waste generated by the maintenance personnel as the building was being vacated.

5.1.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.1.3 Current Status

AOI 2-1 ceased operations early in 2007. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.2 AOI 2-2 SWMU 2 – Plant 2 Hazardous Waste CSA

AOI 2-2 is located east of Building 242 and is a 30-ft by 42-ft roofed structure with three sides. The fourth side is open with three large chain-link fence doors. A trench drain runs along the western portion of the unit. Forms of release control include an epoxy-sealed concrete base with an 8-inch curb around three sides, as well as a containment trench on the fourth side. The unit began operations in 1984. The unit underwent RCRA closure in 1990 and MDNR approved closure in 1992, at which point it began to be used for less than 90-day storage of drummed hazardous waste. Fluids were not normally present in the containment trench during operations at this AOI.

5.2.1 Historical and Current Operations

Wastes managed at AOI 2-2 included spent solvents, spent cleaning and degreasing solvents, waste xylenes, paint solvents, waste adhesives and sealers, waste lapping compound, plating rack coating and stripping wastes, paint rags, paint gloves, and paint masking material. Materials accumulated at this unit included paint sludge, waste mastic liners, waste ELPO filters, and welding dust. In 1992, after the RCRA closure, the flammable items that were accumulated in this AOI were moved to AOI 2-3. The less than 90-day hazardous waste storage area currently stores a minimal quantity of waste generated by the decommissioning personnel.

5.2.2 Previous Investigations and Remedial Actions

Investigations were conducted at this AOI from 1990 to 1992. As discussed above, the unit underwent RCRA closure in 1990 and MDNR approved closure in 1992. No additional investigation or remedial action has been conducted at the less than 90-day storage area. No documentation of releases to the environment from these units has been found.

5.2.3 Current Status

AOI 2-2 was closed and is currently used for less than 90-day storage of drummed hazardous waste. Based on the MDNR approved closure, the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.3 AOI 2-3 SWMU 3 – Flammable Waste Storage Shed

AOI 2-3 was originally located north of Building 237 and is currently located on the northeast corner of Building 242 and is a 22 ft by 9 ft prefabricated, fireproof metal storage shed constructed for flammable material storage. The shed is ventilated and heated, and has explosion-proof lighting. Drums are accumulated on a metal grate above a 750-gallon metal secondary containment sump. AOI 2-3 began operations in 1992 and stores a minimal quantity of flammable materials for less than 90 days by the decommissioning personnel.

5.3.1 Historical and Current Operations

Wastes managed at AOI 2-3 included waste paint, waste thinner, and waste mastic liners. Fluids were not normally present in the secondary containment during operations at this AOI.

5.3.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.3.3 Current Status

AOI 2-3 is currently in use as a less than 90 day storage area. Based on the nature of the operations at this AOI, the construction which included a secondary containment, waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.4 AOI 2-4 SWMU 4 – Used Oil AST

AOI 2-4 is located east of Building 201B and is an outdoor cylindrical steel tank. It is 31 ft long and 10.5 ft in diameter, and has a double-wall bulkhead that separates it into two sections. The west section has a capacity of 15,000 gallons, while the east section has a capacity of 5,000 gallons. A 4-inch, reinforced concrete slab surrounded by a 4-foot-high concrete dike serves as secondary containment for the tank. The unit began operations in 1986 and ceased in March 2006.

5.4.1 Historical and Current Operations

Nonhazardous used oil and oily wastewater generated from equipment maintenance and cleaning in Plant 2 were accumulated in the west section of the tank. The mixture of used oil and oily waste was then transported to the Plant 3 Oily Waste Treatment System (AOI 3-2) and was active until plant cessation in 2006. Fluids were not normally present in the secondary containment during operations at this AOI.

Between 1987 and 1990, the east section of the tank accumulated wastewater and gasoline generated from Buick Reatta fluid fill operations. The east section of the tank became inactive in 1990.

5.4.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

ARCADIS conducted a visual inspection of this AOI in April 2007. No evidence of deteriorated, cracked or spalding pavement, concrete patching or repairing, staining, or odors were observed. The Visual Inspection Form and pictures are included in Appendix G.

5.4.3 Current Status

AOI 2-4 ceased operations in March 2006. Based on the results of the visual inspection, the nature of the operations at this AOI, and the construction and the waste management practices employed, there is no evidence to suggest that a release to the environment occurred from this AOI. Therefore, no further actions at this AOI are warranted.

5.5 AOI 2-5 SWMU 5 – Used Oil UST

AOI 2-5 is a double-walled steel tank with a fiberglass coating located outside the southeast corner of Building 250. AOI 2-5 was installed in the excavation of AOI 2-16. The unit began operation in 1991 and ceased in May 2007. This AOI is estimated to be less than 15 ft deep.

5.5.1 Historical and Current Operations

Wastes managed at AOI 2-5 included nonhazardous used oil and waste antifreeze generated from maintenance operations on the plant operation's truck fleet. AOI 2-5 was removed from the ground in May of 2007.

5.5.2 Previous Investigations and Remedial Actions

During the tank removal, investigations were conducted by ARCADIS in May of 2007. Analytical results from samples taken showed no detectable concentrations of constituents of concern. In accordance with NREPA Part 211, a clean closure letter report was sent to the MDEQ on July 13, 2007.

5.5.3 Current Status

AOI 2-5 ceased operations and was removed from the ground in May 2007. Investigations indicated that there was no release from this AOI, and a clean closure letter report was sent to the MDEQ on July 13, 2007. This UST has been listed as closed in the MDEQ online UST database. Therefore, no further actions at this AOI are warranted.

5.6 AOI 2-6 SWMU 6 – Former Plant 2 Oily Waste Treatment System

AOI 2-6 was located in Building 244 and consisted of three rectangular, 10,000-gallon, concrete tanks; two dissolved air flotation treatment tanks; two gravity separators; treatment chemical storage tanks; and various pumps and valves. Portions of the unit are below grade in a basement. The unit began operations in 1953 and ceased before 1990. This AOI is estimated to be less than 15 ft deep.

5.6.1 Historical and Current Operations

Wastes managed at this unit included used insoluble oil and oily wastewater generated from automobile manufacturing operations in Plant 2. Separated used oil, which was considered to be hazardous waste because of its chromium and lead content, was accumulated in a collection pit that was part of the unit. The used oil was then pumped into a tanker truck for off-site disposal or reclamation. The unit has been inactive since 1990.

5.6.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found. PRC observed no visible evidence of a release at the time of the VSI (1994).

5.6.3 Current Status

AOI 2-6 has been inactive since 1990. Based on the nature of the operations at this AOI, the construction and waste management practices employed, the visual inspection performed during the VSI, and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.7 AOI 2-7 SWMU 7 – Building 242 Former Drum Storage Area

AOI 2-7 was initially identified on the Plant 2 Part A permit application in 1980; however, subsequent documents do not mention this unit. Based upon a review of historical drawings, a 20-ft by 30-ft by 10-ft roofed concrete pit located north of Building 242 was identified and is believed to be the former DSA. According to the Lansing Plant 2 and 3 USEPA PA/VSI (PRC, 1994), the unit began operations before 1980 and ceased in 1986.

5.7.1 Historical and Current Operations

During the PRC Plant 2 walk-through plant personnel were interviewed and indicated that wastes managed at AOI 2-7 included drummed paint waste, spent solvents, and used oil generated from maintenance activities at Plant 2. Facility representatives indicated that the storage of hazardous wastes in this unit ceased in 1982 or 1983 and that the unit was used until 1986 to store capacitors, light ballasts, and oil that was

contaminated with polychlorinated biphenols (PCBs). All waste operations ceased at the unit in 1985 or 1986, at which point it was backfilled with sand and covered with a concrete and wood-block floor.

5.7.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.7.3 Current Status

AOI 2-7 has been covered with a concrete and wood-block floor. . Based on the nature of the operations at this AOI which utilized a secondary containment area where fluids were not normally present, and the waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.8 AOI 2-8 SWMU 8 – Former Outdoor Storage Area

AOI 2-8 was initially identified on the Plant 2 Part A permit application in 1980; however, subsequent documents do not mention this unit. The unit was a 10-ft by 10-ft concrete paved area located northwest of Building 241. No secondary containment existed at the unit, and two drains existed near the unit that drained to the Plant 3 Clarifier. The unit began operations before 1980 and ceased in 1982.

5.8.1 Historical and Current Operations

Specific wastes managed by AOI 2-8 are unknown. The Lansing Plant 2 and 3 *USEPA PA/VSI* (PRC, 1994) indicated that wastes managed were likely to include: drummed waste paint, spent solvents, and used oils generated from rear axle production in Plant 2.

5.8.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.8.3 Current Status

Operations ceased at AOI 2-8 in 1982. Fluids were not normally present on the pavement during operations at this AOI. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.9 AOI 2-9 SWMU 9 – Former Paint Sludge Storage Area

AOI 2-9 was a 20-ft by 20-ft sloped concrete pad with two 20-cy roll off boxes located south of Building 241. Concrete dikes surrounded the pad as a means of secondary containment. AOI 2-9 began operations in 1986 and ceased in 1990.

5.9.1 Historical and Current Operations

Wastes managed included nonhazardous paint booth sludge generated from paint booths in Plant 2. Fluids were not normally present in the containment area during operations at this AOI.

5.9.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.9.3 Current Status

Operations ceased at AOI 2-8 in 1990. Based on the nature of the operations at this AOI, the construction which included secondary containment, waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.10 AOI 2-10 SWMU 10 –Waste Thinner Storage Area

AOI 2-10 consisted of an indoor, 10-ft by 6-ft diked area with two stainless steel, 500-gallon totes located in the southwest portion of Building 206. Dike walls were approximately 3 ft high and made of cinderblock, and the unit's base was concrete.

The floor and walls were epoxy coated. Valves on the totes allowed tanker trucks to withdraw waste directly from the totes. The unit began operations in 1986.

5.10.1 Historical and Current Operations

Waste managed at AOI 2-10 included waste paint thinner generated from Plant 2 painting operations. The waste paint thinner was pumped directly from the totes to a tanker truck for off-site disposal less than every 90 days.

5.10.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.10.3 Current Status

AOI 2-10 ceased operations March 17, 2006 and was decommissioned within 90 days. Fluids were not normally present in the containment areas during operations at this AOI. Based on the nature of the operations at this AOI, the construction which included a secondary containment, waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.11 AOI 2-11 SWMU 11 – Former Gondola Storage Areas

AOI 2-11 included two paved outdoor areas used to store 1 to 3 cubic yard steel gondolas that were used throughout Plant 2 to transport and store raw material, parts, and wastes. AOI 2-11 had an asphalt or concrete-paved base. AOI 2-11 began operations before 1980 and ceased in 1990.

5.11.1 Historical and Current Operations

Wastes managed at AOI 2-11 were limited to residual material in steel waste gondolas. Gondolas typically were used to manage a nonhazardous oil filter residue and air filter residue, which was a wet, oily sludge-like material consisting of dirt and grease from oil and air filters.

5.11.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

5.11.3 Current Status

Operations ceased at this unit in 1990. Fluids were not normally present on the asphalt or concrete during operations at this AOI. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.12 AOI 2-12 SWMU 12 – Former Empty CSA

AOI 2-12 was located on an outdoor asphalt or concrete paved area southwest of Building 241. This AOI consisted of empty 55-gallon drums generated from Facility operations. This AOI was located at grade level.

5.12.1 Historical and Current Operations

Wastes managed at AOI 2-12 included empty 55-gallon drums generated from Facility operations. When a sufficient number of drums accumulated (between 20 and 300), they were taken to an offsite re-conditioner and recycler. AOI 2-12 began operations before 1980 and ceased operations in 1990. Fluids were not normally present on the concrete during operations at this AOI.

5.12.2 Previous Investigations and Remedial Actions

No investigations or remedial action has been conducted at this AOI and none appear to be warranted. No releases to the environment from these units have been documented. PRC observed no visible evidence of a release at the time of the VSI (1994). In addition, this AOI managed empty drums and was located on asphalt or concrete pavement. Therefore, a release to the environment would not have been likely to occur.

5.12.3 Current Status

Operations at AOI 2-12 ceased in 2006. Based on the nature of the operations at this AOI, the visual inspection conducted during the VSI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

5.13 AOI 2-14 SWMU 14 – Former Scrap Metal Storage Areas

AOI 2-14 consisted of two paved Plant 2 areas that were used to accumulate scrap metal. AOI 2-14 began operation before 1980 and ceased in 1990. This AOI is located at grade level.

5.13.1 Historical and Current Operations

Wastes managed at AOI 2-14 included nonhazardous scrap metal such as machining chips, turnings, trimmings, and scrap parts. Scrap metal was accumulated in these areas in gondolas, open-topped roll off boxes, concrete enclosures, or on the pavement. AOI 2-14 became inactive in 1990. AOI 2-14 was replaced by scrap part storage sometime after 1990.

5.13.2 Previous Investigations and Remedial Actions

During the removal of AOI 2-14, oil stained soil was excavated and disposed of offsite. Verification soil sampling was completed but the verification sampling report was not able to be obtained.

5.13.3 Current Status

AOI 2-14 was replaced by scrap part storage sometime after 1990. A release at this AOI occurred, oil stained soil was excavated from this AOI and a verification sampling report is not available, further action at this AOI is anticipated. Further actions planned are described in Table 1 and will be defined in more detail in the RFI Work Plan.

5.14 AOI 2-15 AOC 1 – Building 225 UST Farm

AOI 2-15 consisted of eight 30,000-gallon USTs, which were removed in 1989. This AOI is estimated to be less than 15 ft deep.

5.14.1 Historical and Current Operations

The USTs located in the Building 225 Tank Farm Area held waste process oil, quench oil, cutting oil, and lubrication oil.

5.14.2 Previous Investigations and Remedial Actions

The USTs were removed from August through September 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Soil borings were advanced at and near the USTs and samples were collected and analyzed. Eight monitoring wells were installed and groundwater samples were collected and analyzed. Approximately 513 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Available soil and groundwater analytical data for this AOI are shown on Figures 16 and 17.

In accordance with NREPA Part 213, an industrial Tier II closure report incorporating a restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996. The restrictive covenant was filed with the Ingham County Registrar of Deeds on August 11, 2003 (Appendix H).

5.14.3 Current Status

The USTs in AOI-2-15 have been removed. A closure report was submitted to the MDEQ that relied on land and resource use restrictions documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described herein in Appendix H. No further actions at this AOI are anticipated, with the exception of maintaining the restrictive covenant. The need to continue the restrictive covenant will be evaluated.

5.15 AOI 2-16 AOC 3 – Building 250 USTs

This unit consisted of two 20,000-gallon USTs that held gasoline and diesel fuel located East of Building 250, one 1,500 gallon UST that held used oil located Southeast of Building 250, and one 12,000 gallon UST that held heating oil located West of Building 250. The USTs were removed in 1990 and 1991. This AOI is estimated to be less than 15 ft deep.

5.15.1 Historical and Current Operations

The Building 250 Tank Farm Area is located in vicinity of the Transportation Services facility at Plant 2. The unit was comprised of two buildings and one UST farm, primarily for vehicle refueling and maintenance. The UST farm contained four USTs that comprised this AOI were identified as Tanks 18, 19, 20, and an unregulated heating oil tank. The gasoline and diesel fuel tanks were the largest of the four USTs, with a capacity of 20,000 gallons each. The heating oil UST was removed in November 1990. The diesel fuel UST (1,500 gal.) was removed in October 1991. The used oil UST was removed in 1991. A confirmed release for the gasoline and diesel USTs was reported to the MDEQ in accordance with NREPA Part 213 on October 9, 1990.

5.15.2 Previous Investigations and Remedial Actions

Investigations and remedial actions were conducted at this AOI from 1990 to 1996. All four USTs were removed between November 1990 and the fall of 1991. Soil borings were advanced near the USTs and samples were collected and analyzed. Three monitoring wells were installed and groundwater samples were collected and analyzed. Approximately 980 cy of soil were removed from the vicinity of Tanks 18 and 19 and appropriately disposed off-site. Available soil and groundwater analytical data for this AOI is shown on Figures 14, 15 and 17.

An industrial Tier II closure report incorporating a draft restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996 by ESE. The final restrictive covenant was filed with the Ingham County Registrar of Deeds on August 11, 2003 (Appendix H).

5.15.3 Current Status

The USTs in AOI 2-16 have been removed. A closure report was submitted to the MDEQ that relied on land and resource use restriction documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described in Appendix H. No further actions at this AOI are anticipated, with the exception of maintaining the restrictive covenant. The need to continue the restrictive covenant will be evaluated.

6. Plant 2 Newly Identified Areas of Interest

This section presents information on the two additional AOIs identified at the Facility from the review of historical drawings, interviews with Facility personnel, and Facility reconnaissance. Items noted during the review process that did not meet the definition of an AOI have been retained for future references if needed. A list of these miscellaneous items and a map showing their locations are provided in Appendix I, and visual inspections of miscellaneous items is included in Appendix G.

The Facility AOIs are summarized in Table 1 and are shown on Figure 5. Information on location, historical operations, previous investigations and remedial actions, and current status is included in the description of each AOI. For certain AOIs the only source of information is historical drawings. For these AOIs there is limited information on historical operations and the available information is included in this section and in Table 1. Historical screening data is summarized in Appendix A and shown on data box Figures 14-17.

6.1 AOI 2-23 Acid House

AOI 2-23 consists of an acid house located west of Building 206. An 8-inch steam line led into the acid house. Two tunnels containing acid, air, and electric lines led away from the acid house. Two storage tanks with unknown contents were located immediately south of the acid house. The historical drawing did not indicate if the tanks were above ground storage tanks or below ground storage tanks. This AOI is estimated to be less than 15 ft deep.

6.1.1 Historical and Current Operations

The historical operations and use of the acid house are unknown. Wastes managed at this AOI are not known, but likely included acids.

6.1.2 Previous Investigations and Remedial Actions

There have been no previous investigations or remedial actions at this AOI.

6.1.3 Current Status

The Acid House was identified during the historical drawing review and the use and closure of the Acid House is unknown. Due to the possibility that this AOI held acids

which could have deteriorated the integrity of the AOI and resulted in a release of hazardous constituents to the environment, further action at this AOI is anticipated. Further actions planned are described in Table 1 and will be defined in more detail in the RFI Work Plan.

6.2 AOI 2-52 Pickling Room

AOI 2-52 consists of a pickling room located in Column A3 of Building 203. AOI 2-52 has a concrete wall and an acid-resistant brick floor. This AOI is located at grade level.

6.2.1 Historical and Current Operations

The Pickling Room was identified during the historical drawing review and the exact use of the room is unknown, but, from discussions with Plant 2 personnel, acids were used at this AOI. The room is adjacent to a shot blast room, as well as an air washing room.

6.2.2 Previous Investigations and Remedial Action

There have been no previous investigations or remedial actions at this AOI.

6.2.3 Current Status

AOI 2-52 ceased operations prior to March 2006. Due to the possibility that this AOI held acids which could have deteriorated the integrity of the AOI and resulted in a release of hazardous constituents to the environment, further action at this AOI is anticipated. Further actions planned are described in Table 1 and will be defined in more detail in the RFI Work Plan.

7. Description of Plant 3

7.1 Plant 3 Location

Plant 3 is located on approximately 104 acres of land in a mixed residential, commercial, and industrial area at 2800 West Saginaw Street, Lansing, Michigan. Plant 3 is located in Township 04N, Range 02W, Section 21 and is bordered by St. Joseph Cemetery to the north, railroad tracks and residential buildings to the east, the GM Lansing Plant 2 to the south, and residential buildings to the west. A site layout of Plant 3 is shown on Figure 3.

7.2 Plant 3 Current and Historical Operations

7.2.1 Current Operations

Operations at Plant 3 involve metal stamping to produce hoods, doors, fenders, trunk lids, and roofs. About 20% of Plant 3 operations involved machining connecting rods and crankshafts.

Plant 3 ceased operations in 2006 and is currently undergoing decommissioning and demolition.

7.2.2 Historical Operations

Buildings comprising Plant 3 were constructed in the 1930s. Similar to GM Lansing Plant 2, early operations at Plant 3 involved various aspects of automobile manufacturing. Production operations at Plant 3 consisted of stamping and electroplating bumpers, general machining of crankshafts and connecting rods, and machining, welding, and stamping of automobile parts. In May 1987, electroplating operations ceased.

7.3 Plant 3 Aerial Photographs

Historical aerial photographs from Plant 3 records were reviewed. The information obtained from these documents is summarized in Appendix D. In general, the topographic map and aerial photograph reviews show a progression of development of Plant 3 from 1938 to 1998. Prior to the acquisition of the property by GM, the area was primarily used for residential and agricultural purposes.

7.4 Plant 3 RCRA Regulatory History

The information pertaining to the Plant 3 RCRA regulatory history presented in this section was obtained from the Lansing Plant 2 and 3 USEPA PA/VSI Report (PRC, 1994),

A Notification of Hazardous Waste Activity form for Plant 3 along with Plant 2 was submitted to the United States Environmental Protection Agency (USEPA) in August 1980. Plant 3 along with Plant 2 submitted a RCRA Part A permit application in November 1980. The Part A permit identifies 92,600 gallons of container storage (S01), 123,960 gallons of tank storage (S02), 805,100 gallons per day of treatment in tanks (T01), and 2,200 gallons per day of other treatment (T04) involving electroplating evaporators at Plant Plants 2 and 3.

As previously discussed in Section 4.4, SWMUs identified at Plants 2 and 3 in the Part A permit application included the Building 242 Former DSA (SWMU 7 – AOI 2-7), the Former Outdoor Storage Area (SWMU 8 – AOI 2-8), the Plant 3 East Side Hazardous Waste CSA (SWMU 15 – AOI 3-1), the Former Electroplating Waste Treatment System (SWMU 20 – AOI 3-6), and the Former Electroplating Waste Treatment Sludge Storage Area (SWMU 21 – AOI 3-7). The application also listed the following wastes: ignitable waste (D001), corrosive waste (D002), reactive waste (D003), spent halogenated solvents used in degreasing (F001), spent cyanide plating bath solutions (F007), plating bath residues (F008), spent stripping and cleaning bath solutions (F009), 2,4-dichlorophenol (F015), dichloromethane (U080), trichlorofluoromethane (U121), and methyl chloroform (U226).

Plant 3 along with Plant 2 submitted a revised Part A permit application in October 1988. The revised application indicates that an additional 15,840 gallons and 136 cy of S01 existed at Plants 2 and 3. The revised application listed the following wastes: D001, D008, F001, F002, F005, and F006.

Plant 3 completed a CRPR from the SWMU form and submitted it to the USEPA in June 1985. Three types of SWMUs were identified as existing at Plant 3: USTs, CSAs, and wastewater treatment units.

In December 1987, Plant 3 along with Plant 2 submitted an Act 64 closure plan (PRC, 1994). The closure plan addressed the Plant 3 East Side Hazardous Waste CSA (SWMU 15 – AOI 3-1), Former Electroplating Waste Treatment Sludge Storage Area (SWMU 21 – AOI 3-7), and Building 301A CSA (SWMU 22 – AOI 3-8). The MDNR

issued a Notice of Deficiency (NOD) to Plant 3 for the closure plan in September 1988. Plants 2 and 3 responded with a revised closure plan, which was approved with stipulations in December 1988. Plant 3 along with Plant 2 submitted a closure plan certification report (PRC, 1994) to the MDNR in December 1990. Soil borings were completed and sampling was performed in the vicinity of SWMUs 15, 21, and 22 (AOIs 3-1, 3-7 and 3-8) as part of closure activities. Laboratory analytical results did not indicate the presence of metal or organic chemical contamination in exceedance of the criteria at the time (i.e., Michigan Public Act, Act 307 Type B soil and groundwater cleanup criteria). The MDNR released Plant 3 from financial responsibility for SWMUs 15, 21, and 22 (AOIs 3-1, 3-7 and 3-8) in a letter dated May 1992. The MDNR also acknowledged the closure of the Plant 2 SWMU 2 in accordance with Act 307 Type B criteria in a letter dated May 1992 (PRC, 1994).

7.5 Plant 3 Historical and Current Waste Management Practices

7.5.1 Plant 3 Historical Waste Management Practices

The Lansing Plants 2 and 3 USEPA *PA/VSI* (PRC, 1994) was reviewed for information pertaining to historical waste management practices at Plant 3. In the past, Plant 3 has generated various waste streams in the following general categories: electroplating wastes; painting wastes; waste solvents and oils; and scrap metal.

Hazardous waste streams were generated as a result of electroplating operations, solvent-based painting, and other plant operations. Electroplating operations were conducted at Plant 3 in Building 301. These operations generated rinse water containing copper, nickel, and chromium. Rinse water from parts cleaning operations was discharged directly to the City of Lansing sanitary sewer system. Settled metal hydroxide sludge was dewatered by filter press and stored in a roll off box in the Former Electroplating Water Treatment Sludge Area (SWMU 21 – AOI 3-7). Treated wastewater was discharged to the sanitary sewer. Waste cyanide plating filters, waste acid copper and nickel plating filters, and waste anode bags were stored in the Building 301A CSA (SWMU 22 – AOI 3-8).

Waste paint thinner was stored in the Plant 3 East Side Hazardous Waste CSA (SWMU 15 – AOI 3-1). Later, flammable items that were accumulated at Plant 3 were moved to AOI 2-3 located at Plant 2. This waste was periodically transported to a licensed disposal facility by a tanker truck. Hazardous paint sludge from spray painting booths was stored in drums in SWMU 15 (AOI 3-1).

Several other hazardous waste streams were also generated from Plant 3 operations. These wastes included spent solvents, paint solvents, waste adhesives and sealers, plating rack coating and stripping wastes, and paint rags, gloves, and masking material. These wastes were stored in the Plant 3 East Side Hazardous Waste CSA (SWMU 15 – AOI 3-1). Empty chemical containers from Plant 3 were accumulated in the Former Empty CSA (SWMU 12 – AOI 2-12). These empty containers were transported in bulk to an off-site re-conditioner and recycler. Flammable wastes from Plant 3 were accumulated at Plant 2 in AOI 2-66 (Current Flammable Waste Storage Building).

Non-hazardous waste streams were generated as a result of painting activities, the use of water-soluble oil, the generation of oil filter residue, and the accumulation of scrap metal. GM began using water-based paints, which generated non-hazardous paint sludge, in early 1991. This waste was accumulated in roll-off boxes in the Former Paint Sludge Storage Area (SWMU 9 – AOI 2-9). When a roll-off box was full, the waste was transported to Art Schultz's Oil Service for solidification and then to Granger Landfill in Grand Ledge, Michigan, for disposal.

Used water-soluble oil generated at Plant 2 was pumped to Plant 3 and treated in the Plant 3 Oily Waste Treatment System (SWMU 16 – AOI 3-2). Used oil and oily sludge generated from this unit were managed as hazardous waste (D007 and D008) in tanks that were part of the unit until there was a change in regulations in September 1992 that excluded used oil that was being recycled as a hazardous waste..

Plant activities generated nonhazardous oil filter residue from machining operations throughout Plant 3. These "wet" oily filter residues were accumulated in 1 to 3 cy metal boxes in the Former Gondola Storage Areas (SWMU 11 – AOI 2-11). Residues were held until a sufficient quantity (20 to 40 cy) was accumulated. This waste was then disposed of at the Granger Landfill.

Scrap metal was generated from stamping and machining operations at Plant 3. Scrap metal was accumulated in gondolas, in roll off boxes, in concrete pits, or on the concrete or asphalt pavement at various Former Scrap Metal Storage Areas (SWMU 14 – AOI 2-14) located throughout Plant 3. The scrap metal was picked up by a scrap metal recycler.

7.5.2 Plant 3 Current Waste Management Practices

Plant 3 most recently generated several wastes, including: rags and debris/weld dust; used batteries; empty aerosol cans; used paint pens; empty paint cans; waste paint and thinners; cafeteria grease; and adhesive/sealer and debris/weld dust. Each of the waste streams were accumulated in designated areas throughout Plant 3.

Wastes generated at Plant 3 were transported from the plant by contractors to private licensed disposal sites.

7.6 Plant 3 Geology

The overburden deposits of Plant 3 are characterized by the following stratigraphy (shallow to deep) interpreted in previous subsurface investigations (BBL, 2003 and 2004a). Figures 8 and 9 present cross sections of the Plant 3 geology.

- Unit 1 – This unit is composed of topsoil and is observed from ground surface to a depth varying from 2 to 4.5 ft bgs depending on location. The topsoil contains some sand, fine gravel, and silt, and is medium brown to brown in color.

- Unit 2 – This unit is a sand deposit located directly beneath Unit 1. It is observed from 2 ft bgs to a depth varying from 14 to 24 ft bgs and is not continuous across Plant 3. The sand unit is composed primarily of brown fine to coarse sand and sandy silt with varying amounts of fine to medium gravel. This unit contains perched groundwater, as borings penetrating this layer have indicated that there is an unsaturated zone in Units 3 and 4.

- Unit 3 – This unit is a clay deposit located directly beneath Unit 1 or 2. It is observed from 2 ft bgs to a depth varying from 18 to 26 ft bgs. The clay unit is composed primarily of brown to gray medium stiff sandy clay with varying amounts of fine to coarse sand and fine gravel. This unit is generally unsaturated throughout its thickness (10 to 20 ft) and is not continuous across Plant 3.

- Unit 4 – This unit is a silt and sand deposit that is continuous across Plant 3. It is observed from below Unit 2 or 3 to a depth varying from 72 to 107 ft bgs. This silt and sand unit is composed primarily of inter-bedded very fine to coarse, medium dense to dense sands, silts, and sandy silts, usually light

brown to brownish gray in color and with varying amounts of clay and fine to medium gravel. This unit is continuously saturated within the bottom 10 ft of the unit; there appears to be a direct hydraulic connection between Unit 4 and the bedrock aquifer where Unit 5 is not present and where Unit 4 is in direct contact with the bedrock.

- Unit 5 – This unit is a clay deposit that is not continuous across Plant 3. It is observed in borings at the north end of Plant 3 and from 38 ft bgs at the north edge of the property and 70 ft bgs at the north end of Building 301to a depth varying from 73 to 77 ft bgs. This unit is primarily composed of gray clay and is very sandy, soft, and saturated.

A site layout and geologic cross section locator map is presented as Figure 8. The geologic cross sections, in north to south and east to west directions, are presented as Figure 9. Boring logs (Appendix J) indicate that sandstone and/or shale bedrock is encountered at depths ranging from 69 to 112 ft bgs (744 to 794 ft above mean sea level [amsl]). Based on bedrock surface elevations from Plant 3 borings and local groundwater supply wells, it appears that the bedrock surface slopes from the southeast to the north.

7.7 Plant 3 Hydrogeology

Based on a review of existing soil boring logs (Appendix J) it was determined that the first saturated zone at Plant 3 is contained within Unit 2 at a depth of approximately 6 to 7 ft bgs. Groundwater in this zone is intermittently encountered. This shallow saturated zone appears to be perched as indicated by the presence of an unsaturated zone located between the shallow saturated zone and a deeper saturated zone identified in Unit 4. There are no monitoring wells completed in the perched groundwater zone: however, there is a French Drain beneath the former plating area (FPA) (AOI 3-10 See Section 9.10) that collects groundwater in the shallow saturated zone. The French Drain currently collects a limited volume of water (200 gallons/month or 0.891 cubic ft [cf]/day).

ARCADIS developed a groundwater flow model to evaluate the effectiveness of the French Drain (BBL, 2003 and 2004a). The model indicated that groundwater gradients are directed toward the French Drain but in general, groundwater capture within the perched zone is limited and is affected by the downward hydraulic gradients that exist within the perched saturated zone.

The hydraulic properties of unconsolidated units beneath the perched zone (Unit 2) at Plant 3 were evaluated. The horizontal hydraulic conductivity was determined by conducting *in situ* single well response tests (slug tests), while vertical hydraulic conductivity was determined by performing laboratory hydraulic conductivity testing on Shelby tube samples.

The Shelby tube samples were collected from both Unit 3 and Unit 4 to evaluate the vertical hydraulic conductivity between the perched zone and the overburden aquifer. The slug tests were performed at three monitoring wells screened in Unit 4. Results of the slug tests indicated that the vertical hydraulic conductivities in Unit 3 range from 6.4 x 10^{-8} centimeters per second (cm/sec) to 2.6 x 10^{-8} cm/sec, and in Unit 4 range from 1.0 x 10^{-6} cm/sec to 4.8 x 10^{-5} cm/sec. These results indicate that Unit 3 is a more significant barrier to downward contaminant migration than Unit 4 and that the locations where Unit 4 is in direct contact with Unit 2 represent potential preferred pathways for downward migration. Slug tests performed in the overburden (Unit 4) aquifer indicated that horizontal hydraulic conductivities ranged from 2.6 x 10^{-5} cm/sec to 3.6 x 10^{-5} cm/sec.

Groundwater levels measured from the overburden aquifer show groundwater flow is generally north-northwest. Bedrock groundwater flow is generally east-southeast (Figures 8, 9, 25 and 26). Groundwater elevations in Unit 4 are greater than the bedrock groundwater elevations across Plant 3, indicating a downward vertical gradient between the two units. The convergence of groundwater heads between the two units northwest of Building 301 suggests that groundwater in Unit 4 ultimately discharges to the bedrock northwest of the Plant 3 buildings. In addition, the elevation of the Grand River is approximately 800 ft amsl, which is higher in elevation than the Unit 4 groundwater elevations. Therefore, the river is not acting as a discharge point for the overburden or bedrock aquifer.

As previously discussed, groundwater from the bedrock aquifer is used as a drinking-water source in the Lansing Area. There are 12 production wells to the east and northeast of Plant 3 within a one-mile radius (Appendix B). It is assumed that these wells are still active. Based on the location of these wells, it appears that the bedrock groundwater flow direction in the western portion of Plant 3 is partially influenced by the presumed pumping of the wells to the south-southwest. The overburden aquifer present in Unit 4 and the bedrock aquifer have different flow directions; therefore, it appears that these two units are hydraulically separated in the vicinity of Plant 3 and that the overburden aquifer is not directly influenced by the pumping of the City of

Lansing's groundwater production wells. The overburden groundwater flow appears to be influenced by the bedrock topography, which slopes from southeast to north.

7.8 Plant 3 Hydrology

The Plant 3 Storm Water Flow Map is included in Appendix F. Paved surfaces, parking lots and structures cover the majority of the property, with the remaining portion being maintained landscaping, primarily grass. Surface runoff is collected and processed through clarifiers located on the north end of the property, then directed into the City of Lansing storm sewer system. The nearest surface-water body to Plant 3 is the Grand River, which is more than 1 mile to the south, approximately 0.5 mile to the north, and 1.5 miles to the east.

7.9 Plant 3 Ecology

Plant 3 is located within an industrial/manufacturing plant setting where the majority of the surface is paved (asphalt and/or concrete) parking lots and building structures. The areas adjacent to parking lots and building structures and north of Building 303 consist of maintained landscaping and remnant native vegetation. Animals that may exist at Plant 3 include birds, small mammals, and scavengers, especially those types that can coexist with humans.

8. Plant 3 Areas of Interest Defined in the USEPA PA/VSI Report

This section describes and summarizes the 15 AOIs identified at the Facility in the *Lansing Plants 2 and 3 USEPA PA/VSI Report (PRC, 1994)*, including location, historical operations, previous investigations and remedial actions, and current status. The AOIs are summarized in Table 2 and are shown on Figure 6. Table 2 also includes the previous investigations and remedial actions, the substances handled at each AOI, and the CCR's recommendations of further or no further actions. Decisions regarding the need for further action were made based on professional judgment, screening results, and other factors. Historical screening data is summarized in Appendix A and shown on data box Figures 18-26. Groundwater data for earth metals (aluminum, calcium, iron, magnesium, potassium, and sodium) is not believed to be related to the Facility and was not included in the historical data screening. Earth metal data is included in Appendix K.

8.1 AOI 3-1 SWMU 15 – Plant 3 East Side Hazardous Waste CSA

AOI 3-1 is a three-sided, roofed structure. The maximum inventory at this unit was 144 drums. A 1,730-gallon containment trench runs the length of the fourth side. AOI 3-1 began operations in 1983. This AOI is located at grade level.

8.1.1 Historical and Current Operations

Wastes managed at AOI 3-1 included spent solvents, spent 1,1,1-trichlorethane, spent cleaning and degreasing solvents, paint solvents, waste adhesives and sealers, plating rack coating and stripping wastes, paint rags, paint glove, and paint masking material. Paint sludge, waste mastic liners, waste ELPO filters, welding dust, miscellaneous obsolete materials, and unidentified materials generated from Plant 2 cleanup activities were also stored here. By 1992, the unit had achieved both RCRA and MDNR closure. The area was then used for less than 90-day storage of drummed hazardous waste. Fluids were not normally present in the containment trench during operations at this AOI.

8.1.2 Previous Investigations and Remedial Actions

Investigations were conducted at this AOI from 1990 to 1992. The unit underwent RCRA closure in 1990 and MDNR approved closure in 1992. Subsequently, this AOI has been used as a less than 90 day storage area. No releases to the environment from these units have been documented.

8.1.3 Current Status

AOI 3-1 is currently used for less than 90-day storage of drummed hazardous waste. Based on the MDNR approved closure, the nature of the operations at this AOI, the construction which included a secondary containment and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

8.2 AOI 3-2 SWMU 16 – Plant 3 Oily Waste Treatment System

AOI 3-2 contains two concrete 28,000-gallon batch used oil holding tanks, a concrete 60,000-gallon emergency overflow tank, two concrete 10,000-gallon oily sludge tanks, and several treatment chemical tanks. AOI 3-2 also has a steel gondola used to accumulate oily sludge. AOI 3-2 is entirely indoors in Building 301A and began operations in 1953. AOI 3-2 ceased operations in November 2006. This AOI is estimated to be less than 20 ft deep.

8.2.1 Historical and Current Operations

AOI 3-2 was used to treat oily wastewater. AOI 3-2 formerly managed used soluble oil from Plant 2 and insoluble oil from Plant 3. Treatment of Plant 2 soluble oil ceased before 1993. Two steel 10,000-gallon tanks accumulated used oil until transported off-site for reclamation. Oily sludge generated from this unit was combined with machining residue and managed in the Machining Residue Storage Area. The used oil and oily sludge generated from this unit were managed as hazardous waste until the mid-1980s due to their cadmium, chromium, and lead content.

8.2.2 Previous Investigations and Remedial Actions

There have been no previous investigations or remedial actions at this AOI.

8.2.3 Current Status

AOI 3-2 ceased operations in November 2006. Further action at this AOI is anticipated. Further actions planned are described in Table 2 and will be defined in more detail in the RFI Work Plan.

8.3 AOI 3-3 SWMU 17 – Scrap Metal Pits and Bins

AOI 3-3 consists of 12 former concrete pits, each of which was 12 ft by 12 ft and 15 to 20 ft deep, a 4,000 gallon soluble oil sump pit, and a 2,000 gallon cutting oil sump pit. The pits were located along the east side of Building 301 outdoors and were covered by a roof. The unit began operations in 1954. This AOI is 10 ft deep based on historical drawings.

8.3.1 Historical and Current Operations

Wastes managed at AOI 3-3 included scrap metal and oils generated from Plant 3 machining and stamping operations. Fluids were normally present during operations at this AOI. The scrap metal was eventually collected from the pits by various scrap metal recycling companies.

8.3.2 Previous Investigations and Remedial Actions

During the removal of AOI 3-3, oil stained soil was excavated and disposed of offsite. Verification soil sampling was not likely completed.

8.3.3 Current Status

AOI 3-3 was removed prior to 2000 and paved over. Because a release at this AOI occurred, oil stained soil was excavated from this AOI, and verification sampling may not have been completed, further action at this AOI is anticipated. Further actions planned are described in Table 2 and will be defined in more detail in the RFI Work Plan.

8.4 AOI 3-4 SWMU 18 – Machining Residue Storage Area

AOI 3-4 consists of an asphalt-paved area with a 20-cy roll off box. AOI 3-4 is located at the end of a conveyor that transports machining residue out of Plant 3 into the roll off box. AOI 3-4 began operations prior to 1983. This AOI is located at grade level.

8.4.1 Historical and Current Operations

Wastes managed at AOI 3-4 include nonhazardous machining residue, nonhazardous oily sludge generated from AOI 3-2 (SWMU 16), and solid waste generated from AOI 3-5 (SWMU 19). Fluids were not normally present on the asphalt paving during operations at this AOI.

8.4.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

8.4.3 Current Status

AOI 3-4 ceased operations prior to November 2006. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

8.5 AOI 3-5 SWMU 19 – Plant 3 Clarifier

AOI 3-5 is a circular, concrete, below grade clarifier. AOI 3-5 began operations in 1970 and is currently active. This AOI is estimated to be less than 15 ft deep.

8.5.1 Historical and Current Operations

Wastes managed at AOI 3-5 include storm water runoff, oil and sediments from Plants 2 and 3. Clarified water discharges into the Grand River, while small amounts of nonhazardous sludge generated from the clarifier are managed in the Machining Residue Storage Area (AOI 3-4).

8.5.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

8.5.3 Current Status

AOI 3-5 is currently an operating unit. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

8.6 AOI 3-6 SWMU 20 – Former Electroplating Waste Treatment System

AOI 3-6 consisted of several indoor aboveground storage tanks (ASTs). The ASTs were located on a concrete floor. AOI 3-6 began operations in 1953, and underwent modifications in 1973 and 1975. AOI 3-6 was partially dismantled in 1989.

8.6.1 Historical and Current Operations

AOI 3-6 was used to treat electroplating wastes. Various hazardous wastes were managed at this unit, including wastes generated from copper, nickel, and chromium electroplating. Hazardous wastewater treatment sludge generated at the unit was managed in the Former Electroplating Waste Treatment Sludge Storage Area, while treated wastewater was discharged to the sanitary sewer. The treatment of electroplating waste ceased in 1989 and the unit became partially dismantled.

8.6.2 Previous Investigations and Remedial Actions

As part of the investigation of this AOI, samples were collected in and around AOI 3-6. Laboratory analysis showed exceedances of groundwater surface water interface protection (GSIP) criteria for chromium total and residential drinking water protection (DWP) and GSIP criteria for nickel. Analytical screening results are included in Appendix A and shown on Figures 21, 22, 25 and 26.

8.6.3 Current Status

AOI 3-6 ceased operations in November 2006. Exceedances of the DWP and GSIP screening levels (specifically in the deepest sample collected) indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 2 and will be defined in more detail in the RFI Work Plan.

8.7 AOI 3-7 SWMU 21 – Former Electroplating Waste Treatment Sludge Storage Area

AOI 3-7 was located inside Building 301D and consisted of a 50-ft by 25-ft concrete pad. This AOI was located at grade level.

8.7.1 Historical and Current Operations

Wastes managed at AOI 3-7 included electroplating waste treatment sludge generated from the Former Electroplating Waste Treatment System (AOI 3-6, SWMU 20). Sludge was accumulated in 30-cy roll off boxes that were placed on the concrete pad. AOI 3-7 began operations in 1953 and ceased operations in 1990. Fluids were not normally present on the concrete pad during operations at this AOI.

8.7.2 Previous Investigations and Remedial Actions

No releases to the environment from these units have been documented. PRC observed no visible evidence of a release at the time of the VSI (1994). Additionally, AOI 3-7 underwent RCRA closure in 1990, and the MDNR approved the closure in 1992.

8.7.3 Current Status

AOI 3-7 ceased operations in 1990. Based on the MDNR approved closure, the visual inspection conducted during the VSI, the nature of the operations at this AOI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

8.8 AOI 3-8 SWMU 22 – Building 301A Container Storage Area (CSA)

AOI 3-8 consisted of a concrete pad and elevated steel rollers that supported 2.4-cy gondolas on an upper level of Building 301A. This AOI was located at grade level.

8.8.1 Historical and Current Operations

Wastes managed at AOI 3-8 included waste cyanide plating filters, waste acid copper and nickel plating filters, and anode bags generated from Plant 3 electroplating operations. The filters and anode bags were stored in 2.4-cy gondolas that were supported on elevated steel rollers. AOI 3-8 began operating before 1980 and ceased operations in 1990. Fluids were not normally present on the concrete pad during operations at this AOI.

8.8.2 Previous Investigations and Remedial Actions

No releases to the environment from these units have been documented. PRC observed no visible evidence of a release at the time of the VSI (1994). Additionally, AOI 3-8 underwent RCRA closure in 1990, and the MDNR approved the closure in 1992.

8.8.3 Current Status

AOI 3-8 ceased operations in 1990. Based on the MDNR approved closure, the visual inspection conducted during the VSI, the nature of the operations at this AOI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

8.9 AOI 3-9 AOC 2 – Building 301 UST Farm

AOI 3-9 consisted of six USTs, with capacities ranging from 5,000 to 20,000 gallons. The USTs were located east of Building 301. The USTs were removed in 1989. This AOI is estimated to be less than 15 ft deep.

8.9.1 Historical and Current Operations

The six USTs were used to store polymer, sulfuric acid, soluble oil, gasoline, hydraulic oil, and APCO cleaner, respectively. The USTs were closed in accordance with NREPA Part 213, and removed in 1989.

8.9.2 Previous Investigations and Remedial Actions

Investigations and remedial actions were conducted at this AOI from 1989 to 1996. The USTs were removed in 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Benzene, tetrachloroethylene, and chloromethane were detected in soil samples from the UST area at concentrations above cleanup criteria established at the time of removal. Approximately 1,200 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Available soil and groundwater analytical data for this AOI is shown on Figures 21, 22, 25 and 26.

In accordance with NREPA Part 213, an industrial Tier II closure report incorporating a restrictive covenant was submitted to the MDEQ storage tank division on September 30, 1996. The restrictive covenant was filed with the Ingham County Registrar of Deeds on August 4, 2003 (Appendix H).

8.9.3 Current Status

The USTs in this unit were closed in 1989 in accordance with NREPA Part 213. A closure report was submitted to the MDEQ that relied on land and resource use restriction documented in a Restrictive Covenant filed with the Registrar of Deeds in 2003 and described herein in Appendix H. No further actions at this AOI are anticipated, with the exception of maintaining the restrictive covenant. The need to continue the restrictive covenant will be evaluated.

8.10 AOI 3-10 AOC 4 – Plant 3 Former Electroplating Area

AOI 3-10 consisted of the electroplating area located inside Building 301 and 301A with 13 nickel-related tanks and 23 copper related tanks labeled as cyanide source at the plant. AOI 3-10 also includes a 5 ft by 6 ft by 7 ft sludge sump unit and filter pump and motor. The filter pump and motor is located next to the sludge sump unit and south of the nickel storage tank. The sludge sump unit is located in the northeast portion of Building 301.

8.10.1 Historical and Current Operations

Wastes managed at AOI 3-10 included various hazardous wastes generated from copper, nickel, and chromium electroplating operations. Fluids were normally present during operations at this AOI.

8.10.2 Previous Investigations and Remedial Actions

There were numerous investigations completed at this AOI. Investigations were conducted by EDI Engineering & Science (EDI) (November 1988 to November 1989), WW Engineering & Science (WWES) (September 1990 to May 1992), URS (October 1993 to June 1994), and ARCADIS (March 2002 to present). Available soil and groundwater analytical data for this AOI is shown on Figures 19-26.

Soils Investigation of the Plating Area at Plant 3 – (EDI, 1988)

A soil sampling program was performed to determine soil impact from the plating operations, delineate the vertical and horizontal extent of impact, and determine groundwater quality. Thirty-nine borings were advanced in and around AOI 3-10, and soil from these borings was collected for laboratory analysis. One bedrock monitoring well, MW-88-1, was installed in a projected down gradient location of Plant 3.

The soil analytical results indicated that soil from beneath and adjacent to Building 301 contained concentrations of nickel, zinc, copper, and cyanide above former Michigan Act 307 Type A or B Criteria. These COC were associated with the plating process.

Groundwater from monitoring well MW-88-1 was sampled and analyzed, and found to be un-impacted by nickel, zinc, copper, and cyanide. Groundwater grab samples were taken from perched groundwater encountered in some of the soil borings and submitted for analysis. The results indicated impact to the shallow perched groundwater from nickel, copper, and cyanide.

Phase II Soils Investigation of the Plating Area at Plant 3 – (EDI, 1989)

A second phase of subsurface investigation was performed to further delineate the extent of impact. Eleven soil borings were installed around the exterior of Building 301 and included soil borings located along storm and sanitary sewer lines. Thirteen soil borings were installed inside the building in areas where press lines were being constructed. Forty-eight soil samples were collected from the bottom and sides of the excavations after removing the plating equipment and during construction activities for press line installation. Most of the impacted soils uncovered during the excavation and construction activities were removed and disposed in a licensed hazardous waste landfill. Soil samples were submitted for laboratory analyses of copper, nickel, zinc, and cyanide. Groundwater samples were collected from perched groundwater encountered in 10 of the exterior soil boring locations and analyzed for the same parameters. Soil concentrations in samples from the exterior borings were all below reportable limits or below the respective former Michigan Act 307 Type A or B Criteria. Results from the analyses of soils from the interior sampling locations indicated the presence of impacted soils remaining within this area of Building 301. Results of the groundwater analyses indicated no impact to the perched groundwater in the locations sampled. A French Drain was installed in the excavation and press line construction area to collect perched groundwater around the impacted soils that remained in place.

Phase IIA Soils Investigation of the Former Chromium Plating Area at Plant 3 – (EDI, 1990)

Impacted soils were uncovered and removed during press line installation activities and the second phase of subsurface investigation at this AOI. Soil boring and grab samples in the excavations indicated further impact to soils at depth; as a result, additional subsurface investigation activities were performed.

Three additional soil borings were installed to further determine the vertical extent of soil impact. Soil and groundwater were collected from each boring and analyzed for chromium. Results from the soil analyses indicated that shallow soil (< 30 ft bgs) in this AOI had been impacted by chromium above mean chromium concentrations, plus three standard deviations (53 milligrams per kilogram [mg/kg]) of "background Michigan soils," while soils below 30 ft bgs were not. Chromium concentrations in groundwater from two of the soil borings were below reportable limits. Groundwater from the third boring located within the excavation beneath this AOI and in close proximity to the French Drain, exhibited a chromium concentration above the maximum contaminant level (MCL), or drinking-water standard, of 0.05 milligrams per liter (mg/L).

Site Assessment Report, Tank 12, Plant 3 – (EDI, 1989)

A UST (Tank 12) was part of this AOI. The UST was used to store nickel sulfate solution and was located inside Building 301. The tank was abandoned in place and a subsurface investigation was performed to define and delineate possible soil impact adjacent to the UST. Three soil borings were installed around the former UST, and soil samples were collected and submitted for laboratory analysis. Soil samples were analyzed for chromium, copper, nickel, zinc, and cyanide. Results from the soil analyses indicated that nickel concentrations were above normal background levels according to the consultant.

Phase II Site Investigation Report at Tank 12, Plant 3 – (WWES, 1990)

Based on the Site Assessment Report, Tank 12, Plant 3 (EDI, 1989), a Phase II site investigation was developed and performed to further define the extent of nickel impact to the soil and groundwater around former UST Tank 12. Five soil borings were installed and soil samples were collected to determine the vertical and horizontal extent of nickel impact. Perched groundwater was sampled from the five soil borings and submitted for nickel analysis. Results for the soil analyses indicated that shallow soils (<10 ft bgs) were impacted (above former Michigan Act 307 direct dermal contact

levels), while deeper soils did not exhibit elevated concentrations of nickel. All soils were located under pavement or concrete and did not present a direct contact risk. Results from the groundwater sampling suggested impact to the perched groundwater from nickel, but sampling procedures may have contributed to higher concentrations than would have been representative. Based on these previous investigations, WWES submitted the *Site Investigation Plan for Former Plating Area and Tank 12* (WWES, 1991), with field activities commencing in August 1991.

Phase III Site Investigation Report, GMC-Lansing Plant 3, Former Plating Area - (WWES, 1992)

Drilling, well installation, and sampling activities associated with the Site Investigation Plan for FPA and Tank 12 (WWES, 1991) was conducted by WWES starting in August 1991. Results of the investigation were presented in the Phase III *Site Investigation* Report prepared by WWES (WWES, 1992) and submitted to the MDNR Environmental Response Division (ERD) on May 18, 1992. Results of this investigation were as follows:

- Groundwater is present on-site in three distinct zones: a localized perched groundwater zone within the glacial overburden, a saturated zone at the bedrock/overburden contact, and a bedrock aquifer.

- Perched groundwater was sampled from the French Drain installed in 1989. Results of the groundwater analysis of the French Drain indicated that concentrations of copper, nickel, zinc, and cyanide remain above former Michigan Act 307 Type A and Type B Criteria.

- Groundwater analytical results from the bedrock/overburden indicated that concentrations of the same analytes were not above the established former Michigan Act 307 Type A and B Criteria.

- Groundwater analytical results from the bedrock identified zinc concentrations above established former Michigan Act 307 Type B Criteria.

Based upon the subsurface investigation and results, WWES recommended developing a risk assessment, and performing continued sampling and analysis of the monitoring wells and French Drain.

GM-LAD Plant 3, Building 301, Plating Area and Tank 12 Site Investigation Report - (URS, 1994)

Drilling, well installation, and sampling activities associated with the Work Plan for Site Characterization and Risk Assessment, Plating Area and Tank 12, GMC Plant 3, Lansing, Michigan (RMT, Inc. [RMT], 1993) were conducted by URS starting in October 1993. Results of the investigation were presented in the *GM-LAD Plant 3, Building 301, Plating Area and Tank 12 Site Investigation Report* (URS, 1994) and submitted to the MDNR ERD by URS on June 22, 1994. Results of this investigation were as follows:

- The results from previous subsurface investigations were confirmed.
- Results of the analysis of perched groundwater from the French Drain indicated elevated concentrations of chromium, copper, nickel, zinc, and cyanide. The concentrations of nickel in these samples exceeded established former Michigan Act 307 Type B Criteria.
- Results of the analyses of groundwater samples from the bedrock/overburden contact indicated concentrations of chromium, copper, nickel, zinc, and cyanide were below the established former Michigan Act 307 Type A and B Criteria.
- Results of the analyses of groundwater from the bedrock aquifer indicated chromium, copper, nickel, zinc, and cyanide were not detected or the concentrations were below established former Michigan Act 307 Type A and B Criteria.
- In an overview of historical groundwater analytical data and data derived from the URS investigation, URS determined that concentrations of chromium, copper, nickel, zinc, and cyanide in groundwater from the bedrock/overburden contact were not above the established former Michigan Act 307 Type B Criteria. However, concentrations in soil and perched groundwater were detected above established former Michigan Act 307 Type B Criteria at this AOI.
- The recommendation of the URS investigation was to close the AOI in accordance with former Act 307 Type C closure requirements, Section R229.5717.

In addition to the investigations described above, the following activities have been conducted on-site:

GM has been operating, maintaining, and sampling the French Drain collection system and implementing long-term monitoring and sampling of the overburden monitoring wells at this AOI. Prior to 2002, long-term groundwater monitoring included annual sampling of the overburden monitoring wells (i.e., MW-91-1, MW-91-2, MW-93-1, MW-93-2, and MW-93-3) and the French Drain. Groundwater samples were analyzed for dissolved nickel only. Samples from the French Drain were analyzed for beryllium, cadmium, chromium, copper, cyanide, iron, lead, nickel, silver, and zinc.

ARCADIS collected groundwater samples from the five overburden monitoring wells and French Drain on-site from April 27, 2002 to May 3, 2002. Results of the analyses show that concentrations of beryllium, iron, and nickel in the sample collected in the French Drain have decreased since it was first sampled, but exceed the Michigan Part 201 Residential Drinking Water Criteria (RDW). Concentrations of iron in monitoring wells MW-91-1 and MW-91-2 exceeded the Part 201 RDW. No cadmium, lead, silver, or cyanide was detected in the samples from these down-gradient monitoring wells. The potentiometric surface of the overburden aquifer was (and still is) below the screened interval in several of the previously installed monitoring wells (i.e., MW-93-1, MW-93-2, and MW-93-3) due to a drop in groundwater elevation across Plant 3.

ARCADIS conducted drilling, well installation, sampling, and groundwater modeling activities starting in October 2002, and subsequently prepared an IRWP (BBL, 2004) that was submitted to the MDEQ for review and comment. The MDEQ provided comments in a letter dated May 24, 2004. The MDEQ requested additional investigation and recommended that GM submit an investigation report instead of an IRWP, since this AOI investigation was not a facility-wide investigation.

ARCADIS continued drilling, well installation, and sampling activities starting in September 2004, based on the recommendations outlined in the IRWP (BBL 2004) and the MDEQ comments. Two overburden and two bedrock monitoring wells were installed. A second round of groundwater sampling with new wells was conducted in June of 2005.

Data box figures showing soil and groundwater data results from previous investigations are shown on Figures 19, 30, 21, 22, 23, 24, 25 and 26.

8.10.3 Current Status

AOI 3-10 ceased operations prior to 1988. Based on the results of previous investigations a release of hazardous constituents to the environment has occurred in this area. As such, further action at this AOI is anticipated. Further actions planned are described in Table 2 and will be defined in more detail in the RFI Work Plan.

8.11 AOI 3-11 SWMU 14 - Former Scrap Metal Storage Areas

AOI 3-11 consists of areas formerly located west of Building 304 and east of Building 302. Various types of scrap metal were staged in this area, ranging from stock material to metal shavings. This AOI is estimated to be less than 5 ft deep.

8.11.1 Historical and Current Operations

AOI 3-11 was used to stage oil covered stock material as well as metal shavings from plant machining processes. Wastes managed at this AOI include scrap metal. Fluids were not normally present on the pavement during operations at this AOI.

8.11.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

8.11.3 Current Status

AOI 3-11 ceased operations prior to 2006. Based on the nature of the operations at this AOI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AO. Therefore, no further actions at this AOI are warranted.

9. Plant 3 Newly Defined Areas of Interest

After a review of historical drawings, interviews with plant personnel, and plant reconnaissance, no additional newly defined AOIs were identified. Items noted during the review process that did not meet the definition of an AOI have been retained for future references if needed. A list of these miscellaneous items and a map showing their locations are provided in Appendix I, and visual inspections of miscellaneous items is included in Appendix G.

10. Description of Plant 6

10.1 Plant 6 Location

Plant 6 is located on approximately 72 acres of land in a mixed residential, commercial, and industrial area at 401 North Verlinden Street, Lansing, Michigan. Plant 6 is located in Township 04N, Range 02W, Section 17 and is bordered by residential building, a day care center, and West Saginaw Street to the north, residential buildings to the east, Sexton High School and Michigan Avenue to the south, and the GM Lansing Plant 2 to the west. A site layout of Plant 6 is shown on Figure 4.

10.2 Plant 6 Current and Historical Operations

10.2.1 Current Operations

In 2005, operations ceased at Plant 6; decommissioning and demolition activities are currently underway.

10.2.2 Historical Operations

Prior to 1921, the area where Plant 6 was located was a farm field. In 1921, buildings comprising Plant 6 were constructed by Durant Motor Works and used to manufacture automobiles and automobile parts. GM purchased the building complex in 1935 and began the Fisher Body Division. This became part of the LCA in 1985, where bodies for the Pontiac Grand Am and Chevrolet Classic were manufactured.

Prior to closing in 2005, Plant 6 concluded production of the Oldsmobile Alero and Pontiac Grand Am. The main assembly plant operations consisted of trim and chassis assembly lines, body painting, ELPO, and areas for materials and storage.

10.3 Plant 6 Historical Mapping and Aerial Photographs

Historical Sanborn maps and aerial photographs from Plant 6 records were reviewed. Information obtained from these documents is summarized in Appendix D. In general, the topographic map and aerial photograph reviews show a progression of development of Plant 6 from 1938 to 1998. Prior to the acquisition of the property by GM, the area was primarily used for residential and agricultural purposes.

10.4 Plant 6 RCRA Regulatory History

According to the Lansing Plant 6 USEPA *PA/VSI* (PRC, 1994), Plant 6 submitted a Notification of Hazardous Waste Activity on August 4, 1980. Plant 6 submitted a Part A permit application on November 18, 1980, but it was withdrawn.

The USEPA acknowledged interim status for Plant 6 on June 2, 1982. Plant 6 requested that the USEPA withdraw the Part A permit application, acknowledging that it could not certify the waste had been accumulated for less than 90 days. The USEPA approved the Part A application withdrawal on August 29, 1984.

The MDNR conducted compliance evaluation inspections at Plant 6 in 1982, 1983, 1984, 1986, 1987, 1988, and 1992. The following violations were documented during these inspections:

- improper labeling or dating of hazardous waste containers;
- inadequate contingency plan;
- incomplete personnel training and weekly inspection records; and
- land disposal notification violations.

Plant 6 was cited in 1987 and 1988 for storing hazardous waste for more than 90 days.

10.5 Plant 6 Historical and Current Waste Management Practices

10.5.1 Plant 6 Historical Waste Management Practices

The GM Lansing Plant 6 *PR/VSI* (PRC, 1993) was reviewed for information pertaining to historical waste management practices at Plant 6. In the past, hazardous and non-hazardous wastes generated at Plant 6 have been stored or accumulated in one of twelve identified SWMUs (SWMUs 1 through 12 – AOIs 6-1 through 6-12). SWMUs 1, 2, 4, 7, and 8 (AOIs 6-1, 6-2, 6-4, 6-7 and 6-8) were inactivated prior to 1993. From 1980 to 1990, hazardous waste streams were accumulated at the Original Hazardous Waste Storage Area (SWMU 1 – AOI 6-1). From 1990 to 1992, these waste streams were accumulated at the Former Hazardous Waste Storage Unit (SWMU 2 – AOI 6-2). From 1992 through present, the following nonhazardous wastes were known to be generated at Plant 6: epoxy purge, grinding waste, wash water, phosphoric acid, paint

vapors, paint and bonderite sludge, oven condensate, organic vapors, trim purge, coal ash, hydraulic oil, wash water filters, asbestos, and ELPO sludge. Wastes generated at Plant 6 were stored or accumulated in one of 12 identified SWMUs (SWMUs 1 through 12 – AOIs 6-1 through 6-12).

Hazardous wastes generated at Plant 6 included purge thinner, purge paint, solvent wipe, and waste petroleum naphtha. Purge thinner was generated when paint lines were purged with solvents. The thinner was accumulated in the Current Waste Thinner Tank (SWMU 5 – AOI 6-5). Purge paint was generated when paint supply lines were purged with a new paint. Purge paint was accumulated in drums and transferred to SWMU 3 (AOI 6-3). Solvent wipe, which consists of rags with solvents and oil, was generated during manufacturing operations when oil was removed from automobile parts. Solvent wipe was accumulated in drums and accumulated in SWMUs 1 and 2 (AOIs 6-1 and 6-2). Paint-related waste was generated during painting operations. Rags and spent paint cans were accumulated in drums and transferred to SWMU 3 (AOI 6-3). Each of these hazardous wastes were transported to a licensed disposal facility by Inland Waters Pollution Control (Inland Waters).

Waste petroleum naphtha was generated from degreasing activities. Safety-Kleen Corporation picked up and disposed of petroleum naphtha. Petroleum naphtha was not accumulated or managed at Plant 6.

Beginning in 1992, the following non-hazardous wastes were known to be generated at Plant 6: epoxy purge, grinding waste, wash water, phosphoric acid, paint vapors, paint and bonderite sludge, oven condensate, organic vapors, trim purge, coal ash, hydraulic oil, wash water filters, asbestos, and ELPO sludge.

Continuous filtering of ELPO solution for reuse generated waste ELPO filters that were accumulated in drums and then transferred to SWMU 3 (AOI 6-3). ELPO sludge was generated from cleaning of tanks containing ELPO solution. The sludge was accumulated with waste ELPO filters in drums and transferred to SWMU 3 (AOI 6-3). Waste filters and sludge were transported by Inland Waters for disposal at Michigan Disposal, Inc.

Epoxy purge was generated at the body shop. Epoxy was purged into drums at the Nonhazardous Waste Accumulation Areas (SWMU 15 – AOI 6-15) and transferred to the Nonhazardous Waste Consolidation Area (SWMU 10 – AOI 6-10). Grinding waste was generated from grinding automobiles after assembly. The waste was accumulated in drums in SWMU 15 (AOI 6-15) and transferred to SWMU 10 (AOI 6-

10). Each of these wastes were transported by Granger Container Company for disposal at Granger Landfill.

Wash water was generated from washing automobiles after assembly. Phosphoric acid was generated from automobile pickling operations. From the wastewater cistern, both the wash water and phosphoric acid were transferred through pipes to the wastewater treatment unit at Plant 2.

Bonderite sludge was generated from cleaning bonderite solution tanks. The sludge was accumulated in a Nonhazardous Waste Roll off Box (SWMU 9 – AOI 6-9). Trim purge was generated at the trim shop during automobile assembly. Trim was purged into drums in SWMU 15 (AOI 6-15) and transferred to SWMU 10 (AOI 6-10). Wash water filters were generated from filtering wash water from cleaning automobiles. Asbestos was generated during non-routine asbestos abatement activities. Asbestos was accumulated in SWMU 9 (AOI 6-9). These wastes were transported by Granger Container for disposal at Granger Landfill.

Paint vapors were generated from painting operations. The mixture of air and paint vapors was collected from the paint booth and transferred through ducts to the APCS Incinerator (SWMU 12 – AOI 6-12) for destruction.

Oven condensate was generated from liquids that condensed in ovens used to dry painted automobile bodies. The condensate was collected in drums in SWMU 15 (AOI 6-15) and transferred to SWMU 10 (AOI 6-10). Oven condensate was collected by Inland Waters for treatment.

Coal ash was generated during boiler operations. The coal ash was accumulated in SWMU 9 (AOI 6-9) and transported by Plant 6 vehicles for disposal at Granger Landfill.

Used hydraulic oil was generated from equipment maintenance. Used oil was accumulated in drums in the Oil Accumulation Areas (SWMU 14 – AOI 6-14) and transferred to SWMU 10 (AOI 6-10). The oil was transported to a licensed disposal/recycling facility by General Oil.

10.5.2 Plant 6 Current Waste Management Practices

Plant 6 ceased operations in 2005 and is currently being decommissioned and demolished. However, prior to the Plant closing, Plant 6 most recently generated several wastes, including: rags and debris/weld dust; used batteries; empty aerosol

cans; used paint pens; empty paint cans; waste paint and thinners; cafeteria grease; and adhesive/sealer and debris/weld dust. Each of the waste streams were accumulated in designated areas throughout the plant.

Wastes generated at Plant 6 during decommissioning and demolition are transported from the plant by contractors to private licensed disposal sites.

10.6 Plant 6 Geology

The interpretation of the Plant 6 geology is based on soil borings and monitoring wells installed to investigate AOI 6-18, as defined in the *Draft Investigation Report, GM Lansing Plant #6, AOI 1* (BBL, 2005c).

Based on the boring logs (Appendix J) for soil borings and monitoring wells completed during previous subsurface investigations, the overburden deposits of Plant 6 are characterized by the following stratigraphy (shallow to deep):

Unit 1 – This unit is composed of fill, from 4 to 6 inches below ground surface (bgs), directly beneath the pavement, to a depth varying from 6.5 to 10.5 ft bgs. The fill is composed primarily of fine to coarse sand and fine to medium gravel and some silt and clay, with some concrete and wood debris present. The sand is loose to medium dense. The clay is soft to very stiff. The soil is damp to saturated and yellow brown to brownish gray in color.

Unit 2 – This unit is organic rich clay located directly beneath Unit 1. It is observed from 2.5 ft bgs to a depth varying from 5 to 15 ft bgs, depending on location. The organic-rich clay is composed primarily of greenish gray to gray, moist to damp, soft clay with sand and plant fragments and a “peaty” odor. This deposit was likely water-laid sediment.

Unit 3 – This unit is composed of light gray to gray fine- to medium-grained loose sand and silty sand, and was also likely deposited as water-laid sediments. Intermittent coarse sand, fine gravel and clay can be found throughout. This unit is dry to saturated. This unit was observed in only two of the available boring logs (Appendix J) at depths of 14 to 21 ft bgs and approximately 10 to 15 ft bgs.

Unit 4 – This unit is observed from below Unit 3 to a depth of 30 to 39 ft bgs, depending on location. This unit is predominantly glacial clay till with fine to coarse sand and fine gravel, and is usually damp to moist and predominantly brownish gray in

color. The clay is weakly to moderately plastic and stiff to very stiff. Thin wet sand seams are often present throughout the unit.

Unit 5 – This unit is composed predominantly of fine to medium sands, sandy silts, and elastic silts with intermittent silty sands and clays, and is usually brownish gray to gray in color. This unit is the first continuously saturated unit. Monitoring wells were installed to straddle the top of this unit, which varies from approximately 8 to 13 ft in thickness and is encountered directly below Unit 4 to an approximate depth of 38 to 40 ft bgs, depending on location.

Unit 6 – This unit is composed of clay, lean clay with silt, and clayey silts with inter-bedded sand seams and lenses. The clays and silts are stiff, grayish brown, with varying amounts of fine to coarse sub-rounded to rounded sands and gravels. The clay content decreases locally so that the unit consists of more silt than clay in some areas. The components of Unit 6 are glacial clay tills and are encountered below Unit 5 to an approximate depth of 65 ft bgs, depending on location. A sand and gravel seam, composed of fine- to coarse-grained sand and gravels is inter-bedded within the unit. This sand and gravel seam varies in thickness from slightly more than 2 ft to as much as 7 ft and is encountered to a depth of approximately 50 to 56.5 ft bgs, depending on location. A thin silt and sand lens composed of fine- to medium-grained silty sand, approximately 2 ft in thickness, is also inter-bedded within Unit 6.

Unit 7 – This unit is composed of fine to coarse well-graded sand and gravel. Rare amounts of silt are present. It is present located directly below or within Unit 6 from a depth of 45 to 70 ft bgs, depending on location. The sand and gravel are dense. This unit is generally dry; however, at one location (because of some layering of finer-grained soils) thin saturated zones were noted while drilling.

A Plant 6 layout and geologic cross section locator map is provided as Figure 10. A general cross section was developed across Plant 6 in a north-south orientation and is presented on Figure 11. Boring logs (Appendix J) indicate that sandstone bedrock is encountered at depths ranging from 60.5 to 70 ft bgs (796 to 810 ft amsl). Based on bedrock surface elevations from these investigations and local groundwater supply wells, it appears that the bedrock surface slopes from east to west and slightly from north to south.

10.7 Plant 6 Hydrogeology

The interpretation of the Plant 6 hydrogeology is based on soil borings and monitoring wells installed to investigate AOI 6-18, as defined in the *Draft Investigation Report, GM Lansing Plant #6, AOI 1* (BBL, 2005c).

In the available boring logs (Appendix J), an intermittent saturated zone is encountered at the base of Unit 1 (fill) at a depth of approximately 15 to 21 ft bgs. This intermittent saturated zone appears to be isolated in some instances from the deeper overburden aquifer within Units 4 and 5 by an unsaturated zone located at the top of Unit 4 suggesting that it is perched.

Shelby tube samples were collected from Unit 4 to evaluate the vertical hydraulic conductivity and soil classifications of this unit. Results from the falling-head permeability tests on the Shelby tube samples indicate that the vertical permeability (or hydraulic conductivity) of Unit 4 ranges from 6.4×10^{-8} cm/sec in MW-02-03 to 2.6×10^{-8} cm/sec in the sampled boring locations. These data indicate limited potential for downward migration of groundwater from the uppermost isolated saturated zone to Unit 5.

The zone of saturation is encountered in Units 4 and 5; however, the water table surface is generally located in Unit 4. The unsaturated zone between the intermittent saturated zone and the overburden aquifer is composed of low-permeability soils at the top of Unit 4, as shown by vertical hydraulic conductivity measurements discussed previously. This unsaturated zone appears to provide a layer of protection for the overburden aquifer from contaminants that may be present in the shallow soils. Groundwater flow at Plant 6 within the overburden aquifer is to the southeast and the southwest, with a slight groundwater high in the center of AOI 1 that diverts groundwater flow to the northeast and southwest. A groundwater high is located off-site (at the northeast quarter of Plant 6), with groundwater flow coming onto Plant 6 and flowing southwest.

Based on borings and monitoring wells completed in the bedrock at Plant 6, the Grand River-Saginaw aquifer was encountered at Plant 6. The groundwater flow direction of the bedrock aquifer is north and very slightly northeast. There appears to be an unsaturated zone between the overburden aquifer and the bedrock that has likely been caused by pumping the bedrock aquifer for water supply purposes. This unsaturated zone and the fact that the groundwater flow of the overburden aquifer and bedrock

aquifers are not the same indicates that these two zones are not hydraulically connected.

10.8 Plant 6 Hydrology

The nearest surface-water body to Plant 6 is the Grand River, which is approximately 1 mile to the south and more than 1 mile to the north and southeast. The Plant 6 Storm Water Flow Map is included in Appendix F. The majority of the Plant 6 surface was paved (asphalt and/or concrete) parking lots and building structures at one time. A minimal area adjacent to parking lots and building structures consisted of maintained landscaping and remnant riparian vegetation. Surface runoff was collected and directed into the City of Lansing storm sewer system.

10.9 Plant 6 Ecology

Plant 6 is located within an industrial/manufacturing plant setting where the majority of the surface was paved (asphalt and/or concrete) parking lots and building structures. A minimal area adjacent to parking lots and building structures consisted of maintained landscaping and remnant native vegetation. Animals that may exist at Plant 6 include birds, small mammals, and scavengers, especially those types that can coexist with humans.

11. Plant 6 Areas of Interest Defined in the USEPA's PA/VSI Report

This section describes and summarizes the 15 AOIs identified at the Facility in the *Lansing Plant 6 USEPA PA/VSI Report (PRC, 1993)*, including location, historical operations, previous investigations and remedial actions, and current status. The AOIs are summarized in Table 3 and are shown on Figure 7. Table 3 also includes the previous investigations and remedial actions, the substances handled at each AOI, and the CCR's recommendations of further or no further actions. Decisions regarding the need for further action were made based on professional judgment, screening results, and other factors. Historical screening data is summarized in Appendix A and shown on data box Figures 27-43. Groundwater data for earth metals (aluminum, calcium, iron, magnesium, potassium, and sodium) is not believed to be related to the Facility and was not included in the historical data screening. Earth metal data is included in Appendix K.

11.1 AOI 6-1 SWMU 1 – Original Hazardous Waste Storage Area

This unit consisted of an outdoor concrete area approximately 40 ft by 100 ft. The concrete was covered with a layer of asphalt and was surrounded by a trench. The unit was not an enclosed unit. It began operation around 1980 and ceased in 1990. This AOI is estimated to be less than 5 ft deep.

11.1.1 Historical and Current Operations

Wastes managed at this unit included ELPO filters, ELPO sludge, purge thinner, paint, solvent wipes, and other paint-related wastes that were contained in drums and accumulated in the storage area. Fluids were not normally present in the trenches during operations at this AOI. The storage area operations ceased in 1990 and an Air Pollution Control System (APCS) Incinerator was constructed in its place.

11.1.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.1.3 Current Status

AOI 6-1 ceased operations in 1990. Based on the nature of the operations at this AOI which utilized a secondary containment area were fluids were not normally present in

the trench, and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.2 AOI 6-2 SWMU 2 – Former Hazardous Waste Storage Area

This unit consisted of a 90-ft by 40-ft concrete, epoxy-covered base inside a steel building. The floor of the building is sloped to a sump and no drains are located near the unit. The unit is surrounded by a 1.5-ft dike. The unit began operations in 1990 and ceased in 1992. This AOI is located at grade level.

11.2.1 Historical and Current Operations

Wastes managed at this unit included waste ELPO filters and ELPO sludge, purge thinner, purge paint, solvent wipe, and other paint-related wastes. Fluids were not normally present in the containment area during operations at this AOI. Operations at the unit ceased in 1992.

11.2.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found. PRC observed no visible evidence of a release at the time of the VSI (1994).

11.2.3 Current Status

AOI 6-2 ceased operations in 1992. Based on the nature of the operations at this AOI, the construction which included secondary containment, waste management practices employed, the visual inspection performed during the VSI, and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.3 AOI 6-3 SWMU 3 – Current Hazardous Waste Storage Area

This unit consists of a portion of Building 22. A 25 ft by 50 ft hazardous waste storage area, surrounded by a 1.5-ft dike, exist inside the building. Drums are stacked three-high on the concrete floor of the building. The unit began operations in October 1992 and ceased operations in 2007. This AOI is located at grade level.

11.3.1 Historical and Current Operations

Wastes managed at the unit included waste ELPO filters and ELPO sludge, purge thinner, purge paint, solvent wipe, and paint-related waste. A hydraulic lift and sump were also located inside the building. Operations at the unit ceased in 2007.

11.3.2 Previous Investigations and Remedial Actions

11.3.3 AOI 6-3 ceased operations in 2007 and was properly decommissioned. Current Status

AOI 6-3 ceased operations in 2007 and was properly decommissioned. Based on the nature of the operations at this AOI, and the construction and the waste management practices employed, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.4 AOI 6-5 SWMU 5 – Waste Thinner Tank and Waste Thinner Release

This unit consists of a 12,000-gallon AST and an abated paint thinner release. The tank is located indoors on a concrete floor and is surrounded by a 6-ft-high epoxy coated concrete dike. The unit began operations in 1991 and ceased in 2005. This AOI is located at grade level.

11.4.1 Historical and Current Operations

The unit was used to store purge thinner. Fluids were not normally present in the secondary containment during operations at this AOI. Operations at the unit ceased in 2005.

11.4.2 Previous Investigations and Remedial Actions

On July 5, 1996 waste paint thinner was released to the environment along the West wall of Building 21. The release was reported to the MDEQ on July 5, 1996. Waste paint thinner was removed with a granular absorbent. Contaminated soil was excavated in two phases and properly disposed of off-site. Verification soil samples showed that the release had been remediated to within acceptable MDEQ cleanup criteria. These activities were documented in *Initial Abatement/Assessment Report and the Additional Abatement/Assessment Report* (SME 1996). Other than the paint thinner release, no documentation of releases to the environment from these units has been found.

11.4.3 Current Status

AOI 6-5 ceased operations in 2005 and was properly decommissioned. Based on the nature of the operations at this AOI, the construction which included secondary containment, waste management practices employed and the absence of any documented releases other than the paint thinner release which was properly abated, it is unlikely that there was an additional release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.5 AOI 6-6 SWMU 6 – Hazardous Waste Satellite Accumulation Areas

This unit consisted of 55-gallon steel drums located throughout Plant 6. The drums were located indoors on a concrete floor. The unit began operations in 1991 and ceased in 2005. This AOI is located at grade level.

11.5.1 Historical and Current Operations

Wastes managed at this unit included purge thinner, purge paint, solvent wipe, paint-related wastes, waste ELPO filters, and ELPO sludge. Fluids were not normally present on the concrete floor during operations at this AOI. The wastes were then taken to the current Hazardous Waste Storage Area for less than 90-day storage. Operations at the unit ceased in 2005.

11.5.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.5.3 Current Status

AOI 6-6 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.6 AOI 6-7 SWMU 7 – Former Wastewater Treatment Unit

This unit consisted of three 100,000-gallon concrete holding tanks. The unit began operations in the early 1970s and ceased in 1985. This AOI is estimated to be less than 10 ft deep.

11.6.1 Historical and Current Operations

Wastes managed at this unit included nonhazardous wash water and phosphoric acid generated from automobile body assembly operations. About 1.2 million gallons per day of wastewater was pumped to the holding tanks and treated with chemicals. Operations ceased in 1985, and the unit was removed sometime between 1985 and 1993. Buildings 19 and 20 were constructed in the general area of the wastewater treatment plant.

11.6.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.6.3 Current Status

AOI 6-7 ceased operations in 1985. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.7 AOI 6-9 SWMU 9 – Nonhazardous Waste Roll Off Boxes

This unit consisted of 12-, 20-, and 40- cy roll off boxes. The roll-off boxes were located both indoors and outdoors throughout Plant 6. The unit began operations in 1921 and ceased in 2005. This AOI is located at grade level.

11.7.1 Historical and Current Operations

Wastes managed at this unit included the following nonhazardous wastes: paint and bonderite sludge, trim purge, coal ash, wash water filters, and asbestos. Fluids were not normally present on the asphalt or concrete pavement during operations at this

AOI. The wastes were taken directly off-site from this unit. Operations at the unit ceased in 2005.

11.7.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.7.3 Current Status

AOI 6-9 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.8 AOI 6-10 SWMU 10 – Nonhazardous Waste Consolidation Area

This unit consisted of a 40-ft by 80-ft roofed area on a concrete base. The unit began operations in 1921 and ceased in 2005. This AOI is located at grade level.

11.8.1 Historical and Current Operations

Wastes managed at the unit included the following nonhazardous wastes contained in drums: epoxy purge, grinding waste, oven condensate, trim purge, and used hydraulic oil. Fluids were not normally present on the concrete floor during operations at this AOI. The wastes were taken directly off-site from this unit. Operations at the unit ceased in 2005.

11.8.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.8.3 Current Status

AOI 6-10 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.9 AOI 6-11 SWMU 11 – Wastewater Cistern

This unit consists of an underground tank of approximately 100,000 gallons. The unit began operations in 1977 and ceased in 2005. This AOI is estimated to be less than 20 ft deep.

11.9.1 Historical and Current Operations

Wastes managed in this unit included wash water from rinsing automobile bodies and the overflow of phosphoric acid from phosphoric acid pickling tanks. Wastewater in the tank was discharged to the wastewater treatment unit at GMC's Plant 2. Operations at the unit ceased in 2005.

11.9.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.9.3 Current Status

AOI 6-11 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.10 AOI 6-12 SWMU 12 –APCS Incinerator

This unit was constructed of steel, has a capacity of 110,000 standard cubic ft per minute, and operates at 1,430 ºF. The unit began operations in 1991 and ceased in 2005. This AOI is located at grade level.

11.10.1 Historical and Current Operations

Wastes managed at this unit included paint vapors generated from painting operations. Vapors from the painting operations were incinerated. Fluids were not normally present on the pavement during operations at this AOI. Operations at the unit ceased in 2005.

11.10.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.10.3 Current Status

AOI 6-12 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.11 AOI 6-13 SWMU 13 – Propane Burner Stove

This unit consisted of a steel propane burner located on a concrete pad. The unit began operations in 1992 and ceased in 2005. This AOI is located at grade level.

11.11.1 Historical and Current Operations

The unit was used to eliminate organic vapors generated while filling the diesel and thinner tanks. Operations at the unit ceased in 2005. Wastes managed at this AOI include organic vapors. Fluids were not normally present on the concrete pad during operations at this AOI.

11.11.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.11.3 Current Status

AOI 6-13 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.12 AOI 6-14 SWMU 14 – Oil Accumulation Area

This unit consisted of 55-gallon steel drums located primarily in an area designated for indoor transport vehicles. Drip pans were also located throughout Plant 6 to capture used oil. The drip pans drained under gravity to 55-gallon drums, which were then accumulated at this unit. The unit began operations in 1921 and ceased in 2005. This AOI is located at grade level.

11.12.1 Historical and Current Operations

Waste hydraulic oil was accumulated in the 55-gallon drums that made up the unit. Fluids were not normally present on the pavement during operations at this AOI. The waste hydraulic oil was then transferred to the Nonhazardous Waste Consolidation Area (SWMU 15 – AOI 6-15). Operations at the unit ceased in 2005.

11.12.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.12.3 Current Status

AOI 6-14 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.13 AOI 6-15 SWMU 15 – Nonhazardous Waste Accumulation Area

This unit consisted of 55-gallon drums located indoors on a concrete floor throughout Plant 6. The unit began operations in 1921 and ceased operations in 2005. This AOI is located at grade level.

11.13.1 Historical and Current Operations

Wastes managed at the unit included the following nonhazardous wastes: epoxy purge, grinding waste, oven condensate, and trim purge. Fluids were not normally present on the concrete floor during operations at this AOI. Trim purge was then taken to the Nonhazardous Waste Roll off Boxes (SWMU 9 – AOI 6-9), while grinding waste,

oven condensate, and epoxy purge were taken to the Nonhazardous Waste Consolidation Area (SWMU 10 – 6-10). Operations at the unit ceased in 2005.

11.13.2 Previous Investigations and Remedial Actions

No investigation or remedial action has been conducted at this AOI. No documentation of releases to the environment from these units has been found.

11.13.3 Current Status

AOI 6-15 ceased operations in 2005. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions at this AOI are warranted.

11.14 AOI 6-16 AOC 1 – Tanks 5 and 6

This unit consisted of Tank 5 (a 4,000-gallon steel storage tank) and Tank 6 (a 15,000-gallon steel storage tank). The unit began operations in 1973 and ceased in 1991. This AOI is estimated to be less than 15 ft deep.

11.14.1 Historical and Current Operations

Tank 5 was used to store gasoline, while Tank 6 was used to store diesel fuel. The tanks began operations in 1973 and were removed in 1991.

11.14.2 Previous Investigations and Remedial Actions

Investigations were conducted at this AOI from 1991 to 1992. The USTs were removed in May of 1991 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Approximately 2,250 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Analytical screening results are included in Appendix A and shown Figures 28, 29, 42and 43.

In accordance with NREPA Part 213, an industrial Tier II closure report was submitted to the MDEQ storage tank division on December 14, 1995 by ESE (ESE, 1995). A

draft restrictive covenant was submitted to the MDEQ, but not finalized or filed with the Ingham County Registrar of Deeds. The draft restrictive covenant is included in Appendix H.

11.14.3 Current Status

AOI 6-16 ceased operations in 1991. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment has occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

11.15 AOI 6-17 AOC 2 – USTs 1 and 3

This unit consisted of UST 1 (a 7,500-gallon carbon steel storage tank) (SWMU 4) and UST 3 (a 12,000-gallon carbon steel storage tank) (SWMU 8). The unit began operations in 1973 and ceased in 1991. This AOI is estimated to be less than 15 ft deep.

11.15.1 Historical and Current Operations

USTs (Tanks 1 and 3) held virgin thinner and were made up of SWMU 4 and SWMU 8. The tanks were installed in 1973 and were removed in 1991.

11.15.2 Previous Investigations and Remedial Actions

Investigations were conducted at this AOI from 1989 to 1996. The USTs were removed in 1989 and a confirmed release was reported to the MDEQ in accordance with NREPA Part 213. Following the removal of the USTs, an investigation was conducted to define the horizontal and vertical extent of impact to soil and groundwater as required under NREPA Part 213. No free product was discovered at this AOI. Approximately 700 cy of soil were removed from the vicinity of this AOI and disposed at a licensed facility off-site. Available soil and groundwater analytical data for this AOI is shown on Figures 30, 31, 42 and 43.

In accordance with NREPA Part 213, an industrial Tier II closure report was submitted to the MDEQ storage tank division on November 1, 1996 by ESE (ESE, 1996). A draft restrictive covenant was submitted to the MDEQ, but not finalized or filed with the

Ingham County Registrar of Deeds. The draft restrictive covenant is included in Appendix H.

11.15.3 Current Status

AOI 6-17 ceased operations in 1991. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment has occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12. Plant 6 Newly Identified Areas of Interest

This section presents information on the 27 additional AOIs identified at the Facility from the review of historical drawings, interviews with Facility personnel, and Facility reconnaissance. Items noted during the review process that did not meet the definition of an AOI have been retained for future references if needed. A list of these miscellaneous items and a map showing their locations are provided in Appendix I, and visual inspections of miscellaneous items is included in Appendix G.

The Facility AOIs are summarized in Table 3 and are shown on Figure 7. Information on location, historical operations, previous investigations and remedial actions, and current status is included in the description of each AOI. For certain AOIs the only source of information is historical drawings. For these AOIs there is limited information on historical operations, and the available information is included in this section and in Table 3. Historical screening data is summarized in Appendix A and shown on data box Figures 27-43. Ground water data for earth metals (aluminum, calcium, iron, magnesium, potassium, and sodium) is not believed to be related to the Facility and was not included in the historical data screening. Earth metal data is included in Appendix K.

Appendix C describes the methodology of the Site Assessment performed by ARCADIS in November 2005. Figure C-1 shows the Site Assessment Soil Sampling Methodology followed during the November Site Assessment phase. The field results obtained at each AOI investigated during the Site Assessment are summarized in Table C-1, included in Appendix C. The November Site Assessment phase boring logs (Appendix J), laboratory analytical data sheets and laboratory validation reports are also included in Appendix C.

12.1 AOI 6-18 Lead in Soil Area

AOI 6-18 consists of an area west of Buildings 10, 11, 12 13, and 15 where lead has been detected in the soil at levels that reach above the hazardous limit. In previous ARCADIS reports this AOI was referred to as AOI 1.

12.1.1 Historical and Current Operations

The historical operations of the area are not known. It is unknown what wastes were managed at this AOI.

12.1.2 Previous Investigations and Remedial Actions

Investigations have been conducted by Wenck Associates, Inc. (Wenck) (July 1992 to April 1993); URS Consultants, Inc. (URS) (October 1993); Soils and Materials Engineers, Inc. (SME) (March 1996 to July 1997); and ARCADIS (November 2002 to 2005). Drilling and soil sampling were conducted in the early 1990s by Wenck and URS. Composite and discrete soil samples were analyzed for total lead, TCLP lead, and Extraction Procedure (EP) Toxicity lead.

Well installation and soil and groundwater sampling were conducted by SME in the late 1990s. Discrete soil samples were analyzed for total lead. Groundwater samples were analyzed for chloride, sulfate, magnesium, sodium, potassium, and dissolved lead.

ARCADIS installed and sampled three monitoring wells in November 2002. Groundwater from grab samples and the monitoring wells was sampled and analyzed for total lead. Additional low-flow sampling of these wells was performed in March 2003 with the addition of dissolved lead as a parameter and additional field parameter monitoring. Well installation and the first round of groundwater sampling took place in July and August 2003. The second round of groundwater sampling was conducted in September 2003. Upon completion of the above investigations, ARCADIS prepared an IRWP (BBL, 2004b) and submitted it to the MDEQ for review and comment. In a letter dated May 24, 2004, the MDEQ requested additional investigation activities, but recommended that GM submit an investigation report. Well installation and groundwater sampling were conducted by ARCADIS in September and October 2004 in accordance with the IRWP (BBL, 2004b). Three overburden and three bedrock monitoring wells were installed.

Results of these investigations are shown on Figures 33, 34, 35, 36, 39, 40, 42 and 43 and summarized in Appendix A. Based on discussions with GM personnel, it has been determined that a portion of the soil in this area was excavated as a result of plant construction activities. There have been no additional remedial actions completed at this AOI.

12.1.3 Current Status

AOI 6-18 ceased operations prior to 1992. Soil sampling in this area exhibited concentrations of constituents above screening levels. This indicates that a release of hazardous constituents to the environment may have occurred in this area. Further

action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.2 AOI 6-19 Process Wastewater Tunnel

AOI 6-19, which is located west of the Power Plant, runs underneath Buildings 28 and 21, exits Plant 6 to the west of the buildings and continues to the GM Lansing Plant 2. AOI 6-19 ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

12.2.1 Historical and Current Operations

AOI 6-19 managed process wastes from Plant 6. Wastes managed at this AOI include process wastewater. Operations at the AOI ceased in 2005.

12.2.2 Previous Investigations and Remedial Actions

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA10-3 and SA10-4 were installed in and around AOI 6-19. Samples collected at each location were field screened to assess potential environmental impacts from AOI 6-19. In addition, due to the operations of AOI 6-19, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Analytical screening results are included in Appendix A and shown Figures 33, 34, 42 and 43.

12.2.3 Current Status

AOI 6-19 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.3 AOI 6-21 Former Solder Repair Pit

AOI 6-21 consists of a former solder repair pit located in the southern portion of Building 17. The AOI is 1.5 ft deep based on a historical drawing.

12.3.1 Historical and Current Operations

Wastes managed at AOI 6-21 included metals from soldering operations. Fluids were not normally present in the pit during operations at this AOI. This AOI was associated with the solder repair area. It is unknown when AOI 6-21 began operations, but AOI 6-21 ceased operations prior to 2005.

12.3.2 Previous Investigations and Remedial Actions

In November 2005, ARCADIS completed a Site Assessment phase of investigation including soil screening and sampling. One boring (SA-26-3) was installed adjacent to the pit. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil borings were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis of VOCs or SVOCs. A sample from SA-26-3 was collected for TAL metals analysis and there were no exceedances of screening levels. Results of the initial investigation are summarized in Table C-1 included in Appendix C, shown on Figures 32, 42 and 43 and included in Appendix A. No remedial action has been conducted at this AOI.

12.3.3 Current Status

AOI 6-21 ceased operations in 2005. Soil samples collected from a soil boring that was strategically placed identified no evidence of a release. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Furthermore, analytical results from a soil sample obtained at this AOI identified no exceedances of screening levels. Therefore, no further actions are anticipated at this AOI.

12.4 AOI 6-30 New Weld Pit

AOI 6-30 consists of an 18 ft by 50 ft weld pit located in the eastern portion of Building 18. The AOI is 4 ft deep based on a historical drawing. The AOI ceased operations in 2005.

12.4.1 Historical and Current Operations

This AOI was a part of the conveyor operations in Building 16. Wastes managed at this AOI include metals. Operation at the AOI ceased in 2005.

12.4.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil boring SA29-2 was installed in AOI 6-30. Samples collected at were field screened to assess potential environmental impacts from AOI 6-30. In addition, due to the operations of AOI 6-30, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Analytical screening results are included in Appendix A and shown Figures 32, 42 and 43.

12.4.3 Current Status

AOI 6-30 ceased operations in 2005. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.5 AOI 6-31 New Drive Unit Pit

AOI 6-31 consists of a drive unit pit located in the eastern portion of Building 18. The AOI is 7 ft deep based on a historical drawing. The AOI ceased operations in 2005.

12.5.1 Historical and Current Operations

AOI 6-31 was a part of the conveyor operations in Building 16. Wastes managed at AOI 6-31 included grease and oil from this operation. Fluids were not normally present in the pit during operations at this AOI. It is unknown when AOI 6-31 began operations, but ceased operations in 2005.

12.5.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including field soil screening and sampling. One boring (SA-29-1) was installed in the vicinity of the pit. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil boring were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis. Results of the initial investigation are summarized in Table C-1 included in Appendix C and shown on Figures 32, 42 and 43. No remedial action has been completed at this AOI.

12.5.3 Current Status

AOI 6-31 ceased operations in 2005. Soil samples collected from a soil boring that was strategically placed identified no evidence of a release. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Therefore, no further actions are anticipated at this AOI.

12.6 AOI 6-32 Truck Leveler Process Storage Tanks

AOI 6-32 consists of truck leveler process storage tanks located in the southern portion of Building 21. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

12.6.1 Historical and Current Operations

The AOI was a part of the painting operation's truck dock. Wastes managed at AOI 6-32 included hydraulic oil from this operation. It is unknown when AOI 6-32 began operations, but ceased operations in 2005.

12.6.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including field soil screening and sampling. One boring (SA-5-4) was installed in the vicinity of the tanks. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil boring were field screened in

accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis. Results of the initial investigation are summarized in Table C-1 included in Appendix C and shown on Figures 30, 31, 42 and 43. No remedial action has been completed at this AOI.

12.6.3 Current Status

AOI 6-32 ceased operations in 2005. Soil samples collected from a soil boring strategically placed identified no evidence of a release to the environment. Therefore, no further actions are anticipated at this AOI.

12.7 AOI 6-33 Tank Farm

AOI 6-33 consists of a UST farm located outside and south of Building 23 that was 16-ft below grade surface and housed virgin purge thinner and diesel fuel. AOI 6-33 was installed in the same location as AOI 6-16. The AOI ceased operations in 2006 when the USTs where removed from the ground.

12.7.1 Historical and Current Operations

The USTs in this AOI held virgin purge thinner and diesel fuel. Operations at the AOI ceased in 2006.

12.7.2 Previous Investigations and Remedial Action

During the tank removal in May of 2006, confirmation samples were obtained and analyzed. Analytical results from samples taken showed that there was no release of concentrations of constituents of concern from the USTs. In accordance with NREPA Part 211, a clean closure letter report was sent to the MDEQ on June 29, 2006. A letter was received from the MDEQ on July 17, 2006 indicating that the MDEQ concurred with the clean closure.

12.7.3 Current Status

AOI 6-33 ceased operations and was removed from the ground in May 2006. Investigations indicated that there was no release from this AOI, and a clean closure letter report was sent to the MDEQ on June 29, 2006. A letter was received from the

MDEQ on July 17, 2006 indicating that the MDEQ concurred with the clean closure. Therefore, no further actions at this AOI are warranted.

12.8 AOI 6-40 Parts Washer Solvent Tank

AOI 6-40 consists of a parts washer solvent tank located along the north side of Building 23. The AOI ceased operations in 2005. This AOI is estimated to be less than 10 ft deep.

12.8.1 Historical and Current Operations

Wastes managed in this AOI included metal-containing solvents. The AOI was associated with repairing trucks that were formerly used to haul automobile bodies from the Facility to an assembly location (Plant 1). Fluids were not normally present on the concrete floor during operations at this AOI. It is unknown when AOI 6-40 began operations, but ceased operations in 2005.

12.8.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including soil screening and sampling. One boring (SA-1-5) was installed adjacent to the tank. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil borings were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis of VOCs or SVOCs. A sample from SA-1-5 was collected for TAL metals analysis and there were no exceedances of screening levels. Results of the initial investigation are summarized in Table C-1 included in Appendix C, shown on Figures 28, 29, 42 and 43, and included in Appendix A. No remedial action has been conducted at this AOI.

12.8.3 Current Status

AOI 6-40 ceased operations in 2005. Soil samples collected from a soil boring that was strategically placed identified no evidence of a release. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Furthermore, analytical results from a soil

sample obtained at this AOI identified no exceedances of screening levels. Therefore, no further actions are anticipated at this AOI.

12.9 AOI 6-41 Hoists

AOI 6-41 consists of five hoists located along the north side of Building 23. The AOI ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

12.9.1 Historical and Current Operations

Wastes managed in this AOI included hydraulic oil. The AOI was associated with repairing and loading trucks that were formerly used to haul automobile bodies from the Facility to an assembly location (Plant 1). It is unknown when AOI 6-41 began operations, but ceased operations in 2005.

12.9.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including field soil screening and sampling. One boring (SA-1-6) was installed in the vicinity of the hoists. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil boring were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis. Results of the initial investigation are summarized in Table C-1 included in Appendix C and shown on Figures 28, 29, 42 and 43. No remedial action has been completed at this AOI.

12.9.3 Current Status

AOI 6-41 ceased operations in 2005. Soil samples collected from a soil boring that was strategically placed identified no evidence of a release. Based on the nature of the operations at this AOI, the construction and waste management practices employed and the absence of any documented releases, it is unlikely that there was a release to the environment from this AOI. Furthermore, analytical results from a soil sample obtained at this AOI identified no exceedances of screening levels. Therefore, no further actions are anticipated at this AOI.

12.10 AOI 6-42 Stormceptor® Oil and Sediment Separator

AOI 6-42 consists of a Stormceptor® oil and sediment separator located in the southwest corner of Building 16. AOI 6-42 is currently operating. This AOI is estimated to be less than 15 ft deep.

12.10.1 Historical and Current Operations

Wastes managed in this AOI included storm water, oil and sediments. The Stormceptor® functioned as an oil and sediment separator for Facility storm water runoff. It is unknown when AOI 6-42 began operations, but ceased operations in 2005.

12.10.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including soil screening and sampling. One boring (SA-4-1) was installed adjacent to the tank. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil borings were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis of VOCs or SVOCs. A sample from SA-4-1 was collected for TAL metals analysis and there were no exceedances of screening levels. Results of the initial investigation are summarized in Table C-1 included in Appendix C, shown on Figures 30, 31, 42 and 43, and included in Appendix A. No remedial action has been conducted at this AOI.

12.10.3 Current Status

AOI 6-42 is currently operating. Soil samples collected from a soil boring that was strategically placed identified no evidence of a release. Furthermore, analytical results from a soil sample obtained at this AOI identified no exceedances of screening levels. Therefore, no further actions are anticipated at this AOI.

12.11 AOI 6-43 Stormceptor® Oil and Sediment Separator

AOI 6-43 consists of a Stormceptor® oil and sediment separator located west of Building 15. This AOI is estimated to be less than 30 ft deep.

12.11.1 Historical and Current Operations

The Stormceptor® functioned as an oil and sediment separator for storm water runoff. The Stormceptor® is an active AOI. Wastes managed at this AOI include storm water, oil and sediments.

12.11.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil boring SA 13-1 was installed in AOI 6-43 to a depth of 7 to 9 ft bgs. Samples collected were field screened to assess potential environmental impacts from AOI 6-43. In addition, due to the operations of AOI 6-43, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP screening levels for chromium. Analytical screening results are included in Appendix A and shown Figures 39, 40, 42 and 43. Due to the depth of the AOI (approximately 30 ft bgs) in relation to the depth of the sample (7 to 9 ft bgs), it is believed that the exceedances of GSIP screening levels for chromium are not related to this AOI. There have been no remedial actions at this AOI.

12.11.3 Current Status

AOI 6-43 is currently operating. The samples taken at this AOI are not related to this AOI due to their depth. Another Stormceptor® located at the Facility (AOI 6-42) was investigated and did not show evidence of the release to the environment. Therefore it is not likely that there was a release to the environment from this AOI. No further actions are anticipated at this AOI.

12.12 AOI 6-47 Leaking Industrial Wastewater Line

AOI 6-47 consists of a leaking industrial wastewater line located in the southwest corner of Building 16. This AOI is estimated to be less than 15 ft deep.

12.12.1 Historical and Current Operations

The AOI was a part of the former paint booth operations. Metals associated with the process wastewater had the potential to impact Plant 6. Fluids were normally present

during operations at this AOI. Wastes managed at this AOI include process wastewater.

12.12.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil boring SA 4-4 was installed in AOI 6-47. Samples collected were field screened to assess potential environmental impacts from AOI 6-47. In addition, due to the operations of AOI 6-47, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium. Analytical screening results are included in Appendix A and shown Figures 30, 31, 42 and 43. There have been no remedial actions at this AOI.

12.12.3 Current Status

AOI 6-47 ceased operations in 2005. Exceedances of the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.13 AOI 6-48 Former Coal Pile

AOI 6-48 consists of a former coal pile located in the vicinity of Building 28. This AOI is located at grade level.

12.13.1 Historical and Current Operations

The AOI was used as a coal pile. Operations at the AOI ceased sometime prior to construction of Building 28.

12.13.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 6-1 through SAS 6-12 were installed in and around AOI 6-48. Samples collected were field

screened to assess potential environmental impacts from AOI 6-48. In addition, due to the operations of AOI 6-48, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total, DWP for cobalt, and GSIP and DWP for manganese. Analytical screening results are included in Appendix A and shown Figures 33, 34, 35, 36, 42 and 43. There have been no remedial actions at this AOI.

12.13.3 Current Status

AOI 6-48 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.14 AOI 6-49 Second Lacquer Booth

AOI 6-49 consists of a lacquer booth located in the northern portion of Building 10. This AOI is estimated to be less than 5 ft deep.

12.14.1 Historical and Current Operations

The AOI was a part of the former paint shop. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste paint and paint thinner.

12.14.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 22-2 and SA 22-3 were installed in and around AOI 6-49. Samples collected were field screened to assess potential environmental impacts from AOI 6-49. In addition, due to the operations of AOI 6-49, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium. Analytical screening results are included in Appendix A and shown Figures 41, 42 and 43. There have been no remedial actions at this AOI.

12.14.3 Current Status

AOI 6-49 ceased operations prior to 2005. Exceedances of the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.15 AOI 6-59 Stormceptor® Oil and Sediment Separator

AOI 6-59 consists of a Stormceptor® oil and sediment separator located south of Building 23. The AOI ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

12.15.1 Historical and Current Operations

The Stormceptor® functioned as an oil and sediment separator for storm water runoff. The Stormceptor® is an active AOI. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include storm water, oil and sediment.

12.15.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 3-1 and SA 3-2 were installed in and around AOI 6-59. Samples collected were field screened to assess potential environmental impacts from AOI 6-59. In addition, due to the operations of AOI 6-59, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Analytical screening results are included in Appendix A and shown Figures 28, 29, 42 and 43. There have been no remedial actions at this AOI.

12.15.3 Current Status

AOI 6-59 is currently operating. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.16 AOI 6-60 Paint Mix Room

AOI 6-60 consists of a paint mix room located in the south portion of Building 21. The AOI ceased operations in 2005. This AOI is located at grade level.

12.16.1 Historical and Current Operations

The AOI was a part of the painting operations. Wastes managed at this AOI include waste paint and thinner. Operations at the AOI ceased in 2005

12.16.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 5-1 and SA 5-5 were installed in and around AOI 6-60. Samples collected were field screened to assess potential environmental impacts from AOI 6-60. In addition, due to the operations of AOI 6-60, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and showed elevated PID readings. Laboratory analysis showed exceedances of GSIP and DWP for VOCs and exceedances of GSIP for chromium total. Analytical screening results are included in Appendix A and shown Figures 30, 31, 42 and 43. There have been no remedial actions at this AOI.

12.16.3 Current Status

AOI 6-60 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.17 AOI 6-63 Sump

AOI 6-63 consists of a sump located in the eastern portion of Building 20. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

12.17.1 Historical and Current Operations

It is unknown what operations the AOI was associated with. Operations at the AOI ceased in 2005. Based on historical data, it is possible that the sump was part of the Former WWTP. The WWTP was removed between 1985 and 1993. Building 20 was constructed in the general area of the sump. Fluids were normally present during operations at this AOI. It is unknown what wastes were managed at this AOI.

12.17.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 32-1 was installed in AOI 6-63. Samples collected were field screened to assess potential environmental impacts from AOI 6-63. In addition, due to the operations of AOI 6-63, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Analytical screening results are included in Appendix A and shown Figures 32, 42 and 43. There have been no remedial actions at this AOI.

12.17.3 Current Status

AOI 6-63 ceased operations in 1993. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.18 AOI 6-66 Sump

AOI 6-66 consists of a sump located in the northern portion of Building 17. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

12.18.1 Historical and Current Operations

Wastes managed in this AOI are unknown, but likely included used oil and grease. The AOI was a part of the operations at Building 17. It is unknown when AOI 6-66 began operations, but ceased operations in 2005.

12.18.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including field soil screening and sampling. One boring (SA-28-1) was installed in the vicinity of the sump. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil boring were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1). The field screening showed no evidence of staining or elevated PID readings and, therefore, no samples were collected for laboratory analysis. Results of the initial investigation are summarized in Table C-1 included in Appendix C and shown on Figures 32, 42 and 43. No remedial action has been completed at this AOI.

12.18.3 Current Status

AOI 6-66 ceased operations in 2005. Soil samples collected from a soil boring strategically placed identified no evidence of a release. Therefore, no further actions are anticipated at this AOI.

12.19 AOI 6-68 Sump

AOI 6-68 consists of a sump located in the eastern portion of Building 18. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

12.19.1 Historical and Current Operations

The AOI was associated with the industrial waste treatment pit in Building 18. Wastes managed in the treatment pit included wash water from rinsing automobile bodies and the overflow of phosphoric acid from phosphoric acid pickling tanks. Wastewater in the system was discharged to the WWTP at GMC's Plant 2. Operations at the AOI ceased in 2005.

12.19.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a Site Assessment phase of investigation including field soil screening and sampling. One boring (SA-29-3) was installed in the vicinity of the sump. The soil boring was placed in the most likely location that a release would occur. Samples collected from the soil boring were field screened in accordance with the Site Assessment Soil Sampling Methodology (Figure D-1). The field screening showed no evidence of staining or elevated PID readings and,

therefore, no samples were collected for laboratory analysis. Results of the initial investigation are summarized in Table C-1 included in Appendix C and shown on Figures 32, 42 and 43. No remedial action has been completed at this AOI.

12.19.3 Current Status

AOI 6-68 ceased operations in 2005. Soil samples collected from a soil boring strategically placed identified no evidence of a release. Therefore, no further actions are anticipated at this AOI.

12.20 AOI 6-78 Former PCB Transformers

AOI 6-78 consisted of transformers formerly containing PCB located in the northeastern corner of the Power Plant Building.

12.20.1 Historical and Current Operations

The AOI was a group of PCB transformers within the Power Plant Building. Wastes managed at this AOI include PCB oil.

12.20.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 7-9 was installed in AOI 6-78. Samples collected were field screened to assess potential environmental impacts from AOI 6-78. In addition, due to the operations of AOI 6-78, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Analytical screening results are included in Appendix A and shown Figures 33, 34, 42 and 43. There have been no remedial actions at this AOI.

12.20.3 Current Status

AOI 6-78 ceased operations prior to 2005. Detected concentrations of chromium above the GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further

actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.21 AOI 6-81 Former Paint Shop Area

AOI 6-81 consists of a former paint shop area located in Building 14. This AOI is estimated to be less than 10 ft deep.

12.21.1 Historical and Current Operations

The AOI is a former paint shop where painting operations were conducted. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste paint and thinner.

12.21.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 11-1 through SA 11-18 were installed in AOI 6-81. Samples collected were field screened to assess potential environmental impacts from AOI 6-81. In addition, due to the operations of AOI 6-81, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and exceedances of GSIP and DWP for cobalt and manganese. Analytical screening results are included in Appendix A and shown Figures 41, 42 and 43. There have been no remedial actions at this AOI.

12.21.3 Current Status

AOI 6-81 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.22 AOI 6-82 Coal Chute Building

AOI 6-82 consists of an entire coal chute building located south of Building 28. The AOI ceased operations in 2005. This AOI is estimated to be less than 15 ft deep.

12.22.1 Historical and Current Operations

The AOI is a coal chute building. Operations at the AOI ceased in 2005. Wastes managed at this AOI include coal.

12.22.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 20-1 through SA 20-4 were installed in AOI 6-82. Samples collected were field screened to assess potential environmental impacts from AOI 6-82. In addition, due to the operations of AOI 6-82, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium and exceedances of DWP for cobalt. Analytical screening results are included in Appendix A and shown on Figures 33, 34, 42 and 43. There have been no remedial actions at this AOI.

12.22.3 Current Status

AOI 6-82 ceased operations prior to 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.23 AOI 6-83 Power Plant Building and Former WWTP

AOI 6-83 consisted of the entire Power Plant building including the former WWTP. This AOI is estimated to be less than 15 ft deep.

12.23.1 Historical and Current Operations

The former WWTP treated waste water generated from Plant 6 operations. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include waste water and sludge.

12.23.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 7-1 through SA 7-10 were installed in and around AOI 6-83. Samples collected were field screened to assess potential environmental impacts from AOI 6-83. In addition, due to the operations of AOI 6-83, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total and selenium, exceedances of GSIP and DWP for cobalt, and exceedances of DWP for manganese. Analytical screening results are included in Appendix A and shown Figures 33, 34, 42 and 43. There have been no remedial actions at this AOI.

12.23.3 Current Status

The wastewater treatment operation portion of AOI 6-83 ceased operations in 1987. The powerhouse portion in AOI 6-83 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.24 AOI 6-87 Oil Water Separator

AOI 6-87 consists of an oil/water separator associated with a truck dock. The AOI ceased operations in 2005. This AOI is estimated to be less than 5 ft deep.

12.24.1 Historical and Current Operations

This AOI was associated with storm water management in the truck dock. Operations at the AOI ceased in 2005. Fluids were normally present during operations at this AOI. Wastes managed at this AOI include used oil.

12.24.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment

Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 9-2 was installed in AOI 6-87. Samples collected were field screened to assess potential environmental impacts from AOI 6-87. In addition, due to the operations of AOI 6-87, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and show no evidence of a petroleum product release to the environment. Laboratory analysis showed exceedances of GSIP for chromium total. Analytical screening results are included in Appendix A and shown Figures 33, 34, 42 and 43. There have been no remedial actions at this AOI.

12.24.3 Current Status

AOI 6-87 ceased operations in 2005. Detected concentrations of chromium above the GSIP screening level indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.25 AOI 6-88 Parking Lot Exceedance

AOI 6-88 consists of parking lots. The AOI ceased operations in 2005.

12.25.1 Historical and Current Operations

The AOI managed potentially managed liquid automobile waste. Operations at the AOI ceased in 2005.

12.25.2 Previous Investigations and Remedial Action

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 34-6 was installed in AOI 6-88. Samples collected were field screened to assess potential environmental impacts from AOI 6-88. In addition, due to the operations of AOI 6-88, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and showed elevated PID readings. Laboratory analysis showed exceedances of chromium total and selenium and exceedances of GSIP and DWP for VOCs. Analytical screening results are included in Appendix A and shown Figures 39, 40, 42 and 43. There have been no remedial actions at this AOI.

12.25.3 Current Status

AOI 6-88 ceased operations in 2005. Exceedances of the DWP and GSIP screening levels indicate that a release of hazardous constituents to the environment may have occurred in this area. Further action at this AOI is anticipated. Further actions planned are described in Table 3 and will be defined in more detail in the RFI Work Plan.

12.26 AOI 6-90 ELPO AST Release

AOI 6-90 consists of ASTs located in the southwest corner of Building 16 and an abated ELPO release. The AOI ceased operations in 2005.

12.26.1 Historical and Current Operations

This AOI was associated with ELPO operations. Wastes managed at this AOI include ELPO related products. Operations at the AOI ceased in 2005.

12.26.2 Previous Investigations and Remedial Action

On March 18, 1995 ELPO was released to the environment along the south wall of Building 16. The release was reported to the MDEQ on March 18, 1995. Waste ELPO was removed from the release area and properly disposed of off-site. Verification soil samples showed that the release had been remediated to within acceptable MDEQ cleanup criteria. These activities were documented in a letter report dated October 10, 1995 (SME 1995). Other than the ELPO release, no documentation of releases to the environment from these units has been found.

In November 2005, ARCADIS completed a site assessment phase of investigation including field soil screening and sampling in accordance with the Site Assessment Soil Sampling Methodology (Figure C-1, Appendix C). Soil borings SA 4-3, SA 4-4 and SA 4-5 were installed in and around the ASTs of AOI 6-90. Samples collected were field screened to assess potential environmental impacts from AOI 6-90. In addition, due to the operations of AOI 6-90, soil samples were also analyzed for TAL Metals. Results of the field screening are summarized in Table C-1 (Appendix C) and showed elevated PID readings. Laboratory analysis showed exceedances of GSIP, DWP and the risk-based construction worker screening levels for VOCs and exceedances of GSIP for chromium total and selenium. Analytical screening results are included in Appendix A and shown Figures 30, 31, 42 and 43. It is believed that the exceedances

observed in the soil samples collected at this AOI are related to AOI 6-17 and not AOI 6-90.

12.26.3 Current Status

AOI 6-90 ceased operations in 2005. Based on the abatement of the release, no further actions at this AOI are anticipated.

12.27 AOI 6-91 Dock 9 Hydraulic Oil Release

AOI 6-91 consists of an abated hydraulic oil release. The AOI ceased operations in January 2000.

12.27.1 Historical and Current Operations

Wastes managed at this AOI include waste hydraulic oil.

12.27.2 Previous Investigations and Remedial Action

In January 1994, a waste hydraulic oil leak was detected during the removal of the Dock 9 levelers. The release was reported to the MDEQ on January 7, 1994. Waste hydraulic oil was removed from the release area via a free product removal system and properly disposed of off-site. Verification soil samples showed that the release had been remediated to within acceptable MDEQ industrial cleanup criteria. These activities were documented in a Closure Report (SME 1995). A restrictive covenant was submitted to the MDEQ and filed with the Ingham County Registrar of Deeds on September 8, 2000 (Appendix H), and a Notice of Approved Environmental Remediation was submitted to the MDEQ on December 30, 2000.

12.27.3 Current Status

AOI 6-91 ceased operations in January 2000. Based on the abatement of the release and industrial land use restrictive covenant, no further actions at this AOI are anticipated, with the exception of maintaining the restrictive covenant. The need to continue the restrictive covenant will be evaluated.

13. References

Blasland, Bouck, and Lee, Inc. (BBL). 2003. *Groundwater Sampling – GM Lansing Plant #3*. Prepared for GM, Lansing, Michigan (June 4, 2003).

BBL. 2004a. Interim *Response Work Plan, GM Lansing Plant #3.* Prepared for GM, Lansing, Michigan (April 2004).

BBL. 2004b. Interim *Response Work Plan, GM Lansing Plant #6, AOI I*. Prepared for GM, Lansing, Michigan (April 2004).

BBL. 2005a. Site *Assessment Work Plan*. Prepared for GM, Lansing Plant #6, Lansing MI (October 28, 2005).

BBL. 2005b. Figure 1: Site Location Map. In *Site Assessment Work Plan*. Prepared for GM, Lansing Plant #6, Lansing, MI (October 28, 2005).

BBL. 2005c. *Draft Investigation Report, GM Lansing Plant #6, AOI 1*, Prepared for General Motors, Lansing Plant #6 Facility, Brighton, Michigan (February 2005). **This reference is not cited in this volume.

BBL. 2005d. Site *Assessment Work Plan, LCA, GM, Plant #1, Lansing, Michigan* (May 19, 2005, revised October 28, 2005).

Cannon Township. 2006. *Cannon Township's Watershed Website*. Retrieved May 17, 2006 from: www.cannontwp.org/watershed/grand_river.html.

Department of Geology, Western Michigan University (WMU). 1981. *Hydrogeologic Atlas of Michigan*.

Dorr, J.A., Jr. and D.F. Eschman. 1970. *Geology of Michigan*, University of Michigan Press.

Environmental Data Resources, Inc. (EDR). 2005a. EDR *Radius Map with Geocheck®, Lansing Plant 3* (April 5, 2005).

EDR. 2005b. Sanborn® *Map Report, Lansing Plant 3* (April 5, 2005).

Environmental Science and Engineering, Inc. (ESE). 1995. *Preliminary Design, ESE No. 4694-197*. Prepared for General Motors, Lansing, Michigan (February 10, 1995).

ESE. 1996. *Leaking Underground Storage Tank Report*. Prepared for General Motors, Lansing, Michigan (September 30, 1996).

ESE. 1996. *Leaking Underground Storage Tank Report*. Prepared for General Motors, Lansing, Michigan (December 12, 1996).

McNab, W.H. 1996. *Ecological Subregions of the United States*, July 1994. United States Department of Agriculture, Forest Service. Retrieved April 21, 2006 from: www.fs.fed.us/land/pubs/ecoregions/ch17.html#222J.

Michigan Localities. 2005. See page 2-1.

Michigan Organization. 2005. See page 2-1.

PRC. 1993. *Preliminary Assessment/Visual Site Inspection, GM, LCA, Body Plant, Lansing, Michigan* (March 24, 1993).

PRC. 1994. *Preliminary Assessment/Visual Site Inspection, GM, Oldsmobile Division Plants 2 and 3, Lansing, Michigan* (March 25, 1994).

United States Environmental Protection Agency (USEPA), 2006. Documentation of Environmental Indicator Determination, Interim Final 2/5/99, Migration of Contaminated Groundwater Under Control, Ashland, Inc., 1800 Glenrose Avenue, Lansing, Michigan. Retrieved July 10, 2006 from: www.epa.gov/reg5rcra/wptdiv/cars/caindicators/mido47173653_750.pdf.

United States Geological Survey (USGS), Michigan Water Science Center. 2006. NWISWeb Data for Michigan, Surface-Water Data for Michigan. Retrieved May 17, 2006 from: http://mi.waterdata.usgs.gov/nwis/sw.

United States Geological Survey and National Parks Service (USGS/NPS). 2000. Geologic Provinces of the United States. Retrieved April 21, 2006 from: www2.nature.ups.gov/geology/usgenpa/province.

URS Consultants, Inc. (URS). 2001. See page 2-1.

Western Michigan University (WMU). 1981

World Climate, www.worldclimate.com. *Climate Information for the City of Lansing, Michigan*. January 5, 2005.

ARCADIS

Tables

TABLE 1
GM LANSING PLANT 2
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
2-1	SWMU 1 - Waste Water Treatment System	Treats wastewater containing ELPO, oil, suspended solids, and heavy metal wastes	South of Building 204	PA/VSI	N/A	0	Waste Water	Early 2007	N/A	16, 17	**No Further Action**	N/A
2-2	SWMU 2 - Hazardous Waste Container Storage Area	Stores waste paint materials (solvents, adhesives, rags, gloves, etc.) in drums located on a secondary containment pad.	Northeast of Building 242	PA/VSI	243.0001-A01	0	Waste Paint Materials	Currently Operating	RCRA Investigation from 1990 to 1992. MDNR Approved RCRA Closure in 1992.	17	**No Further Action**	N/A
2-3	SWMU 3 - Flammable Waste Storage Shed	Stores waste paint, waste thinner, and waste mastic liners. Building is self contained and includes and secondary containment floor. Building Transferred from AOI 2-5 to 2-66	North of Building 237 North of Building 242	PA/VSI	N/A	0	Waste Paint, Waste Paint Thinner and Waste Mastic Liners	Prior to 3/2006	N/A	17	**No Further Action**	N/A
2-4	SWMU 4 - Used Oil AST	Double-walled; west section is 15,000 gallons, east section is 5,000 gallons	East of Building 201B	PA/VSI	N/A	0	Used Oil	3/2006	N/A	16, 17	**No Further Action**	N/A
2-5	SWMU 5 - Used Oil UST	Double-walled, fiberglass; stored used oil as well as waste antifreeze. Installed in the vicinity of AOI 2-16 used oil UST location.	Southeast of Building 250	PA/VSI	N/A	<10	Used Oil	5/2007	UST Investigation Conducted in May 2007. Investigation indicated clean closure with no evidence of a release.	14, 15, 17	**No Further Action**	N/A
2-6	SWMU 6 - Former Oily Waste Treatment System	Three 10,000-gallon concrete tanks, two treatment tanks, two gravity separators, chemical storage tanks	North of Building 238	PA/VSI	244.9001-A01	<15	Oily Waste	1990	N/A	17	**No Further Action**	N/A
2-7	SWMU 7 - Building 242 Former Drum Storage Area	Likely stored paint waste, spent solvents, and used oil. Stored PCB waste.	Inside the North End of Building 242	PA/VSI	N/A	0	Waste Paints, Waste Solvents, Used Oil, PCBs Waste	1986	N/A	17	**No Further Action**	N/A
2-8	SWMU 8 - Former Outdoor Storage Area	Likely stored waste paint, spent solvent, and used oils on a concrete pad.	Northwest of Building 241	PA/VSI	N/A	0	Waste Paints, Waste Solvents, Used Oil	1982	N/A	17	**No Further Action**	N/A
2-9	SWMU 9 - Former Paint Sludge Storage Area	Two 20-cubic yard roll-off boxes; stored paint booth sludge on a concrete pad.	South of Building 241	PA/VSI	N/A	0	Paint Sludge	1990	N/A	17	**No Further Action**	N/A
2-10	SWMU 10 - Former and Current Waste Thinner Storage Area	Two stainless steel, 500-gallon totes; stored waste paint thinner	Southwest Portion of Building 206	PA/VSI	N/A	0	Waste Paint Thinner	3/2006	N/A	17	**No Further Action**	N/A
2-11	SWMU 11 - Former Gondola Storage Area	Two paved outdoor areas; stored 1-to 3-cubic yard steel gondolas	Northwest of Building 206C	PA/VSI	N/A	0	Oil Filters, Air Filters, Oil and Grease	1990	N/A	17	**No Further Action**	N/A
2-12	SWMU 12 - Former Empty Container Storage Area	Empty 55-gallon drums generated from facility operations	Southwest of Building 241	PA/VSI	N/A	0	Empty 55 Gallon Drums	1990	N/A	17	**No Further Action**	N/A
2-14	SWMU 14 - Former Scrap Metal Storage Areas	Stored non-hazardous scrap metal (machining chips, turnings, trimmings, and scrap parts)	West of Building 241 and East of Building 206	PA/VSI	N/A	0	Scrap Metal	1990	Contaminated soil removed at the time of closure. Verification sampling report not available.	17	Further Action Required	- Install 2 soil borings to groundwater or bedrock
2-15	AOC 1 - Building 225 UST Farm	Eight former 30,000-gallon tanks. Removed 1989. Closure report submitted 10/1/96.	South of Building 225	PA/VSI	N/A	<15	Used Oil, Quench Oil, Cutting Oil and Lube Oil	1989	UST investigations and remedial actions from 1989 to 1996. USTs removed in 1989. 513 cubic yards of impacted soil removed. Closure report submitted to the MDEQ on September 30, 1996. Restrictive covenant filed with the registrar of deeds in 2003.	16, 17	Further Action Required	- The need to maintain the existing Restrictive Covenant will be deterimined by GM

TABLE 1
GM LANSING PLANT 2
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
2-16	AOC 3 - Building 250 UST Farm	Two 20,000 gallon tanks that stored gasoline and diesel located East of Building 250. One 1,500 gallon tank that stored used oil located Southeast of Building 250. One 12,000 gallon tank that stored heating oil located West of Building 250. Removed in 1990 and 1991. Closure report submitted 10/1/96.	East of Building 250	PA/VSI	38	<15	Gasoline, Diesel, and Used Oil	1991	UST investigations and remedial actions from 1989 to 1996. USTs removed in 1990 and 1991. 980 cubic yards of impacted soil removed. Closure report submitted to the MDEQ on September 30, 1996. Restrictive covenant filed with the registrar of deeds in 2003.	14, 15, 17	Further Action Required	- The need to maintain the existing Restrictive Covenant will be deterimined by GM
2-23	Acid House and Two Storage Tanks of Unknown Operations	Two storage tanks with unknown contents were located immediately south of acid house.	West of Building 206, North of Basketball Court	Drawing Review	237.0002-AO1, 23	<15	Unknown (Likely Acids)	Prior to 3/2006	N/A	17	Further Action Required	- Complete 2 soil borings to groundwater or bedrock
2-52	Pickling Room	Concrete wall and acid-resistant floor	Building 203 A3	Drawing Review	203.2004-AO1 and 206.	0	Unknown (Likely Acids)	Prior to 3/2006	N/A	17	Further Action Required	- Complete 2 soil borings to groundwater or bedrock

Notes:
(A) = Drawings referenced herein are available in GM's archives.

Acronyms
MDNR = Michigan Department of Natural
MDEQ = Michigan Department of Environmental
NA = Not Available
PA/VSI = Preliminary Assessment/Visual Site
PCBs = Polychlorinated Biphenyl

TABLE 2
GM LANSING PLANT 3
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
3-1	SWMU 15 - East Side Hazardous Waste Container Storage Area	Stored paint wastes (solvents, rags, etc.); Achieved RCRA Closure in 1992; Now used as a less than 90 day hazardous waste storage area	East of Building 301	PA/VSI	N/A	0	Paint Wastes	> 90 Day - 1990 < 90 Day - Currently Operating	RCRA Investigation from 1990 to 1992. MDNR Approved RCRA Closure in 1992.	20, 25, 26	**No Further Action**	N/A
3-2	SWMU 16 - Oily Waste Treatment System	Treated oily wastewater; 2 concrete used oil holding tanks, 2 concrete oily sludge tanks	Northeast Portion of Building 301A	PA/VSI	301A.701-A4; 301-1-0-D	<20	Oil Waste	11/2006	N/A	21, 22, 25, 26	Further Action Required	Conduct visual inspection after decommissioning
3-3	SWMU 17 - Scrap Metal Pits and Bins	Scrap Yard Dock Area, 24 Scrap Pits (10' by 10' by 13'), 4000 Gallon Soluble Oil Sump Pit, 2000 Gallon Cutting Oil Sump Pit	Outside of Building 301, West of RR Tracks and East of Building 301, A8-11	PA/VSI	301.154-A2, 301.060-A1, 301.0195-A1, 301.4116-A1, 301.4110-A1A, 301.7108-A1; 301-1-0-D	10	Scrap Metal and oils	Prior to 2000	Contaminated soil removed at the time of closure. Verification sampling report not available.	20, 25, 26	Further Action Required	- Complete 2 soil borings to the water table or bedrock
3-4	SWMU 18 - Machining Residue Storage Area	20 Cubic Yard Roll-off Box located .	East of scrap metal conveyor	PA/VSI	N/A	0	Machining Residue	Prior to 11/2006	N/A	21, 22, 25, 26	**No Further Action**	N/A
3-5	SWMU 19 - Clarifier	Circular concrete below-grade clarifier	South of Willow Road	PA/VSI	GS-001-A88	<15	Storm Water, Oil and Sediments	Currently Operating	N/A	19, 25, 26	**No Further Action**	N/A
3-6	SWMU 20 - Former Electroplating Waste Treatment System	Treated electroplating wastes (copper, nickel, and chromium). Included an Acid Wash Tank, Sludge Storage Tank, Waste Acid Storage Tank,	Building 301A Whole Building	PA/VSI	301-1-0-D	<10	Electroplating Waste	1989	N/A	21, 22, 25, 26	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing and proposed monitoring wells as described below to address the DWP exceedances
			Buildings 301A and 301D Whole Building	Drawing Review	301A.020-A701, 301A.020-A702, 301A.008-A1, 301A.705-A1, 301A.404-A2, A3, A8							
3-7	SWMU 21 - Former Electroplating Waste Treatment Filter Cake Storage Area	Managed electroplating waste treatment sludge generated from Former Electroplating Waste Treatment System in 20-cubic yard roll-off boxes.	East of Building 301A	PA/VSI	301-1-0-D	0	Electroplating Waste	1990	RCRA Investigation from 1990 to 1992. MDNR Approved RCRA Closure in 1992.	21, 22, 25, 26	**No Further Action**	N/A
3-8	SWMU 22 - Building 301A Container Storage Area	Concrete pad with elevated steel rollers that supported 2.4-cubic yard gondolas; Stored wastes generated from electroplating operations	Second Floor of Northeast Portion of Building 301A	PA/VSI	301-1-0-D	0	Gondolas of Electroplating Wastes	1990	RCRA Investigation from 1990 to 1992. MDNR Approved RCRA Closure in 1992.	21, 22, 25, 26	**No Further Action**	N/A
3-9	AOC 2 - Building 301 UST Farm	6 USTs, stored polymer, sulfuric acid, soluble oil, gasoline, hydraulic oil, and APCO cleaner; Were removed in 1989.	East of Building 301	PA/VSI	N/A	<15	Polymer, Sulfuric Acid, Soluble Oil, Gasoline, Hydraulic Oil, APCO Cleaner	1989	UST investigations and remedial actions from 1989 to 1996. USTs removed in 1989. 1,200 cubic yards of impacted soil removed. Closure report submitted to the MDEQ in September 1996. Restrictive covenant filed with the registrar of deeds in 2003.	21, 22, 25, 26	Further Action Required	- The need to maintain the existing Restrictive Covenant will be deterimined by GM

TABLE 2
GM LANSING PLANT 3
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
3-10	AOC 4 - Former Electroplating Area	Electroplating operations	North-Central Portion of Building 301	PA/VSI	GS-008-A1; 301-1-0-D	<15	Electroplating Materials	Prior to 1988	Numerous investigations and remedial actions were conducted at this AOI from 1988 to 2005. These investigations involved collecting soil and groundwater samples, as well as, the installation of a French drain groundwater collection system.	23, 24, 25, 26	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing and proposed monitoring wells as described below to address the DWP exceedances
		New and Reworked Storage Tanks, Chromic Acid Reclaim, 7' diameter by 9' tall	Building 301 B7	Drawing Review	301.0173-A1							
		17 Acid Copper Plating Tanks	Building 301 B11-13	Drawing Review	301.0172-A1							
			Building 301 B6-8	Drawing Review	301.0139-A13							
		Sludge Sump Under Nickel Storage Tank, 1350 Gallons	Building 301 C4	Drawing Review	301.480-A1							
		3 Washwater Tanks (1900 gal each) in Plating Area	Building 301	Drawing Review	301.0131-A1							
		Nickel Plating Tanks 1, 2, 3, 4, 6, 7, 8, and 9	Building 301 B-C/2-4	Drawing Review	301.0161-A2, 301.4134-A1-3							
		Copper Buffing Wash and Rinse Tanks	Building 301 F4-6	Drawing Review	301.0121-A1A							
		Bumper Plating Sumps	Building 301 C11-13	Drawing Review	301.109-A1							
		Dur'ni Nickel Operations Area, Tanks, Sumps and Drain Deck	Building 301 B-C/4-5	Drawing Review	301.4105-A2							
3-11	SWMU 14 - Former Scrap Metal Storage Areas	Stored scrap metal	West of Building 304 and East of Building 302	PA/VSI	N/A	<5	Scrap Metal	Prior to 2006	N/A	25, 26	**No Further Action**	N/A

Notes:
[(A)] = Drawings referenced herein are available in GM's archives.

Acronyms
MDNR = Michigan Department of Natural Resources
MDEQ = Michigan Department of Environmental Quality
NA = Not Available
PA/VSI = Preliminary Assessment/Visual Site Inspection
PCBs = Polychlorinated Biphenyl

TABLE 3
GM LANSING PLANT 6
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
6-1	SWMU 1 - Original Hazardous Waste Storage Area	40'x100' concrete area surrounded by trench; stored ELPO and paint-related wastes; Removed and replaced by Air Pollution Control System (ACSP) Incinerator	North of Building 22	PA/VSI	N/A	5	ELPO and Paint Related Wastes	1990	N/A	33, 34, 37, 38, 42, 43	**No Further Actions**	N/A
6-2	SWMU 2 -- Former Hazardous Waste Storage Area	90'x40' concrete, epoxy-covered base inside steel building; surrounded by 1.5' high dike; stored ELPO and paint-related wastes.	Northwest of Building 22	PA/VSI	N/A	0	ELPO and Paint Related Wastes	1992	N/A	33, 34, 35, 36, 42, 43	**No Further Actions**	N/A
6-3	SWMU 3--Current Hazardous Waste Storage Area	25' x 50' storage area surrounded by 1.5' dike; managed ELPO and paint wastes; hydraulic lift & sump also located in building	Building 22 South Side of Building	PA/VSI	N/A	0	ELPO and Paint Related Wastes, Used Hydraulic Oil	2007	RCRA Closure in 2007	35, 36, 42, 43	**No Further Actions**	N/A
6-5	SWMU 5--Waste Thinner Tank and Waste Thinner Release	12,000-gallon AST, stored waste thinner; surrounded by 6-feet high concrete dike.	Building 21 KKK102 and KKK103	PA/VSI	93034 sheet 1	0	Waste Thinner	2005	Investigations were conducted at this AOI from July 1996 to August 1996. These investigations involved collecting soil samples.	30, 31, 42, 43	**No Further Actions**	N/A
6-6	SWMU 6 -- Hazardous Waste Satellite Accumulation Areas	55-gallon drums; stored ELPO and paint-related wastes	Throughout Facility	PA/VSI	N/A	0	ELPO and Paint Related Wastes	2005	N/A	42, 43	**No Further Actions**	N/A
6-7	SWMU 7 -- Former Wastewater Treatment Unit	Three 100,000-gallon concrete holding tanks and sludge tanks; treated non-hazardous wash water and phosphoric acid generated from automobile body assembly operations	Building 20	PA/VSI	N/A	10	Non-Hazardous Wash Water and Phosphoric Acids	1985	N/A	32, 42, 43	**No Further Actions**	N/A
6-9	SWMU 9 - Non-Hazardous Waste Roll-Off Boxes	12-, 20-, and 40-cubic yard roll-off boxes; stored non-hazardous wastes: such as paint and bonderite sludge, trim purge, coal ash, wash water filters, and asbestos	South of Building26 and North of Building 23	PA/VSI	N/A	0	Paint and Bonderite Sludge, Trim Purge, Coal Ash, Wash Water Filters, and Asbestos	2005	N/A	30, 31, 35, 36, 42, 43	**No Further Actions**	N/A
6-10	SWMU 10 - Non-Hazardous Waste Consolidation Area	40'x80' roofed area on a concrete base; managed epoxy purge, grinding waste, oven condensate, trim purge, and used hydraulic oil	South of Building 22	PA/VSI	N/A	0	Epoxy Purge, Grinding Waste, Oven Condensate, Trim Purge and Used Hydraulic Oil	2005	N/A	33, 34, 42, 43	**No Further Actions**	N/A
6-11	SWMU 11 -- Wastewater Cistern (Industrial waste treatment pit)	300,000 gallons; managed wash water from rinsing automobile bodies and the overflow of phosphoric acid from phosphoric acid pickling tanks	Building 18 PP-QQ/11-12	PA/VSI	Job 5434 sheet 2	<20	Automobile Body Wash Water and Phosphoric Acid	2005	N/A	32, 42, 43	**No Further Actions**	N/A
6-12	SWMU 12 - Air Pollution Control System (APCS) Incinerator	Steel; has a capacity of 110,000 standard cubic feet per minute; operates at 1,430 °F; Incinerated vapors from painting operations	North of Building 22	PA/VSI	N/A	0	Propane and Vapors	2005	N/A	33, 34, 37, 38, 42, 43	**No Further Actions**	N/A
6-13	SWMU 13 - Propane Burner Stove	Steel, located on concrete pad; used to eliminate organic vapors generated during the filling of diesel, gasoline, and thinner tanks	South of Building 23	PA/VSI	N/A	0	Propane and Vapors	2005	Investigation and remedial actions were conducted in concurrence with AOI 6-16.	28, 29, 42, 43	**No Further Actions**	N/A
6-14	SWMU 14 - Oil Accumulation Area	55-gallon steel drums; stored waste hydraulic oil	Building 8	PA/VSI	N/A	0	Used Hydraulic Oil	2005	N/A	41, 42, 43	**No Further Actions**	N/A
6-15	SWMU 15 - Non-Hazardous Waste Accumulation Area	55-gallon drums; stored epoxy purge, grinding waste, oven condensate, and trim purge.	Throughout Facility	PA/VSI	N/A	0	Epoxy Purge, Grinding Waste, Oven Condensate, and Trim Purge	2005	N/A	42, 43	**No Further Actions**	N/A
6-16	AOC 1 - Tanks 5 and 6	Tank 5: 4,000-gallon steel gasoline storage tank; Tank 6: 15,000-gallon steel diesel fuel storage tank	South of Building 23	PA/VSI	N/A	<15	Diesel and Gasoline, Metals	1991	UST investigations and remedial actions from 1991 to 1995. USTs removed in May of 1991. 2,250 cubic yards of impacted soil removed. Closure report submitted to the MDEQ on December 14, 1995. A draft restrictive covenant was submitted to the MDEQ, but not filed with the Ingham County Registrar of Deeds.	28, 29, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells to address the DWP exceedances

TABLE 3
GM LANSING PLANT 6
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
6-17	AOC 2 - Tanks 1 (SWMU 4) and 3 (SWMU 8)	Tank 1 (SWMU 4): 7,500-gallon carbon steel virgin thinner storage tank; Tank 3 (SWMU 8): 12,000-gallon carbon steel virgin thinner storage tank	Southwest of Building 16	PA/VSI	N/A	<15	Virgin Thinner	1991	UST investigations and remedial actions from 1989 to 1996. USTs removed in 1989. 700 cubic yards of impacted soil removed. Closure report submitted to the MDEQ on November 1, 1996. A draft restrictive covenant was submitted to the MDEQ, but not filed with the Ingham County Registrar of Deeds.	30, 31, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells to address the DWP exceedances. One monitoring well will be installed south of boring SA-4-3 in the overburden saturated unit, if present, to evaluate the potential for off-site migration of COCs in excess of Part 201 criteria. - Complete a boring south of VEW-8 to delineate the horizontal extent of VOC exceedances. Collect a samples from the 10-12 foot depth interval and directly above the water table or bedrock, whichever is encountered first.
6-18	Lead in Soil Area	Lead smelter	West of Buildings 10, 11, 12, 13 and15	Site Walkthrough	N/A	<35	Metals	Prior to 1992	Numerous investigations were conducted at this AOI from 1992 to 2005 including Site Assessment 2005. These investigations involved collecting soil and groundwater samples.	33, 34, 35, 36, 39, 420, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells to address the DWP exceedances
6-19	Process Wastewater Tunnel	Runs underneath Building 28 and 21; exits Site to the west and continues to GM Lansing Plant 2	West of the Power Plant	Drawing Review	Job 1359 sheet 103	<15	Process Wastewater	2005	Site Assessment 2005	33, 34, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-21	Former Solder Repair Pit	1.5' deep	Building 17 FF9	Drawing Review	5894 sheet 3	1.5	Metals	Prior to 2005	Site Assessment 2005	32, 42, 43	**No Further Actions**	N/A
6-30	New Weld Pit	18'x50'x4'	Building 18 QQ8-10	Drawing Review	5894 sheet 3	4	Metals	2005	Site Assessment 2005	32, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-31	New Drive Unit Pit	7' deep	Building 18 RR10	Drawing Review	5894 sheet 3	7	Grease and Oil	2005	Site Assessment 2005	32, 42, 43	**No Further Actions**	N/A
6-32	Truck Leveler Process Storage Tanks	N/A	Building 16 EEE-FFF/107-108	Site Walkthrough	N/A	<5	Used Hydraulic Oil	2005	Site Assessment 2005	30, 31, 42, 43	**No Further Actions**	N/A
6-33	Tank Farm	16' bgs; stores purge thinner/diesel fuel; Double walled tank with leak detection system; Installed in the same location as AOI 6-16	South of Building 23	Drawing Review	Unknown	16	Purge Thinner and Diesel Fuel	2005	Investigation and remedial actions were conducted in concurrence with AOI 6-16.	28, 29, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells to address the DWP exceedances
6-40	Parts Washer Solvent Tank	Stored metal-containing solvents	Building 23 G14	Drawing Review	3736 sheet 18	<10	Solvent	2005	Site Assessment 2005	28, 29, 42, 43	**No Further Actions**	N/A
6-41	5 Hoists	N/A	Building 23 G-J/14-19	Drawing Review	3736 sheet 29	<10	Hydraulic Oil	2005	Site Assessment 2005	28, 29, 42, 43	**No Further Actions**	N/A
6-42	Stormceptor	Includes stormceptor oil and sediment separator	North of Building 16	Drawing Review	MH-U	<15	Storm Water, Oil and Sediments	Currently Operating	Site Assessment 2005	30, 31, 42, 43	**No Further Actions**	N/A
6-43	Stormceptor	Includes stormceptor oil and sediment separator	West of Building 15	Drawing Review	Overall - 1U	<15	Storm Water, Oil and Sediments	Currently Operating	Site Assessment 2005	39, 40, 42, 43	**No Further Actions**	N/A

TABLE 3
GM LANSING PLANT 6
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
6-47	Leaking Industrial Wastewater Line	N/A	Building 16 ZZ115	Site Walkthrough	N/A	<15	Process Wastewater	2005	Site Assessment 2005	30, 31, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-48	Former Coal Pile	Was replaced by Bldg. 28	Building 28 Whole Building	Site Walkthrough	N/A	0	Coal	Prior to 2005	Site Assessment 2005	33, 34, 35, 36, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Reoccupy soil borings SA6-7 and SA6-12 to evaluate the DWP exceedances. Collect a soil sample from the interval above the water table or bedrock, whichever is encountered first.
6-49	2nd Lacquer Booth	Associated with former paint shop	Building 10 Q-R/34-36	Drawing Review	9410-B 101	<5	Paint and Thinner	Prior to 2005	Site Assessment 2005	41, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-59	Stormceptor	Includes stormceptor oil and sediment separator	South of Building 23	Drawing Review	Unknown	<15	Storm Water	Currently Operating	Site Assessment 2005	28, 29, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-60	Paint Mix Room	N/A	Building 21 EEE-KKK/8-103	Drawing Review	Unknown	0	Paint and Thinner	2005	Site Assessment 2005	30, 31, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Collect groundwater samples from existing monitoring wells to address the DWP exceedances - Complete borings to the north, east and west of SA-5-5 to horizontally delineate the DWP exceedances - Reoccupy soil boring SA5-5 to evaluate the DWP exceedances. Collect a soil sample from the interval above the water table or bedrock, whichever is encountered first.
6-63	Sump	N/A	Building 20 NN21	Drawing Review	Unknown	<5	Unknown	1993	Site Assessment 2005	32, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-66	Sump	N/A	Building 17 KK18	Drawing Review	Unknown	<5	Unknown	2005	Site Assessment 2005	32, 42, 43	**No Further Actions**	N/A
6-68	Sump	Associated with industrial waste treatment pit in Bldg. 18	Building 18 PP12	Drawing Review	Unknown	<5	Process Waste	2005	Site Assessment 2005	32, 42, 43	**No Further Actions**	N/A
6-78	Former PCB Transformers	N/A	East of the Power Plant	Site Walkthrough	N/A	0	PCBs Oil	Prior to 2005	Site Assessment 2005	33, 34, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances

TABLE 3
GM LANSING PLANT 6
AREAS OF INTEREST (AOI)

CURRENT CONDITIONS REPORT
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

AOI #	Title	Description/Components	Location Building # Column/Bay	AOI Source	Reference Drawing ID [(A)]	AOI Depth Below Grade (Feet)	Materials Handled	Approximate Date AOI Ceased Operations	Previous Investigations and Remedial Actions	Databox Figure #	CCR Conclusion	General Description of Further Action
6-81	Former Paint Shop Area	N/A	Buildings 11, 12, 13, 14 and 14X A-M/37-66	Drawing Review	Unknown	<10	Paint and Thinner	Prior to 2005	Site Assessment 2005	41, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Reoccupy soil borings SA11-1, SA11-5 and SA11-11 to evaluate the DWP exceedances. Collect a soil sample from the interval above the water table or bedrock, whichever is encountered first.
6-82	Former Coal Chute Building	Basement filled with water at the time of the site walkthrough	South of Building 28	Site Walkthrough	N/A	<15	Coal	Prior to 2005	Site Assessment 2005	33, 34, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Reoccupy soil borings SA20-1 to evaluate the DWP exceedances. Collect a soil sample from the interval above water table or bedrock, whichever is encountered first.
6-83	Power Plant Building and Former WWTP	N/A	Power Plant Whole Building	Site Walkthrough	N/A	<15	Waste Water Treatment Sludge	2005	Site Assessment 2005	33, 34, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-87	Oil/Water Separator	Associated with truck dock operations	West of Builing 9	Drawing Review	Unknown	<5	Used Oil	2005	Site Assessment 2005	33, 34, 41, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances
6-88	Parking Lot Exceedance	N/A		Site Walkthrough	N/A	0	Unknown	2005	Site Assessment 2005	39, 40, 42, 43	Further Action Required	- Collect samples from the storm sewers downstream (and upstream, if present) of the site to address the GSIP exceedances - Reoccupy soil borings SA34-6 to evaluate the DWP exceedances. Collect a sample from directly above the water table or bedrock, whichever is encountered first.
6-90	ELPO AST Release	ASTs with Secondary Containment. On 3/18/1995 ELPO was released from the South side of Building 16 via a trench drain.	South of Building 16	Report Review	N/A	0	Waste ELPO	2005	Investigations were conducted at this AOI from April 1995 to October 1995. These investigations involved collecting soil samples.	42, 43	**No Further Actions**	N/A
6-91	Dock 9 Hydraulic Oil Release	In January of 1994 hydraulic oil was released from a dock leveler on the West side of Building 9	West of Building 9	Report Review	N/A	0	Waste Hydraulic Oil	January 2000	Investigations were conducted at this AOI from January 1994 to January 2000. These investigations involved excavation, free product removal, and collecting soil samples.	41, 42, 43	**No Further Actions**	N/A

Notes:

(A) Drawings referenced herein are available in GM's archives.

Acronyms

MDNR Michigan Department of Natural Resources
MDEQ = Michigan Department of Environmental Quality
NA = Not Available
PA/VSI = Preliminary Assessment/Visual Site Inspection
PCBs = Polychlorinated Biphenyl

Table 4: SCENARIOS FOR POTENTIAL HUMAN EXPOSURE
GENERAL MOTORS LANSING PLANTS 2, 3, AND 6, LANSING, MICHIGAN

Receptor Population	Exposure Medium	Exposure Route	Possible Currently	Possible in Future	Comments
On-Facility					
Routine Workers	surface soil (0 - 2 ft bgs)	ingestion, dermal contact, and inhalation of airborne particulates and vapors	Yes	Yes	Exposure to surface soil may be possible in areas without cover or where cover may be removed in the future. Routine worker activities do not involve direct contact with subsurface soil. Exposure to soil vapors via inhalation of ambient air is possible. Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where volatile constituents are identified in soil and occupied buildings exist or may exist in the future.
		inhalation of vapors that migrate through building foundations	Yes	Yes	
	subsurface soil (unsaturated soils > 2 ft bgs)	ingestion and dermal contact	No	No	
		inhalation of soil vapors in ambient air	Yes	Yes	
		inhalation of vapors that migrate through building foundations	Yes	Yes	
	groundwater	ingestion, dermal contact, and inhalation of vapors during potable use	No	No	Drinking water is currently provided to the facility by the municipal water supply, there are no on-facility withdrawal wells for nonpotable uses. Exposure of routine workers to groundwater via potable use is not likely at the Plants since on-facility drinking water is provided by the municipal water supply. In addition, GM plans to implement a restriction on-facility to prohibit any groundwater use. Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where volatile constituents are identified in shallow groundwater and occupied buildings exist or may exist in the future.
		incidental ingestion, dermal contact, and inhalation of vapors during nonpotable use	No	No	
		inhalation of vapors that migrate through building foundations	Yes	Yes	
	NAPL (including residual soil)	ingestion and dermal contact	No	No	Routine worker activities do not involve direct contact with NAPL.
		inhalation of NAPL vapors in ambient air	Yes	Yes	Exposure via inhalation of ambient air is possible in areas where volatile constituents are identified in NAPL.
		inhalation of NAPL vapors in indoor air	Yes	Yes	Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where volatile constituents are identified in NAPL and occupied buildings exist or may exist in the future.

Table 4: SCENARIOS FOR POTENTIAL HUMAN EXPOSURE GENERAL MOTORS LANSING PLANTS 2, 3, AND 6, LANSING, MICHIGAN					
Receptor Population	**Exposure Medium**	**Exposure Route**	**Possible Currently**	**Possible in Future**	**Comments**
On-Facility (Continued)					
Maintenance Workers	surface and subsurface soil	ingestion, dermal contact, and inhalation of airborne particulates and vapors	Yes	Yes	Exposure to surface and shallow subsurface soil may occur during occasional excavations.
	groundwater	incidental ingestion and dermal contact	Yes	Yes	Exposure to shallow groundwater via direct contact may occur during occasional excavations that extend into the water table.
		inhalation of vapors	Yes	Yes	Exposure to shallow groundwater via inhalation may occur during occasional excavations in areas where volatile constituents are identified in shallow groundwater.
	NAPL (including residual soil)	incidental ingestion (residual soil only) and dermal contact	Yes	Yes	Exposure via direct contact may occur during occasional excavations in areas where NAPL has been identified.
		inhalation of vapors	Yes	Yes	Exposure via vapor inhalation may occur during occasional excavations in areas where volatile constituents are identified in NAPL.
	sediment (in storm drains)	ingestion and dermal contact	Yes	Yes	Exposure may occur in storm water management drains and/or ditches.
	water (in storm drains)	ingestion, dermal contact, and inhalation of vapors	Yes	Yes	
Construction Workers	surface and subsurface soil	ingestion, dermal contact, and inhalation of airborne particulates and vapors	Yes	Yes	Exposure to surface and shallow subsurface soil may be possible in areas which are being demolished and/or decommissioned or may be redeveloped in the future.
	groundwater	incidental ingestion and dermal contact	Yes	Yes	Exposure to shallow groundwater via direct contact may occur in areas that may be developed in the future and in which subsurface intrusive activities are conducted below the water table.
		inhalation of vapors	Yes	Yes	Exposure via vapor inhalation may occur in areas where volatile constituents are identified in shallow groundwater and in which demolition, decommissioning, or redevelopment occurs in the future.
	NAPL (including residual soil)	incidental ingestion (residual soil only) and dermal contact	Yes	Yes	Exposure via direct contact may occur in areas which may be developed in the future and subsurface intrusive activities are conducted.
		inhalation of vapors	Yes	Yes	Exposure via vapor inhalation may occur in areas where volatile constituents are identified in NAPL which are being demolished and/or decommissioned or may be redeveloped in the future.

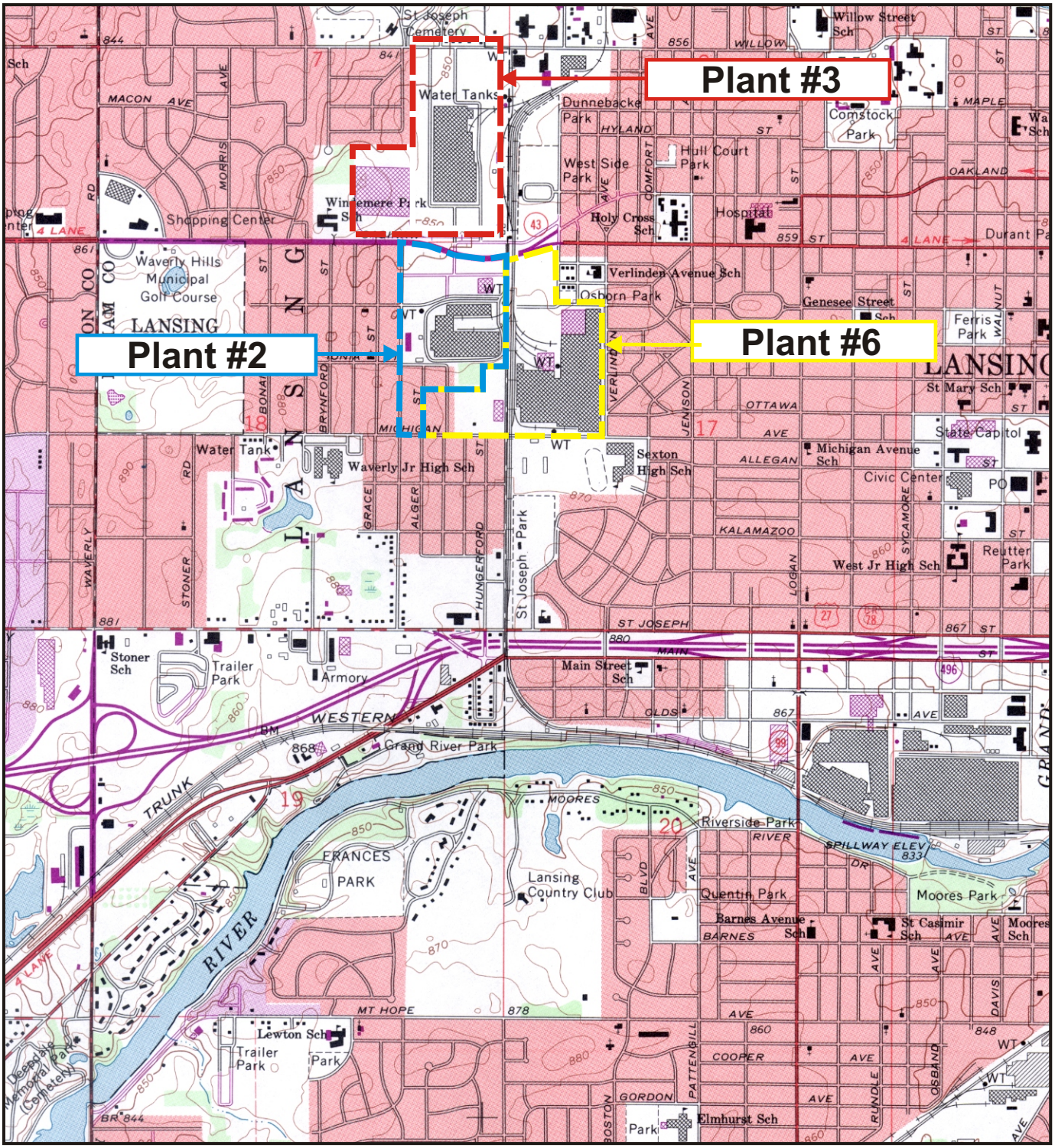
Table 4: SCENARIOS FOR POTENTIAL HUMAN EXPOSURE GENERAL MOTORS LANSING PLANTS 2, 3, AND 6, LANSING, MICHIGAN					
Receptor Population	**Exposure Medium**	**Exposure Route**	**Possible Currently**	**Possible in Future**	**Comments**
On-Facility (Continued)					
Trespassers	surface soil (0 - 2 ft bgs)	ingestion, dermal contact, and inhalation of airborne particulates and vapors	Yes	Yes	Exposure to surface soil may occur in areas without cover or where cover may be removed in the future. Trespasser activities do not involve direct contact with subsurface soil. Exposure to surface and subsurface soil vapors via inhalation of ambient air is possible.
	subsurface soil (unsaturated soils > 2 ft bgs)	ingestion and dermal contact	No	No	
		inhalation of soil vapors	Yes	Yes	
	NAPL (including residual soil)	ingestion and dermal contact	No	No	Trespasser activities do not involve direct contact with NAPL. Exposure via vapor inhalation may occur in areas where volatile constituents are identified in NAPL.
		inhalation of NAPL vapors in ambient air	Yes	Yes	
	sediment (in storm drains)	ingestion and dermal contact	Yes	Yes	Exposure may occur in storm water management drains and/or ditches.
	water (in storm drains)	ingestion, dermal contact, and inhalation of vapors	Yes	Yes	
Residents	surface soil (0 - 2 ft bgs)	ingestion, dermal contact, and inhalation of airborne particulates and vapors	No	Yes	Residents are not currently present at the facility. Exposure to surface soil may occur in areas which may be used for residential purposes in the future and are without cover. Resident activities do not involve direct contact with subsurface soil. Exposure via inhalation of soil vapors in ambient air may occur in the future in areas where volatile constituents are identified in soil. Exposure via vapor intrusion through cracks in building foundations into indoor air may occur where volatile constituents are identified in soil and occupied residential buildings may exist in the future.
		inhalation of vapors that migrate through building foundations	No	Yes	
	subsurface soil (unsaturated soils > 2 ft bgs)	ingestion and dermal contact	No	Yes	
		inhalation of soil vapors in ambient air	No	Yes	
		inhalation of vapors that migrate through building foundations	No	Yes	
	groundwater	ingestion, dermal contact, and inhalation of vapors during household/potable use	No	No	Drinking water is currently provided to the facility by the municipal water supply, there are no on-facility withdrawal wells for nonpotable uses. Exposure of residents to groundwater via potable use is not likely at the Plants since on-facility drinking water is provided by the municipal water supply. In addition, GM plans to implement a restriction on-facility to prohibit any groundwater use. Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where volatile constituents are identified in shallow groundwater and occupied buildings exist or may exist in the future.
		incidental ingestion, dermal contact, and inhalation of vapors during nonpotable use.	No	No	
		inhalation of vapors that migrate through building foundations	No	Yes	
	NAPL (including residual soil)	ingestion and dermal contact	No	No	Future resident activities would not involve direct contact with NAPL.
		inhalation of NAPL vapors in ambient air and indoor air	No	Yes	Exposure via ambient air inhalation may occur in areas where volatile constituents are identified in NAPL. Exposure may occur via vapor intrusion through cracks in building foundations into indoor air where volatile constituents are identified in NAPL in areas where future residential buildings may be present.

Table 4: SCENARIOS FOR POTENTIAL HUMAN EXPOSURE GENERAL MOTORS LANSING PLANTS 2, 3, AND 6, LANSING, MICHIGAN					
Receptor Population	**Exposure Medium**	**Exposure Route**	**Possible Currently**	**Possible in Future**	**Comments**
Off-Facility					
Residents	surface and subsurface soil	ingestion and dermal contact	No	No	No facility-related soil contamination is expected off-facility. Residents may be exposed to windblown dust and vapors emanating from on-facility areas currently without cover or from areas which may be uncovered in the future.
		inhalation of airborne particulates and vapors	Yes	Yes	
	groundwater	ingestion, dermal contact, and inhalation of vapors during household/potable use	No	Yes	Off-facility residents adjacent to and near the facility are not expected to be exposed via potable or non-potable use of on-facility groundwater, because a municipal water supply is available for these locations. Potential potable and nonpotable use of groundwater in the future may be possible given the absence of institutional and/or regulatory controls that otherwise preclude such uses.
		incidental ingestion, dermal contact, and inhalation of vapors during nonpotable use	No	Yes	
		inhalation of vapors that migrate through building foundations	Yes	Yes	Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where facility-related volatile constituents are identified in shallow off-facility groundwater and occupied residential buildings exist or may exist in the future.
Routine Workers	surface and subsurface soil	ingestion and dermal contact	No	No	No facility-related soil contamination is expected off-facility. Routine workers may be exposed to windblown dust and vapors emanating from on-facility areas currently without cover or from areas which may be uncovered in the future.
		inhalation of airborne particulates and vapors	Yes	Yes	
	groundwater	ingestion, dermal contact, and inhalation of vapors during potable use	No	Yes	Off-facility workers adjacent to and near the Facility are not expected to be exposed via potable or non-potable use of on-facility groundwater, because a municipal water supply is available for these locations. Potential potable and nonpotable use of groundwater in the future may be possible given the absence of institutional and/or regulatory controls that otherwise preclude such uses.
		incidental ingestion, dermal contact, and inhalation of vapors during nonpotable use	No	Yes	
		inhalation of vapors that migrate through building foundations	Yes	Yes	Exposure via vapor intrusion through cracks in building foundations into indoor air may be possible where facility-related volatile constituents are identified in shallow off-facility groundwater and occupied commercial/industrial buildings exist or may exist in the future.

Table 4: SCENARIOS FOR POTENTIAL HUMAN EXPOSURE GENERAL MOTORS LANSING PLANTS 2, 3, AND 6, LANSING, MICHIGAN					
Receptor Population	**Exposure Medium**	**Exposure Route**	**Possible Currently**	**Possible in Future**	**Comments**
Off-Facility (Continued)					
Maintenance Workers	surface and subsurface soil	ingestion and dermal contact	No	No	No facility-related soil contamination is expected off-facility. Maintenance workers may be exposed to windblown dust and vapors emanating from on-facility areas currently without cover or from areas which may be uncovered in the future.
		inhalation of airborne particulates and vapors	Yes	Yes	
	groundwater	incidental ingestion and dermal contact	Yes	Yes	Exposure to shallow groundwater via direct contact may occur during occasional excavations that extend into the water table in areas where facility-related constituents are identified off-facility. Exposure to shallow groundwater via inhalation may occur during occasional excavations in areas where facility-related volatile constituents are identified in shallow groundwater off-facility.
		inhalation of vapors	Yes	Yes	

ARCADIS

Figures



REFERENCE: BASE MAP SOURCE: USGS 7.5 MIN. QUAD., LANSING SOUTH, MICHIGAN, 1965.

2000' 0 2000'

Approximate Scale: 1" = 2000'



Area Enlargement

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

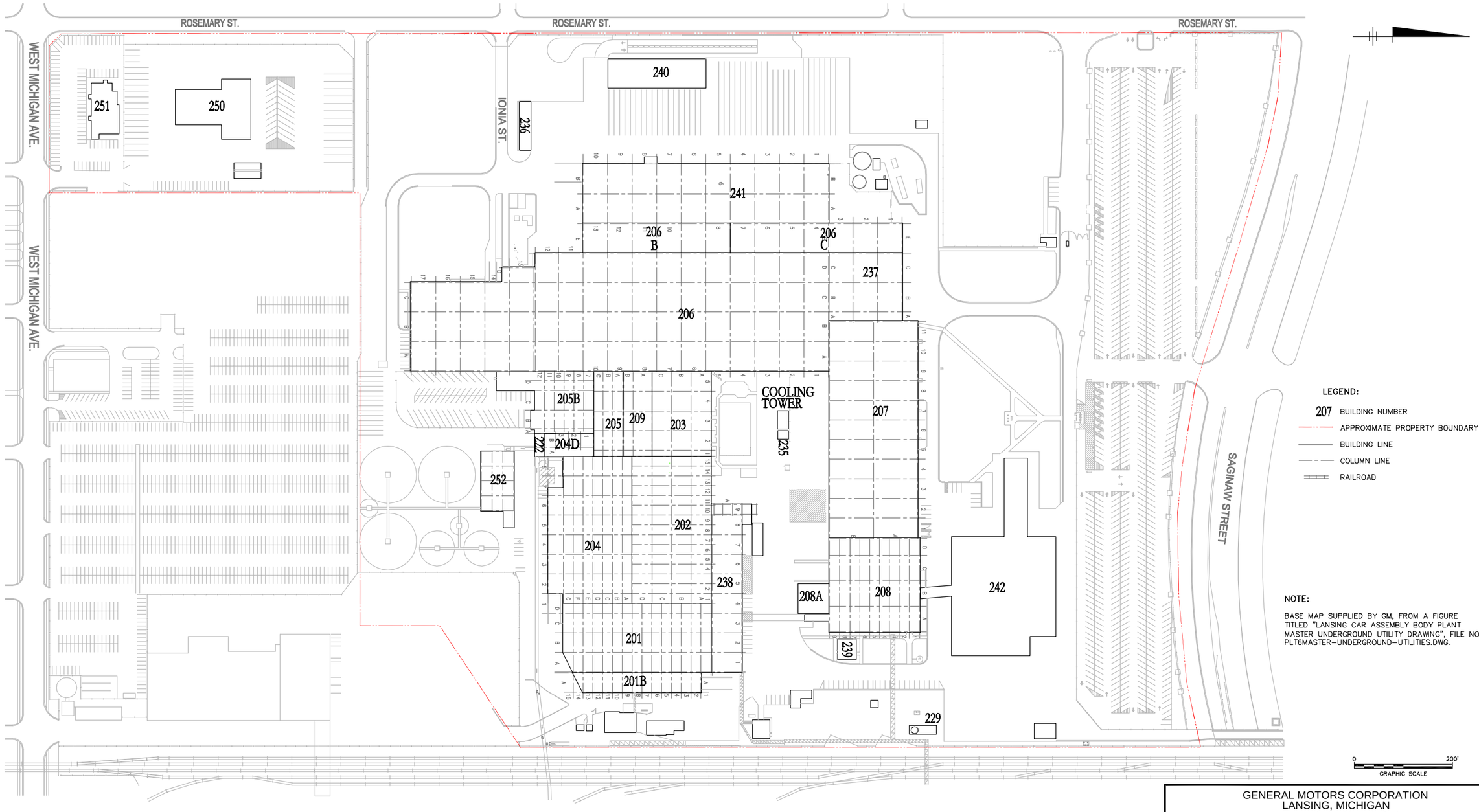
PLANTS 2, 3, AND 6 CURRENT CONDITIONS REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

05/05/08 SYR-141ENV-DJH
B0064479/0000/00300/CDR/64479N01.CDR



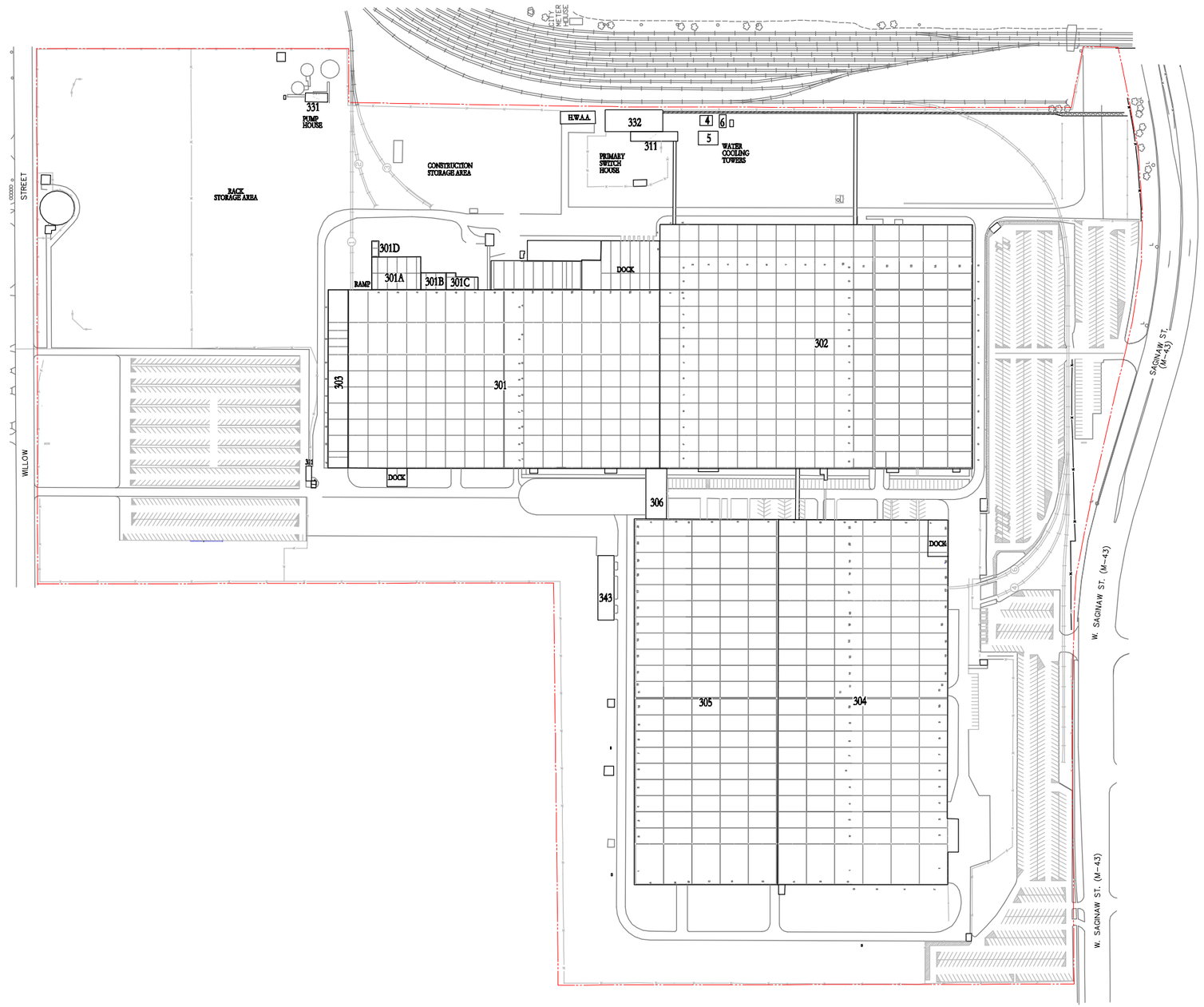
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

GM LANSING PLANT 2 SITE LAYOUT

ARCADIS

FIGURE
2

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B00644790000100300\DWG\64479B02.dwg LAYOUT: 2SAVED: 7/28/2008 3:38 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 3:38 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64430X01
64479X03
64479X02



LEGEND:

305 BUILDING NUMBER

APPROXIMATE PROPERTY BOUNDARY

BUILDING LINE

COLUMN LINE

RAILROAD

NOTE:

BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.

0 300'

GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN

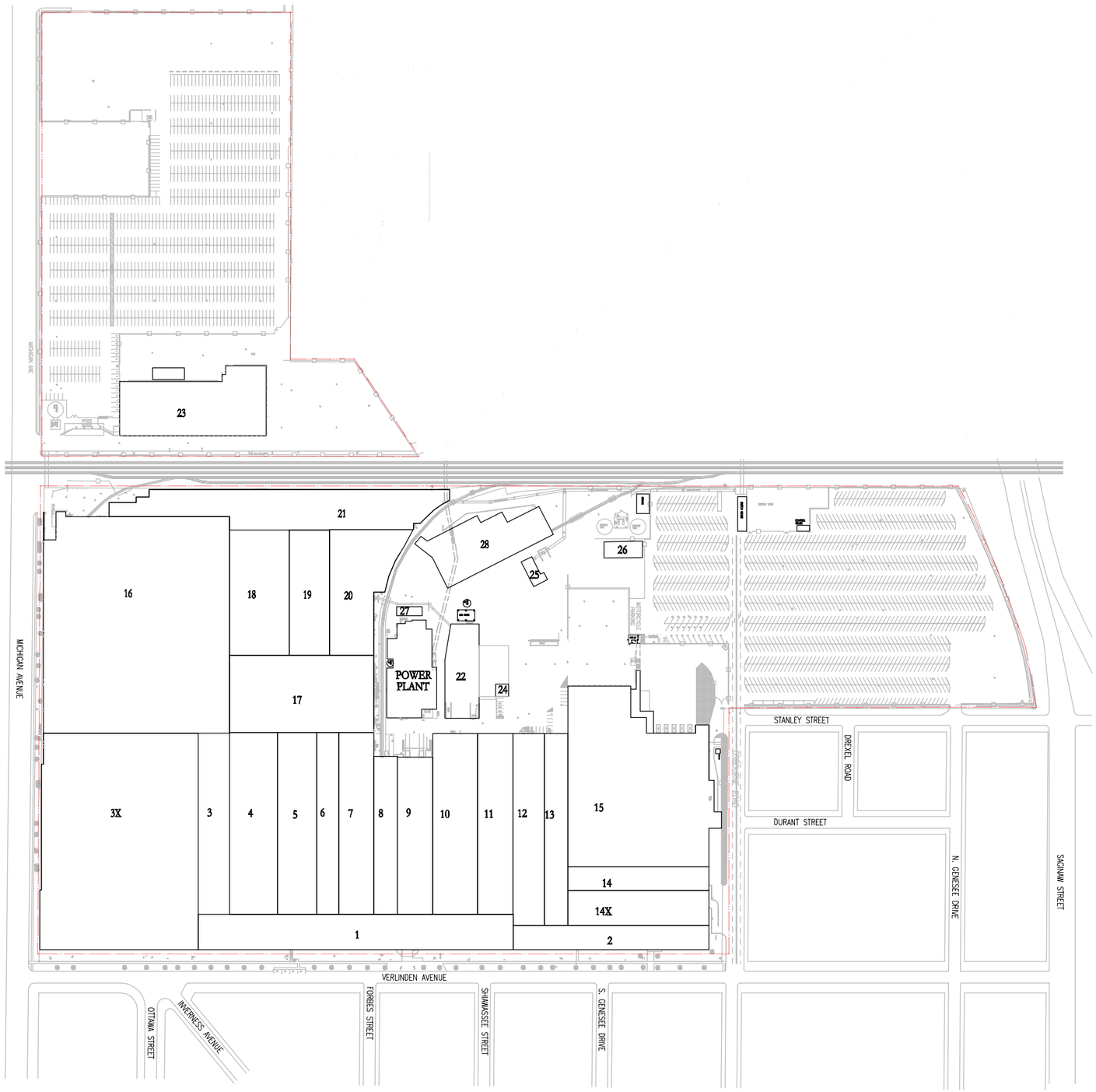
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

GM LANSING PLANT 3 SITE LAYOUT

ARCADIS

FIGURE
3

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\000000300\dwg\64488B02.DWG LAYOUT: 3SAVED: 7/29/2008 3:41 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64480X03
64480X02
---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 3:41 PM BY: FOX, AARON
17.1S (LMS TECH) PAGESETUP:
17.1S (LMS TECH) ACADVER:



LEGEND:

- 15 BUILDING NUMBER
- APPROXIMATE PROPERTY BOUNDARY
- BUILDING LINE
- RAILROAD

NOTE:

BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER–UNDERGROUND–UTILITIES.DWG.

0 300'
GRAPHIC SCALE

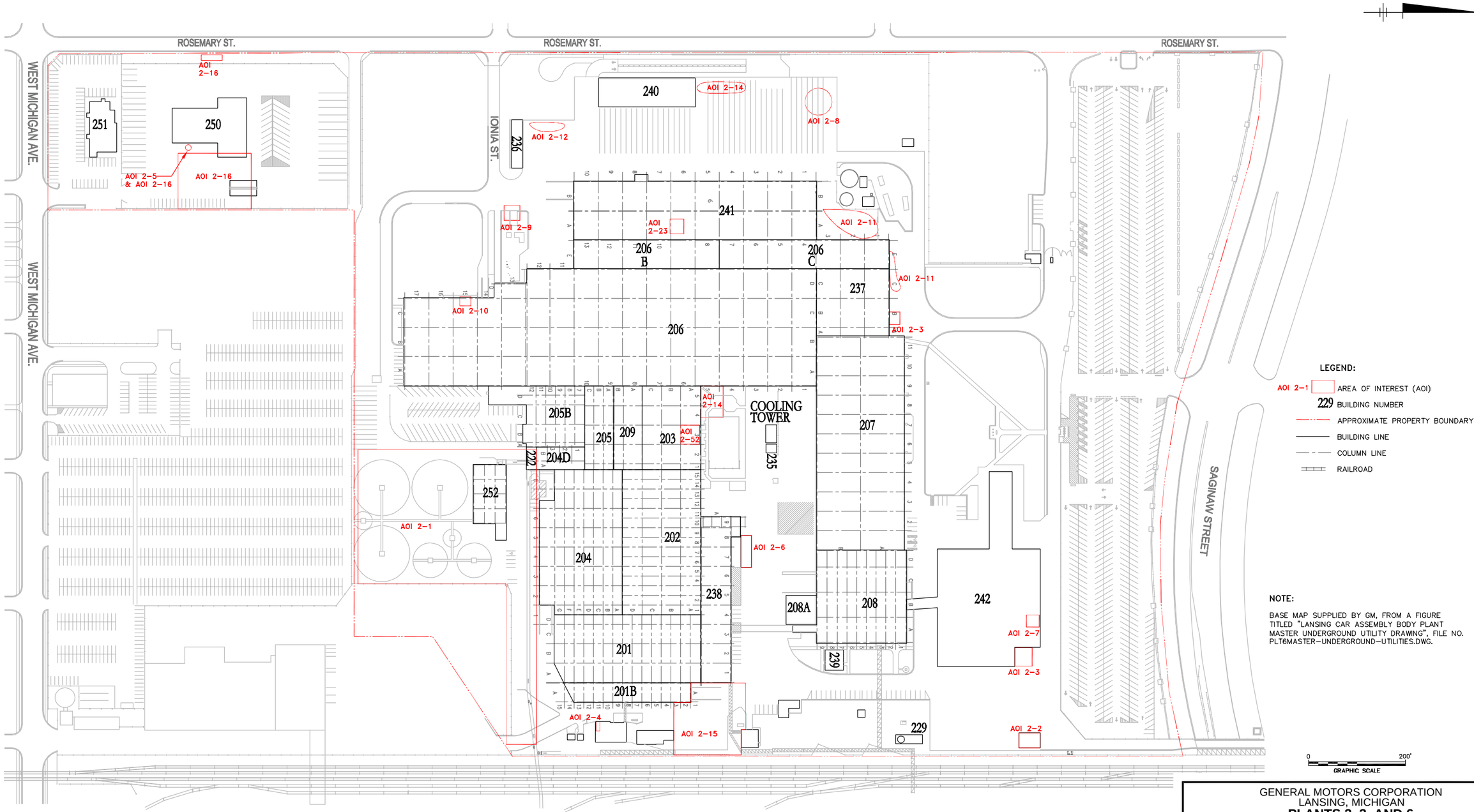
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

GM LANSING PLANT 6 SITE LAYOUT

ARCADIS

FIGURE
4

CITY:BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448100000300DWG\64481B01.dwg LAYOUT: 4SAVED: 7/24/2008 8:37 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE:
XREFS: IMAGES: PROJECTNAME: ---
64481X01



LEGEND:

- AOI 2-1 AREA OF INTEREST (AOI)
- 229 BUILDING NUMBER
- APPROXIMATE PROPERTY BOUNDARY
- BUILDING LINE
- COLUMN LINE
- RAILROAD

NOTE:

BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.

0 200'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

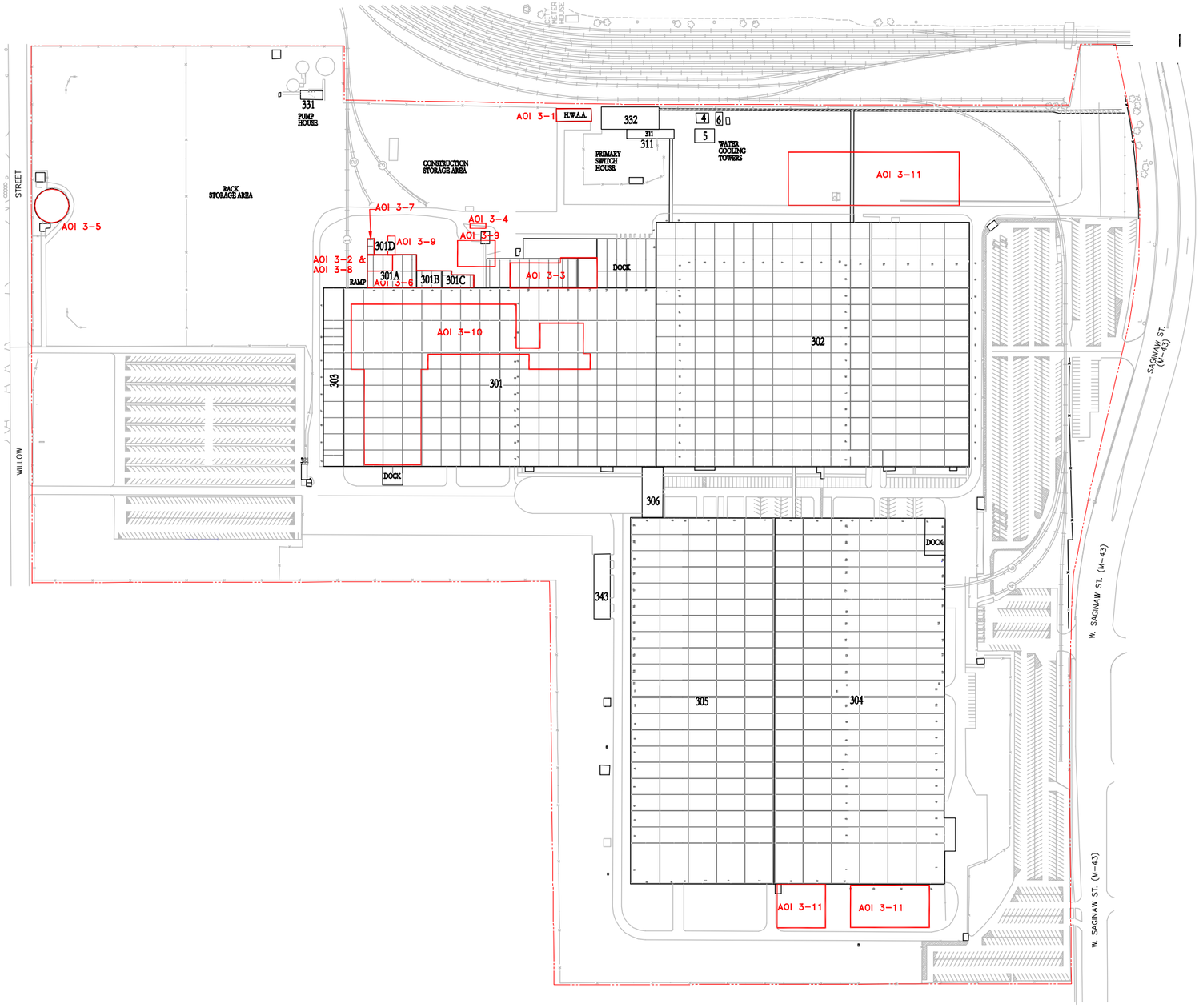
PLANT 2 AOI LOCATIONS

ARCADIS

FIGURE 5

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064479\000\003\DWG\64479B01.dwg LAYOUT: 5SAVED: 7/28/2008 3:51 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 3:51 PM BY: FOX, AARON

XREFS:
IMAGES: PROJECTNAME: ---
64430X01
64479X03
64479X02
Plt. 2 Master-Utility-UG



LEGEND:

- AOI 3-1 — AREA OF INTEREST (AOI)
- 302 — BUILDING NUMBER
- APPROXIMATE PROPERTY BOUNDARY
- BUILDING LINE
- COLUMN LINE
- RAILROAD

NOTE:

BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.

0 300'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 AOI LOCATIONS

ARCADIS

FIGURE
6

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\00000\300\dwg\64480B01.DWG LAYOUT: 6SAVED: 7/28/2008 4:00 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64480X03
64480X02
Plt. 3 UnderGround-All
---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 4:00 PM BY: FOX, AARON



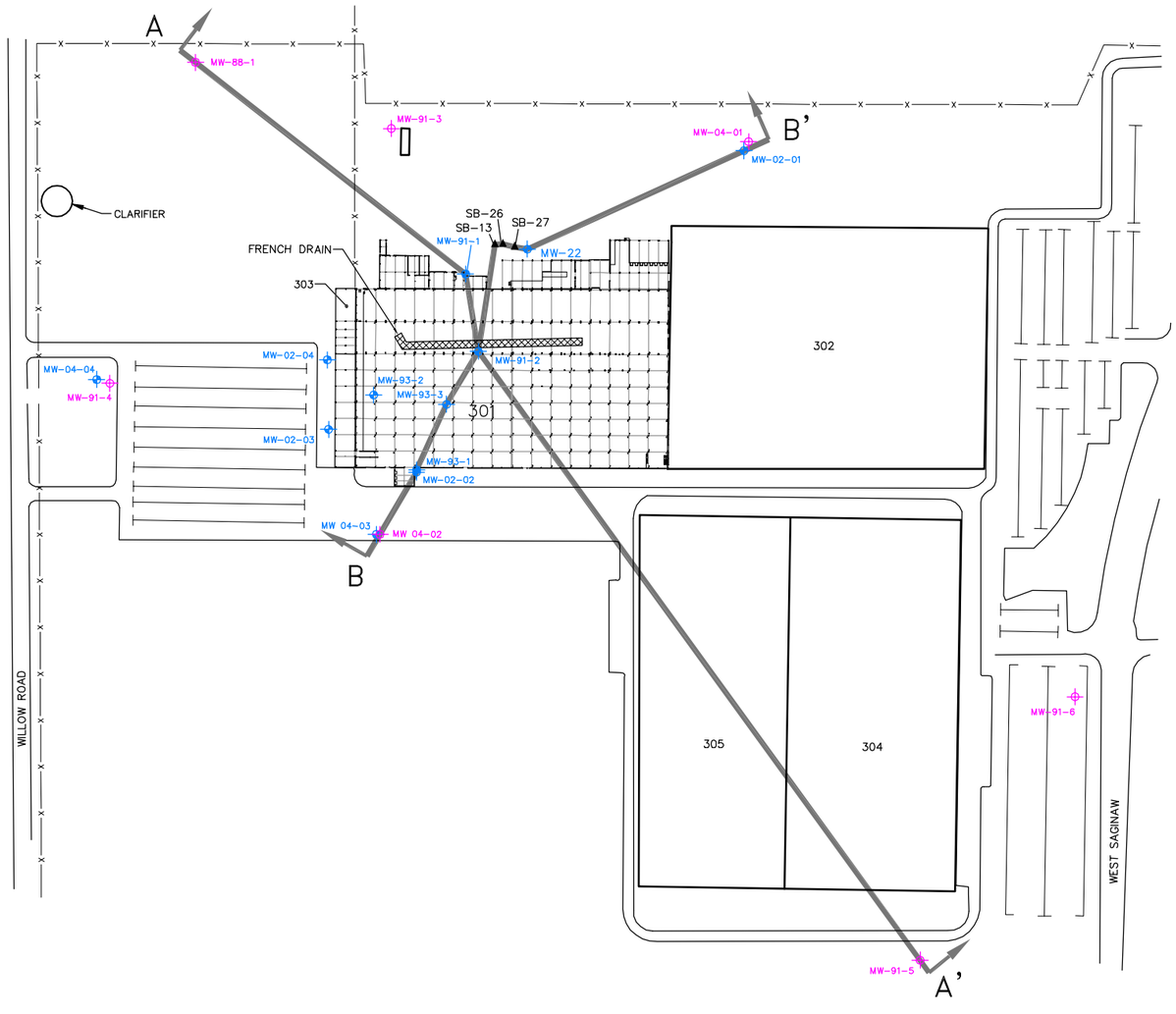
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 AOI LOCATIONS

ARCADIS

FIGURE 7

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Req'd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\000000300\DWG\64481B02.dwg LAYOUT: ?SAVED: 7/29/2008 11:24 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE:
PLTFULL.CTB PLOTTED: 7/29/2008 11:24 AM BY: FOX, AARON
XREFS:
64481X02
64481X03
64481X05
IMAGES:
PROJECTNAME: ----



LEGEND:

- BEDROCK MONITORING WELL LOCATION
- OVERBURDEN MONITORING WELL LOCATION
- SOIL BORING LOCATION
- FRENCH DRAIN
- A — A' GEOLOGIC CROSS SECTION LOCATION

NOTE:

BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.

0 400'
GRAPHIC SCALE

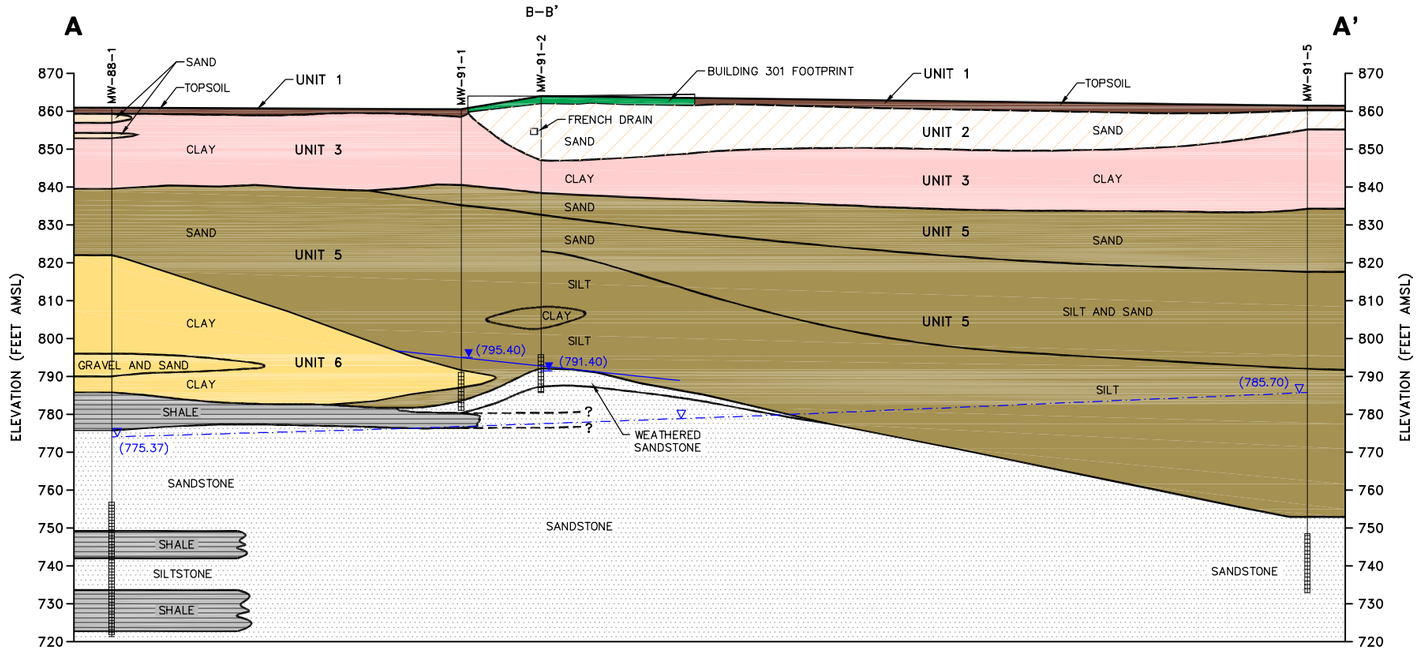
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

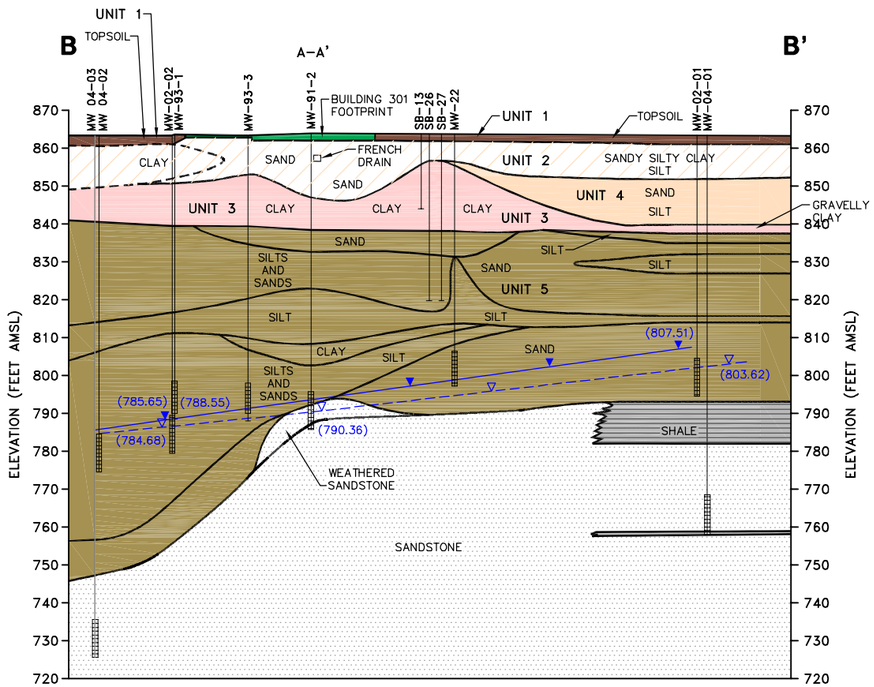
PLANT 3 SITE LAYOUT AND GEOLOGIC CROSS SECTION LOCATOR MAP

ARCADIS

FIGURE
8

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\0000\0300\dwg\64480B03.dwg LAYOUT: 8SAVED: 7/24/2008 8:51 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/24/2008 8:51 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---





LEGEND:

- CONTACT LINE
- INFERRED CONTACT LINE
- (795.40) POTENTIOMETRIC SURFACE OF OVERBURDEN AQUIFER
- (785.70) POTENTIOMETRIC SURFACE OF BEDROCK AQUIFER
- WELL SCREEN
- UNIT 1 – TOPSOIL
  SOME SAND, FINE GRAVEL, AND SILT
- UNIT 2 – FILL SAND AND CLAY USED AS BACKFILL
  SANDY SILT AND SANDY SILTY CLAY (SP, ML, CL)
- UNIT 3 – CLAY
  SANDY SILTY CLAY WITH VARYING AMOUNTS OF FINE TO COARSE SAND AND FINE GRAVEL (CL)
- UNIT 4 – SAND
  SANDY SILT AND SANDY SILTY CLAY (SP, ML, CL)
- UNIT 5 – SILT AND SAND
  INTERBEDDED FINE TO COARSE SANDS, SILTS, AND SANDY SILTS WITH VARYING AMOUNTS OF FINE TO MEDIUM GRAVEL (ML, SM)
- UNIT 6 – CLAY
  SANDY CLAY, SAND AND GRAVEL LENS (CL)
- BEDROCK
  SANDSTONES AND SILTSTONES OF THE SAGINAW FORMATION
- BEDROCK
  SHALE OF THE SAGINAW FORMATION

NOTES:

1. POTENTIOMETRIC SURFACE ELEVATIONS BASED ON MEASUREMENTS FROM 10/08/03.
2. INFORMATION FOR LOCATIONS SB–13, SB–26, SB–27, AND MW–22 WAS PROVIDED BY URS CONSULTANTS, INC., FROM AN UNDATED FIGURE ENTITLED "NORTH–SOUTH GEOLOGIC PROFILE, GM LAD, PLANT NO. 3 BLDG. NO. 301C", AT A HORIZONTAL SCALE OF 1"=20' AND A VERTICAL SCALE OF 1"=10'.

0 400'
GRAPHIC SCALE (HORIZONTAL)
0 40'
GRAPHIC SCALE (VERTICAL)

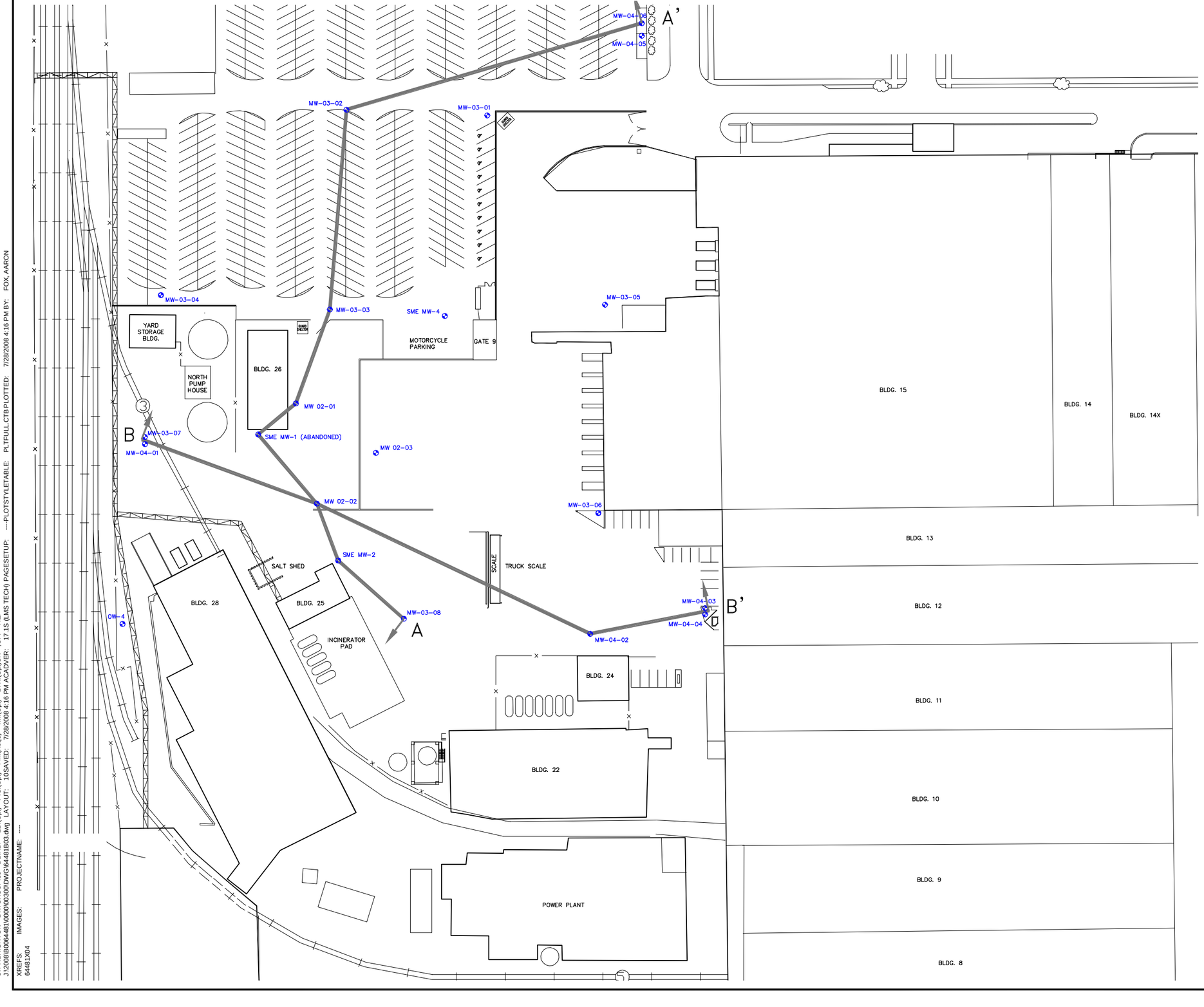
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 GEOLOGIC CROSS SECTION A-A' AND B-B'

ARCADIS

FIGURE
9

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\0000\000300\dwg\64480V01.dwg LAYOUT: 9SAVED: 7/24/2008 8:50 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/24/2008 8:50 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64429X01



LEGEND:

- RAILROAD TRACKS
- FENCE
- BUILDING
- PARKING STALLS
- MW-03-01 MONITORING WELL LOCATION AND NUMBER
- A — A' GEOLOGIC CROSS SECTION LOCATION

NOTE:

BASE MAP BASED ON INFORMATION PROVIDED BY GM FROM A MAP TITLED "PLANTS 2, 3, AND 6," REVISED 9/1/00.

0 100'
GRAPHIC SCALE

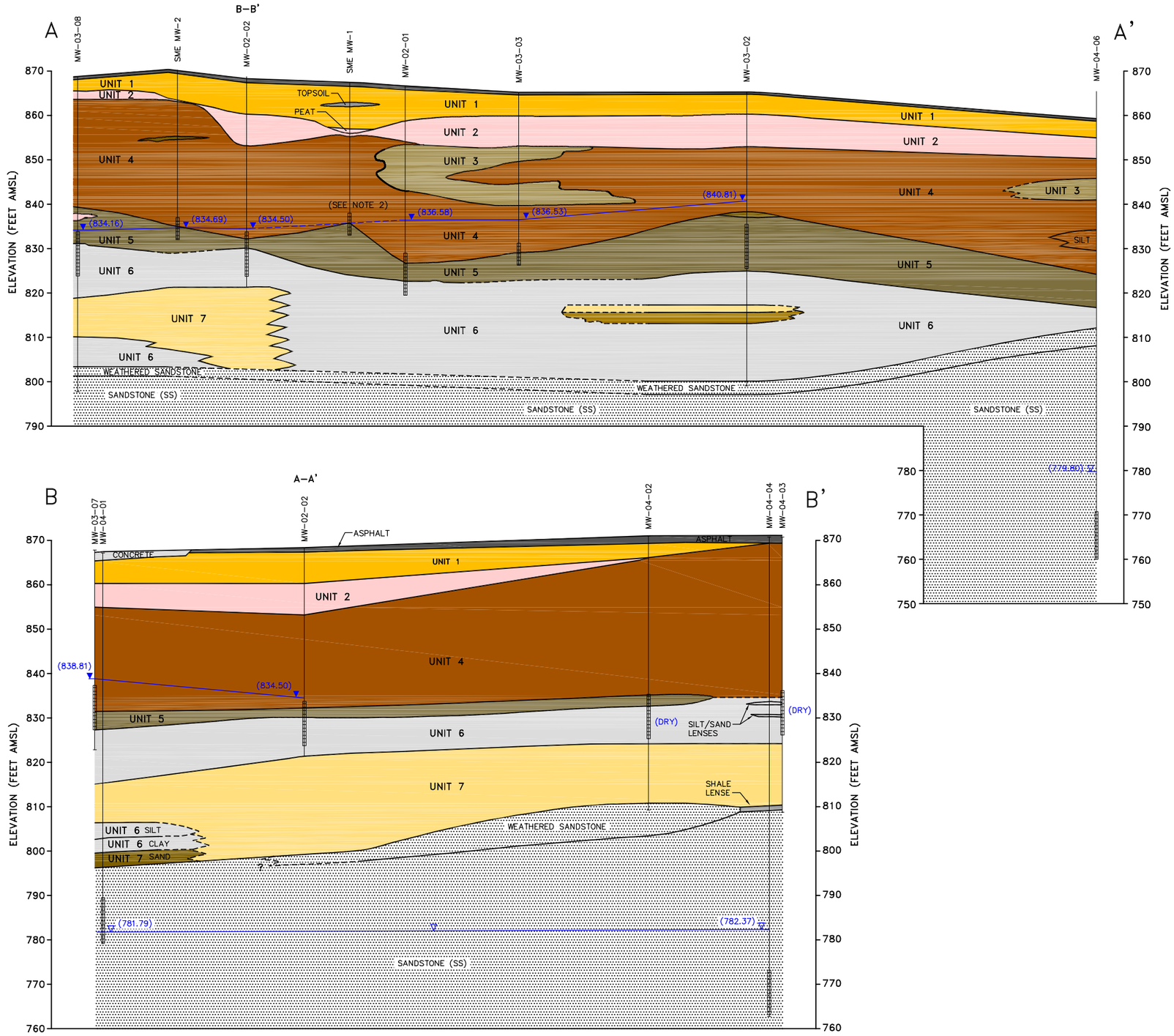
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 SITE LAYOUT AND GEOLOGIC CROSS SECTION LOCATOR MAP

ARCADIS

FIGURE
10

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B00644811\0000\0300\DWG\64481B03.dwg LAYOUT: 10SAVED: 7/28/2008 4:16 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 4:16 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X04



LEGEND:

- CONTACT LINE
- INFERRED CONTACT LINE
- ▼ (838.81) WATER TABLE SURFACE IN OVERBURDEN
- ▽ (781.79) WATER TABLE SURFACE IN BEDROCK
- WELL SCREEN
- ASPHALT
- UNIT 1 FILL – SAND, GRAVEL, SOME CLAY, SLAG, METAL, AND WOOD PRESENT
- UNIT 2 ORGANIC CLAY (CL) – SOFT, PLASTIC CLAY WITH "PEATY" ODOR, SILT
- UNIT 3 SAND, SILT, AND SILTY SAND (SM)
- POORLY-GRADED SAND (SP)
- UNIT 4 CLAY WITH SAND SEAMS (CL) – CLAY, SANDY CLAY, SILTY CLAY, SOME SAND AND GRAVEL SEAMS
- UNIT 5 SAND AND SILT (SM) – SILTY SAND AND SANDY SILT
- UNIT 6 CLAY, SILTY CLAY AND SILT (CL/MH) – SILT, SILTY SAND, SOME SILTY CLAY, SAND, AND GRAVEL
- UNIT 7 SAND AND GRAVEL (SW/GW)
- SANDSTONE (SS)

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. WELL ABANDONED 10/12/04.

0 100' HORIZONTAL SCALE

0 25' VERTICAL SCALE

VERTICAL EXAGGERATION = 4X

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 GEOLOGIC CROSS SECTIONS A-A' & B-B'

ARCADIS

FIGURE 11

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\000000300\DWG\64481V01.dwg LAYOUT: 11SAVED: 7/28/2008 4:17 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 4:17 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ----

Soil Screening Levels
GM Lansing Plants 2, 3 and 6, Lansing, Michigan

Chemical	CASRN	Background Soil Concentration	Part 201 Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Part 201 Residential Volatile Soil Inhalation Criteria	Part 201 Industrial Particulate Soil Inhalation Criteria	Part 201 Industrial Direct Contact Criteria	Part 201 Residential Drinking Water Protection Criteria	Risk-Based Redevelopment Worker Soil Criteria	Part 201 Groundwater Surface Water Interface Protection (GSIP) Criteria	Part 201 Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Part 201 Residential Volatile Soil Inhalation Criteria	Part 201 Industrial Particulate Soil Inhalation Criteria	Part 201 Industrial Direct Contact Criteria
	Exceedance Code:		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
Volatile Organic Compounds													
Acetone	67-64-1		1.1E+05	1.6E+05	1.7E+08	7.3E+04	1.5E+01	4.4E+03	3.4E+01	1.1E+05	1.3E+05	3.9E+08	2.3E+04
Benzene	71-43-2		8.4E+00	4.5E+01	4.7E+05	4.0E+02	1.0E-01	3.4E+01	4.0E+00	1.6E+00	1.3E+01	3.8E+05	1.8E+02
Chloroethane	75-00-3		9.5E+02	3.6E+04	2.9E+08	9.5E+02	8.6E+00	1.9E+03		9.5E+02	3.0E+04	6.7E+08	9.5E+02
1,2-Dichlorobenzene	95-50-1		2.1E+02	4.6E+04	4.4E+07	2.1E+02	1.4E+01	5.3E+03	3.6E-01	2.1E+02	3.9E+04	1.0E+08	2.1E+02
1,4-Dichlorobenzene	106-46-7		1.0E+02	2.6E+02	5.7E+05	1.9E+03	1.7E+00	2.9E+02	2.9E-01	1.9E+01	7.7E+01	4.5E+05	4.0E+02
1,1-Dichloroethane	75-34-3		4.3E+02	2.5E+03	1.5E+07	8.9E+02	1.8E+01	2.5E+03	1.5E+01	2.3E+02	2.1E+03	3.3E+07	8.9E+02
1,2-Dichloroethane	107-06-2		1.1E+01	2.1E+01	1.5E+05	4.2E+02	1.0E-01	4.0E+00	7.2E+00	2.1E+00	6.2E+00	1.2E+05	9.1E+01
1,1-Dichloroethene	75-35-4		3.3E-01	3.7E+00	7.8E+04	5.7E+02	1.4E-01	6.3E+01	1.3E+00	6.2E-02	1.1E+00	6.2E+04	2.0E+02
cis-1,2-Dichloroethene	156-59-2		4.1E+01	2.1E+02	1.0E+06	6.4E+02	1.4E+00	9.3E+01	1.2E+01	2.2E+01	1.8E+02	2.3E+06	6.4E+02
trans-1,2-Dichloroethene	156-60-5		4.3E+01	3.3E+02	2.1E+06	1.4E+03	2.0E+00	2.9E+01	3.0E+01	2.3E+01	2.8E+02	4.7E+06	1.4E+03
Ethyl Benzene	100-41-4		1.4E+02	2.4E+03	1.3E+07	1.4E+02	1.5E+00	1.1E+03	3.6E-01	8.7E+01	7.2E+02	1.0E+07	1.4E+02
Methyl tert-butyl ether	1634-04-4		5.9E+03	3.0E+04	8.8E+07	5.9E+03	8.0E-01	1.4E+03	1.5E+01	5.9E+03	2.5E+04	2.0E+08	1.5E+03
Tetrachloroethene	127-18-4		6.0E+01	6.0E+02	6.8E+06	8.8E+01	1.0E-01	1.2E+02	9.0E-01	1.1E+01	1.8E+02	5.4E+06	8.8E+01
Toluene	108-88-3		2.5E+02	3.3E+03	1.2E+07	2.5E+02	1.6E+01	4.1E+03	2.8E+00	2.5E+02	2.8E+03	2.7E+07	2.5E+02
1,1,1-Trichloroethane	71-55-6		4.6E+02	4.5E+03	2.9E+07	4.6E+02	4.0E+00	9.7E+03	4.0E+00	2.5E+02	3.8E+03	6.7E+07	4.6E+02
1,1,2-Trichloroethane	79-00-5		2.4E+01	5.7E+01	2.5E+05	8.4E+02	1.0E-01	5.8E+01	6.6E+00	4.6E+00	1.7E+01	1.9E+05	1.8E+02
Trichloroethene	79-01-6		3.7E+01	2.6E+02	2.3E+06	5.0E+02	1.0E-01	2.8E+02	4.0E+00	7.1E+00	7.8E+01	1.8E+06	5.0E+02
Vinyl Chloride	75-01-4		2.8E+00	2.9E+01	8.9E+05	3.4E+01	4.0E-02	1.8E+01	3.0E-01	2.7E-01	4.2E+00	3.5E+05	3.8E+00
Xylenes (total)	1330-20-7		1.5E+02	5.4E+04	1.3E+08	1.5E+02	5.6E+00	3.6E+02	7.0E-01	1.5E+02	4.6E+04	2.9E+08	1.5E+02
Semivolatile Organic Compounds													
Fluorene	86-73-7		1.0E+06	1.5E+05	4.1E+06	8.7E+04	3.9E+02	7.2E+04	5.3E+00	5.8E+05	1.3E+05	9.3E+06	2.7E+04
Naphthalene	91-20-3		4.7E+02	3.5E+02	8.8E+04	5.2E+04	3.5E+01	3.4E+01	8.7E-01	2.5E+02	3.0E+02	2.0E+05	1.6E+04
Phenanthrene	85-01-8		5.1E+03	1.9E+02	2.9E+03	5.2E+03	5.6E+01	7.3E+04	5.3E+00	2.8E+03	1.6E+02	6.7E+03	1.6E+03
Inorganic Compounds													
Antimony	7440-36-0				5.9E+03	6.7E+02	4.3E+00	2.0E+02	9.4E+01			1.3E+04	1.8E+02
Arsenic	7440-38-2	5.8E+00			9.1E+02	3.7E+01	4.6E+00	1.9E+02	7.0E+01			7.2E+02	7.6E+00
Barium	7440-39-3	7.5E+01			1.5E+05	1.3E+05	1.3E+03		8.2E+02			3.3E+05	3.7E+04
Beryllium	7440-41-7				5.9E+02	1.6E+03	5.1E+01	3.7E+02	3.6E+02			1.3E+03	4.1E+02
Cadmium	7440-43-9	1.2E+00			2.2E+03	2.1E+03	6.0E+00	4.3E+02	5.5E+00			1.7E+03	5.5E+02
Chromium (total)	7440-47-3				2.4E+02	9.2E+03	3.0E+01	5.7E+02	3.3E+00			2.6E+02	2.5E+03
Chromium III	16065-83-1	1.8E+01			1.5E+05	1.0E+06	1.0E+06	7.6E+05	4.8E+09			3.3E+05	7.9E+05
Chromium VI	18540-29-9				2.4E+02	9.2E+03	3.0E+01	5.7E+02	3.3E+00			2.6E+02	2.5E+03
Cobalt	7440-48-4	6.8E+00			5.9E+03	9.0E+03	8.0E-01	5.5E+02	2.0E+00			1.3E+04	2.6E+03
Copper	7440-50-8	3.2E+01			5.9E+04	7.3E+04	5.8E+03	2.0E+04	1.2E+02			1.3E+05	2.0E+04
Cyanide (total)	57-12-5	3.9E-01			2.5E+02	2.5E+02	4.0E+00	1.0E+04	1.0E-01			2.5E+02	1.2E+01
Lead	7439-92-1	2.1E+01			4.4E+04	9.0E+02	7.0E+02		5.2E+03			1.0E+05	4.0E+02
Manganese	7439-96-5	4.4E+02			1.5E+03	9.0E+04	1.0E+00	1.4E+03	9.1E+01			3.3E+03	2.5E+04
Nickel	7440-02-0	2.0E+01			1.6E+04	1.5E+05	1.0E+02	1.0E+04	1.2E+02			1.3E+04	4.0E+04
Selenium	7782-49-2	4.1E-01			5.9E+04	9.6E+03	4.0E+00	2.5E+03	4.0E-01			1.3E+05	2.6E+03
Silver	7440-22-4	1.0E+00			2.9E+03	9.0E+03	4.5E+00	2.6E+02	1.0E-01			6.7E+03	2.5E+03
Vanadium	7440-62-2					5.5E+03	7.2E+01	3.6E+03	1.9E+02				7.5E+02
Zinc	7440-66-6	4.7E+01				6.3E+05	2.4E+03	1.5E+05	2.7E+02				1.7E+05

Notes:
All criteria are in concentrations of mg/kg.

GENERAL MOTORS CORPORATION
LANSING, MICHIG AN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

SOIL SCREENING LEVELS

ARCADIS

FIGURE
12

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Req'd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\0000\000300\dwg\64480B05.DWG LAYOUT: 12SAVED: 7/24/2008 8:56 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---- 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/24/2008 8:56 AM BY: FOX, AARON

Groundwater Screening Levels GM Lansing Plants 2, 3 and 6, Lansing, Michigan					
Chemical	**CASRN**	**Part 201 Residential Drinking Water Criteria**	**Part 201 Residential Groundwater Volatilization to Indoor Air Inhalation Criteria**	**Part 201 Groundwater Contact Criteria**	**Part 201 Groundwater Surface Water Interface (GSI) Criteria**
Exceedance Code:		**A**	**B**	**C**	**E**
Volatile Organic Compounds					
Acetone	67-64-1	7.3E-01	1.0E+06	3.1E+04	1.7E+00
Benzene	71-43-2	5.0E-03	5.6E+00	1.1E+01	2.0E-01
Chloroethane	75-00-3	4.3E-01	5.7E+03	4.4E+02	
1,2-Dichlorobenzene	95-50-1	6.0E-01	1.6E+02	1.6E+02	1.6E-02
1,4-Dichlorobenzene	106-46-7	7.5E-02	1.6E+01	6.4E+00	1.3E-02
1,1-Dichloroethane	75-34-3	8.8E-01	1.0E+03	2.4E+03	7.4E-01
1,2-Dichloroethane	107-06-2	5.0E-03	9.6E+00	1.9E+01	3.6E-01
1,1-Dichloroethene	75-35-4	7.0E-03	2.0E-01	1.1E+01	6.5E-02
cis-1,2-Dichloroethene	156-59-2	7.0E-02	9.3E+01	2.0E+02	6.2E-01
trans-1,2-Dichloroethene	156-60-5	1.0E-01	8.5E+01	2.2E+02	1.5E+00
Ethyl Benzene	100-41-4	7.0E-01	1.1E+02	1.7E+02	1.8E-02
Tetrachloroethene	127-18-4	5.0E-03	2.5E+01	1.2E+01	4.5E-02
Toluene	108-88-3	1.0E+00	5.3E+02	5.3E+02	1.4E-01
1,1,1-Trichloroethane	71-55-6	2.0E-01	6.6E+02	1.3E+03	2.0E-01
1,1,2-Trichloroethane	79-00-5	5.0E-03	1.7E+01	2.1E+01	3.3E-01
Trichloroethene	79-01-6	5.0E-03	1.5E+01	2.2E+01	2.0E-01
Vinyl Chloride	75-01-4	2.0E-03	1.1E+00	1.0E+00	1.5E-02
Xylenes (total)	1330-20-7	1.0E+01	1.9E+02	1.9E+02	3.5E-02
Semivolatile Organic Compounds					
Fluorene	86-73-7	8.8E-01	2.0E+00	2.0E+00	1.2E-02
Naphthalene	91-20-3	5.2E-01	3.1E+01	3.1E+01	1.3E-02
Phenanthrene	85-01-8	5.2E-02	1.0E+00	1.0E+00	2.4E-03
Inorganic Compounds					
Aluminum	7429-90-5	3.0E-01		6.4E+04	
Antimony	7440-36-0	6.0E-03		6.8E+01	1.3E-01
Arsenic	7440-38-2	1.0E-02		4.3E+00	1.5E-01
Barium	7440-39-3	2.0E+00		1.4E+04	1.6E+02
Beryllium	7440-41-7	4.0E-03		2.9E+02	2.9E-02
Cadmium	7440-43-9	5.0E-03		1.9E+02	4.6E-03
Chromium (total)	7440-47-3	1.0E-01		4.6E+02	1.1E-02
Chromium III	16065-83-1	3.8E+01		2.9E+05	1.7E-01
Chromium VI	18540-29-9	1.0E-01		4.6E+02	1.1E-02
Cobalt	7440-48-4	4.0E-02		2.4E+03	1.0E-01
Copper	7440-50-8	1.4E+00		7.4E+03	2.1E-02
Cyanide (total)	57-12-5	2.0E-01		5.7E+01	5.2E-03
Iron	7439-89-6	2.0E+00		5.8E+04	
Lead	7439-92-1	4.0E-03			2.9E-02
Manganese	7439-96-5	8.6E-01		9.1E+03	4.6E+00
Nickel	7440-02-0	1.0E-01		7.4E+04	1.2E-01
Selenium	7782-49-2	5.0E-02		9.7E+02	5.0E-03
Silver	7440-22-4	3.4E-02		1.5E+03	2.0E-04
Sodium	7440-23-5	1.2E+02		1.0E+06	
Vanadium	7440-62-2	4.5E-03		9.7E+02	1.2E-02
Zinc	7440-66-6	2.4E+00		1.1E+05	2.7E-01
Notes:					
All criteria are in concentrations of mg/L.					

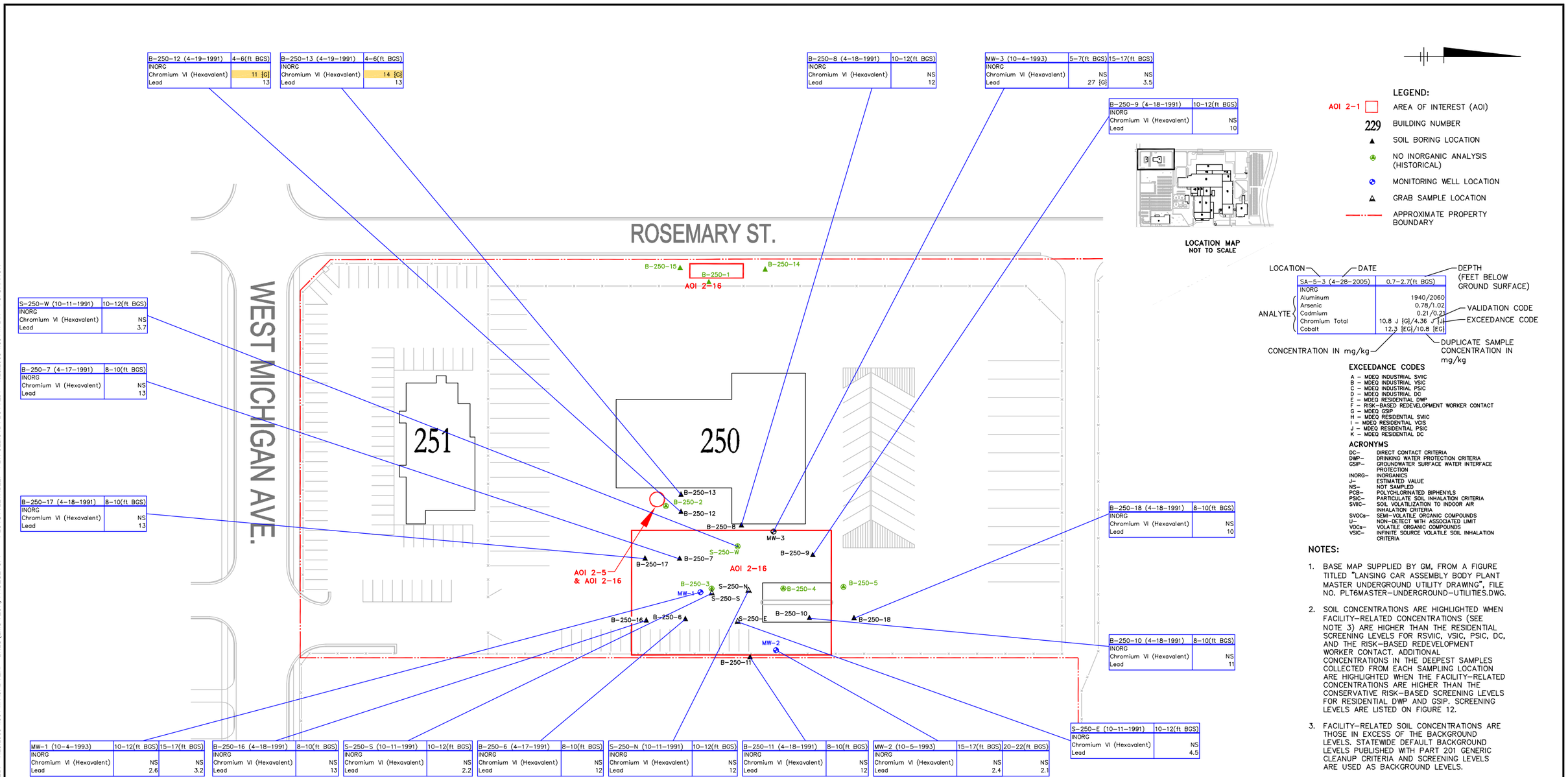
GENERAL MOTORS CORPORATION
LANSING, MICHIG AN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

GROUNDWATER SCREENING LEVELS

ARCADIS

FIGURE
13

CITY:BRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\00000\3001dwg\64480B06.DWG LAYOUT: 13SAVED: 7/24/2008 8:57 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/24/2008 8:57 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ----



B-250-12 (4-19-1991)	4-6(ft BGS)
INORG	
Chromium VI (Hexavalent)	11 {G}
Lead	13

B-250-13 (4-19-1991)	4-6(ft BGS)
INORG	
Chromium VI (Hexavalent)	14 {G}
Lead	13

B-250-8 (4-18-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	12

MW-3 (10-4-1993)	5-7(ft BGS)	15-17(ft BGS)
INORG		
Chromium VI (Hexavalent)	NS	NS
Lead	27 {G}	3.5

B-250-9 (4-18-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	10

S-250-W (10-11-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	3.7

B-250-7 (4-17-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	13

B-250-17 (4-18-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	13

B-250-18 (4-18-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	10

B-250-10 (4-18-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	11

S-250-E (10-11-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	4.5

MW-1 (10-4-1993)	10-12(ft BGS)	15-17(ft BGS)
INORG		
Chromium VI (Hexavalent)	NS	NS
Lead	2.6	3.2

B-250-16 (4-18-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	13

S-250-S (10-11-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	2.2

B-250-6 (4-17-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	12

S-250-N (10-11-1991)	10-12(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	12

B-250-11 (4-18-1991)	8-10(ft BGS)
INORG	
Chromium VI (Hexavalent)	NS
Lead	12

MW-2 (10-5-1993)	15-17(ft BGS)	20-22(ft BGS)
INORG		
Chromium VI (Hexavalent)	NS	NS
Lead	2.4	2.1

LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 2-1 — AREA OF INTEREST (AOI)
- 229 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- ◉ — NO INORGANIC ANALYSIS (HISTORICAL)
- ◉ — MONITORING WELL LOCATION
- ◬ — GRAB SAMPLE LOCATION
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — SA-5-3 (4-28-2005)	DATE	DEPTH (FEET BELOW GROUND SURFACE) 0.7-2.7(ft BGS)
INORG		
ANALYTE: Aluminum		1940/2060
ANALYTE: Arsenic		0.78/1.02
ANALYTE: Cadmium		0.21/0.21
ANALYTE: Chromium Total		10.8 J {G}/4.36 J {G}
ANALYTE: Cobalt		12.3 {EG}/10.8 {EG}

VALIDATION CODE
EXCEEDANCE CODE
CONCENTRATION IN mg/kg
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIC, VSIC, PSIC, DC, AND THE RISK-BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK-BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY-RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 80'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 2 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE 14

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B00644790\000\003\DWG\64479C01.dwg LAYOUT: 14SAVED: 7/28/2008 4:35 PM BY: FOX, AARON
XREFS: PROJECTNAME: ---
64430X01 IMAGES: ---
64479X03
64479X02
PLOTTABLE: PLTFULL.CTB PLOTTED: 7/28/2008 4:35 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE:

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064479\0000\0300\DWG\64479C02.dwg LAYOUT: 15SAVED: 7/28/2008 4:36 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE:
XREFs: PROJECTNAME: ---- IMAGES: FOX, AARON
64430X01
64479X03
64479X02

B-250-2 (8-2-1990)	3-5(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
SVOC			
Fluorene	NS	NS	NS
Naphthalene	NS	NS	NS
Phenanthrene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
1,2-Dichlorobenzene	NS	NS	NS
1,2-Dichloroethane	NS	NS	NS
1,4-Dichlorobenzene	NS	NS	NS
Benzene	0.001 U	0.001 U	0.001 U
Chloroethane	NS	NS	NS
Ethylbenzene	0.001 U	0.001 U	0.001 U
Tetrachloroethene	NS	NS	NS
Toluene	0.001 U	0.001	0.001 U
trans-1,2-Dichloroethene	NS	NS	NS
Trichloroethene	NS	NS	NS
Vinyl chloride	NS	NS	NS
Xylene (total)	0.001 U	0.001 U	0.001 U

B-250-12 (4-19-1991)	4-6(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-13 (4-19-1991)	4-6(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-15 (4-18-1991)	15-17(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-1 (8-2-1990)	3-5(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
SVOC			
Fluorene	NS	NS	NS
Naphthalene	NS	NS	NS
Phenanthrene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
1,2-Dichlorobenzene	NS	NS	NS
1,2-Dichloroethane	NS	NS	NS
1,4-Dichlorobenzene	NS	NS	NS
Benzene	0.001 U	0.001 U	0.001 U
Chloroethane	NS	NS	NS
Ethylbenzene	0.001 U	0.0016	0.001 U
Tetrachloroethene	NS	NS	NS
Toluene	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	NS	NS	NS
Trichloroethene	NS	NS	NS
Vinyl chloride	NS	NS	NS
Xylene (total)	0.001 U	0.001 U	0.001 U

B-250-14 (4-19-1991)	15-17(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.004
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-8 (4-18-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.004
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

MW-3 (10-4-1993)	5-7(ft BGS)	15-17(ft BGS)
SVOC		
Fluorene	0.33 U	0.33 U
Naphthalene	0.33 U	0.33 U
Phenanthrene	0.33 U	0.33 U
VOC		
1,1,1-Trichloroethane	NS	NS
1,1,2-Trichloroethane	NS	NS
1,1-Dichloroethane	NS	NS
1,1-Dichloroethene	NS	NS
1,2-Dichlorobenzene	NS	NS
1,2-Dichloroethane	NS	NS
1,4-Dichlorobenzene	NS	NS
Benzene	0.01 U	0.01 U
Chloroethane	NS	NS
Ethylbenzene	0.01 U	0.01 U
Tetrachloroethene	NS	NS
Toluene	0.01 U	0.01 U
trans-1,2-Dichloroethene	NS	NS
Trichloroethene	NS	NS
Vinyl chloride	NS	NS
Xylene (total)	0.01 U	0.01 U

B-250-9 (4-18-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

S-250-W (10-11-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.33 U
Tetrachloroethene	NS
Toluene	0.33 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.33 U

B-250-7 (4-17-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.8
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.013
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.057

B-250-17 (4-18-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

MW-1 (10-4-1993)	10-12(ft BGS)	15-17(ft BGS)
SVOC		
Fluorene	0.33 U	0.33 U
Naphthalene	0.33 U	0.33 U
Phenanthrene	0.33 U	0.33 U
VOC		
1,1,1-Trichloroethane	NS	NS
1,1,2-Trichloroethane	NS	NS
1,1-Dichloroethane	NS	NS
1,1-Dichloroethene	NS	NS
1,2-Dichlorobenzene	NS	NS
1,2-Dichloroethane	NS	NS
1,4-Dichlorobenzene	NS	NS
Benzene	0.01 U	0.01 U
Chloroethane	NS	NS
Ethylbenzene	0.01 U	0.01 U
Tetrachloroethene	NS	NS
Toluene	0.01 U	0.01 U
trans-1,2-Dichloroethene	NS	NS
Trichloroethene	NS	NS
Vinyl chloride	NS	NS
Xylene (total)	0.01 U	0.01 U

B-250-3 (8-2-1990)	7-9(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
SVOC			
Fluorene	NS	NS	NS
Naphthalene	NS	NS	NS
Phenanthrene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
1,2-Dichlorobenzene	NS	NS	NS
1,2-Dichloroethane	NS	NS	NS
1,4-Dichlorobenzene	NS	NS	NS
Benzene	0.001 U	0.001 U	0.001 U
Chloroethane	NS	NS	NS
Ethylbenzene	0.91 [G]	0.001 U	0.001 U
Tetrachloroethene	NS	NS	NS
Toluene	0.78	0.001 U	0.001 U
trans-1,2-Dichloroethene	NS	NS	NS
Trichloroethene	NS	NS	NS
Vinyl chloride	NS	NS	NS
Xylene (total)	8 [EG]	0.001 U	0.001 U

B-250-16 (4-18-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-6 (4-17-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.014

S-250-S (10-11-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.33 U
Tetrachloroethene	NS
Toluene	0.33 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.33 U

S-250-E (10-11-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.33 U
Tetrachloroethene	NS
Toluene	0.33 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.33 U

B-250-11 (4-18-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

MW-2 (10-5-1993)	15-17(ft BGS)	20-22(ft BGS)
SVOC		
Fluorene	0.33 U	0.33 U
Naphthalene	0.33 U	0.33 U
Phenanthrene	0.33 U	0.33 U
VOC		
1,1,1-Trichloroethane	NS	NS
1,1,2-Trichloroethane	NS	NS
1,1-Dichloroethane	NS	NS
1,1-Dichloroethene	NS	NS
1,2-Dichlorobenzene	NS	NS
1,2-Dichloroethane	NS	NS
1,4-Dichlorobenzene	NS	NS
Benzene	0.01 U	0.01 U
Chloroethane	NS	NS
Ethylbenzene	0.01 U	0.01 U
Tetrachloroethene	NS	NS
Toluene	0.01 U	0.01 U
trans-1,2-Dichloroethene	NS	NS
Trichloroethene	NS	NS
Vinyl chloride	NS	NS
Xylene (total)	0.01 U	0.01 U

S-250-N (10-11-1991)	10-12(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	3 [G]
Phenanthrene	1.6
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.023
Chloroethane	NS
Ethylbenzene	1.4 [G]
Tetrachloroethene	NS
Toluene	0.63
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	7.8 [EG]

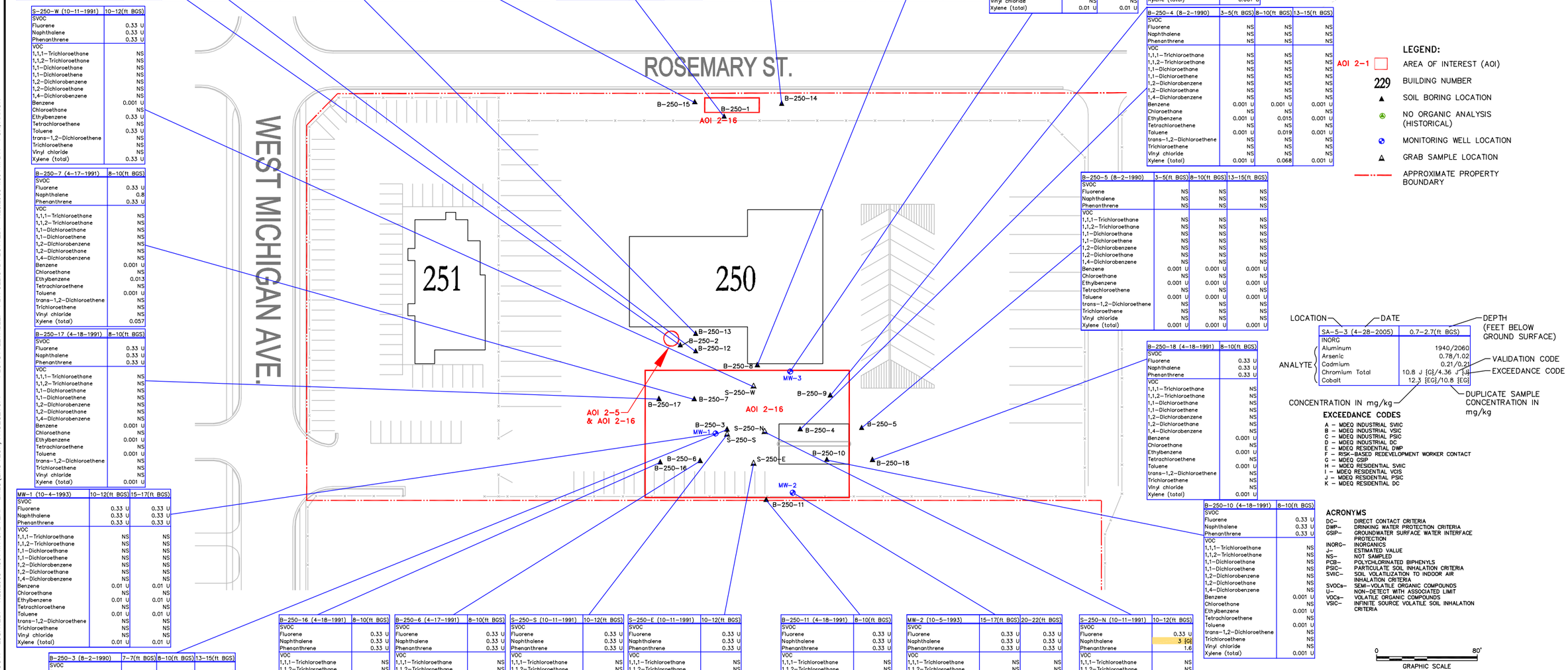
B-250-5 (8-2-1990)	3-5(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
SVOC			
Fluorene	NS	NS	NS
Naphthalene	NS	NS	NS
Phenanthrene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
1,2-Dichlorobenzene	NS	NS	NS
1,2-Dichloroethane	NS	NS	NS
1,4-Dichlorobenzene	NS	NS	NS
Benzene	0.001 U	0.001 U	0.001 U
Chloroethane	NS	NS	NS
Ethylbenzene	0.001 U	0.001 U	0.001 U
Tetrachloroethene	NS	NS	NS
Toluene	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	NS	NS	NS
Trichloroethene	NS	NS	NS
Vinyl chloride	NS	NS	NS
Xylene (total)	0.001 U	0.001 U	0.001 U

B-250-18 (4-18-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

B-250-4 (8-2-1990)	3-5(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
SVOC			
Fluorene	NS	NS	NS
Naphthalene	NS	NS	NS
Phenanthrene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
1,2-Dichlorobenzene	NS	NS	NS
1,2-Dichloroethane	NS	NS	NS
1,4-Dichlorobenzene	NS	NS	NS
Benzene	0.001 U	0.001 U	0.001 U
Chloroethane	NS	NS	NS
Ethylbenzene	0.001 U	0.015	0.001 U
Tetrachloroethene	NS	NS	NS
Toluene	0.001 U	0.019	0.001 U
trans-1,2-Dichloroethene	NS	NS	NS
Trichloroethene	NS	NS	NS
Vinyl chloride	NS	NS	NS
Xylene (total)	0.001 U	0.068	0.001 U

B-250-10 (4-18-1991)	8-10(ft BGS)
SVOC	
Fluorene	0.33 U
Naphthalene	0.33 U
Phenanthrene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethane	NS
1,1-Dichloroethene	NS
1,2-Dichlorobenzene	NS
1,2-Dichloroethane	NS
1,4-Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans-1,2-Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U





LEGEND:

- AOI 2-1 — AREA OF INTEREST (AOI)
- 229 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- NO ORGANIC ANALYSIS (HISTORICAL)
- MONITORING WELL LOCATION
- GRAB SAMPLE LOCATION
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [J]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VOIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC– DIRECT CONTACT CRITERIA
DWP– DRINKING WATER PROTECTION CRITERIA
GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
PCB– POLYCHLORINATED BIPHENYLS
PSIC– PARTICULATE SOIL INHALATION CRITERIA
SVIIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs– SEMI-VOLATILE ORGANIC COMPOUNDS
U– NON-DETECT WITH ASSOCIATED LIMIT
VOCs– VOLATILE ORGANIC COMPOUNDS
VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

0 80'
GRAPHIC SCALE

NOTES:

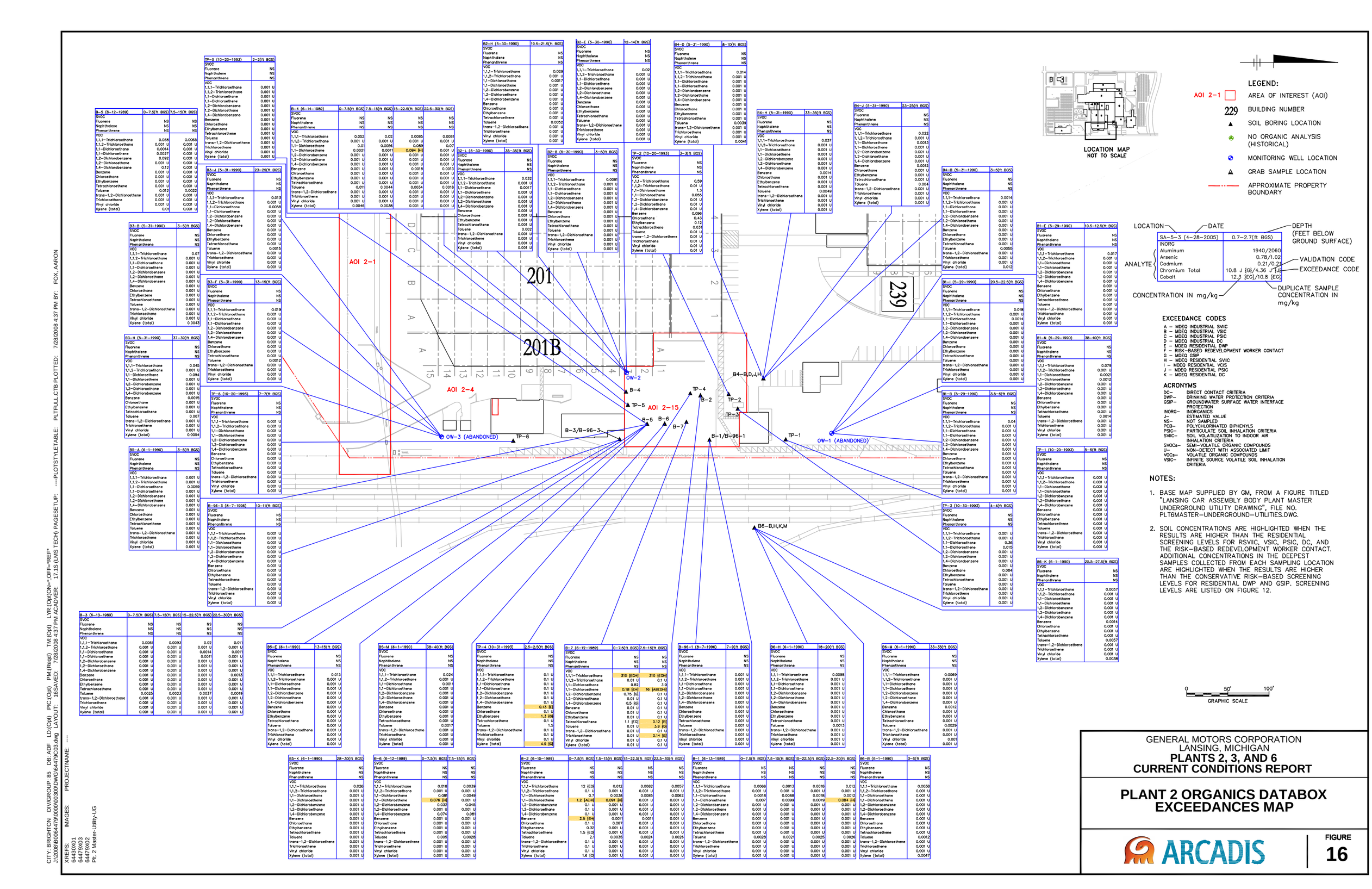
1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK-BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK-BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 2 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE 15



B-5 (6-12-1989)	0-7.5(ft BGS)	7.5-15(ft BGS)
SVOC		
Fluorene	NS	NS
Naphthalene	NS	NS
Phenanthrene	NS	NS
VOC		
1,1,1-Trichloroethane	0.058	0.0063
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethane	0.0014	0.001 U
1,1-Dichloroethene	0.0027	0.001 U
1,2-Dichlorobenzene	0.092	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U
1,4-Dichlorobenzene	0.12	0.001 U
Benzene	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U
Toluene	0.012	0.0022
trans-1,2-Dichloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U
Vinyl chloride	0.001 U	0.001 U
Xylene (total)	0.01	0.001 U

TP-5 (10-20-1993)	2-2(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B-4 (6-14-1989)	0-7.5(ft BGS)	7.5-15(ft BGS)	15-22.5(ft BGS)	22.5-30(ft BGS)
SVOC				
Fluorene	NS	NS	NS	NS
Naphthalene	NS	NS	NS	NS
Phenanthrene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.052	0.02	0.0085	0.0081
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.01	0.0056	0.089	0.07
1,1-Dichloroethene	0.0023	0.0011	0.094 [H]	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Benzene	0.001 U	0.001 U	0.0018	0.0013
Chloroethane	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.01	0.0044	0.0034	0.0018
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	0.0046	0.0038	0.001 U	0.001 U

B3-J (5-31-1990)	23-25(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.013
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0058
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0015
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B3-B (5-31-1990)	3-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.07
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.0043

B3-F (5-31-1990)	13-15(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.019
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0012
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B3-H (5-31-1990)	37-39(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.045
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.094
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.0015
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.0054

TP-6 (10-20-1993)	7-7(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B5-A (6-1-1990)	3-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0059
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B-96-3 (8-7-1996)	10-11(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B2-H (5-30-1990)	19.5-21.5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.029
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0017
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0052
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B2-G (5-30-1990)	12-14(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.02
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B4-D (5-31-1990)	8-10(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.014
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0039
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.0041

B2-L (5-30-1990)	35-36(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.032
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0017
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.002
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B2-B (5-30-1990)	3-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.0081
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

TP-2 (10-20-1993)	3-3(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.59
1,1,2-Trichloroethane	0.01 U
1,1-Dichloroethane	1.3
1,1-Dichloroethene	0.055
1,2-Dichlorobenzene	0.01 U
1,2-Dichloroethane	0.01 U
1,4-Dichlorobenzene	0.01 U
Benzene	0.096
Chloroethane	0.43
Ethylbenzene	0.12
Tetrachloroethene	0.031
Toluene	0.01 U
trans-1,2-Dichloroethene	0.01 U
Trichloroethene	0.01 U
Vinyl chloride	0.01 U
Xylene (total)	0.01 U

B4-H (5-31-1990)	33-35(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.037
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.0014
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0049
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B4-J (5-31-1990)	23-25(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.022
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0013
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.0012
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.004
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B4-B (5-31-1990)	3-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.0014
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0055
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.0012

B1-J (5-29-1990)	20.5-22.5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.018
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0014
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B1-I (5-29-1990)	3.5-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.04
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

TP-3 (10-30-1993)	4-4(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.36
1,1-Dichloroethene	0.015
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.084
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B1-C (5-29-1990)	10.5-12.5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.017
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B1-N (5-29-1990)	38-40(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.079
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.0021
1,1-Dichloroethene	0.0012
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0014
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

TP-1 (10-20-1993)	5-5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B6-K (6-1-1990)	25.5-27.5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.0057
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.0014
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0057
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.0038

B-3 (6-13-1989)	0-7.5(ft BGS)	7.5-15(ft BGS)	15-22.5(ft BGS)	22.5-30(ft BGS)
SVOC				
Fluorene	NS	NS	NS	NS
Naphthalene	NS	NS	NS	NS
Phenanthrene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.0081	0.0093	0.02	0.01
1,1,2-Trichloroethane	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.0014	0.001
1,1-Dichloroethene	0.001 U	0.001 U	0.0011	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Benzene	0.001 U	0.001 U	0.001 U	0.0013
Chloroethane	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.0025	0.0023	0.0037	0.0019
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.001 U	0.001 U	0.001 U	0.001 U
Xylene (total)	0.001 U	0.001 U	0.001 U	0.001 U

B5-E (6-1-1990)	13-15(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.013
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B5-M (6-1-1990)	38-40(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.024
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0017
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

TP-4 (10-31-1993)	2.5-2.5(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.1 U
1,1,2-Trichloroethane	0.1 U
1,1-Dichloroethane	0.1 U
1,1-Dichloroethene	0.1 U
1,2-Dichlorobenzene	0.1 U
1,2-Dichloroethane	0.1 U
1,4-Dichlorobenzene	0.1 U
Benzene	0.13 [E]
Chloroethane	0.1 U
Ethylbenzene	1.3 [G]
Tetrachloroethene	0.1 U
Toluene	1.5
trans-1,2-Dichloroethene	0.1 U
Trichloroethene	0.1 U
Vinyl chloride	0.1 U
Xylene (total)	4.9 [G]

B-7 (6-12-1989)	0-7.5(ft BGS)	7.5-15(ft BGS)
SVOC		
Fluorene	NS	NS
Naphthalene	NS	NS
Phenanthrene	NS	NS
VOC		
1,1,1-Trichloroethane	310 [EGH]	310 [EGH]
1,1,2-Trichloroethane	0.01 U	0.1 U
1,1-Dichloroethane	0.82	3.9
1,1-Dichloroethene	0.18 [EH]	16 [ABEGHI]
1,2-Dichlorobenzene	0.75 [G]	0.1 U
1,2-Dichloroethane	0.01 U	0.1 U
1,4-Dichlorobenzene	0.5 [G]	0.1 U
Benzene	0.01 U	0.1 U
Chloroethane	0.01 U	0.1 U
Ethylbenzene	0.01 U	0.1 U
Tetrachloroethene	1.1 [EG]	0.12 [E]
Toluene	0.01 U	3.9 [G]
trans-1,2-Dichloroethene	0.01 U	0.1 U
Trichloroethene	0.01 U	0.14 [E]
Vinyl chloride	0.01 U	0.1 U
Xylene (total)	0.01 U	0.1 U

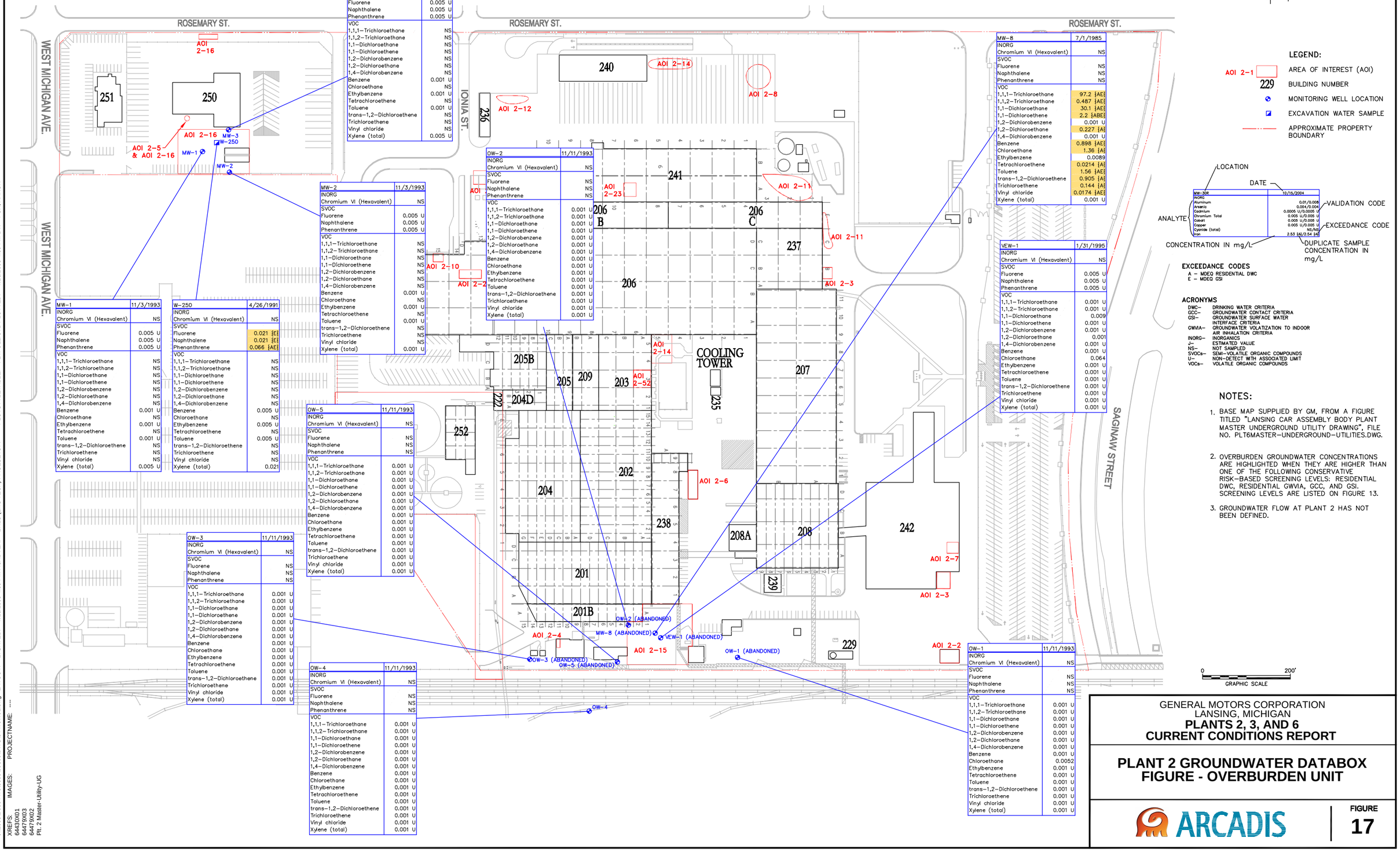
B-96-1 (8-7-1996)	7-9(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B6-H (6-1-1990)	18-20(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.0098
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0013
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B6-M (6-1-1990)	33-35(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.0069
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.0012
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.0029
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B5-K (6-1-1990)	28-30(ft BGS)
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1-Trichloroethane	0.026
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
1,2-Dichlorobenzene	0.001 U
1,2-Dichloroethane	0.001 U
1,4-Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans-1,2-Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

B5-G (6-12-1989)	0-7.5(ft BGS)	7.5-15(ft BGS)
SVOC		
Fluorene	NS	NS
Naphthalene	NS	NS
Phenanthrene	NS	NS
VOC		
1,1,1-Trichloroethane	0.018	0.0039
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethane	0.081	0.0049
1,1-Dichloroethene	0.076 [H]	0.001 U
1,2-Dichlorobenzene	0.032	0.045
1,2-Dichloroethane	0.001 U	0.001 U
1,4-Dichlorobenzene	0.074	0.081
Benzene	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U
Tetrachloroethene	0.001 U	0.001 U
Toluene	0.005	0.0028
trans-1,2-Dichloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U
Vinyl chloride	0.001 U	0.001 U
Xylene (total



MW-3	11/3/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	0.005 U
Naphthalene	0.005 U
Phenanthrene	0.005 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethane	NS
1,1–Dichloroethene	NS
1,2–Dichlorobenzene	NS
1,2–Dichloroethane	NS
1,4–Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans–1,2–Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.005 U

MW-2	11/3/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	0.005 U
Naphthalene	0.005 U
Phenanthrene	0.005 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethane	NS
1,1–Dichloroethene	NS
1,2–Dichlorobenzene	NS
1,2–Dichloroethane	NS
1,4–Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans–1,2–Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.001 U

OW-2	11/11/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.001 U
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001 U
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

MW-8	7/1/1985
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	97.2 {AE}
1,1,2–Trichloroethane	0.487 {AE}
1,1–Dichloroethane	30.1 {AE}
1,1–Dichloroethene	2.2 {ABE}
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.227 {A}
1,4–Dichlorobenzene	0.001 U
Benzene	0.898 {AE}
Chloroethane	1.36 {A}
Ethylbenzene	0.0089
Tetrachloroethene	0.0214 {A}
Toluene	1.56 {AE}
trans–1,2–Dichloroethene	0.905 {A}
Trichloroethene	0.144 {A}
Vinyl chloride	0.0174 {AE}
Xylene (total)	0.001 U

VEW-1	1/31/1995
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	0.005 U
Naphthalene	0.005 U
Phenanthrene	0.005 U
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.009
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.064
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

MW-1	11/3/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	0.005 U
Naphthalene	0.005 U
Phenanthrene	0.005 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethane	NS
1,1–Dichloroethene	NS
1,2–Dichlorobenzene	NS
1,2–Dichloroethane	NS
1,4–Dichlorobenzene	NS
Benzene	0.001 U
Chloroethane	NS
Ethylbenzene	0.001 U
Tetrachloroethene	NS
Toluene	0.001 U
trans–1,2–Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.005 U

W-250	4/26/1991
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	0.021 {E}
Naphthalene	0.021 {E}
Phenanthrene	0.066 {AE}
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethane	NS
1,1–Dichloroethene	NS
1,2–Dichlorobenzene	NS
1,2–Dichloroethane	NS
1,4–Dichlorobenzene	NS
Benzene	0.005 U
Chloroethane	NS
Ethylbenzene	0.005 U
Tetrachloroethene	NS
Toluene	0.005 U
trans–1,2–Dichloroethene	NS
Trichloroethene	NS
Vinyl chloride	NS
Xylene (total)	0.021

OW-5	11/11/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.001 U
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001 U
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

OW-3	11/11/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.001 U
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001 U
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

OW-4	11/11/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.001 U
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001 U
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.001 U
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

OW-1	11/11/1993
INORG	
Chromium VI (Hexavalent)	NS
SVOC	
Fluorene	NS
Naphthalene	NS
Phenanthrene	NS
VOC	
1,1,1–Trichloroethane	0.001 U
1,1,2–Trichloroethane	0.001 U
1,1–Dichloroethane	0.001 U
1,1–Dichloroethene	0.001 U
1,2–Dichlorobenzene	0.001 U
1,2–Dichloroethane	0.001 U
1,4–Dichlorobenzene	0.001 U
Benzene	0.001 U
Chloroethane	0.0052
Ethylbenzene	0.001 U
Tetrachloroethene	0.001 U
Toluene	0.001 U
trans–1,2–Dichloroethene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylene (total)	0.001 U

LEGEND:

- AOI 2-1 — AREA OF INTEREST (AOI)
- 229 — BUILDING NUMBER
- MONITORING WELL LOCATION
- EXCAVATION WATER SAMPLE
- APPROXIMATE PROPERTY BOUNDARY

MW-30R	10/15/2004
INORG	
Aluminum	0.01/0.008
Arsenic	0.004/0.004
Cadmium	0.0005 U/0.0005 U
Chromium Total	0.005 U/0.005 U
Cobalt	0.005 U/0.005 U
Copper	0.005 U/0.005 U
Cyanide (total)	NS/NS
Iron	2.53 [A]/2.54 [A]

LOCATION, DATE, ANALYTE, VALIDATION CODE, EXCEEDANCE CODE, CONCENTRATION IN mg/L, DUPLICATE SAMPLE CONCENTRATION IN mg/L

EXCEEDANCE CODES

A – MDEQ RESIDENTIAL DWC
E – MDEQ GSI

ACRONYMS

DWC– DRINKING WATER CRITERIA
GCC– GROUNDWATER CONTACT CRITERIA
GSI– GROUNDWATER SURFACE WATER INTERFACE CRITERIA
GWVIA– GROUNDWATER VOLATIZATION TO INDOOR AIR INHALATION CRITERIA
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
SVOCs– SEMI–VOLATILE ORGANIC COMPOUNDS
U– NON–DETECT WITH ASSOCIATED LIMIT
VOCs– VOLATILE ORGANIC COMPOUNDS

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER–UNDERGROUND–UTILITIES.DWG.
2. OVERBURDEN GROUNDWATER CONCENTRATIONS ARE HIGHLIGHTED WHEN THEY ARE HIGHER THAN ONE OF THE FOLLOWING CONSERVATIVE RISK–BASED SCREENING LEVELS: RESIDENTIAL DWC, RESIDENTIAL GWVIA, GCC, AND GSI. SCREENING LEVELS ARE LISTED ON FIGURE 13.
3. GROUNDWATER FLOW AT PLANT 2 HAS NOT BEEN DEFINED.

0 200'
GRAPHIC SCALE

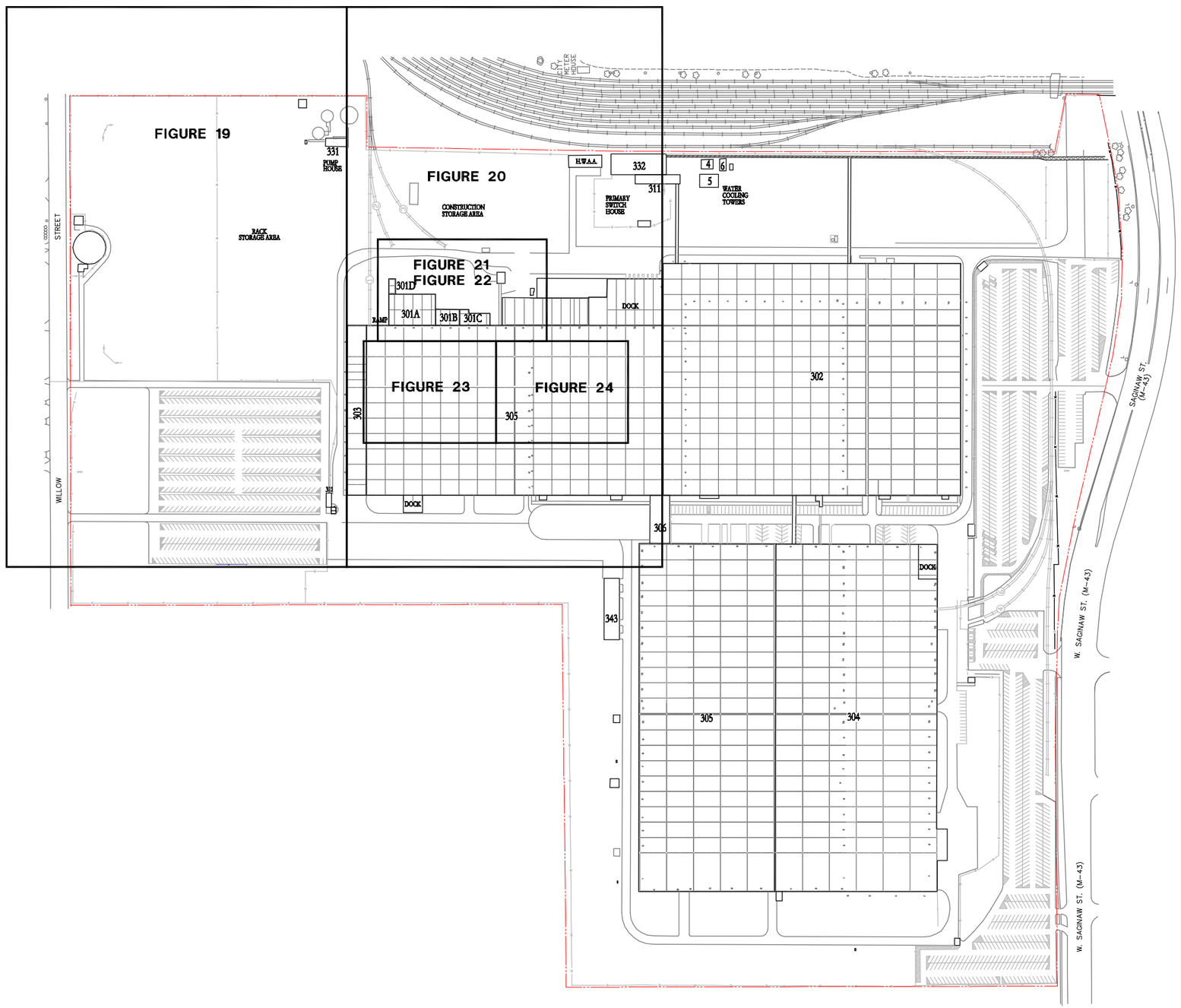
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 2 GROUNDWATER DATABOX FIGURE - OVERBURDEN UNIT

ARCADIS

FIGURE 17

CITY:BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* J:\2008\B0064479\000\00300\DWG\64479W01.dwg LAYOUT: 17SAVED: 7/28/2008 4:39 PM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ----PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/28/2008 4:39 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE:
64430X01
64479X03
64479X02
Plt: 2 Master-Utility-UG



LEGEND:

302 BUILDING NUMBER

APPROXIMATE PROPERTY BOUNDARY

BUILDING LINE

COLUMN LINE

RAILROAD

FIGURE BOUNDARY

NOTE:

BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.

0 300'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 SOIL DATABOX FIGURE LAYOUT

ARCADIS

FIGURE
18

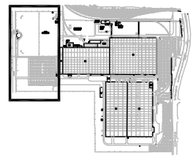
CITY: BRIGHTON DIV/GROUP: 141 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\0000\0300\d0wg\64480B04.DWG LAYOUT: 18SAVED: 7/29/2008 8:07 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:07 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64480X03
64480X02

CITY: BRIGHTON DIV/GROUP:141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448000000300\dwg\64480C07.DWG LAYOUT: 19SAVED: 7/29/2008 8:11 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:11 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64480X03
64480X02

60 (3-29-1989)	9–11	19–21	29–31	39–41	49–51
INORG					
Arsenic	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS
Copper	12	4	6.9	8.5	7.3
Cyanide (total)	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS
Nickel	14	3.4	7.8	9.8	10
Vanadium	NS	NS	NS	NS	NS
Zinc	35	14	38	37	32

MW-88-1 (1-1-1988)	23.5–25	48.5–50
INORG		
Arsenic	4.3	5.9
Beryllium	NS	NS
Cadmium	0.4 U	0.4 U
Chromium III (Trivalent)	9.7	12.7
Chromium Total	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U
Copper	8.9	13
Cyanide (total)	8 U	25 [EGK]
Lead	3.2	3.9
Manganese	NS	NS
Nickel	7.2	16
Vanadium	NS	NS
Zinc	24	45

59 (4-4-1989)	8.5–10.5	18.5–20.5	23.5–25.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5
INORG							
Arsenic	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS
Copper	16	4	14	6.6	9	9.8	6.5
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS
Nickel	14	4.4	14	4	8.1	9.4	5
Vanadium	NS	NS	NS	NS	NS	NS	NS
Zinc	23	10	27	18	21	22	19



LOCATION MAP
NOT TO SCALE

61 (3-29-1989)	8.5–10.5	23.5–25.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5
INORG							
Arsenic	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS
Copper	13	8.7	9.4	14	13	7.2	10
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS
Nickel	13	9.4	8.8	18	18	8.5	18
Vanadium	NS	NS	NS	NS	NS	NS	NS
Zinc	45	27	38	42	46	30	40

56 (4-6-1989)	8.5–10.5	18.5–20.5	23.5–25.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5	78.5–80.5
INORG									
Arsenic	NS	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	11	29	6.9	6.1	11	4.9	14	14	1
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	6.2	32	4.3	3	7.8	4.1	13	12	12
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	21	20	15	13	21	12	33	30	42

57 (4-7-1989)	8.5–10.5	18.5–20.5	23.5–25.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5
INORG								
Arsenic	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS	NS
Copper	8.5	9.4	4.2	8.2	5.7	8.2	13	17
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	5.9	8	3.1	6	3.7	8.7	13	18
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	22	20	12	21	17	23	31	37

9 (1-1-1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	8.2	8.6	7.8	5.1	7.9	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	21.7	16.7	9.6	10.7	11.7	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NS
Copper	18	13	8.5	9.5	12	NS
Cyanide (total)	8 U	8 U	10 [EG]	8 U	8 U	8 U
Lead	5.9	5	2.6	3	4.4	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	20	15	10	12	15	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	44	42	28	28	45	NS

CS-5 (11-1-2002)	43–45
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

CS-7 (11-4-2002)	11–13
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

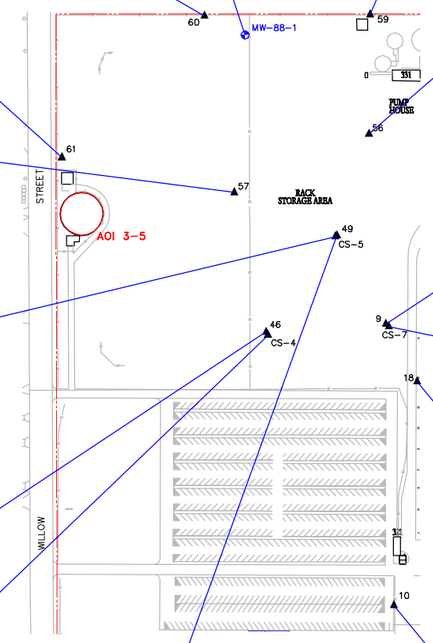
46 (1-1-1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	6	2.6	4.1	3.7	9	5.4	2.9	3.1/4	3.3	4.1
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS/NS	NS	NS
Cadmium	0.36	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	25.7	5.3	12.7	11.7	11.7	7.1	5.3	4.3/5.3	7.6	8.7
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec/Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U
Copper	5.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U/0.2 U	0.2 U	10
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	8 U	10 [EG]	10 [EG]/15 [EGK]	17.5 [EGK]	15 [EGK]
Lead	13	1.4	4.1	2.8	3.6	1 U	2.5	1.8/2.4	2.1	2.5
Manganese	NS	NS	NS	NS	NS	NS	NS	NS/NS	NS	NS
Nickel	24	4.6	14	9.2	11	5.5	6.5	4.9/5.9	7.6	9.3
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS/NS	NS	NS
Zinc	50	14	35	24	35	18	27	27/26	24	35

CS-4 (11-1-2002)	43–45
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.3 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

18 (1-1-1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	7.3	5	4.9	4	4.8
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	12.7	9.7	6.3	13.7	16.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	14	13	18	12	16
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	4.3	3.5	2.4	3.5	4.9
Manganese	NS	NS	NS	NS	NS
Nickel	12	9.1	22	10	13
Vanadium	NS	NS	NS	NS	NS
Zinc	31	29	20	32	39

10 (1-1-1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	8.4	7.7	8.6	6	6.4
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	21.7	14.7	16.7	15.7	9.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	17	16	8 U	12	12
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	6.6	4.7	5	4.7	3.5
Manganese	NS	NS	NS	NS	NS
Nickel	15	14	18	14	10
Vanadium	NS	NS	NS	NS	NS
Zinc	38	31	41	36	36

49 (1-1-1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	3.9	3.2	4.1	3.5	3.3	3.4/4.1	1	2.3	3.7	4.6
Beryllium	NS	NS	NS	NS	NS	NS/NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	15.7	11.7	22.7	5.9	10.7	7.3/9.6	4.3	7.6	11.7	8.5
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec/Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	16	8.7	16	6	9.1	7/7.4	3.1	5.6	8.5	8.6
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	8 U/8 U	8 U	9.3 [EG]	10 [EG]	8 U
Lead	10	2.7	6.7	2.2	3.9	3.3/4.4	1.5	2.6	6.5	4
Manganese	NS	NS	NS	NS	NS	NS/NS	NS	NS	NS	NS
Nickel	15	9	20	6.3	9.3	7.2/8.7	3.7	5.4	14	10
Vanadium	NS	NS	NS	NS	NS	NS/NS	NS	NS	NS	NS
Zinc	31	18	49	18	28	34/43	15	19	31	27



LEGEND:

- AOI 3-1 — AREA OF INTEREST (AOI)
- 301 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- SOIL GRAB SAMPLE
- MONITORING WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE	SA-5-3 (4-28-2005)	0.7–2.7 (DEPTH (FEET BELOW GROUND SURFACE))
INORG		
ANALYTE: Aluminum	1940/2060	
Arsenic	0.78/1.02	
Cadmium	0.21/0.23	(VALIDATION CODE)
Chromium Total	10.8 J [G]/4.36 J [G]	(EXCEEDANCE CODE)
Cobalt	12.3 [EG]/10.8 [EG]	(DUPLICATE SAMPLE CONCENTRATION IN mg/kg)

CONCENTRATION IN mg/kg

EXCEEDANCE CODES

- A – MDEQ INDUSTRIAL SVIC
- B – MDEQ INDUSTRIAL VSIC
- C – MDEQ INDUSTRIAL PSIC
- D – MDEQ INDUSTRIAL DC
- E – MDEQ RESIDENTIAL DWP
- F – RISK-BASED REDEVELOPMENT WORKER CONTACT
- G – MDEQ GSIP
- H – MDEQ RESIDENTIAL SVIC
- I – MDEQ RESIDENTIAL VCIS
- J – MDEQ RESIDENTIAL PSIC
- K – MDEQ RESIDENTIAL DC

ACRONYMS

- DC– DIRECT CONTACT CRITERIA
- DWP– DRINKING WATER PROTECTION CRITERIA
- GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
- INORG– INORGANICS
- J– ESTIMATED VALUE
- NS– NOT SAMPLED
- PCB– POLYCHLORINATED BIPHENYLS
- PSIC– PARTICULATE SOIL INHALATION CRITERIA
- SVIIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- SVOCs– SEMI-VOLATILE ORGANIC COMPOUNDS
- U– NON-DETECT WITH ASSOCIATED LIMIT
- VOCs– VOLATILE ORGANIC COMPOUNDS
- VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTE:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK-BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK-BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY-RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 300'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE 19

CITY: BRIGHTON DIV/GROUP: 141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\00000\00300\dwg\64480C13.DWG LAYOUT: 20SAVED: 7/29/2008 8:12 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64480X03 64480X02 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:12 AM BY: FOX, AARON

42 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	2.8	4.6	3.3	12 [E]	6.2	3.8	3.8	2.6	3.6	4.2
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	4.8	15.7	11.7	12.7	11.7	6.4	6.1	7	10.7	6.6
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	4.6	14	10	11	9.9	8.3	6.3	6.9	9.4	8.3
Cyanide (total)	8 U	8 U	8 U	8 U	22.4 [EGK]	8 U	10 [EG]	8 U	17.5 [EGK]	15 [EGK]
Lead	1.6	4.4	3.7	4.6	3.6	2.7	2.6	2.3	3.2	2.7
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	4	11	11	13	9.7	6	4.7	6.9	9.6	7.2
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	12	24	32	35	26	27	41	24	30	20

CS-6 (11–4–2002)	43–45
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

CS-8 (11–6–2002)	21–23
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

41 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	2.9	4	2.5	1	4.7	2.8	3.1	3.5	2.4	2.9
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	12.7	12.7	13.7	3.9	10.7	6.7	5.6	6.7	6.7	5.7
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	4.8	11	10	3	10	7.1	10	7.8	7.6	6.2
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	12.5 [EG]	12.5 [EG]	15 [EGK]	20 [EGK]	10 [EG]
Lead	2.1	3.4	3.9	1 U	3.9	2.7	1.9	2.6	2.5	2.3
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	4	9.7	11	2.8	8.1	5.8	4.2	6.4	7.6	7
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	13	25	28	9.3	25	23	20	25	48	23

43 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	2.4	4.9	3.6	4.7	2.6	2.2	2.5	1.7	3.9	3.7
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	40.7	15.7	12.7	12.7	16.7	4.6	3.9	3.9	7.5	7.5
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	20	12	11	10	12	4.3	4.8	4	6.6	6.7
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	8 U	10 [EG]	10 [EG]	12.5 [EG]	10 [EG]
Lead	11	4.1	3.9	3.6	3.4	1.5	1.9	1.3	2.2	2.5
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	27	15	11	12	12	3.5	4.1	3.2	7.3	6.9
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	69	36	29	29	34	18	18	14	24	30

54 (4–5–1989)	8.5–10.5	18.5–20.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5
INORG							
Arsenic	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS
Copper	11	9.1	4.9	12	7.5	10	23
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS
Nickel	9.2	7.8	3	7.9	6.1	8.1	26
Vanadium	NS	NS	NS	NS	NS	NS	NS
Zinc	23	19	27	33	25	19	10

CS-9 (11–6–2002)	43–45
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

58 (4–4–1989)	8–10	18–20	23–25	28–30	38–40	48–50	58–60
INORG							
Arsenic	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS
Copper	12	9.4	4.7	5.9	8.5	7.7	7.3
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS
Nickel	11	8.6	4.2	4.3	7.4	7	7.2
Vanadium	NS	NS	NS	NS	NS	NS	NS
Zinc	24	196	8.1	15	20	22	23

53 (4–6–1989)	8.5–10.5	18.5–20.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5
INORG						
Arsenic	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS
Copper	9.8	11	4.5	6.1	10	11
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	7.3	6.8	2.9	5	8.4	7.5
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	19	24	17	16	21	29

55 (4–6–1989)	8.5–10.5	18.5–20.5	23.5–25.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5
INORG								
Arsenic	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS	NS
Copper	9.3	10	4.5	6.4	11	4.3	12	11
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	25 [EGK]	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	11	8.9	3.5	4.7	8.7	4	10	9.2
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	21	20	11	21	25	10	29	24

CS-3 (10–26–2002)	21–22.5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	0.5 U
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

50 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	6.7	6.6	4	2.8/2.8	3.1
Beryllium	NS	NS	NS	NS/NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U
Chromium III (Trivalent)	9.4	22.7	8.7	13.7/11.7	16.7
Chromium Total	Spec	Spec	Spec	Spec/Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U
Copper	46	17	9	12/11	13
Cyanide (total)	8 U	8 U	8 U	10 [EG]/8 U	10 [EG]
Lead	3.9	5.4	3.6	4.9/4	5.1
Manganese	NS	NS	NS	NS/NS	NS
Nickel	16	20	8.6	14/10	15
Vanadium	NS	NS	NS	NS/NS	NS
Zinc	26	45	26	42/28	34

11 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	5.1	8.3	4.6	3.6	4
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	13.7	23.7	17.7	10.7	10.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	13	18	16	13	12
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	5.7	8	5.3	4.1	3.8
Manganese	NS	NS	NS	NS	NS
Nickel	12	20	15	11	10
Vanadium	NS	NS	NS	NS	NS
Zinc	37	26	32	33	25

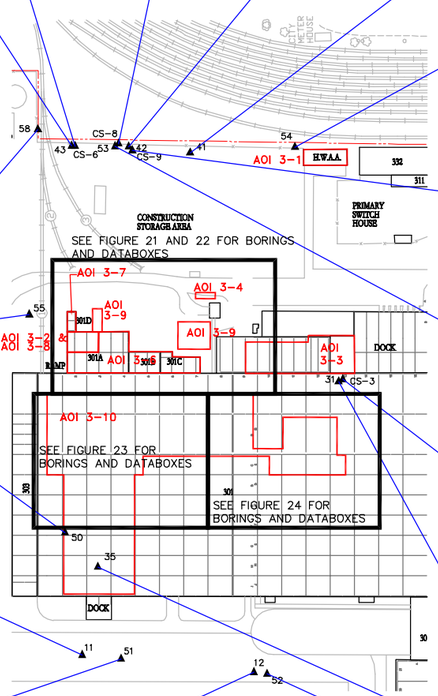
51 (3–30–1989)	8.5–10.5	18.5–20.5	28.5–30.5
INORG			
Arsenic	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS
Chromium Total	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS
Copper	14	7.6	8
Cyanide (total)	1 U	1 U	1 U
Lead	NS	NS	NS
Manganese	NS	NS	NS
Nickel	18	8.9	7.8
Vanadium	NS	NS	NS
Zinc	37	22	36

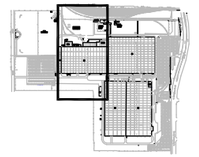
12 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	6.3	4.6	3.3	6	2.3
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	12.7	6.3	13.7	20.7	4
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	12	5.9	9.1	14	4.3
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	4.2	2.5	2.9	5.3	1 U
Manganese	NS	NS	NS	NS	NS
Nickel	12	6.9	12	18	3.1
Vanadium	NS	NS	NS	NS	NS
Zinc	33	24	32	48	12

35 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	3.5	2.5	7.9	4.1	4.5	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	9.3	5.8	9.7	11.7	13.7	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NS
Copper	12	12	10	9.8	11	NS
Cyanide (total)	10 [EG]	8 U	8 U	10 [EG]	17.5 [EGK]	8 U
Lead	9.8	2.5	3.7	3.1	3.4	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	5.9	4.8	9.4	9.9	11	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	36	17	25	27	27	NS

31 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	3.6	2.7	3.5/3.9	4.1	11 [E]	NS
Beryllium	NS	NS	NS/NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	5.8	6.5	10.7/9.7	20.7	11.7	NS
Chromium Total	Spec	Spec	Spec/Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U	NS
Copper	0.2 U	0.2 U	0.2 U/0.2 U	1.1	0.2 U	NS
Cyanide (total)	8 U	8 U	8 U/8 U	15 [EGK]	15 [EGK]	8 U
Lead	2.2	6.4	2.9/2.7	5.8	3.9	NS
Manganese	NS	NS	NS/NS	NS	NS	NS
Nickel	5.2	5.5	9.6/9	21	12	NS
Vanadium	NS	NS	NS/NS	NS	NS	NS
Zinc	18	18	26/25	50	34	NS

52 (3–31–1989)	8.5–10.5	18.5–20.5	28.5–30.5	38.5–40.5	48.5–50.5	58.5–60.5	68.5–70.5	78.5–80.5
INORG								
Arsenic	NS	NS	NS	5.1	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS	NS
Copper	12	15	8.1	7.5	6.3	7	8.5	4.6
Cyanide (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	NS	19	8.2	8.6	6.2	9.4	9.4	5.6
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	41	42	32	24	26	30	34	13





LOCATION MAP
NOT TO SCALE

AOI 3-1 — AREA OF INTEREST (AOI)
301 — BUILDING NUMBER
SOIL BORING LOCATION
NO INORGANICS ANALYSIS (HISTORICAL)
SOIL GRAB SAMPLE
MONITORING WELL LOCATION
APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA–5–3 (4–28–2005)	0.7–2.7
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [J]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE
CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK–BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC– DIRECT CONTACT CRITERIA
DWP– DRINKING WATER PROTECTION CRITERIA
GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
PCB– POLYCHLORINATED BIPHENYLS
PSIC– PARTICULATE SOIL INHALATION CRITERIA
SVIIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs– SEMI–VOLATILE ORGANIC COMPOUNDS
U– NON–DETECT WITH ASSOCIATED LIMIT
VOCs– VOLATILE ORGANIC COMPOUNDS
VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTE:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)". DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS–SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY–RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK–BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY–RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK–BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY–RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 — 300' — GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE 20

CITY: BRIGHTON DIVGROUP: 141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\0000\003000\dwg\64480C08.DWG LAYOUT: 21SAVED: 7/29/2008 8:13 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:14 AM BY: FOX, AARON
XREFS: 64480X03 64480X02
IMAGES: PROJECTNAME: ---

SB#6 (2-12-1990)	8.5-10	18.5-20.5	28.5-30
INORG			
Arsenic	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS
Chromium Total	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS
Copper	NS	NS	NS
Cyanide (total)	NS	NS	NS
Lead	NS	NS	NS
Manganese	NS	NS	NS
Nickel	17	18	18
Vanadium	NS	NS	NS
Zinc	NS	NS	NS

SB#6 (2-13-1990)	38.5-40	48.5-50	58.5-60	68.5-70	80-80.5
INORG					
Arsenic	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS
Copper	NS	NS	NS	NS	NS
Cyanide (total)	NS	NS	NS	NS	NS
Lead	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS
Nickel	21	16	14	30	21
Vanadium	NS	NS	NS	NS	NS
Zinc	NS	NS	NS	NS	NS

SB#2 (7-28-1989)	0-3.5	3.5-7
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	15 [G]	20 [G]
Chromium VI (Hexavalent)	NS	NS
Copper	16	19
Cyanide (total)	1 U	1 U
Lead	NS	NS
Manganese	NS	NS
Nickel	6300 [EG]	2400 [EG]
Vanadium	NS	NS
Zinc	99	55

24 (1-1-1988)	1-2.5	6-7.5	11-12.5	16-17.5	21-22.5	23.5-25
INORG						
Arsenic	6.4	5.8	3.8	5.1	5.4	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	14.7	8.5	13.7	16.7	14.7	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NS
Copper	16	9.4	16	14	12	NS
Cyanide (total)	8 U	8 U	8 U	8 U	8.8 [EG]	15 [EGK]
Lead	4.5	3.3	4.1	5.9	4.9	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	15	9.7	14	20	17	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	34	26	33	44	37	NS

23 (1-1-1988)	1-2.5	6-7.5	11-12.5	16-17.5	21-22.5	23.5-25
INORG						
Arsenic	5.1	4.5	3.3	5.8	4.4	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	14.7	8.5	7.7	18.7	10.7	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NS
Copper	15	9.6	12	16	11	NS
Cyanide (total)	8 U	8 U	10 [EG]	8 U	8 U	15 [EGK]
Lead	3.3	2.8	2.3	5.1	3.3	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	18	10	29	20	9	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	31	25	18	42	26	NS

SB#3 (7-28-1989)	0-3.5	3.5-7
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	16 [G]	12 [G]
Chromium VI (Hexavalent)	NS	NS
Copper	21	14
Cyanide (total)	1 U	1 U
Lead	NS	NS
Manganese	NS	NS
Nickel	26	71
Vanadium	NS	NS
Zinc	34	31

SB#8 (2-20-1990)	4-6	8.5-10	18.5-20.5	28.5-30	38.5-40	48.5-50	58.5-60	68.5-70
INORG								
Arsenic	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS	NS	NS
Copper	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (total)	NS	NS	NS	NS	NS	NS	NS	NS
Lead	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	38	85	19	36	120	95	35	29
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	NS	NS	NS	NS	NS	NS	NS	NS

SB#1 (7-28-1989)	0-3.5	3.5-7
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	7.1 [G]	11 [G]
Chromium VI (Hexavalent)	NS	NS
Copper	13	12
Cyanide (total)	1 U	1 U
Lead	NS	NS
Manganese	NS	NS
Nickel	590 [EG]	660 [EG]
Vanadium	NS	NS
Zinc	28	35

SB#5 (2-14-1990)	8.5-10	15-15.5	18.5-20.5
INORG			
Arsenic	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS
Chromium Total	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS
Copper	NS	NS	NS
Cyanide (total)	NS	NS	NS
Lead	NS	NS	NS
Manganese	NS	NS	NS
Nickel	700 [EG]	42	41
Vanadium	NS	NS	NS
Zinc	NS	NS	NS

27 (1-1-1988)	1-2.5	6-7.5	11-12.5	16-17.5	21-22.5	23.5-25
INORG						
Arsenic	17 [EK]	7.5	5.6	4.7	16 [EK]	4.6
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	18.7	11.7	12.7	11.7	9.7	9
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	17	12	11	10	15	12
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	12.5 [EG]
Lead	9.9	3.7	3.4	3	5.7	2.4
Manganese	NS	NS	NS	NS	NS	NS
Nickel	17	12	10	9.6	11	9.1
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	30	27	27	23	35	25

SB#7 (2-19-1990)	28.5-30
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	NS
Cyanide (total)	NS
Lead	NS
Manganese	NS
Nickel	39
Vanadium	NS
Zinc	NS

SB#7 (2-15-1990)	4-6	13.5-15.5	23.5-25.5
INORG			
Arsenic	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS
Chromium Total	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS
Copper	NS	NS	NS
Cyanide (total)	NS	NS	NS
Lead	NS	NS	NS
Manganese	NS	NS	NS
Nickel	720 [EG]	37	33
Vanadium	NS	NS	NS
Zinc	NS	NS	NS

26 (1-1-1988)	1-2.5	6-7.5	11-12.5	16-17.5	21-22.5	23.5-25
INORG						
Arsenic	7.2	5.6	4.3	3.6	4.7	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	21.7	14.7	6.3	10.7	10.7	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NS
Copper	17	13	30	12	11	NS
Cyanide (total)	8 U	8 U	8 U	15 [EGK]	12.5 [EG]	12.5 [EG]
Lead	7	4	2.2	3.8	2.8	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	19	15	5.9	12	11	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	37	38	18	29	27	NS

25 (1-1-1988)	1-2.5	6-7.5	11-12.5	16-17.5	21-22.5	23.5-25
INORG						
Arsenic	5.4	4.9	3.8	4.2	5.2	2.3
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.65	0.4 U	0.4 U	0.4 U	0.4 U	0.2
Chromium III (Trivalent)	13.7	10.7	11.7	10.7	12.7	7.6
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	13	9.7	12	7.8	12	12
Cyanide (total)	8 U	8 U	8 U	8 U	8 U	10 [EG]
Lead	3.8	2.8	4.3	2.7	3.9	2.6
Manganese	NS	NS	NS	NS	NS	NS
Nickel	14	9.8	13	9.9	14	6.3
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	33	26	30	24	44	27

SB#4 (2-14-1990)	8.5-10	15-17
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	NS	NS
Chromium VI (Hexavalent)	NS	NS
Copper	NS	NS
Cyanide (total)	NS	NS
Lead	NS	NS
Manganese	NS	NS
Nickel	58	25
Vanadium	NS	NS
Zinc	NS	NS



LEGEND:
- AOI 3-1 — AREA OF INTEREST (AOI)
- 301 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- ⊕ — NO INORGANICS ANALYSIS (HISTORICAL)
- △ — SOIL GRAB SAMPLE
- ⊕ — MONITORING WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [J]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTE:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK-BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK-BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY-RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

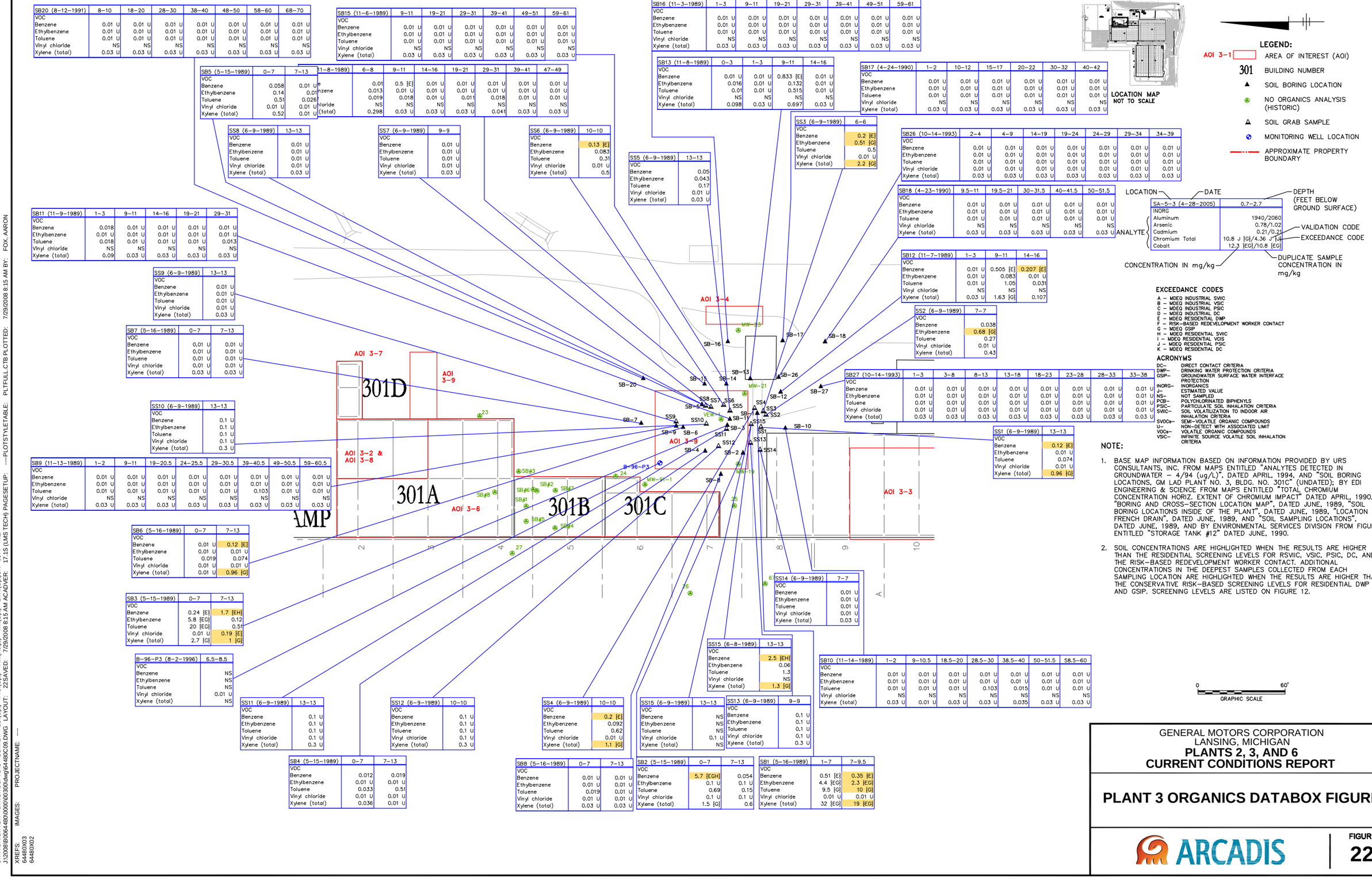
0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE 21



SB20 (8–12–1991)	8–10	18–20	28–30	38–40	48–50	58–60	68–70
VOC							
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB15 (11–6–1989)	9–11	19–21	29–31	39–41	49–51	59–61
VOC						
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB16 (11–3–1989)	1–3	9–11	19–21	29–31	39–41	49–51	59–61
VOC							
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB5 (5–15–1989)	0–7	7–13
VOC		
Benzene	0.058	0.01 U
Ethylbenzene	0.14	0.01
Toluene	0.51	0.026
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	0.52	0.01 U

SB8 (6–9–1989)	13–13
VOC	
Benzene	0.01 U
Ethylbenzene	0.01 U
Toluene	0.01 U
Vinyl chloride	0.01 U
Xylene (total)	0.03 U

SS7 (6–9–1989)	9–9
VOC	
Benzene	0.01 U
Ethylbenzene	0.01 U
Toluene	0.01 U
Vinyl chloride	0.01 U
Xylene (total)	0.03 U

SS6 (6–9–1989)	10–10
VOC	
Benzene	0.13 {E}
Ethylbenzene	0.083
Toluene	0.31
Vinyl chloride	0.01 U
Xylene (total)	0.5

SS5 (6–9–1989)	13–13
VOC	
Benzene	0.05
Ethylbenzene	0.043
Toluene	0.17
Vinyl chloride	0.01 U
Xylene (total)	0.03 U

SS3 (6–9–1989)	6–6
VOC	
Benzene	0.2 {E}
Ethylbenzene	0.51 {G}
Toluene	0.5
Vinyl chloride	0.01 U
Xylene (total)	2.2 {G}

SB13 (11–8–1989)	0–3	1–3	9–11	14–16
VOC				
Benzene	0.01 U	0.01 U	0.833 {E}	0.01 U
Ethylbenzene	0.016	0.01 U	0.132	0.01 U
Toluene	0.01	0.01 U	0.515	0.01 U
Vinyl chloride	NS	NS	NS	NS
Xylene (total)	0.098	0.03 U	0.697	0.03 U

SB17 (4–24–1990)	1–2	10–12	15–17	20–22	30–32	40–42
VOC						
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB11 (11–9–1989)	1–3	9–11	14–16	19–21	29–31
VOC					
Benzene	0.018	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.018	0.01 U	0.01 U	0.01 U	0.013
Vinyl chloride	NS	NS	NS	NS	NS
Xylene (total)	0.09	0.03 U	0.03 U	0.03 U	0.03 U

SS9 (6–9–1989)	13–13
VOC	
Benzene	0.01 U
Ethylbenzene	0.01 U
Toluene	0.01 U
Vinyl chloride	0.01 U
Xylene (total)	0.03 U

SB7 (5–16–1989)	0–7	7–13
VOC		
Benzene	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U
Toluene	0.01 U	0.01 U
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U

SS10 (6–9–1989)	13–13
VOC	
Benzene	0.1 U
Ethylbenzene	0.1 U
Toluene	0.1 U
Vinyl chloride	0.1 U
Xylene (total)	0.3 U

SB9 (11–13–1989)	1–2	9–11	19–20.5	24–25.5	29–30.5	39–40.5	49–50.5	59–60.5
VOC								
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.103	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB6 (5–16–1989)	0–7	7–13
VOC		
Benzene	0.01 U	0.12 {E}
Ethylbenzene	0.01 U	0.01 U
Toluene	0.019	0.074
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	0.01 U	0.96 {G}

SB3 (5–15–1989)	0–7	7–13
VOC		
Benzene	0.24 {E}	1.7 {EH}
Ethylbenzene	5.8 {EG}	0.12
Toluene	20 {EG}	0.51
Vinyl chloride	0.01 U	0.19 {E}
Xylene (total)	2.7 {G}	1 {G}

B–96–P3 (8–2–1996)	6.5–8.5
VOC	
Benzene	NS
Ethylbenzene	NS
Toluene	NS
Vinyl chloride	0.01 U
Xylene (total)	NS

SS11 (6–9–1989)	13–13
VOC	
Benzene	0.1 U
Ethylbenzene	0.1 U
Toluene	0.1 U
Vinyl chloride	0.1 U
Xylene (total)	0.3 U

SS12 (6–9–1989)	10–10
VOC	
Benzene	0.1 U
Ethylbenzene	0.1 U
Toluene	0.1 U
Vinyl chloride	0.1 U
Xylene (total)	0.3 U

SB4 (5–15–1989)	0–7	7–13
VOC		
Benzene	0.012	0.019
Ethylbenzene	0.01 U	0.01 U
Toluene	0.033	0.51
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	0.036	0.01 U

SS4 (6–9–1989)	10–10
VOC	
Benzene	0.2 {E}
Ethylbenzene	0.092
Toluene	0.62
Vinyl chloride	0.01 U
Xylene (total)	1.1 {G}

SS15 (6–9–1989)	13–13
VOC	
Benzene	NS
Ethylbenzene	NS
Toluene	NS
Vinyl chloride	0.1 U
Xylene (total)	NS

SS13 (6–9–1989)	9–9
VOC	
Benzene	0.1 U
Ethylbenzene	0.1 U
Toluene	0.1 U
Vinyl chloride	0.1 U
Xylene (total)	0.3 U

SB8 (5–16–1989)	0–7	7–13
VOC		
Benzene	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U
Toluene	0.019	0.01 U
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U

SB2 (5–15–1989)	0–7	7–13
VOC		
Benzene	5.7 {EGH}	0.054
Ethylbenzene	0.1 U	0.1 U
Toluene	0.69	0.15
Vinyl chloride	0.1 U	0.1 U
Xylene (total)	1.5 {G}	0.6

SB1 (5–16–1989)	1–7	7–9.5
VOC		
Benzene	0.51 {E}	0.35 {E}
Ethylbenzene	4.4 {EG}	2.3 {EG}
Toluene	9.5 {G}	10 {G}
Vinyl chloride	0.01 U	0.01 U
Xylene (total)	32 {EG}	19 {EG}

SS14 (6–9–1989)	7–7
VOC	
Benzene	0.01 U
Ethylbenzene	0.01 U
Toluene	0.01 U
Vinyl chloride	0.01 U
Xylene (total)	0.03 U

SS15 (6–8–1989)	13–13
VOC	
Benzene	2.5 {EH}
Ethylbenzene	0.06
Toluene	1.3
Vinyl chloride	NS
Xylene (total)	1.3 {G}

SB10 (11–14–1989)	1–2	9–10.5	18.5–20	28.5–30	38.5–40	50–51.5	58.5–60
VOC							
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.103	0.015	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.01 U	0.03 U	0.03 U	0.035	0.03 U	0.03 U

SB26 (10–14–1993)	2–4	4–9	14–19	19–24	24–29	29–34	34–39
VOC							
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB18 (4–23–1990)	9.5–11	19.5–21	30–31.5	40–41.5	50–51.5
VOC					
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	NS	NS	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SB12 (11–7–1989)	1–3	9–11	14–16
VOC			
Benzene	0.01 U	0.505 {E}	0.207 {E}
Ethylbenzene	0.01 U	0.083	0.01 U
Toluene	0.01 U	1.05	0.031
Vinyl chloride	NS	NS	NS
Xylene (total)	0.03 U	1.63 {G}	0.107

SS2 (6–9–1989)	7–7
VOC	
Benzene	0.038
Ethylbenzene	0.68 {G}
Toluene	0.27
Vinyl chloride	0.01 U
Xylene (total)	0.43

SB27 (10–14–1993)	1–3	3–8	8–13	13–18	18–23	23–28	28–33	33–38
VOC								
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

SS1 (6–9–1989)	13–13
VOC	
Benzene	0.12 {E}
Ethylbenzene	0.01 U
Toluene	0.074
Vinyl chloride	0.01 U
Xylene (total)	0.96 {G}

LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 3-1 — AREA OF INTEREST (AOI)
- 301 — BUILDING NUMBER
- SOIL BORING LOCATION
- NO ORGANICS ANALYSIS (HISTORIC)
- SOIL GRAB SAMPLE
- MONITORING WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY

SA–5–3 (4–28–2005)	0.7–2.7
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J {G}/4.36 J {J}
Cobalt	12.3 {EG}/10.8 {EG}

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE) — ANALYTE — VALIDATION CODE — EXCEEDANCE CODE — CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VOIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTE:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS–SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK–BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK–BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 3 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE 22

CITY: BRIGHTON DIV/GROUP: 141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B00644800\000\300\dwg\64480C09.DWG LAYOUT: 22SAVED: 7/29/2008 8:15 AM BY: FOX, AARON
---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:15 AM BY: FOX, AARON
XREFS: PROJECTNAME: ---
IMAGES: 17.15 (LMS TECH) PAGESETUP: ACADVER:
64480X03
64480X02

13 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	28.5–30	33.5–35	38.5–40	43.5–45	48.5–50
INORG										
Arsenic	7.8	1.8	3.5	3.5	8	2.7	2.9	2.9	42 [EK]	3.3
Beryllium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	10.7	9.7	7.7	14.7	12.7	12.7	7.1	7.4	5.3	4.5
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	6.1	74	390 [G]	18	130	9	4.2	5	7.1	3.8
Cyanide (total)	8 U	17.5 [EGK]	175 [EGK]	8 U	8 U	8 U	8 U	8 U	8 U	8 U
Lead	6.4	10	1.9	4.4	4.5	4	2.6	3.1	2.4	2.2
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	94	7000 [EG]	4700 [EG]	18	39	14	16	7.3	9.3	7.3
Vanadium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	31	68	23	32	39	27	32	26	30	19

62 (2–24–1989)	10–10	20–20	30–30	40–40
INORG				
Arsenic	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS
Copper	130	14	15	7.3
Cyanide (total)	85 [EGK]	25 [EGK]	5 U	20 [EGK]
Lead	NS	NS	NS	NS
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS
Zinc	NS	NS	35	47	30

20 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	9.1	5	4.4	4.4	4.8	4.4
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	29.7	14.7	8.2	15.7	7.3	16.7
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	21	120	17	250 [G]	27	16
Cyanide (total)	8 U	8 U	8 U	320 [CDEGJK]	12.5 [EG]	8 U
Lead	8.8	4	5	4.7	3.2	4.4
Manganese	NS	NS	NS	NS	NS	NS
Nickel	26	14	8.1	15	12	17
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	28	30	12	38	28	42

71 (3–1–1989)	10–10	20–20	30–30	40–40
INORG				
Arsenic	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS
Copper	48	180 [G]	210 [G]	8.4
Cyanide (total)	NS	189 [EGK]	15 [EGK]	7.7 [EG]
Lead	NS	NS	NS	NS
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS
Zinc	NS	NS	42	NS

19 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	6	7.1/4.6	4.8	3.6	4.3	2.7
Beryllium	NS	NS/NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U/0.4 U	0.4 U	0.28	0.4 U	0.4 U
Chromium III (Trivalent)	9.1	13.7/18.7	16.7	17.7	11.7	9.6
Chromium Total	Spec	Spec/Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	190 [G]	280 [G]/250 [G]	120	140	360 [G]	95
Cyanide (total)	8 U	30 [EGK]/37.5 [EGK]	81.3 [EGK]	90 [EGK]	32.5 [EGK]	42 [EGK]
Lead	3.1	4.3/4.1	5	5.9	3.3	3.1
Manganese	NS	NS/NS	NS	NS	NS	NS
Nickel	18	79/61	32	33	13	9.4
Vanadium	NS	NS/NS	NS	NS	NS	NS
Zinc	23	30/30	40	43	23	22

G8 (3–23–1989)	10–10
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	13
Cyanide (total)	10 [EG]
Lead	NS
Manganese	NS
Nickel	5.3
Vanadium	NS
Zinc	28

21 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	8.4	6.8	4.7	7.2	4.1	1.5
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	26.7	12.7	7.8	15.7	12.7	3.3
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	17	260 [G]	760 [G]	500 [G]	50	7.4
Cyanide (total)	8 U	8 U	155 [EGK]	295 [CDEGJK]	32.5 [EGK]	8 U
Lead	8	3	6.7	4.3	3.4	1 U
Manganese	NS	NS	NS	NS	NS	NS
Nickel	14	9.8	9.8	15	13	3.1
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	56	19	24	31	28	13

29 (3–23–1989)	16–16
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	320 [G]
Cyanide (total)	120 [EGK]
Lead	NS
Manganese	NS
Nickel	3100 [EG]
Vanadium	NS
Zinc	54

63 (2–23–1989)	10–10	20–20	30–30	40–40	50–50	60–60
INORG						
Arsenic	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS
Copper	18	240 [G]	480 [G]	NS	NS	NS
Cyanide (total)	10 [EG]	115 [EGK]	325 [CDEGJK]	140 [EGK]	25 [EGK]	5 [EG]
Lead	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	6100 [EG]	16	8.5	NS	14	19
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	NS	NS	NS	7.3	NS	NS

G12 (3–23–1989)	15–15
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	230 [G]
Cyanide (total)	250 [EGK]
Lead	NS
Manganese	NS
Nickel	12000 [EG]
Vanadium	NS
Zinc	42

G2 (3–23–1989)	7–7
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	390 [G]
Cyanide (total)	390 [CDEGJK]
Lead	NS
Manganese	NS
Nickel	5900 [EG]
Vanadium	NS
Zinc	44

G1 (3–23–1989)	2–2
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	1500 [G]
Cyanide (total)	1370 [CDEGJK]
Lead	NS
Manganese	NS
Nickel	3500 [EG]
Vanadium	NS
Zinc	40

72 (2–28–1989)	10–10	20–20	30–30	40–40	50–50	60–60
INORG						
Arsenic	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS	NS	NS
Chromium Total	NS	320 [CEGJ]	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS	NS	NS
Copper	45	NS	260 [G]	NS	100	14
Cyanide (total)	15 [EGK]	570 [CDEGJK]	92 [EGK]	15 [EGK]	26 [EGK]	13 [EGK]
Lead	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	28	NS	NS	NS	NS	NS

74 (3–1–1989)	10–10
NORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	3
Cyanide (total)	10 [EG]
Lead	NS
Manganese	NS
Nickel	NS
Vanadium	NS
Zinc	NS

73 (3–7–1989)	30–30	40–40
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	NS	NS
Chromium VI (Hexavalent)	NS	NS
Copper	27	6.2
Cyanide (total)	12.5 [EG]	12.5 [EG]
Lead	NS	NS
Manganese	NS	NS
Nickel	NS	NS
Vanadium	NS	NS
Zinc	32	34

14 (1–1–1988)	1–2.5	6–7.5	11–12.5	13.5–15	16–17.5
INORG					
Arsenic	5.2	4.3	5	3.6	4.1
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	13.7	13.7	10.7	20.7	16.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	6.7	69	550 [G]	400 [G]	200 [G]
Cyanide (total)	8 U	8 U	820 [CDEGJK]	525 [CDEGJK]	140 [EGK]
Lead	4	3.7	3.9	3.7	5.5
Manganese	NS	NS	NS	NS	NS
Nickel	7300 [EG]	1300 [EG]	220 [EG]	190 [EG]	49
Vanadium	NS	NS	NS	NS	NS
Zinc	26	32	33	28	38

65 (2–1–1989)	10–10
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	Spec
Chromium VI (Hexavalent)	NS
Copper	470 [G]
Cyanide (total)	170 [EGK]
Lead	NS
Manganese	NS
Nickel	8.4
Vanadium	NS
Zinc	NS

65 (2–28–1989)	10–10
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	51 [EG]
Cyanide (total)	NS
Lead	NS
Manganese	NS
Nickel	2600 [EG]
Vanadium	NS
Zinc	49

G11 (3–23–1989)	18–18
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	18
Cyanide (total)	51 [EGK]
Lead	NS
Manganese	NS
Nickel	2600 [EG]
Vanadium	NS
Zinc	49

22 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	7.1	5.8	4.4	6.1	5.2
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	30.7	12.7	13.7	23.7	13.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	16	70	11	17	9.8
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	7.3	3.3	3.4	6.3	3.4
Manganese	NS	NS	NS	NS	NS
Nickel	15	11	10	20	12
Vanadium	NS	NS	NS	NS	NS
Zinc	49	29	27	46	27

45 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	2.2	3.6	3.8/3.7	3.5	6.4
Beryllium	NS	NS	NS/NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	7.5	14.7	11.7/10.7	17.7	14.7
Chromium Total	Spec	Spec	Spec/Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U
Copper	7.2	12	45/26	15	11
Cyanide (total)	8 U	8 U	8 U/8 U	8 U	8 U
Lead	3.6	4.4	4.3/3.5	5.8	3.7
Manganese	NS	NS	NS/NS	NS	NS
Nickel	6.7	11	18/15	18	12
Vanadium	NS	NS	NS/NS	NS	NS
Zinc	14	29	27/28	43	29

17 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	4.9	36 [EK]	4.3	6.3/6.1	3.4
Beryllium	NS	NS	NS	NS/NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U
Chromium III (Trivalent)	6.5	13.7	17.7	18.7/16.7	12.7
Chromium Total	Spec	Spec	Spec	Spec/Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U
Copper	6.9	230 [G]	15	16/14	11
Cyanide (total)	8 [EG]	8 U	8 U	8 U/8 U	8 U
Lead	2.4	4.6	5.4	5.8/5.7	3.7
Manganese	NS	NS	NS	NS/NS	NS
Nickel	6.3	16	17	18/16	11
Vanadium	NS	NS	NS	NS/NS	NS
Zinc	15	27	37	43/39	28

30 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	2.4	4.3	3.8	3.1	2.6	2.1
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	5.7	14.7	10.7	12.7	10.7	10.7
Chromium Total	Spec	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	7.4	71	43	540 [G]	290 [G]	820 [G]
Cyanide (total)	8 U	15 [EGK]	34 [EGK]	213 [EGK]	320 [CDEGJK]	285 [CDEGJK]
Lead	1.6	6	3.2	2.6	3.1	2.6
Manganese	NS	NS	NS	NS	NS	NS
Nickel	3.8	9.5	1300 [EG]	12	11	11
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	13	28	23	23	30	28

CH–15 (7–20–1989)	13–15.5	15.5–18
INORG		
Arsenic	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium III (Trivalent)	NS	NS
Chromium Total	1900 [CEFGJK]	4600 [CEFGJK]
Chromium VI (Hexavalent)	NS	NS
Copper	110	43
Cyanide (total)	NS	NS
Lead	NS	NS
Manganese	NS	NS
Nickel	17	24
Vanadium	NS	NS
Zinc	NS	NS

15 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	3.9	4.2	4.7	3.9	4.4
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	7.4	11.7	12.7	17.7	9.7
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	4.3	8.1	6.4	11	5.6
Cyanide (total)	8 U	8 U	8 U	8.75 [EG]	8 U
Lead	9.8	3.9	3.8	5.7	2.9
Manganese	NS	NS	NS	NS	NS
Nickel	160 [EG]	4300 [EG]	6500 [EG]	20	10
Vanadium	NS	NS	NS	NS	NS
Zinc	26	26	26	40	24

G7 (3–23–1989)	20–20
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	180 [G]
Cyanide (total)	140 [EGK]
Lead	NS
Manganese	NS
Nickel	2800 [EG]
Vanadium	NS
Zinc	49

G3 (3–23–1989)	5–5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	500 [G]
Cyanide (total)	770 [CDEGJK]
Lead	NS
Manganese	NS
Nickel	870 [EG]
Vanadium	NS
Zinc	49

CH–5 (7–1–1989)	5–8.5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	11 [G]
Chromium VI (Hexavalent)	NS
Copper	12
Cyanide (total)	NS
Lead	NS
Manganese	NS
Nickel	11
Vanadium	NS
Zinc	NS

Q10 (3–23–1989)	5–5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	3.2
Cyanide (total)	10 U
Lead	NS
Manganese	NS
Nickel	4.6
Vanadium	NS
Zinc	37

G6 (3–23–1989)	20–20
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	650 [G]
Cyanide (total)	21 [EGK]
Lead	NS
Manganese	NS
Nickel	170 [EG]
Vanadium	NS
Zinc	40

G4 (3–23–1989)	6–6
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	19
Cyanide (total)	30 [EGK]
Lead	NS
Manganese	NS
Nickel	240 [EG]
Vanadium	NS
Zinc	70

36 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	10	5.5	5.9	3.8	1.1	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	25.7	13.7	10.7	12.7	4.1	NS
Chromium Total	Spec	Spec	Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	20	13	11	13	7.1	NS
Cyanide (total)	NS	NS	NS	NS	NS	NS
Lead	8.5	4.6	2.8	3.5	1.5	NS
Manganese	NS	NS	NS	NS	NS	NS
Nickel	15	10	3700 [EG]	11	3.2	NS
Vanadium	NS	NS	NS	NS	NS	NS
Zinc	45	26	27	27	11	NS

H6 (4–24–1989)	17–17
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	26
Cyanide (total)	11 [EG]
Lead	NS
Manganese	NS
Nickel	9.4
Vanadium	NS
Zinc	23

CH–7 (7–1–1989)	7–10.5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	74 [EG]
Cyanide (total)	NS
Lead	170 [G]
Manganese	10 U
Nickel	NS
Vanadium	NS
Zinc	22

37 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	6.7	5	3.3	4.8	5.7/2.9
Beryllium	NS	NS	NS	NS	NS/NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U/0.4 U
Chromium III (Trivalent)	22.7	13.7	9.7	14.7	11.7/11.7
Chromium Total	Spec	Spec	Spec	Spec	Spec/Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U/0.6 U
Copper	14	12	10	13	12/11
Cyanide (total)	8 U	8 U	8 U	12.5 [EG]	8 U/8 U
Lead	6.2	4.5	3.4	4.6	4.4/5.3
Manganese	NS	NS	NS	NS	NS/NS
Nickel	17	12	510 [EG]	16	11/11
Vanadium	NS	NS	NS	NS	NS/NS
Zinc	45	30	25	34	30/32

G5 (3–23–1989)	5–5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	150
Cyanide (total)	80 [EGK]
Lead	NS
Manganese	NS
Nickel	3400 [EG]
Vanadium	NS
Zinc	49

CH–6 (7–1–1989)	7–10.5
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	68 [EG]
Chromium VI (Hexavalent)	NS
Copper	73
Cyanide (total)	10 U
Lead	NS
Manganese	NS
Nickel	28
Vanadium	NS
Zinc	28

16 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5	23.5–25
INORG						
Arsenic	7.6	5.1	4.6/4.2	3.3	3.7	NS
Beryllium	NS	NS	NS/NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U/0.4 U	0.4 U	0.4 U	NS
Chromium III (Trivalent)	16.7	14.7	9.7/10.7	10.7	21.7	NS
Chromium Total	Spec	Spec	Spec/Spec	Spec	Spec	NS
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U/0.6 U	0.6 U	0.6 U	NS
Copper	28	4.6	8.2/2.9	0.57	4.6	NS
Cyanide (total)	8 U	8 U	8 U/8 U	12.5 [EG]	11.3 [EG]	8 U
Lead	7.1	3.8	2.8/2.3	2.6	5.5	NS
Manganese	NS	NS	NS/NS	NS	NS	NS
Nickel	1700 [EG]	890 [EG]	7500 [EG]/6600 [EG]	550 [EG]	5.2	NS
Vanadium	NS	NS	NS/NS	NS	NS	NS
Zinc	60	31	38/43	24	51	NS

H4 (4–24–1989)	16–16
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	280 [G]
Cyanide (total)	190 [EGK]
Lead	NS
Manganese	NS
Nickel	160 [EG]
Vanadium	NS
Zinc	22

H2 (4–24–1989)	7–7
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	170 [G]
Cyanide (total)	31 [EGK]
Lead	NS
Manganese	NS
Nickel	100
Vanadium	NS
Zinc	35

H7 (4–24–1989)	20–20
INORG	
Arsenic	NS
Beryllium	NS
Cadmium	NS
Chromium III (Trivalent)	NS
Chromium Total	NS
Chromium VI (Hexavalent)	NS
Copper	1200 [G]
Cyanide (total)	2010 [CDEGJK]
Lead	NS
Manganese	NS
Nickel	5.6
Vanadium	NS
Zinc	17

29 (1–1–1988)	1–2.5	6–7.5	11–12.5	16–17.5	21–22.5
INORG					
Arsenic	5	6.1	7.6	7.7	3.4
Beryllium	NS	NS	NS	NS	NS
Cadmium	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium III (Trivalent)	17.7	13.7	20.7	16.7	8.6
Chromium Total	Spec	Spec	Spec	Spec	Spec
Chromium VI (Hexavalent)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	10	15	16	12	6.4
Cyanide (total)	8 U	8 U	8 U	8 U	8 U
Lead	5.4	13	5.8	4.6	4.6
Manganese	NS	NS	NS	NS	NS
Nickel	NS	NS	20	14	8.6
Vanadium	NS	NS	NS	NS	NS
Zinc	46	44	47	33	18

64 (3–1–1989)	10–10	20–20	30–30	40–40
INORG				
Arsenic	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium III (Trivalent)	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Chromium VI (Hexavalent)	NS	NS	NS	NS
Copper	99	310 [G]	220 [G]	4.7
Cyanide (total)	77 [EGK]	117 [EGK]	102 [EGK]	5 U
Lead	NS	NS	NS	NS
Manganese	NS	NS	NS	NS
Nickel	4300 [EG]	16	7.7	NS
Vanadium	NS	NS	NS	NS
Zinc	28	36	NS	NS

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA–5–3 (4–28–2005)	0.7–2.7
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [J]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

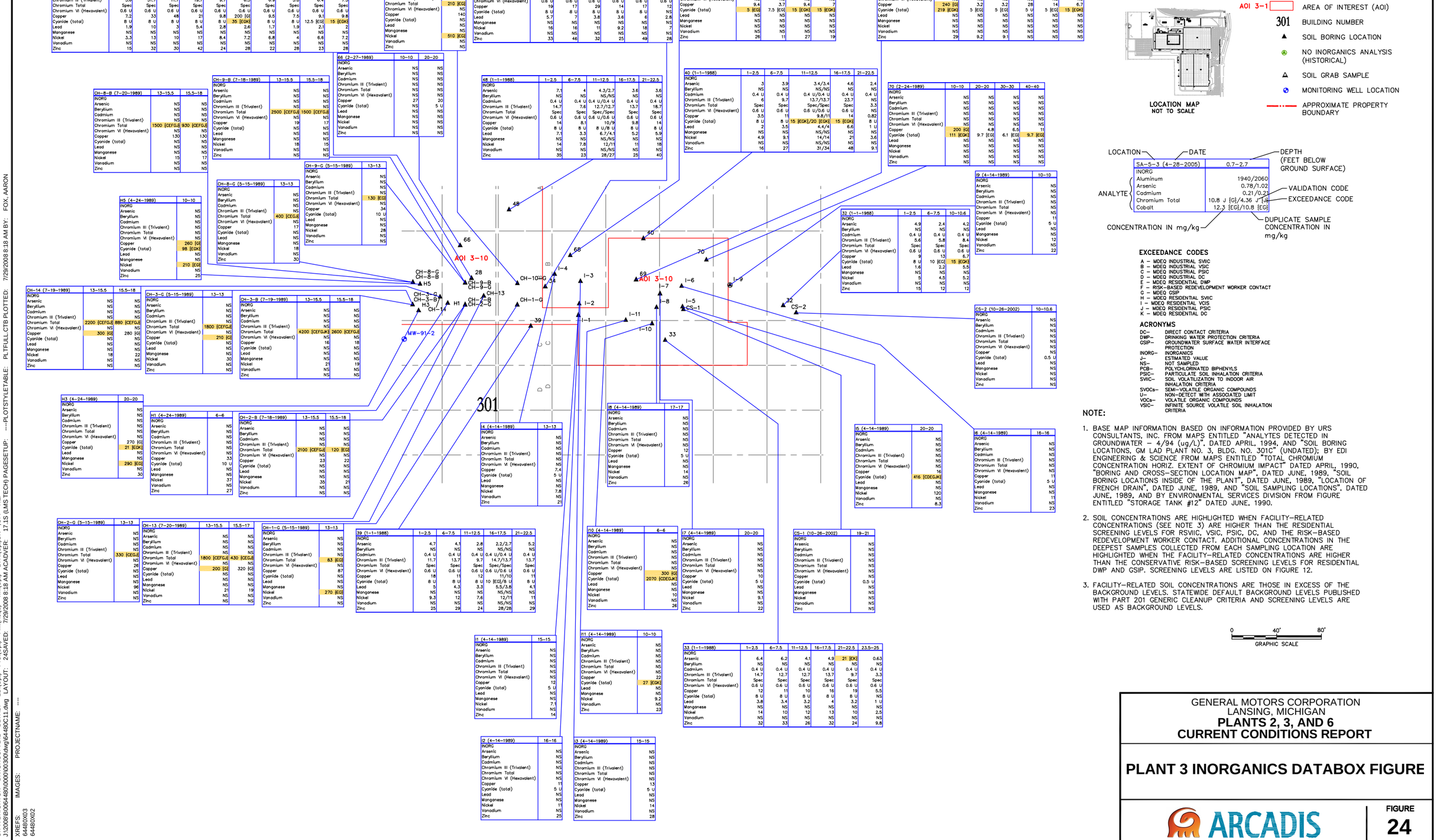
CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

LEGEND:

- AOI 3–1 — AREA OF INTEREST (AOI)
- 301 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- ⓐ — NO INORGANICS ANALYSIS (HISTORIC)
- ▲ — SOIL GRAB SAMPLE
- ⓦ — MONITORING WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RIS



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 3-1 — AREA OF INTEREST (AOI)
- 301 — BUILDING NUMBER
- ▲ — SOIL BORING LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- △ — SOIL GRAB SAMPLE
- MONITORING WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY

LOCATION	DATE	DEPTH (FEET BELOW GROUND SURFACE)
	SA-5-3 (4-28-2005)	0.7-2.7
ANALYTE: INORG		
Aluminum		1940/2060
Arsenic		0.78/1.02
Cadmium		0.21/0.21
Chromium Total		10.8 J [G]/4.36 J [J]
Cobalt		12.3 [EG]/10.8 [EG]

CONCENTRATION IN mg/kg — VALIDATION CODE — EXCEEDANCE CODE — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VOIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC– DIRECT CONTACT CRITERIA
DWP– DRINKING WATER PROTECTION CRITERIA
GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
PCB– POLYCHLORINATED BIPHENYLS
PSIC– PARTICULATE SOIL INHALATION CRITERIA
SVIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs– SEMI-VOLATILE ORGANIC COMPOUNDS
U– NON-DETECT WITH ASSOCIATED LIMIT
VOCs– VOLATILE ORGANIC COMPOUNDS
VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTE:

1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIC, VSIC, PSIC, DC, AND THE RISK-BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK-BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY-RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 40' 80'
GRAPHIC SCALE

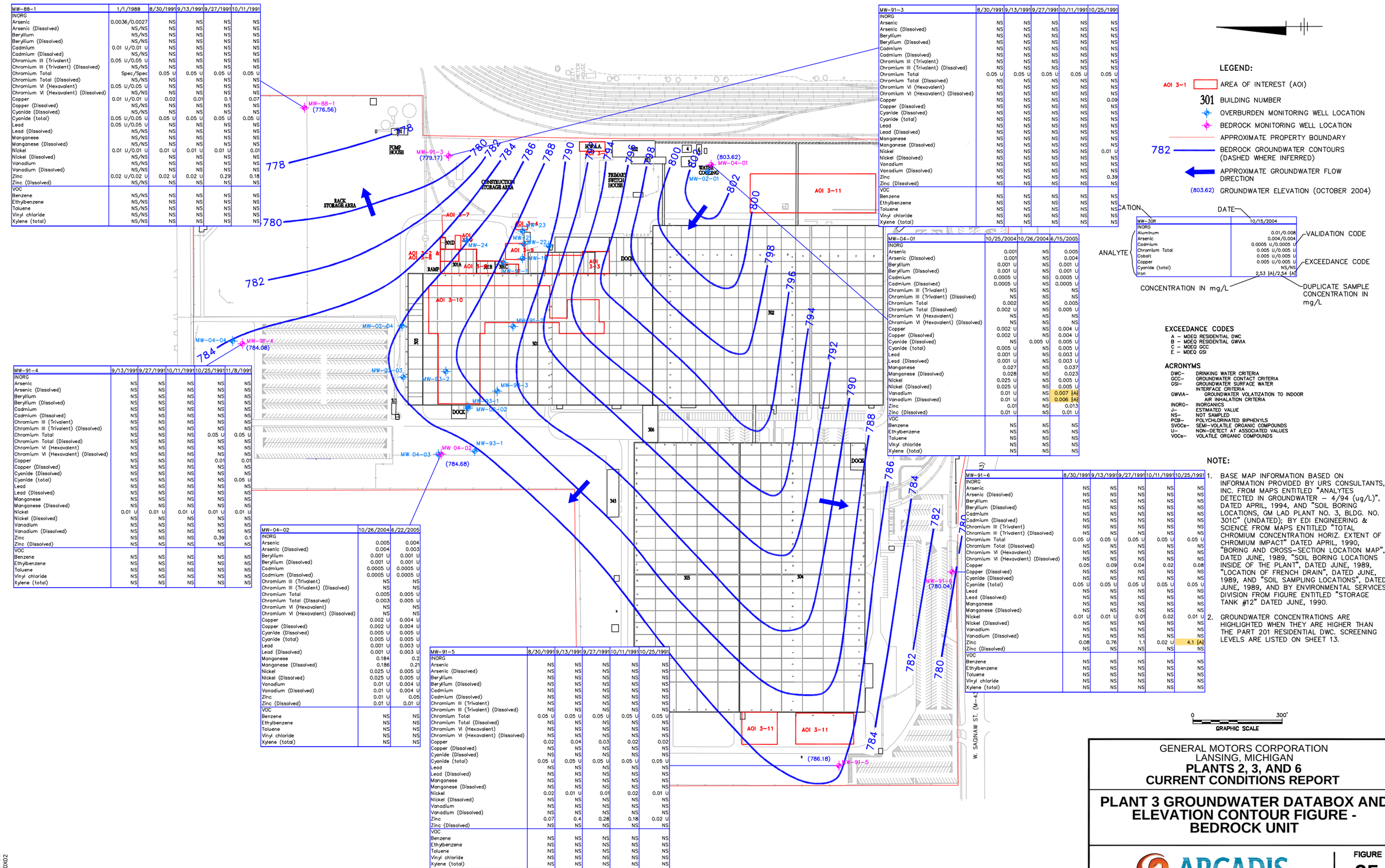
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

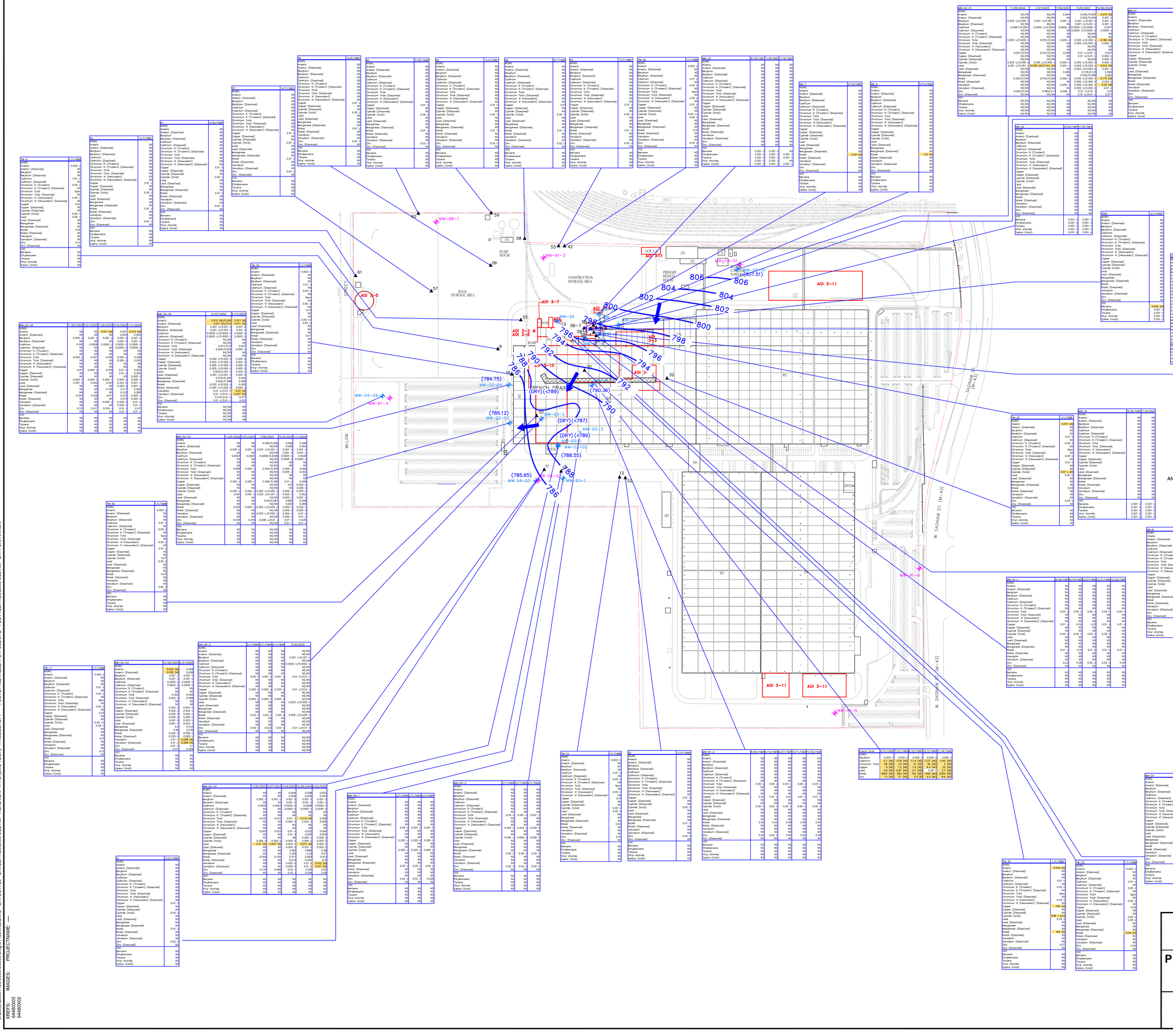
PLANT 3 INORGANICS DATABOX FIGURE

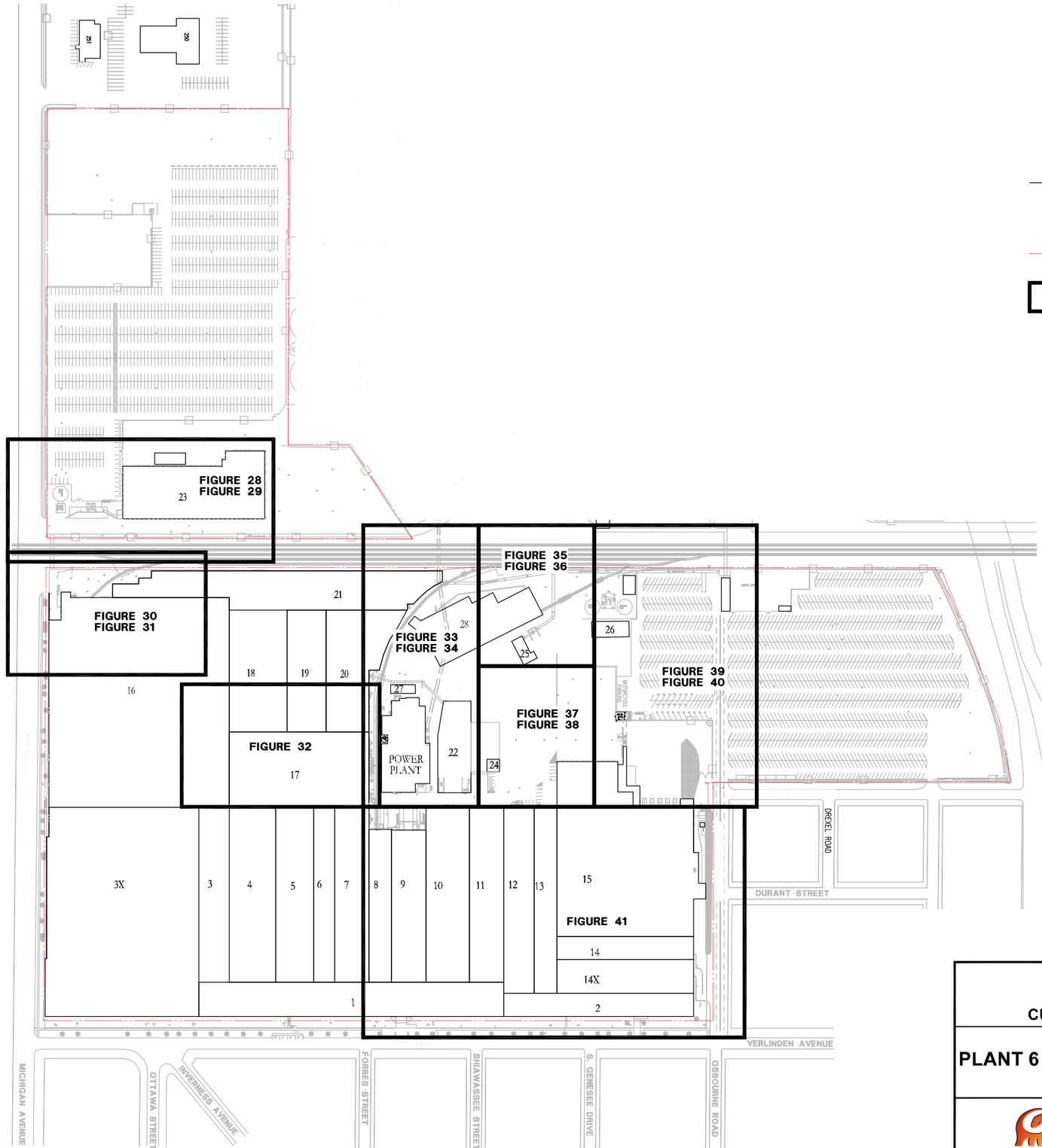
ARCADIS

FIGURE 24

CITY: BRIGHTON DIVGROUP: 141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Read) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\000\300\dwg\64480C11.dwg LAYOUT: 24SAVED: 7/29/2008 8:18 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:18 AM BY: FOX, AARON
XREFS: 64480X03 64480X02
IMAGES: PROJECTNAME: ---


MW-88-1 (776.56)
MW-91-3 (779.17)
MW-04-01 (803.62)
MW-02-01
MW-91-4 (784.08)
MW-02-04
MW-04-04
MW-93-3
MW-93-2
MW-93-1
MW-02-02
MW-04-02
MW-04-03 (784.68)
MW-91-5 (786.18)
MW-91-6 (780.04)
MW-02-03
MW-91-2
MW-04-05
MW-04-06
MW-91-1
MW-02-05
MW-04-07
MW-91-7
MW-02-06
MW-04-08
MW-91-8
MW-02-07
MW-04-09
MW-91-9
MW-02-08
MW-04-10
MW-91-10
MW-02-09
MW-04-11
MW-91-11
MW-02-10
MW-04-12
MW-91-12
MW-02-11
MW-04-13
MW-91-13
MW-02-12
MW-04-14
MW-91-14
MW-02-13
MW-04-15
MW-91-15
MW-02-14
MW-04-16
MW-91-16
MW-02-15
MW-04-17
MW-91-17
MW-02-16
MW-04-18
MW-91-18
MW-02-17
MW-04-19
MW-91-19


LEGEND:
AOI 3-1 AREA OF INTEREST (AOI)
301 BUILDING NUMBER
OVERBURDEN MONITORING WELL LOCATION
BEDROCK MONITORING WELL LOCATION
SOIL BORING WITH BORE HOLE WATER SAMPLE LOCATION (PERCHED ZONE)
APPROXIMATE PROPERTY BOUNDARY
802 OVERBURDEN GROUNDWATER CONTOURS (DASHED WHERE INFERRED)
APPROXIMATE GROUNDWATER FLOW DIRECTION
(803.62) GROUNDWATER ELEVATION (OCTOBER 2004)
LOCATION
DATE
ANALYTE
VALIDATION CODE
EXCEEDANCE CODE
CONCENTRATION IN mg/L
DUPLICATE SAMPLE CONCENTRATION IN mg/L
EXCEEDANCE CODES
A – MDEQ RESIDENTIAL DWC
B – MDEQ RESIDENTIAL GWMA
C – MDEQ GCC
E – MDEQ GSI
ACRONYMS
DWC– DRINKING WATER CRITERIA
GCC– GROUNDWATER CONTACT CRITERIA
GSI– GROUNDWATER SURFACE WATER INTERFACE CRITERIA
GWMA– GROUNDWATER VOLATIZATION TO INDOOR AIR INHALATION CRITERIA
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
PCB– POLYCHLORINATED BIPHENYLS
SVOCs– SEMI-VOLATILE ORGANIC COMPOUNDS
U– NON-DETECT AT ASSOCIATED VALUES
VOCs– VOLATILE ORGANIC COMPOUNDS
TW– TEMPORARY WELL
NOTE:
1. BASE MAP INFORMATION BASED ON INFORMATION PROVIDED BY URS CONSULTANTS, INC. FROM MAPS ENTITLED "ANALYTES DETECTED IN GROUNDWATER – 4/94 (ug/L)", DATED APRIL, 1994, AND "SOIL BORING LOCATIONS, GM LAD PLANT NO. 3, BLDG. NO. 301C" (UNDATED); BY EDI ENGINEERING & SCIENCE FROM MAPS ENTITLED "TOTAL CHROMIUM CONCENTRATION HORIZ. EXTENT OF CHROMIUM IMPACT" DATED APRIL, 1990, "BORING AND CROSS-SECTION LOCATION MAP", DATED JUNE, 1989, "SOIL BORING LOCATIONS INSIDE OF THE PLANT", DATED JUNE, 1989, "LOCATION OF FRENCH DRAIN", DATED JUNE, 1989, AND "SOIL SAMPLING LOCATIONS", DATED JUNE, 1989, AND BY ENVIRONMENTAL SERVICES DIVISION FROM FIGURE ENTITLED "STORAGE TANK #12" DATED JUNE, 1990.
2. PERCHED AND OVERBURDEN GROUNDWATER CONCENTRATIONS ARE HIGHLIGHTED WHEN THEY ARE HIGHER THAN ONE OF THE FOLLOWING CONSERVATIVE RISK-BASED SCREENING LEVELS: RESIDENTIAL DWC, RESIDENTIAL GWVIA, GCC, AND GSI. SCREENING LEVELS ARE LISTED ON FIGURE 13.
0 150' 300'
GRAPHIC SCALE
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT
PLANT 3 GROUNDWATER DATABOX AND ELEVATION CONTOUR FIGURE - PERCHED AND OVERBURDEN UNITS
ARCADIS
FIGURE
26
CITY: BRIGHTON DIV/GROUP: 141 DB: ADF LD:(Opt) PIC:(Opt) PM:(Req'd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064480\00000\00300\dwg\64480W02.DWG LAYOUT: 26 SAVED: 7/29/2008 8:22 AM ACADVER: 17.1S (LMS TECH) PAGESETUP:---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:23 AM BY: FOX, AARON
XREFS: 64480X03 64480X02
IMAGES: PROJECTNAME:----



GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 SOIL DATABOX FIGURE LAYOUT

ARCADIS

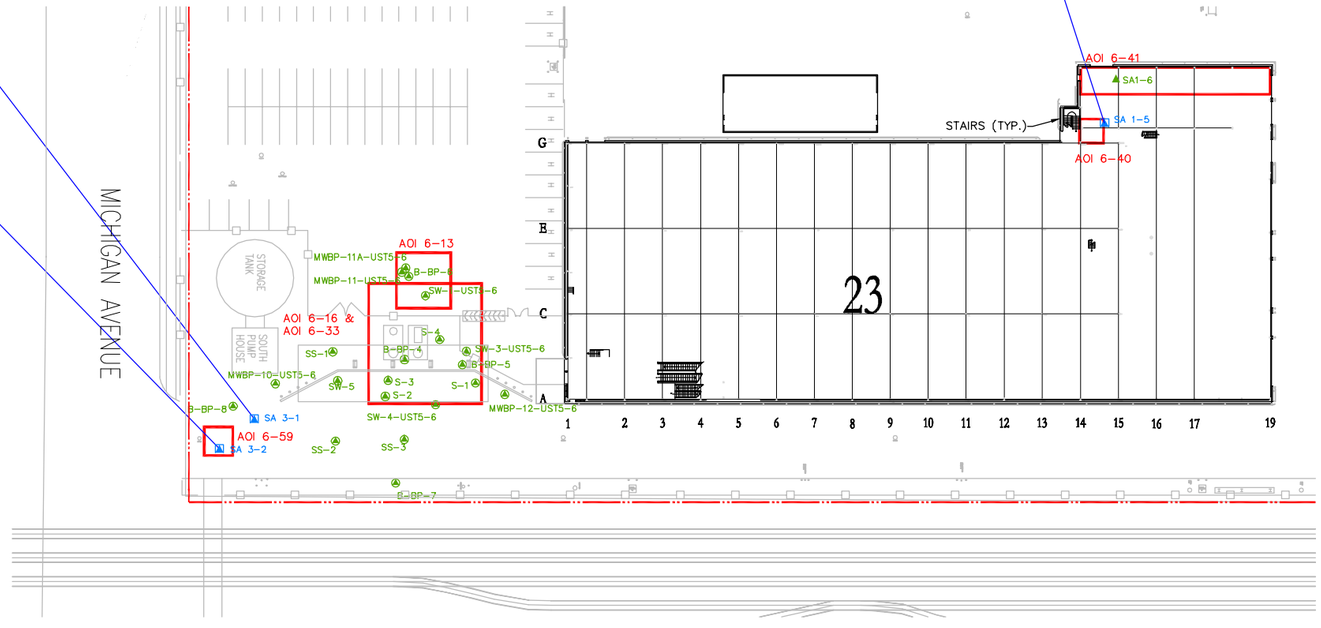
FIGURE
27

CITYBRIGHTON DIV/GROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PMs:(Reqd) TM:(Opt) LYR:(Opt)ON=*OFF=*REF*
J:\2008\B0064481\000\000300\DWG\64481B04.dwg LAYOUT: 27 SAVED: 7/29/2008 8:33 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:33 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: --
6448 1 X02

SA 3-1 (11-11-2005)	14-16(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	2.25
Barium	23.3
Beryllium	0.14 J
Cadmium	0.11 J
Chromium Total	3.8 {G}
Cobalt	3.07
Copper	9.5
Lead	4.4
Manganese	231
Nickel	7.8
Selenium	0.68
Silver	0.02 J
Vanadium	5
Zinc	18.4

SA 3-2 (11-11-2005)	9-11(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.52
Barium	25.3
Beryllium	0.12 J
Cadmium	0.09 J
Chromium Total	3.5 {G}
Cobalt	2.51
Copper	5.5
Lead	3
Manganese	188
Nickel	6.1
Selenium	0.61
Silver	0.1 U
Vanadium	4.8
Zinc	10.9

SA 1-5 (11-11-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.59
Barium	11.2
Beryllium	0.07 J
Cadmium	0.2 U
Chromium Total	1.4 J
Cobalt	1.48
Copper	2.1
Lead	2.5
Manganese	125
Nickel	2.3
Selenium	0.16 J
Silver	0.1 U
Vanadium	2.3
Zinc	3.9



LOCATION MAP
NOT TO SCALE

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J {G}/4.36 J {G}
Cobalt	12.3 {EG}/10.8 {EG}

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 80'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

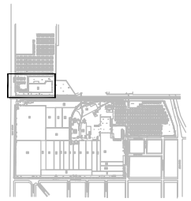
ARCADIS

FIGURE
28

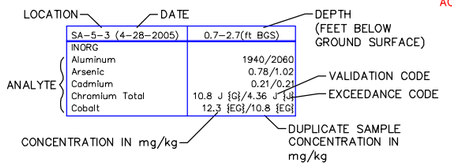
CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\1000\00300\DWG\64481C01.dwg LAYOUT: 28SAVED: 7/29/2008 11:20 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 11:20 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X03
64481X02
64481X06

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* J:\2008\B00064481\000\000300\DWG\64481C02.dwg LAYOUT: 29SAVED: 7/29/2008 8:39 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X02
64481X03
64481X07
FILE: PLTFULL.CTB PLOTTED: 7/29/2008 8:39 AM BY: FOX, AARON
---PLOTSTYLETABLE: 17.1S (LMS TECH) PAGESETUP: 7/29/2008 8:39 AM ACADVER:

B–BP–6 (8–28–1991)	19–21(ft BGS)	24–26(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1–Trichloroethane	NS	NS
1,1,2–Trichloroethane	NS	NS
1,1–Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.003	0.002



LOCATION MAP
NOT TO SCALE



LEGEND:

- AOI 6–75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO ORGANICS ANALYSIS (HISTORICAL)
- NO ORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C–1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

SS–1 (1–11–1992)	3–4(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

MWBP–11–UST5–6 (10–20–1993)	7–0(ft BGS)	10–0(ft BGS)	16–0(ft BGS)
SVOC			
Naphthalene	0.33 U	0.33 U	0.33 U
VOC			
1,1,1–Trichloroethane	NS	NS	NS
1,1,2–Trichloroethane	NS	NS	NS
1,1–Dichloroethene	NS	NS	NS
Acetone	NS	NS	NS
Benzene	0.01 U	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS	NS
Ethylbenzene	0.01 U	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	NS	NS	NS
Xylene (total)	0.03 U	0.03 U	0.03 U

MWBP–11A–UST5–6 (11–17–1993)	34–39(ft BGS)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.03 U

SW–1–UST5–6 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.005

S–4 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

B–BP–4 (5–9–1991)	0–0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.04

MWBP–10–UST5–6 (10–19–1993)	8–0(ft BGS)	12–14(ft BGS)
SVOC		
Naphthalene	0.33 U	0.33 U
VOC		
1,1,1–Trichloroethane	NS	NS
1,1,2–Trichloroethane	NS	NS
1,1–Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.03 U	0.03 U

MWBP–10–UST5–6 (11–16–1993)	34–39(ft BGS)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.03 U

B–BP–8 (8–28–1991)	19–21(ft BGS)	24–26(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1–Trichloroethane	NS	NS
1,1,2–Trichloroethane	NS	NS
1,1–Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.01 U	0.002

S–1 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SS–2 (1–11–1992)	3–4(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.012
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SS–3 (1–11–1992)	4–5(ft BGS)	5–7(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1–Trichloroethane	NS	NS
1,1,2–Trichloroethane	NS	NS
1,1–Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.01 U	0.01 U

B–BP–7 (8–28–1991)	19–21(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

S–2 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SW–4–UST5–6 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.022
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.097
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	99 [EFG]

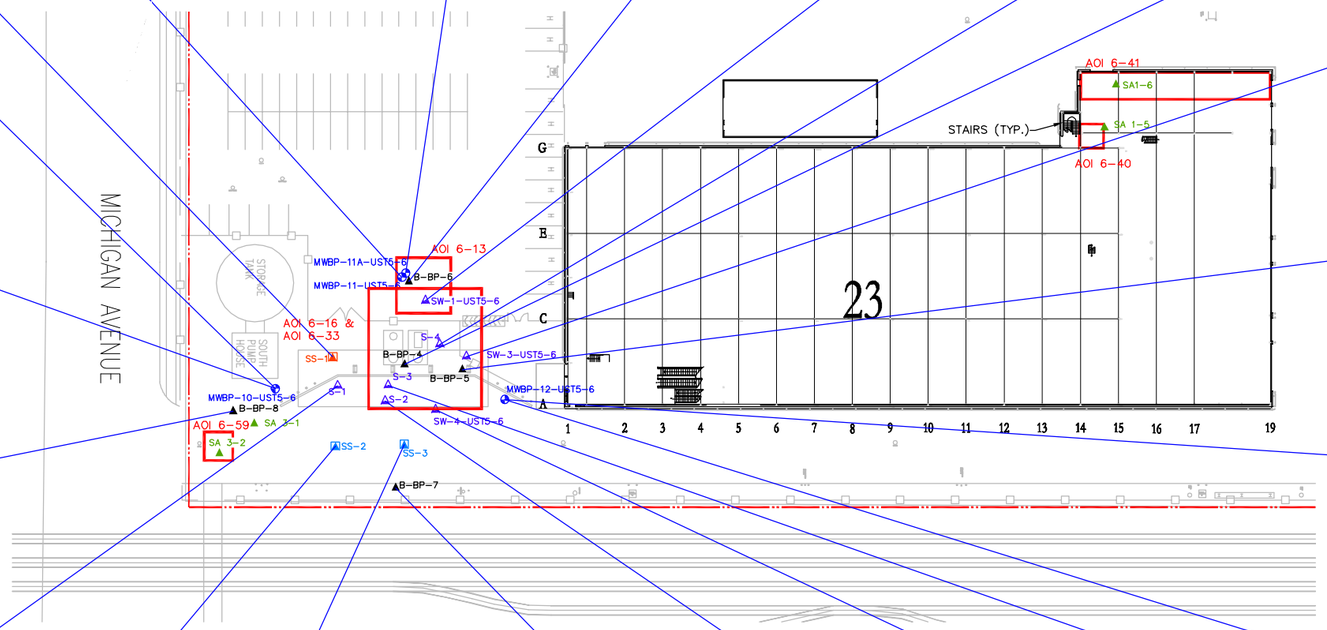
S–3 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SW–3–UST5–6 (6–7–1991)	0–0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.041

B–BP–5 (5–9–1991)	0–0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

MWBP–12–UST5–6 (11–16–1993)	33–38(ft BGS)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1–Trichloroethane	NS
1,1,2–Trichloroethane	NS
1,1–Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis–1,2–Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.03 U

MWBP–12–UST5–6 (10–19–1993)	5–0(ft BGS)	9.5–10(ft BGS)
SVOC		
Naphthalene	0.33 U	0.33 U
VOC		
1,1,1–Trichloroethane	NS	NS
1,1,2–Trichloroethane	NS	NS
1,1–Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis–1,2–Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.03 U	0.03 U



EXCEEDANCE CODES

- A – MDEQ INDUSTRIAL SVIIC
- B – MDEQ INDUSTRIAL VSIC
- C – MDEQ INDUSTRIAL PSIC
- D – MDEQ INDUSTRIAL DC
- E – MDEQ RESIDENTIAL DWP
- F – RISK–BASED REDEVELOPMENT WORKER CONTACT
- G – MDEQ GSIP
- H – MDEQ RESIDENTIAL SVIIC
- I – MDEQ RESIDENTIAL VCIS
- J – MDEQ RESIDENTIAL PSIC
- K – MDEQ RESIDENTIAL DC

ACRONYMS

- DC– DIRECT CONTACT CRITERIA
- DWP– DRINKING WATER PROTECTION CRITERIA
- GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
- INORG– INORGANICS
- J– ESTIMATED VALUE
- NS– NOT SAMPLED
- PCB– POLYCHLORINATED BIPHENYLS
- PSIC– PARTICULATE SOIL INHALATION CRITERIA
- SVIIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- SVOCs– SEMI–VOLATILE ORGANIC COMPOUNDS
- U– NON–DETECT WITH ASSOCIATED LIMIT
- VOCs– VOLATILE ORGANIC COMPOUNDS
- VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER–UNDERGROUND–UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 80'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE
29

SA 4–1 (11–11–2005)	9–11(ft BGS)
INORG	
Antimony	0.08 J
Arsenic	0.6
Barium	9.4
Beryllium	0.05 J
Cadmium	0.2 U
Chromium Total	1.6 J
Cobalt	1.33
Copper	1.9
Lead	7.7
Manganese	118
Nickel	3.1
Selenium	0.17 J
Silver	0.1 U
Vanadium	2.2
Zinc	4.5

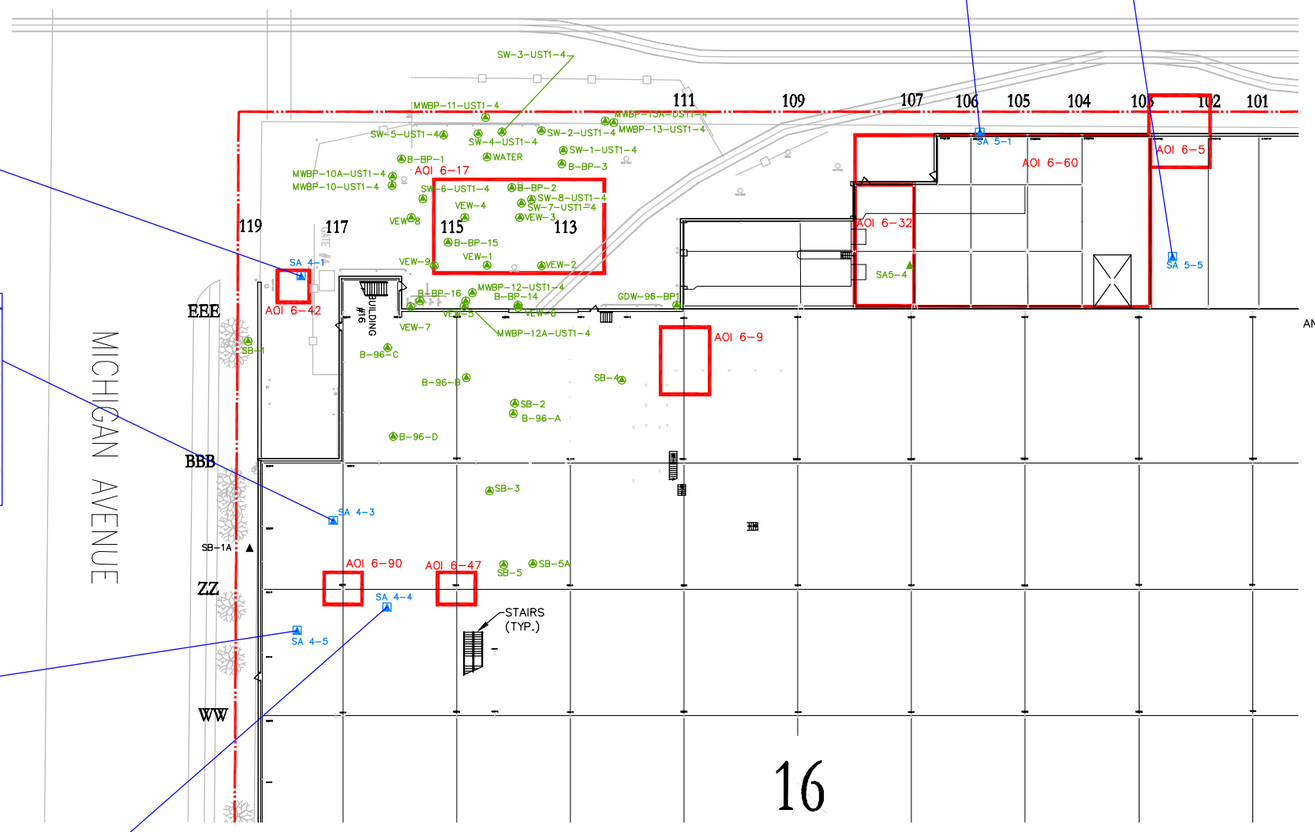
SA 4–3 (11–10–2005)	12–14(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.11
Barium	4.5
Beryllium	0.07 J
Cadmium	0.06 J
Chromium Total	1.8 J
Cobalt	1.37
Copper	4.7
Lead	3
Manganese	126
Nickel	2.9
Selenium	0.44
Silver	0.03 J
Vanadium	2.5
Zinc	10

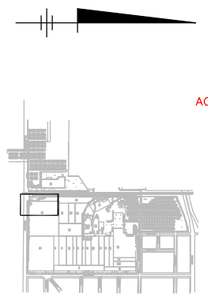
SA 4–5 (11–10–2005)	9–11(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.42
Barium	8.8
Beryllium	0.07 J
Cadmium	0.05 J
Chromium Total	3.2
Cobalt	1.92
Copper	6
Lead	4.2
Manganese	195
Nickel	4.2
Selenium	0.28
Silver	0.1 U
Vanadium	3.5
Zinc	11.7

SA 4–4 (11–10–2005)	14–16(ft BGS)
INORG	
Antimony	0.09 J/0.3 U
Arsenic	1.07/2.17
Barium	31.6/46.2
Beryllium	0.27 J/0.33 J
Cadmium	0.38/0.34
Chromium Total	7.2 [G]/8.9 [G]
Cobalt	3.06/5
Copper	13.4/21.6
Lead	7.3/7.7
Manganese	43.1 J/169 J
Nickel	13.6/17.1
Selenium	1.03 [G]/1.26 [G]
Silver	0.41 J/0.07 J
Vanadium	11.4/15.6
Zinc	36.1/35.7

SA 5–1 (11–10–2005)	8–10(ft BGS)
INORG	
Antimony	0.3 U/0.3 U
Arsenic	1.16/1.22
Barium	36.4/34.1
Beryllium	0.17 J/0.17 J
Cadmium	0.08 J/0.08 J
Chromium Total	5.9 [G]/5.5 [G]
Cobalt	3.89/3.72
Copper	6.2/6.1
Lead	3.9/4
Manganese	276/235
Nickel	9.4/8
Selenium	0.35/0.17 J
Silver	0.1 U/0.1 U
Vanadium	6.9/6.7
Zinc	13.9/13.1

SA 5–5 (11–10–2005)	8–10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.8
Barium	6
Beryllium	0.04 J
Cadmium	0.06 J
Chromium Total	1.8 J
Cobalt	1.01
Copper	3.9
Lead	2.3
Manganese	132
Nickel	2.3
Selenium	0.36
Silver	0.1 U
Vanadium	2
Zinc	6.9





LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6–75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C–1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION	DATE	DEPTH (FEET BELOW GROUND SURFACE)
SA–5–3 (4–28–2005)	0.7–2.7(ft BGS)	
INORG		
Aluminum	1940/2060	
Arsenic	0.78/1.02	
Cadmium	0.21/0.21	
Chromium Total	10.8 J [G]/4.36 J [J]	
Cobalt	12.3 [EG]/10.8 [EG]	

ANALYTE — CONCENTRATION IN mg/kg — VALIDATION CODE — EXCEEDANCE CODE — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

- A – MDEQ INDUSTRIAL SVIC
- B – MDEQ INDUSTRIAL VSIC
- C – MDEQ INDUSTRIAL PSIC
- D – MDEQ INDUSTRIAL DC
- E – MDEQ RESIDENTIAL DWP
- F – RISK–BASED REDEVELOPMENT WORKER CONTACT
- G – MDEQ GSIP
- H – MDEQ RESIDENTIAL SVIIC
- I – MDEQ RESIDENTIAL VCIS
- J – MDEQ RESIDENTIAL PSIC
- K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI–VOLATILE ORGANIC COMPOUNDS
U–	NON–DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER–UNDERGROUND–UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY–RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY–RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE
30

CITY: BRIGHTON DIV/GROUP:85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(On)ON=*;OFF=*REF*
J:\2008\B0064481\10000\00300\DWG\64481C03.dwg LAYOUT: 30SAVED: 7/29/2008 8:40 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:40 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE:
64481X02
64481X03
64481X06

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(On)ON=*;OFF=*REF*
J:\2008\B0064481\000\003\00\DWG\64481C04.dwg LAYOUT: 31SAVED: 7/29/2008 8:43 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:44 AM BY: FOX, AARON
STYLETABLE: PROJECTNAME: ---
XREFS: IMAGES:
64481X02
64481X03
64481X07

MWBP-10A-UST1-4 (11-12-1993)	24-25(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.01 U
1,1,2-Trichloroethane	0.01 U
1,1-Dichloroethane	0.01 U
Acetone	0.01 U
Benzene	0.01 U
cis-1,2-Dichloroethene	0.01 U
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.01 U
Xylene (total)	0.03 U

SW-5-UST1-4 (6-7-1991)	0-0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SW-5-UST1-4 (8-28-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.002
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.004
Xylene (total)	0.001 U

MWBP-11-UST1-4 (8-27-1991)	9-11(ft BGS)	24-26(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U
Acetone	0.05 U	0.05 U
Benzene	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.001 U	0.001 U
Xylene (total)	0.001 U	0.001 U

SW-2-UST1-4 (6-7-1991)	0-0(Unknown)
SVOC	
Naphthalene	0.33 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.01 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.01 U

SW-2-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.001 U
Xylene (total)	0.001 U

MWBP-13-UST1-4 (8-27-1991)	19-21(ft BGS)	24-26(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U
Acetone	0.05 U	0.041
Benzene	0.001 U	0.006
cis-1,2-Dichloroethene	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.004	0.001 U
Xylene (total)	0.001 U	0.001 U

SW-6-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.01
Methyl Tert Butyl Ether	NS
Trichloroethene	0.001 U
Xylene (total)	0.18

MWBP-10-UST1-4 (8-28-1991)	14-16(ft BGS)	19-21(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U
Acetone	0.26	0.05 U
Benzene	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.001 U	0.004
Xylene (total)	0.002	0.001 U

SW-4-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.001 U
Xylene (total)	0.001 U

SW-3-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.003
Xylene (total)	0.002

MWBP-13A-UST1-4 (11-10-1993)	23-25(ft BGS)	28-30(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.01 U	0.01 U
1,1,2-Trichloroethane	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U
Acetone	0.01 U	0.01 U
Benzene	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U

SW-1-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.003
Xylene (total)	0.136

SW-8-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.001 U
Xylene (total)	0.136

SW-7-UST1-4 (6-26-1991)	0-0(Unknown)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.001 U
Xylene (total)	0.004

VEW-8 (3-26-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	10-12(ft BGS)
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	0.004 U	0.004 U	0.02	0.004 U M	0.004 U M
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U M	0.01 U M	0.01 U M
1,1-Dichloroethene	0.002 U	0.002 U	0.004 U	0.004 U	0.008 U
Acetone	NS	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.008	0.02	0.008 U
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.004 U	0.004 U	0.008 U
Ethylbenzene	0.002 U	0.002 U	0.004 U	0.14	0.1
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.008 U	0.008 U	0.016 U
Trichloroethene	0.002 U	0.002 U	0.004 U	0.2 [E]	0.16 [E]
Xylene (total)	0.004 U	0.004 U	0.008 U	0.1	0.092

B-BP-16 (11-4-1993)	6-0(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.01 U
1,1,2-Trichloroethane	0.01 U
1,1-Dichloroethene	0.01 U
Acetone	0.01 U
Benzene	0.01 U
cis-1,2-Dichloroethene	0.01 U
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	NS
Trichloroethene	0.01 U
Xylene (total)	0.03 U

SB-1 (11-2-1995)	5-7(ft BGS)	7-9(ft BGS)	9-11(ft BGS)
SVOC			
Naphthalene	0.33 U	0.33 U	0.33 U
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U	0.01 U
Acetone	NS	NS	NS
Benzene	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	NS	NS	NS
Xylene (total)	0.02 U	0.02 U	0.02 U

VEW-7 (3-26-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	10-12(ft BGS)
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	0.004 U	0.004 U	0.2	1.6	0.018
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U M	0.01 U M	0.01 U M
1,1-Dichloroethene	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Acetone	NS	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.06	0.3 [E]	0.012
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Ethylbenzene	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.004 U	0.008 U	0.004 U
Trichloroethene	0.002 U	0.002 U	0.07	0.7 [E]	0.002 U
Xylene (total)	0.004 U	0.004 U	0.04	2.8 [G]	0.004 U

B-96-C (8-3-1996)	7-9(ft BGS)	10-11(ft BGS)	12-13(ft BGS)
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	0.01 U	0.01 U	0.01 U
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U	0.01 U
Acetone	NS	NS	NS
Benzene	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	0.01 U	0.01 U	0.01 U
Xylene (total)	0.01 U	0.01 U	0.01 U

SB-1A (8-9-1996)	7-9(ft BGS)	9-11(ft BGS)	11-13(ft BGS)
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	0.01 U	0.01 U	0.01 U
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U	0.01 U
Acetone	NS	NS	NS
Benzene	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	0.01 U	0.01 U	0.01 U
Xylene (total)	0.01 U	0.01 U	0.01 U

SA 4-3 (11-10-2005)	12-14(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.6 U
1,1,2-Trichloroethane	0.6 U
1,1-Dichloroethene	0.6 U
Acetone	R
Benzene	0.2 J [E]
cis-1,2-Dichloroethene	0.6 U
Ethylbenzene	23.5 [EG]
Methyl Tert Butyl Ether	3 U
Trichloroethene	0.6 U
Xylene (total)	137 [EFG]

SA 4-5 (11-10-2005)	9-11(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.05 U
1,1,2-Trichloroethane	0.05 U
1,1-Dichloroethene	0.05 U
Acetone	R
Benzene	0.05 U
cis-1,2-Dichloroethene	0.05 U
Ethylbenzene	0.55 [G]
Methyl Tert Butyl Ether	0.3 U
Trichloroethene	0.05 U
Xylene (total)	0.29 J

B-96-D (8-3-1996)	7-9(ft BGS)	9-11(ft BGS)	11-13(ft BGS)
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	0.1 U	0.5 U	0.01 U
1,1,2-Trichloroethane	0.6 [E]	0.5 U	0.01 U
1,1-Dichloroethene	0.1 U	0.5 U	0.01 U
Acetone	NS	NS	NS
Benzene	0.1 U	0.5 U	0.01 U
cis-1,2-Dichloroethene	0.1 U	0.5 U	0.01 U
Ethylbenzene	0.1 U	0.5 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	0.05 U	0.5 U	0.01 U
Xylene (total)	0.1 U	0.5 U	0.01 U

VEW-9 (3-26-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	10-12(ft BGS)
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	0.004 U	0.004 U	0.002 U	0.01	0.02
1,1,2-Trichloroethane	0.01 U	0.01 U M	0.01 U M	0.01 U M	0.01 U M
1,1-Dichloroethene	0.002 U	0.002 U	0.002 U	0.004 U	0.004 U
Acetone	NS	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.002 U	0.016	0.028
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002	0.018
Ethylbenzene	0.002 U	0.016	0.014	0.14	0.17
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.008 U	0.008 U	0.008 U
Trichloroethene	0.002 U	0.005	0.006	0.005	0.02
Xylene (total)	0.004 U	0.018	0.005	0.452	0.85 [G]

B-96-B (8-3-1996)	7-9(ft BGS)	9-11(ft BGS)	11-13(ft BGS)
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	0.1 U	0.5 U	0.01 U
1,1,2-Trichloroethane	0.6 [E]	0.5 U	0.01 U
1,1-Dichloroethene	0.1 U	0.5 U	0.01 U
Acetone	NS	NS	NS
Benzene	0.1 U	3.4 [EH]	0.01 U
cis-1,2-Dichloroethene	0.1 U	0.5 U	0.01 U
Ethylbenzene	0.1 U	12 [EG]	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	0.1 U	0.5 U	0.01 U
Xylene (total)	0.2	299 [ADEFGHK]	0.01 U

SB-5 (1-14-1996)	13-0(ft BGS)	16.5-0(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	NS	NS
1,1,2-Trichloroethane	NS	NS
1,1-Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis-1,2-Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.01 U	0.01 U

SB-5 (1-16-1996)	16.8-0(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.009 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.001
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.004

SB-3 (1-6-1996)	12-0(ft BGS)	14-0(ft BGS)	17-0(ft BGS)	17.5-0(ft BGS)
SVOC				
Naphthalene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	NS	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS	NS
Acetone	NS	NS	NS	NS
Benzene	0.01 U	1.72 [EH]	0.3 [E]	0.028
cis-1,2-Dichloroethene	NS	NS	NS	NS
Ethylbenzene	0.01 U	0.1	0.01 U	0.001 U
Methyl Tert Butyl Ether	NS	NS	NS	NS
Trichloroethene	NS	NS	NS	NS
Xylene (total)	0.01 U	0.34	0.05	0.002

B-96-A (8-3-1996)	15-17(ft BGS)	17-19(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	NS	NS
1,1,2-Trichloroethane	NS	NS
1,1-Dichloroethene	NS	NS
Acetone	NS	NS
Benzene	0.01 U	0.01 U
cis-1,2-Dichloroethene	NS	NS
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	0.01 U	0.01 U

SB-5A (8-9-1996)	10-13(ft BGS)	14-16(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.01 U	0.01 U
1,1,2-Trichloroethane	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U
Acetone	NS	NS
Benzene	NS	NS
cis-1,2-Dichloroethene	0.01 U	0.01 U
Ethylbenzene	NS	NS
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	NS	NS
Xylene (total)	NS	NS

SB-2 (11-2-1995)	7-9(ft BGS)	9-11(ft BGS)	11-13(ft BGS)	13-15(ft BGS)
SVOC				
Naphthalene	0.33 U	9.2 [G]	0.33 U	0.33 U
VOC				
1,1,1-Trichloroethane	NS	NS	NS	NS
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	NS	NS	NS	NS
Benzene	0.39 [E]	29.7 [AEFGH]	2.9 [EH]	0.69 [E]
cis-1,2-Dichloroethene	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	0.67 [G]	122 [EGH]	0.17	0.2
Methyl Tert Butyl Ether	NS	NS	NS	NS
Trichloroethene	0.73	125 [EFG]	0.78 [G]	0.2
Xylene (total)	NS	NS	NS	NS

MWBP-12A-UST1-4 (11-4-1993)	40-0(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.01 U
1,1,2-Trichloroethane	0.01 U
1,1-Dichloroethene	0.01 U
Acetone	0.01 U
Benzene	0.01 U
cis-1,2-Dichloroethene	0.01 U
Ethylbenzene	0.01 U
Methyl Tert Butyl Ether	0.01 U
Trichloroethene	0.01 U
Xylene (total)	0.03 U

VEW-5 (3-19-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)
SVOC				
Naphthalene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.004 U	0.004 U	3.5	9 [EG]
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U M	0.01 U M
1,1-Dichloroethene	0.002 U	0.002 U	0.13 [H]	0.5 [ADH]
Acetone	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	2 [EH]	7 [EGH]
cis-1,2-Dichloroethene	0.002 U	0.002 U	4 [E]	12 [E]
Ethylbenzene	0.002 U	0.002 U	0.18	0.6 [G]
Methyl Tert Butyl Ether	0.004 U	0.004 U	3.9 [E]	10 [E]
Trichloroethene	0.002 U	0.002 U	0.4 [E]	1.2 [E]
Xylene (total)	0.004 U	0.004 U	0.182	0.72

MWBP-12-UST1-4 (8-27-1991)	9-11(ft BGS)	19-21(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U
Acetone	0.041	0.05 U
Benzene	0.58 [E]	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U
Ethylbenzene	3.4 [EG]	0.001 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.001 U	0.001 U
Xylene (total)	0.005 U	0.002

VEW-3 (3-19-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)
SVOC				
Naphthalene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.004 U	0.004 U	0.004 U	0.004 U
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Acetone	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.002 U	0.002 U
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Ethylbenzene	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.004 U	0.004 U
Trichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Xylene (total)	0.004 U	0.004 U	0.004 U	0.004 U

SA 5-5 (11-10-2005)	8-10(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.5 U
1,1,2-Trichloroethane	0.5 U
1,1-Dichloroethene	0.5 U
Acetone	35 [E]
Benzene	0.5 U
cis-1,2-Dichloroethene	0.5 U
Ethylbenzene	0.1 [EG]
Methyl Tert Butyl Ether	2 U
Trichloroethene	0.5 U
Xylene (total)	34.5 [EG]

VEW-4 (3-19-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)
SVOC				
Naphthalene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.004 U	0.004 U	0.004 U	0.004 U
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Acetone	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.002 U	0.002 U
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Ethylbenzene	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.004 U	0.004 U
Trichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Xylene (total)	0.004 U	0.004 U	0.004 U	0.004 U

VEW-2 (3-19-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)
SVOC				
Naphthalene	NS	NS	NS	NS
VOC				
1,1,1-Trichloroethane	0.004 U	0.004 U	0.004 U	0.004 U
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Acetone	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.002 U	0.002 U
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Ethylbenzene	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.004 U	0.004 U
Trichloroethene	0.002 U	0.002 U	0.002 U	0.002 U
Xylene (total)	0.004 U	0.004 U	0.004 U	0.004 U

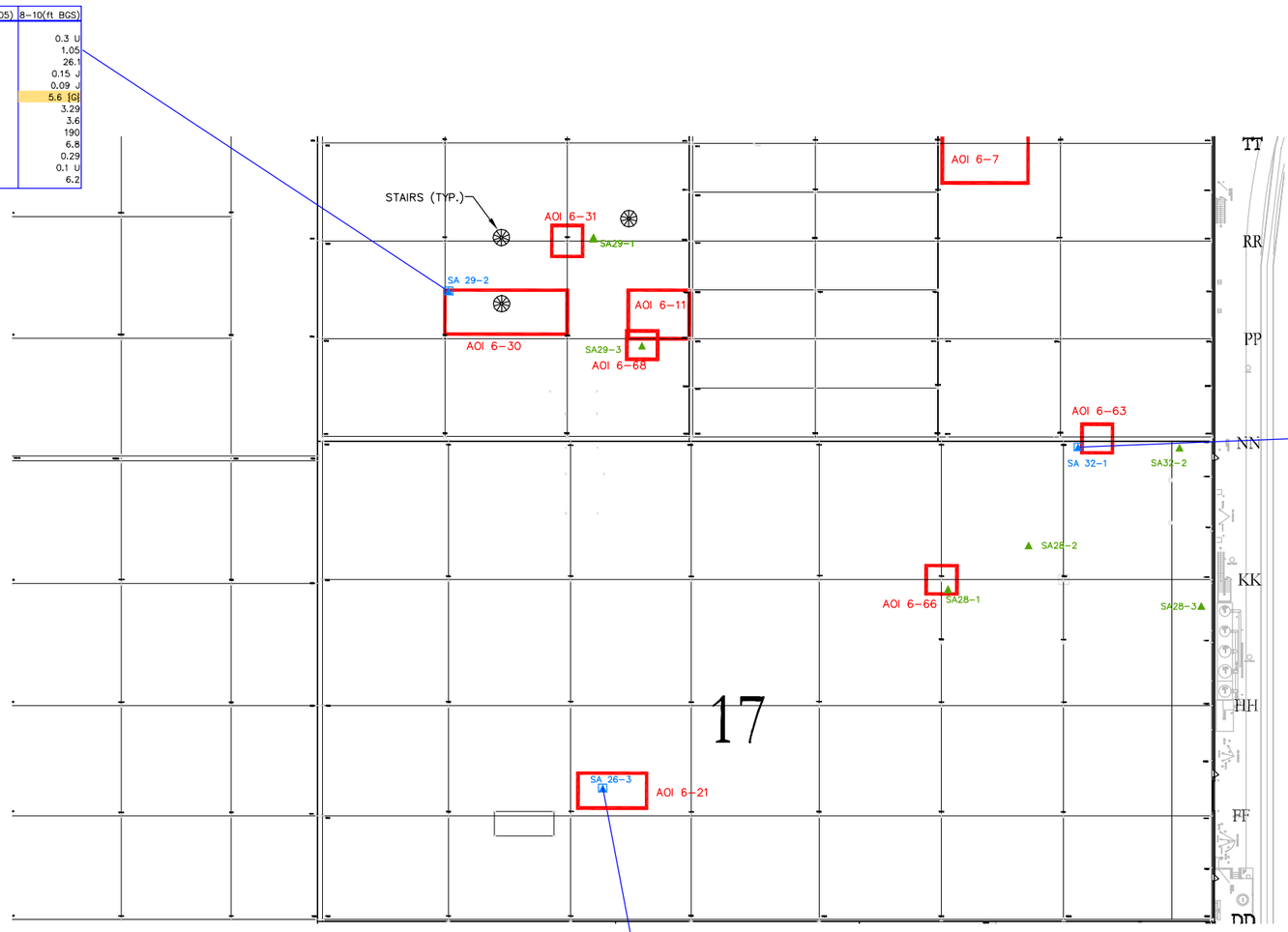
B-BP-15 (11-4-1993)	8-10(ft BGS)	18-20(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.01 U	0.01 U
1,1,2-Trichloroethane	0.041	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U
Acetone	0.01 U	0.01 U
Benzene	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U
Ethylbenzene	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U

VEW-6 (3-26-1995)	2-4(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	10-12(ft BGS)
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	0.004 U	0.004 U	0.004 U M	0.004 U M	0.004 U M
1,1,2-Trichloroethane	0.01 U	0.01 U	0.01 U M	0.01 U M	0.01 U M
1,1-Dichloroethene	0.002 U	0.002 U	0.004 U	0.004 U	0.002 U
Acetone	NS	NS	NS	NS	NS
Benzene	0.002 U	0.002 U	0.004 U	0.004 U	0.002 U
cis-1,2-Dichloroethene	0.002 U	0.002 U	0.004 U	0.004 U	0.002 U
Ethylbenzene	0.002 U	0.002 U	0.004 U	0.03	0.002 U
Methyl Tert Butyl Ether	0.004 U	0.004 U	0.008 U	0.008 U	0.004 U
Trichloroethene	0.002 U	0.002 U	0.002 U M	0.002 U M	0.002 U
Xylene (total)	0.004 U	0.004 U	0.038	0.148	0.004 U

B-BP-14 (11-4-1993)	8-9(ft BGS)	18-20(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.01 U	0.01 U
1,1,2-Trichloroethane	0.01 U	0.01 U
1,1-Dichloroethene	0.01 U	0.01 U
Acetone	0.01 U	0.01 U
Benzene	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.01 U	0.01 U
Ethylbenzene	0.014	0.01 U
Methyl Tert Butyl Ether	NS	NS
Trichloroethene	0.01 U	0.01 U
Xylene (total)	0.03 U	0.03 U

SB-4 (1-14-1996)	8.5-0(ft BGS)	14-0(ft BGS)	17-0(ft BGS)
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
Acetone	NS	NS	NS
Benzene	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	NS	NS	NS
Ethylbenzene	0.01 U	0.01 U	0.01 U
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	0.01 U	0.01 U	0.01 U
Xylene (total)	0.01 U	0.01 U	0.01 U

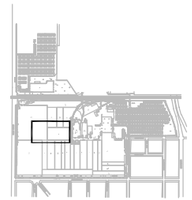
MWBP-12-UST1-4 (8-27-1991)	9-11(ft BGS)	19-21(ft BGS)
SVOC		
Naphthalene	NS	NS
VOC		
1,1,1-Trichloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U
Acetone	0.041	0.05 U
Benzene	0.58 [E]	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U
Ethylbenzene	3.4 [EG]	0.001 U
Methyl Tert But



SA 29-2 (11-9-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.05
Barium	26.1
Beryllium	0.15 J
Cadmium	0.09 J
Chromium Total	5.6 [G]
Cobalt	3.29
Lead	3.6
Manganese	190
Nickel	6.8
Selenium	0.29
Silver	0.1 U
Vanadium	6.2

SA 26-3 (11-10-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.89
Barium	7
Beryllium	0.05 J
Cadmium	0.05 J
Chromium Total	1.8 J
Cobalt	1.39
Lead	2.2
Manganese	121
Nickel	2.8
Selenium	0.2 U
Silver	0.1 U
Vanadium	2.6

SA 32-1 (11-9-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.34
Barium	58.1
Beryllium	0.26 J
Cadmium	0.09 J
Chromium Total	9 [G]
Cobalt	6.25
Lead	5.5
Manganese	350
Nickel	13.1
Selenium	0.49
Silver	0.1 U
Vanadium	10.1



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
ANALYTE: Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [G]
Cobalt	12.3 [EG]/10.8 [EG]

VALIDATION CODE
EXCEEDANCE CODE
DUPLICATE SAMPLE CONCENTRATION IN mg/kg
CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 60'
GRAPHIC SCALE

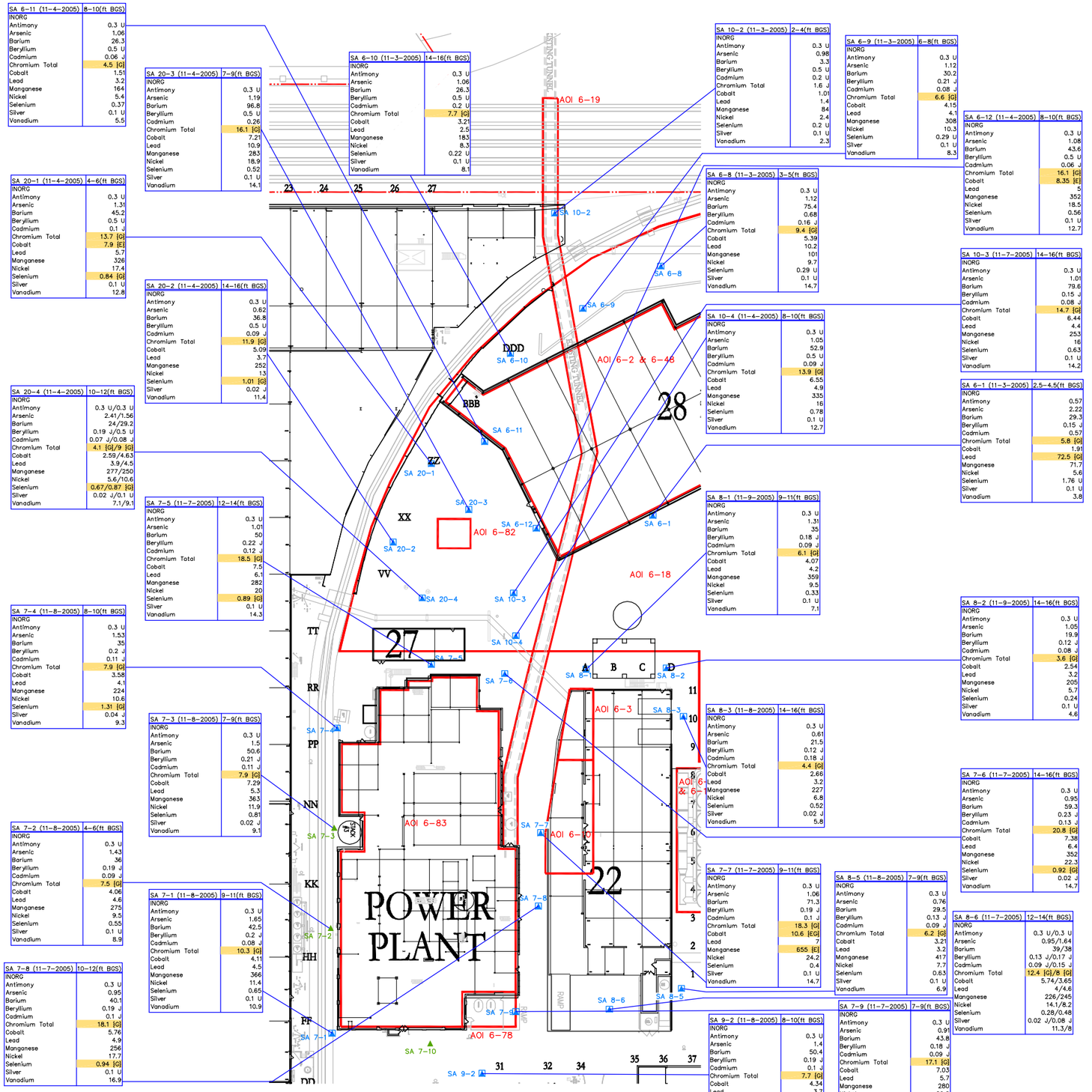
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE
32

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD: (Opt) PIC: (Opt) PM: (Reqd) TM: (Opt) LYR: (Opt)ON="OFF"=REF*
J:\2008\B0064481\000\000300\DWG\64481C05.dwg LAYOUT: 32 SAVED: 7/29/2008 8:45 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:45 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: --
64481X02
64481X03
64481X06



EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

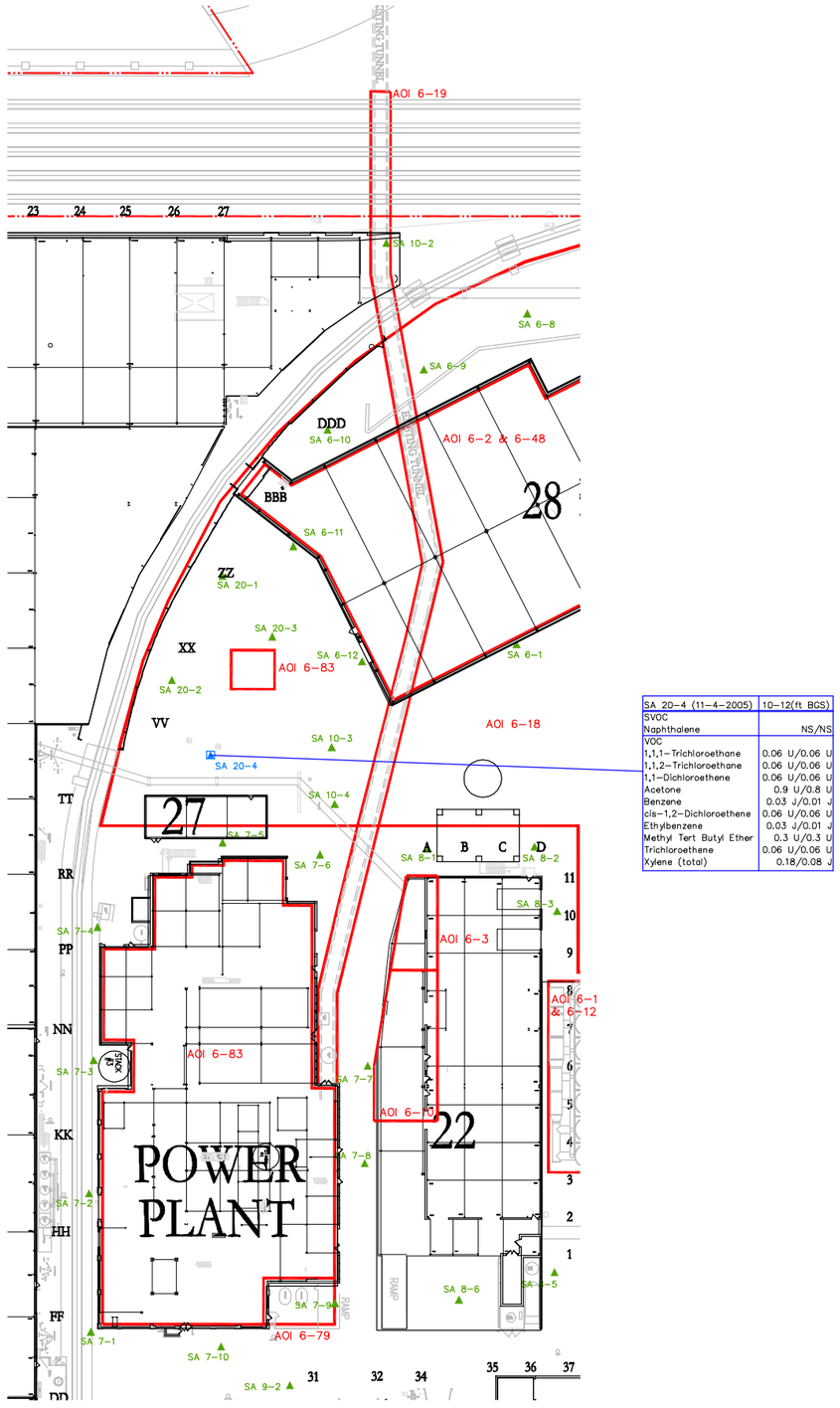
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

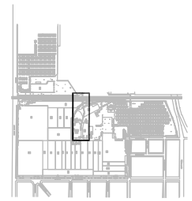
ARCADIS

FIGURE 33

CITY: BRIGHTON DIV/GROUP: 85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* J:\2008\B0064481\00000300\DWG\64481C06.dwg LAYOUT: 33SAVED: 7/29/2008 8:49 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:49 AM BY: FOX, AARON
XREFS: 64481X02 64481X03 64481X06 IMAGES: PROJECTNAME: ---



SA 20-4 (11-4-2005)	10-12(ft BGS)
SVOC	
Naphthalene	NS/NS
VOC	
1,1,1-Trichloroethane	0.06 U/0.06 U
1,1,2-Trichloroethane	0.06 U/0.06 U
1,1-Dichloroethene	0.06 U/0.06 U
Acetone	0.9 U/0.8 U
Benzene	0.03 J/0.01 J
cis-1,2-Dichloroethene	0.06 U/0.06 U
Ethylbenzene	0.03 J/0.01 J
Methyl Tert Butyl Ether	0.3 U/0.3 U
Trichloroethene	0.06 U/0.06 U
Xylene (total)	0.18/0.08 J



LOCATION MAP
NOT TO SCALE

LOCATION	DATE	DEPTH (FEET BELOW GROUND SURFACE)
SA-5-3 (4-28-2005)		0.7-2.7(ft BGS)
ANALYTE: INORG		
Aluminum		1940/2060
Arsenic		0.78/1.02
Cadmium		0.21/0.21
Chromium Total		10.8 J [G]/4.36 J [J]
Cobalt		12.3 [EG]/10.8 [EG]

CONCENTRATION IN mg/kg
VALIDATION CODE
EXCEEDANCE CODE
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO ORGANICS ANALYSIS (HISTORICAL)
- NO ORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VOIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 80'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE
34

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\1\000\00300\DWG\64481C07.dwg LAYOUT: 34SAVED: 7/29/2008 8:50 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:50 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X02
64481X03
64481X07

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\10000\00300\DWG\64481C08.dwg LAYOUT: 35SAVED: 7/29/2008 8:51 AM BY: FOX, AARON
PROJECTNAME: ---- PLTFULL.CTB PLOTTED: 7/29/2008 8:51 AM BY: FOX, AARON
IMAGES: ---- PLOTSTYLETABLE: ---PLOTSTYLEPAGESETUP:
XREFS: 64481X02 64481X03 64481X06 17.1S (LMS TECH)

SA 6-7 (11-3-2005)	4-6(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.07
Barium	45.2
Beryllium	0.25 J
Cadmium	0.13 J
Chromium Total	6.6 [G]
Cobalt	5.62
Lead	5.9
Manganese	601 [E]
Nickel	9.1
Selenium	0.6 U
Silver	0.1 U
Vanadium	9.4

E-12 (11-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	4.2
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SA 6-2 (11-3-2005)	4-6(ft BGS)
INORG	
Antimony	0.19 J/0.5
Arsenic	1.15 J/1.97 J
Barium	11.4/9.3
Beryllium	0.5 U/0.5 U
Cadmium	0.09 J/0.08 J
Chromium Total	3.3/4.1 [G]
Cobalt	1.11/0.98
Lead	34.7 [G]/39.2 [G]
Manganese	53.4/49.8
Nickel	3.6/3.5
Selenium	0.2 U/0.2 U
Silver	0.1 U/0.1 U
Vanadium	3.2/4.6

E-3 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	1.8
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-4 (12-31-1993)	1.5-22(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	7.9
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SA 6-3 (11-3-2005)	3-5(ft BGS)
INORG	
Antimony	0.42
Arsenic	1.56
Barium	40.5
Beryllium	0.5 U
Cadmium	0.19 J
Chromium Total	3.5 [G]
Cobalt	3.22
Lead	121 [G]
Manganese	238
Nickel	4.9
Selenium	0.28 U
Silver	0.1 U
Vanadium	2.9

G-8 (12-31-1992)	1.5-49.1(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	7.8
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

G-2 (12-31-1992)	1.5-35(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	7.7
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

G-1 (12-31-1992)	1.5-35(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	4.3
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

G-3 (12-31-1992)	1.5-50(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	19.4
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-5 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	7.9
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-9 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	5.5
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SA 6-4 (11-3-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U/0.3 U
Arsenic	1.33/1.62
Barium	54/51.7
Beryllium	0.36 J/0.36 J
Cadmium	0.29/0.18 J
Chromium Total	6.9 [G]/7.8 [G]
Cobalt	4.04/3.62
Lead	6.7/8.1
Manganese	373 J/68.1 J
Nickel	7.8/8.2
Selenium	0.32 U/0.2 U
Silver	0.1 U/0.1 U
Vanadium	10.3/9.6

SA 6-6 (11-3-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.15
Barium	15.5
Beryllium	0.5 U
Cadmium	0.06 J
Chromium Total	2.8
Cobalt	1.6
Lead	3.8
Manganese	164
Nickel	3.5
Selenium	0.2 U
Silver	0.1 U
Vanadium	3.5

SA 6-5 (11-3-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.48
Barium	22.8
Beryllium	0.5 U
Cadmium	0.18 J
Chromium Total	3.5 [G]
Cobalt	2.35
Lead	13
Manganese	311
Nickel	6.1
Selenium	0.35 U
Silver	0.1 U
Vanadium	4.1

E-20 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	4.1	4.4	3.4	2.3
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-19 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	267 [G]	8.5	5.2	0.005 U
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-18 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	188 [G]	5.9	6	2.7
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-41A (12-31-1993)	3-7(ft BGS)	14-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	4.8	2.8
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

E-21 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	10.4	4.4	3.5	2.7
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-17 (12-31-1993)	4-6(ft BGS)	9-11(ft BGS)	14-16(ft BGS)	19-21(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	1480 [DEGK]	314 [G]	63 [G]	5.6
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-41 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	17.3
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-29 (12-31-1993)	0-2(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	1.8	4.9	4.5	3.2
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

SME-MW-1 (3-15-1996)	2-0(ft BGS)	5-0(ft BGS)	10-0(ft BGS)	15-0(ft BGS)	20-0(ft BGS)
INORG					
Antimony	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS
Lead	4.8	8.6	6.1	4.1	4
Manganese	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS

G-9 (12-31-1992)	0-1.5(ft BGS)	1.5-3.5(ft BGS)	4-6(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG						
Antimony	NS	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS	NS
Lead	1.31 [G]	32.4 [G]	6.6	6.3	7.2	4.2
Manganese	NS	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS	NS

E-23 (12-31-1993)	0-2(ft BGS)	6-8(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	829 [EGK]	9.8	15.4	10.7
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-25 (12-31-1993)	0-2(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	4030 [DEGK]	25.2 [G]	15.7	9.1
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-40A (12-31-1993)	1-15(ft BGS)	6-0(ft BGS)
INORG		
Antimony	NS	NS/NS
Arsenic	NS	NS/NS
Barium	NS	NS/NS
Beryllium	NS	NS/NS
Cadmium	NS	NS/NS
Chromium Total	NS	NS/NS
Cobalt	NS	NS/NS
Lead	12	5.2/5.8
Manganese	NS	NS/NS
Nickel	NS	NS/NS
Selenium	NS	NS/NS
Silver	NS	NS/NS
Vanadium	NS	NS/NS

E-40 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	7.3
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SME-MW-2 (3-15-1996)	5-0(ft BGS)	10-0(ft BGS)	15-0(ft BGS)	20-0(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	2.9	6	1.3	3.4
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-31 (12-31-1993)	0-2(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	35.7 [G]	17	4.4	3.7
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-8 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	5.6
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

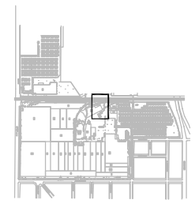
G-5 (12-31-1992)	1.5-35(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	6.9
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-24 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	5	7	16.9	23.1
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-16 (12-31-1993)	4-6(ft BGS)	9-11(ft BGS)	14-16(ft BGS)	19-21(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	1290 [DEGK]	3.4	6.1	66.5 [G]
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

G-6 (12-31-1992)	1.5-35(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	47.1 [G]
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-22 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	300 [G]	9	11.5	2.9
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.22
Chromium Total	10.8 J [G]/4.36 J [G]
Cobalt	12.3 J [EG]/10.8 [EG]

ANALYTE

DEPTH (FEET BELOW GROUND SURFACE)
VALIDATION CODE
EXCEEDANCE CODE
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VOS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC-	DIRECT CONTACT CRITERIA
DWP-	DRINKING WATER PROTECTION CRITERIA
GSIP-	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG-	INORGANICS
J-	ESTIMATED VALUE
NS-	NOT SAMPLED
PCB-	POLYCHLORINATED BIPHENYLS
PSIC-	PARTICULATE SOIL INHALATION CRITERIA
SVIC-	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs-	SEMI-VOLATILE ORGANIC COMPOUNDS
U-	NON-DETECT WITH ASSOCIATED LIMIT
VOCs-	VOLATILE ORGANIC COMPOUNDS
VSIC-	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

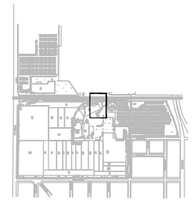
PLANT 6 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE
35



SA 6-4 (11-3-2005)	8-10(ft BGS)
SVOC	
Naphthalene	NS/NS
VOC	
1,1,1-Trichloroethane	0.06 U/0.06 U
1,1,2-Trichloroethane	0.15 U/0.06 U
1,1-Dichloroethene	0.06 U/0.06 U
Acetone	0.9 U/0.9 U
Benzene	0.06 U/0.06 U
cis-1,2-Dichloroethene	0.06 U/0.06 U
Ethylbenzene	0.06 U/0.06 U
Methyl Tert Butyl Ether	0.3 U/0.3 U
Trichloroethene	0.06 U/0.06 U
Xylene (total)	0.06 U/0.06 U



LOCATION MAP
NOT TO SCALE

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [G]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE
VALIDATION CODE
EXCEEDANCE CODE
CONCENTRATION IN mg/kg
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO ORGANICS ANALYSIS (HISTORICAL)
- NO ORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE 36

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\1\000\003\00\DWG\64481C09.dwg LAYOUT: 36SAVED: 7/29/2008 8:53 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:53 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X02
64481X03
64481X07

E-13 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	4.4
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-26 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	18.2	7.8	4.6	3.9
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-15 (12-31-1993)	4-6(ft BGS)	9-11(ft BGS)	14-16(ft BGS)	19-21(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	4.2	8.9	2.3	3.8
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-1 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	54.7 [G]
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-32 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	3.7	190 [G]	6.9	3.8
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-27 (12-31-1993)	0-2(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	3240 [DEGK]	21.3	6.9	3.2
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

E-33 (12-31-1993)	1-3(ft BGS)	4-6(ft BGS)	6-8.5(ft BGS)
INORG			
Antimony	NS	NS	NS
Arsenic	NS	NS	NS
Barium	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium Total	NS	NS	NS
Cobalt	NS	NS	NS
Lead	3	3.1	1.8
Manganese	NS	NS	NS
Nickel	NS	NS	NS
Selenium	NS	NS	NS
Silver	NS	NS	NS
Vanadium	NS	NS	NS

E-39 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	23.6
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J [G]/4.36 J [J]
Cobalt	12.3 [EG]/10.8 [EG]

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

E-10 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	3.6
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-38A (12-31-1993)	0.5-4.5(ft BGS)	9-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	19	26 [G]
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

G-4 (12-31-1992)	1.5-50(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	2.6
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

G-7 (12-31-1992)	1.5-35(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	12
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-39A (12-31-1993)	3-4(ft BGS)	14-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	4.8	3.1
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

SA 12-2 (11-2-2005)	10-12(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.01
Barium	140
Beryllium	1.19
Cadmium	0.18 J
Chromium Total	25.7 [G]
Cobalt	22.8 [EG]
Lead	13.9
Manganese	191
Nickel	17.3
Selenium	0.4
Silver	0.04 J
Vanadium	23.4

E-2 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	6.3
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SA 12-1 (11-2-2005)	9-11(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.76
Barium	104
Beryllium	0.74
Cadmium	0.22
Chromium Total	22.8 [G]
Cobalt	17.4 [EG]
Lead	8.6
Manganese	548 [E]
Nickel	31.5
Selenium	0.26
Silver	0.03 J
Vanadium	15.9

SA 12-3 (11-2-2005)	10-12(ft BGS)
INORG	
Antimony	0.1 J
Arsenic	1.34
Barium	50.7
Beryllium	0.18 J
Cadmium	0.17 J
Chromium Total	6.4 [G]
Cobalt	2.36
Lead	23.6
Manganese	199
Nickel	4
Selenium	0.32
Silver	0.03 J
Vanadium	6.3

E-14 (12-31-1993)	4-6(ft BGS)	9-11(ft BGS)	14-16(ft BGS)	19-21(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	4.8	4	2.4	3
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS

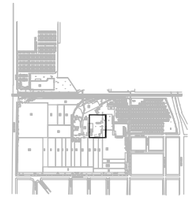
E-7 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	2.9
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-11 (12-31-1993)	1.5-20(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	3
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SA 12-4 (11-3-2005)	11-13(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.38
Barium	25.9
Beryllium	0.23 J
Cadmium	0.08 J
Chromium Total	5.8 [G]
Cobalt	3.76
Lead	4.9
Manganese	375
Nickel	8.7
Selenium	0.34 U
Silver	0.1 U
Vanadium	9.2

SA 14-1 (11-9-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.9
Barium	18.9
Beryllium	0.12 J
Cadmium	0.1 J
Chromium Total	2.8
Cobalt	1.54
Lead	15.9
Manganese	125
Nickel	3.1
Selenium	0.2 U
Silver	0.1 U
Vanadium	3.4

E-28 (12-31-1993)	0-2(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG				
Antimony	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS
Barium	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS
Lead	2.8	62.4 [G]	3.8	2.8
Manganese	NS	NS	NS	NS
Nickel	NS	NS	NS	NS
Selenium	NS	NS	NS	NS
Silver	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 — 60'
GRAPHIC SCALE

E-32 E-10 E-33 E-13 E-26 E-15 E-1 E-27 E-28 E-14 E-7 E-2 E-11 E-39 E-39A E-38A G-4 G-7 SA 12-1 SA 12-2 SA 12-4 SA 12-3 SA 14-1

AOI 6-18

AOI 6-1 & 6-12

SWMU 5

24

STAIRS

STAIRS

38 39 40 41 42 44 45 46 47 48 50 52

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

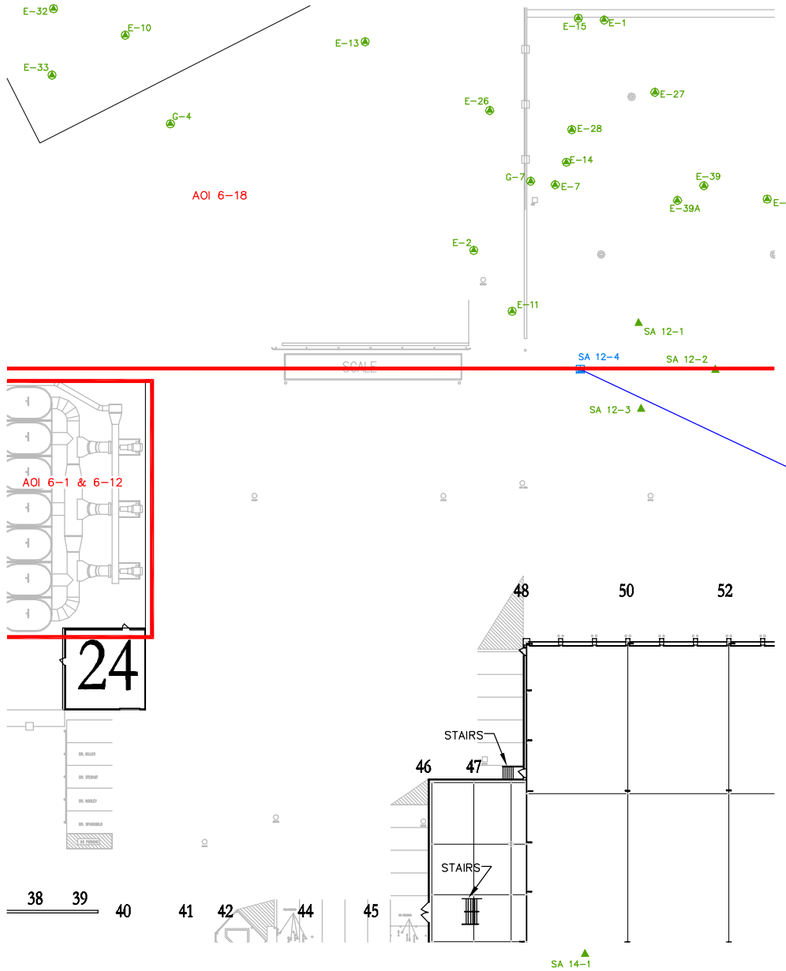
ARCADIS

FIGURE 37

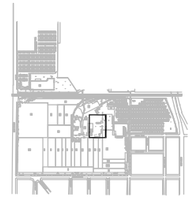
CITY: BRIGHTON DIVGROUP: BS DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* J:\2008\B006448\1000\0300\DWG\64481C11.dwg LAYOUT: 37SAVED: 7/29/2008 8:57 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:57 AM BY: FOX, AARON

XREFS: 64481X02 64481X03 64481X06

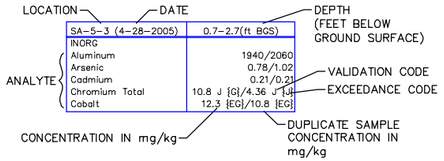
IMAGES: PROJECTNAME: ---



SA 12-4 (11-3-2005)	11-13(ft BGS)
SVOC	
Naphthalene	0.09 J
VOC	
1,1,1-Trichloroethane	0.06 U
1,1,2-Trichloroethane	0.06 U
1,1-Dichloroethene	0.06 U
Acetone	0.8 U
Benzene	0.06 U
cis-1,2-Dichloroethene	0.06 U
Ethylbenzene	0.06 U
Methyl Tert Butyl Ether	0.3 U
Trichloroethene	0.06 U
Xylene (total)	0.06 U



LOCATION MAP
NOT TO SCALE



LEGEND:

- AOI 6-75 — SITE ASSESSMENT AREA OF INTEREST GROUPING (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO ORGANICS ANALYSIS (HISTORICAL)
- NO ORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE D-1, APPENDIX D)
- APPROXIMATE PROPERTY BOUNDARY

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 60'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE
38

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\10000\00300\DWG\64481C12.dwg LAYOUT: 38SAVED: 7/29/2008 8:58 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 8:58 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X02
64481X03
64481X07

E-34A (12-31-1993)	0-15(ft BGS)	15-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	1200 {DEGK}	210 {G}
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	

E-34 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	384 {G}
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-35 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	62.5 {G}
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

G-10 (12-31-1992)	0-1.5(ft BGS)	1.5-3.5(ft BGS)	4-6(ft BGS)	8-10(ft BGS)	13-15(ft BGS)
INORG					
Antimony	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS
Lead	48.5 {G}	28.3 {G}	9.2	3.2	3.6
Manganese	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS

SME-MW-3 (3-15-1996)	2-0(ft BGS)	5-0(ft BGS)	10-0(ft BGS)	15-0(ft BGS)	20-0(ft BGS)
INORG					
Antimony	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS
Lead	22.9	48.5 {G}	3.2	3.6	4.5
Manganese	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS

GP-10 (10-23-1996)	5-0(ft BGS)	9-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	217 {G}	36.1 {G}
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

E-35A (12-31-1993)	3.5-8.5(ft BGS)	13.5-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	6.9	3.1
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

SA 34-6 (11-11-2005)	6-8(ft BGS)
INORG	
Antimony	30 {E}
Arsenic	1.24
Barium	119
Beryllium	0.57
Cadmium	2.6
Chromium Total	9.9 {G}
Cobalt	0.98
Lead	22.2
Manganese	12.7
Nickel	11.9
Selenium	1.09 {G}
Silver	0.1 U
Vanadium	9.6

GP-5 (10-23-1996)	5-0(ft BGS)	10-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	36.1 {G}	18.6
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

E-36 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	244 {G}
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

GP-8 (10-23-1996)	5-0(ft BGS)	10-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	4	6.5
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

E-36A (12-31-1993)	4-9.5(ft BGS)	14-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	5.4	3.5
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

GP-9 (10-23-1996)	5-0(ft BGS)	7-0(ft BGS)	8-0(ft BGS)
INORG			
Antimony	NS	NS	NS
Arsenic	NS	NS	NS
Barium	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium Total	NS	NS	NS
Cobalt	NS	NS	NS
Lead	7.9	10	4
Manganese	NS	NS	NS
Nickel	NS	NS	NS
Selenium	NS	NS	NS
Silver	NS	NS	NS
Vanadium	NS	NS	NS

E-37A (12-31-1993)	3.3-8.5(ft BGS)	11.5-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	320 {G}	2.8
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

GP-7 (10-23-1996)	5-0(ft BGS)	8-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	77.9 {G}	3.8
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

GP-6 (10-23-1996)	5-0(ft BGS)	8-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	24.3	8.2
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

E-38 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	141 {G}
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

E-37 (12-31-1993)	1-5(ft BGS)
INORG	
Antimony	NS
Arsenic	NS
Barium	NS
Beryllium	NS
Cadmium	NS
Chromium Total	NS
Cobalt	NS
Lead	51.7 {G}
Manganese	NS
Nickel	NS
Selenium	NS
Silver	NS
Vanadium	NS

SME-MW-4 (3-15-1996)	2-0(ft BGS)	5-0(ft BGS)	10-0(ft BGS)	15-0(ft BGS)	20-0(ft BGS)
INORG					
Antimony	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS
Chromium Total	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS
Lead	23.1	454 {GK}	3.7	4.3	4.7
Manganese	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS

GP-2 (10-23-1996)	3-0(ft BGS)	5-0(ft BGS)	8-0(ft BGS)
INORG			
Antimony	NS	NS	NS
Arsenic	NS	NS	NS
Barium	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium Total	NS	NS	NS
Cobalt	NS	NS	NS
Lead	400 > {G}	400 > {G}	400 > {G}
Manganese	NS	NS	NS
Nickel	NS	NS	NS
Selenium	NS	NS	NS
Silver	NS	NS	NS
Vanadium	NS	NS	NS

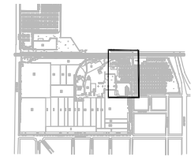
GP-1 (10-23-1996)	5-0(ft BGS)	6-0(ft BGS)	8-0(ft BGS)
INORG			
Antimony	NS	NS	NS
Arsenic	NS	NS	NS
Barium	NS	NS	NS
Beryllium	NS	NS	NS
Cadmium	NS	NS	NS
Chromium Total	NS	NS	NS
Cobalt	NS	NS	NS
Lead	6.6	6.3	4.7
Manganese	NS	NS	NS
Nickel	NS	NS	NS
Selenium	NS	NS	NS
Silver	NS	NS	NS
Vanadium	NS	NS	NS

SA 13-1 (11-8-2005)	7-9(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.26
Barium	8.4
Beryllium	0.06 J
Cadmium	0.05 J
Chromium Total	5.5 {G}
Cobalt	2.77
Lead	3.1
Manganese	144
Nickel	3.5
Selenium	0.29
Silver	0.34
Vanadium	3

SA 13-2 (11-8-2005)	9-11(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.67
Barium	5.5
Beryllium	0.05 J
Cadmium	0.06 J
Chromium Total	1.9 J
Cobalt	1.31
Lead	1.9
Manganese	123
Nickel	3
Selenium	0.3
Silver	0.1 U
Vanadium	3.7

GP-3 (10-23-1996)	5-0(ft BGS)	8-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	NS	NS
Lead	4.3	5
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS

GP-4 (10-23-1996)	5-0(ft BGS)	8-0(ft BGS)
INORG		
Antimony	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium Total	NS	NS
Cobalt	6.2	5.6
Manganese	NS	NS
Nickel	NS	NS
Selenium	NS	NS
Silver	NS	NS
Vanadium	NS	NS



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG	
Aluminum	1940/2060
Arsenic	0.78/1.02
Cadmium	0.21/0.21
Chromium Total	10.8 J {G}/4.36 J {G}
Cobalt	12.3 {EG}/10.8 {EG}

ANALYTE — VALIDATION CODE — EXCEEDANCE CODE

CONCENTRATION IN mg/kg — DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 80'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

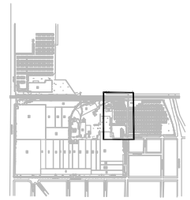
ARCADIS

FIGURE 39

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\10000\00300\DWG\64481C14.dwg LAYOUT: 39SAVED: 7/29/2008 9:00 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 9:00 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---
64481X02
64481X03
64481X06



SA 34-6 (11-11-2005)	6-8(ft BGS)
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.08 U
1,1,2-Trichloroethane	0.08 U
1,1-Dichloroethene	0.08 U
Acetone	1 U
Benzene	0.16 [E]
cis-1,2-Dichloroethene	0.08 U
Ethylbenzene	1.23 [C]
Methyl Tert Butyl Ether	0.4 U
Trichloroethene	0.08 U
Xylene (total)	8.11 [EG]



LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — AREA OF INTEREST (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO ORGANICS ANALYSIS (HISTORICAL)
- NO ORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE C-1, APPENDIX C)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION — DATE — DEPTH (FEET BELOW GROUND SURFACE)

ANALYTE	SA-5-3 (4-28-2005)	0.7-2.7(ft BGS)
INORG		
Aluminum		1940/2060
Arsenic		0.78/1.02
Cadmium		0.21/0.21
Chromium Total		10.8 J [G]/4.36 J [G]
Cobalt		12.3 [EG]/10.8 [EG]

VALIDATION CODE
EXCEEDANCE CODE
CONCENTRATION IN mg/kg
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC– DIRECT CONTACT CRITERIA
DWP– DRINKING WATER PROTECTION CRITERIA
GSIP– GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG– INORGANICS
J– ESTIMATED VALUE
NS– NOT SAMPLED
PCB– POLYCHLORINATED BIPHENYLS
PSIC– PARTICULATE SOIL INHALATION CRITERIA
SVIC– SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs– SEMI-VOLATILE ORGANIC COMPOUNDS
U– NON-DETECT WITH ASSOCIATED LIMIT
VOCs– VOLATILE ORGANIC COMPOUNDS
VSIC– INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE RESULTS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.

0 80'
GRAPHIC SCALE

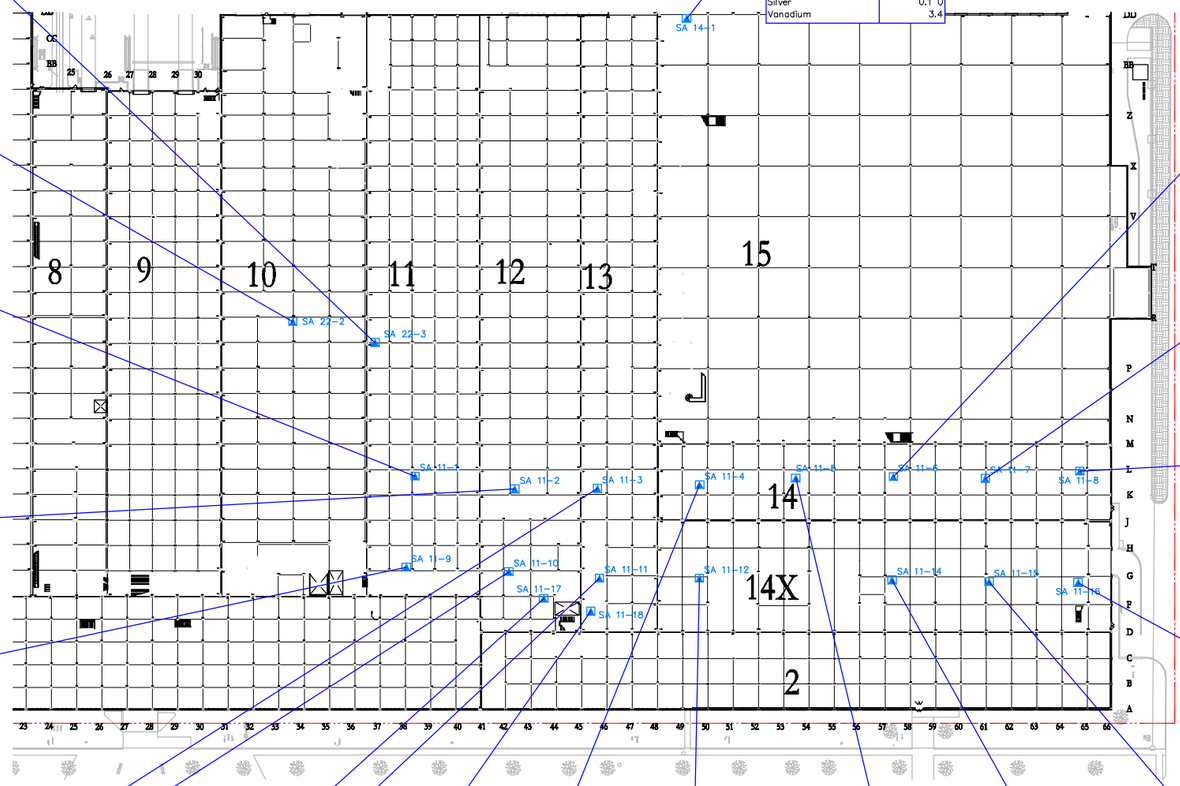
GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 ORGANICS DATABOX FIGURE

ARCADIS

FIGURE
40

CITY: BRIGHTON DIVGROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B0064481\10000\00300\DWG\64481C15.dwg LAYOUT: 40SAVED: 7/29/2008 9:09 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ---- ---PLOTSTYLETABLE:
64481X02
64481X03
64481X07



SA 22-3 (11-2-2005)	2-4(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.79
Barium	142
Beryllium	0.39 J
Cadmium	0.16 J
Chromium Total	10.6 [G]
Cobalt	5.5
Lead	5.9
Manganese	368
Nickel	10
Selenium	0.17 J
Silver	0.02 J
Vanadium	14.5

SA 22-2 (11-2-2005)	2-4(ft BGS)
INORG	
Antimony	0.09 J
Arsenic	1.12
Barium	100
Beryllium	0.42 J
Cadmium	0.32
Chromium Total	5.8 [G]
Cobalt	4.32
Lead	7.9
Manganese	98.2
Nickel	5.1
Selenium	1.01 [G]
Silver	0.14
Vanadium	9.5

SA 11-1 (11-2-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.44
Barium	180
Beryllium	0.84
Cadmium	0.28
Chromium Total	18.3 [G]
Cobalt	8.08 [E]
Lead	6.9
Manganese	671 [E]
Nickel	18.4
Selenium	0.27
Silver	0.03 J
Vanadium	20.2

SA 11-2 (11-1-2005)	6-8(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.21
Barium	37.7
Beryllium	0.25 J
Cadmium	0.06 J
Chromium Total	9 [G]
Cobalt	3.45
Lead	3.5
Manganese	197
Nickel	10.1
Selenium	0.29
Silver	0.02 J
Vanadium	10

SA 11-9 (11-2-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.8
Barium	60.9
Beryllium	0.33 J
Cadmium	0.1 J
Chromium Total	19.3 [G]
Cobalt	6.39
Lead	5.2
Manganese	340
Nickel	20.3
Selenium	0.65
Silver	0.02 J
Vanadium	14

SA 11-3 (10-31-2005)	5.5-7.5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.74
Barium	19.3
Beryllium	0.08 J
Cadmium	0.05 J
Chromium Total	3.4
Cobalt	1.82
Lead	3.4
Manganese	154
Nickel	4.4
Selenium	0.38
Silver	0.1 U
Vanadium	4

SA 11-17 (11-1-2005)	4-6(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	2.95
Barium	68.3
Beryllium	0.28 J
Cadmium	0.1 J
Chromium Total	10.7 [G]
Cobalt	5.45
Lead	5.1
Manganese	286
Nickel	13.4
Selenium	0.72
Silver	0.05 J
Vanadium	14.6

SA 11-18 (11-1-2005)	6-8(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	3.23
Barium	54.1
Beryllium	0.35 J
Cadmium	0.08 J
Chromium Total	14.9 [G]
Cobalt	6.61
Lead	6.2
Manganese	303
Nickel	17.4
Selenium	0.79
Silver	0.02 J
Vanadium	17.4

SA 11-10 (11-2-2005)	3-5(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.06
Barium	31.2
Beryllium	0.34 J
Cadmium	0.16 J
Chromium Total	7.1 [G]
Cobalt	3.58
Lead	6.7
Manganese	282
Nickel	8.3
Selenium	0.29
Silver	0.03 J
Vanadium	8.1

SA 11-11 (11-1-2005)	4-6(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	3.1
Barium	70.5
Beryllium	0.32 J
Cadmium	0.07 J
Chromium Total	11.5 [G]
Cobalt	6.69
Lead	5.8
Manganese	453 [E]
Nickel	16.1
Selenium	0.8
Silver	0.02 J
Vanadium	16.6

SA 11-4 (10-31-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	3.02
Barium	56.8
Beryllium	0.31 J
Cadmium	0.08 J
Chromium Total	13.3 [G]
Cobalt	6.58
Lead	6.6
Manganese	290
Nickel	14.2
Selenium	0.79
Silver	0.08 J
Vanadium	13.9

SA 11-12 (11-1-2005)	2-4(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.81
Barium	420
Beryllium	0.47 J
Cadmium	0.06 J
Chromium Total	12.7 [G]
Cobalt	3.1
Lead	8.9
Manganese	81.6
Nickel	11.3
Selenium	0.46
Silver	0.03 J
Vanadium	17.1

SA 11-5 (10-31-2005)	0.7-2.7(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.59
Barium	202
Beryllium	1.04
Cadmium	0.35
Chromium Total	25 [G]
Cobalt	12.6 [EG]
Lead	9.3
Manganese	1180 [E]
Nickel	29.1
Selenium	0.32
Silver	0.03 J
Vanadium	27.2

SA 11-14 (11-1-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	2.62
Barium	31.8
Beryllium	0.17 J
Cadmium	0.08 J
Chromium Total	8.5 [G]
Cobalt	4.32
Lead	3.8
Manganese	258
Nickel	11.2
Selenium	0.64
Silver	0.1 U
Vanadium	8.5

SA 11-15 (11-1-2005)	0-2(ft BGS)
INORG	
Antimony	0.3 U/0.15 J
Arsenic	5.19/7.34
Barium	45.5/98.7
Beryllium	0.29 J/0.48 J
Cadmium	0.08 J/0.1 J
Chromium Total	10.4 [G]/20.9 [G]
Cobalt	6.15/7.53
Lead	5.3/6.3
Manganese	312/320
Nickel	13.9/17.2
Selenium	0.71 J/0.2 UJ
Silver	0.02 J/0.15
Vanadium	12.4/29.9

SA 14-1 (11-9-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	0.9
Barium	18.9
Beryllium	0.12 J
Cadmium	0.1 J
Chromium Total	2.8
Cobalt	1.54
Lead	15.9
Manganese	125
Nickel	3.1
Selenium	0.2 U
Silver	0.1 U
Vanadium	3.4

SA 11-6 (10-31-2005)	2-4(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.37
Barium	29.9
Beryllium	0.16 J
Cadmium	0.06 J
Chromium Total	7.1 [G]
Cobalt	3.54
Lead	3.8
Manganese	214
Nickel	9.3
Selenium	0.46
Silver	0.1 U
Vanadium	8.7

SA 11-7 (10-31-2005)	4-6(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.36
Barium	36.1
Beryllium	0.25 J
Cadmium	0.06 J
Chromium Total	11.5 [G]
Cobalt	7.46
Lead	4.6
Manganese	246
Nickel	11.3
Selenium	0.42
Silver	0.19
Vanadium	11.2

SA 11-8 (10-31-2005)	8-10(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	1.18
Barium	40.1
Beryllium	0.21 J
Cadmium	0.08 J
Chromium Total	8 [G]
Cobalt	4.52
Lead	4
Manganese	255
Nickel	10.4
Selenium	0.56
Silver	0.1 U
Vanadium	9.1

SA 11-16 (11-1-2005)	2-4(ft BGS)
INORG	
Antimony	0.3 U
Arsenic	2.39
Barium	29.8
Beryllium	0.23 J
Cadmium	0.07 J
Chromium Total	8.1 [G]
Cobalt	5.33
Lead	4.6
Manganese	293
Nickel	12.8
Selenium	0.49
Silver	0.1 U
Vanadium	10

LOCATION MAP
NOT TO SCALE

LEGEND:

- AOI 6-75 — SITE ASSESSMENT AREA OF INTEREST GROUPING (AOI)
- SITE ASSESSMENT GEOPROBE LOCATION
- GEOPROBE LOCATION (SME)
- COMPOSITE SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- EXCAVATION SOIL SAMPLE LOCATION
- NO INORGANICS ANALYSIS (HISTORICAL)
- NO INORGANIC ANALYSIS, FIELD SOIL SCREENING INFORMATION (SEE FIGURE D-1, APPENDIX D)
- APPROXIMATE PROPERTY BOUNDARY

LOCATION	DATE	DEPTH (FEET BELOW GROUND SURFACE)
SA-5-3 (4-28-2005)		0.7-2.7(ft BGS)
ANALYTE: INORG		
Aluminum		1940/2060
Arsenic		0.78/1.02
Cadmium		0.21/0.21
Chromium Total		10.8 J [G]/4.36 J [J]
Cobalt		12.3 [EG]/10.8 [EG]

CONCENTRATION IN mg/kg

VALIDATION CODE
EXCEEDANCE CODE
DUPLICATE SAMPLE CONCENTRATION IN mg/kg

EXCEEDANCE CODES

A – MDEQ INDUSTRIAL SVIC
B – MDEQ INDUSTRIAL VSIC
C – MDEQ INDUSTRIAL PSIC
D – MDEQ INDUSTRIAL DC
E – MDEQ RESIDENTIAL DWP
F – RISK-BASED REDEVELOPMENT WORKER CONTACT
G – MDEQ GSIP
H – MDEQ RESIDENTIAL SVIC
I – MDEQ RESIDENTIAL VCIS
J – MDEQ RESIDENTIAL PSIC
K – MDEQ RESIDENTIAL DC

ACRONYMS

DC–	DIRECT CONTACT CRITERIA
DWP–	DRINKING WATER PROTECTION CRITERIA
GSIP–	GROUNDWATER SURFACE WATER INTERFACE PROTECTION
INORG–	INORGANICS
J–	ESTIMATED VALUE
NS–	NOT SAMPLED
PCB–	POLYCHLORINATED BIPHENYLS
PSIC–	PARTICULATE SOIL INHALATION CRITERIA
SVIC–	SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
SVOCs–	SEMI-VOLATILE ORGANIC COMPOUNDS
U–	NON-DETECT WITH ASSOCIATED LIMIT
VOCs–	VOLATILE ORGANIC COMPOUNDS
VSIC–	INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

NOTES:

1. BASE MAP SUPPLIED BY GM, FROM A FIGURE TITLED "LANSING CAR ASSEMBLY BODY PLANT MASTER UNDERGROUND UTILITY DRAWING", FILE NO. PLT6MASTER-UNDERGROUND-UTILITIES.DWG.
2. SOIL CONCENTRATIONS ARE HIGHLIGHTED WHEN FACILITY-RELATED CONCENTRATIONS (SEE NOTE 3) ARE HIGHER THAN THE RESIDENTIAL SCREENING LEVELS FOR RSVIIC, VSIC, PSIC, DC, AND THE RISK BASED REDEVELOPMENT WORKER CONTACT. ADDITIONAL CONCENTRATIONS IN THE DEEPEST SAMPLES COLLECTED FROM EACH SAMPLING LOCATION ARE HIGHLIGHTED WHEN THE FACILITY-RELATED CONCENTRATIONS ARE HIGHER THAN THE CONSERVATIVE RISK BASED SCREENING LEVELS FOR RESIDENTIAL DWP AND GSIP. SCREENING LEVELS ARE LISTED ON FIGURE 12.
3. FACILITY RELATED SOIL CONCENTRATIONS ARE THOSE IN EXCESS OF THE BACKGROUND LEVELS. STATEWIDE DEFAULT BACKGROUND LEVELS PUBLISHED WITH PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS ARE USED AS BACKGROUND LEVELS.

0 120'
GRAPHIC SCALE

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 INORGANICS DATABOX FIGURE

ARCADIS

FIGURE
41

CITY: BRIGHTON DIVGROUP: 85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Regd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
J:\2008\B006448\1000\00300\DWG\64481C17.dwg LAYOUT: 41SAVED: 7/29/2008 9:10 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 9:10 AM BY: FOX, AARON
XREFS: 64481X02 64481X03 64481X06 IMAGES: PROJECTNAME: ---

CITY: BRIGHTON DIV/GROUP: 85 DB: ADF LD:(Opt) PIC:(Opt) PM:(Read) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* J:\2008\B0004481\1000\0300\DWG\B4481W01.dwg LAYOUT: 42 SAVED: 7/29/2008 8:19 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLOTFULL.CTB PLOTTED: 7/29/2008 8:20 AM BY: FOX, AARON
XREFS: IMAGES: PROJECTNAME: ----
B4481X02
B4481X03

MWBP-11A	12/8/1993
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.005 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.001 U

MWBP-10	12/8/1993
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.005 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.001 U

MW-10A	11/4/1993
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.005 U
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.003 U

GDW-96-BP2	8/3/1996
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.005 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.003
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.001 U

MW-12A	11/4/1993
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.025 U
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	NS
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.001 U

MW-1	11/7/1995
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.003 U

MWBP-12	12/8/1993
INORG	
Antimony	NS
Antimony (Dissolved)	NS
Arsenic	NS
Arsenic (Dissolved)	NS
Barium	NS
Barium (Dissolved)	NS
Beryllium	NS
Beryllium (Dissolved)	NS
Cadmium	NS
Cadmium (Dissolved)	NS
Chromium Total	NS
Chromium Total (Dissolved)	NS
Cobalt	NS
Cobalt (Dissolved)	NS
Copper	NS
Copper (Dissolved)	NS
Lead	NS
Lead (Dissolved)	NS
Manganese	NS
Manganese (Dissolved)	NS
Nickel	NS
Nickel (Dissolved)	NS
Selenium	NS
Selenium (Dissolved)	NS
Silver	NS
Silver (Dissolved)	NS
Vanadium	NS
Vanadium (Dissolved)	NS
Zinc	NS
Zinc (Dissolved)	NS
SVOC	
Naphthalene	0.005 U
VOC	
1,1,1-Trichloroethane	0.001 U
1,1,2-Trichloroethane	0.001 U
1,1-Dichloroethene	0.001 U
Acetone	NS
Benzene	0.001 U
cis-1,2-Dichloroethene	0.001 U
Ethylbenzene	0.001 U
Methyl Tert Butyl Ether	NS
Trichloroethene	NS
Xylene (total)	0.001 U

MW-02-02	11/26/2002	3/4/2003	8/19/2003	9/16/2003	11/11/2004
INORG					
Antimony	NS	NS	NS	0.005 U	0.002 U
Antimony (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Arsenic	NS	NS	0.037 [A]	0.018 [A]	0.029 [A]
Arsenic (Dissolved)	NS	NS	0.016 J [A]	0.011 [A]	0.005
Barium	NS	NS	0.43	0.43	0.87
Barium (Dissolved)	NS	NS	0.44	0.4	0.46
Beryllium	NS	NS	0.001 U	0.001 U	0.001 U
Beryllium (Dissolved)	NS	NS	0.001 U	0.001 U	0.001 U
Cadmium	NS	NS	0.0002 U	0.0002 U	0.002
Cadmium (Dissolved)	NS	NS	0.0002 U	0.0002 U	0.0005 U
Chromium Total	NS	NS	0.005	0.005 U	0.023 [E]
Chromium Total (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Cobalt	NS	NS	0.005 U	0.005 U	0.02
Cobalt (Dissolved)	NS	NS	0.005 U	0.005 U	0.015 U
Copper	NS	NS	0.005 U	0.005 U	0.08 [E]
Copper (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Lead	0.491 [AE]	0.011 [A]	NS	0.003 U	0.027 [A]
Lead (Dissolved)	NS	0.009 [A]	0.001 U	0.003 U	0.001 U
Manganese	NS	NS	NS	0.13	3.05 [A]
Manganese (Dissolved)	NS	NS	0.084	0.081	0.157
Nickel	NS	NS	NS	0.012	0.044
Nickel (Dissolved)	NS	NS	0.005 U	0.005 U	0.025 U
Selenium	NS	NS	NS	0.005 U	0.002 U
Selenium (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Silver	NS	NS	NS	0.0005 U	0.0005 U
Silver (Dissolved)	NS	NS	0.0005 U	0.0005 U	0.0005 U
Vanadium	NS	NS	NS	0.005 U	0.01 U
Vanadium (Dissolved)	NS	NS	0.005 U	0.005 U	0.01 U
Zinc	NS	NS	NS	0.013	0.012
Zinc (Dissolved)	NS	NS	0.014	0.009	0.01 U
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS	NS	NS
Acetone	NS	NS	NS	NS	NS
Benzene	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS
Methyl Tert Butyl Ether	NS	NS	NS	NS	NS
Trichloroethene	NS	NS	NS	NS	NS
Xylene (total)	NS	NS	NS	NS	NS

MW-03-07	8/19/2003	9/15/2003	11/9/2004
INORG			
Antimony	NS/NS	0.005 U/0.005 U	0.002 U
Antimony (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.002 U
Arsenic	NS/NS	0.011 [A]/0.011 [A]	0.068 [A]
Arsenic (Dissolved)	0.006 J/0.005 J	0.003/0.003	0.003
Barium	NS/NS	0.17/0.17	0.29
Barium (Dissolved)	0.15/0.16	0.16/0.14	0.2
Beryllium	NS/NS	0.001 U/0.001 U	0.001 U
Beryllium (Dissolved)	0.001 U/0.001 U	0.001 U/0.001 U	0.001 U
Cadmium	NS/NS	0.001/0.001	0.0005 U
Cadmium (Dissolved)	0.0002 U/0.0002 U	0.0005 U/0.0005 U	0.0005 U
Chromium Total	NS/NS	0.005 U/0.005 U	0.013 [E]
Chromium Total (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.002 U
Cobalt	NS/NS	0.005 U/0.005 U	0.015 U
Cobalt (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.015 U
Copper	NS/NS	0.005 U/0.005 U	0.019
Copper (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.011
Lead	NS/NS	0.003/0.003 U	0.008 [A]
Lead (Dissolved)	0.001 U/0.001 U	0.003 U/0.003 U	0.001 U
Manganese	NS/NS	0.085/0.083	0.288
Manganese (Dissolved)	0.085/0.078	0.076/0.071	0.053
Nickel	NS/NS	0.005 U/0.005 U	0.025 U
Nickel (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.025 U
Selenium	NS/NS	0.005 U/0.005 U	0.002 U
Selenium (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.002 U
Silver	NS/NS	0.0005 U/0.0005 U	0.0005 U
Silver (Dissolved)	0.0005 U/0.0005 U	0.0005 U/0.0005 U	0.0005 U
Vanadium	NS/NS	0.005 U/0.005 U	0.01 U
Vanadium (Dissolved)	0.005 U/0.005 U	0.005 U/0.005 U	0.01 U
Zinc	NS/NS	0.017/0.016	0.013
Zinc (Dissolved)	0.005/0.005 U	0.237/0.016	0.01 U
SVOC			
Naphthalene	NS/NS	NS/NS	NS
VOC			
1,1,1-Trichloroethane	NS/NS	NS/NS	NS
1,1,2-Trichloroethane	NS/NS	NS/NS	NS
1,1-Dichloroethene	NS/NS	NS/NS	NS
Acetone	NS/NS	NS/NS	NS
Benzene	NS/NS	NS/NS	NS
cis-1,2-Dichloroethene	NS/NS	NS/NS	NS
Ethylbenzene	NS/NS	NS/NS	NS
Methyl Tert Butyl Ether	NS/NS	NS/NS	NS
Trichloroethene	NS/NS	NS/NS	NS
Xylene (total)	NS/NS	NS/NS	NS

SME-MW-1	3/21/1996	3/4/2003	8/19/2003	9/16/2003	11/11/2004
INORG					
Antimony	NS	NS	0.005 U	0.005 U	0.002 U
Antimony (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Arsenic	NS	NS	0.008	0.008	0.018 [A]
Arsenic (Dissolved)	NS	NS	0.001 U	0.001 U	0.004
Barium	NS	NS	0.4	0.4	0.64
Barium (Dissolved)	NS	NS	0.33	0.33	0.31
Beryllium	NS	NS	0.001 U	0.001 U	0.001
Beryllium (Dissolved)	NS	NS	0.001 U	0.001 U	0.001 U
Cadmium	NS	NS	0.0002 U	0.0002 U	0.0025
Cadmium (Dissolved)	NS	NS	0.0002 U	0.0002 U	0.0005 U
Chromium Total	NS	NS	0.005 U	0.005 U	0.015 [E]
Chromium Total (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Cobalt	NS	NS	0.005 U	0.005 U	0.024
Cobalt (Dissolved)	NS	NS	0.005 U	0.005 U	0.015 U
Copper	NS	NS	0.005 U	0.005 U	0.025 [E]
Copper (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Lead	0.003 U	0.011 [A]	NS	0.007 [A]	0.058 [AE]
Lead (Dissolved)	NS	0.009 [A]	0.001 U	0.003 U	0.001 U
Manganese	NS	NS	NS	0.262	2.32 [A]
Manganese (Dissolved)	NS	NS	0.082	0.077	0.059
Nickel	NS	NS	NS	0.016	0.057
Nickel (Dissolved)	NS	NS	0.005 U	0.005 U	0.025 U
Selenium	NS	NS	0.005 U	0.005 U	0.002 U
Selenium (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U
Silver	NS	NS	NS	0.0005 U	0.0005 U
Silver (Dissolved)	NS	NS	0.0005 U	0.0005 U	0.0005 U
Vanadium	NS	NS	NS	0.013 [AE]	0.036 [AE]
Vanadium (Dissolved)	NS	NS	0.005 U	0.005 U	0.01 U
Zinc	NS	NS	0.04	0.013	0.013
Zinc (Dissolved)	NS	NS	0.011	0.008	0.017
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS	NS	NS
Acetone	NS	NS	NS	NS	NS
Benzene	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS
Methyl Tert Butyl Ether	NS	NS	NS	NS	NS
Trichloroethene	NS	NS	NS	NS	NS
Xylene (total)	NS	NS	NS	NS	NS

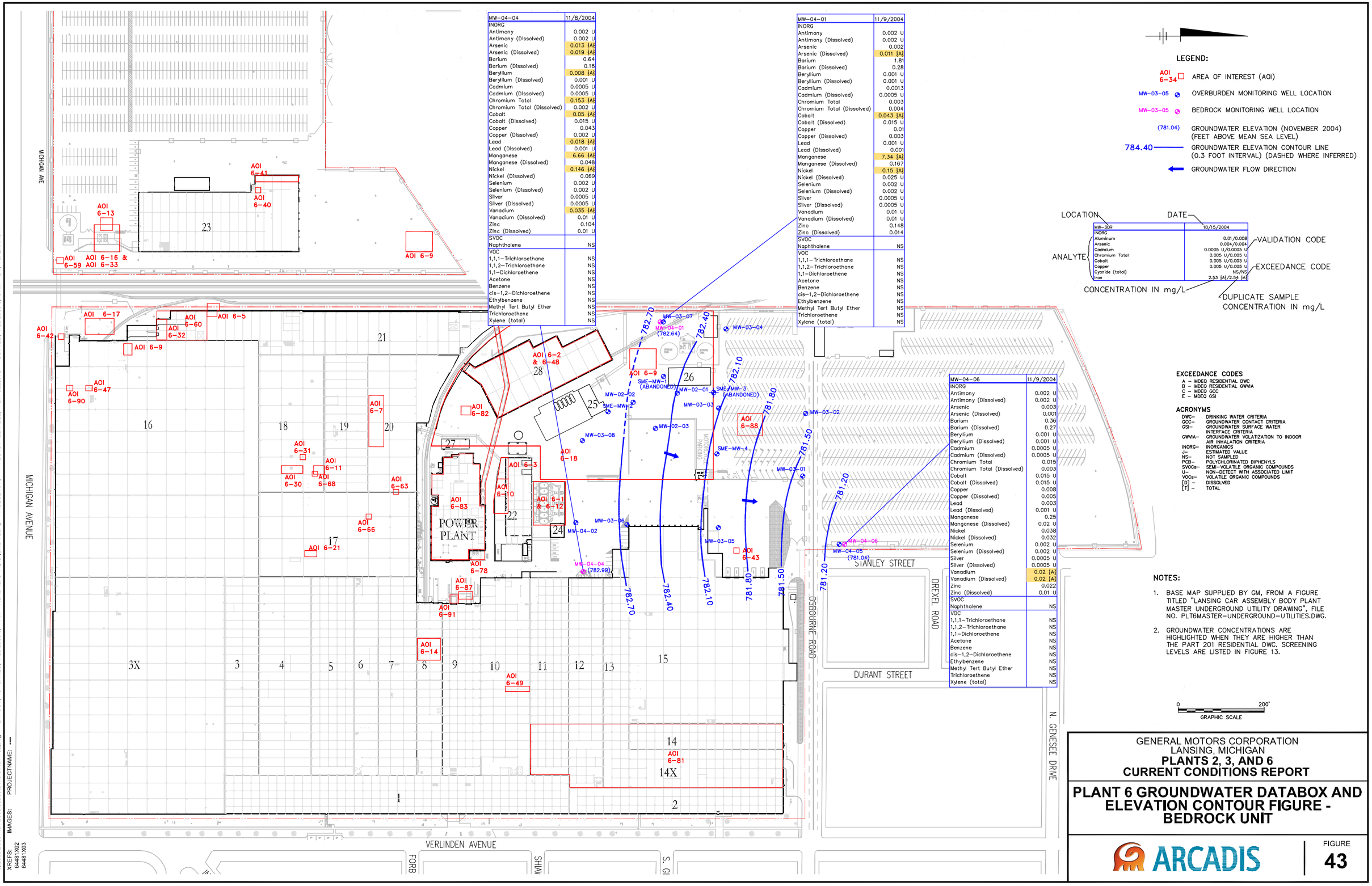
MW-03-04	8/19/2003	9/17/2003	11/10/2004
INORG			
Antimony	NS	0.005 U	0.002 U/0.002 U
Antimony (Dissolved)	0.005 U	0.005 U	0.002 U/0.002 U
Arsenic	NS	0.014 [A]	0.014 [A]/0.014 [A]
Arsenic (Dissolved)	0.009 J	0.002	0.012 [A]/0.012 [A]
Barium	NS	0.27	0.32/0.31
Barium (Dissolved)	0.27	0.26	0.28/0.28
Beryllium	NS	0.001 U	0.001 U/0.001 U
Beryllium (Dissolved)	0.001 U	0.001 U	0.001 U/0.001 U
Cadmium	NS	0.0002 U	0.0005 U/0.0005 U
Cadmium (Dissolved)	0.0002 U	0.0002 U	0.0005 U/0.0005 U
Chromium Total	NS	0.005 U	0.011 [E]/0.012 [E]
Chromium Total (Dissolved)	0.005 U	0.005 U	0.002 U/0.002 U
Cobalt	NS	0.005 U	0.015 U/0.015 U
Cobalt (Dissolved)	NS	0.005 U	0.015 U/0.015 U
Copper	NS	0.005 U	0.024 [E]/0.018
Copper (Dissolved)	NS	0.005 U	0.002 U/0.002 U
Lead	0.589 [AE]	0.01 [A]	NS 0.003 U 0.014 [A]/0.011 [A]
Lead (Dissolved)	NS	0.009 [A]	0.001 U 0.003 U 0.001 U/0.001 U
Manganese	NS	NS	0.276 0.529/0.476
Manganese (Dissolved)	NS	NS	0.297 0.258 0.199/0.2
Nickel	NS	NS	0.007 0.025 U/0.025 U
Nickel (Dissolved)	NS	NS	0.007 0.025 U/0.025 U
Selenium	NS	NS	0.005 U 0.002 U/0.002 U
Selenium (Dissolved)	NS	NS	0.005 U 0.002 U/0.002 U
Silver	NS	NS	0.0005 U 0.0005 U/0.0005 U
Silver (Dissolved)	NS	NS	0.0005 U 0.0005 U/0.0005 U
Vanadium	NS	NS	0.005 U 0.01 U/0.01 U
Vanadium (Dissolved)	NS	NS	0.005 U 0.01 U/0.01 U
Zinc	NS	NS	0.027 0.063/0.087
Zinc (Dissolved)	NS	NS	0.016 0.034 0.016/0.019
SVOC			
Naphthalene	NS	NS	NS NS/NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS NS/NS
1,1,2-Trichloroethane	NS	NS	NS NS/NS
1,1-Dichloroethene	NS	NS	NS NS/NS
Acetone	NS	NS	NS NS/NS
Benzene	NS	NS	NS NS/NS
cis-1,2-Dichloroethene	NS	NS	NS NS/NS
Ethylbenzene	NS	NS	NS NS/NS
Methyl Tert Butyl Ether	NS	NS	NS NS/NS
Trichloroethene	NS	NS	NS NS/NS
Xylene (total)	NS	NS	NS NS/NS

MW-02-01	11/26/2002	3/3/2003	8/19/2003	9/15/2003	11/11/2004
INORG					
Antimony	NS	NS	NS	0.005 U	0.002 U/0.002 U
Antimony (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U/0.002 U
Arsenic	NS	NS	NS	0.005 U	0.009/0.008
Arsenic (Dissolved)	NS	NS	0.001 U	0.001 U	0.003/0.003
Barium	NS	NS	0.39	0.38	0.48/0.45
Barium (Dissolved)	NS	NS	0.39	0.37	0.39/0.39
Beryllium	NS	NS	NS	0.001 U	0.001 U/0.001 U
Beryllium (Dissolved)	NS	NS	0.001 U	0.001 U	0.001 U/0.001 U
Cadmium	NS	NS	NS	0.0002 U	0.0006/0.0005 U
Cadmium (Dissolved)	NS	NS	0.0002 U	0.0002 U	0.0005 U/0.0005 U
Chromium Total	NS	NS	NS	0.005 U	0.013 [E]/0.011
Chromium Total (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U/0.002 U
Cobalt	NS	NS	NS	0.005 U	0.015 U/0.015 U
Cobalt (Dissolved)	NS	NS	0.005 U	0.005 U	0.015 U/0.015 U
Copper	NS	NS	NS	0.005 U	0.024 [E]/0.018
Copper (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U/0.002 U
Lead	0.589 [AE]	0.01 [A]	NS	0.003 U	0.014 [A]/0.011 [A]
Lead (Dissolved)	NS	0.009 [A]	0.001 U	0.003 U	0.001 U/0.001 U
Manganese	NS	NS	NS	0.276	0.529/0.476
Manganese (Dissolved)	NS	NS	0.297	0.258	0.199/0.2
Nickel	NS	NS	NS	0.007	0.025 U/0.025 U
Nickel (Dissolved)	NS	NS	0.007	0.007	0.025 U/0.025 U
Selenium	NS	NS	0.005 U	0.005 U	0.002 U/0.002 U
Selenium (Dissolved)	NS	NS	0.005 U	0.005 U	0.002 U/0.002 U
Silver	NS	NS	NS	0.0005 U	0.0005 U/0.0005 U
Silver (Dissolved)	NS	NS	0.0005 U	0.0005 U	0.0005 U/0.0005 U
Vanadium	NS	NS	0.005 U	0.005 U	0.01 U/0.01 U
Vanadium (Dissolved)	NS	NS	0.005 U	0.005 U	0.01 U/0.01 U
Zinc	NS	NS	0.027	0.063/0.087	0.135
Zinc (Dissolved)	NS	NS	0.016	0.034	0.016/0.019
SVOC					
Naphthalene	NS	NS	NS	NS	NS/NS
VOC					
1,1,1-Trichloroethane	NS	NS	NS	NS	NS/NS
1,1,2-Trichloroethane	NS	NS	NS	NS	NS/NS
1,1-Dichloroethene	NS	NS	NS	NS	NS/NS
Acetone	NS	NS	NS	NS	NS/NS
Benzene	NS	NS	NS	NS	NS/NS
cis-1,2-Dichloroethene	NS	NS	NS	NS	NS/NS
Ethylbenzene	NS	NS	NS	NS	NS/NS
Methyl Tert Butyl Ether	NS	NS	NS	NS	NS/NS
Trichloroethene	NS	NS	NS	NS	NS/NS
Xylene (total)	NS	NS	NS	NS	NS/NS

SME-MW-3	3/21/1996	3/3/2003	8/19/2003	9/16/2003	11/11/2004
INORG					
Antimony	NS	NS	NS	0.005 U	0.002 U
Antimony (Dissolved)	NS	NS	NS	0.005 U	0.002 U
Arsenic	NS	NS	NS	0.009	0.006
Arsenic (Dissolved)	NS	NS	NS	0.005 U	0.004
Barium	NS	NS	NS	0.85	0.85
Barium (Dissolved)	NS	NS	NS	0.85	0.82
Beryllium	NS	NS	NS	0.001 U	0.001 U
Beryllium (Dissolved)	NS	NS	NS	0.001 U	0.001 U
Cadmium	NS	NS	NS	0.0009	0.0009
Cadmium (Dissolved)	NS	NS	NS	0.0005 U	0.0005 U
Chromium Total	NS	NS	NS	0.064 [E]	0.029 [E]
Chromium Total (Dissolved)	NS	NS	NS	0.005	0.002 U
Cobalt	NS	NS	NS	0.022	0.022
Cobalt (Dissolved)	NS	NS	NS	0.015 U	0.015 U
Copper	NS	NS	NS	0.053 [E]	0.029 [E]
Copper (Dissolved)	NS	NS	NS	0.003	0.003
Lead	NS	NS	NS	0.033 [AE]	0.008 [A]
Lead (Dissolved)	NS	NS	NS	0.001 U	0.001 U
Manganese	NS	NS	NS	2.15 [A]	0.574
Manganese (Dissolved)	NS	NS	NS	0.601	0.213
Nickel	NS	NS	NS	0.046	0.025 U
Nickel (Dissolved)	NS	NS	NS	0.025 U	0.025 U
Selenium	NS	NS	NS	0.002 U	0.002 U
Selenium (Dissolved)	NS	NS	NS	0.002 U	0.002 U
Silver	NS	NS	NS	0.001 [E]	0.0005 U
Silver (Dissolved)	NS	NS	NS	0.0005 U	0.0005 U
Vanadium	NS	NS	NS	0.01 U	0.01 [A]
Vanadium (Dissolved)	NS	NS	NS	0.01 U	0.01 U
Zinc	NS	NS	NS	0.025 U	0.135
Zinc (Dissolved)	NS	NS	NS	0.016/0.019	0.047
SVOC					
Naphthalene	NS	NS	NS	NS	NS
VOC					
1,1,1-Trichloroethane	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS	NS	NS
Acetone	NS	NS	NS	NS	NS
Benzene	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	NS	NS	NS	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS
Methyl Tert Butyl Ether	NS	NS	NS	NS	NS
Trichloroethene	NS	NS	NS	NS	NS
Xylene (total)	NS	NS	NS	NS	NS

MW-03-03	8/20/2003	9/16/2003	11/10/2004
INORG			
Antimony	NS	0.005 U	0.002 U
Antimony (Dissolved)	0.005 U	0.005 U	0.002 U
Arsenic	NS	0.018 [A]	0.029 [A]
Arsenic (Dissolved)	0.012 J [A]	0.003	0.036 [A]
Barium	NS	0.67	0.26
Barium (Dissolved)	1.34 [E]	0.49	0.23
Beryllium	NS	0.58/0.53	0.76
Beryllium (Dissolved)	0.001 U	0.001 U	0.001 U
Cadmium	NS	0.0007	0.0008
Cadmium (Dissolved)	0.0002 U	0.0002 U	0.0005 U
Chromium Total	NS	0.005	0.013 [E]
Chromium Total (Dissolved)	0.005 U	0.005 U	0.004
Cobalt	NS	0.005 U	0.015 U
Cobalt (Dissolved)	0.007 J	0.005 U	0.015 U
Copper	NS	0.005 U	0.015
Copper (Dissolved)	0.005 U	0.005 U	0.002 U
Lead	NS	0.003 U	0.009 [A]
Lead (Dissolved)	0.001 U	0.003 U	0.001 U
Manganese	NS	0.299	0.259
Manganese (Dissolved)	0.015	0.034	0.104
Nickel	NS	0.006	0.025 U
Nickel (Dissolved)	0.006	0.006	0.025 U
Selenium	NS	0.005 U	0.002 U
Selenium (Dissolved)	0.005 U	0.005 U	0.002 U
Silver	NS	0.0005 U	0.0005 U
Silver (Dissolved)	0.0005 U	0.0005 U	0.0005 U
Vanadium	NS	0.005 U	0.01 U
Vanadium (Dissolved)	0.005 U	0.005 U	0.01 U
Zinc	NS	0.09	0.164
Zinc (Dissolved)	0.017	0.083	0.036
SVOC			
Naphthalene	NS	NS	NS
VOC			
1,1,1-Trichloroethane	NS	NS	NS
1,1,2-Trichloroethane	NS	NS	NS
1,1-Dichloroethene	NS	NS	NS
Acetone	NS	NS	NS
Benzene	NS	NS	NS
cis-1,2-Dichloroethene	NS	NS	NS
Ethylbenzene	NS	NS	NS
Methyl Tert Butyl Ether	NS	NS	NS
Trichloroethene	NS	NS	NS
Xylene (total)	NS	NS	NS

MW-04-05	11/9/2004
INORG	
Antimony	0.002 U
Antimony (Dissolved)	0.002 U
Arsenic	0.006
Arsenic (Dissolved)	0.001 U
Barium	2.27 [AE]
Barium (Dissolved)	2.23 [AE]
Beryllium	0.001
Beryllium (Dissolved)	0.001 U
Cadmium	0.0009
Cadmium (Dissolved)	0.0005 U
Chromium Total	0.064 [E]
Chromium Total (Dissolved)	0.005
Cobalt	0.022
Cobalt (Dissolved)	0.015 U
Copper	0.053 [E]
Copper (Dissolved)	0.003
Lead	0.033 [AE]
Lead (Dissolved)	0.001 U
Manganese	2.15 [A]
Manganese (Dissolved)	0.601
Nickel	0.046
Nickel (Dissolved)	0.025 U
Selenium	0.002 U
Selenium (Dissolved)	0.002 U
Silver	0.0005 U
Silver (Dissolved)	0.0005 U
Vanadium	0.037 [AE]
Vanadium (Dissolved)	0.01 U
Zinc	0.105
Zinc (Dissolved)	0.022
SVOC	
Naphthalene	NS
VOC	
1,1,1-Trichloroethane	NS
1,1,2-Trichloroethane	NS
1,1-Dichloroethene	NS
Acetone	NS
Benzene	NS
cis-1,2-Dichloroethene	NS
Ethylbenzene	NS
Methyl T



CITY:BRIGHTON DIVGROUP:85 DB:ADF LD:(Opt) PIC:(Opt) PM:(Regd) TM:(Opt) LYR:(Opt)ON=*OFF=*REF* PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/29/2008 9:18 AM BY: FOX, AARON
:\2008\B0064481\000000300\DWG\64481W02.dwg LAYOUT: 43 SAVED: 7/29/2008 9:17 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---
XREFS: 64481X02 64481X03 IMAGES: PROJECTNAME: ---

GENERAL MOTORS CORPORATION
LANSING, MICHIGAN
PLANTS 2, 3, AND 6
CURRENT CONDITIONS REPORT

PLANT 6 GROUNDWATER DATABOX AND ELEVATION CONTOUR FIGURE - BEDROCK UNIT

ARCADIS

FIGURE 43