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RCRA Facility Investigation (RFI) Report Pontiac North Campus

PDF has been modified to decrease the size and only include Metal Fabrication Division (AOI M-#) and Demolition Area (AOI W-#) Area's of Interest (AOI)

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General Motors Corporation
Pontiac, Michigan

MID 005356910, MID 085470102
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April 29, 2002

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Table of Contents

VOLUME I

Section Acronyms ..... **ix**

Section 1. Introduction **1-1**

1.1 General 1-1
1.2 Purpose 1-1
1.3 RFI Objectives and Approach 1-2
1.4 Report Organization 1-2

Section 2. RFI Overview **2-1**

2.1 Site Location 2-1
2.2 Areas of Investigation Overview 2-1
2.2.1 Fiero 2-1
2.2.2 Demolition Area (DA) 2-2
2.2.3 Metal Fabrication Division (MFD) 2-2
2.2.4 Powertrain 2-2
2.2.5 Service Parts Operation (SPO) 2-2
2.2.6 Offsite Areas 2-2
2.3 Field Investigation 2-3
2.3.1 Areas Investigated 2-3
2.3.2 RFI Field Investigation Overview 2-4
2.3.3 RFI Field Methods and Procedures 2-4
2.3.4 RFI Field Activities 2-6
2.4 Laboratory Procedures 2-9
2.5 Storm Sewer IM Investigation 2-10

Section 3. Environmental Setting **3-1**

3.1 Location/Physiology 3-1
3.2 Climate 3-1
3.3 Land Use and Demographic Data 3-1
3.3.1 Land Use Patterns 3-1
3.3.2 Economy, Population, and Housing Trends 3-1
3.3.3 Site Redevelopment Plans 3-2
3.4 Regional Geology 3-2
3.4.1 Overburden 3-2
3.4.2 Bedrock 3-2
3.5 Regional Hydrogeology 3-2
3.6 Surface Water/Drainage 3-3
3.7 Groundwater Use 3-4
3.8 Site Geology/Hydrogeology 3-4
3.8.1 Site Geology 3-4
3.8.2 Site Hydrogeologic Setting 3-7
3.8.3 In-situ Hydraulic Conductivity Test Results 3-8
3.9 Background Soil Characterization 3-9

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

Section 4. Investigation Results and Discussion 4-1

4.1 Sitewide Hydrogeologic Study 4-2
4.1.1 Scope and Results 4-3
4.1.2 Discussion of Results 4-4
4.1.3 Conclusions 4-4
4.2 Fiero 4-5
4.2.1 Wastewater Collection Sumps (AOI F-7) 4-5
4.2.1.1 Scope and Results 4-5
4.2.1.2 Discussion of Results 4-6
4.2.1.3 Conclusions 4-6
4.2.2 Former Paint Sludge Storage Area (AOI F-8) 4-6
4.2.2.1 Scope and Results 4-7
4.2.2.2 Discussion of Results 4-7
4.2.2.3 Conclusions 4-8
4.2.3 Coal Storage Area (AOI F-12) 4-8
4.2.3.1 Scope and Results 4-8
4.2.3.2 Discussion of Results 4-9
4.2.3.3 Conclusions 4-9
4.2.4 Former Oily Pea Gravel, Concrete, and Debris (AOI F-13) 4-9
4.2.4.1 Scope and Results 4-9
4.2.4.2 Discussion of Results 4-10
4.2.4.3 Conclusions 4-10
4.2.5 Fuel AST Area (AOI F-14) 4-10
4.2.5.1 Scope and Results 4-10
4.2.5.2 Discussion of Results 4-11
4.2.5.3 Conclusions 4-11
4.2.6 Oil/Solvent Catch Basin (AOI F-15) 4-11
4.2.6.1 Scope and Results 4-11
4.2.6.2 Discussion of Results 4-12
4.2.6.3 Conclusions 4-12
4.3 Demolition Area 4-12
4.3.1 West Yard (AOI W-1) 4-12
4.3.1.1 Scope and Results 4-13
4.3.1.2 Discussion of Results 4-14
4.3.1.3 Conclusions 4-17
4.3.2 Former Plant 8 Flammable Liquid Storage Tank Farm (AOI W-3) 4-17
4.3.2.1 Scope and Results 4-17
4.3.2.2 Discussion of Results 4-18
4.3.2.3 Conclusions 4-18
4.3.3 Plant 8 Basement AST Area (AOI W-5) 4-18
4.3.3.1 Scope and Results 4-18
4.3.3.2 Discussion of Results 4-19
4.3.3.3 Conclusions 4-19
4.3.4 Former Plant 8 Flammable Materials Storage Building (AOI W-6) 4-20
4.3.4.1 Scope and Results 4-20
4.3.4.2 Discussion of Results 4-20
4.3.4.3 Conclusions 4-21
4.3.5 Former Plant 9 Basement AST Area (AOI W-8) 4-21
4.3.5.1 Scope and Results 4-21
4.3.5.2 Discussion of Results 4-22
4.3.5.3 Conclusions 4-23
4.3.6 Former Central Foundry (Plant 6) Resin Spill and UST (AOI W-9) 4-24
4.3.6.1 Scope and Results 4-24

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

4.3.6.2 Discussion of Results 4-25
4.3.6.3 Conclusions 4-26
4.3.7 Railroad Marshalling Area Drainage System (AOI W-10) 4-26
4.3.7.1 Scope and Results 4-27
4.3.7.2 Discussion of Results 4-28
4.3.7.3 Conclusions 4-29
4.3.8 Salvage Yard Sump Drain (AOI W-11) 4-29
4.3.8.1 Scope and Results 4-29
4.3.8.2 Discussion of Results 4-29
4.3.8.3 Conclusions 4-29
4.3.9 Montcalm Substation (AOI W-13) 4-30
4.3.9.1 Scope and Results 4-30
4.3.9.2 Discussion of Results 4-30
4.3.9.3 Conclusions 4-30
4.4 Metal Fabrication Division 4-31
4.4.1 Wastewater Treatment Plant (AOI M-1) 4-31
4.4.1.1 Scope and Results 4-31
4.4.1.2 Discussion of Results 4-32
4.4.1.3 Conclusions 4-33
4.4.2 Former Plating Operations Area (AOI M-2) 4-33
4.4.2.1 Scope and Results 4-33
4.4.2.2 Discussion of Results 4-34
4.4.2.3 Conclusions 4-35
4.4.3 Plant 25 Former Gasoline UST and Current Gasoline AST Location (AOI M-4) . 4-35
4.4.3.1 Scope and Results 4-36
4.4.3.2 Discussion of Results 4-36
4.4.3.3 Conclusions 4-37
4.4.4 Former A-2 Fill Area (AOI M-5) 4-37
4.4.4.1 Scope and Results 4-37
4.4.4.2 Discussion of Results 4-38
4.4.4.3 Conclusions 4-39
4.4.5 ELPO Building (AOI M-7) 4-39
4.4.5.1 Scope and Results 4-39
4.4.5.2 Discussion of Results 4-40
4.4.5.3 Conclusions 4-41
4.4.6 Plant 11 Heat Treat Oil Storage Area (AOI M-9) 4-41
4.4.6.1 Scope and Results 4-41
4.4.6.2 Discussion of Results 4-42
4.4.6.3 Conclusions 4-42
4.4.7 Plant 12 Former Gasoline Storage Area (AOI M-11) 4-43
4.4.7.1 Scope and Results 4-43
4.4.7.2 Discussion of Results 4-43
4.4.7.3 Conclusions 4-44
4.4.8 AST Area West of Plant 14 (AOI M-13) 4-44
4.4.8.1 Scope and Results 4-44
4.4.8.2 Discussion of Results 4-44
4.4.8.3 Conclusions 4-45
4.4.9 Plant 25 Basement Sump Area (AOI M-16) 4-45
4.4.9.1 Scope and Results 4-45
4.4.9.2 Discussion of Results 4-46
4.4.9.3 Conclusions 4-46
4.4.10 Plant 15 Southern Piping Trench (AOI M-17) 4-46
4.4.10.1 Scope and Results 4-46

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Aug 07, 2009 15:19

4.4.10.2 Conclusions 4-46
4.4.11 Plant 5 Southern Access Railway (AOI M-19) 4-47
4.4.11.1 Scope and Results 4-47
4.4.11.2 Discussion of Results 4-47
4.4.11.3 Conclusions 4-48
4.4.12 Plant 14 Transformer Station (AOI M-21) 4-48
4.4.12.1 Scope and Results 4-48
4.4.12.2 Discussion of Results 4-49
4.4.12.3 Conclusions 4-49
4.4.13 Plants 25, 33, and 75 Substation and Power Building (AOI M-23) 4-49
4.4.13.1 Scope and Results 4-49
4.4.13.2 Discussion of Results 4-50
4.4.13.3 Conclusions 4-50
4.4.14 Plant 12 Transformer Oil Spill (AOI M-24) 4-50
4.4.14.1 Scope and Results 4-50
4.4.14.2 Discussion of Results 4-50
4.4.14.3 Conclusions 4-51
4.4.15 Plant 33 Basement Sump Area (AOI M-25) 4-51
4.4.15.1 Scope and Results 4-51
4.4.15.2 Discussion of Results 4-52
4.4.15.3 Conclusions 4-52
4.5 Powertrain 4-52
4.5.1 Emissions Control Building Former UST Farm and Former Stoddard Solvent AST (AOI P-6) 4-52
4.5.1.1 Scope and Results 4-52
4.5.1.2 Discussion of Results 4-53
4.5.1.3 Conclusions 4-54
4.6 Pontiac School Board (PSB) Property 4-54
4.6.1 Scope and Results 4-54
4.6.2 Discussion of Results 4-55
4.6.3 Conclusions 4-56
4.7 Offsite Lakes 4-57
4.7.1 Harris Lake 4-57
4.7.1.1 Scope and Results 4-57
4.7.1.2 Discussion of Results 4-58
4.7.1.3 Conclusions 4-60
4.7.2 Terry Lake 4-61
4.7.2.1 Scope and Results 4-61
4.7.2.2 Discussion of Results 4-61
4.7.2.3 Conclusions 4-61
4.7.3 Osmun Lake 4-61
4.7.3.1 Scope and Results 4-62
4.7.3.2 Discussion of Results 4-62
4.7.3.3 Conclusions 4-62
4.8 LNAPL Delineation 4-62
4.8.1 Area No. 1 4-63
4.8.1.1 Scope and Results 4-63
4.8.1.2 Discussion of Results 4-64
4.8.1.3 Conclusions 4-64
4.8.2 Area No. 2 4-65
4.8.2.1 Scope and Results 4-65
4.8.2.2 Discussion of Results 4-65
4.8.2.3 Conclusions 4-65
4.8.3 Area No. 3 4-66

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4.8.3.1 Scope and Results 4-66
4.8.3.2 Discussion of Results 4-66
4.8.3.3 Conclusions 4-66

Section 5. Risk Evaluation 5-1

Section 6. Summary/Conclusions 6-1

6.1 No Significant Release Found 6-2
6.2 AOIs Discussed in Risk Evaluation 6-3

Section 7. References 7-1

Tables

2-1 Summary of RFI Activities, Analytical Results, and Proposed Activity
2-2 Summary of Analytical Methods
2-3 Field Parameter Study
3-1 Subsurface Stratigraphic Data Summary
3-2 Groundwater Levels Summary
3-3 Hydraulic Conductivity Values
4-1 Constituents of Concern/Screening Criteria for AOIs
4-2 Constituents of Concern/Screening Criteria for PSB
4-3 Constituents of Concern/Screening Criteria for Harris, Terry, and Osmun Lakes
4-4 Data Summary for Sitewide Hydrogeologic Investigation (Soil)
4-5 Data Summary for Sitewide Hydrogeologic Investigation (Shallow Groundwater)
4-6 Data Summary for Sitewide Hydrogeologic Investigation (Deep and Intermediate Groundwater)
4-7 Data Summary for AOI F-7 (Soil)
4-8 Data Summary for AOI F-7 (Groundwater)
4-9 Data Summary for AOI F-8 (Soil)
4-10 Data Summary for AOI F-8 (Groundwater)
4-11 Data Summary for AOI F-12 (Soil)
4-12 Data Summary for AOI F-12 (Groundwater)
4-13 Data Summary for AOI F-13 (Soil)
4-14 Data Summary for AOI F-14 (Soil)
4-15 Data Summary for AOI F-15 (Soil)
4-16 Data Summary for AOI F-15 (Groundwater)
4-17 Data Summary for AOI W-1 (Soil)
4-18 Data Summary for AOI W-1 (LNAPL)
4-19 Data Summary for AOI W-1 (Shallow Groundwater)
4-20 Data Summary for AOI W-1 (Deep and Intermediate Groundwater)
4-21 Data Summary for AOI W-3 (Soil)
4-22 Data Summary for AOI W-5 (Soil)
4-23 Data Summary for AOI W-5 (Groundwater)
4-24 Data Summary for AOI W-6 (Soil)
4-25 Data Summary for AOI W-8 (Soil)
4-26 Data Summary for AOI W-8 (LNAPL)

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

Tables, continued

4-27 Data Summary for AOI W-8 (Groundwater)
4-28 Data Summary for AOI W-9 (Soil)
4-29 Data Summary for AOI W-9 (Shallow Groundwater)
4-30 Data Summary for AOI W-9 (Deep and Intermediate Groundwater)
4-31 Data Summary for AOI W-10 (Soil)
4-32 Data Summary for AOI W-10 (LNAPL)
4-33 Data Summary for AOI W-10 (Groundwater)
4-34 Data Summary for AOI W-13 (Soil)
4-35 Data Summary for AOI M-1 (Soil)
4-36 Data Summary for AOI M-1 (Groundwater)
4-37 Data Summary for AOI M-2 (Soil)
4-38 Data Summary for AOI M-2 (Groundwater)
4-39 Data Summary for AOI M-4 (Soil)
4-40 Data Summary for AOI M-4 (Groundwater)
4-41 Data Summary for AOI M-5 (Soil)
4-42 Data Summary for AOI M-5 (Groundwater)
4-43 Data Summary for AOI M-7 (Soil)
4-44 Data Summary for AOI M-7 (Groundwater)
4-45 Data Summary for AOI M-9 (Soil)
4-46 Data Summary for AOI M-9 (Groundwater)
4-47 Data Summary for AOI M-11 (Soil)
4-48 Data Summary for AOI M-13 (Soil)
4-49 Data Summary for AOI M-16 (Soil)
4-50 Data Summary for AOI M-16 (Groundwater)
4-51 Data Summary for AOI M-19 (Soil)
4-52 Data Summary for AOI M-21 (Soil)
4-53 Data Summary for AOI M-23 (Soil)
4-54 Data Summary for AOI M-24 (Soil)
4-55 Data Summary for AOI M-25 (Soil)
4-56 Data Summary for AOI P-6 (Soil)
4-57 Data Summary for AOI P-6 (Groundwater)
4-58 Data Summary for PSB (Sediment)
4-59 Data Summary for PSB (Soil)
4-60 Data Summary for PSB (Groundwater)
4-61 Data Summary for Harris Lake (Soil)
4-62 Data Summary for Harris Lake (Sediment)
4-63 Data Summary for Harris Lake (Surface Water)
4-64 Data Summary for Harris Lake (Oil/Water Mixture)
4-65 Data Summary for Harris Lake (Fish Tissue)
4-66 Data Summary for Terry Lake (Sediment)
4-67 Data Summary for Osmun Lake (Sediment)
4-68 LNAPL Thickness
5-1 Smear Zone Soil Screening Results
5-2a Shallow Groundwater Screening Results
5-2b Intermediate and Deep Groundwater Screening Results
5-3a Surface Water Screening Results
5-3b Seep Water Screening Results

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Tables, continued

5-4 Estimated Cumulative Cancer Risk and HI for AOIs with "Contaminated" Soil – Based on Maximum Concentrations
5-5 Estimated Cumulative Cancer Risk and HI for AOIs with "Contaminated" Soil – Based on Maximum Concentrations and 95% UCLs

VOLUME II

Figures

1-1 Site Location
1-2 Site Facilities
1-3 Site Operational Areas
1-4 Summary of Site Operational Areas and Facilities
2-1 Areas of Interest and Offsite Areas
2-2 Site Background Soil Sampling Locations
2-3 LNAPL Areas No. 1 and 2
2-4 LNAPL Area No. 3
3-1 City of Pontiac Land Use Map
3-2 Regional Surficial Geology
3-3 Regional Bedrock Geology
3-4 Aquifer Characterization of the Glacial Drift
3-5 Storm and Sanitary Sewer Outfalls
3-6 Cross Section Location Map
3-7 Cross Section A-A'
3-8 Cross Section B-B'
3-9 Cross Section C-C'
3-10 Cross Section D-D'
3-11 Cross Section E-E'
3-12 Top of Water Table – Groundwater Contours (February 7 and 8, 2002)
3-12b Top of Water Table – Groundwater Contours (January 2 and 3, 2002)
3-13 Potentiometric Surface – Upper Outwash Deposits
4-1 Fiero – Sample Locations and Ground Cover
4-2 DA – Sample Locations and Ground Cover
4-3 MFD (North Section) – Sample Locations and Ground Cover
4-4 MFD (South Section) – Sample Locations and Ground Cover
4-5 Powertrain – Sample Locations and Ground Cover
4-6 Harris Lake and PSB – Sample Locations and Ground Cover
4-7 Sitewide hydrogeologic investigation – Soil
4-8 Sitewide hydrogeologic investigation – Groundwater
4-9 AOIs F-7, F-12, F-14 and F-15 – Soil
4-10 AOIs F-7, F-8, F-12 and F-15 – Groundwater
4-11 AOIs F-8 and F-13 – Soil
4-12 AOIs W-1 and W-11 – Soil
4-13 AOIs W-1, W-5, W-8, W-9, W-10 and W-11 – Groundwater
4-14 AOIs W-3, W-5, W-6 and W-8 – Soil
4-15 AOI W-9 – Soil
4-16 AOIs W-10 and W-13 – Soil

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Figures, continued

4-17 AOIs M-1 and M-13 – Soil
4-18 AOIs M-1 and M-2 – Groundwater
4-19 AOIs M-2 and M-21 – Soil
4-20 AOIs M-4, M-5, M-11, M-16, M-23, M-24 and M-25 – Soil
4-21 AOIs M-4, M-5, and M-16 – Groundwater
4-22 AOIs M-7 and M-9 – Soil
4-23 AOIs M-7 and M-9 – Groundwater
4-24 AOI M-19 – Soil
4-25 AOI P-6 – Soil
4-26 AOI P-6 – Groundwater
4-27 Pontiac School Board – Sediment and Soil
4-28 Harris Lake – Soil
4-29 Harris Lake – Sediment and Oil
4-30 Harris Lake – Surface Water

VOLUME III

Appendices

Appendix A. Analytical Compound Lists
Appendix B. Bathymetry Survey for Harris Lake and Osmun Lake
Appendix C. Hydraulic Conductivity Calculations

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VOLUME IV

Appendix D. Soil Boring Logs and Monitoring Well Construction Logs

VOLUME V

Appendix E. Analytical Data Summaries
Appendix F. Data Review and Validation

VOLUME VI

Appendix G. Massachusetts DEP Bentonite Pellet Report
Appendix H. LNAPL Fingerprinting
Appendix I. Risk Evaluation Calculations
Appendix J. Baseline Human Health Risk Assessment for Harris Lake
Appendix K. Screening Ecological Risk Assessment for Harris Lake
Appendix L. Total and Dissolved Inorganics Comparison

VOLUMES VII and VIII

Appendix M. Storm Sewer Supplemental IM Report

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Acronyms

amsl	Above mean sea level
AOI	Area of interest
AST	Aboveground storage tank
AVS/SEM	Acid volatile sulfide/simultaneously extracted metals
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
BTU	British thermal units
CCR	Current Conditions Report
CMS	Corrective Measures Study
COC	Constituent of Concern
CPC	Chevrolet-Pontiac-Canada Group
CRA	Conestoga-Rovers & Associates
CSA	Closed Container Storage Area
DA	Demolition Area
DEP	Department of Environmental Protection
DNAPL	Dense non-aqueous phase liquid
EEC	Encore Environmental Consortium, LLC
EI	Environmental indicator
ELPO	Electrodeposition
ENCORE	Environmental Corporate Remediation
Facility	GM Pontiac North Campus Site
FSP	Field Sampling Plan
GAC	Granular-Activated Carbon
GCC	Groundwater Contact Criteria
GIS	Geographical information system
GM	General Motors Corporation
GMC	General Motors Corporation
HSA	Hollow-stem Auger
ID	Inner Diameter
IDC	Industrial Direct Contact Criteria
IDWC	Industrial Drinking Water Criteria
IGVIC	Industrial Groundwater Volatilization to Indoor Air Inhalation Criteria
IM	Interim Measure
IPSIC	Industrial Particulate Soil Inhalation Criteria
ISVIC	Industrial Soil Volatilization to Indoor Air Inhalation Criteria
IVSIC	Industrial Infinite Source Volatile Soil Inhalation Criteria
LNAPL	Light non-aqueous phase liquid
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MFD	Metal Fabrication Division
MTBE	Methyl-tert-butyl-ether
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NREPA	Natural Resources and Environmental Protection Act (1994 PA 451, as amended)
NTU	Nepholometric Turbidity Units
PA/VSI	Preliminary Assessment/Visual Site Inspection

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PCB	Polychlorinated biphenyl
PID	Photoionization detector
PNC	Pontiac North Campus
PRC	PRC Environmental Management, Inc.
PSB	Pontiac School Board Property
PVC	Polyvinyl chloride
QAPP	Quality Assurance Project Plan
RAGS	USEPA Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RDC	Residential Direct Contact Criteria
RDWC	Residential Drinking Water Criteria
RFI	RCRA Facility Investigation
RGVIC	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria
RPSIC	Residential Particulate Soil Inhalation Criteria
RVSIC	Residential Infinite Source Volatile Soil Inhalation Criteria
SPO	Service Parts Operations
SVIAIC	Soil Volatilization to Indoor Air Inhalation Criteria
SVOC	Semi-volatile organic compounds
SWRF	Stormwater Retention Facility
SWMU	Soil waste management unit
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxicity Equivalents
TEF	Toxicity Equivalence Factors
TOC	Total organic carbon
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground storage tank
VOC	Volatile organic compounds
WWTP	Wastewater treatment plant

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1. Introduction

1.1 General

On October 10, 2000, the U.S. Environmental Protection Agency (USEPA) and General Motors Corporation (GM) entered into a Voluntary Corrective Action Agreement (Voluntary Agreement) for the Pontiac North Campus (PNC) located in Pontiac, Michigan (Site). The Voluntary Agreement calls for GM to work independently and voluntarily to investigate and, as necessary, stabilize and remediate releases of hazardous waste or hazardous constituents at or from the Site in accordance with the Resource Conservation and Recovery Act (RCRA) and relevant USEPA corrective action guidance documentation. This RCRA Facilities Investigation (RFI) Report for the Site was prepared by Encore Environmental Consortium, L.L.C. for Environmental Corporate Remediation (ENCORE), a wholly owned subsidiary of GM. This Report presents the results of the RFI for the Site.

The Site encompasses approximately 595 acres in the northwest quadrant of the City of Pontiac, Michigan (see Figure 1-1). The Site covers four facilities (see Figure 1-2), including:

- Chevrolet-Pontiac-Canada Group (CPC) Pontiac Fiero Assembly Plant (formerly General Motors Corporation [GMC] Fisher Body Division); GMNA Property Management Fiero Facility; Baldwin Ave; Pontiac, Michigan 48340; (USEPA ID No. MID 005356910);
- GMC Central Foundry Division - Pontiac Plant; One Pontiac Plaza; Pontiac, Michigan 48340 (USEPA ID No. MID 085470102);
- CPC – Pontiac; GM Metal Fabricating Division Pontiac; 220 E. Columbia Ave; Pontiac, Michigan 48340 (USEPA ID No. MID 005356886); and
- GMC Warehousing and Distribution Division, Service Parts Operations; 9251 Joslyn Rd; Pontiac, Michigan 48340 (USEPA ID No. MID 076331289).

Because Site operations have changed significantly in recent years, this RFI Report groups operations according to current activities. Figure 1-3 shows each of these Site operational areas and offsite areas, while Figure 1-4 shows an overlay of the operational areas and the facility boundaries. During the completion of the RFI, offsite areas were identified for investigation. These operational and offsite areas are as follows:

Operational Areas

- Fiero;
- Demolition Area (DA);
- Metal Fabrication Division (MFD);
- Powertrain; and
- Service Parts Operation (SPO).

Offsite Areas

- Pontiac School Board (PSB) Property;
- Harris Lake;
- Terry Lake; and
- Osmun Lake

1.2 Purpose

GM performed the RFI pursuant to the Voluntary Agreement to determine whether the Areas of Interest (AOIs) identified in the Current Conditions Report (CCR) (ENCORE, 2001a) as requiring Further Action have released

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

hazardous waste or hazardous constituents that may pose an unacceptable risk to human health and the environment. The CCR and CCR Addendum #1 (ENCORE, 2002a) were prepared in part to provide details of historical and current operations at the Site, previous investigations and remedial activities, RCRA regulatory history, historical and current waste management practices, and specific areas targeted for investigation. The CCR and CCR Addendum #1 were submitted in accordance with Section V(1)(a) of the Voluntary Agreement. The RFI was conducted in accordance with an RFI Work Plan (ENCORE, 2001d) and supplemental Work Plan Addenda #s 1, 2, and 3 (ENCORE, 2001e, 2001f, 2002b) for additional phases of field investigation. The fieldwork for the RFI was performed from June 2001 through February 2002. Concurrent with the RFI a Storm Sewer Interim Measure (IM) investigation was implemented to address polychlorinated biphenyls (PCBs) identified at storm sewer Outfall 001.

The information in this RFI Report describes the procedures, methods, and results of the field investigations conducted during the RFI. The information includes a comparison of the RFI data with Michigan Part 201 generic risk-based screening criteria to identify whether a potential release of hazardous waste or hazardous constituents has occurred from each AOI. Where a potential release is identified, the nature and extent of hazardous constituents in the environmental media characterized during the RFI are discussed. A human health risk evaluation is included in the RFI Report to provide a basis for evaluating whether the presence of these hazardous constituents pose an unacceptable risk to human health. A separate baseline human health risk assessment was prepared for Harris Lake. An ecological risk assessment was performed on Harris Lake to determine if Site-related constituents present an unacceptable ecological risk.

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1.3 RFI Objectives and Approach

The objectives of the RFI Work Plan (ENCORE, 2001d) and Work Plan Addenda #s 1, 2, and 3 (ENCORE, 2001e, 2001f, 2002b) were to detail the investigations necessary to:

- Determine Sitewide hydrogeologic conditions, as necessary, to properly investigate releases from AOIs;
- Characterize the nature and extent of releases of hazardous waste and/or hazardous constituents in environmental media at the Site;
- Assess potential risk to human health and the environment associated with releases of hazardous waste and/or hazardous constituents;
- Provide sufficient data to support the RCRA corrective action environmental indicators determination;
- Determine whether interim corrective measures are necessary to control current unacceptable risks, if any, to human health;
- Determine whether a corrective measures study is necessary to mitigate current and future unacceptable risks, if any, to human health and the environment; and
- Determine the impact, if any, from discharges from the Site to offsite areas.

1.4 Report Organization

The RFI Report is organized as follows:

- Section 2 provides an overview of the RFI; including a summary of the AOIs, and other areas investigated during the RFI, a summary of the phases of the RFI field investigations and the general approach; and interim measures conducted during the RFI.
- Section 3 discusses the environmental setting in the vicinity of the Site, including information on surface water hydrology, geology, hydrogeology, background soil characteristics, land use, and groundwater use.
- Section 4 presents a summary and discussion of the RFI results for each of the AOIs and other areas investigated, including areas where interim measures were conducted before and during the RFI for previously identified releases. The discussion for each area investigated includes a summary of the scope of

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the field investigation, a summary and evaluation of the RFI and historic data, and a discussion of whether a potential release above screening criteria has been identified.

- Section 5 presents a human health risk evaluation that evaluates the releases at areas identified in Section 4 to determine whether corrective measures are warranted. Potential risk under these scenarios is evaluated either by estimating the cumulative cancer and non-cancer risks (for exposures to soil and sediment) or by deriving risk-based criteria (for exposures to groundwater).
- Section 6 provides the summary and conclusions of the RFI Report.
- Section 7 lists the references cited in the RFI Report.
- Tables
- Figures
- Appendix A contains the complete compound lists for Target Compound List (TCL) volatile organic compounds (VOCs); TCL semi-volatile organic compounds (SVOCs); inorganics; PCBs, total cyanide (cyanide), hexavalent chromium.
- Appendix B contains the Bathymetry Surveys completed by Chris Ransome and Associates for Harris Lake and Osmun Lake.
- Appendix C contains the calculations and field data used to determine the hydraulic conductivity values.
- Appendix D contains the soil boring logs and monitoring well construction logs for all the soil borings and groundwater monitoring wells installed during the RFI and groundwater monitoring wells sampled during the RFI.
- Appendix E contains summary tables that show all the RFI soil, groundwater, sediment, sediment oil, surface water, and fish data. Data for field quality control samples (e.g., field duplicates and blanks) are also included in Appendix E.
- Appendix F contains summaries of the results of the data review and data validation. The complete data deliverables provided by the laboratories that performed the analysis of the samples collected during the RFI are available upon request.
- Appendix G contains the Massachusetts Department of Environmental Protection (MADEP) report documenting that a specific brand of bentonite pellets commonly used in monitoring well construction contains acetone as a coating agent.
- Appendix H contains the Zymax Forensics light nonaqueous phase liquid (LNAPL) fingerprint report.
- Appendix I contains the risk evaluation calculations performed, and related supporting information.
- Appendix J contains the Baseline Human Health Risk Assessment for Harris Lake.
- Appendix K contains the Screening Ecological Risk Assessment for Harris Lake.
- Appendix L contains the Total and Dissolved Inorganics Comparison.
- Appendix M contains the Storm Sewer Supplemental IM Report.

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2. RFI Overview

The CCR (ENCORE, 2001a) identified 64 AOIs based on a review of Site historical and current usage information that indicates a potential for known or suspected areas of prior release of hazardous waste or hazardous constituents. The CCR (ENCORE, 2001a) discussed each AOI with respect to description, historical and current operations, previous remedial investigations and actions, and current status, and identified 30 AOIs requiring further action. The remaining 34 AOIs have sufficient information to support No Further Action (NFA). A new AOI (F-15) was identified during the RFI as requiring Further Action along with offsite areas (PSB property, Harris Lake, Terry and Osmun Lakes). This report presents information obtained during the RFI for the 31 Further Action AOIs plus the off-Site areas (excluding Terry and Osmun Lakes), at location shown on Figure 2-1.

This section provides a general description of the Site location, field investigation performed during the RFI, investigation methods, laboratory procedures, and ongoing IM. A detailed description of the historical and current operations at the Site, a review of historical topographic and Sanborn maps and aerial photographs, RCRA regulatory history, and historical and current waste management practices is presented in the CCR (ENCORE, 2001a) and CCR Addendum #1 (ENCORE, 2002a).

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2.1 Site Location

Comprising approximately 595 acres, the Site is located in the City of Pontiac, Oakland County, Michigan (see Figure 1-1). The Site is bounded to the south by Montcalm Avenue, to the west by Baldwin Avenue and the Grand Trunk Western Railroad Line, to the east by Joslyn Avenue and a plant service road, and to the north by Walton Boulevard and the Grand Trunk Western Railroad Line. Surrounding areas consist of residential subdivisions and mixed commercial and light industrial use properties. A detailed description of area demographics and environmental setting is provided in Section 3.

2.2 Areas of Investigation Overview

The Site is divided into five onsite operational areas along with offsite areas to the south. Each of these areas is briefly described in the subsequent paragraphs with detailed discussions presented in the CCR (ENCORE, 2001a) and CCR Addendum #1 (ENCORE, 2002a). These areas are:

- Fiero;
- Demolition Area (DA);
- Metal Fabrication Division (MFD);
- Powertrain;
- Service Parts Operation (SPO); and
- Offsite Areas.

2.2.1 Fiero

The Fiero plant area comprises approximately 81 acres located at the southwestern portion of the Site, including Plant 17 (Figure 1-3). The area is currently used for prototyping, storage and other non-manufacturing processes.

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2.2.2 Demolition Area (DA)

The DA consists of approximately 48 acres of the south-central portion of the Site. There are currently no buildings or operations within the DA portion of the Site. The three former main operational buildings (the Foundry [Plant 6], Final Vehicle Assembly [Plant 8], and Engine Construction [Plant 9]) were demolished in 1995, 1997, and 1997, respectively. Since 1996, the DA has been the subject of ongoing soil and groundwater investigations. The former plant locations are shown on Figure 1-3.

2.2.3 Metal Fabrication Division (MFD)

The MFD area consists of approximately 236 acres in the center of the Site (Figure 1-3). It also represents the most active area of the Site with regard to current manufacturing operations. Plants currently located in the MFD area include Plants 5, 11, 12, 14, 15, 23, 25, 33, 49, 56, and ELPO. Also present in the MFD area is a wastewater treatment plant (WWTP), which is located directly west of Plants 5 and 23.

2.2.4 Powertrain

The Powertrain area consists of approximately 150 acres located along the eastern portion of the Site (Figure 1-3). The Powertrain area primarily consists of office space contained within the Powertrain Headquarters Building and the Powertrain Engineering Building. A gasoline underground storage tank (UST) farm and fueling station occupy the southwest corner of the Powertrain Headquarters Building. Test laboratories and office space are located in the Emissions Control Building. Paved parking areas and roadways occupy much of the land. A vacant area exists where former Plant 18 was located.

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2.2.5 Service Parts Operation (SPO)

The SPO area consists of approximately 80 acres of land located at the northern portion of the Site (Figure 1-3) and includes Warehouse Storage and Shipping & Receiving operations, parts painting (Plant 75), and a large truck parking lot (north of Plants 25 and 33). The building and adjacent paved roadways and parking areas encompass nearly all of this area. There were no Further Action AOIs identified for SPO, therefore, this Operational Area will not be discussed further.

2.2.6 Offsite Areas

- Pontiac School Board (PSB) Property

The area currently owned by the City of Pontiac School Board (PSB) (Figure 1-3) historically included Howard Lake, the first of a chain of four lakes. Howard Lake is believed to have taken up part of the southwest corner of the property. A series of open ditches traversed the PSB property from the Site to Harris Lake, and it is believed that these ditches historically conveyed storm water from the Site to the lakes.

- Harris Lake

A review of historical maps shows that the shape and size of Harris Lake (Figure 1-3) has changed over the years. The lake appears to have become smaller, indicating that it has likely been used as a fill area. In addition, some foundry sand was observed during previous on-shore activities. A fill area is located along the north shore. It is believed that Harris Lake received storm water runoff from the Site via a series of ditches and culverts.

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- Terry Lake

Terry Lake is located downstream of Harris Lake (Figure 1-1). Terry Lake receives surface water from Harris Lake.

- Osmun Lake

Osmun Lake is located downstream of Terry Lake (Figure 1-1). Osmun Lake receives surface water from Terry Lake along with storm water discharge from Fiero via Outfall 002.

2.3 Field Investigation

2.3.1 Areas Investigated

This section is organized with respect to the four onsite operational areas with Further Action AOIs and the offsite areas of investigation that make up the RFI. These areas are:

- Fiero;
- DA;
- MFD;
- Powertrain; and
- Offsite Areas.

Each operational area and the AOIs, which require Further Action as presented in the CCR and CCR Addendum #1, are discussed below (see Figure 2-1).

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Fiero

- AOI F-7: Wastewater Collection Sumps
- AOI F-8: Former Paint Sludge Storage Area
- AOI F-12: Coal Storage Area
- AOI F-13: Former Oily Pea Gravel, Concrete, and Debris Area
- AOI F-14: Fuel Aboveground Storage Tank (AST) Area
- AOI F-15: Oil/Solvent Catch Basin

Demolition Area

- AOI W-1: West Yard
- AOI W-3: Former Plant 8 Flammable Liquid Storage Tank Farm
- AOI W-5: Plant 8 Basement AST Area
- AOI W-6: Former Plant 8 Flammable Materials Storage Building
- AOI W-8: Former Plant 9 Basement AST Area
- AOI W-9: Former Central Foundry (Plant 6) Resin Spill and UST
- AOI W-10: Railroad Marshalling Area Drainage System
- AOI W-11: Salvage Yard Sump Drain
- AOI W-13: Montcalm Substation

Metal Fabrication Division

- AOI M-1: Wastewater Treatment Plant
- AOI M-2: Former Plating Operations Area
- AOI M-4: Plant 25 Former Gasoline UST and Current Gasoline AST Location
- AOI M-5: Former A-2 Fill Area
- AOI M-7: ELPO Building
- AOI M-9: Plant 11 Heat Treat Oil Storage Area

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Aug 07, 2009 15:19

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- AOI M-11: Plant 12 Former Gasoline Storage Area
- AOI M-13: ASTs Area West of Plant 14
- AOI M-16: Plant 25 Basement Sump Area
- AOI M-17: Plant 15 Southern Piping Trench
- AOI M-19: Plant 5 Southern Access Railway
- AOI M-21: Plant 14 Transformer Station
- AOI M-23: Plants 25, 33, and 75 Substation and Power Building
- AOI M-24: Plant 12 Transformer Oil Spill
- AOI M-25: Plant 33 Basement Sump Area

Powertrain

- AOI P-6: Emissions Control Building Former UST Farm and Former Stoddard Solvent AST

Offsite Areas

- PSB Property
- Harris Lake
- Terry Lake
- Osmun Lake

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Aug 07, 2009 15:19

2.3.2 RFI Field Investigation Overview

The RFI field investigation was initiated in June 2001. Based on preliminary laboratory results obtained during the RFI field investigation and information obtained from the CCR Addendum #1, supplemental field investigations were implemented. The field investigations supplemental to the RFI Work Plan were presented in:

- Addendum #1: City of Pontiac School Bus Maintenance Facility and Harris Lake (ENCORE, 2001e);
- Addendum #2: AOIs M-9, F-7, F-8, and F-15 (ENCORE, 2001f); and
- Addendum #3: Stage III – AOI and Harris Lake - Follow-up Investigation (ENCORE, 2002b).

Field investigations for the 31 AOIs and offsite areas identified for investigation in the RFI Work Plan and Addenda #s 1 and 2 were completed in February 2002. Field investigations for RFI Work Plan Addendum #3 were initiated in December 2001 and completed in February 2002.

The methods and procedures used in the field investigation conducted during the implementation of the RFI Work Plan and supplemental Work Plan Addenda #s 1, 2, and 3 are summarized in Section 2.3.4. All RFI objectives, sampling methodologies, and analytical procedures were in accordance with those presented in the RFI Work Plan, including the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP), except as noted in Section 4. Samples were submitted for an AOI-specific list of analytes and may have included analysis for TCL VOCs, TCL SVOCs, metals (inorganics), PCBs, total cyanide (cyanide), hexavalent chromium, and dioxins. The AOI specific constituent list was developed based on historical chemical usage at the AOI. Complete compound lists for TCL VOCs, TCL SVOCs, inorganics, and dioxins are provided in Appendix A. The results of the investigation are summarized and discussed in Section 4. A summary of field investigations performed and laboratory analysis for each AOI is provided in Table 2-1.

2.3.3 RFI Field Methods and Procedures

The following paragraphs summarize the field methods and procedures implemented during the completion of the RFI. All sampling methodologies and analytical procedures were in accordance with those presented in the RFI Work Plan (ENCORE, 2001d) and supplemental Work Plan addenda, including the FSP and QAPP except as noted in Section 4.

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

Surface soil samples were collected as detailed in the RFI Work Plan (ENCORE, 2001d). Surface soil samples were collected at the 0 to 2-foot interval using a hand auger or direct-push (i.e., Geoprobe) sampling technique.

Soil borings were completed as detailed in the RFI Work Plan (ENCORE, 2001d). Soil borings were advanced using either hollow-stem auger (HSA) drilling or direct-push (Geoprobe) sampling technique. To provide a vertical profile of the subsurface, soil samples were collected continuously for visual classification using split-spoon sampling or direct-push methods from the ground surface to the bottom of each boring. Three soil samples were collected from each borehole and submitted for laboratory analysis for the AOI specific list of constituents. Soil samples submitted for laboratory analysis consisted of soil collected from the following intervals: 0 to 2 feet, 8 to 10 feet, and the 2-foot interval immediately above the water table interface. An additional 2-foot soil interval may have been submitted for analysis if it exhibited elevated photoionization detector (PID) readings or had visual staining and/or odor.

Monitoring wells were installed utilizing the spun-casing technique and were constructed of 2-inch inner diameter (ID) continuous-wire-wrapped polyvinyl chloride (PVC) screen with 10-foot screens. Monitoring wells were installed as detailed in the RFI Work Plan (ENCORE, 2001d). Due to height restrictions inside of buildings and Site access problems at some locations, drill rig modifications to this drilling method and well construction materials had to be implemented. At locations where the drill rig with spun casing capabilities could not gain access due to height restrictions, monitoring wells were installed through 4.25-inch HSA with a traditional drill rig (the well materials used were consistent with those stipulated in the RFI Work Plan [ENCORE, 2001d]). At the locations where the Geoprobe drill rig was used to install the monitoring wells (either due to extreme low overhead clearance or in areas of extreme terrain), 4.25-inch HSA were utilized. In addition, at these locations the well material was comprised of 2-inch ID, machine-slotted, prepacked well screens. The prepacked well screens are the same as traditional well screens with the exception that the screen is surrounded by a 4-inch diameter wire mesh that is filled with filter sand. The prepacked well screens are then installed through the HSA in order to provide an adequate filter pack. Details as to exact locations and modifications to monitoring well installation are discussed in Section 2.3.4.

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Aug 07, 2009 15:19

Monitoring wells were developed by first removing a quantity of water equal to three times the volume of water lost during drilling (i.e., drilling water lost to the formation). Low-flow development techniques were then utilized to develop the well at 2-foot increments for the saturated length of the entire well screen.

Groundwater samples were collected using low-flow purge and sample approach in accordance to the guidelines presented in the FSP (ENCORE, 2001d). As groundwater was purged from each of the monitoring wells, field parameters (temperature, specific conductance, DO, and pH) were recorded. Sample collection was initiated when all the parameters stabilized and the turbidity stabilized below 5 nepholometric turbidity units (NTUs). In some instances, turbidity was not measured below 5 NTUs, but where readings did stabilize at a level higher for a period of greater than 1 hour, sample collection was initiated. A summary of field parameters is provided in Table 2-3.

For the first round groundwater quality samples were collected with a peristaltic pump or bladder pump (depth to water greater than 30 feet). For the second round of sample collection, all non-VOC parameters were collected with a peristaltic pump and samples for VOCs were collected with a disposable bailer. In wells where the depth to water was greater than 30 feet, a Grundfos submersible pump was used for sample collection.

During the first round of groundwater sampling, samples were collected and submitted for PCBs, dioxins, and inorganics analysis. During the second round of groundwater sampling, samples were collected for inorganic analysis for total and dissolved concentrations, and for PCBs and dioxin.

Sediment samples were collected as detailed in the RFI Work Plan (ENCORE, 2001b). Sediment samples were collected at discrete intervals using either a Ponar® sampler or Lexan® tubing.

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

2.3.4 RFI Field Activities

Sitewide Hydrogeologic Investigation

Based on the limited amount of available information for the Site hydrogeologic setting, a Sitewide hydrogeologic investigation was initiated. The purpose of this investigation was to provide groundwater flow information necessary for final placement of the AOI groundwater monitoring wells. A total of 30 groundwater monitoring wells were installed within three hydrogeologic zones with 19 installed within the shallow water table zone, five installed within the intermediate glaciolacustrine zone and six installed within the upper sand and gravel zone.

Groundwater elevations were obtained periodically from each of these wells to determine a generalized groundwater flow direction for the Site. This information was used in part to determine the final placement of monitoring wells installed as part of the AOI investigations.

Two rounds of groundwater samples were collected from each of the Sitewide monitoring wells installed. In addition, the hydraulic conductivity for each of the wells was calculated either from information obtained during low-flow sampling or from slug tests performed.

To assess soil background metal concentrations, soil borings SB-01 through SB-03 were completed (Figure 2-2). Soil samples were collected from each of these borings from the 0 to 2-foot interval. Soil samples were also collected from the installation of select monitoring wells (MWP1, MWP2, GWM3, and GWP6) to be used in the evaluation of the soil background metal concentrations. Additional soil borings (BP01 and BP04) were performed at GWP6 to delineate arsenic concentration in soil.

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Aug 07, 2009 15:19

AOI and AOI Follow-up Investigation

The investigation proposed for each AOI are described in the RFI Work Plan and RFI Work Plan Addenda #1 and #3 (including types and numbers of borings, numbers of monitoring wells installed, and analytical suites). A summary of this investigation is also provided in Table 2-1. The preliminary data evaluated during the completion of the RFI were used to implement a follow-up investigation at specific AOIs (F-7, F-8, F-15, W-1, W-8, W-9, W-10, M-1, M-2, M-4, M-5, M-9, M-16, M-19, and P-6).

Pit and sump inspections were completed at AOIs F-7, F-8, F-15, W-6, W-10, M-9, M-16, M-17, and M-25. The pits and sumps were inspected to identify the condition of the sump including staining and broken or cracked concrete. Based on these observations, additional investigations were completed in the form of soil borings and monitoring well installations at AOIs M-9, F-7, F-8, and F-15.

Test pits were completed at AOI W-1 to characterize the fill placed in the former settling basin. The test pits were completed using a backhoe to excavate the soil. Soil samples were collected and submitted for laboratory analysis.

All monitoring wells installed during AOI and AOI follow-up investigations were shallow wells with screened intervals that straddle the water table. The majority of the monitoring wells were installed using the spun-casing technology and were constructed with a 10-foot long, wire-wrapped, PVC well screen (0.010-inch slot) with the following exceptions. Due to height restrictions inside of buildings (i.e., drill rig with spun casing capabilities did not have the height clearance), monitoring wells MWM9-01, MWM2-06, MWM2-07 and MWM7-03 were installed with 4.25-inch augers using a traditional drill rig. Due the extremely low clearance at monitoring well location MWM2-08, the Geoprobe 66DT drill rig was used to install the well. Monitoring well MWM2-08 was installed with 4.25-inch augers, and the well material consisted of a 10-foot-long, machine-slotted PVC prepacked well screen.

Two monitoring wells were installed along the seepage face along Montcalm Avenue, downgradient from LNAPL Area No. 1 (AOI W-1) to obtain water samples representative of the surface water seep in this location. Both of these monitoring wells (MWW1-02 and MWW1-03) were installed with the Geoprobe 66 DT drill rig

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

because of limited access and the steep grade. The well material for both of these wells consisted of a 10-foot-long; machine-slotted PVC, prepacked well screen.

At AOI M-5, groundwater samples were scheduled to be collected from existing monitoring well MW1-99. Upon inspection of the well, it was determined that the well was damaged and groundwater samples could not be collected. Monitoring well MW1-99 was abandoned by first pulling the well from the ground, overdrilling with 4.25-inch augers (i.e., drilling to a point lower than elevation than the monitoring well was set), and backfilling with a cement/bentonite slurry.

After a monitoring well was installed, a total of three times the amount of water lost to the formation during drilling was removed. Monitoring wells were then developed using low-flow sampling methodology. Two rounds of groundwater samples were collected from each of the monitoring wells installed during the AOI investigation. Only one round of groundwater samples was collected from monitoring wells installed during the AOI follow-up investigation.

The hydraulic conductivity for each of the monitoring wells was calculated either from information obtained during low-flow sampling or from slug tests. Groundwater elevations, including measurement for LNAPL at select monitoring wells, were obtained on a regular basis.

PCBs were delineated in the soil at AOI M-1 and AOI W-9. In these areas, soil samples were collected with a Geoprobe to assess the horizontal and vertical distribution of PCBs. Soil samples were collected in a 5- to 20-foot horizontal grid pattern at 2-foot intervals from ground surface to the top of the water table. These soil samples were field-screened with a bioassay field screening kit. Additional step-out borings were completed until the PCB field screening results were less than the screening criteria of 20 milligrams per kilogram (mg/kg) or until obstructions (e.g., building foundation and underground utilities) were encountered. The soil samples screened onsite that did not exceed the screening criteria were submitted to the laboratory for verification along with 10% of the samples that exceeded the screening criteria of 20 mg/kg.

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Aug 07, 2009 15:19

Pontiac School Board (PSB) Property

Based on information obtained during the preparation of the CCR Addendum #1 (ENCORE, 2002a), a sediment sampling, soil boring, and monitoring well installation program was completed at the PSB property. The work was performed in accordance with the RFI Work Plan Addendum #1 (ENCORE, 2001e).

Historical information indicates that at least two drainage ditches may have conveyed storm water from the Site to Harris Lake via the PSB property. An abandoned corrugated metal storm sewer pipe occupies the location of the historical ditch alignment. A total of 10 soil borings were completed along the approximate alignment of the former ditches. Soil borings were completed from ground surface to the top of the water table. Soil samples were submitted for analysis for VOCs, SVOCs, PCBs, and inorganics.

Soil and sediment samples were collected from catch basins and manholes along the abandoned storm sewer. Sediment samples were collected from within the pipes extending from the manhole or catch basins. Test pits were excavated at abandoned catch basins and manholes, and soil samples were collected from the bedding material around the outside of the pipes. Soil and sediment samples were submitted for analysis for VOCs, SVOCs, PCBs, inorganics, and dioxins.

A total of two monitoring wells were installed at the downgradient portion of the PSB property in the vicinity of the culvert that crosses Saginaw Street and discharges into Harris Lake. Two rounds of groundwater samples were collected from these monitoring wells. Groundwater samples were submitted for analysis for VOCs, SVOCs, PCBs, and inorganics.

Harris Lake

A surface soil, surface water, sediment, fish sampling, sediment oil, and bathymetry investigative program was performed for Harris Lake. The work was completed in accordance with the RFI Work Plan Addenda #s 1 and

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

3. The types of samples collected (e.g., surface water, sediment, and soil) and the analytical suite for samples analyzed is provided in Table 2-1.

A total of 10 surface water samples were collected along the shoreline of Harris Lake. The samples were collected in a manner that avoided disturbance to the bottom sediment.

As part of the RFI Work Plan Addendum #1 sampling effort, 13 sediment samples were collected at the 0 to 2-inch interval from 10 locations. In addition, sediment samples were collected from 10 locations from the 0 to 6-inch interval. Ten of the sediment sampling locations were collected from the near shore area with three samples collected from the middle of the lake. As a part of RFI Work Plan Addendum #3 sampling effort, sediment samples were collected at multiple depths from an additional 13 locations along the shoreline of Harris Lake. A sediment sample was collected to a depth where marl was encountered (approximately 1 to 2 feet). Sediment samples were collected using Lexan® tubing or a Ponar® grab sampler.

An oil sample was obtained from the sediment at location SDHS-09. Sediment was collected and placed into a 5 gallon container which was agitated, thereby releasing oil. The accumulated oil was collected and placed into appropriate sample containers for laboratory analysis of SVOCs, PCBs and dioxins.

A total of 10 soil borings were completed on the north side, and a total of three borings were completed on the south side of Harris Lake. The borings were completed from the ground surface to the top of the water table in areas of suspected fill material.

A permit was obtained from the Michigan Department of Natural Resources (MDNR) to complete the fish sampling program for Harris Lake. Originally the fish were to be trapped using trap nets. However, due to difficult weather conditions, a variance to the permit was obtained from the MDNR to use gill nets. Two types of fish samples were sent to the lab: both fillets of individual fish and whole fish from the same species that were composited were submitted for laboratory analysis.

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Aug 07, 2009 15:19

In addition, a bathymetry survey was completed for Harris Lake. A copy of the bathymetry report is provided in Appendix B.

Terry Lake

A total of three sediment samples were collected from Terry Lake. The work was completed in accordance with the RFI Work Plan Addendum #3. The sediment samples were collected in the area receiving discharge from Harris Lake. Samples were submitted for analysis for VOCs, SVOCs, PCBs, and inorganics.

Osmun Lake

Six sediment samples were obtained from Osmun Lake. Three samples were collected from the area receiving discharge from the Fiero storm sewer, and three sediment samples were collected from the Terry Lake outlet to Osmun Lake. Samples were submitted for analysis for VOCs, SVOCs, PCBs, and inorganics.

In addition, a bathymetry survey was completed for Osmun Lake. A copy of the bathymetry report is provided in Appendix B.

LNAPL Investigation

A LNAPL was detected in the water table zone in the West Yard (AOI W-1) during previous investigations and in two additional areas during the implementation of the RFI. In addition, LNAPL was also detected in the Montcalm Production well; this production well is screened in the lower sand and gravel zone. The following paragraphs detail the investigations for LNAPL in both the water table zone (shallow) and the lower sand and gravel zone (deep).

- Shallow LNAPL

During the implementation of the RFI, two areas of LNAPL were encountered within the water table zone in AOIs W-10 and W-8 (LNAPL Areas No. 2 and 3, respectively). A delineation program was performed at each

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

location to determine the horizontal extent of the LNAPL. In addition, LNAPL Area 1 was further delineated to the east, north, and southwest. LNAPL Areas No. 1 and 2 are shown on Figure 2-3, and LNAPL Area No 3 is shown on Figure 2-4. It should be noted that LNAPL Areas No. 1 and 2 commingle and the exact delineation of the individual LNAPL was not performed.

Even though LNAPL Area No. 1 (Figure 2-3) was previously delineated, there remained uncertainty as to the accuracy of the delineation to the east because the methods used to delineate LNAPL Area 1 differed from those used to define LNAPL Areas No. 2 and 3. LNAPL Area No. 1 was delineated by PID readings and visual observations of soil cuttings during drilling, whereas LNAPL Areas No. 2 and 3 were delineated by screening soil cuttings with a fluorescent/ultraviolet light. A total of 12 borings were completed with a Geoprobe in the eastern portion of LNAPL Area No. 1. The soil borings were completed to a depth of approximately 10 feet below the water table. The soils were then screened onsite with a fluorescent/ultraviolet light to detect the presence or absence of LNAPL. Based on these results, a monitoring well was installed to confirm the delineation.

The initial investigation at LNAPL Area No. 2 (Figure 2-3) involved the collection of soils with a Geoprobe. These soil samples were collected continuously from ground surface down to a depth of approximately 10 feet below the water table. The soils were then screened onsite with a fluorescent/ultraviolet light to detect the presence or absence of LNAPL. Four temporary 1-inch diameter piezometers were installed on all four sides of the monitoring well when LNAPL was detected to identify localized groundwater flow. Based on these results, two monitoring wells were installed upgradient and downgradient of the suspected LNAPL pool, and one monitoring well was installed within the LNAPL area.

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Aug 07, 2009 15:19

The depth to groundwater in LNAPL Area No. 3 (Figure 2-4) was too deep to reliably use a Geoprobe. At this location, a conventional drill rig was used to install permanent wells to delineate the LNAPL. A total of four monitoring wells were installed around monitoring well MWW8-03 encountered and accumulated LNAPL. Four additional monitoring wells were then installed around MWW8-03 (to the north, south, east, and west) that did not encounter LNAPL. Two temporary piezometers were installed in the area to aid in identifying groundwater flow direction. The four wells that do not have LNAPL present served as the upgradient, downgradient, and two lateral wells for delineation.

- Deep LNAPL

LNAPL was observed at the Montcalm Production Well (Figure 2-3) during purging for sample collection and as a thickness on top of the water column. The Montcalm Production Well was installed in the 1950s to a depth of 180 feet, predominately screened in the sand and gravel zone beneath the basal till layer. The production well was installed to supply coolant water to the foundry. There is no additional information for this well. To evaluate whether LNAPL is present in the lower sand and gravel zone, three deep monitoring wells (DWD10, DWD12, and DWD13) were installed in this zone. Two additional monitoring wells (GWD9 and GWD11) were installed in the upper sand and gravel zones (above the basal till layer) adjacent to the new deep wells to provide vertical hydraulic gradient between the various groundwater zones.

The Montcalm Production Well was abandoned by pumping neat cement, via a tremie pipe, from the bottom of the well to the ground surface. A licensed Michigan water well driller oversaw the operation and filed the appropriate forms with the MDEQ.

2.4 Laboratory Procedures

The analytical suites for all samples that were submitted to the laboratory were specific to each AOI and offsite area and are summarized in Table 2-1. All methods and procedures for the analysis are presented in the QAPP and summarized in Table 2-2. Field screening for PCBs was also performed using bioassay colorimetric techniques.

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Aug 07, 2009 15:19

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The only variation to these methods was for the analysis of thallium in groundwater samples. The analytical method was modified from the first round of groundwater sampling to the second. The method was modified from Method SW846-6010B to Method SW846-6020 to lower the detection limit and the reporting limit. The data results from the collection of surface water samples and the first round of groundwater samples showed detections of thallium above the screening criteria. However, because the reporting limit was so close to the screening criteria, incidents of false detections were reported. To eliminate this problem, the analytical method was switched from SW846-6010B (reporting limit of 10 milligrams per liter [mg/L] and detection limit of 5 mg/L) to SW846-6020 (reporting limit of 1 mg/L and detection limit of 0.018 mg/L) to lower the detection limit, and thus to eliminate the potential for false positives that would exceed the screening criteria.

2.5 Storm Sewer IM Investigation

As a result of the detections of PCBs within the onsite storm sewer system and the Storm Water Retention Facility (SWRF) in June 1999, GM initiated the Environmental Review of PCB Issues and Storm Sewer Interim Measures (ENCORE, 2001b). The purpose of the IM was to summarize the potential correlation between the detections of PCBs and the historical and/or current occurrence of PCBs at the Site and to provide the information required to execute a successful storm sewer rehabilitation program. The Draft Storm Sewer IM (ENCORE, 2001c) identified areas requiring the completion of additional investigation and tasks prior to proceeding with storm sewer rehabilitation efforts. These additional activities were presented in the Draft Environmental Review of PCB Issues and Storm Sewer IM (ENCORE, 2001b). The Storm Sewer Supplemental IM Report (ENCORE, 2002c) is provided as Appendix M.

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3. Environmental Setting

3.1 Location/Physiology

The Site is located in the City of Pontiac, Michigan as shown on Figure 1-1. The Site occupies portions of Sections 16, 17, 20, and 21 of Pontiac Township, Range 10E, Township 03N, in Oakland County.

The topography of the Site vicinity is characterized by relatively low relief and is defined by glacial melt deposits, as described in Section 3.8.1. The regional topography is also defined by direct or indirect glacial deposits but varies in relief, depending on depositional processes as described in Section 3.4.

3.2 Climate

Oakland County's weather is generally temperate, with an average winter temperature of 25.3° F and an average summer temperature of 70.2° F. The sun shines 38% of the time during the winter and 67% of the time in the summer. Average seasonal snowfall is 34.6 inches. Average annual precipitation is 29.7 inches with 58% (17.2 inches) occurring between the months of April and September. The average relative humidity for Oakland County is 80% (Feenstra, 1982). The prevailing winds are typically from the northwest in the winter months and the southwest in the summer months.

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3.3 Land Use and Demographic Data

3.3.1 Land Use Patterns

The Site is zoned for industrial use, and areas surrounding the Site are zoned for either residential, commercial, or industrial use (Figure 3-1). Two city-owned parks (Perry Park and Oakland Park) are located south of the Site, and one (Jaycee Park) is located to the north. Residential neighborhoods are located east and west of the Site and also near the middle portion of the Site, south of SPO.

3.3.2 Economy, Population, and Housing Trends

The economy in the Pontiac area is primarily supported by manufacturing. Manufacturing accounts for approximately 81% of total revenue for businesses located in Pontiac (U.S. Census Bureau, 1997). In addition, manufacturing provided approximately 70% of the income earned by employees working in Pontiac.

Residents of Pontiac work in several industries, including manufacturing (22%), retail (19%), health services (11%) and education (9%). Unemployment, as of 1990, was relatively high with 14% of Pontiac residents in the labor force unemployed (U.S. Census Bureau, 1990).

The population of Pontiac has steadily dropped over the last 10 years falling from 71,166 in 1990 to 66,337 in 2000 (7% drop) reflecting a downturn in manufacturing as well as a trend in migration from older urban areas like Pontiac.

With the declining population, the number of vacant housing units has increased from 1,816 in 1990 to 2,102 in 2000, even though the total number of housing units decreased from 26,593 to 26,336 over the same period. Of the 24,234 occupied housing units, 53% are occupied by the owner and 47% are occupied by renters.

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3.3.3 Site Redevelopment Plans

Portions of the Site are intended for "Brownfield" redevelopment. Currently, the U.S. Postal Service is evaluating a portion of the Demolition Area to build a 700,000 square foot distribution center. The City of Pontiac is also in the process of purchasing land for the building of city streets through portions of the Site to service future redevelopment.

3.4 Regional Geology

East-central Oakland County is characterized by glaciofluvial deposits that are common to Oakland County. The regional overburden material consists of glacial till composed mainly of clay and some sands. Overburden material is regionally underlain by shales of Early Mississippian age.

3.4.1 Overburden

Continental glaciers advanced into this area of Michigan at least twice, once in each of the last two glacial stages of the Illinoian and Wisconsinan glaciers of the Pleistocene epoch. During the Wisconsinan stage, ice sheets of the Huron-Erie glacial lobe advanced from the southeast across the area of the Site. During the advance and retreat of this ice sheet, a series of end moraines (Fort Wayne, Defiance, and Birmingham) and a thick sequence of ground moraine (glacial till) composed of clay, silt, and rock fragments were deposited in this area. As the ice sheet retreated to the southeast, large volumes of meltwater formed glacial Lake Maumee between the Fort Wayne Moraine and the retreating glacier. The ice again advanced, forming the Defiance Moraine, and subsequently retreated, forming glacial Lake Arkona. As the ice advanced yet again from the east, the Birmingham Moraine was formed.

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Aug 07, 2009 15:19

Pleistocene glaciation deposited glacial drift in a thickness of over 400 feet in parts of Oakland County. The buried bedrock surface is highly irregular. The Site is located in an area that is part of the lake plain of southeastern Michigan, formed by lakes that were ancestral to the present Great Lakes. Dunes, offshore bars, and lake-bottom sands, silts, and clays associated with the lakes are found in Oakland County. Figure 3-2 presents the regional surficial geology.

3.4.2 Bedrock

Oakland County is located along the southeast side of the Michigan Basin, a "bowl-like" feature in which the sedimentary rocks dip inward from all directions toward the center of the Lower Peninsula of Michigan.

The Coldwater Shale, of Early Mississippian age, is the first bedrock formation encountered in the area. The shale is primarily gray to dark gray. Other lithologies within this unit include red fossiliferous or nonfossiliferous shale, carbonate (limestone or dolomite), siltstone, and sandstone. Total thickness of the Coldwater Shale ranges across the Michigan Basin. In the vicinity of the Site, the unit may be up to 1,300 feet thick (Westjohn and Weaver, 1996). Located beneath the Coldwater Shale are sedimentary formations of the Berea Sandstone - Bedford Shale unit. Figure 3-3 presents the regional bedrock geology.

3.5 Regional Hydrogeology

Regional groundwater flow is typically to the south and east corresponding in general to flow within the Clinton River watershed. Water-bearing formations exist in both the unconsolidated and bedrock formations. In the

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Aug 07, 2009 15:19

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Site area, four distinct water-bearing units are identified: unconfined water table aquifer, glacial aquifer, sand and gravel outwash aquifer and bedrock aquifer. Each is described below.

Unconfined water table zone

The upper glacial deposits (till and glaciolacustrine) of the area contain an unconfined water table influenced by seasonal precipitation, local drainage patterns, and topography. The water table is located at a depth of approximately 10 to 30 feet below ground surface. The unconfined water table zone is not used for water supply purposes. The use of this zone as a potable supply is generally prohibited by Michigan Department of Public Health regulations (Part 127 of Act 368 [Groundwater Quality Control], 1978) because it is at a depth of less than 25 feet.

Glacial zone

The regional glacial till is extensive, both areally and vertically. The glacial till moraines consist of poorly stratified clays, sand, and gravel that are not laterally continuous. This material does not transmit large quantities of water, and as a result, water-bearing zones within this unit are not considered significant aquifers. However, in some areas, glacial outwash underlies the moraine material. In the vicinity of the Site, the outwash appears in a more complex, bedded sequence with the moraine. It is within these interbedded layers of outwash that larger quantities of water can be yielded over longer periods of time. Figure 3-4 identifies the Site within the regional aquifer characterization.

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Aug 07, 2009 15:19

Sand and gravel outwash zone

The regional sand and gravel aquifer is composed of glacial outwash that generally consists of beds of well-sorted sand and gravel. This regional aquifer unit underlies the glacial till and the interbedded local outwash aquifers described above at a depth of approximately 150 feet. This unit is considered the most important aquifer in the region because it provides storage for large quantities of water that can be used for both residential and industrial supplies.

Bedrock zone

On a regional basis, the Coldwater Shale and Bedford Shale are commonly considered nonproductive aquifers, typically yielding only small amounts of water. However, on a local basis, within parts of the region, the Coldwater Shale contains beds of sandstone. This occasional sandstone layer and the Berea Sandstone (where present) yield enough water for residential use. A more abundant water supply is found at greater depths but its use is impractical due to depth and significant increases in mineral content.

3.6 Surface Water/Drainage

Within the Site boundaries, surface water drainage is controlled by building and paved area drainage patterns. Storm water from the roofs of Site structures is directed through roof drains and downspouts to exterior Site surfaces or through underground piping to the storm sewer system. The majority of the site is paved, therefore a majority of the storm water runoff from exterior Site surfaces enters into catch basins that discharge to the storm sewer system. There are six storm water discharge points from the Site, as shown on Figure 3-5. The storm water outfalls from the Site are:

- Fiero Outfall 001 to Harris Lake;
- Fiero Outfall 002 to Osmun Lake via Augusta Drain;
- MFD Outfall 001 to Storm Water Retention and treatment facility then to the City of Pontiac storm sewer;
- MFD Outfall 002 to Clinton River via City of Pontiac Sewer;
- Powertrain Outfall 010 to Clinton River via City of Pontiac Sewer; and

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

- Powertrain Outfall 011 to Clinton River via City of Pontiac Sewer.

Storm water from MFD Outfall 001, which is discharged to the City of Pontiac sewer, is treated prior to discharge because of the presence of PCBs in previous samples collected from the outfall.

Regarding local surface water drainage, the nearest surface water bodies to the Site are Harris Lake, Terry Lake, and Osmun Lake, which are approximately 600 to 3,200 feet southwest to west of the Site. These lakes discharge into the Clinton River, which is located approximately 5,200 feet south of the Site.

On a regional scale, the Site is located within the Clinton River watershed, which includes an area of approximately 760 square miles within Oakland and Macomb counties. The Clinton River discharges into Lake St. Clair (approximately 25 miles to the east), which is used as a municipal water supply for the City of Detroit and surrounding communities, including the City of Pontiac.

3.7 Groundwater Use

Groundwater in the area near the Site is not used as a municipal water supply source. Local drinking water is supplied by the City of Detroit, which is obtained from Lake St. Clair.

There are no municipal drinking water supply wells within a 5-mile radius of the Site (USEPA, 2000). The area surrounding the Site is on municipal water supply from the City of Detroit (MDNR, 1987). The nearest private well is approximately 5,000 feet from the Site (Superior, 2000).

There are no production wells currently on Site. The last remaining production well was abandoned on February 27, 2002 (Montcalm Production Well).

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Aug 07, 2009 15:19

3.8 Site Geology/Hydrogeology

This section describes the geologic setting for the site based on available monitoring well and borehole data. Data developed during previous investigations along with information obtained during the implementation of the RFI were used for this assessment.

3.8.1 Site Geology

The Site overburden geology consists of four principal units: fill material, glaciolacustrine, glacial outwash, and basal till. Fill material is a generic term referring to reworked native soils, foundry sands, and imported soils resulting from preparation of the Site construction and reworking of the land over time. Glaciolacustrine deposits, composed of silts, clays with lenses of sands and gravels, are the most laterally continuous and thickest type of deposit present. Sand and gravel outwash is fairly extensive immediately above the basal till. Basal till is found across the entire site. In addition to these four units, a peat and marl unit is also present in the area of Harris Lake and the southwestern area of the Site. Subsurface stratigraphic data for the RFI are summarized in Table 3-1. Five geologic cross-sections were constructed across the Site along traverses shown on Figure 3-6. These cross-sections are labeled A-A′ (Figure 3-7), B-B′ (Figure 3-8), C-C′ (Figure 3-9), D-D′ (Figure 3-10), and E-E′ (Figure 3-11). The Site stratigraphy as depicted on these cross-sections is discussed below.

Fill Material

Regrading and construction activities at the Site have resulted in the placement of reworked native soils and imported foreign soils. Fill material is present across the areas of the Site that have had either existing or former buildings present or other construction activities (e.g., loading docks, fill areas [AOI M-5], parking lots). These fill materials consist mainly of spent foundry sand that contain a variety of debris including slag fragments and steel casings. Intermixed with the foundry sand is gravel, gray clay stringers, clayey fill material, and light

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

brown sand. Fill material, where present, can be up to 30 feet in depth but is typically between 4 to 8 feet in thickness.

In the area of the West Yard (AOI W-1), Former Central Foundry (AOI W-9), and the Railroad Marshalling Area (AOI W-10), the fill material is primarily foundry sand. In other areas of the Demolition Area, the fill material consists primarily of construction debris that was used to backfill old basements. Fill material in the remaining areas of the Site consists primarily of reworked native soils.

The fill material is thickest in the southwestern portion of the Site, primarily in the West Yard. In this area it is upwards of 30 feet thick in the area of monitoring wells MW32-99 and MWD4, as shown on cross-sections A-A′ (Figure 3-7) and B-B′ (Figure 3-8). As depicted on cross-section B-B' (Figure 3-8) the fill material extends southwest and terminates at Harris Lake. This indicates that fill material was placed in the immediate area of Harris Lake (which is supported by historical air photos and soil boring logs from soil borings completed around Harris Lake). In addition, cross-section A-A′ (Figure 3-7) shows that the fill material pinches out to the east (at the east edge of the Former Central Foundry - AOI W-9). Beneath these fill deposits in the southwestern portion of the Site and around Harris Lake, a peat and marl layer is present.

Along cross-section C-C' (Figure 3-9), the eastern portion only shows fill material at SPO (northern extent) and at Powertrain (location of previous tank excavation and backfill), whereas the area along the rest of cross-section C-C' shows native material (i.e., absence of fill material).

There is an absence of fill material across portions of the Site as shown on cross-section D-D' (Figure 3-10). The fill material becomes less continuous and not as thick farther north on the Site. In the area of AOIs M-16 and M-4, the fill material is only approximately 4 feet thick, as shown on cross-section B-B′ (Figure 3-8).

Cross-section E-E' (Figure 3-11) illustrates that the fill material is present across the West Yard and extends westward across Fiero. The fill material is approximately 10 feet thick in this area, and majority of the fill material in the area of monitoring wells MWF12-01 and MWF12-02 consists of coal from GM's power plant. Farther east from Fiero the fill material is no longer present.

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Aug 07, 2009 15:19

Glaciolacustrine Deposits Interbedded Outwash Deposits

Immediately underlying the fill material are glaciolacustrine deposits (see Figures 3-7 to 3-11). The glaciolacustrine deposits are highly variable with a wide variation in grain size and density; however, a majority of these deposits consist of clays, silts, and fine sands. The glaciolacustrine deposits are usually described as brown to gray, fine to coarse sand with varying amounts of silt and clay. Some of the glaciolacustrine deposits are composed primarily of fine to coarse sand and gravel or silt and clay. The majority of the glaciolacustrine deposits are water-bearing; however, there are areas composed primarily of clays and silts in which there is very minimal groundwater.

The glaciolacustrine deposits are present from either ground surface or immediately below the fill material down to the upper outwash deposits. These glaciolacustrine deposits range in thickness from approximately 70 feet in the northern portion of the Site, as shown on cross-sections B-B' and C-C' (Figures 3-8 and 3-9), to more than 100 feet thick in the southern portion of the Site.

Near the east-central portion of the Site there is an isolated pocket of ablation till within the glaciolacustrine deposits (Figure 3-9). The ablation till is composed of gray gravelly clay.

Found within the glaciolacustrine deposits are interbedded outwash deposits. The most prominent of these outwash deposits is shown on cross-section A-A' (Figure 3-7). This outwash deposit extends the entire length of the Site from east to west and ranges in thickness from a few feet to over 40 feet. However, this same outwash deposit extends only partway onto the Site, as seen on cross-section E-E' (Figure 3-11). This outwash deposit appears to be hydraulically connected to Harris Lake, as shown on cross-section B-B' (Figure 3-8).

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Other interbedded outwash deposits are illustrated on cross-sections A-A′ through D-D′ (Figures 3-7 through 3-10).

Upper Outwash Deposits

Immediately underlying the glaciolacustrine deposits is the first in a series of areal extensive glacial outwash deposits referred to as the upper outwash deposit. This upper outwash deposit is composed primarily of gray, fine to coarse sands and fine to coarse gravels, with some silt. This outwash deposit is continuous across the Site and is situated on top of the upper basal till unit. The upper outwash deposit ranges in thickness from 5 to 30 feet, as shown on cross-sections A-A', B-B', C-C', and D-D' (Figures 3-7 through 3-10). This upper outwash deposit dips slightly (approximately 20 feet) across the Site from the northwest to the southeast, which follows the dip of the underlying till deposits.

In the northern part of the Site, a small basal till unit is interbedded within the upper outwash deposits, as shown on cross-sections B-B' and C-C' (Figures 3-8 and 3-9). This basal till unit is only approximately 20 feet thick. From cross-sections B-B' and C-C' (Figures 3-8 and 3-9), it appears that this basal till unit is continuous across the Site from east to west but only extends a short distance south onto the Site before pinching out.

Basal Till Deposits

Basal till deposits at the Site are generally described as gray clay with silt, fine to medium sand, and some gravel. In addition to its poorly sorted (heterogeneous) grain size distribution, the till exhibits a higher density than the overlying glaciolacustrine deposits, as evidenced by increased blow counts recorded during split-spoon sampling.

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Aug 07, 2009 15:19

The basal till is present across the entire Site, as presented in cross-sections A-A', B-B', C-C', and D-D' (Figures 3-7 through 3-10). This basal till unit was encountered in all the deep monitoring wells (GWM3, GWS2, GWF4, GWP6, GWP3, GWD8, GWD9, and GWD11) installed as part of the Sitewide hydrogeologic investigation. The base of the basal till unit can only be seen in the southern portion of the Site, as shown on cross-section A-A' (Figure 3-7) where monitoring wells (DWD10 and DWD12) were advanced through the basal till into the lower outwash deposits. The basal till unit ranges in thickness from 20 to 60 feet, as shown on cross-section A-A' (Figure 3-7), and the surface of this basal till dips gently toward the southeast. The basal till is expected to act as a vertical barrier to any potential migration of groundwater or Site-related constituents.

In the southern portion of the Site, a second (lower) basal till unit is present, as depicted on cross-section A-A' (Figure 3-7). This basal till unit is generally described as gray clay, fine to medium sand, and some gravel. The thickness of the lower basal till unit could not be determined because borings in this area were not advanced deep enough to penetrate this unit. Between these two basal till units there is an outwash deposit (discussed below). The multiple sequence of basal till and glacial outwash represent a stagnation period in the retreat of the ice sheet where oscillation, retreat, and readvancement occurred.

Lower Outwash Deposits

A deeper outwash layer overlays an additional basal till unit evident only in the southern portion of the Site (deeper monitoring wells were only installed in the southern portion of the Site). These outwash deposits are composed primarily of gray, fine to coarse sands and fine to coarse gravels, with some silt. These deposits are found between the upper and lower basal till units and range in thickness from 15 to 25 feet. Only the deep monitoring wells (DWD10, DWD12, and DWD13) were installed within these lower outwash deposits.

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3.8.2 Site Hydrogeologic Setting

Unconfined Water Table Zone

Groundwater is present in the fill material and unconfined glaciolacustrine deposits at the Site. Groundwater elevation measurements were obtained periodically throughout the duration of the RFI. As additional monitoring wells were installed and surveying was completed, subsequent rounds of groundwater level measurements were collected. These data are presented in Table 3-2 and include water levels obtained on October 1 and 2, 2001; October 8 and 9, 2001; November 7 and 8; 2001, January 2 and 3, 2002; and February 7 and 8, 2002. Top of water table groundwater maps (Figure 3-12) for February 7 and 8, 2002 (Figure 3-12) and January 2 and 3, 2002 (Figure 3-12b) were generated for the unconfined water table from data presented in Table 3-2. Site groundwater is typically found at depths ranging from 4 to 35 feet below ground surface (bgs) in this zone. In general, the groundwater flow direction follows the topography of the Site, with the apparent horizontal component of the groundwater flow to the southwest toward a series of small lakes (Harris, Terry, and Osmun). The horizontal hydraulic gradient across the Site is 0.0047 (as calculated from MWS1 to MWD6). These monitoring wells are located in the northeast and southwest corners of the Site, respectively, along the main axis of groundwater flow. However, there are localized groundwater flow variations as shown on Figure 3-12. In the area of Former Plant 9 (AOI W-8), there is a large groundwater depression at monitoring well MWW8-03. There is a large sewer (72-inch diameter) that is located in this immediate area, which suggests that the sewer is leaking and acting as a groundwater collection point. There is a large groundwater mound located in the area of the West Yard (AOI W-1) and Railroad Marshalling Area (W-10), which is most likely associated with the storm sewer system below the tracks, which has been plugged.

Located in the southwest portion of the Site is a groundwater seep along Montcalm Avenue east of the Saginaw gate. Monitoring wells MWW1-02 and MWW1-03 were installed along the seep (Figure 3-12). The data presented in Table 3-2 indicate that the groundwater elevation is at ground surface. In this area, the topography drops off and intercepts the water table, creating the seepage. This area is hydraulically at the downgradient portion of the Site.

In addition to the localized groundwater flow onsite, there are also Site areas where groundwater was not present within the interval targeted for well placement. At monitoring wells MWM25-01, MWM9-01, MWP6-05, MWP6-06, and MWP6-08, groundwater failed to recharge after installation. This is due to the fact that the glaciolacustrine deposits in the immediate areas where the wells were installed are not abundant in water-bearing materials (sands) and more abundant in clays and silts. There are also areas in which underground storage tanks (USTs) (AOIs M-4 and P-6) were removed as part of previous remedial actions. These excavations are backfilled with imported sand (cross-sections B-B' and C-C', Figures 3-8 and 3-9), which may support a perched groundwater system.

Glaciolacustrine Zone

Intermediate groundwater monitoring wells (IWF3, IWP2, IWP5, IWM2, and IWD7) were installed in the glaciolacustrine deposits as part of the Sitewide hydrogeologic investigation. These intermediate monitoring wells were installed in well clusters with monitoring wells installed in the unconfined water table and the upper sand and gravel outwash zone to allow for determination of vertical groundwater flow information. Water levels were obtained from these monitoring wells with these data presented in Table 3-2. During the RFI groundwater monitoring well IWP2 was dry due to the tight nature of the soils the well screen is situated in.

Upper Sand and Gravel Outwash Zone

Groundwater level measurements were collected periodically throughout the duration of the RFI. As additional monitoring wells were installed and surveying was completed additional groundwater level measurements were collected. These data are presented in Table 3-2. A groundwater potentiometric map (Figure 3-13) for February 7 and 8, 2002 was generated for the upper sand and gravel outwash aquifer from data presented in Table 3-2.

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The groundwater potentiometric surface in the sand and gravel aquifer is typically measured at depths ranging from 40 to 75 feet. In general, the horizontal component of the groundwater flow is to the south-southeast toward the Clinton River, which is the regional groundwater discharge point. The horizontal hydraulic gradient across the Site is 0.0045 (as calculated from GWM3 to GWP3). These monitoring wells are located in the northwest and southeast corners of the site, respectively, along the main axis of groundwater flow.

Lower Sand and Gravel Outwash Zone

A total of three groundwater monitoring wells (DWD10, DWD12, and DWD13) were installed in the lower sand and gravel outwash zone. One round of groundwater level measurements was obtained with these data presented in Table 3-2. Based on these data, the groundwater flow direction is similar to the upper sand and gravel zone, being toward the southeast.

Vertical Groundwater Flow

To determine vertical groundwater flow at the Site, equipotential lines were plotted and a flow net was developed on each of the cross-sections for the Site (Figures 3-7 to 3-11). As shown on each of the cross-sections, groundwater flow in the glaciolacustrine and upper outwash deposits (above the basal till) is primarily downward.

Vertical hydraulic gradients were calculated for each of the nested sets of monitoring wells across the Site. The vertical gradients were calculated for the water table monitoring well and the corresponding monitoring well installed in the upper sand and gravel outwash zone in each set (GWM1 and GWM3, MWS1 and GWS2, MWF2 and GWF4, MWD6 and GWD8, MWP4 and GWP6, and MWP1 and GWP3). In addition, the vertical hydraulic gradients were calculated based on two sets of monitoring wells constructed in the upper and lower sand and gravel outwash (GWD9 and DWD10 and GWD11 and DWD12).

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In all instances, the vertical gradient is downward. The vertical hydraulic gradient between the water table zone and the upper sand and gravel outwash monitoring wells located on the north and west sides of the Site ranges from 0.37 to 0.47 (MWM1 and GWM3 - 0.38, MWS1 and GWS2 - 0.38, MWF2 and GWF4 - 0.42, and MWD6 and GWD8 - 0.37). The vertical hydraulic gradient between the water table zone and the upper sand and gravel outwash monitoring wells located on the north and east central and southeastern sides of the Site ranges from 0.65 to 0.71 (MWP4 and GWP6 - 0.65, and MWP1 and GWP3 - 0.71). The vertical hydraulic gradients between the monitoring wells installed in the upper and lower sand and gravel outwash zones were 0.12 between monitoring wells GWD9 and DWD10 and 0.37 between monitoring wells GWD9 and DWD10.

3.8.3 In-situ Hydraulic Conductivity Test Results

Hydraulic conductivity values were estimated from the data obtained from monitoring wells during low-flow sampling. In addition, in-situ rising-head hydraulic conductivity tests (slug tests) were also performed on a select number of monitoring wells installed during the RFI for which the above method was unable to give an accurate determination of the hydraulic conductivity.

During the first and second rounds of groundwater sampling, select parameters were recorded at regular intervals during low-flow purging and sampling for each monitoring well. In addition to the water quality parameters (e.g., temperature, turbidity, and pH), additional parameters were also recorded. These parameters included time purging was initiated, initial water level and water levels during purging, purge rate, time purging was completed, and total volume purged. In-situ horizontal conductivity values were calculated for each of the monitoring wells using the QSTRANSX program for unconfined, partially penetrating overburden wells (for the monitoring wells that straddle the water table) or for partially confined overburden wells (for the monitoring wells that were installed in the deeper sand and gravel outwash aquifer). A summary of hydraulic conductivity data for the monitoring wells at which hydraulic conductivity tests were conducted is presented in Table 3-3. The calculations and field data are presented in Appendix C.

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Rising-head hydraulic conductivity tests (slug tests) were performed on select wells, which did not exhibit drawdown during low flow sampling due to their unanticipated high yield. These slug tests were performed in accordance with ASTM D4044-96. In-situ horizontal conductivity values were calculated for each of the monitoring wells using the AQTESOLV® program for unconfined, partially penetrating overburden wells (for the monitoring wells that straddle the water table) or for partially confined overburden wells (for the monitoring wells that were installed in the deeper sand and gravel outwash aquifer).

The range of hydraulic conductivities of the monitoring wells installed in the unconfirmed water table zone is 1.5×10^{0} to 2.34×10^{-5} cm/sec. The range of hydraulic conductivities in the intermediate zone (glaciolacustrine deposits) is 2.5×10^{-4} to $< 10^{-7}$ cm/sec (based on dry well IWP2). The range of hydraulic conductivities in the upper and lower sand and gravel zones are 4.3×10^{-1} to 1.1×10^{-4} cm/sec and 1.6×10^{-3} to 6.0×10^{-3} cm/sec, respectively.

3.9 Background Soil Characterization

Background soil samples were collected during the RFI to characterize naturally occurring levels of metals in soil at the Site. Consistent with the RFI Work Plan, background soil samples were collected from six locations where no manufacturing or management of production materials or wastes are known to have occurred. The locations where the background soil samples were collected are shown in Figure 3-4. At each location, one sample was collected from 0 to 2 ft bgs, another from 6 to 8 ft bgs, and another was collected from just above the water table. The boring logs for these samples are provided in Appendix D and the analytical data are provided in Appendix E.

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Aug 07, 2009 15:19

The concentrations of metals in the samples from the 0 to 2 ft bgs interval are the most representative of background exposures to metals in soil because surface soil is encountered more often than deeper soil. Therefore, the data from the surface interval are used in calculating background soil concentrations for the Site. The metal concentrations in background soil from the surficial soil are summarized in Table 3-4, which also include summary statistics describing the concentration distributions. Table 3-4 also includes statistical prediction limits for determining whether concentrations of metals from elsewhere at the Site are within background levels, and MDEQ's Part 201 mean background concentrations for metals in soil. Prediction limits were not calculated for antimony, cadmium, mercury, selenium, or thallium, because these metals were either not detected or did not have enough detected concentrations to calculate prediction limits.

The upper prediction limits on the table are nonparametric bootstrap prediction limits (Efron and Tibshirani 1998) calculated from 6,000 bootstrap replications and at a 0.01 level of significance. Nonparametric bootstrap statistical limits are more reliable than parametric statistical limits because, unlike parametric limits, they do not rely on assumptions about distribution shapes that are often difficult to justify. A concentration of a metal lower than or equal to its upper prediction limit is considered to be within background levels; a concentration higher than its upper prediction limit is considered to be higher than background levels.

The higher of the MDEQ background soil concentration or the calculated prediction interval was used for comparisons with metal concentrations in samples from elsewhere at the Site, except for arsenic and zinc. The calculated prediction interval for arsenic and zinc appear higher than their expected background ranges, so the highest concentration detected among the background samples are used instead.

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4. Investigation Results and Discussion

The results of the field investigations conducted during the RFI are discussed in this section. The discussion is divided into subsections corresponding to the AOIs and off-site areas that were investigated. Each subsection includes a description of the areas investigated, the scope of the field investigations, a summary of the results, and discussion of the results with respect to whether a potentially significant release of hazardous constituents has been identified and if so, the nature and extent of the release.

The identification of a potentially significant release at an area is based on comparison of the characterization data collected during the RFI with generic risk-based screening criteria. The approach for evaluating the soil, groundwater, sediment, and surface water data is discussed below.

Soil

The soil characterization data are compared with screening criteria that are based on the Michigan Part 201 generic cleanup criteria that the MDEQ has developed under the authority of the Natural Resources and Environmental Protection Act (NREPA) (1994 PA 451, as amended). The specific Part 201 criteria used for identifying soil contamination are those based on direct contact, inhalation of soil vapor and particulate in ambient air, and inhalation of soil vapor in indoor air (MDEQ 2000).

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Aug 07, 2009 15:19

For the evaluation of soil data from the AOIs and the seep at the southern Site boundary (which are located on-site), the Part 201 criteria for evaluating soil at industrial sites are used. These criteria are appropriate based on current and reasonably expected future land use at the Site, as discussed in Section 2.3. For the evaluation of soil data from Harris Lake and the Pontiac School Board property (which are located off-site), the Part 201 criteria for evaluating soil at residential sites are used, although neither area is currently residential. Both the industrial and residential Part 201 criteria were derived by the MDEQ based on a cancer risk of 10^{-5} and a hazard quotient (HQ) of 1, and use. They are also derived from exposure factors that reflect conservative assumptions about the magnitude, frequency, and duration of exposures, which in combination are intended to provide estimates of exposures that are higher than actual exposures to a large portion (90% to 99%) of the population.

A potentially significant release is identified at an area when the highest concentrations of the constituents detected in soil at the area are higher than these screening criteria. It should be noted that an area with constituents at concentrations in soil that are higher than these screening criteria does not mean that it necessarily poses an unacceptable risk; it only means that the potential for the area to pose an unacceptable risk should be evaluated considering site-specific factors. The site-specific evaluation of potential risks posed by constituents in an area where a potentially significant release is identified is addressed by further risk-based evaluations that are discussed in Section 5.

Groundwater

In a manner similar to that discussed above for screening soil characterization data, the groundwater monitoring data collected during the RFI are compared with generic risk-based screening criteria to identify whether a potentially significant release from an area to groundwater has occurred. The groundwater monitoring data are compared with screening criteria based on the Michigan Part 201 generic cleanup criteria that the MDEQ has developed under the authority of the NREPA. The specific Part 201 criteria used for identifying groundwater contamination in all three saturated zones are those based on residential drinking water use (MDEQ 2000), although none of these saturated zones currently serve as a drinking water supply for the Site. In addition, the Part 201 criteria based on inhalation of groundwater vapor in indoor air and the criteria based on direct contact by workers conducting excavations (MDEQ 2000) are also used to identify contamination in the shallow saturated zone, which is within approximately 10 ft below ground surface at some parts of the Site. Inorganic

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Aug 07, 2009 15:19

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data from both dissolved and total concentrations were developed for the Site. A comparison of these data is provided in Appendix L. For the purpose of this RFI, the dissolved inorganic data was utilized.

It should be noted that the groundwater screening criteria described above include criteria that are designed to be protective of potential exposures via drinking water use and represent highly conservative screening criteria for evaluating groundwater that is not a current or reasonably expected future drinking water supply. Therefore, the presence of groundwater with constituent concentrations higher than these generic screening criteria does not mean that the groundwater necessarily poses an unacceptable risk; it only means that the potential for the groundwater to pose an unacceptable risk should be evaluated considering site-specific factors. The site-specific evaluation of potential risks posed by constituents in groundwater where a potentially significant release is identified is addressed by further risk-based evaluations that are discussed in Section 5.

Sediment and Surface Water

Generic risk-based screening criteria for evaluating the significance of potential exposure to sediments and surface water are not well established. Therefore, as a conservative approach to the identification of a potentially significant release to sediment and surface water, the sediment and surface water characterization data collected during the RFI are compared with the generic risk-based screening criteria described above for evaluating the soil and groundwater characterization data, respectively.

Discussion of the RFI field investigations in the following subsections begins with data collected as part of the site-wide hydrogeologic investigation that are not located at a specific AOI. Then the data collected at the AOIs located at the Fiero Plant are discussed, followed by discussion of the data collected at the Demolition Area, the Metal Fabrication Division, Powertrain, and discussion of data collected at the off-site areas. Each subsection includes tables comparing the RFI characterization data for an area with the screening criteria discussed above. In addition, the tables also compare the RFI data at the AOIs with more conservative screening criteria based on the Part 201 criteria for residential soil. These additional comparisons are provided as another point of reference only, and are not used as bases for identifying the presence of a potentially significant release because these criteria are unnecessarily conservative for this Site, as discussed above. Each subsection also includes figures that show the spatial distribution of the RFI data for constituents having at least one concentration higher than the most conservative screening criteria in any media at any AOI. Tables 4-1 through 4-3 present a listing of the Site-specific constituents of concern (COC). The figures for the off-site areas show the spatial distribution of the RFI data for constituents having at least one concentration higher than the screening criteria in the media sampled at those areas.

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Aug 07, 2009 15:19

4.1 Sitewide Hydrogeologic Study

A Sitewide hydrogeologic investigation was performed as the initial work activity for the RFI. Based on the limited amount of available information on the Site hydrogeologic setting, the implementation of the Sitewide study was crucial to understanding Site hydrogeologic conditions as a basis for AOI investigations. The intent of the Sitewide study is to provide the following information:

- Groundwater flow directions in the upper water table groundwater system;
- Groundwater flow direction in the lower sand and gravel zone;
- Vertical hydraulic gradients between the upper water table zone, the intermediate glaciolacustrine zone, and the upper sand and gravel zone;
- Hydraulic conductivity values for the upper water table zone, the intermediate glaciolacustrine zone, and the upper sand and gravel zone;
- Influence of the storm sewer system on groundwater flow; and
- Sitewide groundwater quality for the upper water table zone, the intermediate glaciolacustrine zone, and the upper sand and gravel zone.

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To provide these data, the Sitewide investigation consisted of installation of wells at 12 locations across the site with up to three wells per location (upper water table, intermediate clay/till, and lower sand and gravel zone). An additional seven water table wells were installed close to the main storm sewer system to obtain data on localized influence of the storm sewer on groundwater elevations. Locations of these wells are shown on Figures 4-1 through 4-5.

4.1.1 Scope and Results

The scope of the field investigations involved collection of soil and groundwater samples to determine the general condition of the Site as a whole.

The following is a summary of the Sitewide sampling activities completed for each medium. Where a well or boring has been assigned to an individual AOI, that location and associated data are discussed in the specific AOI section. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted.

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Soil Boring Samples

Locations of soil borings associated with the Sitewide hydrogeologic investigation are shown on Figure 4-7. These locations are representative of areas not associated with an AOI and include locations SB-01, SB-02, SB-03, MWM1, GWM3, MWM4, MWF2, MWM6, MWM7, MWF1, MWP1, MWM9, GWP6, IWP5, and GWS2. Soil samples were submitted for laboratory analysis for VOCs, SVOCs, and inorganics. Soil samples from GWM3, GWP6, GWS2, MWF1, and MWF2 were also analyzed for PCBs based on historic usage of PCBs near these locations. Four additional soil borings (BP-01 through BP-04) were installed near GWP6 to evaluate arsenic concentration in soils. Boring logs are provided in Appendix D. All other soil boring locations initially installed as part of the Sitewide hydrogeologic investigation are now associated with an AOI, and these data are discussed in the AOI-specific section.

Groundwater Samples

Two rounds of groundwater quality samples were obtained from three hydrostratigraphic intervals (water table, intermediate, and upper sand and gravel.) The water table wells included MWM1, MWM4, MWM5, MWM6, MWM7, MWF1, MWF2, MWP1, MWM9, MWP4, and MWS1. Intermediate wells included IWM2, IWF3, and IWP5. Upper soil and ground zone wells included GWM3, GWF4, GWP3, GWP6, and GWS2. Locations of these are shown on Figure 4-8. Groundwater quality samples were submitted for laboratory analysis for VOCs, SVOCs, and inorganics. Select wells (MWM5, MWM6, MWM7, and MWM9) also included PCB analysis based on historic usage of PCBs near these locations. All other groundwater monitoring wells installed as part of the Sitewide hydrogeologic investigation are now associated with an AOI, and these data are discussed in the AOI-specific section.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	24	30	30	10	30
Groundwater – Water table	11	22	22	36	23
Groundwater – Intermediate	3	5	9	8	3
Groundwater – Upper Sand & Gravel	5	12	12	12	8

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Aug 07, 2009 15:19

Summaries of the analytical data for the soil, shallow groundwater, and intermediate and deep groundwater samples are shown in Tables 4-4, 4-5 and 4-6, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.1.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

Of the constituents detected in the selected Sitewide soil boring samples, only arsenic and manganese were detected at concentrations that exceed screening criteria. Arsenic was detected in the sample collected from the 0 to 2-foot interval of GWP6 at a concentration of 134 mg/kg, which exceeds the Industrial Direct Contact (IDC) of 61 mg/kg. Because this concentration is unusually high and no source of arsenic could be identified in the area, a new sample was collected from the 0 to 2-foot interval at GWP6 and four borings, BP-01 through BP-04, located at a radius of approximately 5 feet from GWP6 to verify this result. The concentration of arsenic in the new sample at GWP6 is 5.36 mg/kg and the concentrations in the four surrounding samples range from 2.66 to 5.17 mg/kg. The original concentration of 134 mg/kg was not confirmed by the verification samples, and, therefore, is considered an anomaly. Accordingly, the arsenic concentration at GWP6 is best represented by the average of the concentration among the five verification samples (i.e., 4.3 mg/kg).

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Groundwater Samples

There were no constituents detected in the groundwater samples from the Sitewide water table wells detected at concentrations that exceed screening criteria.

Of the constituents detected in the groundwater samples from the Sitewide intermediate wells, only acetone and bis(2-ethylhexyl)phthalate were detected at concentrations that exceed screening criteria. Acetone concentrations that exceed the IDWC of 2.1 mg/L were detected in second-round samples submitted from IWF3, IWM2 and IWP5, with a maximum concentration of 13 mg/L.

Of the constituents detected in the groundwater samples from the Sitewide upper sand and gravel wells, only acetone was detected at concentrations that exceed the screening criteria. Acetone concentrations that exceed the IDWC of 2.1 mg/L were detected in first-round sample submitted from GWP6, with a maximum concentration of 7.1 mg/L.

A summary of groundwater monitoring well locations and analytical results showing locations of applicable exceedances is presented on Figure 4-8.

4.1.3 Conclusions

It is likely that the presence of acetone in the intermediate and upper sand and gravel wells is a result of residual contamination from the bentonite pellets used for well construction (see Appendix G) and is not representative of actual groundwater quality.

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Groundwater Samples

Two rounds of groundwater samples were collected from one monitoring well (MWF15-01) with its location shown on Figure 4-10. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	3	9	9	9	9
Groundwater	1	2	2	2	2

Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-15 and 4-16, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

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Aug 07, 2009 15:19

4.2.6.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of constituents detected in the soil borings from AOI F-15 exceed screening criteria in the sample collected from 0 to 2-foot interval from soil boring BF15-02. Tetrachloroethene (PCE) was detected in this sample at a concentration of 81 mg/kg, which exceeds the Industrial Soil Volatilization to Indoor Air Inhalation Criteria (ISVIC) of 60 mg/kg. 1,1-Dichloroethene was detected at a concentration of 2.2 mg/kg, which exceeds the ISVIC of 0.33 mg/kg.

Groundwater Samples

The concentrations of constituents detected in both the first and second rounds of groundwater sampling from AOI F-15 do not exceed screening criteria. A summary of the groundwater monitoring well location and analytical data is shown on Figure 4-10.

4.2.6.3 Conclusions

The RFI soil data from AOI F-15 indicate that a release exceeding screening criteria has occurred at AOI F-15. Concentrations of constituents detected in groundwater do not exceed screening criteria.

Table 2-1 presents a summary of the data, conclusions, and proposed activity for this AOI.

4.3 Demolition Area

4.3.1 West Yard (AOI W-1)

AOI W-1 consists of the West Yard, an area of approximately 20 acres located in the southwest corner of the DA. It is bounded to the south by Montcalm Avenue, to the west by the Grand Trunk Western Railroad, to the

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east by the former Foundry (Plant 6) and to the north by the former Plant 9 (demolished in 1997). The West Yard area also includes the former A-1 fill area.

The investigation of AOI W-1 includes various smaller investigations that are being conducted within the West Yard. These include the investigation of the Montcalm Production Well and the seepage face along Montcalm Avenue, as well as a downgradient property boundary groundwater investigation.

The Montcalm Production Well, located in the West Yard is approximately 180 feet deep and was predominantly screened in the sand and gravel zone beneath a basal till layer (approximately 120-180 bgs). LNAPL has historically been observed in this well.

A groundwater seep is present along the southwest corner of the West Yard along Montcalm Avenue. This groundwater seep is due to the ground surface intersecting the top of the water table.

4.3.1.1 Scope and Results

The scope of the field investigations at AOI W-1 involved installation of soil borings to collect groundwater, seep water, soil, and LNAPL samples to further characterize the previously identified soil and groundwater contamination in this area.

The following is a summary of the sampling activities conducted for each medium at AOI W-1. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted.

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Aug 07, 2009 15:19

Shallow Soil Boring Samples

Four soil borings (BW1-01 through BW1-04) were completed per the RFI Work Plan (ENCORE, 2001d) in areas of historic burn and fill operations for which subsurface soil data do not exist. These samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and dioxins. Six additional soil borings were completed per Work Plan Addendum #3 (ENCORE, 2002b). Three soil borings (BW1-07 through BW1-09) were completed to delineate soil in the vicinity of BW1-04 that exceeds screening criteria. One soil boring (BW1-05) was completed to delineate the southern portion of the AOI. The samples from these four borings were submitted for laboratory analysis for chromium, hexavalent chromium and manganese. Two soil borings (BW1-06 and BW1-10) were installed to verify sampling results from previous investigations. The samples from these two soil borings were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and dioxins. Soil boring BW1-11 was installed to verify the historic presence of dioxins between previously installed wells SBTT4 and SBDW22. In addition, BW1-05 was resampled at a depth of 0 to 2 feet to verify the historic presence of dioxins. Boring locations are shown on Figure 4-12.

Soil borings associated with the installation of four monitoring wells (MWW1-01 through MWW1-04) are shown on Figure 4-12. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, total cyanide and dioxins. Soil samples were not collected from monitoring wells MWW1-02 and MWW1-03 which were installed near the groundwater seep. Soil boring logs are provided in Appendix D.

Deep Soil Boring Samples

A deep soil boring (BD6) was completed to determine if LNAPL was present throughout the screened interval of the Montcalm Production Well as presented in Work Plan Addendum #3. Samples were collected at the following intervals: 0 to 2 feet, 8 to 10 feet, 76 to 78 feet, 98 to 100 feet and 134 to 136 feet. The samples from this boring were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

Monitoring wells DWD13 and GWD8, installed as part of the Sitewide hydrogeologic investigation, are included in this discussion due to their proximity to AOI W-1. Soil samples were collected from DWD13 and GWD8 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, and inorganics.

The soil boring locations are shown on Figure 4-12.

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Test Pit Samples

Three composite samples (TPW1-01 through TPW1-03) were collected from test pits excavated to characterize the fill placed in the former settling basin. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, and cyanide (Figure 4-12).

LNAPL Samples

LNAPL samples were obtained from two existing wells MW24-99 and MW36-99. An LNAPL sample was originally scheduled to be collected from MW-22, however there was no LNAPL detected in this well at the time of sampling, therefore, MW36-99 was substituted for LNAPL sample collection. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, total cyanide and dioxins.

Groundwater Samples

Two rounds of groundwater samples were collected from one newly installed monitoring well (MWW1-01) and eleven previously existing downgradient wells (MW-10, MW-19, MW28-99, MW29-99, MW30-99, MW31-99, MW33-99, MW34-99, MW39-99, MW40-99 and MW42-99). One round of groundwater samples was collected from monitoring wells MWW1-02 through MWW1-04. Groundwater samples could not be collected from MW-6 due to the presence of LNAPL at the time of sampling. MWW1-02 and MWW1-03 were installed to provide groundwater data at the seepage face along Moncalm Avenue. MWW1-04 was installed at the most southwestern point of the West Yard and DA to provide groundwater data at the downgradient property line. Well locations are shown on Figure 4-13. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and dioxins.

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Aug 07, 2009 15:19

MWW1-01 was also used to determine if any contamination is present due to historical activities at AOI W-11.

Monitoring wells DWD10, GWD9, GWD8, IWD7, and MWD6 were installed as part of the Sitewide hydrogeologic investigation and due to their proximity to AOI W-1, are included in this discussion. Groundwater samples were collected from DWD10, GWD9, GWD8, IWD7, and MWD6 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Total Cyanide	Dioxins	Mn	Cr (total)	Cr (VI)
Soil Boring	16	44	44	44	44	20	26	12	12	12
Test Pits	3	3	3	3	3	3				
LNAPL	2	2	2	2	2	2	2	0	0	0
Groundwater	21	28	28	28	28	26	26	0	0	0

Summaries of the analytical data for the soil, LNAPL, shallow groundwater, and deep and intermediate groundwater samples are shown in Tables 4-17, 4-18, 4-19, and 4-20, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.1.2 Discussion of Results

The concentrations of constituents detected in soil, and groundwater and LNAPL were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

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Shallow Soil Boring Samples

The concentrations of constituents detected in shallow soil samples collected from AOI W-1 as part of the RFI exceed screening criteria for chromium (total), total PCBs, lead, manganese, and dioxins. No VOC or SVOC concentrations exceed screening criteria.

Lead exceeds the IDC of 900 mg/kg at BW1-01 (8 to 10 feet) with a concentration of 3,950 mg/kg. Manganese exceeds the IPSIC of 1,500 mg/kg at locations BW1-02 (0 to 2 feet, 6,330 mg/kg); BW1-03 (4 to 6 feet, 4,250 mg/kg); BW1-04 (0 to 2 feet, 2,090 mg/kg); BW1-05 (0 to 2 feet, 1,900 mg/kg); BW1-07 (0 to 2 feet, 4,620 mg/kg); BW1-08 (11 to 13 feet, 7,040 mg/kg); and BW1-09 (0 to 2 feet, 3,670 mg/kg; 19 to 21 feet, 1,540 mg/kg). Chromium (total) exceedances include BW1-01 (8 to10 feet, 1,520 mg/kg), BW1-03 (4 to 6 feet, 639 mg/kg), SSTT02 (o to 2 feet, 251 mg/kg), SSTT05 (0 to 2 feet, 940 mg/kg), SSTT04 (0 to 2 feet, 1,660 mg/kg), and SBTT4 (3 to 10 feet, 340 mg/kg).

Total PCB concentrations exceed the IDC of 20 mg/kg at BW1-01 (8 to 10 feet, 46 mg/kg) and BW1-10 (8 to 10 feet, 62.69 mg/kg; 12 to 14 feet, 25.01 mg/kg).

One shallow soil sample (BW1-01, 8 to 10 feet) exhibited an exceedance for dioxins. The calculated 2,3,7,8-TCDD TEQ of 1.89 x 10^{-3} mg/kg at this location exceeds the IDC of 9.9 x 10^{-4} mg/kg.

In addition, several soil samples were collected from the AOI W-1 area between 1995 and 1999. The concentrations of constituents detected in the historic soil samples from AOI W-1 exceed the screening criteria for butyl benzyl phthalate, chromium (total), total PCBs, antimony, arsenic, lead and manganese. Butyl benzyl phthalate was detected above screening criteria (IDC, 310 mg/kg) in the soil sample collected from SBTT3 at 5 feet. Concentrations of constituents detected in three subsurface soil samples exceed the IDC of 20 mg/kg for total PCBs: SBTT3 (92.8 mg/kg, 5 feet); and SBMW20 (47.5 mg/kg, 23 feet).

Four inorganics were detected at concentrations that exceed the screening criteria. Arsenic exceeds the IDC of 61 mg/kg in one surface sample collected from SSTT5 (67.1 mg/kg); antimony exceeds the IDC of 1,200 mg/kg in one subsurface sample collected from SBSB5 (1,740 mg/kg, 4 feet); and lead exceeds the IDC of 900 mg/kg in subsurface samples collected from SBMW22 (1,350 mg/kg, 16 feet) and SBWD2 (1,300 mg/kg, 24 feet). Manganese was detected in 10 soil samples at concentrations that exceed the IPSIC of 1,500 mg/kg. Manganese exceeds the screening criteria at the following surface soil sample locations: SSTT1 (2,080 mg/kg); SSTT5 (4,600 mg/kg); SSTT4 (4,490 mg/kg); SSTT2 (2,040 mg/kg)) and at the following subsurface soil sample locations: (SBMW22 (3,900 mg/kg, 16 feet); SBTT3 (1,990 mg/kg, 5 feet); SBTT4 (1,690 mg/kg, 3 feet); SBTT5 (1,790 mg/kg, 3 feet); SBSB5 (3,510 mg/kg, 4 feet). A summary of soil sample locations and analytical results is shown on Figure 4-12.

Deep Soil Boring Samples

The concentrations of constituents detected in the deep soil samples collected from AOI W-1 do not exceed screening criteria. A summary of the analytical results are presented on Figure 4-12.

Test Pit Samples

The concentrations of constituents detected in the test pit soil samples do not exceed screening criteria, with the exception of manganese, which was detected in TPWI-02 (2,080 mg/kg), exceeding the IPSIC of 1,500 mg/kg.

LNAPL Samples

Part 201 screening criteria do not exist for LNAPL, therefore, all constituents detected in LNAPL are discussed below without a comparison to screening criteria.

Fifteen VOCs were detected in the two LNAPL samples collected from AOI W-1. Acetone, benzene, isopropyl benzene, ethylbenzene, methyl cyclohexane and xylene were detected in both samples. 1,2-dichlorobenzene, 2

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butanone, cis-1,2-dichloroethene and tetrachloroethene were detected in the sample collected from MW36-99, while methylene chloride was detected in the MW24-99 sample only.

Eighteen SVOCs were detected in the LNAPL samples. 2-Methyl naphthalene, fluoranthene and phenanthrene were detected in both samples. Acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, fluorene and pyrene were detected in the sample collected from MW24-99, while di-n-butylphthalate was detected in MW36-99 only.

Twenty-one inorganics were detected in the W-1 LNAPL samples. Aluminum, arsenic, barium, cadmium, calcium, chromium, copper, cyanide, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, vanadium and zinc were detected in both samples. Antimony and beryllium were detected in the MW36-99 sample and cobalt was detected in the MW24-99 sample only.

PCBs and dioxins were detected in both LNAPL samples collected from MW36-99 and MW24-99.

Further LNAPL discussions, including delineation of horizontal extent and fingerprint analysis are presented in Section 4.8.1.

Groundwater Samples

The concentrations of constituents detected in groundwater samples collected from AOI W-1 and associated Sitewide wells exceed screening criteria for 3 VOCs (acetone, benzene and vinyl chloride), 1 SVOC (bis(2-ethylhexyl)phthalate), 3 inorganics (antimony, barium, and thallium), total PCBs, and dioxins.

Acetone was detected in the first groundwater sample collected from GWD8 (screened between 63 to 73 feet) at a concentration of 3.1 mg/L, which exceeds the IDWC of 2.1 mg/L. The second groundwater sample collected from GWD8 had an acetone concentration that does not exceed the screening criteria. Benzene concentrations measured in groundwater samples exceed the IDWC of 0.005 mg/L in both samples collected from 3 locations: MW33-99 (0.0062 mg/L; 0.01 mg/L), MW34-99 (0.0073 mg/L; 0.0093 mg/L) and MW42-99 (0.082 mg/L; 0.091 mg/L). These locations are downgradient of the LNAPL area. Vinyl chloride concentrations measured in groundwater samples exceed the IDWC of 0.002 mg/L in both samples collected from 3 locations: MW31-99 (0.018 mg/L; 0.0043 mg/L), MW34-99 (0.0056 mg/L; 0.0078 mg/L) and MW42-99 (0.0031 mg/L; 0.0025 mg/L).

Bis(2-ethylhexyl)phthalate was detected in the second round groundwater sample at IWD7 (0.0088 mg/L, 30 to 40 feet) at a concentration that exceeds the IDWC (0.006 mg/L). In the first groundwater sample collected from IWD7, bis(2-ethylhexyl)phthalate was not detected above method reporting limits.

Antimony concentrations exceed the IDWC of 0.006 mg/L in three first round samples collected from MW19 (0.0079 mg/L), MWW1-01 (0.0069 mg/L) and MW34-99 (0.0073 mg/L). The second round samples collected from MW19, MWW1-01 and MW34-99 did not show detections for antimony at the method quantitation limits. Barium was detected above the IDWC and RDWC of 2 mg/L in both samples collected from MW28-99 (3.55 mg/L; 4.07 mg/L). Five first round samples exceeded the IDWC and RDWC of 0.002 mg/L for thallium: MW10 (0.0053 mg/L), MW30-99 (0.0091 mg/L), MW31-99 (0.0064 mg/L), MW33-99 (0.0066 mg/L) and MWW1-01 (0.0054 mg/L). The second round samples collected from MW30-99, MW31-99, MW33-99 and MWW1-01 were non-detect for thallium at the method quantitation limits. Thallium was detected in the second round sample collected from MW10, but at a concentration that does not exceed screening criteria.

The IDWC for total PCBs of 0.0005 mg/L was exceeded in the 2 samples collected at MW39-99 (0.004 mg/L; 0.005 mg/L) and the sample collected from MWW1-04 (0.0008 mg/L).

Dioxins were detected in two pre-RFI monitoring wells. Second-round samples collected from MW-28-99 (1.77×10^{-8} mg/L) and MW-34-99 (2.16×10^{-8} mg/L) exhibited exceedances of the Groundwater Contact Criteria (GCC) for the 2,3,7,8-TCDD TEQ of 1×10^{-5} mg/L.

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4.3.1.3 Conclusions

The RFI soil and groundwater data and the presence of LNAPL at AOI W-1, indicate that a release exceeding screening criteria has occurred at AOI W-1. Historically, butyl benzylphthalate, chromium (total), total PCBs, antimony, arsenic, lead, manganese, and dioxins have exceeded screening criteria in the West Yard. RFI shallow soil samples exceeded screening criteria for chromium (total), total PCBs, lead, manganese, and dioxins. The manganese impacted areas have not been delineated.

Concentrations of constituents detected in shallow groundwater exceed screening criteria for benzene, vinyl chloride, antimony, barium, thallium, total PCBs, and dioxins. Total PCBs were detected at a concentration exceeding the screening criteria in the sample collected from the downgradient property boundary well.

The concentrations of constituents detected in the soil samples collected from the deep borings and groundwater samples collected from the 2 seepage face wells do not exceed screening criteria.

Based on soil and groundwater results and the presence of LNAPL, this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

An Interim Measures work plan will be prepared for LNAPL Area No. 1 (AOI W-1). The Interim Measures work plan will be submitted to the U.S. EPA for concurrence before field activities are initiated.

Table 2-1 presents a summary of the data, conclusions, and proposed activity for this AOI.

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4.3.2 Former Plant 8 Flammable Liquid Storage Tank Farm (AOI W-3)

AOI W-3 consists of a former Flammable Liquid Storage Tank Farm near former Plant 8 in the northwestern corner of the DA. The tank farm contained nine ASTs historically used to store flammable liquids including diesel fuel, line thinner, gasoline, and solvents. The tank farm consisted of two separate areas, a north area and south area, each contained within a 3-foot-high dike. The former tank farm was decommissioned and demolished prior to RFI onsite activities although no closure documentation is available.

4.3.2.1 Scope and Results

The scope of the field investigations at AOI W-3 involved collection of soil samples to determine whether a potential release exceeding the applicable Part 201 criteria has occurred from the former tank farm.

The following is a summary of the soil sampling activities conducted at AOI W-3. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Five soil borings (BW3-01 through BW3-05) were completed at the approximate locations of borings installed during previous investigations where no laboratory data currently exists. Boring locations are shown on Figure 4-14. Due to a shallow groundwater table in the area of AOI W-3 (approximately five feet), samples were collected from each borehole at the 0 to 2-foot interval and at the 2-foot interval directly above the water table. The samples were submitted for laboratory analysis for VOCs, SVOCs and lead. The boring logs are provided in Appendix D.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	Lead
Soil Boring	5	10	10	10

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A summary of the analytical data for the soil samples is shown in Table 4-21. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.2.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

The concentrations of constituents detected in the soil samples from AOI W-3 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-14.

4.3.2.3 Conclusions

The RFI soil analytical data from AOI W-3 do not indicate that a release has occurred to soils at AOI W-3. All concentrations detected in soil do not exceed the applicable Part 201 screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions for this AOI.

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4.3.3 Plant 8 Basement AST Area (AOI W-5)

AOI W-5 consists of seventeen ASTs formerly located in the basement of the former Plant 8. The basement ASTs historically stored weak metallic wastewater, alkali wastewater, and additional unknown materials. Plant 8 has been decommissioned and was demolished in 1997. There is no information available on the closure of the ASTs.

4.3.3.1 Scope and Results

The scope of the field investigations at AOI W-5 involved collection of soil and groundwater samples to determine whether a potential release in excess of the Part 201 criteria has occurred from the AST area.

The following is a summary of the sampling activities conducted for each medium at AOI W-5. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

Three soil borings (BW5-01 through BW5-03) were completed to provide areal coverage of the AOI with some biasing to areas of the basement where tanks had previously been present. Boring locations are shown on Figure 4-14. Only one sample (0 to 2-feet) was collected at BW5-03 because the groundwater table was encountered at a depth of 2 feet and an additional sample was collected at BW5-01 from 2 to 4 feet because elevated PID readings were recorded. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

Locations of oil borings associated with the installation of two monitoring wells (MWW5-01 and MWW5-02), as well as those associated with two monitoring wells installed as part of the Sitewide hydrogeologic investigation (MWD1 and MWD2), are shown on Figure 4-14. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Samples were not submitted for laboratory analysis for MWD2 because the sample interval was composed of concrete and brick rubble. Soil boring logs are provided in Appendix D.

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Groundwater Samples

Two rounds of groundwater samples were collected from two monitoring wells (MWW5-01 and MWW5-02) installed downgradient of the former AST area and two wells that were installed as part of the Sitewide hydrogeologic investigation (MWD1 and MWD2). Well locations are shown on Figure 4-13. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	6	17	16	17	17
Groundwater	4	8	8	8	8

A summary of the analytical data is shown in Tables 4-22 and 4-23, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

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4.3.3.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of all constituents detected in the soil boring samples from AOI W-5 do not exceed the screening criteria, with the exception of total PCBs in two samples. The total PCB concentrations exceed the IDC (20 mg/kg) in two samples collected from BW5-02 (0 to 2 feet, 21.69 mg/kg; 8 to 10 feet, 24.79 mg/kg). A summary of soil sample locations and analytical results is shown on Figure 4-14.

Groundwater Samples

The concentrations of constituents detected in the groundwater samples from AOI W-5 and various Sitewide wells exceed the screening criteria for antimony, thallium, vanadium, and total PCBs. Only thallium exceeds the screening criteria (IDWC 0.002 mg/L) in the first-round sample collected from MWW5-01 (0.0053 mg/L), while the total PCB concentration (0.0017 mg/L) detected in the second-round sample exceeds the IDWC of 0.0005 mg/L. Thallium was detected in the first-round sample collected from MWD1 at a concentration of 0.005 mg/L, which exceeds the IDWC of 0.002 mg/L. Three inorganics were detected at MWD2 with concentrations that exceed the screening criteria. Antimony concentrations exceed the IDWC of 0.006 mg/L in both samples collected from MWD2 (0.0098 mg/L and 0.0078 mg/L). Thallium was detected in the first-round groundwater sample collected from MWD2 at a concentration of 0.009 mg/L which exceeds the IDWC of 0.002 mg/L. Vanadium was detected at a concentration of 0.0732 mg/L which exceeds the IDWC of 0.062 mg/L in the first-round groundwater sample collected from MWD2. Thallium and vanadium concentrations detected in the second groundwater samples collected from MWW5-01, MWD1 and MWD2 do not exceed the screening criteria.

4.3.3.3 Conclusions

The RFI soil and groundwater data from AOI W-5 indicate that a release exceeding applicable Part 201 screening criteria has occurred at AOI W-5. Total PCB concentrations that exceed the screening criteria were detected in two soil samples. Antimony, thallium, vanadium, and total PCB concentrations exceed groundwater

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screening criteria in samples collected from AOI W-5 and the surrounding Sitewide wells. Based on these results, this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity for this AOI.

4.3.4 Former Plant 8 Flammable Materials Storage Building (AOI W-6)

AOI W-6 consists of the former Plant 8 Flammable Materials Storage Building located in the northwestern corner of the DA. The seventeen ASTs contained in the storage building were historically used to store oils and glycols. The storage building doors were above ground level causing the storage building to act as a diked area. Railroad and truck unloading areas contained catch basins that were connected to the onsite WWTP via a sump located in the northwest corner of the building. The storage building was decommissioned and demolished prior to RFI activities.

The eight catch basins inspected in the AOI W-6 loading areas contained black sludge with a strong petroleum odor and oily sheen. The catch basins were constructed of concrete and appeared to be in good condition with no sign of deterioration or cracking. The catch basins were cleaned as part of the RFI activities. No further investigation of the catch basins was necessary.

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4.3.4.1 Scope and Results

The scope of the field investigations at AOI W-6 involved collection of soil samples to determine whether a potential release in excess of screening criteria has occurred from the former storage building.

The following is a summary of the soil sampling activities conducted at AOI W-6. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Eight soil borings (BW6-01 through BW6-08) were completed to provide areal coverage of the former storage building. Boring locations are shown on Figure 4-14. Due to a shallow water table in the area of AOI W-6 samples were collected from each borehole at the 0 to 2-foot interval and the 2-foot interval directly above the water table. At BW6-02 and BW6-06 samples were collected from only the 0 to 2-foot interval. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and lead. Soil boring logs are presented in Appendix D.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Lead
Soil Boring	8	13	13	13	13

A summary of the analytical data for the soil samples is shown in Table 4-24. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.4.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

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The concentrations of constituents detected in the soil boring samples from AOI W-6 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-14.

4.3.4.3 Conclusions

The RFI soil data from AOI W-6 do not indicate that a release has occurred at AOI W-6. Concentrations of constituents detected in soil do not exceed screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions for this AOI.

4.3.5 Former Plant 9 Basement AST Area (AOI W-8)

AOI W-8 consists of 12 ASTs formerly located in the Plant 9 basement. Kerosene, coolants, and other unknown materials were historically stored in the ASTs. All tanks have been removed and Plant 9 has been decommissioned and demolished. No documentation on the closure of the ASTs is available. Kerosene-like odors have historically been reported in the storm sewers in this area.

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Aug 07, 2009 15:19

4.3.5.1 Scope and Results

The scope of the field investigations at AOI W-8 involved collection of soil, groundwater and LNAPL samples to determine whether a potential release exceeding screening criteria has occurred from the Plant 9 AST area.

The following is a summary of the sampling activities conducted for each medium at AOI W-8. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Surface Soil Samples

Eight surface soil samples (SW8-03 through SW8-10) were collected to delineate a shallow manganese and potential chromium exceedance detected in the 0 to 2-foot interval at MWW8-02. Sample locations are shown on Figure 4-14. The initial step-out samples (SW8-03 through SW8-06) were submitted for laboratory analysis for chromium, hexavalent chromium and manganese. The additional step-out samples (SW8-07 through SW8-10) were submitted for laboratory analysis for manganese.

Soil Boring Samples

Two soil borings (BW8-01 and BW8-02) were completed to provide areal coverage of the AOI. Boring locations are shown on Figure 4-14. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

Locations of soil borings associated with the installation of nine monitoring wells (MWW8-01 through MWW8-05 and MWW8-09 through MWW8-12) are shown on Figure 4-14. Soil samples were not collected from borings at wells MWW8-06 through MWW8-08. Five monitoring wells were installed per the RFI Work Plan. Monitoring well MWW8-05 was installed to replace DW-21 which could not be located. Seven groundwater wells were installed to delineate LNAPL detected in monitoring well MWW8-03. An additional sample was collected from MWW8-02 at the 6 to 8-foot interval due to elevated PID readings. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Soil boring logs are presented in Appendix D.

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LNAPL Samples

One LNAPL sample was collected from MWW8-03 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and dioxins. This area has been designated LNAPL Area No. 3. Further LNAPL discussion will be presented in Section 4.8.3.

Groundwater Samples

Groundwater samples were collected from eight monitoring wells (MWW8-01, MWW8-02, MWW8-04, MWW8-05, MWW8-08 and MWW8-10 through MWW8-12) to provide areal coverage of the AOI and to delineate LNAPL. Well locations are shown on Figure 4-13. Monitoring well MWW8-05 was installed to replace a pre-existing well that could not be located (DW-21). Groundwater samples were not collected from monitoring wells MWW8-03, MWW8-06, MWW8-07 and MWW8-09 due to the presence of LNAPL. Two rounds of groundwater samples were collected from monitoring wells MWM8-01, MWM8-02, MWM8-04, and MWM8-05 and one round of groundwater samples was collected from monitoring wells MWW8-08 and MWW8-10 through MWW8-12. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Dioxins analysis was also performed on groundwater samples obtained from the LNAPL delineation wells MWW8-08 and MWW8-10 through MWW8-12.

The number of locations from which samples were collected for each medium during the RFI and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Cr (total)	Cr (IV)	Dioxins	Mn
Surface Soil	8	0	0	0	0	4	4	0	8
Soil Boring	12	30	30	30	30	30	0	0	0
LNAPL	1	1	1	1	1	0	0	0	0
Groundwater	9	14	14	14	14	0	0	4	0

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Aug 07, 2009 15:19

Summaries of the analytical data for the soil, LNAPL, and groundwater samples are shown in Tables 4-25, 4-26 and 4-27, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.5.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Surface Soil Samples

Manganese was detected in the 0 to 2-foot interval at MWW8-02 with a concentration of 2,780 mg/kg, which exceeds the IPSIC of 1,500 mg/kg. To delineate the extent of this exceedance, a series of surface samples was collected. While manganese was detected in all eight surface samples collected, only four of the samples contained manganese at concentrations exceeding the IPSIC (SW8-03, SW8-04, SW8-05 and SW8-09), with manganese concentrations of 1,710 mg/kg, 2,770 mg/kg, and 2,040 mg/kg respectively.

The sample collected from the 0 to 2-foot interval at MWW8-02 contains a total chromium concentration (847 mg/kg) that exceeds the IPSIC for hexavalent chromium (240 mg/kg). Four surface soil samples were collected to determine the chromium species present. Total chromium and hexavalent chromium were not detected at concentrations exceeding the screening criteria.

A summary of soil sample locations and analytical results is shown on Figure 4-14.

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Soil Boring Samples

The concentrations of constituents detected in the RFI soil boring samples from AOI W-8 do not exceed the screening criteria except at MWW8-02 (0 to 2-foot interval) where manganese exceeds criteria as discussed above.

A summary of soil sample locations and analytical results is shown on Figure 4-14.

LNAPL Samples

Part 201 screening criteria do not exist for LNAPL. Constituents detected in LNAPL are discussed below without a comparison against screening criteria.

LNAPL was found in five AOI W-8 monitoring wells (MWW8-03, MWW8-05, MWW8-06, MWW8-07 and MWW8-09). An LNAPL sample was collected from the MWW8-03 and was submitted for analysis and chemical fingerprinting. A summary of analytical results is presented in Table 4-26.

Four VOCs were detected in the AOI W-8 LNAPL sample (isopropyl benzene, ethylbenzene, methyl cyclohexane and xylene). Four SVOCs were detected in the LNAPL sample (2-methyl naphthalene, biphenyl, fluorene and phenanthrene). Total PCBs, dioxins and copper were detected in the LNAPL sample collected from MWW8-03.

Further LNAPL discussion including fingerprint analysis and delineation will be presented in Section 4.8.3

Groundwater Samples

The concentrations of constituents detected in the groundwater samples collected from AOI W-8 exceed screening criteria for manganese, thallium, antimony, total PCBs, and dioxins.

Manganese detections in three samples, two collected from MWW8-05 (3.24 mg/L and 2.99 mg/L) and one collected from MWW8-11 (2.92 mg/L) exceed the IDWC of 2.5 mg/L. Thallium was detected in the first-round groundwater sample collected from MWD3 (located immediately downgradient of AOI W-8) at a concentration of 0.0074 mg/L, which exceeds the IDWC of 0.002 mg/L for thallium. Thallium was not detected at or above method quantification limits in the second sample collected from MWD3. Antimony was detected in the second-round sample collected from MWD3 at a concentration of 0.008 mg/L which exceeds the IDWC of 0.005 mg/L.

PCBs were detected in one groundwater sample collected from MWW8-10. The total PCB concentration of 0.0015 mg/L exceeds the IDWC of 0.0005 mg/L. Dioxins were detected in the sample collected from MWW8-08 at a concentration of 1.97×10^{-8} mg/L, which exceeds the GCC for the 2,3,7,8-TCDD TEQ of 1×10^{-8} mg/L.

4.3.5.3 Conclusions

The RFI soils and groundwater data from AOI W-8 indicate that a release exceeding Part 201 criteria has occurred at AOI W-8. Chromium and manganese were detected in surface soils at concentrations that exceed the IPSIC. The chromium speciation allowed the increase of the screening criteria to that of chromium (III) from hexavalent chromium. The manganese impacted area was delineated and occupies an approximate area of 60,000 square feet. Impacts of manganese, total PCBs, thallium, antimony and dioxins are apparent in the groundwater at AOI W-8.

Based on the soil and groundwater results of AOI W-8, as well as the presence of LNAPL, this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

An Interim Measures work plan will be prepared for LNAPL Area No. 3 (AOI W-8). The Interim Measures work plan will be submitted to the U.S. EPA for concurrence before field activities are initiated.

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Table 2-1 presents a summary of the data, conclusions, and proposed activity for this AOI.

4.3.6 Former Central Foundry (Plant 6) Resin Spill and UST (AOI W-9)

AOI W-9 consists of the Former Central Foundry (Plant 6) previously located in the southeast corner of the DA, which was bordered on the south by Montcalm Avenue, on the west by the West Yard, on the east by Glenwood Avenue, and on the north by Plant 9. The former Central Foundry Building covered approximately 900,000 square feet. Historically, PCBs were utilized in hydraulic and transformer fluids at the Foundry. A 20,000-gallon UST containing gasoline was also located at the Foundry.

The Former Central Foundry (Plant 6) has been decommissioned and demolished. Previous remedial activities addressed the former resin spill and the presence of PCBs. However, documentation does not exist for closure of the 20,000-gallon UST.

4.3.6.1 Scope and Results

The scope of the field investigations at AOI W-9 involved collection of surface soil and soil boring samples to determine whether a potential release exceeding screening criteria has occurred from the former UST or the demolition of the Plant.

The following is a summary of the soil sampling activities completed at AOI W-9. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

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Surface Soil Samples

Ten surface soil samples (SW9-01 through SW9-10) were collected from the perimeter of the Former Central Foundry building to determine surface soil quality and to evaluate potential impacts, if any, from demolition activities. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Three additional surface soil samples (SW9-11 through SW9-13) were collected to fill data gaps for manganese and chromium, which were detected at concentrations that exceed the screening criteria in the original borings (discussed below). All three samples were submitted for laboratory analysis for manganese. In addition, SW9-11 was sampled for arsenic and SW9-12 was analyzed for total chromium and hexavalent chromium. Sample locations are shown on Figure 4-15.

Soil Boring Samples

Two soil borings (BW9-01 and BW9-02) were completed in the area of the former UST to confirm that closure activities eliminated potential releases. Boring locations are shown on Figure 4-15. Due to the shallow water table (10 feet) in the AOI, samples from only two intervals were collected from each boring (0 to 2 feet and 8 to 10 feet). The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and total cyanide.

Soil borings associated with the installation of three Sitewide monitoring wells (MWD3, MWD4 and MWD5) are shown on Figure 4-15. These borings are included in this discussion because the wells are located immediately downgradient of AOI W-9. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, and inorganics.

Soil boring logs are presented in Appendix D.

PCB Delineation Samples

Based on the results of the PCB analysis for soil samples from borings BW9-02 and SW9-09, additional soil samples were collected to horizontally and vertically delineate PCBs in soil (results discussed below). Soil

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samples were collected following a 5 to 20-foot horizontal grid pattern at 2-foot intervals from ground surface to the top of the water table. The samples were collected continuously centered around both BW9-02 and SW9-09. The soil samples were field screened with a bioassay field screening kit. Based on the results of the screening analysis, additional borings were completed until the samples collected from the horizontal and vertical extents of the PCB field screening did not exceed the IDC screening criteria of 20 mg/kg or until obstructions (e.g., building foundation and underground utilities) were encountered. The soil samples that were screened onsite as not exceeding the screening criteria were submitted to the laboratory for verification along with 10 percent of the samples that showed exceedances of the screening criteria of 20 mg/kg. Analytical results are presented in Appendix E.

Groundwater Samples

Monitoring wells MWD3, MWD4, MWD5 and GWD11 were installed as part of the Sitewide hydrogeologic investigation immediately downgradient of AOI W-9. Due to their proximity to AOI W-9, they are included in this discussion. Groundwater samples were collected from MWD3, MWD5 and GWD11 and submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Natural recharge did not occur at MWD4, therefore, no groundwater samples were collected.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Cyanide	Mn	Cr (total)	Cr (VI)
Surface Soil	13	10	10	10	10 (+1 arsenic)	0	3	2	1
Soil Boring	4	10	10	10	4	4	0	0	0
PCB Delineation	186	0	0	298	0	0	0	0	0
Groundwater	4	7	7	7	7	0	0	7	0

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A summary of the analytical data for the soil, shallow groundwater, and deep groundwater samples are shown in Tables 4-28, 4-29 and 4-30, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.6.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Surface Soil Samples

The concentrations of constituents detected in the surface soil samples from AOI W-9 exceed the screening criteria for manganese and total PCBs. Concentrations of manganese that exceed the IPSIC of 1,500 mg/kg were detected at 2 of the original sample locations: SW9-02 (2,650 mg/kg) and SW9-10 (1,570 mg/kg). Two additional borings, SW9-11 and SW9-12, had concentrations of manganese that exceed the IPSIC (SW9-11 (1,530 mg/kg) and SW9-12 (1,600 mg/kg)). These locations are concentrated in the southwest quadrant of AOI W-9. Concentrations of chromium (total) that exceed the IPSIC of 240 mg/kg (the IPSIC for hexavalent chromium must be used because the soil samples were not speciated) were detected in surface soil samples SW9-01 (249 mg/kg) and SW9-02 (523 mg/kg).

In SW9-09, the total PCB concentration (29.3 mg/kg) exceeds the IDC of 20 mg/kg. A PCB delineation program was implemented at SW9-09. The delineated aerial extent of contamination is shown on Figure 4-15.

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Soil Boring Samples

The concentrations of constituents detected in the soil boring samples collected from AOI W-9 exceed screening criteria for manganese and total PCBs.

Manganese concentrations exceed the IPSIC of 1,500 mg/kg at the following three locations: BW9-02 (0 to 2 feet, 1,840 mg/kg), BW9-01 (8 to 10 feet, 1,540 mg/kg), and MWD4 (0 to 2 feet, 3,020 mg/kg).

The total PCB concentration (47.4 mg/kg) detected in the sample collected from the 0 to 2-foot interval for BW9-02 exceeds the IDC of 20 mg/kg. The sample collected from the 8 to 10-foot interval for BW9-01 (20.25 mg/kg) also exceeds the IDC for total PCBs. A PCB delineation program was implemented at BW9-02. The delineated areas of contamination are shown on Figure 4-15.

Groundwater Samples

Thallium was detected in the first sample collected from shallow well MWD5 at a concentration of 0.0053 mg/L, which exceeds the IDWC of 0.002 mg/L. The second groundwater sample collected from MWD5 shows a detection of thallium at a concentration that does not exceed screening criteria.

4.3.6.3 Conclusions

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The RFI soil and groundwater data from AOI W-9 indicate that a release exceeding screening criteria has occurred at AOI W-9. Chromium (total) was detected in soil at concentrations that exceed the applicable hexavalent chromium criteria at SW9-01 and SW9-02. Speciation of the chromium was not completed at AOI W-9. Manganese concentrations in soils exceed applicable criteria at six locations. The extent of the manganese impacts was not delineated.

Total PCB concentrations exceed applicable criteria at two AOI W-9 locations. Both of these areas were delineated, both areally and vertically. At SW9-09 an estimated area of 1,200 square feet (40 ft by 30 ft) contains soil that exceeds the screening criteria of 20 mg/kg. At BW9-02 an estimated area of 17,500 square feet (140 ft by 125 ft) contains soil that exceeds the screening criteria of 20 mg/kg.

Groundwater results from a downgradient Sitewide hydrogeologic investigation well exhibit only one exceedance for thallium. Based on these results, AOI W-9 will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity for this AOI.

4.3.7 Railroad Marshalling Area Drainage System (AOI W-10)

AOI W-10 consists of a Railroad Marshalling Area that extends the entire length of the western boundary of the West Yard. Historical operations at the Railroad Marshalling Area included the temporary storage of railcars loaded with scrap metal and grinding waste to be shipped off site. Waste from the waste metal chips drained out of the railcars and into the railway ballast/soil immediately beneath the tracks. An oily discharge originating from the railroad area was noted in July 1971 immediately south of the marshalling area in a culvert on property owned by Pontiac Public School Board.

As a result of the oily discharge, the Railroad Marshalling Area Drainage System was installed in November 1972. The drainage system was designed to collect and convey the oily discharge from the railcars to the WWTP. The Railroad Marshalling Area Drainage System remains at the Site.

Twelve catch basins and a pit/tunnel structure in the Railroad Marshalling Area were cleaned and inspected. A black sludge and/or oily sheen were noted in most of the catch basins. Deterioration ranged from none observed to heavily deteriorated concrete and pipes.

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4.3.7.1 Scope and Results

The scope of the field investigations at AOI W-10 involved collection of soil, groundwater and LNAPL samples to determine whether a potential release exceeding screening criteria has occurred.

The following is a summary of the sampling activities conducted for each medium at AOI W-10. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

Six soil borings (BW10-01 through BW10-06) were completed as discussed in the RFI Work Plan. These borings correspond to one boring per sump pair (pairs of sumps run along each side of the railway tracks). An additional sample was collected at BW10-05 (2 to 4 feet) and BW10-06 (6 to 8 feet) because elevated PID readings were recorded at these intervals. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

Three additional soil borings (BW10-07 through BW10-09) were installed to further delineate the extent of inorganics detected at concentrations that exceed screening criteria in soil as presented in the RFI Work Plan Addendum #3 (ENCORE, 2002b). The samples were submitted for laboratory analysis for chromium (total), hexavalent chromium and manganese. Boring locations are shown on Figure 4-16.

Soil borings associated with the installation of six monitoring wells (MWW10-01 through MWW10-06) are shown on Figure 4-16. Additional samples were collected at MWW10-01 (4 to 6 feet), MWW10-05 (2 to 4 feet) and MWW10-06 (2 to 4 feet) due to elevated PID readings recorded at these intervals. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

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LNAPL Samples

LNAPL was encountered at AOI W-10 in well MWW10-01. To delineate the LNAPL area, 37 soil samples were collected and evaluated with a fluorescent/ultraviolet light to determine the presence of LNAPL in the soil column. Four piezometers (PZ-01 through PZ-04) were installed to determine groundwater flow direction. Five additional monitoring wells (MWW10-02 through MWW10-06) were installed surrounding MWW10-01 to determine LNAPL thickness and impact, if any, on groundwater quality. One LNAPL sample was collected from MWW10-01 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and dioxins. This area has been designated LNAPL Area No. 2. Further LNAPL discussion will be presented in Section 4.8.2

Groundwater Samples

Groundwater samples were collected from five monitoring wells (MWW10-01 through MWW10-04 and MWW10-06) installed to further delineate the LNAPL area and to determine the extent, if any, of downgradient groundwater impacts. Well locations are shown on Figure 4-13. During the second round of sampling (January and February 2002) monitoring wells MWW10-01 and MWW10-05 were not sampled due to the presence of LNAPL. The groundwater samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. In addition, dioxins analysis was performed on groundwater samples collected from wells MWW10-02 through MWW10-04 and MWW10-06.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Mn	Cr (total)	Cr (VI)	Dioxins
Soil Boring	15	34	34	34	34	40	40	6	0
LNAPL	1	1	1	1	1	0	0	0	1
Groundwater	5	5	5	5	5	0	0	0	4

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Summaries of the analytical data for the soil, LNAPL and groundwater samples are shown in Tables 4-31, 4-32 and 4-33, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.3.7.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of constituents detected in the soil samples collected from AOI W-10 exceed screening criteria for total chromium, lead and manganese.

Total chromium was detected at concentrations that exceed the IPSIC for hexavalent chromium (240 mg/kg) in the samples collected from the 0 to 2-foot interval at BW10-04 (596 mg/kg) and BW10-05 (564 mg/kg). Lead was detected at a concentration exceeding the IDC of 900 mg/kg at one location, MWW10-01 (4 to 6 feet, 4,020 mg/kg). Manganese was detected at concentrations exceeding the IPSIC of 1,500 mg/kg in the 0 to 2-foot interval at five locations: MWW10-01 (1,660 mg/kg), MWW10-06 (2,260 mg/kg), BW10-01 (1,770 mg/kg), BW10-04 (10,000 mg/kg) and BW10-05 (2,450 mg/kg). A summary of soil sample locations and analytical results is shown on Figure 4-16.

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LNAPL Samples

Part 201 screening criteria do not exist for LNAPL, therefore, all constituents detected in LNAPL are discussed below without a comparison against screening criteria.

LNAPL was observed in two monitoring wells; MWW10-01 and MWW10-05. An LNAPL sample was collected from MWW10-01 and submitted for laboratory analysis. A summary of analytical results are presented in Table 4-32.

Eight VOCs were detected in the LNAPL sample collected from MWW10-01: 2-butanone, isopropyl benzene, chloromethane, cyclohexane, ethylbenzene, methyl cyclohexane, toluene and xylene. Seven SVOCs were detected in the LNAPL sample: 2-methyl naphthalene, anthracene, biphenyl, fluoranthene, fluorene, phenanthrene and pyrene. Nine inorganics were detected in the sample: arsenic, barium, chromium, copper, lead, manganese, nickel, selenium and vanadium. PCBs and dioxins were detected in the LNAPL sample.

Further LNAPL discussion including fingerprint analysis and delineation will be presented in Section 4.8.2.

Groundwater Samples

The concentrations of constituents detected in the groundwater samples collected from AOI W-10 exceed the screening criteria for total PCBs, bis-(2-ethylhexyl)phthalate, arsenic and thallium.

Bis(2-ethylhexyl)phthalate was detected in a sample collected from MWW10-02 at a concentration of 0.15 mg/L, which exceeds the IDWC of 0.006 mg/L.

Arsenic was detected in a sample collected from MWW10-01 at a concentration of 0.0591 mg/L, which exceeds the IDWC of 0.05 mg/L. Thallium was detected in the sample collected from MWW10-01 at a concentration of 0.0055 mg/L, which exceeds the IDWC of 0.002 mg/L.

The total PCB concentration of 0.0009 mg/L detected at MWW10-04 exceeds the IDWC of 0.0005 mg/L. This well is located downgradient of the LNAPL area. A summary of groundwater sample locations and analytical results is shown on Figure 4-13.

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4.3.7.3 Conclusions

The RFI soils and groundwater data from AOI W-10 indicate that a release exceeding criteria has occurred at AOI W-10. Lead and manganese concentrations exceeds applicable criteria in soil samples, while bis(2-ethylhexyl)phthalate, total PCBs, arsenic, and thallium concentrations exceeds applicable criteria in groundwater samples.

Based on the soil and groundwater results of AOI W-10 as well as the presence of LNAPL this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

An Interim Measures work plan will be prepared for LNAPL Area No. 2 (AOI W-10). The Interim Measures work plan will be submitted to the U.S. EPA for concurrence before field activities are initiated.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

4.3.8 Salvage Yard Sump Drain (AOI W-11)

AOI W-11 consists of the Salvage Yard Sump Drain. The location of the Sump Drain within the West Yard is unclear. It is believed to be located in the former Salvage Building and to have drained to the WWTP. The Salvage Building was located on the western boundary of the West Yard, north of the Compressor Building, and immediately east of the rail lines. Internal documents indicate that 69 barrels with various liquid contents including nickel were allegedly discharged down the salvage sump during June and July 1985.

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4.3.8.1 Scope and Results

The scope of the field investigations at AOI W-11 involved collection of groundwater samples to determine whether a potential release in excess of applicable Part 201 screening criteria has occurred from the sump drain. Groundwater samples were collected from one monitoring well (MWW1-01) installed near and downgradient of the sump. This well was installed as part of the AOI W-1 investigation. The well location is shown on Figure 4-13. Section 4.3.1.1 further discusses the scope and results of monitoring well MWW1-01.

4.3.8.2 Discussion of Results

The concentrations of constituents detected in groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0. The concentrations of constituents detected in the groundwater samples from AOI W-11 exceed screening criteria for two inorganics (antimony and thallium). The results of the comparisons are further discussed in Section 4.3.1.2 with the discussion for AOI W-1. A summary of analytical results is shown on Figure 4-13.

4.3.8.3 Conclusions

RFI soil data generated from AOI W-11 do not exceed screening criteria. Groundwater data shows exceedances of screening criteria for thallium and vanadium; however, these concentrations are believed to be a result of the analytical method and not indicative of actual groundwater quality. Since the location of the Salvage Yard Sump Drain within the West Yard is unclear and the groundwater results from the suspected area do not confirm a release of nickel from the assumed AOI W-11 location, any further activity required for the sump drain will occur under AOI W-1.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

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4.3.9 Montcalm Substation (AOI W-13)

AOI W-13 consists of the Montcalm Substation, located east of Saginaw Street and north of Montcalm Avenue. Historically, transformer oil that potentially contained PCBs was used at this substation. The substation remains in service.

4.3.9.1 Scope and Results

The scope of the field investigations at AOI W-13 involved collection of surface soil samples to determine whether a potential release exceeding screening criteria has occurred from the substation.

The following is a summary of the soil sampling activities conducted at AOI W-13. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Six surface soil samples (SW13-01 through SW13-06) were collected along the perimeter of the substation. Sample locations are shown on Figure 4-16. The samples were submitted for laboratory analysis for SVOCs and PCBs.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	SVOCs	PCBs
Surface Soil	6	6	6

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A summary of the analytical data for the soil samples is shown in Table 4-34. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

4.3.9.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

The concentrations of constituents detected in the surface soil samples collected from AOI W-13 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-16.

4.3.9.3 Conclusions

The RFI soil data collected from AOI W-13 do not indicate that a release has occurred to soils at AOI W-13. Concentrations of constituents detected in soil do not exceed screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

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4.4 Metal Fabrication Division

4.4.1 Wastewater Treatment Plant (AOI M-1)

AOI M-1 consists of the WWTP located west of Plants 5, 14, 23, and 56. Historically, the WWTP has utilized up to 55 ASTs, which were related to the industrial wastewater treatment process (including system influent, system effluent, and materials used during treatment). The WWTP and two waste piles located within the WWTP area were identified as SWMUs by GM in the Certification of Potential Releases from Solid Waste Management Units (GM, 1986). This area is considered an AOI because of the type of materials stored and treated (industrial wastes), a history of documented releases, and its previous identification as a SWMU.

4.4.1.1 Scope and Results

The scope of the field investigations at AOI M-1 involved collection of surface soil, soil boring, and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the wastewater treatment plant.

The following is a summary of the sampling activities completed for each medium at AOI M-1. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

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Surface Soil Samples

Twelve surface soil samples (SM1-01 through SM1-12) were collected. Sample locations are shown on Figure 4-17. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide, and hexavalent chromium.

Soil Boring Samples

Eleven soil borings (BM1-01 through BM1-11) were completed. Boring locations are shown on Figure 4-17. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and hexavalent chromium. Due to the shallow water table throughout most of the AOI (4 to 10 feet bgs), samples were submitted from only two intervals from each boring (0 to 2-foot interval and the 2-foot interval directly above the water table). Samples from BM1-01, BM1-03, BM1-07, BM1-08 and BM1-11 were submitted only for the 0 to 2- and 2 to 4-foot intervals. Samples from BM1-04, BM1-05 and BM1-06 were submitted only for the 0 to 2- and 4 to 6-foot intervals. Samples from BM1-09 were submitted only for the 0 to 2- and 3 to 5-foot intervals. Samples from BM1-10 were submitted only for the 0 to 2- and 8 to 10-foot intervals. The water table at BM1-02 was encountered at 2 feet below ground surface; therefore, only the 0 to 2-foot sample interval was submitted for laboratory analysis.

Soil boring locations associated with the installation of three groundwater monitoring wells (MWM1-01, MWM1-02, and MWM1-03) are shown on Figure 4-17. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide, and hexavalent chromium. Due to the shallow water table, samples from MWM1-01 were submitted only from the 0 to 2- and 4 to 6-foot intervals. Soil boring logs are provided in Appendix D.

PCB Delineation Samples

Based on the results of the PCB analysis for soil borings BM1-07 and BM1-08, additional soil samples were collected to horizontally and vertically delineate PCBs in soil (results discussed below). Soil samples were collected at 2-foot intervals from ground surface to the top of the water table and horizontally at 5-foot intervals from the areas surrounding BM1-07 and BM1-08. The soil samples were field screened with a bioassay field

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screening kit for PCBs. Additional step-out borings were completed until concentrations measured at the horizontal and vertical extents using the PCB field screening kits were less than the IDC of 20 mg/kg or obstructions (e.g., tanks, buildings, underground utilities) were encountered. The soil samples screened onsite that did not have concentrations that exceed the IDC were submitted to the laboratory for verification along with 10 percent of the samples that did have concentrations that exceeded the IDC of 20 mg/kg. Analytical results are presented in Appendix E.

Groundwater Samples

Two rounds of groundwater samples were collected from 3 monitoring wells (MWM1-01, MWM1-02 and MWM1-03). Well locations are shown on Figure 4-18. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide, and hexavalent chromium.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Cyanide	Hexavalent Chromium
Surface Soil	12	12	12	12	12	12	12
Soil Boring	11	29	29	29	29	29	29
Groundwater	3	6	6	6	6	6	6
PCB Delineation	42	0	0	46	0	0	0

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Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-35 and 4-36, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.1.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Surface Soil Samples

The concentrations of constituents detected in the surface soil samples collected from AOI M-1 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-17.

Soil Boring Samples

The concentration of constituents detected in samples collected from soil borings exceed screening criteria only for total PCBs.

Total PCB concentrations exceed the IDC of 20 mg/kg in four of the samples, with a maximum concentration of 46.65 mg/kg. The samples that exceed screening criteria were collected from the 0 to 2- and 2 to 4-foot intervals for BM1-07 (31.6 mg/kg and 38.8 mg/kg, respectively) and from the 0 to 2- and 2 to 4-foot intervals for BM1-08 (43.65 mg/kg and 46.65 mg/kg, respectively). Both of these areas were areally and vertically delineated. The delineated areas of contamination are shown on Figure 4-17.

Groundwater Samples

The concentrations of constituents detected in groundwater samples exceed the applicable criteria only for cyanide.

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Cyanide was detected in first- and second-round samples submitted from MWM1-03 (0.897 mg/L and 0.828 mg/L) exceed the IDWC of 0.2 mg/L. A summary of groundwater monitoring well locations and analytical results is shown on Figure 4-18.

4.4.1.3 Conclusions

The RFI soils and groundwater data from AOI M-1 indicate that a release exceeding screening criteria has occurred at AOI M-1. PCBs exceeding screening criteria were detected in soils at BM1-07 and BM1-08. A PCB delineation program was implemented at these locations. At BM1-07, an estimated area of 300 square feet (15 ft x 20 ft) contains soil exceeding the IDC of 20 mg/kg. At BM1-08, an estimated area of 625 square feet (25 ft x 25 ft) contains soil exceeding the IDC of 20 mg/kg.

Cyanide concentrations detected in groundwater exceed screening criteria in both samples collected from MWM1-03.

Based on the soil and groundwater results at AOI M-1, this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

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4.4.2 Former Plating Operations Area (AOI M-2)

AOI M-2 consists of a Former Plating Operations Area located in the western portion of Plant 56 (old Plant 2), near Dock 34. This area is considered an AOI because of the type of materials historically used in plating operations (metals, solvents, and acids). In addition, the plating pits showed evidence of corrosion during the Site walkthrough completed as part of the CCR preparation. This area also has six metal-lined mix tanks located below the concrete floor east of the plating pits.

4.4.2.1 Scope and Results

The scope of the field investigations at AOI M-2 involved collection of soil and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the former plating operations area.

The following is a summary of the sampling activities completed for each medium at AOI M-2. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

Eighteen soil borings (BM2-01 through BM2-18) were completed to provide areal coverage of the AOI. The locations were biased to areas of suspected subsurface impacts, such as plating pits and holding tanks. Boring locations are shown on Figure 4-19. The samples from borings BM2-01 through BM2-13 were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and hexavalent chromium. Based on analytical results from soil borings BM2-04 and BM2-10, additional borings (BM2-14 through BM2-18) were completed to delineate soil that exceeds the applicable criteria (discussed below). The samples from boring BM2-14 were submitted for laboratory analysis for VOCs only. The samples from borings BM2-15 through BM2-18 were submitted for laboratory analysis for manganese only.

Soil boring locations associated with the installation of eight monitoring wells (MWM2-01 through MWM2-08), and an additional Sitewide well, MWM8, are shown on Figure 4-18. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide and hexavalent chromium, with the exceptions of

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Aug 07, 2009 15:19

MWM2-06 and MWM2-07, which were not analyzed for PCBs, and MWM8, which was not analyzed for cyanide or hexavalent chromium.

Monitoring wells MWM2-06, MWM2-07, and MWM2-08 were installed using 4.25-inch augers rather then the spun-casing technology. Due to the low overhead clearance, the drilling rig equipped with spun-casing capabilities could not gain access inside the building where the monitoring wells were installed. Soil boring logs are provided in Appendix D.

Groundwater Samples

Groundwater samples were initially collected from four monitoring wells MWM2-01 through MWM2-04. Due to its proximity to AOI M-2, Sitewide well MWM8 is also included in this discussion. Based on VOC concentrations that exceed the screening criteria, four additional wells (MWM1-05 through MWM1-08) were installed to further delineate the VOC plume. Well locations are shown on Figure 4-18. Two rounds of groundwater samples were collected from monitoring wells MWM2-01 through MWM2-04 and one round of groundwater samples was collected from monitoring wells MWM2-05 through MWM2-08. The samples collected from MWM2-01 through MWM2-04 were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics, cyanide, and hexavalent chromium, while the samples collected from MWM2-05 through MWM2-08 were submitted for laboratory analysis for VOCs only. Samples collected from MWM8 were submitted for laboratory analysis for VOCs, SVOCs, PCBs, and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Cyanide	Hexavalent Chromium
Soil Boring	27	73	69	61	69 (+3 Mang)	67	68
Groundwater	9	14	10	10	10	8	8

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Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-37 and 4-38, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.2.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentration of constituents detected in soil samples collected from AOI M-2 borings exceed the screening criteria for 1,1-dichloroethene and manganese.

At soil boring BM2-10, the 1,1-dichloroethene concentration exceeds the ISVIC of 0.33 mg/kg with concentrations of 1.8 mg/kg and 0.99 mg/kg at the 4 to 6- and 8 to 10-foot intervals, respectively. Soil boring BM2-14 was completed to delineate this exceedance. The analytical results for BM2-14 for 1,1-dichloroethene show that this constituent was not detected.

Manganese was detected above the IPSIC of 1,500 mg/kg in samples collected from soil borings BM2-04 (0 to 2 feet, 1,640 mg/kg), BM2-15 (0 to 2 feet, 1,940 mg/kg), and MWM2-06 (6 to 8 feet, 2,220 mg/kg). Based on analytical results from adjacent soil borings with manganese IPSIC exceedances and the completion of additional soil borings to delineate these exceedances, it appears that the manganese in the soil has been fully delineated. The analytical results for manganese at each of these borings do not exceed screening criteria.

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Aug 07, 2009 15:19

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A summary of soil sample locations and analytical results is shown on Figure 4-19.

Groundwater Samples

The concentration of constituents detected in groundwater samples collected from AOI M-2 exceed the screening criteria for 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, vinyl chloride, acetone, nickel and thallium.

Five VOCs were detected in wells MWM2-04, MWM2-06 and MWM2-07 at concentrations that exceed screening criteria. 1,1,1-Trichloroethane (0.48 mg/L and 0.42 mg/L), 1,1,2-trichloroethane (0.012 mg/L and 0.01 mg/L), and 1,1-dichloroethene (0.08 mg/L and 0.075 mg/L) were detected in both first- and second-round samples submitted from MWM2-04 at concentrations that exceed the IDWC of 0.2 mg/L, 0.005 mg/L and 0.007 mg/L respectively. 1,1-Dichloroethene was also detected in MWM2-06 at a concentration of 0.01 mg/L, which exceeds the IDWC. 1,2-Dichloroethane was detected in the second-round sample submitted from MWM2-04 at a concentration of 0.01 mg/L, which exceeds the IDWC of 0.005 mg/L. Vinyl chloride was detected in the sample submitted from MWM2-07 at a concentration of 0.0033 mg/L, which exceeds the IDWC of 0.002 mg/L. Acetone was detected in the second round groundwater sample collected from MWM8 at a concentration of 3.4 mg/L, which exceeds the IDWC of 2.1 mg/L. Nickel was detected in the second round groundwater sample from MWM2-04 at a concentration of 0.168 mg/L, which exceeds the IDWC of 0.1 mg/L. Thallium was detected in first round groundwater samples submitted from MWM2-03 (0.0056 mg/L) and MWM2-04 (0.0051 mg/L), at concentrations that exceed the IDWC of 0.002 mg/L.

A summary of groundwater monitoring well locations and analytical data is shown on Figure 4-18.

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4.4.2.3 Conclusions

The RFI soil and groundwater data from AOI M-2 indicate that a release exceeding applicable Part 201 screening criteria has occurred at M-2. 1,1-Dichloroethene was detected at concentrations exceeding the screening criteria in one boring (BM2-10). Soil boring BM2-14 was completed to delineate the exceedance. The analytical results for 1,1-dichloroethene from soil boring BM2-14 indicate that delineation is complete. Manganese exceeds the screening criteria in surface samples submitted from soil borings BM2-04, BM2-06, and at depth from BM2-15. The analytical results for the additional soil borings that were completed to delineate the manganese do not exceed screening criteria. This indicates that the delineation for manganese in soil for AOI M-2 is complete.

Six VOCs (1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, vinyl chloride, and acetone) and two inorganics (nickel and thallium) were detected in groundwater samples collected from AOI M-2 wells at concentrations exceeding screening criteria.

Based on these results, this AOI will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

4.4.3 Plant 25 Former Gasoline UST and Current Gasoline AST Location (AOI M-4)

AOI M-4 consists of two tanks (one former UST and one existing AST) adjacent to Plant 25 (formerly Plant 51) located in the northwest corner of the MFD portion of the Site. This area is considered an AOI because of a prior documented release from the former UST.

There have been no documented releases from the existing AST, which is located within a secondary containment system. Remediation of the gasoline spill from the former UST was terminated in August 1987. However, the limited available analytical data show that in 1991 benzene still exceeded screening criteria.

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4.4.3.1 Scope and Results

The scope of the field investigations at AOI M-4 involved collection of soil and groundwater samples to determine if soil and groundwater quality exceed applicable Part 201 criteria as a result of a historical release.

The following is a summary of the sampling activities completed for each medium at AOI M-4. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed are presented in Table 2-1.

Soil Boring Samples

One soil boring (BM4-01) was completed in the footprint of the former UST to confirm closure activities at the location shown on Figure 4-20. From the ground surface down to a depth of 13 feet the soils were comprised of very loose pea gravel and other fill material. Due to the loose nature of the fill material, the samples from the 0 to 2-foot and the 8 to 10-foot intervals could not be collected due to insufficient recovery in the sample tube. Soil samples were collected from the 6 to 8-foot interval, and were subsequently submitted to the laboratory for analysis of lead only because the size of the material collected (pea gravel) was too large to fit in the sample container for VOCs. The sample that was collected from the 12 to 14-foot interval (top of water table) was submitted for laboratory analysis for VOCs and lead.

Soil boring locations associated with the installation of five monitoring wells (MWM4-01 through MWM4-05) are shown on Figure 4-20. Soil samples were collected from the 0 to 2-foot, 8 to 10-foot, and the top of the water table. Due to a shallow water table in the vicinity of MWM4-02, samples for that boring were submitted only from the 0 to 2-foot and 5 to 7-foot intervals. The samples were submitted for laboratory analysis for VOCs and lead. Soil boring logs are provided in Appendix D.

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Groundwater Samples

Monitoring wells MWM4-01 through MWM4-03 were installed in the area of the previous remedial program and also downgradient of the former UST to determine groundwater quality conditions. Additional groundwater monitoring wells (MWM4-04 and MWM4-05) were installed to further delineate the area of potential groundwater impacts. Well locations are shown on Figure 4-21. Groundwater samples were collected from five monitoring wells (MWM4-01 through MWM4-05). Two rounds of samples were collected from monitoring wells MWM4-01 through MWM4-03 and one round was collected from MWM4-04 and MWM4-05. The samples were submitted for laboratory analysis for VOCs and lead.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	Lead
Soil Boring	6	12	13
Groundwater	5	8	8

Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-39 and 4-40, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.3.2 Discussion of Results

Concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

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Soil Boring Samples

The concentrations of constituents detected in the soil samples collected from AOI M-4 do not exceed screening criteria. A summary of soil sample locations and analytical data is shown on Figure 4-20.

Groundwater Samples

The concentrations of constituents detected in the AOI M-4 groundwater samples exceed screening criteria for benzene and ethylbenzene. Benzene was detected at concentrations that exceed the IDWC of 0.005 mg/L in the first-round sample submitted from MWM4-02 (0.11 mg/L) and in the sample collected from MWM4-04 (0.55 mg/L). Ethylbenzene was detected in the sample submitted from MWM4-04 at a concentration of 0.85 mg/L, which exceeds the IDWC of 0.074 mg/L.

A summary of groundwater monitoring well locations and analytical results is shown on Figure 4-21.

4.4.3.3 Conclusions

The RFI groundwater data from AOI M-4 indicates that a release exceeding applicable Part 201 screening criteria has occurred at AOI M-4. Benzene and ethylbenzene were detected in groundwater samples collected from AOI M-4 at concentrations exceeding screening criteria. Based on these results, AOI M-4 will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

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4.4.4 Former A-2 Fill Area (AOI M-5)

AOI M-5 consists of the former A-2 fill area, which covers approximately 10 acres under Plants 25 and 33 (previously Plants 51 and 55), the east parking lot area in the MFD area, and under the SPO Building (Plant 75). The former landfill was identified as a SWMU by GM in the Certification of Potential Releases from Solid Waste Management Units (GM, 1986). This area is considered an AOI because of previous fill activities and it was also previously identified as a SWMU.

In the report titled Draft Site Investigation Report (CRA, 2000b), it was concluded that the fill materials in the former A-2 fill area have not significantly impacted groundwater quality with the exception of one questionable detection of bis(2-ethylhexyl)phthalate in groundwater. However, dioxin sampling of soil and groundwater was not part of these investigations and a review of existing data does show elevated levels of several metals.

4.4.4.1 Scope and Results

The scope of the field investigations at AOI M-5 involved collection of soil and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the A-2 fill area.

The following is a summary of the sampling activities completed for each medium at AOI M-5. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed are presented in Table 2-1.

Soil Boring Samples

Two soil borings (BM5-01 and BM5-02) were completed to provide additional characterization of subsurface soil. Boring locations are shown on Figure 4-20. The samples were submitted for laboratory analysis for VOCs, PCBs, inorganics, and dioxins. Due to a shallow water table in the vicinity of BM5-01, samples for that boring were submitted only from the 0 to 2- and 8 to 10-foot intervals. An additional sample was collected at BM5-02 (4 to 6 feet) due to an elevated PID reading and strong odor.

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Based on the analytical results from soil borings BM5-01 and BM5-02, an additional soil boring (BM5-03) was completed. Samples from BM5-03 were submitted for 0 to 2-, 2 to 4-, 4 to 6-, and 8 to 10-foot intervals, and were analyzed for lead only. Soil boring logs are presented in Appendix D.

Samples from the boring associated with the installation of monitoring well MWM5-01 (location shown on Figure 4-20) were submitted from the 0 to 2-, 2 to 4-, 4 to 6-, and 6 to 8-foot intervals for laboratory analysis for VOCs, PCBs, inorganics and dioxins. Due to a shallow water table in the vicinity of MWM5-01, samples for that boring were submitted from the 0 to 2- and 6 to 8-foot intervals; however, due to elevated PID readings and strong odors at the 2 to 4- and 4 to 6-foot intervals, it was determined that samples from these additional intervals would also be submitted to the laboratory for analysis.

Groundwater Samples

Two rounds of groundwater quality samples were to be collected from existing monitoring MW-1-99 and MW2-99. However, MW1-99 was damaged to the point where a groundwater sample could not be collected from it. MW1-99 was abandoned by overdrilling the well and backfilled with a cement/bentonite grout. A replacement well, MWM5-01, was installed at this location.

Two rounds of groundwater samples were collected from monitoring wells MW2-99 and MWM5-01. Well locations are shown on Figure 4-21. The samples were submitted for laboratory analysis for PCBs, inorganics, and dioxins.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	PCBs	Inorganics	Dioxins
Soil Boring	4	10	10	9 (+4 Lead)	10
Groundwater	2	0	4	4	4

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Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-41 and 4-42, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.4.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentration of constituents detected in the soil samples collected from AOI M-5 exceeds the screening criteria for lead. Lead was detected in the sample submitted from the 2 to 4-foot interval of the boring associated with the installation of monitoring well MWM5-01, at a concentration of 1,560 mg/kg, which exceeds the IDC of 900 mg/kg.

Groundwater Samples

The concentrations of constituents detected in AOI M-5 groundwater samples exceed screening criteria for barium, manganese, and total PCBs. Barium and manganese concentrations exceed screening criteria in the samples collected from MWM5-01. Barium exceeds the IDWC of 2 mg/L in both first- and second-round samples (2.03 mg/L and 4.72 mg/L) while manganese exceeds the IDWC (health-based) of 2.5 mg/L in the first-round sample (3.57 mg/L). PCBs were detected in the second-round samples collected from both MW2-99 and MWM5-01. In both cases the concentrations (0.0008 mg/L and 0.0017 mg/L) exceed the IDWC of 0.0005 mg/L for total PCBs.

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Aug 07, 2009 15:19

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In addition, a groundwater sample was collected in January 2000 from MW1-99, which has since been abandoned. Of the constituents detected in this historic sample, bis(2-ethylhexyl)phthalate was detected at a concentration of 0.51 mg/L, which exceeds the IDWC of 0.006 mg/L, and barium was detected at a concentration of 3.44 mg/L, which exceeds the IDWC of 2 mg/L.

4.4.4.3 Conclusions

The RFI soil and groundwater data from AOI M-5 indicate that a release exceeding applicable Part 201 screening criteria has occurred at AOI M-5. Lead, the only soil exceedance, was detected at a concentration that exceeds the IDC in one sample. Groundwater samples show concentrations of bis(2-ethylhexyl)phthalate, barium, manganese, and total PCBs that exceed screening criteria. Based on the soil and groundwater results at AOI M-5, this AOI will be further evaluated in the Baseline Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

4.4.5 ELPO Building (AOI M-7)

AOI M-7 consists of the ELPO Building. The ELPO operation is located east of Plants 5 and 8 and southwest of Plant 18. The ELPO building is considered an AOI because of poor sump integrity. In addition, numerous spills in the interior of the ELPO process area are evident, and staining was observed on the outside wall of the ELPO Building during the September 2000 Site walkthrough. Recently (February 2001) the wastewater conveyance trenches were determined to be leaking resulting in a discharge of wastewater to the surface and subsurface.

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Aug 07, 2009 15:19

4.4.5.1 Scope and Results

The scope of the field investigations at AOI M-7 involved collection of soil and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the ELPO building.

The following is a summary of the sampling activities completed for each medium at AOI M-7. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

Three soil borings (BM7-01, BM7-02 and BM7-03) were completed to supplement data generated from the well installation program described below. Boring locations are shown on Figure 4-22. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Due to a shallow water table in the vicinity of BM7-02, samples for that boring were submitted only from the 0 to 2- and 8 to 10-foot intervals. Soil boring logs are provided in Appendix D.

Soil boring locations associated with the installation of three monitoring wells (MWM7-01, MWM7-02 and MWM7-03), as well as a Sitewide well, MWM10, are shown on Figure 4-22. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. A total of four soil samples were collected and submitted to the laboratory from soil boring MWM7-03. During the course of sample collection activities the sample from the 10 to 12-foot interval had a strong odor and elevated PID readings. It was determined that an additional sample would be submitted to the laboratory from this interval.

Due to the low overhead clearance, the drilling rig with spun-casing capabilities could not gain access inside the ELPO Building where the monitoring well was installed, therefore, monitoring well MWM7-03 was installed using 4.25-inch augers instead.

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

Groundwater Samples

Groundwater samples were collected from three monitoring wells (MWM7-01, MWM7-02 and MWM7-03) installed downgradient of the ELPO operational area to assess impacts, if any, to groundwater quality. MWM10 was installed as part of the Sitewide hydrogeologic investigation; however, due to its proximity to AOI M-7, it is included in this discussion. Monitoring well locations are shown on Figure 4-23. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Due to the extremely slow groundwater recharge at MWM7-03 samples were collected over a period of two days. The well was purged dry in the morning, allowed to recharge throughout the day, and samples were collected later in the day. The samples that could not be collected on the first day due to insufficient volume of groundwater were collected the following day. Sample collection for all parameters was completed with a disposable bailer. Water quality parameters were not recorded during purging of the well due to insufficient recharge. Based on a VOC exceedance from the first round of groundwater sampling an additional sample was collected from MWM7-03, and submitted for laboratory analysis for VOCs. A total of three sampling events were completed at MWM7-03.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	7	21	21	21	21
Groundwater	4	8	8	8	8

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Aug 07, 2009 15:19

Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-43 and 4-44, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.5.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of constituents detected in the soil samples collected from AOI M-7 do not exceed screening criteria. A summary of boring locations and analytical results is shown on Figure 4-22.

Groundwater Samples

The concentrations of constituents detected in AOI M-7 groundwater samples exceed screening criteria for acetone and thallium. Acetone was detected in the first-round sample collected from MWM7-03 at a concentration of 14 mg/L, exceeding the IDWC of 2.1 mg/L. Interviews with Site personnel indicated that acetone was not used or stored in the ELPO Building. A second groundwater sample was collected from MWM7-03 and analyzed only for VOCs to verify the value from the first round of sampling. Acetone was detected at a concentration of 42 mg/L, which exceeds the screening criteria. Finally, during the second full round of groundwater sampling, the VOC sample collected from MWM7-03 yielded an acetone concentration of 0.54 mg/L which does not exceed the screening criteria.

The Massachusetts Department of Environmental Protection (DEP) published a report documenting that a specific brand of bentonite pellets commonly used in monitoring well construction contains acetone as a coating agent. These pellets were used in the well construction of MWM7-03, which may explain the elevated concentration of acetone in the first round and follow-up round of groundwater sampling. The second round of groundwater sampling again had a detection of acetone, but the concentration does not exceed the screening criteria. The report published by the MADEP is provided in Appendix G.

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Aug 07, 2009 15:19

Thallium was detected at concentrations that exceed the IDWC of 0.002 mg/L in the first round samples submitted from all four wells associated with this AOI (MWM7-01, 0.0141 mg/L; MWM7-02, 0.0053 mg/L; MWM7-03, 0.0063 mg/L; MWM10, 0.0143 mg/L). Thallium was not detected in any of the second round samples.

4.4.5.3 Conclusions

The concentrations of acetone detected in MWM7-03 in the first round and follow-up groundwater sampling events exceed screening criteria. Acetone was again detected in the second round of sampling; however, at a concentration that does not exceed screening criteria. It has been determined that the both of the acetone concentrations that exceed the screening criteria are likely a direct result of well materials used and not indicative of groundwater quality conditions at AOI M-7. Thallium was detected during the first round sampling event; however, during the second round analysis utilizing the revised laboratory methodology, thallium was not detected above screening criteria.

The RFI soil and groundwater data from AOI M-7 do not indicate that a release has occurred to soils or groundwater at AOI M-7. Concentrations of constituents detected in soil and groundwater do not exceed the screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions for the AOI.

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Aug 07, 2009 15:19

4.4.6 Plant 11 Heat Treat Oil Storage Area (AOI M-9)

AOI M-9 consists of four ASTs located near the eastern wall of Plant 11, contained inside a floor pit with a sump that discharges to the WWTP. This area is considered an AOI because of the type and quantity of oils and coolant materials historically stored in the ASTs.

During the Site walkthrough completed as part of the CCR preparation, only one AST was in use. The contents were labeled as used oil, non-RCRA regulated. The floor pit and sump contained a moderate amount of oily liquid. The outside of the eastern Plant 11 wall was stained an oily color, suggesting that oil may have seeped out.

In June 2001, the trench surrounding the ASTs was cleaned and inspected. While the trench was being power-sprayed, water was observed to be coming out of the outside east wall where brown staining had originally been observed (and still exists), further suggesting potential leakage from the containment area. Substantial cracking was observed in the concrete trench surrounding the tanks. Cracking was particularly noticeable along floor/wall joints.

4.4.6.1 Scope and Results

The scope of the field investigations at AOI M-9 involved cleaning and inspecting the trench surrounding the ASTs to assess structural integrity. Based on the inspection, soil and groundwater samples were collected to determine whether a potential release exceeding screening criteria has occurred from the Plant 11 heat treat oil storage area.

The following is a summary of the sampling activities completed for each medium during the RFI at AOI M-9. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

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Aug 07, 2009 15:19

Soil Boring Samples

Locations of soil borings associated with the completion of one soil boring (BM9-01) and the installation of two monitoring wells (MWM9-01 and MWM9-02) are shown on Figure 4-22. The RFI Work Plan outlined that two monitoring wells were to be completed downgradient of the sump, inside Plant 11. Based on the absence of groundwater, only one monitoring well was installed and the other designated as soil boring BM9-01. A second monitoring well was placed outside, west of Plant 11 and was designated MWM9-02.

Due to the low overhead clearance, the drilling rig with spun-casing capabilities could not gain access inside the Plant 11, therefore, 4.25-inch augers were used instead.

The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Due to a shallow water table in the vicinity of MWM9-02, samples for that boring and for BM9-01 were submitted only from 0 to 2- and 8 to 10-foot intervals. Soil boring logs are provided in Appendix D.

Groundwater Samples

Groundwater sample collection was attempted from two monitoring wells (MWM9-01 and MWM9-02). Well locations are shown on Figure 4-23. Well MWM9-01 was dry at the time of sampling, therefore groundwater quality samples were collected only from MWM9-02 and submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	3	7	7	7	7
Groundwater	1	1	1	1	1

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Aug 07, 2009 15:19

Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-45 and 4-46, respectively. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.6.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of constituents detected in the soil samples collected from AOI M-9 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-22.

Groundwater Samples

The concentrations of constituents detected in the groundwater samples collected from AOI M-9 do not exceed screening criteria. A summary of the groundwater monitoring well location and analytical results is shown on Figure 4-23.

4.4.6.3 Conclusions

The RFI soils and groundwater data from AOI M-9 do not indicate that a release has occurred to soils or groundwater at AOI M-9. Concentrations of constituents detected in soil and groundwater do not exceed

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

screening criteria. No further action or investigation is warranted for this area. The ASTs will be removed from this sump and a soil sample will be collected. The sump will then be abandoned.

Table 2-1 presents a summary of the data and conclusions at the AOI.

4.4.7 Plant 12 Former Gasoline Storage Area (AOI M-11)

AOI M-11 consists of a former outdoor gasoline storage area near the northeast corner of Plant 12. This area is considered an AOI because of the type and quantity of the materials (gasoline) historically stored in the area.

There were no documented releases from the former AST. However, the former location of the AST is not known. According to Site personnel, the AST was emptied and removed from the Site. Cracks were observed in the concrete slab along the north wall of Plant 12 during the Site walkthrough completed as part of the CCR preparation, but no signs of leakage or stains were observed. However, there is no documentation available on the AST closure.

4.4.7.1 Scope and Results

The scope of the field investigations at AOI M-11 involved collection of soil samples to determine whether a potential release above screening criteria has occurred from the Plant 12 Former Gasoline Storage Area.

The following is a summary of the soil boring sampling activities conducted at AOI M-11. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Three soil borings (BM11-01, BM11-02, and BM11-03) were completed in areas where the former AST may have been located. Soil boring locations are shown on Figure 4-20. The samples were submitted for laboratory analysis for BTEX. Soil boring logs are provided in Appendix D.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	BTEX
Soil Boring	3	9

A summary of the analytical data for the soil samples is shown in Table 4-47. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.7.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

BTEX compounds were not detected in the soil boring samples, with the exception of benzene which was detected in 1 of 9 samples (BM11-01 at 8 to 10-foot interval) at a concentration of 0.0054 mg/kg which does not exceed applicable screening criterion of 0.1 mg/kg. A summary of soil sample locations and analytical results is shown on Figure 4-20.

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4.4.7.3 Conclusions

The RFI soils data from AOI M-11 do not indicate that a release has occurred to soils at AOI M-11. Concentrations of constituents detected in soil do not exceed screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

4.4.8 AST Area West of Plant 14 (AOI M-13)

AOI M-13 consists of three ASTs located west of Plant 14. This area is considered an AOI because of the type and quantity of materials (diesel fuel and gasoline) stored in the ASTs.

There have been no documented releases related to the ASTs in this area. However, secondary containment was not present for two of the ASTs and there is no closure information on the former AST.

4.4.8.1 Scope and Results

The scope of the field investigations at AOI M-13 involved collection of soil samples to determine whether a potential release exceeding screening criteria has occurred from the AST Area West of Plant 14.

The following is a summary of the soil sampling activities conducted at AOI M-13. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

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Two soil borings (BM13-01 and BM13-02) were completed at the AST locations that did not have secondary containment to provide information on subsurface soil conditions. Boring locations are shown on Figure 4-17. The samples were submitted for laboratory analysis for BTEX, SVOCs, and lead. Due to a shallow water table in the vicinity of AOI M-13, soil samples for both borings were submitted only from the 0 to 2-foot and 8 to 10-foot intervals. Soil boring logs are provided in Appendix D.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	BTEX	SVOCs	Lead
Soil Boring	2	4	4	4

A summary of the analytical data for the soil samples is shown in Table 4-48. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

4.4.8.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

The concentrations of constituents detected in the soil boring samples collected from AOI M-13 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-17.

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4.4.8.3 Conclusions

The RFI soils data from AOI M-13 do not indicate that a release has occurred to soils at AOI M-13. Concentrations of constituents detected in soils do not exceed screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

4.4.9 Plant 25 Basement Sump Area (AOI M-16)

AOI M-16 consists of the basement area of Plant 25, which contains a sludge tank, pumping system, and several floor sumps. This area is considered an AOI because oily liquid was observed in several of the floor sumps. Most of the basement sumps have been filled with grout. The two remaining floor sumps were cleaned and inspected as part of the RFI activities. Both sumps contained black oily sludge, topped with alkali-oily liquids. The concrete was intact in both sump pits, although one pit exhibited minor pitting while the other had heavy black staining was observed on the other.

4.4.9.1 Scope and Results

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Aug 07, 2009 15:19

The scope of the field investigations at AOI M-16 involved collection of soil and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the Plant 25 basement sump area.

The following is a summary of the sampling activities completed for each medium at AOI M-16. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

Soil boring locations associated with the installation of two monitoring wells (MWM16-01 and MWM16-02) are shown on Figure 4-20. The associated samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Soil boring logs are provided in Appendix D.

Groundwater Samples

MWM16-01 was installed downgradient from the AOI to assess groundwater quality conditions downgradient of the pits and sumps. Based on results from the first round of groundwater sampling, which indicated vinyl chloride was detected at a concentration that exceeds screening criteria, a second well (MWM16-02) was installed downgradient to further delineate the area of potential groundwater impacts. The well locations are shown on Figure 4-21. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	2	6	6	6	6
Groundwater	2	3	3	3	3

Summaries of the analytical data for the soil and groundwater samples are shown in Tables 4-49 and 4-50. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

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4.4.9.2 Discussion of Results

The concentrations of constituents detected in soil and groundwater were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Soil Boring Samples

The concentrations of constituents detected in the soil samples collected from AOI M-16 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-20.

Groundwater Samples

The only constituent detected in groundwater samples collected from AOI M-16 that exceeds the screening criteria is vinyl chloride. For both rounds of sampling performed at well MWM16-01, vinyl chloride exceeds the IDWC (0.002 mg/L) with concentrations of 0.023 mg/L and 0.017 mg/L, respectively. However, a groundwater sample collected from monitoring well MWM16-02, which was installed downgradient of MWM16-01, does not show vinyl chloride to be detected. A summary of groundwater monitoring well locations and analytical results is shown on Figure 4-21.

4.4.9.3 Conclusions

The RFI soils data from AOI M-16 do not indicate that a release has occurred to soils at AOI M-16. Concentrations of constituents detected in soil do not exceed screening criteria. The RFI groundwater data from AOI M-16 indicate that a release has occurred to groundwater at AOI M-16. Vinyl chloride concentrations exceed screening criteria in both groundwater samples collected from MWM16-01; however, vinyl chloride was not detected in the downgradient monitoring well (MWM16-02). Based on these results, groundwater at AOI M-16 will be further evaluated in the Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

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4.4.10 Plant 15 Southern Piping Trench (AOI M-17)

AOI M-17 consists of a piping trench located along the southern wall in the western portion of Plant 15. The piping trench is approximately 10 to 15 feet deep and contains pipes that distribute wastewater to the WWTP. This area is considered an AOI because of the type of material transported in pipes located within this trench and the unknown condition of the trench.

Although there have been no documented releases associated with the piping trench, the interior of the piping trench could not be observed during the initial site walk completed as part of the CCR.

4.4.10.1 Scope and Results

A visual evaluation of the trench was completed as part of the RFI activities. The piping trench was inspected remotely via use of a mobile video camera. The walls and floor appeared to be intact, with no observed staining.

4.4.10.2 Conclusions

Based on the results from the inspection of the trench no further action or investigation is warranted for this area.

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Table 2-1 presents a summary of the data and conclusions for this AOI.

4.4.11 Plant 5 Southern Access Railway (AOI M-19)

The access railway is located at the southwestern end of Plant 5. The railway is approximately 600 feet long and spans the western half of the building along the southern side. The railway was used to transport materials associated with metal working and automotive assembly operations into and out of Plant 5. The type and extent of materials transported on the railway is unknown, and soils directly below the railway tracks may have been impacted. Deteriorated asphalt currently covers most of the area directly beneath the tracks.

4.4.11.1 Scope and Results

The scope of the field investigations at AOI M-19 involved collection of surface soil samples to determine whether a potential release exceeding screening criteria has occurred from the railway.

The following is a summary of the surface soil sampling activities conducted at AOI M-19. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Seven surface soil samples (SM19-01 through SM19-07) were collected along the length of the railroad tracks to determine quality of surface soils in this area. Sample locations are shown on Figure 4-24. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Four additional surface soil samples were collected (SM19-08 through SM19-11 at locations SM19-04, SM19-05, SM19-06, SM19-03, respectively, to verify the manganese results derived from the initial surface soil samples collected and to determine chromium species present. These samples were submitted for laboratory analysis for manganese, chromium (total) and hexavalent chromium.

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Aug 07, 2009 15:19

The number of locations from which surface soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Mn	Cr (Total)	Cr (VI)
Surface Soil	11	7	7	7	7	11	11	4

A summary of the analytical data for the soil samples is shown in Table 4-51. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.4.11.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

Manganese and chromium were detected in soils at concentrations that exceed the screening criteria.

Concentrations of manganese detected in the initial soil samples collected at SM19-04 (2,245 mg/kg), SM19-05 (12,600 mg/kg), and SM19-06 (10,700 mg/kg) exceed the IPSIC of 1,500 mg/kg. Concentrations of total chromium detected in the initial soil samples collected at SM19-05 (515 mg/kg) and SM19-06 (449 mg/kg) exceed the IPSIC for hexavalent chromium of 240 mg/kg.

Four additional soil samples were collected to verify elevated detections of manganese, and determine the chromium species present. Chromium and hexavalent chromium were detected at concentrations that do not

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Aug 07, 2009 15:19

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exceed screening criteria. Total chromium was detected at a maximum concentration of 668 mg/kg at SM19-09. The hexavalent chromium concentration at this location does not exceed screening criteria. Manganese concentrations exceed the IPSIC in SM19-10 (2,310 mg/kg). A summary of soil sample locations and analytical results is presented on Figure 4-24.

4.4.11.3 Conclusions

The RFI soils data from AOI M-19 do indicate that a release exceeding screening criteria has occurred to soils at AOI M-19. Chromium speciation was conducted as part of the RFI at AOI M-19. Hexavalent chromium is present, but not at concentrations that exceed screening criteria. Confirmation manganese samples were collected, however the impacted area was not fully delineated. Based on these results, AOI M-19 will be further evaluated in the Baseline Risk Evaluation presented in Section 5.

Table 2-1 presents a summary of the data, conclusions, and proposed activity at the AOI.

4.4.12 Plant 14 Transformer Station (AOI M-21)

AOI M-21 consists of a transformer station located adjacent to Track 26 between Plant 14 and Plant 2. Approximately 25 transformers are located on an elevated concrete pad with no secondary containment system. The area immediately north of the transformer station (in the vicinity of Track 26) is covered with gravel, leaving the underlying soils potentially exposed. Evidence of oil stains on the north edge of the concrete pad was observed during the Site walk through completed as part of the CCR preparation.

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Aug 07, 2009 15:19

4.4.12.1 Scope and Results

The scope of the field investigations at AOI M-21 involved collection of surface soil samples to determine whether a potential release in exceeding the applicable Part 201 screening criteria has occurred from the substation.

The following is a summary of the surface soil sampling activities conducted at AOI M-21. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Four surface soil samples (SM21-01 through SM21-04) were collected along the perimeter of the transformer pad with one sample biased to the area previously observed to be oil stained. Sample locations are shown on Figure 4-19. The samples were submitted for laboratory analysis for SVOCs and PCBs.

The number of locations from which surface soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	SVOCs	PCBs
Surface Soil	4	4	4

A summary of the analytical data for the soil samples is shown in Table 4-52. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

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4.4.12.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0. The concentrations of constituents detected in the surface soil samples collected from AOI M-21 do not exceed screening criteria.

4.4.12.3 Conclusions

The RFI soils data from AOI M-19 do indicate that a release exceeding Part 201 screening criteria has occurred to soils at AOI M-19. Chromium speciation was conducted as part of the RFI at AOI M-19. Hexavalent chromium is present, but not at concentrations that exceed applicable screening criteria. Additional manganese samples were also collected because concentrations from the initial samples exceeded the screening criterion based on inhalation of windblown particulates. Additional characterization of manganese at the AOI was conducted to the extent practical given the physical limitations in the area. As shown on Figure 4-24, this AOI is a rail spur bounded on the north by the Plant 5 & 23 building and on the south by the concrete foundation of the Former Plant 8 building. The additional characterization of manganese covered the area between the existing building and building foundation, which is where the release of manganese was most likely and where the potential for windblown particulates is possible. Based on these results, AOI M-19 will be further evaluated in the Baseline Risk Assessment presented in Section 5.

Table 2-1 presents a summary of the data and conclusions at the AOI.

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Aug 07, 2009 15:19

4.4.13 Plants 25, 33, and 75 Substation and Power Building (AOI M-23)

AOI M-23 consists of a substation and power building located southwest of Plant 25 and north of Columbia Avenue. Transformer oil that potentially contained PCBs was used at the substation and power building. The substation and power building remain in service.

4.4.13.1 Scope and Results

The scope of the field investigations at AOI M-23 involved collection of surface soil samples to determine whether a potential release exceeding screening criteria has occurred from the substation and power building.

The following is a summary of the surface soil sampling activities conducted at AOI M-23. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Four surface soil samples (SM23-01 through SM23-04) were collected along the perimeter of the substation. Sample locations are shown on Figure 4-20. The samples were submitted for laboratory analysis for SVOCs and PCBs.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	SVOCs	PCBs
Surface Soil	4	4	4

A summary of the analytical data for the soil samples is shown in Table 4-53. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

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4.4.13.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

The concentrations of constituents detected in the surface soil samples from AOI M-23 do not exceed screening criteria. A summary of soil sample locations and analytical results is shown on Figure 4-20.

4.4.13.3 Conclusions

The RFI soil data from AOI M-23 do not indicate that a release has occurred to soils at AOI M-23. Concentrations of constituents detected in soil do not exceed screening criteria. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

4.4.14 Plant 12 Transformer Oil Spill (AOI M-24)

AOI M-24 consists of an area adjacent to Plant 12 where PCB-containing fluid was spilled. Soil and concrete that may have been affected by the transformer oil spill were removed in May 1994. However, there is no documentation confirming removal activities.

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Aug 07, 2009 15:19

4.4.14.1 Scope and Results

The scope of the field investigations at AOI M-24 involved collection of surface soil samples to determine whether a potential release exceeding screening criteria has occurred from Plant 12.

The following is a summary of the surface soil sampling activities conducted at AOI-M24.

Two surface soil samples (SM24-01 and SM24-02) were collected immediately below the concrete patched areas identified in the CCR (ENCORE, 2001a). Sample locations are shown on Figure 4-20. The samples were submitted for laboratory analysis for SVOCs and PCBs.

The number of locations from which soil samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	SVOCs	PCBs
Surface Soil	2	2	2

A summary of the analytical data for the soil samples is shown in Table 4-54. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is also provided in Appendix F.

4.4.14.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0. The laboratory results indicate that SVOCs and PCBs were not detected in the surface soil samples collected at AOI M-24. The soil sample locations and analytical results are summarized on Figure 4-20.

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4.4.14.3 Conclusions

The RFI soil data from AOI M-24 do not indicate that a release exceeding screening criteria has occurred to soils at AOI M-24. No chemical constituents were detected in the soil sample. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

4.4.15 Plant 33 Basement Sump Area (AOI M-25)

AOI M-25 consists of the basement area of Plant 33, which contains several floor sumps and process pits. This area is considered an AOI because the condition of the floor pits could not be evaluated due to the pits having recently been filled with flowable fill (grout).

One sump was inspected in the Plant 33 Basement. Black oily sludge with a strong petroleum odor was present at the bottom of the sump. The sump was cleaned as part of the RFI activities. The concrete walls and floor of the sump appeared to be smooth and no substantial pitting observed.

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4.4.15.1 Scope and Results

The scope of the field investigations at AOI M-25 involved collection of soil and groundwater samples to determine whether a potential release in exceeding screening criteria has occurred from the sump area.

The following is a summary of the sampling activities completed for each medium at AOI M-25. Soil samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Soil Boring Samples

The location of the soil boring associated with the installation of one monitoring well (MWM25-01) is shown on Figure 4-20. Soil samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs and inorganics. Soil boring logs are provided in Appendix D.

Groundwater Samples

Monitoring well MWW25-01 was dry during both sampling events and a groundwater sample could not be collected. The location of MWM25-01 is shown on Figure 4-20.

The number of locations from which samples were collected for each medium and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics
Soil Boring	1	3	3	3	3
Groundwater	1	0	0	0	0

A summary of the analytical data for the soil samples is shown in Table 4-55. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

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Aug 07, 2009 15:19

4.4.15.2 Discussion of Results

The concentrations of constituents detected in soil were compared with the MDEQ Part 201 industrial criteria as discussed in Section 4.0.

The concentrations of constituents detected in the soil boring samples collected from AOI M-25 do not exceed screening criteria. A summary of the soil sample locations and analytical results is shown on Figure 4-20.

At the time of sampling MWM25-01 was dry and a groundwater sample could not be collected.

4.4.15.3 Conclusions

A groundwater monitoring well was to be installed downgradient of the AOI to determine impacts, if any, to the groundwater quality downgradient of AOI M-25. Natural recharge never occurred at MWW25-01.

The RFI soils data from AOI M-25 do not indicate that a release has occurred at AOI M-25. Concentrations of constituents detected in soil do not exceed screening criteria. The inspection of the one active sump showed it to be structurally sound. No further action or investigation is warranted for this area.

Table 2-1 presents a summary of the data and conclusions at the AOI.

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Aug 07, 2009 15:19

4.5 Powertrain

4.5.1 Emissions Control Building Former UST Farm and Former Stoddard Solvent AST (AOI P-6)

AOI P-6 consists of a former UST tank farm and former Stoddard solvent AST located west of the northwest corner of the Emissions Control Building. A release from one or more of the USTs was discovered in June 1984 and more recently in January 2001. A concrete paved parking lot is currently at the location of the former UST tank farm and former AST.

The former UST tank farm contained seven USTs that were installed in the early- to mid-1970s. The USTs stored several types of materials, including unleaded gasoline, Indolene I clear gas, GM calibration solvent, and water. The USTs were taken out of service in November 1986 and removed in July 1987.

The 950-gallon AST was located on a concrete pad and contained by a concrete dike. The AST was used to store waste Stoddard solvent. The AST was closed in accordance with the closure plan in November 1986, although formal correspondence with MDEQ and/or USEPA was not necessary.

4.5.1.1 Scope and Results

The scope of the field investigations at AOI P-6 involved collection of soil and groundwater samples to determine whether a potential release exceeding screening criteria has occurred from the former UST tank farm or AST.

The following is a summary of the sampling activities completed for each medium at AOI P-6. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed are presented in Table 2-1.

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4.7.3.1 Scope and Results

The scope of the field investigations at Osmun Lake involved collection of sediment samples to determine whether a potential release exceeding screening criteria has occurred.

The following is a summary of the sediment sampling activities conducted at Osmun Lake. Samples were collected in accordance with the procedures discussed in Section 2.3, except as otherwise noted. A summary of field investigations performed is presented in Table 2-1.

Surficial sediment samples were collected from six locations (SDOL-01 through SDOL-06). The samples were collected from the 0 to 6-inch interval. The samples were submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and cyanide.

The number of locations from which sediment samples were collected and the number of samples analyzed for each analyte group are as follows:

Medium	Locations	VOCs	SVOCs	PCBs	Inorganics	Cyanide
Sediment	6	6	6	6	6	6

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Summaries of the analytical data for the sediment samples are shown in Table 4-67. The analytical data for all samples are provided in Appendix E. Complete documentation of the data review and validation is provided in Appendix F.

4.7.3.2 Discussion of Results

The concentrations of constituents detected in sediment were compared with the MDEQ Part 201 residential criteria as discussed in Section 4.0. This comparison indicated that lead is the only constituent to exceed screening criteria in Osmun Lake sediments. Lead was detected in one sample at SDOL-04 with a concentration of 592 mg/kg, which exceeds the RDC of 400 mg/kg.

4.7.3.3 Conclusions

The RFI sediment data from Osmun Lake indicate that a release exceeding screening criteria has occurred at Osmun Lake. Lead was the only constituent detected at concentrations that exceeds screening criteria at one location, therefore, no further action is recommended for Osmun Lake.

Table 2-1 presents a summary of data and conclusions for this AOI.

4.8 LNAPL Delineation

Three LNAPL areas exist within the DA. LNAPL Area No. 1 is situated in AOI W-1, LNAPL Area No. 2 is situated in AOI W-10, and LNAPL Area No. 3 is situated in AOI W-8. The location of LNAPL Areas No. 1 and 2 are shown on Figure 2-3, while the location of LNAPL Area No. 3 is shown on Figure 2-4. LNAPL Areas No. 2 and 3 were discovered during the implementation of the RFI when LNAPL was encountered in monitoring wells MWW10-01 and MWW8-03, respectively. LNAPL Area No. 1 was previously investigated and delineated within AOI W-1 prior to implementation of the RFI.

Further delineation of LNAPL Areas No. 2 and 3 was performed to determine the horizontal extent of LNAPL at each location. The initial investigation consisted of field screening soil samples collected using a Geoprobe rig with fluorescent/ultraviolet light to determine the absence or presence of LNAPL within the soil samples.

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Based on this initial screening, additional groundwater monitoring wells were installed for each LNAPL area to determine the horizontal extent of the LNAPL. In addition, wells were installed within the LNAPL area for purposes of estimating LNAPL thickness and properties. At Area No. 3, the LNAPL was too deep and the concrete too thick to use the Geoprobe, so a conventional drill rig was used to investigate Area No. 3 and to install permanent wells.

Additional investigation around LNAPL Area No. 1 was performed to verify the horizontal extent and to assess if migration of the previously delineated LNAPL had occurred.

It should be noted that although LNAPL Areas No. 1 and 2 are being discussed in this report as two separate areas based on their location within individual AOIs, both areas potentially commingle to create one single LNAPL pool. The exact location of where these LNAPL pools mix cannot be determined. It should also be noted that based on varying physical descriptions, fingerprint analysis results and differing magnitudes of chemical constituents of the LNAPL samples collected from Areas No. 1 and 2, it appears that different LNAPL types are present in these areas.

As such, the objective of this section is to provide information with respect to the various LNAPL samples and to identify the horizontal extent of LNAPL at the Site.

Samples of the LNAPL were collected and submitted from each LNAPL area for chemical analysis. Soil and groundwater samples were also collected from various boreholes and monitoring wells and downgradient in the LNAPL areas and submitted for laboratory analysis. The results of the soil, groundwater, and LNAPL analyses are discussed and evaluated in the corresponding AOI sections.

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Deep LNAPL

An investigation was completed to determine if LNAPL is present within the screened zone of the Montcalm Production Well (120 to 180 feet), as historically LNAPL has been observed in this well. A deep boring (BD-6) was completed to a depth of 140 feet immediately southwest of the production well. No evidence of LNAPL was observed during the completion of the soil boring. Three deep groundwater monitoring wells (DWD10, DWD12, DWD13) were installed within the screened zone of the production well. These wells were regularly monitored and LNAPL has not been observed. The Montcalm Production Well was abandoned on February 27, 2002.

4.8.1 Area No. 1

LNAPL Area No. 1 occupies approximately one third of the West Yard (AOI W-1, Figure 2-3). Previous LNAPL investigations of this area include a 1997 study by Parsons Engineering Science, Inc (Parsons) and a 2000 Conestoga-Rovers & Associates (CRA) LNAPL delineation program. From the previous investigations, it appeared that possibly three different LNAPLs were present in the West Yard (AOI W-1) based on physical properties and chemical composition. Based on the nature of the fill materials in the West Yard area, it was concluded in the previous investigations that the LNAPL had a potential to migrate laterally. This section discusses the scope, results and conclusions of the additional investigations conducted around LNAPL Area No. 1.

4.8.1.1 Scope and Results

Twelve soil boring samples (ND01-01 through ND01-12, Figure 2-3) were collected along the south, east and north borders of LNAPL Area No. 1 and screened for the presence of LNAPL with a fluorescent/ultraviolet light to confirm the horizontal extent of the LNAPL and to assess whether any migration of the LNAPL had occurred. Monitoring well MWW1-05 was installed south of MW39-99 to determine the southern limit of LNAPL in that area. Two LNAPL samples were collected from AOI W-1 during the RFI field activities. Samples collected

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Aug 07, 2009 15:19

from MW24-99 and MW36-99 were submitted for laboratory analysis for fingerprinting, VOCs, SVOCs, PCBs, inorganics, total cyanide and dioxins. The LNAPL fingerprinting report is presented in Appendix H.

4.8.1.2 Discussion of Results

LNAPL was not observed during the fluorescent/ultraviolet light screening conducted in soil borings ND01-01 through ND01-12. LNAPL was also not present in the new monitoring well MWW1-05.

During sample collection, the LNAPL collected from MW24-99 and MW36-99 was described as dark brown and weathered. From fingerprinting analysis, LNAPL from MW24-99 and MW36-99 is described as highly degraded No. 6 fuel oil with less amounts of moderately degraded kerosene type fuel for MW36-99 and a highly degraded diesel #2 for MW24-99 (Zymax, 2001).

The results of chemical analysis of the LNAPL sample collected from MW36-99 indicate that the chemical composition of the LNAPL from this well has lower levels of VOCs than the sample previously collected from MW36-99 by CRA during previous investigations. The concentrations of VOCs detected in MW24-99 were similar to those detected in MW36-99. Concentrations of VOCs detected in MW24-99 and MW36-99 ranged from benzene at 0.15 mg/kg to xylene at 21 mg/kg.

Concentrations of SVOCs detected in MW24-99 and MW36-99 were limited to various PAHs ranging from acenaphthene at 40 mg/kg to pyrene at 300 mg/kg.

Total PCB concentrations ranged from 32 mg/kg at MW36-99 to 1,400 mg/kg at MW24-99. The PCB concentrations detected in MW36-99 were consistent with previous investigations. The PCB concentration detected at MW24-99 was significantly higher than any LNAPL samples previously collected from LNAPL Area No. 1.

The 2,3,7,8-TCDD TEQ for LNAPL samples collected from MW24-99 and MW36-99 were 3.13×10^{-3} mg/kg and 4.16×10^{-3} mg/kg, respectively.

The LNAPL analytical results from both historical and RFI sampling are presented in Table 4-18. The chemical analysis results are further evaluated in Section 4.3.1. Several of the chemical constituents detected in LNAPL have also been detected in groundwater from wells downgradient of LNAPL Area No. 1 at a concentration greater than samples collected from upgradient wells indicating the LNAPL is acting as a potential dissolved phase source.

The measured apparent thickness of LNAPL in Area No. 1 appears to vary over time from the various monitoring events conducted during the RFI (Table 4-68). The maximum apparent thickness of LNAPL encountered in the monitoring wells in Area No. 1 was 2.71 feet at MW-6 (March 18, 2002), while the minimum thickness was 0.01 feet at various times in various wells.

Figure 2-3 presents the horizontal extent of LNAPL Area No. 1. It should be noted that the LNAPL Area No. 1 extends into the W-10 area. As previously discussed, the Area No. 1 and Area No. 2 LNAPL areas may be connected as a single LNAPL area.

4.8.1.3 Conclusions

From the additional investigations conducted during the RFI, LNAPL Area No. 1 has not significantly changed in the aerial extent compared to the delineation presented in the 2000 Draft CRA LNAPL Delineation Report (CRA, 2000a).

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4.8.2 Area No. 2

LNAPL Area No. 2 is situated along and covers approximately 2/3 the length of the Railroad Marshalling Area (AOI W-10). LNAPL was discovered in AOI W-10 during development of monitoring well MWW10-01. Additional investigation of LNAPL Area No. 2 was conducted to define the horizontal extent and thickness of LNAPL in this area.

4.8.2.1 Scope and Results

Thirty-seven soil boring samples were collected and screened with a fluorescent/ultraviolet light for the presence of LNAPL. Five piezometers (PZ-01 through PZ-04) were installed to assess groundwater flow direction in the area. Based on the results of the ultraviolet screening, five additional monitoring wells (MWW10-02 through MWW10-06) were also installed to determine LNAPL thickness and groundwater impact. One LNAPL sample was collected from MWW10-01 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and dioxins.

4.8.2.2 Discussion of Results

The fluorescent/ultraviolet light screening showed positive indicators for LNAPL in 20 of the 37 soil borings. Based on the LNAPL screening, five additional monitoring wells were installed to further characterize and delineate LNAPL in the area. In addition to the LNAPL encountered in MWW10-01, only MWW10-05 had LNAPL present.

The LNAPL sample collected from MWW10-01 was described as thick and dark brown with a diesel odor. From fingerprinting analysis, the LNAPL from MWW10-01 is described as a moderately degraded diesel No. 2 with less amounts of highly degraded No. 6 fuel oil (Zymax, 2001). The LNAPL fingerprinting cover letter is presented in Appendix H.

It should be noted that the LNAPL presented in wells MW-6 and MW-13, which have historically been considered part of LNAPL Area No. 1, may be associated with the LNAPL identified in Area No. 2.

The results of chemical analysis of LNAPL samples collected from MWW10-01 indicate that VOCs, PAHs, PCBs, and dioxins are present in the LNAPL from Area No. 2. The concentrations of VOCs detected range from chloromethane at 0.23 mg/kg to xylene at 15 mg/kg. The concentrations of PAHs detected range from biphenyl at 51 mg/kg to phenanthrene at 540 mg/kg. The total PCB concentration was 188.6 mg/kg. The 2,3,7,8-TCDD TEQ concentration for the LNAPL sample collected from MWW10-01 is 5.31 x 10^{-4} mg/kg.

The LNAPL analytical results are presented in Table 4-32 and are further discussed in Section 4.3.6.

The apparent thickness of LNAPL in the various monitoring wells in AOI W-10 have varied over time (Table 4-68). The apparent maximum LNAPL thickness has been encountered in MWW10-01 at 10.91 feet, while the minimum apparent thickness was 0.05 at MWM10-06.

Figure 2-3 presents the horizontal extent of LNAPL Area No. 2.

4.8.2.3 Conclusions

LNAPL Area No. 2 has been adequately delineated and appears to be localized along the railroad tracks of the former Railroad Marshalling Area. The groundwater flow direction in this area is to the southwest. Although downgradient monitoring wells installed along the property boundary do not have LNAPL present, they do indicate that the LNAPL is acting as a potential source of dissolved phase constituents.

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4.8.3 Area No. 3

LNAPL Area No. 3 is located within AOI W-8. LNAPL was discovered in AOI W-8 during low flow development of monitoring well MWW8-03. Additional investigation of LNAPL Area No. 3 was conducted to define the horizontal extent and thickness of LNAPL in this area.

4.8.3.1 Scope and Results

Seven additional monitoring wells (MWW8-06 through MWW8-12) and one piezometer (PZW8-01) were installed in the immediate vicinity of MWW8-03 to further delineate the LNAPL. One LNAPL sample was collected from MWW8-03 and submitted for laboratory analysis for VOCs, SVOCs, PCBs, inorganics and dioxins and fingerprinting.

4.8.3.2 Discussion of Results

During sample collection, the LNAPL collected from MWW8-03 was described as thick and yellow with a diesel/kerosene odor. Fingerprinting analysis describes the LNAPL as a weathered diesel No. 2 with a small amount of highly degraded No. 6 fuel oil (Zymax, 2001). The LNAPL fingerprinting report is presented in Appendix H.

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The results of chemical analysis of LNAPL samples collected from MWW8-03 indicate that VOCs, PAHs, PCBs, and dioxins are present in the LNAPL. The concentrations of VOCs detected range from methyl cyclohexane at 0.62 mg/kg to xylene at 1.3 mg/kg. The concentrations PAHs detected range from 2-methylnapthalene at 120 mg/kg to phenanthrene at 780 mg/kg. The total PCB concentration detected was 2.7 mg/kg. The 2,3,8-TCDD TEQ concentration for the LNAPL sample collected from MWW8-03 is 7.38 x 10^{-6} mg/kg.

The LNAPL analytical results are presented in Table 4-26 and are further discussed and evaluated in Section 4.3.5.

The thickness of LNAPL in the various monitoring wells in AOI W-8 have varied over time (Table 4-68), although it has generally been greater than 3.0 feet. Figure 2-4 presents the horizontal extent of the current LNAPL Area No. 3 plume.

It should be noted that an existing storm sewer runs through the middle of this area and that a depression in the groundwater table has been observed from the water level data (Figure 3-12). The presence of the sewer may also influence the migration of the LNAPL. The invert elevation of the 66' storm sewer in LNAPL Area No. 3 is 940.75 feet above mean sea level. Groundwater elevations in this area are higher than the sewer invert which would create a potential for LNAPL to migrate into the storm sewer. Although LNAPL has not been observed in the sewer, it should be noted that kerosene odors have been identified within the sewer in this area.

4.8.3.3 Conclusions

LNAPL Area No. 3 has been adequately delineated and appears to be localized to a small area within AOI W-8. The migration of the LNAPL with the overall groundwater flow at the Site have been influenced by the presence of a storm sewer in the area and potential infiltration into the sewer.

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5. Human Health Risk Evaluation

Section 4 discussed the results of the RFI field investigation for each AOI and off-site area that was investigated and compared the site characterization data with conservative generic risk-based screening criteria to identify whether a potentially significant release of hazardous constituents as occurred. The environmental media that have been identified to have been affected by potentially significant releases and the primary contaminants affecting each medium are summarized Section 5.1. The potential for exposure to these media are discussed in Section 5.2 and the significance of these potential exposures is evaluated in Section 5.3. The results of the evaluation are summarized in Section 5.4.

5.1 Potentially Significant Releases

As discussed in Section 4.0, a potentially significant release is identified based on comparison of the RFI characterization data for soil, groundwater, sediment, and surface water with conservative generic risk-based screening criteria. Environmental media that have been affected by a potentially significant release of hazardous constituents are considered "contaminated". The results of the comparisons discussed in Section 4 are summarized for soil, groundwater, sediment, and surface water in Sections 5.1.1 to 5.1.4.

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5.1.1 Soil

The tables for Section 4 summarized the soil characterization data for each AOI and off-site area, as well as the ratios of the highest measured concentrations for each constituent at each area to the screening criteria. As discussed in Section 4.0, the screening criteria for soil are the MDEQ Part 201 generic cleanup criteria based on direct contact, inhalation of soil vapor and particulate in ambient air, and inhalation of soil vapor in indoor air. The comparison of soil data from the AOIs and the seep at the southern Site boundary (which are located on-site) used the Part 201 criteria for evaluating soil at industrial sites. The comparison of soil data from Harris Lake and the Pontiac School Board property (which are located off-site) used the Part 201 criteria for evaluating soil at residential sites, although neither area is currently residential. Both the industrial and residential Part 201 criteria were derived by the MDEQ based on a cancer risk of 10 5 and a HQ of 1.

A potentially significant release to soil at an area is identified in the Section 4 tables by comparing the highest site-related concentration of each chemical in surface and subsurface soil at the area to the screening criteria. As a conservative assumption, all concentrations of organic chemicals are assumed to be site-related. For inorganic chemicals, site-related concentrations are considered those that are higher than the site-specific background levels shown in the Section 4 soil tables, which are summarized in Table 4-4 and discussed in Section 3.9. Ratios of the highest site-related concentrations in surface or subsurface soil to the screening criteria that exceed 1 are considered indications of a potentially significant release to soil and the soil at the area is considered "contaminated". As shown in the Section 4 tables, the ratios for certain constituents exceed 1 at the following AOIs:

AOI F-7	AOI M-1	AOI W-1
AOI F-15	AOI M-2	AOI W-5
	AOI M-5	AOI W-8
	AOI M-19	AOI W-9
		AOI W-10

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Aug 07, 2009 15:19

Among these AOIs, only AOIs F-15 and M-2 have constituents with concentrations that are higher than the screening criteria based on inhalation of soil vapor in indoor air (i.e., 1,1 dichloroethene and tetrachloroethene at AOI F-15, and 1,1-dichloroethene at AOI M-2). In addition to these AOIs, Harris Lake and the Pontiac School Board property also have constituents with concentrations in surface and subsurface soil that exceed the soil screening criteria.

In addition to the soil characterization data summarized in the Section 4 tables, chemical characterization data for light nonaqueous-phase liquids (LNAPLs) were collected during the RFI. As discussed in Section 4.8, these LNAPLs are found in subsurface soil at the water table in AOIs W-1, W-8, and W 10. The chemical characterization data for the LNAPL at each of these AOIs are summarized in Tables 4-18, 4-26, and 4-32, respectively. Although soil sampling conducted during the RFI did not specifically target the depth interval in which the LNAPL layer fluctuates with the water table (the smear zone), a theoretical upper bound on the concentration of a LNAPL constituent in the smear zone soil (Csoil) can be estimated as follows:

where CNAPL is the concentration of a chemical in the LNAPL, NAPL is the density of the LNAPL (approximately 0.9 kg/L), n is the total porosity of the soil (assumed to be 0.43), and soil is the dry bulk density of the soil (assumed to be 1.5 kg/L). The assumed soil porosity and bulk density are the default values USEPA recommended in the Soil Screening Guidance (USEPA 1996). This calculation assumes 100% NAPL saturation of the soil voids and is highly conservative since typical NAPL residual saturation does not exceed 20% to 50%, depending on the type of NAPL and soil.

The upper-bound smear zone soil concentrations estimated using the highest concentrations detected in the LNAPL at each AOI are shown in Table 5-1, and are compared with the soil screening criteria discussed above. As shown in Table 5-1, a few constituents have upper-bound smear zone soil concentrations that exceed the screening criteria (1,1-dichloroethene, benzo(a)pyrene, PCBs, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalent (TEQ) at AOI W-1, phenanthrene at AOI W-8, and PCBs at AOI W-10). However, the upper-bound estimates for some of these constituents (benzo(a)pyrene, 2,3,7,8-TCDD, and phenanthrene) are only slightly higher than the screening criteria. In fact, the ratios of these estimates to the screening criteria should not be considered to be higher than 1 for any practical purpose, because the estimates assume a LNAPL saturation that is at least two times higher than the typical range of residual saturation. That is, the ratios for these constituents actually show that the true concentrations of the constituents in the smear zone soil almost certainly do not meet the definition of "contamination".

The potential for human exposure to the constituents in soil and LNAPL-containing soil with concentrations higher than the screening criteria is discussed in Section 5.2 and the significance of any potential exposure is discussed in Section 5.4. Section 5.4 also includes discussion of potential exposures of workers to the LNAPLs at AOIs W-1, W-8, and W-10 during subsurface construction activities that the soil screening criteria do not address (e.g., dermal contact with LNAPL).

5.1.2 Groundwater

Groundwater quality data were collected from four saturated zones during the RFI, as discussed in Section 3.8. Data from monitoring wells screened in the unconfined saturated zone are summarized in Table 5-2a, and data from monitoring wells screened in the intermediate saturated zone (glaciolacustrine deposits) and in the deep saturated zones (upper and lower sand and gravel outwash deposits) are summarized in Table 5-2b. Where appropriate based on the locations of the monitoring wells, the groundwater data on these tables are grouped and summarized by AOI or area. Data from monitoring wells not specifically associated with a particular AOI (or area) are summarized as a group under "site-wide hydrogeologic investigation" (SWHI). The locations of the monitoring wells are shown on Figures 4-8, 4-10, 4-13, 4-15, 4-18, 4-21, 4-23, and 4-26.

Tables 5-2a and 5-2b show the detected constituents, their detection frequencies and range of detected concentrations, and the ratios of the highest measured concentrations to the screening criteria. The screening

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Aug 07, 2009 15:19

criteria for groundwater are the MDEQ Part 201 generic cleanup criteria. The specific Part 201 criteria used here for identifying a potentially significant release for all four saturated zones are those based on residential drinking water use (MDEQ 2000), although none of these saturated zones currently serve as a drinking water supply for the Site or the immediate vicinity. In addition, the Part 201 criteria based on inhalation of groundwater vapor in indoor air and the criteria based on direct contact by workers conducting excavations (MDEQ 2000) are also used to identify contamination in the unconfined saturated zone, which is as shallow as 10 ft below ground surface at some locations.

A potentially significant release to groundwater is identified in Tables 5-2a and 5-2b by comparing the highest concentration of each chemical in groundwater at an area to the screening criteria. The ratios of the highest concentrations to each set of screening criteria are shown in Tables 5-2a and 5-2b. Ratios higher than 1 are considered indications of a potentially significant release to groundwater and the groundwater is considered "contaminated".

As shown in Table 5-2a, organic chemicals with concentrations higher than the screening criteria in the shallow groundwater consist primarily of several volatile organic compounds (VOCs), each of which is found at such concentrations at only one to three AOIs. No VOC has a concentration higher than the criteria based on inhalation of vapors in indoor air. Other organic chemicals with concentrations higher than the screening criteria include bis(2-ethylhexyl)phthalate, PCBs, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalent (TEQ). Like the VOCs, the presence of these chemicals at these concentrations is limited to only a few AOIs. Only one concentration of bis(2-ethylhexyl)phthalate (at AOI W-10) in 133 samples of shallow groundwater across the Site is higher than the screening criteria. This chemical is generally considered a common laboratory contaminant (USEPA 1989). The presence of PCBs and 2,3,7,8-TCDD TEQ in groundwater at concentrations higher than the screening criteria are likely related to the presence of these chemicals in LNAPLs on the water table at AOIs W-4 and W-8, as discussed in the Section 5.2.

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Aug 07, 2009 15:19

Several metals are also present in the shallow groundwater at concentrations higher than the screening criteria, as shown in Table 5-2a. The most prevalent of these are manganese, thallium, and vanadium. As discussed in the Section 3, the only thallium concentrations higher than the screening criteria were those that were obtained by Method 6010B, which was the method originally specified in the RFI Work Plan. Based on a review of the thallium results from the initial phase of field work, USEPA and GM determined that Method 6010B has a high potential for false detection of thallium at low concentrations in aqueous matrices (groundwater and surface water), and identified Method 6020 as a more appropriate method. All thallium analyses in subsequent phases of field work were done using Method 6020. The data from several groundwater and surface water samples that were analyzed using Method 6010B and were still available for reanalysis using Method 6020 confirm that the thallium concentrations obtained using Method 6010B are all either false detections or are far higher than actual concentrations. The thallium concentrations obtained by Method 6020 do not exceed the screening criteria.

The groundwater data from the intermediate saturated zones have only five chemicals with concentrations higher than the screening criteria (acetone, bis(2-ethylhexyl)phthalate, lead, thallium, vanadium), as shown in Table 5-2a. Except for acetone, these chemicals have concentrations higher than the screening criteria in only one monitoring well in the intermediate saturated zone, and may not be associated with a release. For example, bis(2-ethylhexyl)phthalate was detected at a concentration of 0.0088 mg/L at monitoring well IDW7. This is the only concentration of the chemical that is higher than the screening criterion of 0.006 mg/L in the intermediate and deep zones; and as noted above, there is only one concentration in the shallow groundwater that is higher than the screening criterion. Overall, this chemical was detected in only 7 of 158 groundwater samples. Therefore, the concentration of bis(2-ethylhexyl)phthalate in well IDW7 is unlikely to be the result of a release.

In the deep saturated zones, the only chemical with concentrations higher than a screening criterion is acetone. However, the presence of acetone in the groundwater samples appears to be unrelated to a release at any AOI, since acetone concentrations in soil at the AOIs are low (maximum of 2.2 mg/kg among 570 samples) and would not account for the acetone concentrations observed in the groundwater samples. As discussed earlier,

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the presence of acetone in the groundwater samples is likely associated with well construction materials (coated bentonite pellets), and therefore, the presence of acetone is not considered groundwater contamination for the purposes of the EI determinations.

The potential for human exposure to these constituents in groundwater is discussed in Section 5.2, and the significance of any potential exposure is discussed in Section 5.3.

5.1.3 Sediment

Sediment data were collected at Harris Lake, Osmun Lake, Terry Lake, and the Pontiac School Board property, as summarized in the tables for Section 4. Sediment samples were not collected at any other AOI. The screening criteria for sediment in the Section 4 tables are the same as the screening criteria for soil. The use of soil screening criteria for evaluating sediment data is highly conservative because potential exposure of receptors to sediment is expected to be much lower than potential exposure of receptors to soil.

The Section 4 tables compare the highest site-related concentration of each chemical in sediment detected at each area to the screening criteria. Site-related concentrations for metals are estimated in the same way as discussed in Section 5.1.1. The ratios of the highest site-related concentrations in sediment to the screening criteria are shown in the Section 4 tables. Ratios higher than 1 are considered indications of a potentially significant release to sediment and the sediment is considered "contaminated". As shown in the Section 4 tables, the chemicals with concentrations higher than the screening criteria are limited to certain polycyclic aromatic hydrocarbons (PAHs) and a few inorganics (antimony, arsenic, and lead) and cyanide.

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Aug 07, 2009 15:19

In addition to the sediment characterization data summarized in the Section 4 tables, oil characterization data were also collected from Harris Lake where oil is present in sediment at some locations. The chemical characterization data for the oil are summarized in the Section 4 tables. These concentrations are not compared with screening criteria, but the significance of potential exposures to the oil and oil-containing sediment is evaluated in the Baseline Human Health Risk Assessment for Harris Lake, Michigan (Appendix J).

The potential for human exposure to these chemicals in sediment is discussed in Section 5.2, and the significance of any potential exposure is discussed in Section 5.3.

5.1.4 Surface Water

Surface water data were collected at Harris Lake and Outfall 001, and are summarized in Table 5-3a, which show the detected constituents, their detection frequencies, their range of detected concentrations, and the ratio of the highest measured concentration to the screening criteria. The screening criteria for surface water in Table 5-3a are the same as the screening criteria for groundwater in the intermediate and deep saturated zones that are discussed in Section 5.1.2. These screening criteria, which are based on residential drinking water use, are highly conservative since these surface waters are not drinking water sources, and the most likely potential human exposure would be via direct contact during recreation.

As shown in Table 5-3a, thallium is the only chemical in the Harris Lake surface water that has concentrations higher than the screening criterion. Among the Outfall 001 data, lead and thallium are the only chemicals with concentrations higher than the screening criteria. However, only one concentration of lead in surface water exceeds the screening criterion, and this concentration (0.0077 mg/L) is actually lower than the maximum contaminant level (MCL) of 0.015 mg/L established under the federal Safe Drinking Water Act. For lead, the MCL is a more appropriate drinking water criterion than the MDEQ Part 201 criterion which is actually not a drinking water criterion, but corresponds to an assumed concentration MDEQ uses for deriving its soil lead screening criterion. As such, the Part 201 criterion for lead is not an appropriate criterion for identifying surface water (or groundwater) contamination.

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Aug 07, 2009 15:19

All the thallium concentrations that exceed the screening criterion were analyzed using Method 6010B; but no thallium concentration analyzed using Method 6020 exceeds the screening criterion. As discussed in the RFI Report and in Section 2.2.2, data for aqueous matrices (including groundwater and surface water) obtained by Method 6020 are more reliable than those obtained by Method 6010B. The data from three surface water samples that were analyzed using Method 6010B and were still available for reanalysis using Method 6020 confirm that the thallium concentrations obtained using Method 6010B are false detections. Therefore, the surface water data from Harris Lake and Outfall 001 do not indicate any contamination.

The surface water data collected from the seep at the southern Site boundary are summarized in Table 5-3b, which shows the detected constituents, their detection frequencies, their range of detected concentrations, and the ratio of the highest measured concentration to the screening criteria. The screening criteria for seep water in Table 5-3b are Part 201 generic cleanup criteria based on direct contact by workers conducting excavations (MDEQ 2000). These criteria are appropriate for evaluating the seep water because they conservative than a trespasser or visitor scenario. The most likely potential human exposure to this water would be via occasional direct contact by occasional passersby who might walk through the water. As shown in Table 5-3b, no chemical in the seep water has concentrations higher than the screening criteria. Therefore, surface water at the seep is not contaminated.

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Aug 07, 2009 15:19

5.2 Exposure Pathways

The potential for exposure to media affected by the potentially significant releases identified in Section 5.1 under current conditions and reasonably expected future land use is discussed below.

Soil

Contaminated soil identified at AOIs F-7, F-15, M-2, M-5, and M-19 is covered by building floors or pavement, which prevents current exposure of workers engaged in routine activities or exposure of trespassers. However, potential exposure of workers engaged in subsurface construction activities at these AOIs is possible. Contaminated soil at AOIs M-1, W-1, W-5, W-8, W-9, and W-10 is not covered or not entirely covered, so potential exposure of workers engaged in routine activities and subsurface construction activities, and exposure of trespassers is possible. At AOIs W-1, W-8, and W-10, potential exposure of workers via direct contact with LNAPLs in the surface soil during subsurface construction activities is also possible.

For concentrations that exceed the screening criteria based on inhalation of indoor air (which are identified at only AOIs F-15 and M-2), only the concentrations at AOI F-15 are under currently occupied buildings; the concentrations at AOI M-2 were collected from outdoor locations. Therefore, potential exposure of workers via inhalation of indoor air is possible at AOI F-15, but not at AOI M-2.

The soil contamination identified at Harris Lake and the Pontiac School Board property is off-site. However, neither area is currently used for residential purposes. Potential current exposures to soil at Harris Lake include potential exposure of visitors and recreational users who might occasionally visit the Lake. A detailed discussion of the potential scenarios for current and reasonably expected future human exposures at Harris Lake is provided in the Baseline Human Health Risk Assessment for Harris Lake, Michigan. At the Pontiac School Board property, current exposure of workers engaged in routine activities and subsurface construction activities, and exposure of trespassers is possible.

Groundwater

As discussed in Section 3.7, the Site and the immediate vicinity obtain potable water from Lake St. Clair through the City of Detroit, and do not rely on local groundwater in any of the saturated zones as a drinking water supply. Therefore, drinking water exposure of workers and residents at and around the Site is not expected. However, potential exposure of workers to groundwater in the shallow saturated zone during subsurface construction activities is possible because the water table at the Site at many locations is shallower

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Arcadis
Aug 07, 2009 15:19

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Arcadis
Aug 07, 2009 15:19

than the expected maximum excavation depths of 10 to 12 ft bgs. No current exposure to groundwater in the intermediate and deep saturated zones is expected because these zones are deeper than the expected maximum excavation depths, and groundwater from these zones is not currently used for any purpose at the Site or in the immediate vicinity.

Sediment

Current exposure of visitors and recreational users who might occasionally contact sediment in Harris Lake, Osmun Lake, and Terry Lake is possible. A detailed discussion of potential human exposures at Harris Lake under current and reasonably expected future land uses is provided in the Baseline Human Health Risk Assessment for Harris Lake, Michigan (Appendix J).

The contaminated sediment identified at the Pontiac School Board property is actually material that was collected from inside a storm sewer pipe that formerly conveyed storm water across that area to Harris Lake. As such, the potential for exposure to the material, if any, is very limited. Also, the sewer pipe is being removed so there will be no potential for exposure to material in the pipe.

The potential significance of exposures via the complete pathways identified above is discussed in Section 5.3.

5.3 Significance of Potential Exposures

The significance of potential exposures, from complete exposure pathways, identified in Section 5.2 is discussed below.

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Aug 07, 2009 15:19

5.3.1 Soil

The significance of potential exposures to soil contamination can be evaluated by estimating the cumulative cancer and noncancer risks associated with the potential exposures and comparing them with the USEPA-established levels for determining whether corrective measures are warranted under RCRA Corrective Action. Under USEPA policy, corrective measures are not warranted when the site-related cumulative cancer risk does not exceed 10-4 and the noncancer hazard index (HI) does not exceed 1 (61 FR 19432, May 1, 1996; USEPA 1991b).

Upper-bound estimates of high-end cumulative cancer and noncancer risks for potential exposure of workers to soil at the AOIs identified in Section 5.1.1 are shown in Table 5-4. These upper-bound estimates are calculated using the highest concentration of each constituent detected in soil at each area, and the conservative exposure factors that were used to derive the USEPA Region 9 risk-based PRGs for soil in generic commercial/industrial settings (USEPA 2000). High-end cumulative cancer and noncancer risk estimates for an area would be lower if concentrations representative of the area were used instead of the highest concentrations, and if site-specific exposure factors were used to account for the magnitude, frequency, and duration of exposures appropriate for the particular area, as would be done in risk assessments following USEPA guidance (1989).

As summarized in Table 5-4, these upper-bound estimates of cumulative cancer risk and HI do not exceed 10-4 or 1, respectively, for AOIs F-7, F-15, M-5, and W-8. This means that there are no unacceptable current exposures at these AOIs, except these calculations do not address the potential for indoor air exposure at AOI F-15 which is further evaluated below. Potential exposures at AOIs M-1, M-2, M-19, W-1, W-5, W-9, and W-10 are further evaluated below by developing conservative estimates of the average concentrations for certain chemicals at each AOI to provide more representative concentrations to which receptors might be exposed under current conditions.

Conservative estimates of the average concentrations are calculated as 95% upper confidence limits (UCLs) on the means of surface (0 to 2 ft) and depth-averaged (0 to 10 ft) concentrations at each sampling location for

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

evaluating potential exposure of routine workers/trespassers and construction workers, respectively. Data that consist of non-detects are conservatively replaced with one-half sample quantitation limits (SQLs), and unusually high SQLs are handled as recommended in USEPA guidance (USEPA 1989).

The 95% UCL for each chemical is calculated using the nonparametric bootstrap method known as the bias-corrected and accelerated (BCa) method with 4,000 bootstrap replications (Efron and Tibshirani 1998). A nonparametric bootstrap confidence interval does not rely on assumptions about the data's underlying probability distribution which are often difficult to confirm, but instead are based on statistical re-sampling of the empirical distribution of the observed concentrations. For an empirical distribution that is approximately normal, the bootstrap confidence interval will be essentially the same as the normal confidence interval. For an empirical distribution that is not normal, however, the bootstrap prediction interval will be more accurate than a confidence interval calculated assuming a normal (or even lognormal) distribution (USEPA 1997b).

Table 5-5 shows the high-end estimates of cumulative cancer risk and HI for AOIs M-1, M-2, M 19, W 1, W-5, W-9 and W-10 that are based on 95% UCLs for certain chemicals at each AOI. The chemicals chosen for 95% UCL calculations at each AOI are those with maximum concentrations that contribute most significantly to the cumulative cancer and noncancer risks. Using 95% UCLs for these chemicals and maximum concentrations for other chemicals still overestimates cumulative risks, but is an efficient approach that is consistent with USEPA guidance (1989; page 6-25). As shown on this table, these high-end estimates of cumulative cancer risk and HI do not exceed 10-4 or 1, respectively. This means that there is no unacceptable current exposure to soil at these AOIs. The calculation of these cumulative cancer and noncancer risk estimates is provided in Appendix I.1 and is discussed below.

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Aug 07, 2009 15:19

AOI F-15 (Oil/Solvent Catch Basin)

Potential exposure of workers via inhalation of soil vapor in indoor air is theoretically possible at AOI F-15, based on the concentrations of 1,1-dichloroethene and tetrachloroethene at boring BF15-02 that are higher than the screening criteria. However, these concentrations are not expected to pose a significant risk to workers via inhalation of indoor air when the screening criteria are adjusted to use occupational air standards, rather than the inhalation benchmarks that MDEQ used in deriving the criteria. The Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs) for 1,1 dichloroethene and tetrachloroethene are 4 mg/m3 and 678 mg/m3, respectively. By comparison, the inhalation benchmarks for 1,1-dichloroethene and tetrachloroethene that MDEQ used in deriving the screening criteria are approximately 0.0002 mg/m3 and 0.02 mg/m3, respectively. The PELs are appropriate for evaluating exposure of workers via inhalation of indoor air, and would give soil screening criteria that are much higher than the concentrations of these chemicals in soil at boring BF15-02. Therefore, the concentrations of 1,1-dichloroethene and tetrachloroethene in soil at AOI F-15 do not pose an unacceptable risk.

AOI M-1 (Wastewater Treatment Plant)

Potential exposure of routine workers to surface soil in unpaved areas and potential exposure of construction workers to surface and subsurface soil at AOI M-1 are possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI M-1, except 95% UCLs are used for PCBs and cyanide. The bootstrap 95% UCLs on the mean concentrations are approximately 3.3 and 4.6 mg/kg, for PCBs and cyanide, respectively. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI M-1 based on these exposure concentrations are approximately 2 x 10-5 and 0.5, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of workers to soil at AOI M-1 is expected to be much lower. Currently, most of the areas where concentrations are higher than the screening criteria are covered with gravel. No routine or construction activity is being conducted or planned in these areas, so workers currently have little opportunity for direct contact with soil in this area. Accordingly, the

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

frequency of current exposure to contaminated soil at AOI M-1 is expected to be on the order of only a few days a year at most. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI M-1. Since these estimates are within USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of PCBs and cyanide, and other chemicals in soil at AOI M 1 do not pose an unacceptable risk.

AOI M-2 (Former Plating Operations Area)

Potential exposure of construction workers to surface and subsurface soil at AOI M-2 is possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI M-2, except 95% UCLs are used for PCBs, cyanide, and nickel. The bootstrap 95% UCL on the mean concentrations are approximately 0.4, 7.6, and 440 mg/kg, for PCBs, cyanide, and nickel, respectively. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI M-2 based on these exposure concentrations are approximately 2 x 10-5 and 0.5, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, potential construction activities at AOI M-2 would likely last no more than a few months, with actual subsurface work occurring during only a small part of the construction period. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI M-2. Since these estimates are within USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of PCBs, cyanide, nickel, and other chemicals in soil at AOI M 2 do not pose an unacceptable risk.

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Aug 07, 2009 15:19

AOI M-19 (Plant 5 South Access Railway)

Potential exposure of construction workers to surface and subsurface soil at AOI M-19 is possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI M-19, except 95% UCLs are used for PCBs, manganese, and mercury. The bootstrap 95% UCL on the mean concentrations are approximately 4.6, 6,200, and 3.1 mg/kg, for PCBs, manganese, and mercury, respectively. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI M-19 based on these exposure concentrations are approximately 2 x 10 5 and 0.7, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of construction workers to soil at AOI M-19 is expected to be much lower. In fact, no construction is being conducted or planned at this AOI; and if construction were to occur, potential exposure of workers performing soil excavation would be expected to last only a few weeks. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI M 19. Since these estimates are within USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of PCBs, manganese, mercury, and other chemicals in soil at AOI M 19 do not pose an unacceptable risk.

AOI W-1 (West Yard)

Potential exposure of routine workers to surface soil in unpaved areas and potential exposure of construction workers to surface and subsurface soil at AOI W-1 are possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI W-1, except bootstrap 95% UCLs are used for benzo(a)pyrene (2.5 mg/kg), 2-methylnaphthalene (6.6 mg/kg), naphthalene (24 mg/kg), PCBs (1.5 mg/kg), antimony (6.9 mg/kg), arsenic (15 mg/kg), chromium (470 mg/kg), cyanide (1.2 mg/kg), iron (68,000 mg/kg), manganese (2,600 mg/kg), mercury (0.10 mg/kg), 2,3,7,8-TCDD TEQ (4.1 x 10-5 mg/kg). As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI W-1 based on these exposure concentrations are approximately 3 x 10-5 and 1, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of workers to soil at

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Aug 07, 2009 15:19

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Arcadis
Aug 07, 2009 15:19

AOI W-1 is expected to be much lower. Currently, many of the areas where concentrations are higher than the screening criteria are covered with gravel. No routine or construction activity is being conducted or planned in these areas, so workers currently have little opportunity for direct contact with soil in this area. Accordingly, the frequency of current exposure to contaminated soil at AOI W-1 is expected to be on the order of only a few days a year at most. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI W-1. Since these estimates do not exceed USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of chemicals in soil at AOI W 1 do not pose an unacceptable risk.

AOI W-5 (Plant 8 Basement AST Area)

Potential exposure of routine workers to surface soil in unpaved areas and potential exposure of construction workers to surface and subsurface soil at AOI W-5 are possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI W-5, except a 95% UCL is used for PCBs. The bootstrap 95% UCL for PCBs is approximately 7.9 mg/kg. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI W-5 based on these exposure concentrations are approximately 2 x 10-5 and 0.6, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of workers to soil at AOI W-5 is expected to be much lower. Currently, many of the areas where concentrations are higher than the screening criteria are covered with gravel. No routine or construction activity is being conducted or planned in these areas, so workers currently have little opportunity for direct contact with soil in this area. Accordingly, the frequency of current exposure to contaminated soil at AOI W-5 is expected to be on the order of only a few days a year at most. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI W-5. Since these estimates do not exceed USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of PCBs and chemicals in soil at AOI W 5 do not pose an unacceptable risk.

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Arcadis
Aug 07, 2009 15:19

AOI W-9 (Former Central Foundry Resin Spill and UST)

Potential exposure of routine workers to surface soil in unpaved areas and potential exposure of construction workers to surface and subsurface soil at AOI W-9 are possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI W-9, except bootstrap 95% UCLs are used for benzo(a)pyrene and PCBs. The bootstrap 95% UCLs on the mean concentrations are approximately 2.1 and 5.6 mg/kg, for benzo(a)pyrene and PCBs, respectively. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI W-1 based on these exposure concentrations are approximately 3 x 10-5 and 0.7, respectively. These calculations do not include the data at and around soil boring BW9-02, because that area is currently fenced to prevent unauthorized worker access until remedial action to address the presence of PCBs in the soil is completed. The restricted-access area around boring BW9-02 is shown on Figure 4-15.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of workers to soil at AOI W-9 is expected to be much lower. Currently, many of the areas where concentrations are higher than the screening criteria are covered with gravel. No routine or construction activity is being conducted or planned in these areas, so workers currently have little opportunity for direct contact with soil in this area. Accordingly, the frequency of current exposure to contaminated soil at AOI W-9 is expected to be on the order of only a few days a year at most. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI W-9. Since these estimates do not exceed USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of benzo(a)pyrene, PCBs, and other chemicals in soil at AOI W 9 outside the restricted-access area shown on Figure 4-15 do not pose an unacceptable risk.

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Arcadis
Aug 07, 2009 15:19

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Aug 07, 2009 15:19

AOI W-10 (Railroad Marshalling Area Drainage System)

Potential exposure of routine workers to surface soil in unpaved areas and potential exposure of construction workers to surface and subsurface soil at AOI W-10 are possible. The estimates of cancer risk and HQ shown in Appendix I.1 are calculated using the maximum concentrations of each chemical detected at AOI W-10, except bootstrap 95% UCLs are used for PCBs and manganese. The bootstrap 95% UCLs on the mean concentrations are approximately 1.5 and 3,700 mg/kg, for PCBs and manganese, respectively. As shown in Table 5-5, the estimated high-end cumulative cancer risk and HI at AOI W-10 based on these exposure concentrations are approximately 1 x 10-5 and 0.4, respectively.

The calculations in Appendix I.1 assume that workers contact contaminated soil during the entire workday for 250 days per year and 25 years (EPA 2000). However, the frequency of potential exposure of workers to soil at AOI W-10 is expected to be much lower. Currently, many of the areas where concentrations are higher than the screening criteria are covered with gravel. No routine or construction activity is being conducted or planned in these areas, so workers currently have little opportunity for direct contact with soil in this area. Accordingly, the frequency of current exposure to contaminated soil at AOI W-10 is expected to be on the order of only a few days a year at most. This means the calculations in Appendix I.1 are conservative high-end estimates of cumulative cancer and noncancer risks at AOI W-10. Since these estimates do not exceed USEPA's acceptable cancer risk range of 10-6 to 10-4 and HI limit of 1 (USEPA 1991b), the concentrations of PCBs, manganese, and other chemicals in soil at AOI W 10 do not pose an unacceptable risk.

As noted in Section 5.1.1 and in the RFI Report, subsurface soil at AOIs W-1, W-8, and W-10 contains LNAPLs at the water table. The LNAPLs at AOIs W-1 and W-10 have constituents with concentrations that correspond to theoretical upper-bound smear zone soil concentrations that exceed the soil screening criteria used in Section 5.1.1 to identify contamination. The significance of potential exposure of workers to these constituents during excavation associated with occasional maintenance or construction activities is evaluated in Appendix I.2. Potential exposure of workers via direct contact with the LNAPLs and inhalation of vapors from exposed LNAPL is also evaluated in Appendix I.2, which discusses the exposure concentrations, exposure factors, toxicity values, and risk calculations used to evaluate these pathways. As noted above, no construction is actually being conducted or is planned at these areas.

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Aug 07, 2009 15:19

The cumulative cancer risk and HI for each exposure pathway for each LNAPL area are summarized below:

		Smear Zone Soil Ingestion	Smear Zone Soil Dermal Contact	LNAPL Dermal Contact	LNAPL Vapor Inhalation
AOI W-1	**Risk**	9×10^{-6}	2×10^{-6}	4×10^{-5}	4×10^{-5}
	HI	1	0.3	0.4	0.02
AOI W-8	**Risk**	2×10^{-8}	4×10^{-9}	7×10^{-10}	8×10^{-17}
	HI	0.03	0.0008	0.0005	0.00002
AOI W-10	**Risk**	1×10^{-6}	3×10^{-7}	2×10^{-6}	7×10^{-7}
	HI	0.2	0.04	0.04	0.0004

These estimates are calculated using the highest concentration of each constituent detected in each LNAPL, except a 95% UCL is used for 1,1-dichloroethene at AOI W-1. The 95% UCL for 1,1-dichloroethene at AOI W-1 is calculated using the nonparametric bootstrap method discussed above and using one-half the highest quantitation limit for nondetects. This summary shows that potential exposure of workers conducting excavations during occasional maintenance or construction activities is not expected to result in significant cancer or noncancer risks.

With respect to "contaminated" soil at off-site areas identified in Section 5.1.1, the Baseline Human Health Risk Assessment for Harris Lake, Michigan (Appendix I) showed that potential human exposures to soil at Harris

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

Lake under both current and reasonably expected future use do not pose unacceptable risk. Potential current exposures to soil at the Pontiac School Board property also are not expected to pose unacceptable risk. This can be seen by comparing the data from the Pontiac School Board property to the Part 201 screening criteria for evaluating soil at industrial sites. The Section 4 tables show that no constituent in soil samples from this area has a concentration that exceeds the Part 201 criteria for soil at industrial sites.

5.3.2 Groundwater

As discussed in Section 5.2, potential current exposure to groundwater at and around the Site is limited to worker contact with groundwater in the shallow saturated zone during excavation activities that extend into the water table. Screening criteria for evaluating the significance of these potential current exposures do not need to include the Part 201 generic cleanup criteria that are based on residential drinking water use, which are used in the evaluation discussed in Section 5.1.2. Instead, the evaluation of significance is more appropriately conducted using only the Part 201 criteria that are based on worker contact with groundwater while performing excavations. Comparison of the data from wells screened in the shallow saturated zone with these criteria is included in the right-most column in Table 5-2a. The ratios in this column show that the only instances where concentrations exceed these screening criteria are for 2,3,7,8-TCDD TEQ at AOIs W-1 and W-8, and for PCBs at AOI W-1. However, these concentrations were "total" rather than dissolved-phase measurements. The dissolved-phase concentration for dioxin and PCBs at AOI W-1 (also shown on Table 5-2a) do not exceed the groundwater direct contact criteria. No dissolved-phase groundwater data for dioxin were collected at AOI W-8.

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Arcadis
Aug 07, 2009 15:19

The interpretation of these total groundwater concentrations for dioxin and PCBs should recognize that direct comparison of the concentrations with the groundwater contact criteria would not be consistent with the basis for the criteria. As discussed below, these groundwater concentrations at AOIs W-1 and W-8 likely include very large contributions of dioxin and PCBs from minute quantities of LNAPL in the groundwater samples. But the groundwater contact criteria were derived for evaluating only aqueous-phase concentrations (MDEQ 2000), rather than concentrations that include both an aqueous-phase and a nonaqueous-phase.

As noted in Section 5.1.2 and discussed earlier, the presence of dioxin and PCBs in groundwater at AOIs W-1 and W-8 is likely associated with the presence of LNAPLs that contain dioxin and PCBs. When the source of the dioxin and PCBs in groundwater is LNAPL, the theoretical maximum aqueous-phase concentrations can be estimated by the effective solubility of the chemicals. For example, the effective solubility of dioxin for the LNAPLs at AOIs W-1 and W 8 are approximately 10 14 to 10 17 mg/L, which is calculated using the highest dioxin concentrations in the LNAPLs, an assumed LNAPL molecular weight of 150 g/mole, and a dioxin aqueous solubility of 1 x 10-5 mg/L. This means that the groundwater dioxin concentrations of approximately 2 x 10-8 mg/L at AOIs W-1 and W-8 actually consist of both a small aqueous component and a much larger LNAPL component. Based on the dioxin concentrations in the LNAPL, the groundwater samples likely included a minute amount of LNAPL (approximately 0.003% to 0.3%) that contributed most of the dioxin in the groundwater samples.

As noted above, the Part 201 groundwater contact criteria were derived based on dermal contact with chemicals in the aqueous-phase. Therefore, only the aqueous-phase component of dioxin and PCBs in the groundwater samples from AOIs W-1 and W-8 should be compared with the groundwater contact criteria. This comparison would show that the aqueous-phase concentrations in these groundwater samples (estimated using the effective solubility discussed above, or available dissolved-phase groundwater data) are well below the groundwater contact criteria. This means that the aqueous-phase concentrations in the groundwater do not pose a significant risk to workers who might contact groundwater while performing occasional excavations.

The significance of potential exposure of workers to constituents in LNAPL during occasional excavations is evaluated in Appendix I.2, and the results of the calculations are summarized in Section 5.3.1. The results show

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

that the estimates of cumulative cancer and noncancer risks associated with such exposures at AOIs W-1, W-8, and W-10 do not exceed 10-4 or HI of 1, respectively. These risk estimates show that such exposures would not pose a significant risk.

5.3.3 Sediment

As discussed in the Baseline Human Health Risk Assessment for Harris Lake, Michigan (Appendix J), potential human exposures to sediment in Harris Lake under both current and reasonably expected future use are not expected to pose unacceptable risk. A limited number of sediment samples were also collected from Terry Lake and Osmun Lake, which are downstream of Harris Lake. These samples were collected to determine whether the sediment quality in these downstream lakes is comparable to or better than that in Harris Lake.

As shown in the Section 4 tables, the sediment quality in Terry Lake and Osmun Lake is significantly better than that in Harris Lake. The sediment samples in the downstream lakes have far fewer constituents that exceed the screening criteria. In fact, each downstream lake has only one chemical whose maximum concentration exceeds the screening criteria. For Terry Lake, only 1 of 3 concentrations of benzo(a)pyrene (3.5 mg/kg) exceeds the screening criteria. For Osmun Lake, only 1 of 6 concentrations of lead (592 mg/kg) exceeds the screening criteria. In contrast, Harris Lake has 7 constituents (including benzo(a)pyrene and lead) with concentrations that exceed the screening criteria in a total of 66 instances.

As discussed in the Baseline Human Health Risk Assessment for Harris Lake, potential exposures at Harris Lake (including exposures to sediment) were evaluated under both current and reasonably expected future land use scenarios. Although no residents currently live at Harris Lake and there are no recreational facilities currently at the Lake, the risk assessment included an evaluation of potential exposures assuming residential and recreational land use at the Lake. The exposure scenarios evaluated for these future land uses at Harris Lake, which are described in the risk assessment report for Harris Lake, are comparable to current land uses at Terry and Osmun Lakes. As such, the risk assessment conclusions for Harris Lake (including those relating to potential exposures to sediment) are relevant to Terry and Osmun Lakes. In particular, because the sediment quality in Terry and Osmun Lakes are better than that in Harris Lake and the baseline risk assessment for Harris Lake showed that potential human exposures to sediment do not pose an unacceptable risk, it can be concluded that the sediment in Terry Lake and Osmun Lake also does not pose an unacceptable risk.

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Aug 07, 2009 15:19

5.4 Conclusion

Soil, groundwater, and sediment at a number of AOIs at the Site and two off-site areas are considered to have been affected by potentially significant releases when the highest constituent concentrations in these media are compared with generic risk-based screening criteria. However, when the likelihood of complete exposure pathways, current site-specific conditions, and 95% UCLs rather than the highest concentrations are considered, the concentrations of constituents in these media do not present a significant exposure, except one area at AOI W-9. At the one area in AOI W-9, GM has initiated interim measures to address the presence of PCBs in surface and subsurface soil and has restricted worker access to the area until the effectiveness of the interim measures are confirmed.

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Aug 07, 2009 15:19

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Aug 07, 2009 15:19

6. Summary/Conclusions

The RFI included field investigations at the following AOIs identified in the CCR (ENCORE, 2001a) and CCR Addendum # 1 (ENCORE, 2002a) and the offsite areas (PSB, Harris Lake, and Terry and Osmun Lakes):

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- AOI F-7: Wastewater Collection Sumps
- AOI F-8: Former Paint Sludge Storage Area
- AOI F-12: Coal Storage Area
- AOI F-13: Former Oily Pea Gravel, Concrete, and Debris Area
- AOI F-14: Fuel AST Area
- AOI F-15: Oil/Solvent Catch Basin

Demolition Area

- AOI W-1: West Yard
- AOI W-3: Former Plant 8 Flammable Liquid Storage Tank Farm
- AOI W-5: Plant 8 Basement AST Area
- AOI W-6: Former Plant 8 Flammable Materials Storage Building
- AOI W-8: Former Plant 9 Basement AST Area
- AOI W-9: Former Central Foundry (Plant 6) Resin Spill and UST
- AOI W-10: Railroad Marshalling Area Drainage System
- AOI W-11: Salvage Yard Sump Drain
- AOI W-13: Montcalm Substation

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- AOI M-1: Wastewater Treatment Plant
- AOI M-2: Former Plating Operations Area
- AOI M-4: Plant 25 Former Gasoline UST and Current Gasoline AST Location
- AOI M-5: Former A-2 Fill Area
- AOI M-7: ELPO Building
- AOI M-9: Plant 11 Heat Treat Oil Storage Area
- AOI M-11: Plant 12 Former Gasoline Storage Area
- AOI M-13: ASTs Area West of Plant 14
- AOI M-16: Plant 25 Basement Sump Area
- AOI M-17: Plant 15 Southern Piping Trench
- AOI M-19: Plant 5 Southern Access Railway
- AOI M-21: Plant 14 Transformer Station
- AOI M-23: Plants 25, 33, and 75 Substation and Power Building
- AOI M-24: Plant 12 Transformer Oil Spill
- AOI M-25: Plant 33 Basement Sump Area

Powertrain

- AOI P-6: Emissions Control Building Former UST Farm and Former Stoddard Solvent AST

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Offsite Areas

- PSB Property
- Harris Lake
- Terry Lake
- Osmun Lake

The objectives of the RFI Work Plan and Work Plan Addenda #s 1, 2, and 3 were to:

- Determine Sitewide hydrogeologic conditions, as necessary, to properly investigate releases from AOIs;
- Characterize the nature and extent of releases of hazardous waste and/or hazardous constituents in environmental media at the Site;
- Assess potential risk to human health and the environment associated with releases of hazardous waste and/or hazardous constituents;
- Provide sufficient data to support the RCRA corrective action environmental indicators determination;
- Determine whether interim corrective measures are necessary to control current unacceptable risks, if any, to human health;
- Determine whether a corrective measures evaluation is necessary to mitigate current and future unacceptable risks, if any, to human health and the environment; and
- Determine the impact, if any, from discharges from the Site to offsite areas.

Based on the results of the RFI field investigations it was determined that a potential release has occurred at 12 AOIs and four offsite areas (PSB, Harris Lake, Terry Lake, and Osmun Lake). The findings of the field investigations are discussed in Section 4 of this RFI Report. The potential health significance of the constituents found in soil, groundwater, surface water, sediment, and oil were discussed in a risk evaluation (Section 5). The potential health significance of the constituents found in the sediment, oil, and fish at Harris Lake were evaluated in a Baseline Risk Assessment (Appendix J). A Screening Ecological Risk Assessment was performed for Harris Lake (Appendix K) to determine impacts, if any, to the biota of the lake and surrounding area.

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6.1 No Significant Release Found

Among the AOIs and offsite areas investigated during the RFI, the following have no significant release of hazardous constituents to the environment. The determination is based on a conservative approach in which the highest concentration of a constituent at an area is compared with conservative generic risk-based screening criteria:

Fiero

- AOI F-8: Former Paint Sludge Storage Area
- AOI F-12: Coal Storage Area
- AOI F-13: Former Oily Pea Gravel, Concrete, and Debris Area
- AOI F-14: Fuel AST Area

Demolition Area

- AOI W-3: Former Plant 8 Flammable Liquid Storage Tank Farm
- AOI W-6: Former Plant 8 Flammable Materials Storage Building
- AOI W-11: Salvage Yard Sump Drain
- AOI W-13: Montcalm Substation

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- AOI M-7: ELPO Building
- AOI M-9: Plant 11 Heat Treat Oil Storage Area
- AOI M-11: Plant 12 Former Gasoline Storage Area
- AOI M-13: ASTs Area West of Plant 14
- AOI M-16: Plant 25 Basement Sump
- AOI M-17: Plant 15 Southern Piping Trench
- AOI M-21: Plant 14 Transformer Station
- AOI M-23: Plants 25, 33, and 75 Substation and Power Building
- AOI M-24: Plant 12 Transformer Oil Spill
- AOI M-25: Plant 33 Basement Sump Area

The results of the RFI indicate that no further investigation of these areas is warranted. However, further activities will be completed at AOI F-7 (Wastewater Collection Sumps), AOI F-8 (Former Paint Sludge Storage Area), and AOI M-9 (Plant 11 Heat Treat Oil Storage Area). The two sumps associated with AOI F-7 are to remain active. These two sumps were noted to have concrete which was cracked, therefore they will be repaired. The sumps at AOI F-8 and AOI F-9 are no longer in use and will be abandoned.

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6.2 AOIs Discussed in Risk Evaluation

A release of hazardous constituents was identified at 13 AOIs and four offsite areas, based on a conservative approach in which the highest concentrations of a constituent at an AOI or offsite area were compared against generic risk-based screening criteria. Using the RFI characterization data on the nature and extent of constituents at these areas, the health significance of these releases under current and reasonably expected future land use were evaluated. The findings of the RFI field investigation and conclusions of the risk evaluation are summarized below:

Fiero

AOI F-7: Waste Water Collection Sump

A release was identified based on the presence of 1,1-DCE and TCE within groundwater. However, the results of the risk evaluation indicate that this area does not pose an unacceptable health risk, therefore, No Further Action is required.

AOI F-15: Oil/Solvent Catch Basin

A release was identified based on the presence of PCE in the soil at concentrations greater than the screening criteria. However, the area is paved and there are no exposure pathways. No Further Action is required.

Demolition Area

AOI W-1: West Yard

A release was identified based on the presence of lead, manganese, chromium and PCBs in the soil and select VOCs, inorganics, PCBs, and dioxins in the groundwater at concentrations higher than the screening criteria. In addition an LNAPL pool was identified in this AOI. This AOI will be evaluated further in the CMS.

AOI W-5: Plant 8 Basement AST Area

A release was identified based on the presence of PCBs in soil and antimony, thallium, and vanadium in groundwater at concentrations higher than the screening criteria. This area will be evaluated further in the CMS.

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AOI W-8: Former Plant 9 Basement AST Area

A release was identified based on the presence of manganese and chromium in the surface soil and manganese, thallium, antimony, PCBs, and dioxins in the groundwater at concentrations higher than the screening criteria. This LNAPL pool is also present in the shallow groundwater system. This area will be evaluated further in the CMS.

AOI W-9: Former Central Foundry (Plant 6) Resin Spill and UST

A release was identified based on the presence of manganese, chromium, and PCBs in the surface soil and manganese and PCBs in the deeper soil at concentrations higher than the screening criteria. This AOI will be evaluated further in the CMS.

AOI W-10: Railroad Marshalling Area Drainage System

A release was identified based on the presence of manganese and chromium in the surface soil, lead in the deeper soil borings, and select aresenic, thallium, PCBs, and bis-(2-ethylhexyl)-phthalate in the groundwater at concentrations higher than the screening criteria. In addition an LNAPL pool was identified in this AOI. This area will be evaluated further in the CMS.

<u>Metal Fabrication Division</u>

AOI M-1: Wastewater Treatment Plant

A release was identified based on the presence of PCBs in the soil and cyanide in the groundwater at concentrations higher than the screening criteria. The risk evaluation indicates that these constituents do not pose an unacceptable health risk, therefore No Further Action is required.

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AOI M-2: Former Plating Operations Area

A release was identified based on the presence of manganese and 1,1-DCE in the soil and select VOCs, nickel, and thallium in the groundwater at concentrations higher than the screening criteria. The risk evaluation indicates that these constituents do not pose an unacceptable health risk, therefore No Further Action is proposed for soils. Groundwater will be monitored and evaluated in the CMS.

AOI M-4: Plant 25 Former Gasoline UST and Current Gasoline AST Location

A release was identified based on the presence of benzene, ethylbenzene, and xylenes in the groundwater at concentrations higher than the screening criteria. No Further Action is required for soils. Groundwater will be further evaluated in the CMS.

AOI M-5: Former A-2 Fill Area

A release was identified based on the presence of lead in the soil and barium, manganese, and PCBs in the groundwater at concentrations higher than the screening criteria. The risk evaluation indicates that these constituents do not pose an unacceptable threat to workers. No further action is proposed for soils. Groundwater will be monitored and evaluated in the CMS.

AOI M-19: Plant 5 Southern Access Railway

A release was identified based on the presence of manganese and chromium in the soil at concentrations higher than the screening criteria. The risk evaluation indicates that these constituents do not pose an unacceptable health risk, therefore No Further Action is proposed.

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Powertrain

AOI P-6: Emissions Control Building Former UST Farm and Former Stoddard Solvent AST

A release was identified based on the presence of benzene, toluene, ethyl benzene, and xylenes in the groundwater at concentrations higher than the screening criteria. No Further Action is required for soils. Groundwater will be evaluated further in the CMS.

Offsite Area

PSB Property

A release was identified based on the presence of arsenic, benzene and lead in the soil and select SVOCs, arsenic, and lead in the sediment contained in the sewer pipes at concentrations higher than the screening criteria. The constituents in soils do not represent a risk to workers. The sewer pipes will be excavated and removed from the Site.

Harris Lake

A release was identified based on the presence of select SVOCs, select inorganics, and cyanide in the sediment, benzo(a)pyrene, lead and chromium in the soil and thallium in the surface water at concentrations higher than the screening criteria. The Baseline Risk Assessment (Appendix J) demonstrates that these constituents do not pose an unacceptable risk to the public. However, for aesthetic purposes the near shore sediments containing oil will be removed and replaced with clean soil.

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Terry Lake

A release was identified based on the presence of benzo(a)pyrene in the sediment at concentrations higher than the screening criteria. The risk evaluation demonstrates that this constituent does not represent an unacceptable health risk.

Osmun Lake

A release was identified based on the presence of lead in the sediment at concentrations higher than the screening criteria. The risk evaluation demonstrates that this constituent does not represent an unacceptable health risk.

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Tables

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Table 2-1:
GENERAL MOTORS CORPORATION, PONTIAC NORTH CAMPUS
RCRA FACILITY INVESTIGATION
SUMMARY OF RFI ACTIVITIES, RESULTS, AND PROPOSED FURTHER ACTIVITY

Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
W-1	West Yard • Approximately 20 acres in size • Entire yard was historically used for materials management activities, including: -- disposal of foundry sand, refuse, sludge and trash; -- the storage of hazardous waste (former hazardous waste storage pad); -- former railroad marshalling area; and -- a backfilled settling basin	• Impacted soils, groundwater, and LNAPL contain VOCs, SVOCs, metals, PCB and Dioxins	• Completed 12 soil borings • Installed 4 groundwater monitoring wells •Completed 3 test pits •Installed 1 LNAPL delineation monitoring well •Installed 5 site-wide hydrogeologic monitoring wells (1 shallow, 1 intermediate, 2 upper sand and gravel, 2 lower sand and gravel • Groundwater samples were collected at selected, previously installed, downgradient wells (MW-10, MW-19, MW28-99, MW29-99, MW30-99, MW31-99, MW33-99, MW34-99, MW39-99, MW40-99, and MW42-99) • Collected NAPL samples from MW36-99 and MW24-99	VOCs SVOCs PCBs Inorganics Dioxin Cyanide	**SHALLOW BORINGS** Lead (3,950 mg/kg) Manganese (7,040 mg/kg) Total PCB (54 mg/kg) Chromium (total) (1,520 mg/kg) Dioxins ($1.89x10^{-3}$ mg/kg) **DEEP BORINGS** No exceedances **HISTORIC RESULTS** Antimony Arsenic Butyl benzylphthalate Chromium (total) Total PCB Lead Manganese	**SHALLOW WELLS** Benzene (0.091 mg/L) Vinyl chloride (0.018 mg/L) Antimony (0.0079 mg/L) Barium (4.07 mg/L) Thallium (0.0091 mg/L) Total PCB (0.0033 mg/L) Dioxins ($1x10^{-5}$ mg/L) **UPPER SAND AND GRAVEL WELLS** Acetone (3.1 mg/L) **LOWER SAND AND GRAVEL WELLS** bis (2-ethylhexyl) phthalate (0.0088 mg/L)	Perform CMS

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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
W-3	Former Plant 8 Flammable Liquid Storage Tank Farm • Total of nine ASTs • 5 ASTs in the north area and 4 in the south area contained within a 3-foot high dike • 13,000 to 26,000 gallons • Excess product in fill hoses was routinely emptied inside the diked area surrounding the ASTs	• Flammable liquids • Diesel fuel • Line thinner • Gasoline • Solvents	• Completed 5 soil borings	VOCs SVOCs Lead	No exceedances	Groundwater not analyzed	No Further Action.
W-5	Plant 8 Basement AST Area • Seventeen ASTs ranging in size from 680 gallons to 11,300 gallons • Three tanks were located at Column L-67 within the basement • All other tanks are suspected to have been located at the west end of the basement	• Weak metallic wastewater • Alkali/oily wastewater	• Completed 3 soil borings • Installed 2 groundwater monitoring wells • Installed 2 shallow Sitewide hydrogeologic monitoring wells	VOCs SVOCs PCBs Inorganics	Total PCBs (24 mg/kg)	Antimony (0.0098 mg/L) Thallium (0.009 mg/L) Vanadium (0.0732 mg/L) PCBs (0.0017 mg/L)	Perform CMS.

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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
W-6	Former Plant 8 Flammable Materials Storage Building • Seventeen tanks ranging in size from 15,000 gallons to 22,000 gallons • Doors of the building were above ground level causing the storage building to act as a diked area • The railroad and truck unloading areas contained catch basins that were connected to the WWTP	• Oils	• Completed 8 soil borings	VOCs SVOCs PCBs Lead	No exceedances	Groundwater not analyzed	No Further Action.
W-8	Former Plant 9 Basement AST Area • 12 ASTs ranging in size form 2,000 gallons to 14,000 gallons • The tanks were located along the north side of the Plant 9 basement • Kerosene-like odors noticed in storm sewer in this area	• Kerosene • Coolant (141-KC)	• Completed 8 surface soil samples • Completed 2 soil borings • Installed 5 groundwater monitoring wells • Installed 7 monitoring wells for NAPL delineation • Installed 1 shallow site-wide hydrogeologic monitoring well • Collected NAPL sample from monitoring well MWW8-03	VOCs SVOCs PCBs Inorganics Dioxins Hexavalent Chromium	**SURFACE SOIL** Manganese (2,780 mg/kg) Total Chromium (847 mg/kg) **SOIL BORINGS** No exceedances	Manganese (3.24 mg/L) Total PCB (0.0013 mg/L) Thallium (0.0074 mg/L) Atimony (0.008 mg/L) Dioxins ($1x10^{-8}$ mg/L)	Perform CMS.

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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
W-9	Former Central Foundry (Plant 6) • Formerly located east of the West Yard • Produced gray iron from metallic ore to be casted into automotive parts • Operations ceased in 1987 and the plant was demolished in 1995 • 20,000 UTS	• Gasoline • Metals • PCBs • Arsenic • Resin	• Completed 13 surface soil samples • Completed 2 soil borings • Completed PCB soil delineation at 2 locations • Installed 4 Sitewide hydrogeologic monitoring wells (2 shallow, 1 upper sand and gravel, 1 lower sand and gravel)	**UST BORINGS** BTEX **SURFACE SAMPLES** VOCs SVOCs PCBs Inorganics Hexavalent Chromium	**SOIL BORINGS** Total PCBs (47 mg/kg) Manganese (3,020 mg/kg) **SURFACE SOIL** Total PCBs (29 mg/kg) Manganese (2,650 mg/kg) Chromium (total) (523 mg/kg)	Thallium (0.0053 mg/L)	Perform CMS.
W-10	Railroad Marshalling Area Drainage System • Extends the entire length of the western boundary of the West Yard • Used for the temporary storage of railcars loaded with scrap metal and grinding waste to be shipped off-site • A drainage system was installed in 1972 to collect the waste draining out of the railcars • The marshalling area is no longer used for the storage of railcars, although the drainage system remains in place	• Waste from the metal chips • Oils • PCBs	• Inspected sumps • Completed 9 soil borings • Installed 3 downgradient groundwater monitoring wells • Installed 3 monitoring wells for NAPL delineation • Collected NAPL sample from monitoring well MWW10-01	VOCs SVOCs PCBs Inorganics Dioxins	**SURFACE SOILS** Manganese (10,000 mg/kg) Total Chromium (596 mg/kg) **SOIL BORINGS** Lead (4,020 mg/kg)	Total PCBs (0.0007 mg/L) bis-(2-ethylhexyL)-phthalate (0.15 mg/L) Arsenic (0.0591 mg/L) Thallium (0.0055 mg/L)	Perform CMS.

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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
W-11	Salvage Yard Sump Drain • 69 barrels of unknown liquid were dumped down the Salvage Yard sump drain over an eight day period in 1985 • The location of the Salvage Yard sump drain is unclear • 2 possible sump locations	• Barrel contents unknown • WWTP influent and effluent analyzed for: Total Kjeldahl nitrogen, chloride, nickel, zinc, phosphorus, oil and grease on the days the dumping occurred	• Installed 1 downgradient monitoring well (installed as part of AOI W-1 investigation)	VOCs SVOCs PCBs Inorganics	Soils not analyzed	Antimony (0.0069 mg/L) Thallium (0.0054 mg/L)	No Further Action.
W-13	Montcalm Substation • Located east of Saginaw Street and north of Montcalm Avenue • Transformer oil that potentially contained PCBs was used at this location	• PCBs • Oils	• Completed 6 surface soil samples	PCBs SVOCs	No exceedances	Groundwater not analyzed	No Further Action.

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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
M-1	Wastewater Treatment Plant • Located west of Plants 5/23 and Plant 14 • Included up to 55 ASTs historically utilized for the WWTP • Ground cover includes pavement, gravel, and grass • Known releases included alkali/oily water, cyanide plating solution, acidic alkali water, lime slurry, reclaimed oil, strong metallic water, chrome solution, and cyanide solution • History of exceedances of lead, phenol, and hexavalent chromium at sanitary sewer Outfall 003	• Treated metals (including hexavalent chromium) • Treated alkali-oily wastes • Oil • Sludge • Sulfuric Acid • Lime • Alum • Polymer • Caustic • Pickle Liquid	• Completed 12 surface soil samples • Completed 11 soil borings • Installed 3 groundwater monitoring wells • Completed PCB soil delineation at 2 locations	VOCs SVOCs PCBs Inorganics Cyanide Hexavalent Chromium	PCBs (46 mg/kg)	Cyanide (0.897 mg/L)	No Further Action.
M-2	Former Plating Operations Area • Western portion of Plant 2 • Types of plating included meacher (copper coating) and utilyte (nickel and chrome plating) • Plating pits showed evidence of corrosion during Site visit	• Metals (including copper, nickel, and hexavalent chromium) • Chlorinated solvents	• Completed 18 soil borings • Installed 8 groundwater monitoring wells • Installed 1 shallow Sitewide hydrogeologic monitoring well	VOCs SVOCs PCBs Inorganics Cyanide Hexavalent Chromium	Manganese (2,220 mg/kg) 1,1-DCE (1.8 mg/kg)	1,1,1-TCA (0.48 mg/L) 1,1,2-TCA (0.012 mg/L) 1,1-DCE (0.08 mg/L) 1,2-DCA (0.01 mg/L) Vinyl Chloride (0.0033 mg/L) Nickel (0.168 mg/L) Acetone (3.4 mg/L) Thallium (0.0056 mg/L)	<u>Soils</u> No Further Action. <u>Groundwater</u> Perform CMS.

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Table 2-1:
GENERAL MOTORS CORPORATION, PONTIAC NORTH CAMPUS
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Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
M-4	Plant 25 Former Gasoline UST and Current Gasoline AST • Prior documented release (gasoline) from former UST (1,000 gal)	• Gasoline (leaded and unleaded)	• Completed 1 soil boring • Installed 5 groundwater monitoring wells	VOCs Lead	No exceedances	Benzene (0.55 mg/L) Ethylbenzene (0.85 mg/L)	Soils No Further Action. Groundwater Perform CMS.
M-5	A-2 Fill Area • Used for disposal of plant refuse and industrial waste including partially burned materials	• Wastewater sludge • PCBs • Partially burned waste	• Completed 3 soil borings • Installed 1 groundwater monitoring well • Groundwater samples were collected from previously installed MW-299	VOCs PCBs Inorganics Dioxins	Lead (1,560 mg/kg)	Barium (4.72 mg/L) Manganese (3.57 mg/L) PCBs (0.0015 mg/L)	No Further Action.
M-7	ELPO Building/Flammable Liquids Storage Building • Includes ELPO Operations Building and Flammable Liquids Storage Building. • Series of concrete trenches and sumps which convey wastewater containing metals	• Solvents • Alkali Cleaners • Phosphoric Acid • Chromic Acid • PCBs • Metals	• Completed 3 soil borings • Installed 3 groundwater monitoring wells • Installed 1 shallow site-wide hydrogeologic monitoring well	VOCs SVOCs PCBs Inorganics	No exceedances	Acetone (42 mg/L) Thallium (0.0141 mg/L)	No Further Action.

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Table 2-1:
GENERAL MOTORS CORPORATION, PONTIAC NORTH CAMPUS
RCRA FACILITY INVESTIGATION
SUMMARY OF RFI ACTIVITIES, RESULTS, AND PROPOSED FURTHER ACTIVITY

Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
M-9	Plant 11 Heat Treat Oil Storage Area • Four ASTs near the eastern wall of Plant 11 • ASTs contained inside a floor pit with sump that discharges to WWTP	• Dirty heat treat quench oil • LC-7 coolant • Acidic material	• Cleaned and evaluated structural integrity of containment pit and sump • Completed 1 soil boring • Installed 2 groundwater monitoring wells	VOCs SVOCs PCBs Inorganics	No exceedances	No exceedances	Sump will be properly abandoned. No Further Action.
M-11	Plant 12 Former Gasoline Storage Area • Former 480-gallon unleaded gasoline AST located north of Plant 12 • Exact location unknown • No information available on removal of AST	• Gasoline (unleaded)	• Completed 3 soil borings	BTEX	No exceedances	Groundwater not analyzed	No Further Action.
M-13	ASTs west of Plant 14 • Three ASTs, one AST with secondary containment, other 2 had no containment	• Gasoline • Diesel fuel	• Completed 2 soil borings	BTEX SVOCs Lead	No exceedances	Groundwater not analyzed	No Further Action.
M-16	Plant 25 Basement Sump Area • Sludge tank, pumping system, and several floor sumps • Area currently flooded • Several of the sumps and pits filled with grout, unable to ascertain condition • Evidence of water on foundation walls	• Sludges • Oils	• Cleaned and evaluated structural integrity of floor sumps • Installed 2 groundwater monitoring wells	VOCs SVOCs PCBs Inorganics	No exceedances	Vinyl chloride (0.023 mg/L)	No Further Action.

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GENERAL MOTORS CORPORATION, PONTIAC NORTH CAMPUS
RCRA FACILITY INVESTIGATION
SUMMARY OF RFI ACTIVITIES, RESULTS, AND PROPOSED FURTHER ACTIVITY

Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
M-17	Plant 15 Southern Piping Trench • Located along the southern wall in the western portion of Plant 15 • Contains pipes that distribute wastewater below grade to the WWTP	• Metals • Alkali-Oily	• Visually inspected piping trench	None	Soil not analyzed	Groundwater not analyzed	No Further Action.
M-19	Plant 5 Southern Access Railway • Southwestern end of Plant 5 • Soil exposed at ground surface	• Unknown	• Completed 1 surface soil samples	VOCs SVOCs PCBs Inorganics Hexavalent Chromium	Manganese (12,600 mg/kg) Total Chromium (668 mg/kg)	Groundwater not analyzed	No Further Action.
M-21	Plant 14 Transformer Station • Located between Plant 2 and Plant 14, adjacent to Track 26 • Oil-stained concrete observed during Site walk	• PCBs	• Completed 4 surface soil samples	SVOCs PCBs	No exceedances	Groundwater not analyzed	No Further Action.
M-23	Plants 25, 33, and 75, Substation, and Power Building • Southwest of Plant 25 and north of Columbia Avenue • Transformer oil that potentially contained PCBs was used at the Substation and Power Building	• PCBs	• Completed 4 surface soil samples	SVOCs PCBs	No exceedances	Groundwater not analyzed	No Further Action.

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RCRA FACILITY INVESTIGATION
SUMMARY OF RFI ACTIVITIES, RESULTS, AND PROPOSED FURTHER ACTIVITY

Area ID	AOI Description	Summary of Primary Materials Managed	RFI Activities	Laboratory Analysis Performed	Analytical Results That Exceed Applicable Part 201 Criteria		Proposed Activity
					Soil	Groundwater	
M-24	Plant 12 Transformer Oil Spill • Spill of PCB-containing transformer oil occurred on concrete surfaces near Plant 12 in May 1994 (exact location unknown) • Concrete excavated along with soil but no documentation	• PCBs	• Completed 2 surface soil samples	SVOCs PCBs	No exceedances	Groundwater not analyzed	No Further Action.
M-25	Plant 33 Basement Sump Area • Floor sumps and several process pits • Process pits filled with flowable material, unable to observe condition	• Oils • Metals	• Installed 1 groundwater monitoring well	VOCs SVOCs PCBs Inorganics	No exceedances	Well dry at time of sampling	No Further Action.

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TABLE 4-4

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	30	5	2.10E-03	9.80E-03	2.20E-02	1.60E-03	3.00E-03		1.10E+05	2E-07	1.60E+05	1E-07	1.70E+08	1E-10	1.10E+05	2E-07	1.10E+05	2E-07	1.30E+05	2E-07	3.90E+08	6E-11	2.30E+04	1E-06
VOC	Benzene	71-43-2	A	30					5.40E-04	9.20E-04		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	30					5.80E-04	1.70E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	30					4.50E-04	2.30E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	30					1.10E-03	2.60E-03		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	30	2	8.00E-03	2.25E-02	3.70E-02	2.20E-03	5.80E-03		2.70E+04	1E-06	3.50E+04	1E-06	2.90E+07	1E-09	2.70E+04	1E-06	2.70E+04	1E-06	2.90E+04	1E-06	6.70E+07	6E-10	2.70E+04	1E-06
VOC	Carbon Disulfide	75-15-0		30					6.50E-04	1.30E-03		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	30					5.50E-04	1.40E-03		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	30					4.30E-04	8.70E-04		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		30					8.20E-04	3.10E-03		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	30					6.35E-04	1.20E-03		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	30					6.50E-04	1.80E-03		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	30					5.80E-04	9.90E-04		3.90E+02		2.00E+03		2.60E+06		3.90E+02		3.90E+02		1.70E+03		5.80E+06		3.90E+02	
VOC	Cyclohexane	110-82-7		30					8.30E-04	1.40E-03																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	30					1.30E-03	3.80E-03		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	30					5.10E-04	1.60E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	30					5.60E-04	1.70E-03		3.60E+00		1.40E+02		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	30					5.90E-04	1.00E-03		2.10E+02		4.50E+02		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	30					6.60E-04	1.10E-03								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	30					5.60E-04	9.50E-04		1.00E+02		4.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		30					7.90E-04	1.60E-03		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	30					4.80E-04	8.20E-04		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	30					5.10E-04	1.00E-03		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	30					6.00E-04	1.70E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	30					2.40E-04	1.20E-03		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		30					6.10E-04	1.00E-03		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	30					5.80E-04	1.10E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	30					5.45E-04	1.20E-03		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	30					4.90E-04	1.00E-03		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	2-Hexanone	591-78-6		30					1.10E-03	2.40E-03		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		30					9.10E-04	3.00E-03																	
VOC	Methyl tert-butyl ether	1634-04-4		30					3.90E-04	1.20E-03		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		30	1	2.30E-03	2.30E-03	2.30E-03	1.60E-03	4.00E-03		2.70E+03	9E-07	5.30E+04	4E-08	6.00E+07	4E-11	2.70E+03	9E-07	2.70E+03	9E-07	4.50E+04	5E-08	1.40E+08	2E-11	2.70E+03	9E-07
VOC	Methylcyclohexane	108-87-2		30					4.90E-04	1.20E-03																	
VOC	Methylene Chloride	75-09-2	B2	30					1.10E-03	1.80E-03		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		30					4.10E-04	7.90E-04		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	30					6.25E-04	2.60E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	30	1	1.40E-03	1.40E-03	1.40E-03	6.60E-04	1.70E-03		6.00E+01	2E-05	6.00E+02	2E-06	6.80E+06	2E-10	8.80E+01	2E-05	1.10E+01	1E-04	1.80E+02	8E-06	5.40E+06	3E-10	8.80E+01	2E-05
VOC	Toluene	108-88-3	D	30	4	6.40E-04	1.71E-03	3.50E-03	4.40E-04	9.10E-04		2.50E+02	1E-05	3.30E+03	1E-06	1.20E+07	3E-10	2.50E+02	1E-05	2.50E+02	1E-05	2.80E+03	1E-06	2.70E+07	1E-10	2.50E+02	1E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	30					7.40E-04	1.30E-03		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	30					6.35E-04	1.30E-03		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	30					4.80E-04	1.70E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	30					6.25E-04	1.10E-03		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		30					9.10E-04	2.20E-03		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		30					7.70E-04	1.60E-03		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	30					5.90E-04	2.00E-03		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	30					1.60E-03	2.70E-03		1.50E+02		5.40E+04		1.30E+08		1.50E+02		1.50E+02		4.60E+04		2.90E+08		1.50E+02	
SVOC	Acenaphthene	83-32-9		30	1	5.70E-02	5.70E-02	5.70E-02	5.30E-02	6.70E-02		3.50E+05	2E-07	9.70E+04	6E-07	6.20E+06	9E-09	2.00E+05	3E-07	1.90E+05	3E-07	8.10E+04	7E-07	1.40E+07	4E-09	4.10E+04	1E-06
SVOC	Acenaphthylene	208-96-8	D	30					4.90E-02	6.10E-02		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	30					5.20E-02	6.50E-02		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	30	1	1.10E-01	1.10E-01	1.10E-01	5.10E-02	6.40E-02		1.00E+06	1E-07	1.60E+06	7E-08	2.90E+07	4E-09	1.00E+06	1E-07	1.00E+06	1E-07	1.40E+06	8E-08	6.70E+07	2E-09	2.30E+05	5E-07
SVOC	Atrazine	1912-24-9		30					1.60E-01	2.00E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		30					1.80E-01	2.20E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	30	2	9.40E-02	3.97E-01	7.00E-01	5.70E-02	7.20E-02								1.00E+02	7E-03							2.00E+01	4E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	30	3	7.60E-02	2.82E-01	6.50E-01	6.20E-02	7.80E-02						1.90E+03	3E-04	1.00E+01	7E-02					1.50E+03	4E-04	2.00E+00	3E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	30	3	1.10E-01	3.37E-01	7.60E-01	6.00E-02	7.60E-02								1.00E+02	8E-03							2.00E+01	4E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	30	3	6.40E-02	1.83E-01	4.00E-01	5.70E-02	7.20E-02						3.50E+05	1E-06	9.10E+03	4E-05					8.00E+05	5E-07	2.50E+03	2E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	30	1	4.00E-01	4.00E-01	4.00E-01	5.50E-02	6.90E-02								1.00E+03	4E-04							2.00E+02	2E-03
SVOC	Biphenyl	92-52-4		30					1.50E-01	1.80E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	30					4.90E-02	6.10E-02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	30					5.30E-02	6.70E-02		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	30	16	7.30E-02	2.23E-01	6.60E-01	5.70E-02	7.10E-02						8.90E+05	7E-07	1.00E+04	7E-05					7.00E+05	9E-07	2.80E+03	2E-04
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	30					6.30E-02	8.00E-02																	

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TABLE 4-4

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Butylbenzylphthalate	85-68-7	C	30					5.30E-02	6.70E-02						2.10E+07		3.10E+02						4.70E+07		3.10E+02	
SVOC	Caprolactam	105-60-2		30					1.90E-01	2.40E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	30					5.40E-02	6.80E-02								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		30					5.30E-02	6.70E-02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		30					5.30E-02	6.70E-02																	
SVOC	2-Chloronaphthalene	91-58-7		30					5.00E-02	6.30E-02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		30					5.40E-02	6.80E-02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		30					5.40E-02	6.80E-02																	
SVOC	Chrysene	218-01-9	B2	30	3	6.70E-02	3.39E-01	8.50E-01	4.80E-02	6.00E-02								1.00E+04	9E-05							2.00E+03	4E-04
SVOC	Di-n-butylphthalate	84-74-2	D	30					1.60E-01	2.00E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		30					5.60E-02	7.10E-02								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	30	1	9.40E-02	9.40E-02	9.40E-02	5.30E-02	6.70E-02								1.00E+01	9E-03							2.00E+00	5E-02
SVOC	Dibenzofuran	132-64-9	D	30					5.20E-02	6.50E-02																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	30					4.10E-02	5.10E-02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		30					5.20E-02	6.50E-02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	30					1.60E-01	2.00E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		30					8.30E-02	1.00E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	30					1.70E-01	2.10E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		30					1.70E-01	2.10E-01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		30					1.10E-01	1.40E-01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	30					4.80E-02	6.00E-02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	30					5.00E-02	6.30E-02																	
SVOC	Fluoranthene	206-44-0	D	30	4	7.60E-02	6.39E-01	2.10E+00	5.80E-02	7.30E-02		1.00E+06	2E-08	6.90E+05	2E-06	4.10E+06	5E-07	1.80E+05	1E-05	1.00E+06	2E-06	7.40E+05	3E-06	9.30E+06	2E-07	4.60E+04	5E-05
SVOC	Fluorene	86-73-7	D	30					5.00E-02	6.30E-02		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	30					5.80E-02	7.30E-02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	30					4.70E-02	5.90E-02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	25					6.20E-02	7.80E-02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	30					5.00E-02	6.30E-02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	30	1	3.50E-01	3.50E-01	3.50E-01	7.30E-02	9.20E-02								1.00E+02	4E-03							2.00E+01	2E-02
SVOC	Isophorone	78-59-1	C	30					4.60E-02	5.80E-02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		30					5.00E-02	6.30E-02								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		30					4.90E-02	6.10E-02						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	30					5.10E-02	6.40E-02		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		30					4.80E-02	6.00E-02																	
SVOC	3-Nitroaniline	99-09-2	C	30					1.50E-01	1.80E-01																	
SVOC	4-Nitroaniline	100-01-6	C	30					7.10E-02	8.90E-02																	
SVOC	Nitrobenzene	98-95-3	D	30					4.80E-02	6.00E-02		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		30					4.80E-02	6.00E-02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		30					2.00E-01	2.50E-01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	30					5.10E-02	6.40E-02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	30					4.60E-02	5.80E-02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	30					5.40E-02	6.80E-02																	
SVOC	Pentachlorophenol	87-86-5	B2	30					1.20E-01	1.60E-01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	30	3	7.70E-02	2.26E-01	4.30E-01	5.40E-02	6.80E-02		5.10E+03	8E-05	1.90E+02	2E-03	2.90E+03	1E-04	8.00E+03	5E-05	2.80E+03	2E-04	1.60E+02	3E-03	6.70E+03	6E-05	1.60E+03	3E-04
SVOC	Phenol	108-95-2	D	30					5.10E-02	6.40E-02						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	30	3	7.60E-02	6.59E-01	1.70E+00	5.30E-02	6.70E-02		1.00E+06	2E-06	7.80E+05	2E-06	2.90E+06	6E-07	1.10E+05	2E-05	1.00E+06	2E-06	6.50E+05	3E-06	6.70E+06	3E-07	2.90E+04	6E-05
SVOC	2,4,5-Trichlorophenol	95-95-4		30					5.70E-02	7.20E-02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	30					6.50E-02	8.20E-02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	10	2	3.24E-02	5.05E-02	6.85E-02	2.10E-02	2.40E-02		1.60E+04	4E-06	8.10E+02	8E-05	6.50E+03	1E-05	2.00E+01	3E-03	3.00E+03	2E-05	2.40E+02	3E-04	5.20E+03	1E-05	4.00E+00	2E-02
INORG	Antimony	7440-36-0		30					5.09E-01	6.41E-01						5.90E+03		1.20E+03						1.30E+04		1.80E+02	
INORG	Arsenic	7440-38-2	A	40	40	1.18E+00	4.12E+00	8.63E+00			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	30	30	3.58E+00	2.58E+01	5.80E+01			1.10E+02					1.50E+05		2.50E+05						3.30E+05		3.70E+04	
INORG	Beryllium	7440-41-7	B1	30	16	5.68E-02	2.26E-01	4.70E-01	4.78E-02	6.01E-02	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	30	20	5.69E-02	1.84E-01	6.10E-01	4.51E-02	5.62E-02	1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		30	30	3.37E+00	9.36E+00	1.80E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		30	30	1.57E+00	4.18E+00	7.59E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	30	30	3.68E+00	1.10E+01	1.80E+01			3.20E+01					5.90E+04		1.40E+05						1.30E+05		2.00E+04	
INORG	Cyanide (total)	57-12-5	D	1					1.82E-01	1.82E-01						2.50E+02		2.50E+02						2.50E+02		1.20E+01	
INORG	Lead	7439-92-1	B2	30	30	1.80E+00	7.41E+00	2.64E+01			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	
INORG	Manganese	7439-96-5	D	30	30	4.83E+01	2.49E+02	4.62E+02			5.10E+02					1.50E+03		1.70E+05						3.30E+03		2.50E+04	
INORG	Mercury	7439-97-6	D	30	18	1.00E-02	5.72E-02	6.39E-01	8.70E-03	1.10E-02	1.30E-01							1.10E+03	5E-04							1.60E+02	3E-03
INORG	Nickel	7440-02-0	A	30	30	3.40E+00	1.08E+01	1.99E+01			3.01E+01					1.60E+04		2.70E+05						1.30E+04		4.00E+04	
INORG	Selenium	7782-49-2	D	30	2	5.47E-01	9.89E-01	1.43E+00	3.22E-01	4.05E-01	4.10E-01					5.90E+04	2E-05	1.80E+04	6E-05					1.30E+05	8E-06	2.60E+03	4E-04

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TABLE 4-4

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Silver	7440-22-4	D	30					1.56E-01	1.96E-01						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		30	7	5.71E-01	8.46E-01	1.23E+00	5.19E-01	6.06E-01								2.40E+02	5E-03							3.50E+01	4E-02
INORG	Vanadium	7440-62-2		30	30	4.57E+00	1.25E+01	2.30E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	30	30	1.35E+01	3.19E+01	5.27E+01			4.70E+01							1.00E+06	6E-06							1.70E+05	3E-05

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-5

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	22	6	1.50E-02	2.92E-02	7.80E-02	5.10E-04	1.00E-02	1.00E+06	8E-08	3.10E+04	3E-06	1.00E+06	8E-08
VOC	Benzene	71-43-2	T	A	22					1.60E-04	1.00E-03	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	22	2	1.80E-04	3.00E-04	4.20E-04	1.70E-04	1.00E-03	3.80E+01	1E-05	1.40E+01	3E-05	4.80E+00	9E-05
VOC	Bromoform	75-25-2	T	B2	22					1.80E-04	2.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	22					2.00E-04	1.00E-03	9.80E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	22	1	5.00E-04	5.00E-04	5.00E-04	4.10E-04	1.00E-02	2.40E+05	2E-09	2.40E+05	2E-09	2.40E+05	2E-09
VOC	Carbon Disulfide	75-15-0	T		22					2.60E-04	1.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	22					1.20E-04	1.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	22					1.40E-04	1.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		22					2.60E-04	1.00E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	22	6	1.40E-04	6.02E-04	1.70E-03	1.40E-04	1.00E-03	1.80E+02	9E-06	1.50E+02	1E-05	2.80E+01	6E-05
VOC	Chloromethane	74-87-3	T	D	22	3	1.30E-04	2.45E-04	3.35E-04	1.30E-04	1.00E-03	5.20E+01	6E-06	4.90E+02	7E-07	8.60E+00	4E-05
VOC	Cumene	98-82-8	T	D	22					1.20E-04	1.00E-03	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		22					1.30E-04	1.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	22					6.20E-04	2.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	22					2.60E-04	1.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	22					2.20E-04	1.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	22	1	2.20E-04	2.20E-04	2.20E-04	1.10E-04	1.00E-03	1.60E+02	1E-06	1.60E+02	1E-06	1.60E+02	1E-06
VOC	1,3-Dichlorobenzene	541-73-1	T	D	22					1.50E-04	1.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	22					1.70E-04	1.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		22					2.60E-04	2.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	22	1	1.00E-03	1.00E-03	1.00E-03	1.60E-04	1.00E-03	2.30E+03	4E-07	2.40E+03	4E-07	1.00E+03	1E-06
VOC	1,2-Dichloroethane	107-06-2	T	B2	22					2.10E-04	1.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	22	1	9.70E-04	9.70E-04	9.70E-04	2.40E-04	1.00E-03	1.30E+00	7E-04	1.10E+01	9E-05	2.00E-01	5E-03
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	22					2.20E-04	5.00E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		22					1.50E-04	5.00E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	22					1.70E-04	1.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	22					2.70E-04	1.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	22	1	1.80E-04	1.80E-04	1.80E-04	1.20E-04	1.00E-03	1.70E+02	1E-06	1.70E+02	1E-06	1.70E+02	1E-06
VOC	2-Hexanone	591-78-6	T		22					4.60E-04	1.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		22					4.10E-04	1.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		22					1.30E-04	5.00E-03	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		22					2.30E-04	1.00E-02	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		22					1.50E-04	1.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	22					3.40E-04	1.00E-03	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		22					1.50E-04	1.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	22					2.50E-04	1.00E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	22	1	5.50E-04	5.50E-04	5.50E-04	2.50E-04	1.00E-03	1.70E+02	3E-06	1.20E+01	5E-05	2.50E+01	2E-05
VOC	Toluene	108-88-3	T	D	22	5	1.90E-04	3.90E-04	8.10E-04	1.80E-04	1.00E-03	5.30E+02	2E-06	5.30E+02	2E-06	5.30E+02	2E-06
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	22					1.70E-04	1.00E-03	3.00E+02		1.90E+01		3.00E+02	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	1,1,1-Trichloroethane	71-55-6	T	D	22	4	5.25E-04	3.56E-03	7.00E-03	1.50E-04	1.00E-03	1.30E+03	5E-06	1.30E+03	5E-06	6.60E+02	1E-05
VOC	1,1,2-Trichloroethane	79-00-5	T	C	22					3.00E-04	1.00E-03	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	22	2	7.10E-04	9.05E-04	1.10E-03	1.40E-04	1.00E-03	9.70E+01	1E-05	3.70E+01	3E-05	1.50E+01	7E-05
VOC	Trichlorofluoromethane	75-69-4	T		22					2.80E-04	2.00E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		22					3.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	22					1.50E-04	1.00E-03	6.30E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	22	1	9.90E-04	9.90E-04	9.90E-04	3.50E-04	1.00E-03	1.90E+02	5E-06	1.90E+02	5E-06	1.90E+02	5E-06
SVOC	Acenaphthene	83-32-9	T		22					8.00E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	22					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	22					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	22					6.80E-04	5.00E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		22					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		22					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	22					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	22					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	22					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	22					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	22					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		22					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	22					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	22					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	22					2.70E-03	5.00E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	22					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	22					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		22					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	22					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		22					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		18					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		22					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		22					1.00E-03	5.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		22					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	22					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	22					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		22					1.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	22					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	22					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	18					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		22					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	22					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		22					8.50E-04	5.00E-03			5.20E+02			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Dimethylphthalate	131-11-3	T	D	22					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		22					1.30E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		22					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	22					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	22					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	22					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	22					1.30E-03	5.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	22					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	22					7.30E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	22					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	22					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	22					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	22					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		22					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		22					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	22					7.50E-04	5.00E-03	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		22					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	18					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	22					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	22					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		22					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		22					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	22					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	22					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	22					7.80E-04	5.00E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	22					2.40E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	22					8.20E-04	5.00E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	22					2.60E-03	5.00E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	22					1.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		22					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	22					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	4					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	9					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		22	1	2.60E-03	2.60E-03	2.60E-03	2.20E-03	2.50E-02			6.80E+01	4E-05		
INORG	Antimony	7440-36-0	T		22					2.20E-03	2.50E-02			6.80E+01			
INORG	Arsenic	7440-38-2	D	A	22	6	3.90E-03	5.03E-03	7.80E-03	3.90E-03	1.00E-02			4.30E+00	2E-03		
INORG	Arsenic	7440-38-2	T	A	22	5	4.00E-03	6.04E-03	9.60E-03	3.90E-03	1.00E-02			4.30E+00	2E-03		
INORG	Barium	7440-39-3	D	D	22	22	5.33E-02	2.28E-01	5.29E-01					1.40E+04	7E-05		
INORG	Barium	7440-39-3	T	D	22	22	5.04E-02	2.31E-01	9.29E-01					1.40E+04	7E-05		
INORG	Beryllium	7440-41-7	D	B1	22					5.40E-04	1.00E-03			2.90E+02			

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TABLE 4-5

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INORG	Beryllium	7440-41-7	T	B1	22					5.40E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	22	9	2.90E-04	5.29E-04	1.47E-03	2.80E-04	5.00E-03			1.90E+02	8E-06		
INORG	Cadmium	7440-43-9	T	B1	22	6	3.50E-04	5.71E-04	1.45E-03	2.80E-04	5.00E-03			1.90E+02	8E-06		
INORG	Chromium (total)	7440-47-3	D		22	4	1.80E-03	2.25E-03	2.70E-03	1.40E-03	2.00E-02			4.60E+02	6E-06		
INORG	Chromium (total)	7440-47-3	T		22	6	1.40E-03	1.83E-03	2.50E-03	1.40E-03	1.00E-02			4.60E+02	5E-06		
INORG	Cobalt	7440-48-4	D		22	5	1.30E-03	2.36E-03	4.60E-03	1.30E-03	2.00E-02			2.40E+03	2E-06		
INORG	Cobalt	7440-48-4	T		22	4	1.40E-03	2.48E-03	4.40E-03	1.30E-03	2.00E-02			2.40E+03	2E-06		
INORG	Copper	7440-50-8	D	D	22	4	4.40E-03	5.10E-03	6.00E-03	4.20E-03	5.00E-03			7.40E+03	8E-07		
INORG	Copper	7440-50-8	T	D	22	2	4.70E-03	4.85E-03	4.70E-03	4.20E-03	5.00E-03			7.40E+03	6E-07		
INORG	Lead	7439-92-1	D	B2	22					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	22	1	3.50E-03	3.50E-03	3.50E-03	2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	22	22	1.60E-03	2.06E-01	6.17E-01					9.10E+03	7E-05		
INORG	Manganese	7439-96-5	T	D	22	22	9.30E-04	2.12E-01	6.37E-01					9.10E+03	7E-05		
INORG	Mercury	7439-97-6	D	D	22	2	9.40E-05	9.70E-05	1.00E-04	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Mercury	7439-97-6	T	D	22	2	7.50E-05	8.25E-05	9.00E-05	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Nickel	7440-02-0	D	A	22	11	2.40E-03	5.17E-03	1.08E-02	2.20E-03	2.00E-02			7.40E+04	1E-07		
INORG	Nickel	7440-02-0	T	A	22	13	2.20E-03	5.06E-03	1.06E-02	2.20E-03	2.00E-02			7.40E+04	1E-07		
INORG	Selenium	7782-49-2	D	D	22					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	22	2	5.10E-03	5.55E-03	6.00E-03	4.50E-03	5.00E-03			9.70E+02	6E-06		
INORG	Silver	7440-22-4	D	D	22					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	22					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		22	13	3.10E-05	4.50E-03	1.50E-02	1.80E-05	1.00E-02			1.30E+01	1E-03		
INORG	Thallium	7440-28-0	T		22	12	1.80E-05	4.45E-03	1.59E-02	1.80E-05	1.00E-02			1.30E+01	1E-03		
INORG	Vanadium	7440-62-2	D		22	4	1.40E-03	3.70E-03	6.50E-03	8.20E-04	1.00E-02			9.70E+02	7E-06		
INORG	Vanadium	7440-62-2	T		22	4	1.10E-03	3.83E-03	6.40E-03	8.20E-04	1.00E-02			9.70E+02	7E-06		
INORG	Zinc	7440-66-6	D	D	22	3	1.73E-02	2.35E-02	2.90E-02	1.20E-02	2.00E-02			1.10E+05	3E-07		
INORG	Zinc	7440-66-6	T	D	22	7	1.30E-02	2.20E-02	3.46E-02	1.20E-02	2.00E-02			1.10E+05	3E-07		

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	Acetone	67-64-1	T	D	10	8	2.40E-02	1.78E+00	7.10E+00	5.10E-04	3.40E-03	2.10E+00	**3E+00**	7.30E-01	**1E+01**
VOC	Benzene	71-43-2	T	A	10	2	2.60E-04	9.30E-04	1.60E-03	1.60E-04	8.30E-02	5.00E-03	3E-01	5.00E-03	3E-01
VOC	Bromodichloromethane	75-27-4	T	B2	10					1.70E-04	8.30E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromoform	75-25-2	T	B2	10					1.80E-04	8.30E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromomethane	74-83-9	T	D	10					2.00E-04	8.30E-02	2.90E-02	0E+00	1.00E-02	0E+00
VOC	2-Butanone	78-93-3	T	D	10					4.20E-04	8.30E-01	3.80E+01	0E+00	1.30E+01	0E+00
VOC	Carbon Disulfide	75-15-0	T		10					2.00E-04	8.30E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Carbon Tetrachloride	56-23-5	T	B2	10					1.20E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Chlorobenzene	108-90-7	T	D	10					1.40E-04	8.30E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloroethane	75-00-3	T		10					2.60E-04	8.30E-02	1.70E+00	0E+00	4.30E-01	0E+00
VOC	Chloroform	67-66-3	T	B2	10	1	3.55E-04	3.55E-04	3.55E-04	1.40E-04	8.30E-02	1.00E-01	4E-03	1.00E-01	4E-03
VOC	Chloromethane	74-87-3	T	D	10					1.30E-04	8.30E-02	1.10E+00	0E+00	2.60E-01	0E+00
VOC	Cumene	98-82-8	T	D	10					1.20E-04	8.30E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Cyclohexane	110-82-7	T		10					1.30E-04	8.30E-02		0E+00		0E+00
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	10					6.20E-04	1.70E-01	2.00E-04	0E+00	2.00E-04	0E+00
VOC	Dibromochloromethane	124-48-1	T	C	10					2.60E-04	8.30E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dibromoethane	106-93-4	T	B2	10					2.20E-04	8.30E-02	1.00E-03	0E+00	1.00E-03	0E+00
VOC	1,2-Dichlorobenzene	95-50-1	T	D	10					1.10E-04	8.30E-02	6.00E-01	0E+00	6.00E-01	0E+00
VOC	1,3-Dichlorobenzene	541-73-1	T	D	10					1.50E-04	8.30E-02	1.90E-02	0E+00	6.60E-03	0E+00
VOC	1,4-Dichlorobenzene	106-46-7	T	C	10					1.70E-04	8.30E-02	7.50E-02	0E+00	7.50E-02	0E+00
VOC	Dichlorodifluoromethane	75-71-8	T		10					2.60E-04	1.70E-01	4.80E+00	0E+00	1.70E+00	0E+00
VOC	1,1-Dichloroethane	75-34-3	T	C	10					1.60E-04	8.30E-02	2.50E+00	0E+00	8.80E-01	0E+00
VOC	1,2-Dichloroethane	107-06-2	T	B2	10					2.10E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,1-Dichloroethene	75-35-4	T	C	10					2.40E-04	8.30E-02	7.00E-03	0E+00	7.00E-03	0E+00
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	10					2.20E-04	4.20E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	trans-1,2-Dichloroethene	156-60-5	T		10					1.50E-04	4.20E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dichloropropane	78-87-5	T	B2	10					1.70E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	10					2.70E-04	8.30E-02	6.30E-02	0E+00	2.10E-02	0E+00
VOC	Ethyl Benzene	100-41-4	T	D	10					1.20E-04	8.30E-02	7.00E-01	0E+00	7.00E-01	0E+00
VOC	2-Hexanone	591-78-6	T		10					4.60E-04	8.30E-01	2.90E+00	0E+00	1.00E+00	0E+00
VOC	Methyl Acetate	79-20-9	T		10					4.10E-04	8.30E-01		0E+00		0E+00
VOC	Methyl tert-butyl ether	1634-04-4	T		10					1.30E-04	4.20E-01	6.90E-01	0E+00	2.40E-01	0E+00
VOC	4-Methyl-2-pentanone	108-10-1	T		10					2.30E-04	8.30E-01	5.20E+00	0E+00	1.80E+00	0E+00

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VOC	Methylcyclohexane	108-87-2	T		10					1.50E-04	8.30E-02		0E+00		0E+00
VOC	Methylene Chloride	75-09-2	T	B2	10					3.40E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Styrene	100-42-5	T		10					1.50E-04	8.30E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	10					2.50E-04	8.30E-02	3.50E-02	0E+00	8.50E-03	0E+00
VOC	Tetrachloroethene	127-18-4	T	C-B2	10					2.30E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Toluene	108-88-3	T	D	10	3	4.30E-04	7.77E-04	1.00E-03	1.80E-04	8.30E-02	1.00E+00	1E-03	1.00E+00	1E-03
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	10					1.70E-04	8.30E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	1,1,1-Trichloroethane	71-55-6	T	D	10					1.50E-04	8.30E-02	2.00E-01	0E+00	2.00E-01	0E+00
VOC	1,1,2-Trichloroethane	79-00-5	T	C	10					3.00E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichloroethene	79-01-6	T	C-B2	10					1.40E-04	8.30E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichlorofluoromethane	75-69-4	T		10					2.80E-04	8.30E-02	7.30E+00	0E+00	2.60E+00	0E+00
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		10					3.20E-04	8.30E-02	1.70E+02	0E+00	1.70E+02	0E+00
VOC	Vinyl Chloride	75-01-4	T	A	10					1.50E-04	8.30E-02	2.00E-03	0E+00	2.00E-03	0E+00
VOC	Xylenes (total)	1330-20-7	T	D	10	3	3.50E-04	4.55E-04	6.10E-04	3.30E-04	8.30E-02	1.00E+01	6E-05	1.00E+01	6E-05
SVOC	Acenaphthene	83-32-9	T		10					8.00E-04	5.00E-03	3.80E+00	0E+00	1.30E+00	0E+00
SVOC	Acenaphthylene	208-96-8	T	D	10					7.10E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Acetophenone	98-86-2	T	D	10					2.60E-03	1.00E-02	4.40E+00	0E+00	1.50E+00	0E+00
SVOC	Anthracene	120-12-7	T	D	10					6.80E-04	5.00E-03	4.30E-02	0E+00	4.30E-02	0E+00
SVOC	Atrazine	1912-24-9	T		10					2.50E-03	5.00E-03	3.00E-03	0E+00	3.00E-03	0E+00
SVOC	Benzaldehyde	100-52-7	T		10					2.80E-03	1.00E-02		0E+00		0E+00
SVOC	Benzo(a)anthracene	56-55-3	T	B2	10					7.00E-04	5.00E-03	8.50E-03	0E+00	2.10E-03	0E+00
SVOC	Benzo(a)pyrene	50-32-8	T	B2	10					7.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	10					9.40E-04	5.00E-03	2.00E-03	0E+00	2.00E-03	0E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	10					8.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	10					8.40E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Biphenyl	92-52-4	T		10					2.60E-03	1.00E-02		0E+00		0E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	10					8.70E-04	5.00E-03		0E+00		0E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	10					9.70E-04	5.00E-03	8.30E-03	0E+00	2.00E-03	0E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	10	1	3.90E-03	3.90E-03	3.90E-03	2.70E-03	5.00E-03	6.00E-03	7E-01	6.00E-03	7E-01
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	10					8.80E-04	5.00E-03		0E+00		0E+00
SVOC	Butylbenzylphthalate	85-68-7	T	C	10					8.80E-04	5.00E-03	2.70E+00	0E+00	1.20E+00	0E+00
SVOC	Caprolactam	105-60-2	T		10	5	9.70E-03	1.65E-01	5.40E-01	2.50E-03	1.00E-02	1.70E+01	3E-02	5.80E+00	9E-02
SVOC	Carbazole	86-74-8	T	B2	10					8.20E-04	1.00E-02	3.50E-01	0E+00	8.50E-02	0E+00

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SVOC	4-Chloro-3-methylphenol	59-50-7	T		10					9.90E-04	5.00E-03	4.20E-01	0E+00	1.50E-01	0E+00
SVOC	4-Chloroaniline	106-47-8	T		10					5.10E-04	1.00E-02		0E+00		0E+00
SVOC	2-Chloronaphthalene	91-58-7	T		10					8.50E-04	5.00E-03	5.20E+00	0E+00	1.80E+00	0E+00
SVOC	2-Chlorophenol	95-57-8	T		10					1.00E-03	5.00E-03	1.30E-01	0E+00	4.50E-02	0E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		10					7.90E-04	5.00E-03		0E+00		0E+00
SVOC	Chrysene	218-01-9	T	B2	10					7.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Di-n-butylphthalate	84-74-2	T	D	10					6.70E-04	5.00E-03	2.50E+00	0E+00	8.80E-01	0E+00
SVOC	Di-n-octylphthalate	117-84-0	T		10					1.10E-03	5.00E-03	3.80E-01	0E+00	1.30E-01	0E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	10					7.90E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Dibenzofuran	132-64-9	T	D	10					1.10E-03	5.00E-03		0E+00		0E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	10					9.30E-04	2.00E-02	4.30E-03	0E+00	1.10E-03	0E+00
SVOC	2,4-Dichlorophenol	120-83-2	T		10					8.50E-04	1.00E-02	2.10E-01	0E+00	7.30E-02	0E+00
SVOC	Diethylphthalate	84-66-2	T	D	10					6.50E-04	5.00E-03	1.60E+01	0E+00	5.50E+00	0E+00
SVOC	2,4-Dimethylphenol	105-67-9	T		10					8.50E-04	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Dimethylphthalate	131-11-3	T	D	10					7.60E-04	5.00E-03	2.10E+02	0E+00	7.30E+01	0E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		10					1.30E-03	2.00E-02	2.00E-02	0E+00	2.00E-02	0E+00
SVOC	2,4-Dinitrophenol	51-28-5	T		10					3.00E-03	2.00E-02		0E+00		0E+00
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	10					7.90E-04	5.00E-03	3.20E-02	0E+00	7.70E-03	0E+00
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	10					5.70E-04	5.00E-03		0E+00		0E+00
SVOC	Fluoranthene	206-44-0	T	D	10					8.10E-04	5.00E-03	2.10E-01	0E+00	2.10E-01	0E+00
SVOC	Fluorene	86-73-7	T	D	10					1.00E-03	5.00E-03	2.00E+00	0E+00	8.80E-01	0E+00
SVOC	Hexachlorobenzene	118-74-1	T	B2	10					7.40E-04	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Hexachlorobutadiene	87-68-3	T	C	10					7.30E-04	5.00E-03	4.20E-02	0E+00	1.50E-02	0E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	10					1.10E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
SVOC	Hexachloroethane	67-72-1	T	C	10					7.40E-04	5.00E-03	2.10E-02	0E+00	7.30E-03	0E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	10					6.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Isophorone	78-59-1	T	C	10	1	2.65E-03	2.65E-03	2.65E-03	6.30E-04	5.00E-03	3.10E+00	9E-04	7.70E-01	3E-03
SVOC	2-Methylnaphthalene	91-57-6	T		10					6.40E-04	5.00E-03	7.50E-01	0E+00	2.60E-01	0E+00
SVOC	Methylphenol (summed)	1319-77-3	T		10					1.30E-03	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Naphthalene	91-20-3	T	C	10					7.50E-04	5.00E-03	1.50E+00	0E+00	5.20E-01	0E+00
SVOC	2-Nitroaniline	88-74-4	T		10					7.00E-04	2.00E-02		0E+00		0E+00
SVOC	3-Nitroaniline	99-09-2	T	C	10					7.10E-04	2.00E-02		0E+00		0E+00
SVOC	4-Nitroaniline	100-01-6	T	C	10					1.30E-03	2.00E-02		0E+00		0E+00

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	Nitrobenzene	98-95-3	T	D	10					8.10E-04	5.00E-03	9.60E-03	0E+00	3.40E-03	0E+00
SVOC	2-Nitrophenol	88-75-5	T		10					8.10E-03	5.00E-03	5.80E-02	0E+00	2.00E-02	0E+00
SVOC	4-Nitrophenol	100-02-7	T		10					1.90E-03	2.00E-02		0E+00		0E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	10					1.40E-03	5.00E-03	1.10E+00	0E+00	2.70E-01	0E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	10					6.70E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	10					7.80E-04	5.00E-03		0E+00		0E+00
SVOC	Pentachlorophenol	87-86-5	T	B2	10					2.40E-03	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Phenanthrene	85-01-8	T	D	10					8.20E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Phenol	108-95-2	T	D	10					2.60E-03	5.00E-03	1.30E+01	0E+00	4.40E+00	0E+00
SVOC	Pyrene	129-00-0	T	D	10					1.10E-03	5.00E-03	1.40E-01	0E+00	1.40E-01	0E+00
SVOC	2,4,5-Trichlorophenol	95-95-4	T		10					1.20E-03	5.00E-03	2.10E+00	0E+00	7.30E-01	0E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	10					1.70E-03	5.00E-03	4.70E-01	0E+00	1.20E-01	0E+00
P/PCB	PCBs (summed)	1336-36-3	T	B2	1					8.20E-05	8.20E-05	5.00E-04	0E+00	5.00E-04	0E+00
INORG	Antimony	7440-36-0	D		10					2.20E-03	2.50E-02	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Antimony	7440-36-0	T		10					2.20E-03	2.50E-02	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Arsenic	7440-38-2	D	A	10	6	6.90E-03	1.30E-02	1.88E-02	3.90E-03	1.00E-02	5.00E-02	4E-01	5.00E-02	4E-01
INORG	Arsenic	7440-38-2	T	A	10	6	7.80E-03	1.33E-02	1.94E-02	3.90E-03	1.00E-02	5.00E-02	4E-01	5.00E-02	4E-01
INORG	Barium	7440-39-3	D	D	10	10	6.46E-02	1.70E-01	3.24E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Barium	7440-39-3	T	D	10	10	5.99E-02	1.78E-01	3.31E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Beryllium	7440-41-7	D	B1	10					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Beryllium	7440-41-7	T	B1	10					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Cadmium	7440-43-9	D	B1	10					2.80E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Cadmium	7440-43-9	T	B1	10	2	3.10E-04	3.20E-04	3.30E-04	2.80E-04	5.00E-03	5.00E-03	7E-02	5.00E-03	7E-02
INORG	Chromium (total)	7440-47-3	D		10	1	1.50E-03	1.50E-03	1.50E-03	1.40E-03	1.00E-02	1.00E-01	2E-02	1.00E-01	2E-02
INORG	Chromium (total)	7440-47-3	T		10	5	3.60E-03	6.68E-03	1.13E-02	1.40E-03	1.00E-02	1.00E-01	1E-01	1.00E-01	1E-01
INORG	Cobalt	7440-48-4	D		10					1.30E-03	2.00E-02	1.00E-01	0E+00	4.00E-02	0E+00
INORG	Cobalt	7440-48-4	T		10	1	1.30E-03	1.30E-03	1.30E-03	1.30E-03	2.00E-02	1.00E-01	1E-02	4.00E-02	3E-02
INORG	Copper	7440-50-8	D	D	10					4.20E-03	5.00E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Copper	7440-50-8	T	D	10					4.20E-03	5.00E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Lead	7439-92-1	D	B2	10					2.50E-03	3.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Lead	7439-92-1	T	B2	10					2.50E-03	3.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Manganese	7439-96-5	D	D	10	10	3.11E-02	1.00E-01	2.32E-01			2.50E+00	9E-02	8.60E-01	3E-01
INORG	Manganese	7439-96-5	T	D	10	10	3.44E-02	1.05E-01	2.52E-01			2.50E+00	1E-01	8.60E-01	3E-01

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RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

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INORG	Mercury	7439-97-6	D	D	10					6.90E-05	2.00E-04	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Mercury	7439-97-6	T	D	10	1	8.80E-05	8.80E-05	8.80E-05	6.90E-05	2.00E-04	2.00E-03	4E-02	2.00E-03	4E-02
INORG	Nickel	7440-02-0	D	A	10	3	2.40E-03	3.47E-03	5.60E-03	2.20E-03	2.00E-02	1.00E-01	6E-02	1.00E-01	6E-02
INORG	Nickel	7440-02-0	T	A	10	6	2.90E-03	4.17E-03	5.40E-03	2.20E-03	2.00E-02	1.00E-01	7E-02	1.00E-01	7E-02
INORG	Selenium	7782-49-2	D	D	10					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Selenium	7782-49-2	T	D	10					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Silver	7440-22-4	D	D	10					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Silver	7440-22-4	T	D	10					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Thallium	7440-28-0	D		10					1.80E-05	1.00E-02	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Thallium	7440-28-0	T		10					1.80E-05	1.00E-02	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Vanadium	7440-62-2	D		10					8.20E-04	1.00E-02	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Vanadium	7440-62-2	T		10					8.20E-04	1.00E-02	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Zinc	7440-66-6	D	D	10					1.20E-02	2.00E-02	5.00E+00	0E+00	2.40E+00	0E+00
INORG	Zinc	7440-66-6	T	D	10	2	1.28E-02	2.02E-02	2.76E-02	1.20E-02	2.00E-02	5.00E+00	6E-03	2.40E+00	1E-02
VOC	Acetone	67-64-1	T	D	6	5	6.50E-01	4.73E+00	1.30E+01	3.60E-02	3.60E-02	2.10E+00	**6E+00**	7.30E-01	**2E+01**
VOC	Benzene	71-43-2	T	A	6					2.70E-03	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Bromodichloromethane	75-27-4	T	B2	6					2.80E-03	4.20E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromoform	75-25-2	T	B2	6					3.00E-03	4.50E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromomethane	74-83-9	T	D	6					3.30E-03	5.00E-02	2.90E-02	0E+00	1.00E-02	0E+00
VOC	2-Butanone	78-93-3	T	D	6					6.80E-03	1.40E-01	3.80E+01	0E+00	1.30E+01	0E+00
VOC	Carbon Disulfide	75-15-0	T		6					3.30E-03	5.00E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Carbon Tetrachloride	56-23-5	T	B2	6					2.00E-03	3.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Chlorobenzene	108-90-7	T	D	6					2.30E-03	3.50E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloroethane	75-00-3	T		6					4.30E-03	6.50E-02	1.70E+00	0E+00	4.30E-01	0E+00
VOC	Chloroform	67-66-3	T	B2	6					2.30E-03	3.50E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloromethane	74-87-3	T	D	6					2.20E-03	3.20E-02	1.10E+00	0E+00	2.60E-01	0E+00
VOC	Cumene	98-82-8	T	D	6					2.00E-03	3.00E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Cyclohexane	110-82-7	T		6					2.20E-03	3.20E-02		0E+00		0E+00
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	6					1.00E-02	1.60E-01	2.00E-04	0E+00	2.00E-04	0E+00
VOC	Dibromochloromethane	124-48-1	T	C	6					4.30E-03	6.50E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dibromoethane	106-93-4	T	B2	6					3.70E-03	5.50E-02	1.00E-03	0E+00	1.00E-03	0E+00
VOC	1,2-Dichlorobenzene	95-50-1	T	D	6					1.80E-03	2.80E-02	6.00E-01	0E+00	6.00E-01	0E+00
VOC	1,3-Dichlorobenzene	541-73-1	T	D	6					2.50E-03	3.80E-02	1.90E-02	0E+00	6.60E-03	0E+00

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DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

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VOC	1,4-Dichlorobenzene	106-46-7	T	C	6					2.80E-03	4.20E-02	7.50E-02	0E+00	7.50E-02	0E+00
VOC	Dichlorodifluoromethane	75-71-8	T		6					4.30E-03	6.50E-02	4.80E+00	0E+00	1.70E+00	0E+00
VOC	1,1-Dichloroethane	75-34-3	T	C	6					2.70E-03	4.00E-02	2.50E+00	0E+00	8.80E-01	0E+00
VOC	1,2-Dichloroethane	107-06-2	T	B2	6					3.50E-03	5.20E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,1-Dichloroethene	75-35-4	T	C	6					4.00E-03	6.00E-02	7.00E-03	0E+00	7.00E-03	0E+00
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	6					3.70E-03	5.50E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	trans-1,2-Dichloroethene	156-60-5	T		6					2.50E-03	3.80E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dichloropropane	78-87-5	T	B2	6					2.80E-03	4.20E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	6					4.50E-03	6.80E-02	6.30E-02	0E+00	2.10E-02	0E+00
VOC	Ethyl Benzene	100-41-4	T	D	6	1	6.50E-03	6.50E-03	6.50E-03	6.00E-03	3.00E-02	7.00E-01	9E-03	7.00E-01	9E-03
VOC	2-Hexanone	591-78-6	T		6					7.70E-03	1.40E-01	2.90E+00	0E+00	1.00E+00	0E+00
VOC	Methyl Acetate	79-20-9	T		6					6.80E-03	1.40E-01		0E+00		0E+00
VOC	Methyl tert-butyl ether	1634-04-4	T		6					2.20E-03	7.10E-02	6.90E-01	0E+00	2.40E-01	0E+00
VOC	4-Methyl-2-pentanone	108-10-1	T		6	1	8.50E-03	8.50E-03	8.50E-03	1.20E-02	1.40E-01	5.20E+00	2E-03	1.80E+00	5E-03
VOC	Methylcyclohexane	108-87-2	T		6					2.50E-03	3.80E-02		0E+00		0E+00
VOC	Methylene Chloride	75-09-2	T	B2	6					5.70E-03	8.50E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Styrene	100-42-5	T		6					2.50E-03	3.80E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	6					4.20E-03	6.20E-02	3.50E-02	0E+00	8.50E-03	0E+00
VOC	Tetrachloroethene	127-18-4	T	C-B2	6					3.80E-03	5.80E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Toluene	108-88-3	T	D	6	1	1.90E-02	1.90E-02	1.90E-02	9.00E-03	4.50E-02	1.00E+00	2E-02	1.00E+00	2E-02
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	6					2.80E-03	4.20E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	1,1,1-Trichloroethane	71-55-6	T	D	6					2.50E-03	3.80E-02	2.00E-01	0E+00	2.00E-01	0E+00
VOC	1,1,2-Trichloroethane	79-00-5	T	C	6					5.00E-03	7.50E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichloroethene	79-01-6	T	C-B2	6					2.30E-03	3.50E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichlorofluoromethane	75-69-4	T		6					4.70E-03	7.00E-02	7.30E+00	0E+00	2.60E+00	0E+00
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		6					5.30E-03	8.00E-02	1.70E+02	0E+00	1.70E+02	0E+00
VOC	Vinyl Chloride	75-01-4	T	A	6					2.50E-03	3.80E-02	2.00E-03	0E+00	2.00E-03	0E+00
VOC	Xylenes (total)	1330-20-7	T	D	6	1	2.50E-02	2.50E-02	2.50E-02	1.40E-02	8.20E-02	1.00E+01	3E-03	1.00E+01	3E-03
SVOC	Acenaphthene	83-32-9	T		6					8.00E-04	5.00E-03	3.80E+00	0E+00	1.30E+00	0E+00
SVOC	Acenaphthylene	208-96-8	T	D	6					7.10E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Acetophenone	98-86-2	T	D	6					2.60E-03	1.00E-02	4.40E+00	0E+00	1.50E+00	0E+00
SVOC	Anthracene	120-12-7	T	D	6					6.80E-04	5.00E-03	4.30E-02	0E+00	4.30E-02	0E+00
SVOC	Atrazine	1912-24-9	T		6					2.50E-03	5.00E-03	3.00E-03	0E+00	3.00E-03	0E+00

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SVOC	Benzaldehyde	100-52-7	T		6					2.80E-03	1.00E-02		0E+00		0E+00
SVOC	Benzo(a)anthracene	56-55-3	T	B2	6					7.00E-04	5.00E-03	8.50E-03	0E+00	2.10E-03	0E+00
SVOC	Benzo(a)pyrene	50-32-8	T	B2	6					7.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	6					9.40E-04	5.00E-03	2.00E-03	0E+00	2.00E-03	0E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	6					8.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	6					8.40E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Biphenyl	92-52-4	T		6					2.60E-03	1.00E-02		0E+00		0E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	6					8.70E-04	5.00E-03		0E+00		0E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	6					9.70E-04	5.00E-03	8.30E-03	0E+00	2.00E-03	0E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	6					2.70E-03	5.00E-03	6.00E-03	0E+00	6.00E-03	0E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	6					8.80E-04	5.00E-03		0E+00		0E+00
SVOC	Butylbenzylphthalate	85-68-7	T	C	6					8.80E-04	5.00E-03	2.70E+00	0E+00	1.20E+00	0E+00
SVOC	Caprolactam	105-60-2	T		6	5	3.30E-03	2.71E-01	8.20E-01	2.50E-03	2.50E-03	1.70E+01	5E-02	5.80E+00	1E-01
SVOC	Carbazole	86-74-8	T	B2	6					8.20E-04	1.00E-02	3.50E-01	0E+00	8.50E-02	0E+00
SVOC	4-Chloro-3-methylphenol	59-50-7	T		6					9.90E-04	5.00E-03	4.20E-01	0E+00	1.50E-01	0E+00
SVOC	4-Chloroaniline	106-47-8	T		6					6.10E-04	1.00E-02		0E+00		0E+00
SVOC	2-Chloronaphthalene	91-58-7	T		6					8.50E-04	5.00E-03	5.20E+00	0E+00	1.80E+00	0E+00
SVOC	2-Chlorophenol	95-57-8	T		6					1.00E-03	5.00E-03	1.30E-01	0E+00	4.50E-02	0E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		6					7.90E-04	5.00E-03		0E+00		0E+00
SVOC	Chrysene	218-01-9	T	B2	6					7.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Di-n-butylphthalate	84-74-2	T	D	6					6.70E-04	5.00E-03	2.50E+00	0E+00	8.80E-01	0E+00
SVOC	Di-n-octylphthalate	117-84-0	T		6					1.10E-03	5.00E-03	3.80E-01	0E+00	1.30E-01	0E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	6					7.90E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Dibenzofuran	132-64-9	T	D	6					1.10E-03	5.00E-03		0E+00		0E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	6					9.30E-04	2.00E-02	4.30E-03	0E+00	1.10E-03	0E+00
SVOC	2,4-Dichlorophenol	120-83-2	T		6					8.50E-04	1.00E-02	2.10E-01	0E+00	7.30E-02	0E+00
SVOC	Diethylphthalate	84-66-2	T	D	6					6.50E-04	5.00E-03	1.60E+01	0E+00	5.50E+00	0E+00
SVOC	2,4-Dimethylphenol	105-67-9	T		6					8.50E-04	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Dimethylphthalate	131-11-3	T	D	6					7.60E-04	5.00E-03	2.10E+02	0E+00	7.30E+01	0E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		6					1.30E-03	2.00E-02	2.00E-02	0E+00	2.00E-02	0E+00
SVOC	2,4-Dinitrophenol	51-28-5	T		6					3.00E-03	2.00E-02		0E+00		0E+00
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	6					7.90E-04	5.00E-03	3.20E-02	0E+00	7.70E-03	0E+00
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	6					5.70E-04	5.00E-03		0E+00		0E+00

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	Fluoranthene	206-44-0	T	D	6					8.10E-04	5.00E-03	2.10E-01	0E+00	2.10E-01	0E+00
SVOC	Fluorene	86-73-7	T	D	6					1.00E-03	5.00E-03	2.00E+00	0E+00	8.80E-01	0E+00
SVOC	Hexachlorobenzene	118-74-1	T	B2	6					7.40E-04	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Hexachlorobutadiene	87-68-3	T	C	6					7.30E-04	5.00E-03	4.20E-02	0E+00	1.50E-02	0E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	6					1.10E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
SVOC	Hexachloroethane	67-72-1	T	C	6					7.40E-04	5.00E-03	2.10E-02	0E+00	7.30E-03	0E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	6					6.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Isophorone	78-59-1	T	C	6					6.30E-04	5.00E-03	3.10E+00	0E+00	7.70E-01	0E+00
SVOC	2-Methylnaphthalene	91-57-6	T		6					6.40E-04	5.00E-03	7.50E-01	0E+00	2.60E-01	0E+00
SVOC	Methylphenol (summed)	1319-77-3	T		6					1.30E-03	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Naphthalene	91-20-3	T	C	6					7.50E-04	5.00E-03	1.50E+00	0E+00	5.20E-01	0E+00
SVOC	2-Nitroaniline	88-74-4	T		6					7.00E-04	2.00E-02		0E+00		0E+00
SVOC	3-Nitroaniline	99-09-2	T	C	6					7.10E-04	2.00E-02		0E+00		0E+00
SVOC	4-Nitroaniline	100-01-6	T	C	6					1.30E-03	2.00E-02		0E+00		0E+00
SVOC	Nitrobenzene	98-95-3	T	D	6					8.10E-04	5.00E-03	9.60E-03	0E+00	3.40E-03	0E+00
SVOC	2-Nitrophenol	88-75-5	T		6					2.10E-03	5.00E-03	5.80E-02	0E+00	2.00E-02	0E+00
SVOC	4-Nitrophenol	100-02-7	T		6					1.90E-03	2.00E-02		0E+00		0E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	6					1.40E-03	5.00E-03	1.10E+00	0E+00	2.70E-01	0E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	6					6.70E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	6					7.80E-04	5.00E-03		0E+00		0E+00
SVOC	Pentachlorophenol	87-86-5	T	B2	6					2.40E-03	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Phenanthrene	85-01-8	T	D	6					8.20E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Phenol	108-95-2	T	D	6					2.60E-03	5.00E-03	1.30E+01	0E+00	4.40E+00	0E+00
SVOC	Pyrene	129-00-0	T	D	6					1.10E-03	5.00E-03	1.40E-01	0E+00	1.40E-01	0E+00
SVOC	2,4,5-Trichlorophenol	95-95-4	T		6					1.20E-03	5.00E-03	2.10E+00	0E+00	7.30E-01	0E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	6					1.70E-03	5.00E-03	4.70E-01	0E+00	1.20E-01	0E+00
P/PCB	PCBs (summed)	1336-36-3	T	B2	1					8.20E-05	8.20E-05	5.00E-04	0E+00	5.00E-04	0E+00
INORG	Antimony	7440-36-0	D		6					2.20E-03	2.50E-02	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Antimony	7440-36-0	T		6					2.20E-03	2.50E-02	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Arsenic	7440-38-2	D	A	6	4	6.10E-03	1.32E-02	2.74E-02	3.90E-03	3.90E-03	5.00E-02	5E-01	5.00E-02	5E-01
INORG	Arsenic	7440-38-2	T	A	6	4	7.40E-03	1.30E-02	2.66E-02	3.90E-03	3.90E-03	5.00E-02	5E-01	5.00E-02	5E-01
INORG	Barium	7440-39-3	D	D	6	6	8.18E-02	1.99E-01	3.04E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Barium	7440-39-3	T	D	6	6	1.01E-01	2.07E-01	2.88E-01			2.00E+00	1E-01	2.00E+00	1E-01

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
INORG	Beryllium	7440-41-7	D	B1	6					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Beryllium	7440-41-7	T	B1	6					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Cadmium	7440-43-9	D	B1	6					2.80E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Cadmium	7440-43-9	T	B1	6	1	3.30E-04	3.30E-04	3.30E-04	2.80E-04	5.00E-03	5.00E-03	7E-02	5.00E-03	7E-02
INORG	Chromium (total)	7440-47-3	D		6					1.40E-03	1.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
INORG	Chromium (total)	7440-47-3	T		6	4	1.90E-03	1.77E-02	6.05E-02	1.40E-03	1.00E-02	1.00E-01	6E-01	1.00E-01	6E-01
INORG	Cobalt	7440-48-4	D		6	2	1.90E-03	2.00E-03	2.10E-03	1.30E-03	2.00E-02	1.00E-01	2E-02	4.00E-02	5E-02
INORG	Cobalt	7440-48-4	T		6	3	1.90E-03	3.47E-03	6.20E-03	1.30E-03	2.00E-02	1.00E-01	6E-02	4.00E-02	2E-01
INORG	Copper	7440-50-8	D	D	6					4.20E-03	5.00E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Copper	7440-50-8	T	D	6	3	5.60E-03	8.40E-03	9.90E-03	4.20E-03	4.20E-03	4.00E+00	2E-03	1.40E+00	7E-03
INORG	Lead	7439-92-1	D	B2	6					2.50E-03	3.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Lead	7439-92-1	T	B2	6	1	2.80E-03	2.80E-03	2.80E-03	2.50E-03	3.00E-03	4.00E-03	7E-01	4.00E-03	7E-01
INORG	Manganese	7439-96-5	D	D	6	6	3.49E-02	1.12E-01	2.19E-01			2.50E+00	9E-02	8.60E-01	3E-01
INORG	Manganese	7439-96-5	T	D	6	6	3.75E-02	1.59E-01	3.52E-01			2.50E+00	1E-01	8.60E-01	4E-01
INORG	Mercury	7439-97-6	D	D	6					6.90E-05	2.00E-04	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Mercury	7439-97-6	T	D	6					6.90E-05	2.00E-04	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Nickel	7440-02-0	D	A	6	3	2.30E-03	1.05E-02	2.32E-02	2.20E-03	2.00E-02	1.00E-01	2E-01	1.00E-01	2E-01
INORG	Nickel	7440-02-0	T	A	6	5	2.30E-03	1.51E-02	5.90E-02	2.20E-03	2.20E-03	1.00E-01	6E-01	1.00E-01	6E-01
INORG	Selenium	7782-49-2	D	D	6					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Selenium	7782-49-2	T	D	6					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Silver	7440-22-4	D	D	6					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Silver	7440-22-4	T	D	6					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Thallium	7440-28-0	D		6	2	6.80E-04	3.39E-03	6.10E-03	1.80E-05	1.00E-02	2.00E-03	**3E+00**	2.00E-03	**3E+00**
INORG	Thallium	7440-28-0	T		6	1	9.20E-05	9.20E-05	9.20E-05	1.80E-05	1.00E-02	2.00E-03	5E-02	2.00E-03	5E-02
INORG	Vanadium	7440-62-2	D		6					8.20E-04	1.00E-02	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Vanadium	7440-62-2	T		6	2	2.20E-03	2.80E-03	3.40E-03	8.20E-04	1.00E-02	6.20E-02	5E-02	4.50E-03	8E-01
INORG	Zinc	7440-66-6	D	D	6	1	1.56E-02	1.56E-02	1.56E-02	1.20E-02	2.00E-02	5.00E+00	3E-03	2.40E+00	7E-03
INORG	Zinc	7440-66-6	T	D	6	4	1.34E-02	1.95E-02	3.03E-02	1.20E-02	2.00E-02	5.00E+00	6E-03	2.40E+00	1E-02

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit

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TABLE 4-6

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR SITEWIDE HYDROGEOLOGIC INVESTIGATION (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria

4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	90	51	2.50E-03	1.36E-01	2.20E+00	1.80E-03	5.70E+01		1.10E+05	2E-05	1.60E+05	1E-05	1.70E+08	1E-08	1.10E+05	2E-05	1.10E+05	2E-05	1.30E+05	2E-05	3.90E+08	6E-09	2.30E+04	1E-04
VOC	Acetonitrile	75-05-8	D	10					5.30E-02	1.40E+01		8.80E+03		1.90E+03		1.80E+06		2.10E+04		4.80E+03		1.60E+03		4.00E+06		4.30E+03	
VOC	Acrolein	107-02-8	C	10					5.30E-02	1.40E+01		7.60E-01		3.70E-01		5.90E+02		1.80E+04		4.10E-01		3.10E-01		1.30E+03		3.60E+03	
VOC	Acrylonitrile	107-13-1	B1	10					5.30E-02	1.40E+01		3.50E+01		1.70E+01		5.80E+04		1.10E+02		6.60E+00		5.00E+00		4.60E+04		1.60E+01	
VOC	Benzene	71-43-2	A	90	12	8.50E-04	1.53E-01	7.20E-01	6.10E-04	5.70E+00		8.40E+00	9E-02	4.50E+01	2E-02	4.70E+05	2E-06	4.00E+02	2E-03	1.60E+00	5E-01	1.30E+01	6E-02	3.80E+05	2E-06	1.80E+02	4E-03
VOC	Bromodichloromethane	75-27-4	B2	90					6.70E-04	5.70E+00		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	90					5.10E-04	5.70E+00		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	90					1.20E-03	5.70E+00		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	90	35	2.20E-03	1.51E-01	2.30E+00	2.50E-03	5.70E+01		2.70E+04	9E-05	3.50E+04	7E-05	2.90E+07	8E-08	2.70E+04	9E-05	2.70E+04	9E-05	2.90E+04	8E-05	6.70E+07	3E-08	2.70E+04	9E-05
VOC	Carbon Disulfide	75-15-0		90	4	2.20E-03	4.58E-03	9.60E-03	7.00E-04	5.70E+01		1.40E+02	7E-05	1.60E+03	6E-06	2.10E+07	5E-10	2.80E+02	3E-05	7.60E+01	1E-04	1.30E+03	7E-06	4.70E+07	2E-10	2.80E+02	3E-05
VOC	Carbon Tetrachloride	56-23-5	B2	90					6.40E-04	5.70E+00		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	2-Chloro-1,3-butadiene	126-99-8		10					5.30E-03	1.40E+00																	
VOC	3-Chloro-1-propene	107-05-1		10					1.10E-02	2.90E+00																	
VOC	Chlorobenzene	108-90-7	D	90	1	1.10E-01	1.10E-01	1.10E-01	4.70E-04	5.70E+00		2.20E+02	5E-04	9.20E+02	1E-04	2.10E+06	5E-08	2.60E+02	4E-04	1.20E+02	9E-04	7.70E+02	1E-04	4.70E+06	2E-08	2.60E+02	4E-04
VOC	Chloroethane	75-00-3		90	3	2.20E-03	3.77E-03	5.20E-03	9.40E-04	5.70E+00		9.50E+02	5E-06	3.60E+04	1E-07	2.90E+08	2E-11	9.50E+02	5E-06	9.50E+02	5E-06	3.00E+04	2E-07	6.70E+08	8E-12	9.50E+02	5E-06
VOC	Chloroform	67-66-3	B2	90					7.30E-04	5.70E+00		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	90					7.50E-04	5.70E+00		1.20E+01		1.00E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	34	9	2.50E-03	2.61E-01	1.10E+00	6.60E-04	2.40E-01		3.90E+02	3E-03	2.00E+03	6E-04	2.60E+06	4E-07	3.90E+02	3E-03	3.90E+02	3E-03	1.70E+03	6E-04	5.80E+06	2E-07	3.90E+02	3E-03
VOC	Cyclohexane	110-82-7		34	8	2.20E-03	1.47E-01	3.00E-01	9.40E-04	5.00E-01																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	44					1.40E-03	2.90E+00		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	90					5.90E-04	5.70E+00		2.10E+01		3.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	44					6.50E-04	1.40E+00		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	Dibromomethane	74-95-3		10					5.30E-03	1.40E+00								2.00E+03								2.00E+03	
VOC	trans-1,4-Dichloro-2-butene	110-57-6		10					5.30E-03	1.40E+00																	
VOC	1,2-Dichlorobenzene	95-50-1	D	83	1	3.40E-03	3.40E-03	3.40E-03	6.40E-04	5.70E+00		2.10E+02	2E-05	4.60E+04	7E-08	4.40E+07	8E-11	2.10E+02	2E-05	2.10E+02	2E-05	3.90E+04	9E-08	1.00E+08	3E-11	2.10E+02	2E-05
VOC	1,3-Dichlorobenzene	541-73-1	D	83	1	1.10E-01	1.10E-01	1.10E-01	7.20E-04	5.70E+00								1.70E+02	6E-04							1.70E+02	6E-04
VOC	1,4-Dichlorobenzene	106-46-7	C	83	1	2.60E-03	2.60E-03	2.60E-03	6.00E-04	5.70E+00		1.00E+02	3E-05	2.60E+02	1E-05	5.70E+05	5E-09	2.90E+03	9E-07	1.90E+01	1E-04	7.70E+01	3E-05	4.50E+05	6E-09	4.00E+02	7E-06
VOC	Dichlorodifluoromethane	75-71-8		44	1	1.40E-03	1.40E-03	1.40E-03	9.00E-04	1.40E+00		1.00E+03	1E-06	6.30E+04	2E-08	1.50E+09	9E-13	1.00E+03	1E-06	9.00E+02	2E-06	5.30E+04	3E-08	3.30E+09	4E-13	1.00E+03	1E-06
VOC	1,1-Dichloroethane	75-34-3	C	90	4	1.85E-02	6.11E-02	1.70E-01	5.20E-04	5.70E+00		4.30E+02	4E-04	2.50E+03	7E-05	1.50E+07	1E-08	8.90E+02	2E-04	2.30E+02	7E-04	2.10E+03	8E-05	3.30E+07	5E-09	8.90E+02	2E-04
VOC	1,2-Dichloroethane	107-06-2	B2	90					5.90E-04	5.70E+00		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	90					6.90E-04	5.70E+00		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	90	4	1.23E-02	4.38E-01	1.40E+00	2.80E-04	5.70E+00		4.20E+01	3E-02	2.10E+02	7E-03	1.00E+06	1E-06	6.40E+02	2E-03	2.30E+01	6E-02	1.80E+02	8E-03	2.30E+06	6E-07	6.40E+02	2E-03
VOC	trans-1,2-Dichloroethene	156-60-5		90	1	1.80E-01	1.80E-01	1.80E-01	6.60E-04	5.70E+00		4.30E+01	4E-03	3.30E+02	5E-04	2.10E+06	9E-08	1.40E+03	1E-04	2.30E+01	8E-03	2.80E+02	6E-04	4.70E+06	4E-08	1.40E+03	1E-04
VOC	1,2-Dichloropropane	78-87-5	B2	90					6.70E-04	5.70E+00		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	90					6.30E-04	5.70E+00		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	1,4-Dioxane	123-91-1	B2	10					5.30E-01	1.40E+02						7.10E+05		3.70E+03						5.70E+05		5.30E+02	
VOC	Ethyl Benzene	100-41-4	D	90	21	2.10E-03	3.03E+00	2.50E+01	5.50E-04	2.40E-01		1.40E+02	2E-01	1.10E+04	2E-03	2.90E+07	9E-07	1.40E+02	2E-01	1.40E+02	2E-01	9.50E+03	3E-03	6.70E+07	4E-07	1.40E+02	2E-01
VOC	Ethyl Methacrylate	97-63-2		4					5.65E-03	1.30E-02																	
VOC	2-Hexanone	591-78-6		90	3	2.50E-03	7.45E-03	1.58E-02	1.20E-03	5.70E+01		1.80E+03	9E-06	1.30E+03	1E-05	1.20E+06	1E-08	2.50E+03	6E-06	9.90E+02	2E-05	1.10E+03	1E-05	2.70E+06	6E-09	2.50E+03	6E-06
VOC	Iodomethane	74-88-4		10					5.30E-03	1.40E+00																	
VOC	Isobutyl Alcohol	78-83-1		10					2.30E+00	6.30E+02		8.90E+03		9.50E+04		4.40E+07		8.90E+03		8.90E+03		7.90E+04		1.00E+08		8.90E+03	
VOC	Methacrylonitrile	126-98-7		10					2.10E-02	5.70E+00																	
VOC	Methyl Acetate	79-20-9		34	7	1.40E-01	5.17E+00	3.40E+01	9.90E-04	5.00E-01																	
VOC	Methyl tert-butyl ether	1634-04-4		34					4.50E-04	1.30E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		90	8	3.00E-03	1.16E-01	6.80E-01	1.70E-03	5.70E+01		2.70E+03	3E-04	5.30E+04	1E-05	6.00E+07	1E-08	2.70E+03	3E-04	2.70E+03	3E-04	4.50E+04	2E-05	1.40E+08	5E-09	2.70E+03	3E-04
VOC	Methylcyclohexane	108-87-2		34	12	8.50E-04	3.78E-01	1.40E+00	5.50E-04	4.90E-01																	
VOC	Methylene Chloride	75-09-2	B2	90	11	2.40E-03	2.40E+00	2.50E+01	1.20E-03	1.40E+00		2.40E+02	1E-01	7.00E+02	4E-02	8.30E+06	3E-06	2.30E+03	1E-02	4.50E+01	6E-01	2.10E+02	1E-01	6.60E+06	4E-06	1.30E+03	2E-02
VOC	Methylmethacrylate	80-62-6	E	10					5.30E-03	1.40E+00																	
VOC	Pentachloroethane	76-01-7		10	1	9.90E-02	9.90E-02	9.90E-02	1.70E-01	3.00E+01																	
VOC	Propionitrile	107-12-0		10					2.10E-02	5.70E+00																	
VOC	Styrene	100-42-5		90					4.50E-04	5.70E+00		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,1,2-Tetrachloroethane	630-20-6		10					5.30E-03	1.40E+00		3.30E+01		1.20E+02		5.30E+05		4.40E+02		6.20E+00		3.60E+01		4.20E+05		4.40E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	90					7.20E-04	5.70E+00		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	90	12	2.30E-03	1.13E+00	5.60E+00	7.60E-04	5.70E+00		6.00E+01	9E-02	6.00E+02	9E-03	6.80E+06	8E-07	8.80E+01	6E-02	1.10E+01	5E-01	1.80E+02	3E-02	5.40E+06	1E-06	8.80E+01	6E-02
VOC	Toluene	108-88-3	D	90	36	5.60E-04	2.39E+00	4.20E+01	6.60E-04	2.50E-01		2.50E+02	2E-01	3.30E+03	1E-02	1.20E+07	4E-06	2.50E+02	2E-01	2.50E+02	2E-01	2.80E+03	2E-02	2.70E+07	2E-06	2.50E+02	2E-01
VOC	1,2,4-Trichlorobenzene	120-82-1	D	65					8.00E-04	1.10E+02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	90	2	2.60E-03	3.25E-03	3.90E-03	7.30E-04	5.70E+00		4.60E+02	8E-06	4.50E+03	9E-07	2.90E+07	1E-10	4.60E+02	8E-06	2.50E+02	2E-05	3.80E+03	1E-06	6.70E+07	6E-11	4.60E+02	8E-06
VOC	1,1,2-Trichloroethane	79-00-5	C	90					5.50E-04	5.70E+00		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	90	5	4.90E-02	5.65E-01	2.30E+00	6.90E-04	5.70E+00		3.70E+01	6E-02	2.60E+02	9E-03	2.30E+06	1E-06	5.00E+02	5E-03	7.10E+00	3E-01	7.80E+01	3E-02	1.80E+06	1E-06	5.00E+02	5E-03
VOC	Trichlorofluoromethane	75-69-4		44	2	1.40E-03	1.45E-03	1.50E-03	9.90E-04	1.40E+00		5.60E+02	3E-06	1.10E+05	1E-08	1.70E+09	9E-13	5.60E+02	3E-06	5.60E+02	3E-06	9.20E+04	2E-08	3.80E+09	4E-13	5.60E+02	3E-06
VOC	1,2,3-Trichloropropane	96-18-4		12					5.30E-03	1.40E+00								8.30E+02								8.30E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		34	3	5.50E-03	7.67E-03	8.90E-03	8.40E-04	3.20E-01		5.50E+02	2E-05	2.10E+05	4E-08	2.30E+09	4E-12	5.50E+02	2E-05	5.50E+02	2E-05	1.80E+05	5E-08	5.10E+09	2E-12	5.50E+02	2E-05
VOC	Vinyl Acetate	108-05-4		10					5.30E-02	1.40E+01		1.50E+03		2.00E+03		5.90E+06		2.40E+03		7.90E+02		1.70E+03		1.30E+07		2.40E+03	
VOC	Vinyl Chloride	75-01-4	A	90	1	9.50E-03	9.50E-03	9.50E-03	6.80E-04	5.70E+00		1.50E-01	6E-02	1.50E+00	6E-03	4.70E+04	2E-07	2.90E+01	3E-04	2.80E-02	3E-01	4.40E-01	2E-02	3.70E+04	3E-07	4.00E+00	2E-03
VOC	Xylenes (total)	1330-20-7	D	90	25	4.85E-03	1.28E+01	1.50E+02	1.80E-03	8.80E-02		1.50E+02	1E+00	5.40E+04	3E-03	1.30E+08	1E-06	1.50E+02	1E+00	1.50E+02	1E+00	4.60E+04	3E-03	2.90E+08	5E-07	1.50E+02	1E+00

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

TABLE 4-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Acenaphthene	83-32-9		66	16	2.40E-02	4.31E+00	3.60E+01	5.30E-02	3.50E+01		3.50E+05	1E-04	9.70E+04	4E-04	6.20E+06	6E-06	2.00E+05	2E-04	1.90E+05	2E-04	8.10E+04	4E-04	1.40E+07	3E-06	4.10E+04	9E-04
SVOC	Acenaphthylene	208-96-8	D	66	1	2.00E+00	2.00E+00	2.00E+00	4.90E-02	1.10E+02		3.00E+03	7E-04	2.70E+03	7E-04	1.00E+06	2E-06	8.00E+03	3E-04	1.60E+03	1E-03	2.20E+03	9E-04	2.30E+06	9E-07	1.60E+03	1E-03
SVOC	Acetophenone	98-86-2	D	44					5.20E-02	3.00E+01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	2-Acetylaminofluorene	53-96-3		10					1.70E+00	3.00E+02																	
SVOC	4-Aminobiphenyl	92-67-1		10					9.00E-01	1.60E+02																	
SVOC	Aniline	62-53-3	B2	10					9.00E-01	6.10E+01						2.90E+04		2.30E+03						6.70E+04		3.30E+02	
SVOC	Anthracene	120-12-7	D	66	19	2.00E-02	2.67E+00	2.10E+01	5.10E-02	3.00E+01		1.00E+06	2E-05	1.60E+06	1E-05	2.90E+07	7E-07	1.00E+06	2E-05	1.00E+06	2E-05	1.40E+06	2E-05	6.70E+07	3E-07	2.30E+05	9E-05
SVOC	Atrazine	1912-24-9		34					1.60E-01	1.90E+01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		34					1.80E-01	1.90E+01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	66	21	4.20E-02	2.38E+00	1.50E+01	5.80E-02	1.10E+02								1.00E+02	2E-01							2.00E+01	8E-01
SVOC	Benzo(a)pyrene	50-32-8	B2	66	15	2.50E-02	1.36E+00	8.60E+00	6.30E-02	1.10E+02						1.90E+03	5E-03	1.00E+01	9E-01					1.50E+03	6E-03	2.00E+00	**4E+00**
SVOC	Benzo(b)fluoranthene	205-99-2	B2	66	22	2.80E-02	1.62E+00	1.10E+01	6.10E-02	1.10E+02								1.00E+02	1E-01							2.00E+01	6E-01
SVOC	Benzo(g,h,i)perylene	191-24-2	D	66	18	2.10E-02	1.09E+00	4.50E+00	5.80E-02	1.10E+02						3.50E+05	1E-05	9.10E+03	5E-04					8.00E+05	6E-06	2.50E+03	2E-03
SVOC	Benzo(k)fluoranthene	207-08-9	B2	66	11	3.60E-02	1.11E+00	5.30E+00	5.50E-02	1.10E+02								1.00E+03	5E-03							2.00E+02	3E-02
SVOC	Benzyl Alcohol	100-51-6		10					6.90E-01	6.10E+01						1.50E+08		5.80E+03						3.30E+08		5.80E+03	
SVOC	Biphenyl	92-52-4		34	1	3.40E+00	3.40E+00	3.40E+00	1.50E-01	1.90E+01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	66					4.90E-02	1.10E+02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	66					5.30E-02	1.10E+02		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	66	19	2.40E-02	7.16E+00	7.60E+01	5.70E-02	3.50E+01						8.90E+05	9E-05	1.00E+04	8E-03					7.00E+05	1E-04	2.80E+03	3E-02
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	66					6.40E-02	1.10E+02																	
SVOC	2,sec-Butyl-4,6-dinitrophenol	88-85-7		10					1.10E-02	5.70E-02								1.40E+02								6.60E+01	
SVOC	Butylbenzylphthalate	85-68-7	C	66	23	9.40E-02	6.16E+01	1.10E+03	5.30E-02	3.50E+01						2.10E+07	5E-05	3.10E+02	**4E+00**					4.70E+07	2E-05	3.10E+02	**4E+00**
SVOC	Caprolactam	105-60-2		34					1.90E-01	1.90E+01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	65	8	2.10E-02	1.88E+00	1.10E+01	5.40E-02	1.10E+02								3.70E+03	3E-03							5.30E+02	2E-02
SVOC	4-Chloro-3-methylphenol	59-50-7		66					5.30E-02	1.10E+02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		66					5.30E-02	1.10E+02																	
SVOC	p-Chlorobenzilate	510-15-6		10					1.70E-01	3.00E+01																	
SVOC	2-Chloronaphthalene	91-58-7		66					5.00E-02	1.10E+02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		66					5.40E-02	1.10E+02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		66					5.40E-02	1.10E+02																	
SVOC	Chrysene	218-01-9	B2	66	26	4.70E-02	2.78E+00	1.60E+01	4.80E-02	1.10E+02								1.00E+04	2E-03							2.00E+03	8E-03
SVOC	Di-n-butylphthalate	84-74-2	D	66	3	5.70E+00	1.67E+02	4.80E+02	1.60E-01	1.10E+02						1.50E+06	3E-04	7.60E+02	6E-01					3.30E+06	1E-04	7.60E+02	6E-01
SVOC	Di-n-octylphthalate	117-84-0		66	1	3.70E+01	3.70E+01	3.70E+01	5.70E-02	3.50E+01								2.80E+04	1E-03							6.90E+03	5E-03
SVOC	Diallate (total)	2303-16-4		10					3.50E-01	6.10E+01																	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	66	6	1.80E-02	2.47E-01	6.70E-01	5.30E-02	1.10E+02								1.00E+01	7E-02							2.00E+00	3E-01
SVOC	Dibenzofuran	132-64-9	D	66	14	2.20E-02	4.23E+00	2.70E+01	5.20E-02	3.50E+01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	66					4.10E-02	6.50E+02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		66					5.20E-02	1.10E+02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	2,6-Dichlorophenol	87-65-0		13					1.70E-01	3.00E+01																	
SVOC	Diethylphthalate	84-66-2	D	66					1.60E-01	1.10E+02						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	Dimethoate	60-51-5		10					3.90E-02	2.30E+01																	
SVOC	p-(Dimethylamino)azobenzene	60-11-7		10					3.50E-01	6.10E+01																	
SVOC	7,12-Dimethylbenz(a)anthracene	57-97-6		10					3.50E-01	6.10E+01																	
SVOC	3,3'-Dimethylbenzidine	119-93-7		10					1.70E-01	3.00E+01																	
SVOC	a,a-Dimethylphenethylamine	122-09-8		10					9.00E-01	1.60E+02																	
SVOC	2,4-Dimethylphenol	105-67-9		66	8	2.40E-02	9.40E+00	7.20E+01	8.40E-02	3.50E+01						2.10E+06	3E-05	5.60E+04	1E-03					4.70E+06	2E-05	1.10E+04	7E-03
SVOC	Dimethylphthalate	131-11-3	D	66					1.70E-01	1.10E+02						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		66					1.70E-01	5.60E+02								3.90E+02								7.90E+01	
SVOC	1,3-Dinitrobenzene	99-65-0		10					1.70E-01	3.00E+01																	
SVOC	2,4-Dinitrophenol	51-28-5		66					1.20E-01	5.60E+02																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	66					4.80E-02	1.10E+02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	66					5.00E-02	1.10E+02																	
SVOC	Diphenylamine	122-39-4		10					1.70E-01	3.00E+01																	
SVOC	Disulfoton	298-04-4		10					3.90E-02	2.30E+01																	
SVOC	Ethylmethanesulfonate	62-50-0		10					1.70E-01	3.00E+01																	
SVOC	Famphur	52-85-7		10					3.90E-02	2.30E+01																	
SVOC	Fluoranthene	206-44-0	D	66	30	4.60E-02	6.93E+00	8.20E+01	5.90E-02	3.00E+01		1.00E+06	8E-05	8.90E+05	9E-05	4.10E+06	2E-05	1.80E+05	5E-04	1.00E+06	8E-05	7.40E+05	1E-04	9.30E+06	9E-06	4.60E+04	2E-03
SVOC	Fluorene	86-73-7	D	66	22	4.00E-02	5.47E+00	3.60E+01	5.00E-02	3.00E+01		1.00E+06	4E-05	1.50E+05	2E-04	4.10E+06	9E-06	1.30E+05	3E-04	5.80E+05	6E-05	1.30E+05	3E-04	9.30E+06	4E-06	2.70E+04	1E-03
SVOC	Hexachlorobenzene	118-74-1	B2	66					5.90E-02	1.10E+02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	66					4.70E-02	1.10E+02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	63					6.30E-02	1.10E+02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	65					5.00E-02	1.10E+02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Hexachlorophene	70-30-4		2					1.80E-01	1.80E-01																	
SVOC	Hexachloropropene	1888-71-7		10					1.70E+00	3.00E+02																	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	65	13	2.70E-02	9.96E-01	3.70E+00	7.30E-02	1.10E+02								1.00E+02	4E-02							2.00E+01	2E-01

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TABLE 4-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Isodrin	465-73-6		10					3.50E-03	1.90E-01																	
SVOC	Isophorone	78-59-1	C	65					4.60E-02	1.10E+02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	Isosafrole (total)	120-58-1		10					3.50E-01	6.10E+01																	
SVOC	Kepone	143-50-0		10					3.50E-02	3.10E+00																	
SVOC	Methapyrilene	91-80-5		10					9.00E-01	1.60E+02																	
SVOC	Methyl parathion	298-00-0		10					3.90E-02	2.30E+01								2.80E+02								5.60E+01	
SVOC	3-Methylcholanthrene	56-49-5		10					3.50E-01	6.10E+01																	
SVOC	Methylmethanesulfonate	66-27-3		10					1.70E-01	3.00E+01																	
SVOC	2-Methylnaphthalene	91-57-6		65	35	2.40E-02	1.58E+01	1.50E+02	5.00E-02	2.10E+01								4.00E+04	4E-03						8.10E+03	2E-02
SVOC	Methylphenol (summed)	1319-77-3		65	12	8.60E-02	1.18E+01	1.25E+02	4.90E-02	3.50E+01						2.50E+06	4E-05	5.60E+04	2E-03					6.70E+06	2E-05	1.10E+04	1E-02
SVOC	N-Nitrosomorpholine	59-89-2		10					1.70E-01	3.00E+01																	
SVOC	Naphthalene	91-20-3	C	65	27	2.20E-02	1.01E+01	9.70E+01	5.10E-02	2.10E+01		4.70E+02	2E-01	3.50E+02	3E-01	8.80E+04	1E-03	8.00E+04	1E-03	2.50E+02	4E-01	3.00E+02	3E-01	2.00E+05	5E-04	1.60E+04	6E-03
SVOC	1,4-Naphthoquinone	130-15-4		10					9.00E-01	1.60E+02																	
SVOC	1-Naphthylamine	134-32-7		10					1.70E-01	3.00E+01																	
SVOC	2-Naphthylamine	91-59-8		10					1.70E-01	3.00E+01																	
SVOC	5-Nitro-o-toluidine	99-55-8		10					3.50E-01	6.10E+01																	
SVOC	2-Nitroaniline	88-74-4		65					4.80E-02	5.60E+02																	
SVOC	3-Nitroaniline	99-09-2	C	65					1.50E-01	5.60E+02																	
SVOC	4-Nitroaniline	100-01-6	C	65					7.10E-02	5.60E+02																	
SVOC	Nitrobenzene	98-95-3	D	65					4.80E-02	1.10E+02		4.90E+02		1.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		65					4.80E-02	1.10E+02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		65					2.00E-01	5.60E+02																	
SVOC	4-Nitroquinoline-1-oxide	56-57-5		10					1.70E+00	3.00E+02																	
SVOC	N-Nitrosodi-n-butylamine	924-16-3		10					1.70E-01	3.00E+01																	
SVOC	N-Nitrosodiethylamine	55-18-5		10					1.70E-01	3.00E+01																	
SVOC	N-Nitrosodimethylamine	62-75-9		10					1.70E-01	3.00E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	65					5.10E-02	1.10E+02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	66					4.60E-02	1.10E+02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	N-Nitrosomethylethylamine	10595-95-6		10					1.70E-01	3.00E+01																	
SVOC	N-Nitrosopiperidine	100-75-4		10					1.70E-01	3.00E+01																	
SVOC	N-Nitrosopyrrolidine	930-55-2		10					1.70E-01	3.00E+01																	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	65					5.40E-02	1.10E+02																	
SVOC	Parathion	56-38-2		10					3.90E-02	2.30E+01																	
SVOC	Pentachlorobenzene	608-93-5		10					1.70E-01	3.00E+01								1.90E+02								1.90E+02	
SVOC	Pentachloronitrobenzene	82-68-8		10					9.00E-01	1.60E+02		2.20E+02		2.80E+02		1.50E+05		8.40E+03		1.20E+02		2.30E+02		3.30E+05		1.70E+03	
SVOC	Pentachlorophenol	87-86-5	B2	65					1.30E-01	1.00E+03						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenacetin	62-44-2		10					3.50E-01	6.10E+01																	
SVOC	Phenanthrene	85-01-8	D	65	42	2.30E-02	8.92E+00	1.10E+02	5.40E-02	3.70E-01		5.10E+03	2E-02	1.90E+02	6E-01	2.90E+03	4E-02	8.00E+03	1E-02	2.80E+03	4E-02	1.60E+02	7E-01	6.70E+03	2E-02	1.60E+03	7E-02
SVOC	Phenol	108-95-2	D	65	8	5.90E-02	1.86E+01	1.40E+02	5.10E-02	3.50E+01						1.80E+07	8E-06	1.20E+04	1E-02					4.00E+07	4E-06	1.20E+04	1E-02
SVOC	p-Phenylene diamine	106-50-3		10					1.70E+00	3.00E+02																	
SVOC	Phorate	298-02-2		10					3.90E-02	2.30E+01																	
SVOC	2-Picoline	109-06-8		10					3.50E-01	6.10E+01																	
SVOC	Pronamide	23950-58-5		10					3.50E-01	6.10E+01																	
SVOC	Pyrene	129-00-0	D	65	33	3.20E-02	4.99E+00	5.00E+01	5.30E-02	3.00E+01		1.00E+06	5E-05	7.80E+05	6E-05	2.90E+06	2E-05	1.10E+05	5E-04	1.00E+06	5E-05	6.50E+05	8E-05	6.70E+06	7E-06	2.90E+04	2E-03
SVOC	Pyridine	110-86-1		10					3.50E-01	6.10E+01		2.00E+00		9.80E+00		1.00E+05		3.70E+01		1.10E+00		8.20E+00		2.30E+05		3.70E+01	
SVOC	Safrole (total)	94-59-7		10					3.50E-01	6.10E+01																	
SVOC	Sulfotepp	3689-24-5		10					3.90E-02	2.30E+01																	
SVOC	1,2,4,5-Tetrachlorobenzene	95-94-3		10					1.70E-01	3.00E+01								3.80E+05								7.70E+04	
SVOC	2,3,4,6-Tetrachlorophenol	58-90-2		10					9.00E-01	1.60E+02																	
SVOC	Thionazin	297-97-2		10					3.90E-02	2.30E+01																	
SVOC	o-Toluidine	95-53-4		10					3.50E-01	6.10E+01																	
SVOC	2,4,5-Trichlorophenol	95-95-4		65					5.80E-02	2.20E+02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	65					6.60E-02	1.10E+02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
SVOC	O,O,O-Triethyl phosphorothioate	126-68-1		10					3.90E-02	2.30E+01																	
SVOC	1,3,5-Trinitrobenzene	99-35-4		10					9.00E-01	1.60E+02																	
P/PCB	PCBs (summed)	1336-36-3	B2	72	32	5.86E-02	9.69E+00	8.93E+01	1.00E-02	3.80E+00		1.60E+04	6E-03	8.10E+02	1E-01	6.50E+03	1E-02	2.00E+01	**4E+00**	3.00E+03	3E-02	2.40E+02	4E-01	5.20E+03	2E-02	4.00E+00	**2E+01**
P/PCB	Aldrin	309-00-2	B2	30					1.10E-02	3.85E-01		7.10E+03		2.00E+02		8.00E+02		5.90E+00		1.30E+03		5.80E+01		6.40E+02		1.00E+00	
P/PCB	alpha-BHC	319-84-6	B2	30					1.10E-02	3.85E-01		1.60E+02		4.10E+01		2.10E+03		1.90E+01		3.00E+01		1.20E+01		1.70E+03		2.60E+00	
P/PCB	beta-BHC	319-85-7	C	30					1.10E-02	3.85E-01						7.40E+03		3.80E+01						5.90E+03		5.40E+00	
P/PCB	delta-BHC	319-86-8	D	30					1.10E-02	3.85E-01																	
P/PCB	gamma-BHC	58-89-9	B2-C	30					1.10E-02	3.85E-01								7.30E+01								8.30E+00	
P/PCB	Chlordane (summed)	57-74-9	B2	23					5.30E-03	3.85E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane (summed)	57-74-9	B2	23					1.40E-02	2.00E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane	57-74-9	B2	7					5.30E-03	3.85E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane	57-74-9	B2	7					1.40E-02	2.00E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	

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TABLE 4-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
P/PCB	Chlordane	57-74-9	B2	7					5.30E-03	3.85E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane	57-74-9	B2	7					1.40E-02	2.00E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane (summed)	57-74-9	B2	23					1.40E-02	2.00E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	Chlordane (summed)	57-74-9	B2	23					5.30E-03	3.85E-01		5.90E+04		4.20E+03		2.10E+04		2.40E+02		1.10E+04		1.20E+03		3.10E+04		3.10E+01	
P/PCB	4,4'-DDD	72-54-8	B2	30					1.10E-02	7.70E-01						5.60E+04		5.40E+02						4.40E+04		9.50E+01	
P/PCB	4,4'-DDE	72-55-9	B2	30					1.10E-02	7.70E-01						4.00E+04		2.60E+02						3.20E+04		4.50E+01	
P/PCB	4,4'-DDT	50-29-3	B2	30					1.10E-02	7.70E-01						4.00E+04		4.60E+02						3.20E+04		5.70E+01	
P/PCB	Dieldrin	60-57-1	B2	30					1.10E-02	7.70E-01		7.20E+02		6.40E+01		8.50E+02		6.40E+00		1.40E+02		1.90E+01		6.80E+02		1.10E+00	
P/PCB	Endosulfan I	959-98-8		30					1.10E-02	3.85E-01								6.70E+03								1.40E+03	
P/PCB	Endosulfan II	33213-65-9		30					1.10E-02	7.70E-01								6.70E+03								1.40E+03	
P/PCB	Endosulfan sulfate	1031-07-8		30					1.10E-02	7.70E-01								6.70E+03								1.40E+03	
P/PCB	Endrin	72-20-8	D	30					1.10E-02	7.70E-01								2.60E+02								6.50E+01	
P/PCB	Endrin aldehyde	7421-93-4		30					1.10E-02	7.70E-01								2.60E+02								6.50E+01	
P/PCB	Endrin ketone	53494-70-5		27					1.10E-02	7.70E-01								2.60E+02								6.50E+01	
P/PCB	Heptachlor	76-44-8	B2	30					1.10E-02	3.85E-01		1.90E+03		2.10E+02		3.00E+03		3.20E+01		3.50E+02		6.20E+01		2.40E+03		5.60E+00	
P/PCB	Heptachlor epoxide	1024-57-3	B2	30					1.10E-02	3.85E-01						1.50E+03		1.30E+01						1.20E+03		3.10E+00	
P/PCB	Methoxychlor	72-43-5	D	30					2.70E-02	3.85E+00								7.70E+03								1.90E+03	
P/PCB	Toxaphene	8001-35-2	B2	30					9.00E-02	1.95E+01						4.20E+04		1.20E+02						9.70E+03		2.00E+01	
INORG	Aluminum	7429-90-5	D	31	31	4.38E+02	3.12E+03	1.08E+04										6.60E+05	2E-02							5.00E+04	2E-01
INORG	Antimony	7440-36-0		65	33	3.24E-01	6.07E+01	1.74E+03	2.28E-01	2.08E+01						5.90E+03	3E-01	1.20E+03	**1E+00**					1.30E+04	1E-01	1.80E+02	**1E+01**
INORG	Arsenic	7440-38-2	A	65	65	6.03E-01	6.43E+00	4.43E+01			1.32E+01					9.10E+02	3E-02	6.10E+01	5E-01					7.20E+02	4E-02	7.60E+00	**4E+00**
INORG	Barium	7440-39-3	D	65	65	4.66E+00	2.58E+02	5.72E+03			1.10E+02					1.50E+05	4E-02	2.50E+05	2E-02					3.30E+05	2E-02	3.70E+04	2E-01
INORG	Beryllium	7440-41-7	B1	65	27	2.50E-02	3.66E-01	1.32E+00	2.41E-02	1.72E+00	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	65	55	3.68E-02	1.24E+00	1.56E+01	2.99E-02	5.89E-01	1.20E+00					2.20E+03	7E-03	4.10E+03	4E-03					1.70E+03	8E-03	5.50E+02	3E-02
INORG	Chromium (total)	7440-47-3		65	65	1.69E+00	1.22E+02	1.66E+03			4.92E+01					2.40E+02	**7E+00**	1.70E+04	9E-02					2.60E+02	**6E+00**	2.50E+03	6E-01
INORG	Chromium III	16065-83-1	D	12	12	1.35E+01	1.07E+02	3.77E+02								1.50E+05	3E-03	1.00E+06	4E-04					3.30E+05	1E-03	7.90E+05	5E-04
INORG	Chromium VI	18540-29-9	A	12					3.80E-01	4.46E-01						2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		65	49	9.70E-01	8.87E+00	6.44E+01	2.65E+00	4.50E+00	1.74E+01					5.90E+03	8E-03	1.80E+04	3E-03					1.30E+04	4E-03	2.60E+03	2E-02
INORG	Copper	7440-50-8	D	65	65	2.79E+00	2.25E+02	4.70E+03			3.20E+01					5.90E+04	8E-02	1.40E+05	3E-02					1.30E+05	4E-02	2.00E+04	2E-01
INORG	Cyanide (total)	57-12-5	D	56	29	2.32E-01	1.27E+00	4.10E+00	1.78E-01	5.89E-01						2.50E+02	2E-02	2.50E+02	2E-02					2.50E+02	2E-02	1.20E+01	3E-01
INORG	Iron	7439-89-6	D	31	31	2.06E+03	3.28E+04	3.76E+05										1.00E+06	4E-01							1.60E+05	**2E+00**
INORG	Lead	7439-92-1	B2	65	64	7.11E-01	1.53E+02	3.95E+03	9.00E-01	9.00E-01	4.92E+01					4.40E+04	9E-02	9.00E+02	**4E+00**					1.00E+05	4E-02	4.00E+02	**1E+01**
INORG	Manganese	7439-96-5	D	77	77	3.24E+01	1.06E+03	7.04E+03			5.10E+02					1.50E+03	**4E+00**	1.70E+05	4E-02					3.30E+03	**2E+00**	2.50E+04	3E-01
INORG	Mercury	7439-97-6	D	65	30	1.19E-02	4.46E-01	4.65E+00	8.80E-03	9.00E-02	1.30E-01							1.10E+03	4E-03							1.60E+02	3E-02
INORG	Nickel	7440-02-0	A	65	65	3.06E+00	6.10E+01	6.01E+02			3.01E+01					1.60E+04	4E-02	2.70E+05	2E-03					1.30E+04	4E-02	4.00E+04	1E-02
INORG	Selenium	7782-49-2	D	65	13	2.22E-01	1.26E+00	7.67E+00	1.62E-01	1.14E+01	4.10E-01					5.90E+04	1E-04	1.80E+04	4E-04					1.30E+05	6E-05	2.60E+03	3E-03
INORG	Silver	7440-22-4	D	65	12	2.75E-01	6.48E+00	6.96E+01	7.85E-02	5.20E+00						2.90E+03	2E-02	1.70E+04	4E-03					6.70E+03	1E-02	2.50E+03	3E-02
INORG	Thallium	7440-28-0		65	21	2.72E-01	1.26E+00	7.72E+00	2.61E-01	2.28E+01								2.40E+02	3E-02							3.50E+01	2E-01
INORG	Tin	7440-31-5		9	4	2.70E+01	5.41E+01	8.40E+01	1.14E+01	1.20E+01																	
INORG	Vanadium	7440-62-2		65	64	4.23E+00	1.26E+01	6.14E+01	1.80E+00	1.80E+00	3.28E+01							1.00E+04	3E-03							7.50E+02	4E-02
INORG	Zinc	7440-66-6	D	65	65	3.96E+00	3.84E+02	7.40E+03			4.70E+01							1.00E+06	7E-03							1.70E+05	4E-02
HERB	2,4-D	94-75-7		10					1.10E-01	1.70E-01						2.90E+06		1.50E+04						6.70E+06		2.50E+03	
HERB	2,4,5-T	93-76-5		10					2.70E-02	2.70E-01																	
HERB	2,4,5-TP	93-72-1		10					2.70E-02	3.00E-02								8.40E+03								1.70E+03	
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	27	26	2.57E-07	1.19E-04	1.89E-03	8.32E-07	8.32E-07						8.90E-02	2E-02	9.90E-04	**2E+00**					7.10E-02	3E-02	9.00E-05	**2E+01**

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
12. The concentrations for the Chlordane isomers (alpha and beta) were summed before comparing to the Screening Criteria.
13. The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

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TABLE 4-18

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR W-1 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
VOC	Acetone	67-64-1	D	6					2.70E-01	5.00E+00
VOC	Benzene	71-43-2	A	6	2	1.50E-01	1.90E-01	2.30E-01	2.50E-01	2.50E-01
VOC	Bromodichloromethane	75-27-4	B2	6					3.60E-02	2.50E-01
VOC	Bromoform	75-25-2	B2	6					5.90E-02	5.00E-01
VOC	Bromomethane	74-83-9	D	6					9.20E-02	1.20E+00
VOC	2-Butanone	78-93-3	D	6	1	3.40E-01	3.40E-01	3.40E-01	9.00E-01	5.00E+00
VOC	Carbon Disulfide	75-15-0		6					1.20E-01	1.20E+00
VOC	Carbon Tetrachloride	56-23-5	B2	6					3.60E-02	2.50E-01
VOC	Chlorobenzene	108-90-7	D	10	1	6.60E-01	6.60E-01	6.60E-01	2.90E-02	2.50E-01
VOC	Chloroethane	75-00-3		6					1.30E-01	1.20E+00
VOC	Chloroform	67-66-3	B2	6					3.60E-02	2.50E-01
VOC	Chloromethane	74-87-3	C	6					5.40E-02	1.20E+00
VOC	Cumene	98-82-8	D	2	2	9.20E-01	1.21E+00	1.50E+00		
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	2					2.90E-01	9.00E-01
VOC	Dibromochloromethane	124-48-1	C	6					4.40E-02	5.00E-01
VOC	1,2-Dibromoethane	106-93-4	B2	2					7.00E-02	2.20E-01
VOC	1,2-Dichlorobenzene	95-50-1	D	6	2	8.00E-01	1.54E+01	3.00E+01	1.80E-01	1.80E-01
VOC	1,3-Dichlorobenzene	541-73-1	D	6	1	5.60E-01	5.60E-01	5.60E-01	3.40E-02	1.10E-01
VOC	1,4-Dichlorobenzene	106-46-7	C	6	1	1.20E+00	1.20E+00	1.20E+00	5.90E-02	1.80E-01
VOC	Dichlorodifluoromethane	75-71-8		2					1.40E-01	4.30E-01
VOC	1,1-Dichloroethane	75-34-3	C	6					4.90E-02	2.50E-01
VOC	1,2-Dichloroethane	107-06-2	B2	6					3.90E-02	2.50E-01
VOC	1,1-Dichloroethene	75-35-4	C	10	1	1.70E+01	1.70E+01	1.70E+01	5.90E-02	2.50E-01
VOC	cis-1,2-Dichloroethene	156-59-2	D	6	1	8.00E-02	8.00E-02	8.00E-02	1.80E-01	2.50E-01
VOC	trans-1,2-Dichloroethene	156-60-5		6					6.40E-02	2.50E-01
VOC	1,2-Dichloropropane	78-87-5	B2	6					3.30E-02	2.50E-01
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	6					4.10E-02	2.50E-01
VOC	Ethyl Benzene	100-41-4	D	10	6	1.30E+00	4.39E+01	9.70E+01	2.50E-01	2.50E-01
VOC	2-Hexanone	591-78-6		6					1.10E-01	5.00E+00
VOC	Methyl Acetate	79-20-9		2					1.70E+00	5.40E+00
VOC	Methyl tert-butyl ether	1634-04-4		2					4.00E-02	1.30E-01
VOC	4-Methyl-2-pentanone	108-10-1		6					1.00E-01	5.00E+00
VOC	Methylcyclohexane	108-87-2		2	2	8.90E-01	5.95E+00	1.10E+01		
VOC	Methylene Chloride	75-09-2	B2	6	1	5.20E-01	5.20E-01	5.20E-01	1.40E-01	3.80E+00
VOC	Styrene	100-42-5		6					6.00E-02	2.50E-01
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	6					3.90E-02	5.00E-01
VOC	Tetrachloroethene	127-18-4	C-B2	10	4	6.90E-01	2.51E+00	6.50E+00	1.70E-01	2.50E-01
VOC	Toluene	108-88-3	D	10	4	1.40E+01	2.40E+01	3.40E+01	3.60E-02	2.50E-01
VOC	1,2,4-Trichlorobenzene	120-82-1	D	2					4.00E-02	1.30E-01
VOC	1,1,1-Trichloroethane	71-55-6	D	6					3.60E-02	2.50E-01
VOC	1,1,2-Trichloroethane	79-00-5	C	6					5.90E-02	2.50E-01
VOC	Trichloroethene	79-01-6	C-B2	6					6.10E-02	2.50E-01
VOC	Trichlorofluoromethane	75-69-4		2					6.90E-02	2.20E-01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		2					3.60E+00	1.10E+01
VOC	Vinyl Chloride	75-01-4	A	6					3.90E-02	5.00E-01
VOC	Xylenes (total)	1330-20-7	D	10	8	1.80E+00	1.05E+02	2.60E+02		
SVOC	Acenaphthene	83-32-9		2	1	4.00E+01	4.00E+01	4.00E+01	1.00E+00	1.00E+00

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TABLE 4-18

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR W-1 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	Acenaphthylene	208-96-8	D	2					9.40E-01	9.40E-01
SVOC	Acetophenone	98-86-2	D	2					1.00E+00	1.00E+00
SVOC	Anthracene	120-12-7	D	2	1	4.30E+01	4.30E+01	4.30E+01	9.80E-01	9.80E-01
SVOC	Atrazine	1912-24-9		2					3.00E+00	3.00E+00
SVOC	Benzaldehyde	100-52-7		2					3.40E+00	3.40E+00
SVOC	Benzo(a)anthracene	56-55-3	B2	2	1	7.00E+01	7.00E+01	7.00E+01	1.10E+00	1.10E+00
SVOC	Benzo(a)pyrene	50-32-8	B2	2	1	5.40E+01	5.40E+01	5.40E+01	1.20E+00	1.20E+00
SVOC	Benzo(b)fluoranthene	205-99-2	B2	2	1	7.50E+01	7.50E+01	7.50E+01	1.20E+00	1.20E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	D	2					1.10E+00	1.10E+00
SVOC	Benzo(k)fluoranthene	207-08-9	B2	2					1.10E+00	1.10E+00
SVOC	Biphenyl	92-52-4		2					2.80E+00	2.80E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	2					9.40E-01	9.40E-01
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	2					1.00E+00	1.00E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	2	1	1.10E+02	1.10E+02	1.10E+02	1.10E+00	1.10E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	2					1.20E+00	1.20E+00
SVOC	Butylbenzylphthalate	85-68-7	C	2					1.00E+00	1.00E+00
SVOC	Caprolactam	105-60-2		2					3.60E+00	3.60E+00
SVOC	Carbazole	86-74-8	B2	2					1.00E+00	1.00E+00
SVOC	4-Chloro-3-methylphenol	59-50-7		2					1.00E+00	1.00E+00
SVOC	4-Chloroaniline	106-47-8		2					1.00E+00	1.00E+00
SVOC	2-Chloronaphthalene	91-58-7		2					9.60E-01	9.60E-01
SVOC	2-Chlorophenol	95-57-8		2					1.00E+00	1.00E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		2					1.00E+00	1.00E+00
SVOC	Chrysene	218-01-9	B2	2	1	9.40E+01	9.40E+01	9.40E+01	9.20E-01	9.20E-01
SVOC	Di-n-butylphthalate	84-74-2	D	2	1	1.30E+02	1.30E+02	1.30E+02	3.00E+00	3.00E+00
SVOC	Di-n-octylphthalate	117-84-0		2					1.10E+00	1.10E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	2					1.00E+00	1.00E+00
SVOC	Dibenzofuran	132-64-9	D	2					1.00E+00	1.00E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	2					7.80E-01	7.80E-01
SVOC	2,4-Dichlorophenol	120-83-2		2					1.00E+00	1.00E+00
SVOC	Diethylphthalate	84-66-2	D	2					3.00E+00	3.00E+00
SVOC	2,4-Dimethylphenol	105-67-9		2					1.60E+00	1.60E+00
SVOC	Dimethylphthalate	131-11-3	D	2					3.20E+00	3.20E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		2					3.20E+00	3.20E+00
SVOC	2,4-Dinitrophenol	51-28-5		2					2.20E+00	2.20E+00
SVOC	2,4-Dinitrotoluene	121-14-2	B2	2					9.20E-01	9.20E-01
SVOC	2,6-Dinitrotoluene	606-20-2	B2	2					9.60E-01	9.60E-01
SVOC	Fluoranthene	206-44-0	D	2	2	5.20E+01	1.31E+02	2.10E+02		
SVOC	Fluorene	86-73-7	D	2	1	5.40E+01	5.40E+01	5.40E+01	9.60E-01	9.60E-01
SVOC	Hexachlorobenzene	118-74-1	B2	2					1.10E+00	1.10E+00
SVOC	Hexachlorobutadiene	87-68-3	C	2					9.00E-01	9.00E-01
SVOC	Hexachlorocyclopentadiene	77-47-4	E	2					1.20E+00	1.20E+00
SVOC	Hexachloroethane	67-72-1	C	2					9.60E-01	9.60E-01
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	2					1.40E+00	1.40E+00
SVOC	Isophorone	78-59-1	C	2					8.80E-01	8.80E-01
SVOC	2-Methylnaphthalene	91-57-6		2	2	4.40E+01	4.60E+01	4.80E+01		
SVOC	Methylphenol (summed)	1319-77-3		2					9.40E-01	9.40E-01

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TABLE 4-18

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR W-1 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	Naphthalene	91-20-3	C	2					9.80E-01	9.80E-01
SVOC	2-Nitroaniline	88-74-4		2					9.20E-01	9.20E-01
SVOC	3-Nitroaniline	99-09-2	C	2					2.80E+00	2.80E+00
SVOC	4-Nitroaniline	100-01-6	C	2					1.40E+00	1.40E+00
SVOC	Nitrobenzene	98-95-3	D	2					9.20E-01	9.20E-01
SVOC	2-Nitrophenol	88-75-5		2					9.20E-01	9.20E-01
SVOC	4-Nitrophenol	100-02-7		2					3.80E+00	3.80E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	2					9.80E-01	9.80E-01
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	2					8.80E-01	8.80E-01
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	2					1.00E+00	1.00E+00
SVOC	Pentachlorophenol	87-86-5	B2	2					2.40E+00	2.40E+00
SVOC	Phenanthrene	85-01-8	D	2	2	8.40E+01	1.47E+02	2.10E+02		
SVOC	Phenol	108-95-2	D	2					9.80E-01	9.80E-01
SVOC	Pyrene	129-00-0	D	2	1	3.00E+02	3.00E+02	3.00E+02	1.00E+00	1.00E+00
SVOC	2,4,5-Trichlorophenol	95-95-4		2					1.10E+00	1.10E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	2					1.30E+00	1.30E+00
P/PCB	PCBs (summed)	1336-36-3	B2	10	10	2.30E+01	2.14E+02	1.40E+03		
INORG	Aluminum	7429-90-5	D	2	2	3.24E+01	1.12E+02	1.91E+02		
INORG	Antimony	7440-36-0		2	1	5.20E-01	5.20E-01	5.20E-01	4.90E-01	4.90E-01
INORG	Arsenic	7440-38-2	A	2	2	9.50E-01	1.53E+00	2.10E+00		
INORG	Barium	7440-39-3	D	2	2	2.23E+01	2.52E+01	2.81E+01		
INORG	Beryllium	7440-41-7	B1	2	1	5.00E-02	5.00E-02	5.00E-02	4.60E-02	4.60E-02
INORG	Cadmium	7440-43-9	B1	2	2	9.10E-02	1.31E-01	1.70E-01		
INORG	Chromium (total)	7440-47-3		2	2	3.26E+01	6.39E+01	9.51E+01		
INORG	Cobalt	7440-48-4		2	1	2.50E-01	2.50E-01	2.50E-01	1.50E-01	1.50E-01
INORG	Copper	7440-50-8	D	2	2	4.60E+00	2.05E+01	3.63E+01		
INORG	Cyanide (total)	57-12-5	D	2	2	2.50E-01	3.20E-01	3.90E-01		
INORG	Iron	7439-89-6	D	2	2	3.72E+02	3.99E+02	4.26E+02		
INORG	Lead	7439-92-1	B2	2	2	1.40E+00	5.00E+00	8.60E+00		
INORG	Manganese	7439-96-5	D	2	2	7.00E+00	1.26E+01	1.82E+01		
INORG	Mercury	7439-97-6	D	2	2	7.00E-02	8.00E-02	9.00E-02		
INORG	Nickel	7440-02-0	A	2	2	1.10E+00	6.40E+00	1.17E+01		
INORG	Selenium	7782-49-2	D	2	2	3.40E-01	4.75E-01	6.10E-01		
INORG	Silver	7440-22-4	D	2					1.50E-01	1.50E-01
INORG	Thallium	7440-28-0		2					5.00E-01	5.00E-01
INORG	Vanadium	7440-62-2		2	2	4.70E-01	1.39E+00	2.30E+00		
INORG	Zinc	7440-66-6	D	2	2	3.50E+00	6.20E+00	8.90E+00		
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	2	2	3.13E-03	3.64E-03	4.16E-03		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit

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TABLE 4-19

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	28	8	6.80E-04	9.21E-03	3.30E-02	5.10E-04	1.00E-02	1.00E+06	3E-08	3.10E+04	1E-06	1.00E+06	3E-08
VOC	Benzene	71-43-2	T	A	28	17	1.60E-04	1.29E-02	9.10E-02	1.60E-04	1.00E-03	3.60E+01	3E-03	1.10E+01	8E-03	5.60E+00	2E-02
VOC	Bromodichloromethane	75-27-4	T	B2	28					1.70E-04	1.00E-03	3.80E+01		1.40E+01		4.80E+00	
VOC	Bromoform	75-25-2	T	B2	28					1.80E-04	1.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	28					2.00E-04	1.00E-02	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	28	14	4.30E-04	1.47E-02	7.30E-03	4.10E-04	1.00E-02	2.40E+05	3E-08	2.40E+05	3E-08	2.40E+05	3E-08
VOC	Carbon Disulfide	75-15-0	T		28					2.00E-04	1.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	28					1.20E-04	1.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	28					1.30E-04	1.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		28	10	1.30E-03	1.54E-02	4.50E-02	2.60E-04	1.00E-03	5.70E+03	8E-06	4.40E+02	1E-04	5.70E+03	8E-06
VOC	Chloroform	67-66-3	T	B2	28	1	8.10E-04	8.10E-04	8.10E-04	1.40E-04	1.00E-03	1.80E+02	5E-06	1.50E+02	5E-06	2.80E+01	3E-05
VOC	Chloromethane	74-87-3	T	D	28	4	1.30E-04	1.48E-04	1.70E-04	1.30E-04	1.00E-03	5.20E+01	3E-06	4.90E+02	3E-07	8.60E+00	2E-05
VOC	Cumene	98-82-8	T	D	28	12	1.70E-04	2.43E-03	8.60E-03	1.20E-04	1.00E-03	5.60E+01	2E-04	5.60E+01	2E-04	5.60E+01	2E-04
VOC	Cyclohexane	110-82-7	T		28	11	1.70E-04	4.20E-03	1.90E-02	1.30E-04	1.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	28					6.20E-04	2.10E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	28					2.60E-04	1.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	28					2.20E-04	1.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	28	4	4.80E-04	1.28E-03	2.00E-03	1.10E-04	1.00E-03	1.60E+02	1E-05	1.60E+02	1E-05	1.60E+02	1E-05
VOC	1,3-Dichlorobenzene	541-73-1	T	D	28					1.50E-04	1.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	28					1.70E-04	1.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		28					2.60E-04	2.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	28	11	1.60E-04	4.34E-03	2.30E-02	1.60E-04	1.00E-03	2.30E+03	1E-05	2.40E+03	1E-05	1.00E+03	2E-05
VOC	1,2-Dichloroethane	107-06-2	T	B2	28	1	4.50E-04	4.50E-04	4.50E-04	2.10E-04	1.00E-03	5.90E+01	8E-06	1.90E+01	2E-05	9.60E+00	5E-05
VOC	1,1-Dichloroethene	75-35-4	T	C	28					2.40E-04	1.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	28	6	4.50E-04	2.11E-03	3.90E-03	2.20E-04	5.00E-04	2.20E+02	2E-05	2.00E+02	2E-05	9.60E+01	4E-05
VOC	trans-1,2-Dichloroethene	156-60-5	T		28	3	1.80E-04	8.43E-04	2.10E-03	1.50E-04	5.00E-04	2.00E+02	1E-05	2.20E+02	1E-05	8.50E+01	2E-05
VOC	1,2-Dichloropropane	78-87-5	T	B2	28					1.70E-04	1.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	28					2.70E-04	1.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	28	8	2.40E-04	5.85E-03	1.90E-02	1.20E-04	1.00E-03	1.70E+02	1E-04	1.70E+02	1E-04	1.70E+02	1E-04
VOC	2-Hexanone	591-78-6	T		28					4.60E-04	1.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		28					4.10E-04	1.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		28	3	8.40E-04	3.41E-03	7.10E-03	1.30E-04	5.00E-03	4.70E+04	2E-07	6.90E+02	1E-05	4.70E+04	2E-07
VOC	4-Methyl-2-pentanone	108-10-1	T		28	4	2.88E-04	8.49E-04	1.60E-03	2.30E-04	1.00E-02	2.00E+04	8E-08	1.30E+04	1E-07	2.00E+04	8E-08
VOC	Methylcyclohexane	108-87-2	T		28	11	3.30E-04	2.58E-03	7.60E-03	1.50E-04	1.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	28	4	5.00E-04	2.32E-03	4.50E-03	3.40E-04	1.00E-03	1.40E+03	3E-06	2.20E+02	2E-05	2.20E+02	2E-05
VOC	Styrene	100-42-5	T		28					1.50E-04	1.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	28					2.50E-04	1.00E-03	7.70E+01		4.70E+00		1.20E+01	

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TABLE 4-19

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Tetrachloroethene	127-18-4	T	C-B2	28	2	4.30E-04	5.65E-04	7.00E-04	2.30E-04	1.00E-03	1.70E+02	4E-06	1.20E+01	6E-05	2.50E+01	3E-05
VOC	Toluene	108-88-3	T	D	28	14	2.50E-04	2.83E-03	1.50E-02	1.80E-04	1.00E-03	5.30E+02	3E-05	5.30E+02	3E-05	5.30E+02	3E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	28					1.70E-04	1.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	28					1.50E-04	1.00E-03	1.30E+03		1.30E+03		6.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	T	C	28					3.00E-04	1.00E-03	2.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	28	5	2.40E-04	6.43E-04	8.45E-04	1.40E-04	1.00E-03	9.70E+01	9E-06	3.70E+01	2E-05	1.50E+01	6E-05
VOC	Trichlorofluoromethane	75-69-4	T		28	1	6.60E-04	6.60E-04	6.60E-04	2.80E-04	1.00E-03	1.10E+03	6E-07	1.10E+03	6E-07	1.10E+03	6E-07
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		28					3.20E-04	1.10E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	28	9	1.80E-04	4.72E-03	1.80E-02	1.90E-04	1.00E-03	6.90E-01	3E-02	5.70E-01	3E-02	1.10E-01	2E-01
VOC	Xylenes (total)	1330-20-7	T	D	28	10	6.90E-04	4.52E-02	2.00E-01	1.30E-04	1.00E-03	1.90E+02	1E-03	1.90E+02	1E-03	1.90E+02	1E-03
SVOC	Acenaphthene	83-32-9	T		28	1	2.40E-03	2.40E-03	2.40E-03	8.00E-04	2.50E-02	4.20E+00	6E-04	4.20E+00	6E-04	4.20E+00	6E-04
SVOC	Acenaphthylene	208-96-8	T	D	28					7.10E-04	2.50E-02	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	28	1	2.70E-03	2.70E-03	2.70E-03	2.60E-03	5.00E-02	6.10E+03	4E-07	6.10E+03	4E-07	6.10E+03	4E-07
SVOC	Anthracene	120-12-7	T	D	28					6.80E-04	2.50E-02	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		28					2.50E-03	2.50E-02			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		28					2.80E-03	5.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	28					7.00E-04	2.50E-02			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	28					7.30E-04	2.50E-02			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	28					9.40E-04	2.50E-02			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	28					8.50E-04	2.50E-02			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	28					8.40E-04	2.50E-02			5.00E-03			
SVOC	Biphenyl	92-52-4	T		28					2.60E-03	5.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	28					8.70E-04	2.50E-02						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	26					9.70E-04	2.50E-02	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	28	1	2.70E-03	2.70E-03	2.70E-03	2.70E-03	2.50E-02			3.20E-01	8E-03		
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	28					8.80E-04	2.50E-02						
SVOC	Butylbenzylphthalate	85-68-7	T	C	28					8.80E-04	2.50E-02			2.70E+00			
SVOC	Caprolactam	105-60-2	T		28					2.50E-03	5.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	28	2	1.50E-03	2.15E-03	2.80E-03	8.20E-04	5.00E-02			7.40E+00	4E-04		
SVOC	4-Chloro-3-methylphenol	59-50-7	T		28					9.90E-04	2.50E-02			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		28					6.10E-04	5.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		28					8.50E-04	2.50E-02			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		28					1.00E-03	2.50E-02			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		28					7.90E-04	2.50E-02						
SVOC	Chrysene	218-01-9	T	B2	28					7.50E-04	2.50E-02			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	28	3	1.35E-03	1.72E-03	2.30E-03	6.70E-04	2.50E-02			1.10E+01	2E-04		
SVOC	Di-n-octylphthalate	117-84-0	T		28					1.10E-03	2.50E-02			4.00E-01			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	28					7.90E-04	2.50E-02			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	28	1	1.80E-03	1.80E-03	1.80E-03	1.10E-03	2.50E-02						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	28					9.30E-04	1.00E-01			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		28					8.50E-04	5.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	28					6.30E-04	2.50E-02			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		28	3	1.90E-03	5.23E-03	1.10E-02	8.50E-04	2.50E-02			5.20E+02	2E-05		
SVOC	Dimethylphthalate	131-11-3	T	D	28					7.60E-04	2.50E-02			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		28					1.30E-03	1.00E-01			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		28					3.60E-03	1.00E-01						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	28					7.90E-04	2.50E-02			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	28					5.70E-04	2.50E-02						
SVOC	Fluoranthene	206-44-0	T	D	28	1	9.90E-04	9.90E-04	9.90E-04	8.10E-04	2.50E-02	2.10E-01	5E-03	2.10E-01	5E-03	2.10E-01	5E-03
SVOC	Fluorene	86-73-7	T	D	28	1	2.20E-03	2.20E-03	2.20E-03	1.00E-03	2.50E-02	2.00E+00	1E-03	2.00E+00	1E-03	2.00E+00	1E-03
SVOC	Hexachlorobenzene	118-74-1	T	B2	28					7.40E-04	2.50E-02	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	26					7.30E-04	2.50E-02	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	26					1.10E-03	2.50E-02			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	28					7.40E-04	2.50E-02	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	28					6.30E-04	2.50E-02			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	28					6.30E-04	2.50E-02			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		28	6	8.50E-04	3.14E-03	6.10E-03	6.40E-04	2.50E-02			2.50E+01	2E-04		
SVOC	Methylphenol (summed)	1319-77-3	T		28	1	2.16E-02	2.16E-02	2.16E-02	1.30E-03	2.50E-02			8.10E+02	3E-05		
SVOC	Naphthalene	91-20-3	T	C	27	4	6.20E-03	8.53E-03	1.30E-02	7.50E-04	2.50E-02	3.10E+01	4E-04	3.10E+01	4E-04	3.10E+01	4E-04
SVOC	2-Nitroaniline	88-74-4	T		28					7.00E-04	1.00E-01						
SVOC	3-Nitroaniline	99-09-2	T	C	28					7.10E-04	1.00E-01						
SVOC	4-Nitroaniline	100-01-6	T	C	28					1.30E-03	1.00E-01						
SVOC	Nitrobenzene	98-95-3	T	D	28					8.10E-04	2.50E-02	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		28					2.10E-03	2.50E-02			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		28					1.90E-03	1.00E-01						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	28					1.40E-03	2.50E-02			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	28					6.70E-04	2.50E-02			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	28					7.80E-04	2.50E-02						
SVOC	Pentachlorophenol	87-86-5	T	B2	28					2.40E-03	2.50E-02			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	28					8.20E-04	2.50E-02	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	28	1	1.90E-02	1.90E-02	1.90E-02	2.60E-03	2.50E-02			2.90E+04	7E-07		
SVOC	Pyrene	129-00-0	T	D	28					1.10E-03	2.50E-02	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		28					1.20E-03	2.50E-02			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	28					1.70E-03	2.50E-02			1.00E+01			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
P/PCB	PCBs (summed)	1336-36-3	D	B2	12					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	28	6	3.02E-04	1.55E-03	3.93E-03	8.20E-05	2.00E-04	4.50E-02	9E-02	3.30E-03	**1E+00**	4.50E-02	9E-02
INORG	Antimony	7440-36-0	D		28	4	5.80E-03	6.98E-03	7.90E-03	2.20E-03	2.50E-02			6.80E+01	1E-04		
INORG	Antimony	7440-36-0	T		28	4	2.60E-03	6.33E-03	8.60E-03	2.20E-03	2.50E-02			6.80E+01	1E-04		
INORG	Arsenic	7440-38-2	D	A	28	19	4.00E-03	1.16E-02	2.69E-02	3.90E-03	1.00E-02			4.30E+00	6E-03		
INORG	Arsenic	7440-38-2	T	A	28	18	4.10E-03	1.21E-02	2.64E-02	3.90E-03	1.00E-02			4.30E+00	6E-03		
INORG	Barium	7440-39-3	D	D	28	28	5.63E-02	4.70E-01	4.07E+00					1.40E+04	3E-04		
INORG	Barium	7440-39-3	T	D	28	28	5.75E-02	5.00E-01	4.57E+00					1.40E+04	3E-04		
INORG	Beryllium	7440-41-7	D	B1	28	1	7.50E-04	7.50E-04	7.50E-04	5.00E-04	1.00E-03			2.90E+02	3E-06		
INORG	Beryllium	7440-41-7	T	B1	28					5.00E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	28	4	3.00E-04	4.20E-04	6.90E-04	2.80E-04	5.00E-03			1.90E+02	4E-06		
INORG	Cadmium	7440-43-9	T	B1	28	6	2.20E-04	4.98E-04	1.10E-03	2.80E-04	5.00E-03			1.90E+02	6E-06		
INORG	Chromium (total)	7440-47-3	D		28	3	1.80E-03	4.17E-03	8.50E-03	1.40E-03	1.00E-02			4.60E+02	2E-05		
INORG	Chromium (total)	7440-47-3	T		28	3	1.40E-03	2.03E-03	2.70E-03	1.40E-03	1.00E-02			4.60E+02	6E-06		
INORG	Cobalt	7440-48-4	D		28	9	1.30E-03	2.02E-03	3.50E-03	1.30E-03	2.00E-02			2.40E+03	1E-06		
INORG	Cobalt	7440-48-4	T		28	8	1.70E-03	2.36E-03	3.20E-03	1.30E-03	2.00E-02			2.40E+03	1E-06		
INORG	Copper	7440-50-8	D	D	28	2	4.50E-03	5.05E-03	5.60E-03	4.20E-03	5.00E-03			7.40E+03	8E-07		
INORG	Copper	7440-50-8	T	D	28	4	4.70E-03	1.27E-02	1.94E-02	4.20E-03	5.00E-03			7.40E+03	3E-06		
INORG	Cyanide (total)	57-12-5	T	D	25	17	2.00E-03	5.55E-03	1.11E-02	1.70E-03	1.00E-02			5.70E+01	2E-04		
INORG	Lead	7439-92-1	D	B2	28					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	28	5	4.00E-03	1.68E-02	2.71E-02	2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	28	27	4.72E-02	3.92E-01	9.52E-01	9.00E-04	9.00E-04			9.10E+03	1E-04		
INORG	Manganese	7439-96-5	T	D	28	28	1.60E-03	3.76E-01	9.40E-01					9.10E+03	1E-04		
INORG	Mercury	7439-97-6	D	D	28	6	8.00E-05	1.02E-04	1.30E-04	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Mercury	7439-97-6	T	D	28	6	6.73E-05	1.03E-04	1.20E-04	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Nickel	7440-02-0	D	A	28	19	2.40E-03	6.23E-03	1.59E-02	2.20E-03	2.00E-02			7.40E+04	2E-07		
INORG	Nickel	7440-02-0	T	A	28	19	2.60E-03	6.97E-03	1.94E-02	2.20E-03	2.00E-02			7.40E+04	3E-07		
INORG	Selenium	7782-49-2	D	D	28					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	28	1	4.90E-03	4.90E-03	4.90E-03	4.50E-03	5.00E-03			9.70E+02	5E-06		
INORG	Silver	7440-22-4	D	D	28					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	28	1	1.50E-03	1.50E-03	1.50E-03	1.50E-03	5.00E-03			1.50E+03	1E-06		
INORG	Thallium	7440-28-0	D		28	6	4.30E-05	5.24E-03	9.10E-03	1.80E-05	1.00E-02			1.30E+01	7E-04		
INORG	Thallium	7440-28-0	T		28	4	1.80E-05	5.38E-03	1.02E-02	1.80E-05	1.00E-02			1.30E+01	8E-04		
INORG	Vanadium	7440-62-2	D		28	4	1.00E-03	7.43E-03	2.45E-02	8.20E-04	1.00E-02			9.70E+02	3E-05		
INORG	Vanadium	7440-62-2	T		28	5	1.00E-03	6.24E-03	2.58E-02	8.20E-04	1.00E-02			9.70E+02	2E-05		
INORG	Zinc	7440-66-6	D	D	28	2	1.56E-02	1.83E-02	2.09E-02	1.20E-02	2.00E-02			1.10E+05	2E-07		
INORG	Zinc	7440-66-6	T	D	28	6	1.85E-02	2.44E-02	3.32E-02	1.20E-02	2.00E-02			1.10E+05	3E-07		

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	D	B2	4	3	1.99E-09	2.46E-09	3.03E-09	4.57E-09	4.57E-09			1.00E-08	3E-01		
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	23	15	1.63E-09	5.99E-09	2.16E-08	2.34E-09	5.88E-09			1.00E-08	**2E+00**		

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
12. The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	Acetone	67-64-1	T	D	5	3	1.40E-01	1.18E+00	3.10E-00	5.10E-04	5.10E-03	2.10E+00	**1E+00**	7.30E-01	**4E+00**
VOC	Benzene	71-43-2	T	A	5	1	4.50E-03	4.50E-03	4.50E-03	1.60E-04	4.00E-02	5.00E-03	9E-01	5.00E-03	9E-01
VOC	Bromodichloromethane	75-27-4	T	B2	5					1.70E-04	4.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromoform	75-25-2	T	B2	5					1.80E-04	4.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromomethane	74-83-9	T	D	5					2.90E-04	4.00E-02	2.90E-02	0E+00	1.00E-02	0E+00
VOC	2-Butanone	78-93-3	T	D	5					4.10E-04	4.00E-01	3.80E+01	0E+00	1.30E+01	0E+00
VOC	Carbon Disulfide	75-15-0	T		5					2.00E-04	4.00E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Carbon Tetrachloride	56-23-5	T	B2	5					1.20E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Chlorobenzene	108-90-7	T	D	5					1.40E-04	4.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloroethane	75-00-3	T		5					2.60E-04	4.00E-02	1.70E+00	0E+00	4.30E-01	0E+00
VOC	Chloroform	67-66-3	T	B2	5	1	1.60E-04	1.60E-04	1.60E-04	4.40E-04	4.00E-02	1.00E-01	2E-03	1.00E-01	2E-03
VOC	Chloromethane	74-87-3	T	D	5					1.30E-04	4.00E-02	1.10E+00	0E+00	2.60E-01	0E+00
VOC	Cumene	98-82-8	T	D	5					1.20E-04	4.00E-02	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Cyclohexane	110-82-7	T		5					1.30E-04	4.00E-02		0E+00		0E+00
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	5					6.20E-04	8.00E-02	2.00E-04	0E+00	2.00E-04	0E+00
VOC	Dibromochloromethane	124-48-1	T	C	5					2.60E-04	4.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dibromoethane	106-93-4	T	B2	5					2.20E-04	4.00E-02	1.00E-03	0E+00	1.00E-03	0E+00
VOC	1,2-Dichlorobenzene	95-50-1	T	D	5					1.10E-04	4.00E-02	6.00E-01	0E+00	6.00E-01	0E+00
VOC	1,3-Dichlorobenzene	541-73-1	T	D	5					1.50E-04	4.00E-02	1.90E-02	0E+00	6.60E-03	0E+00
VOC	1,4-Dichlorobenzene	106-46-7	T	C	5					1.70E-04	4.00E-02	7.50E-02	0E+00	7.50E-02	0E+00
VOC	Dichlorodifluoromethane	75-71-8	T		5					2.60E-04	8.00E-02	4.80E+00	0E+00	1.70E+00	0E+00
VOC	1,1-Dichloroethane	75-34-3	T	C	5					1.60E-04	4.00E-02	2.50E+00	0E+00	8.80E-01	0E+00
VOC	1,2-Dichloroethane	107-06-2	T	B2	5					2.10E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,1-Dichloroethene	75-35-4	T	C	5					2.40E-04	4.00E-02	7.00E-03	0E+00	7.00E-03	0E+00
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	5					2.20E-04	2.00E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	trans-1,2-Dichloroethene	156-60-5	T		5					1.50E-04	2.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dichloropropane	78-87-5	T	B2	5					1.70E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	4					8.40E-04	4.00E-02	6.30E-02	0E+00	2.10E-02	0E+00
VOC	Ethyl Benzene	100-41-4	T	D	5					1.20E-04	4.00E-02	7.00E-01	0E+00	7.00E-01	0E+00
VOC	2-Hexanone	591-78-6	T		5					4.60E-04	4.00E-01	2.90E+00	0E+00	1.00E+00	0E+00
VOC	Methyl Acetate	79-20-9	T		5					4.10E-04	4.00E-01		0E+00		0E+00
VOC	Methyl tert-butyl ether	1634-04-4	T		5					1.30E-04	2.00E-01	6.90E-01	0E+00	2.40E-01	0E+00
VOC	4-Methyl-2-pentanone	108-10-1	T		4					7.20E-04	4.00E-01	5.20E+00	0E+00	1.80E+00	0E+00

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PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	Methylcyclohexane	108-87-2	T		5					1.50E-04	4.00E-02		0E+00		0E+00
VOC	Methylene Chloride	75-09-2	T	B2	5					3.40E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Styrene	100-42-5	T		5					1.50E-04	4.00E-02	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	5					2.50E-04	4.00E-02	3.50E-02	0E+00	8.50E-03	0E+00
VOC	Tetrachloroethene	127-18-4	T	C-B2	4					7.20E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Toluene	108-88-3	T	D	5					4.80E-04	4.00E-02	1.00E+00	0E+00	1.00E+00	0E+00
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	5					1.70E-04	4.00E-02	7.00E-02	0E+00	7.00E-02	0E+00
VOC	1,1,1-Trichloroethane	71-55-6	T	D	5					1.50E-04	4.00E-02	2.00E-01	0E+00	2.00E-01	0E+00
VOC	1,1,2-Trichloroethane	79-00-5	T	C	5					3.00E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichloroethene	79-01-6	T	C-B2	5					1.40E-04	4.00E-02	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichlorofluoromethane	75-69-4	T		5					2.80E-04	4.00E-02	7.30E+00	0E+00	2.60E+00	0E+00
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		5					3.20E-04	4.00E-02	1.70E+02	0E+00	1.70E+02	0E+00
VOC	Vinyl Chloride	75-01-4	T	A	5					1.50E-04	4.00E-02	2.00E-03	0E+00	2.00E-03	0E+00
VOC	Xylenes (total)	1330-20-7	T	D	5					3.30E-04	4.00E-02	1.00E+01	0E+00	1.00E+01	0E+00
SVOC	Acenaphthene	83-32-9	T		5					8.00E-04	5.00E-03	3.80E+00	0E+00	1.30E+00	0E+00
SVOC	Acenaphthylene	208-96-8	T	D	5					7.10E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Acetophenone	98-86-2	T	D	5					2.60E-03	1.00E-02	4.40E+00	0E+00	1.50E+00	0E+00
SVOC	Anthracene	120-12-7	T	D	5					6.80E-04	5.00E-03	4.30E-02	0E+00	4.30E-02	0E+00
SVOC	Atrazine	1912-24-9	T		5					2.50E-03	5.00E-03	3.00E-03	0E+00	3.00E-03	0E+00
SVOC	Benzaldehyde	100-52-7	T		5					2.80E-03	1.00E-02		0E+00		0E+00
SVOC	Benzo(a)anthracene	56-55-3	T	B2	5					7.00E-04	5.00E-03	8.50E-03	0E+00	2.10E-03	0E+00
SVOC	Benzo(a)pyrene	50-32-8	T	B2	5					7.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	5					9.40E-04	5.00E-03	2.00E-03	0E+00	2.00E-03	0E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	5					8.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	5					8.40E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Biphenyl	92-52-4	T		5					2.60E-03	1.00E-02		0E+00		0E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	5					8.70E-04	5.00E-03		0E+00		0E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	5					9.70E-04	5.00E-03	8.30E-03	0E+00	2.00E-03	0E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	5					2.70E-03	5.00E-03	6.00E-03	0E+00	6.00E-03	0E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	5					8.80E-04	5.00E-03		0E+00		0E+00
SVOC	Butylbenzylphthalate	85-68-7	T	C	5					8.80E-04	5.00E-03	2.70E+00	0E+00	1.20E+00	0E+00
SVOC	Caprolactam	105-60-2	T		5					2.50E-03	1.00E-02	1.70E+01	0E+00	5.80E+00	0E+00
SVOC	Carbazole	86-74-8	T	B2	5					8.20E-04	1.00E-02	3.50E-01	0E+00	8.50E-02	0E+00

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RCRA FACILITY INVESTIGATION

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Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	4-Chloro-3-methylphenol	59-50-7	T		5					9.90E-04	5.00E-03	4.20E-01	0E+00	1.50E-01	0E+00
SVOC	4-Chloroaniline	106-47-8	T		5					6.10E-04	1.00E-02		0E+00		0E+00
SVOC	2-Chloronaphthalene	91-58-7	T		5					8.50E-04	5.00E-03	5.20E+00	0E+00	1.80E+00	0E+00
SVOC	2-Chlorophenol	95-57-8	T		5					1.00E-03	5.00E-03	1.30E-01	0E+00	4.50E-02	0E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		5					7.90E-04	5.00E-03		0E+00		0E+00
SVOC	Chrysene	218-01-9	T	B2	5					7.50E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Di-n-butylphthalate	84-74-2	T	D	5					6.70E-04	5.00E-03	2.50E+00	0E+00	8.80E-01	0E+00
SVOC	Di-n-octylphthalate	117-84-0	T		5					1.10E-03	5.00E-03	3.80E-01	0E+00	1.30E-01	0E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	5					7.90E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Dibenzofuran	132-64-9	T	D	5					1.10E-03	5.00E-03		0E+00		0E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	4					9.30E-04	2.00E-02	4.30E-03	0E+00	1.10E-03	0E+00
SVOC	2,4-Dichlorophenol	120-83-2	T		5					8.50E-04	1.00E-02	2.10E-01	0E+00	7.30E-02	0E+00
SVOC	Diethylphthalate	84-66-2	T	D	5					6.50E-04	5.00E-03	1.60E+01	0E+00	5.50E+00	0E+00
SVOC	2,4-Dimethylphenol	105-67-9	T		5					8.50E-04	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Dimethylphthalate	131-11-3	T	D	5					7.60E-04	5.00E-03	2.10E+02	0E+00	7.30E+01	0E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		5					1.30E-03	2.00E-02	2.00E-02	0E+00	2.00E-02	0E+00
SVOC	2,4-Dinitrophenol	51-28-5	T		5					3.00E-03	2.00E-02		0E+00		0E+00
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	5					7.90E-04	5.00E-03	3.20E-02	0E+00	7.70E-03	0E+00
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	5					5.70E-04	5.00E-03		0E+00		0E+00
SVOC	Fluoranthene	206-44-0	T	D	5					8.10E-04	5.00E-03	2.10E-01	0E+00	2.10E-01	0E+00
SVOC	Fluorene	86-73-7	T	D	5					1.00E-03	5.00E-03	2.00E+00	0E+00	8.80E-01	0E+00
SVOC	Hexachlorobenzene	118-74-1	T	B2	5					7.40E-04	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Hexachlorobutadiene	87-68-3	T	C	5					7.30E-04	5.00E-03	4.20E-02	0E+00	1.50E-02	0E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	4					1.10E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
SVOC	Hexachloroethane	67-72-1	T	C	5					7.40E-04	5.00E-03	2.10E-02	0E+00	7.30E-03	0E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	5					6.30E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Isophorone	78-59-1	T	C	5					6.30E-04	5.00E-03	3.10E+00	0E+00	7.70E-01	0E+00
SVOC	2-Methylnaphthalene	91-57-6	T		5					6.40E-04	5.00E-03	7.50E-01	0E+00	2.60E-01	0E+00
SVOC	Methylphenol (summed)	1319-77-3	T		5					1.30E-03	5.00E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Naphthalene	91-20-3	T	C	5					7.50E-04	5.00E-03	1.50E+00	0E+00	5.20E-01	0E+00
SVOC	2-Nitroaniline	88-74-4	T		5					7.00E-04	2.00E-02		0E+00		0E+00
SVOC	3-Nitroaniline	99-09-2	T	C	5					7.10E-04	2.00E-02		0E+00		0E+00
SVOC	4-Nitroaniline	100-01-6	T	C	5					1.30E-03	2.00E-02		0E+00		0E+00

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SVOC	Nitrobenzene	98-95-3	T	D	5					8.10E-04	5.00E-03	9.60E-03	0E+00	3.40E-03	0E+00
SVOC	2-Nitrophenol	88-75-5	T		5					2.10E-03	5.00E-03	5.80E-02	0E+00	2.00E-02	0E+00
SVOC	4-Nitrophenol	100-02-7	T		5					1.90E-03	2.00E-02		0E+00		0E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	5					1.40E-03	5.00E-03	1.10E+00	0E+00	2.70E-01	0E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	5					6.70E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	5					7.80E-04	5.00E-03		0E+00		0E+00
SVOC	Pentachlorophenol	87-86-5	T	B2	5					2.40E-03	5.00E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Phenanthrene	85-01-8	T	D	5					8.20E-04	5.00E-03	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Phenol	108-95-2	T	D	5	1	5.20E-03	5.20E-03	5.20E-03	2.60E-03	5.00E-03	1.30E+01	4E-04	4.40E+00	1E-03
SVOC	Pyrene	129-00-0	T	D	5					1.10E-03	5.00E-03	1.40E-01	0E+00	1.40E-01	0E+00
SVOC	2,4,5-Trichlorophenol	95-95-4	T		5					1.20E-03	5.00E-03	2.10E+00	0E+00	7.30E-01	0E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	5					1.70E-03	5.00E-03	4.70E-01	0E+00	1.20E-01	0E+00
P/PCB	PCBs (summed)	1336-36-3	D	B2	1					2.00E-04	2.00E-04	5.00E-04	0E+00	5.00E-04	0E+00
P/PCB	PCBs (summed)	1336-36-3	T	B2	5					8.20E-05	2.00E-04	5.00E-04	0E+00	5.00E-04	0E+00
INORG	Antimony	7440-36-0	D		5	1	2.30E-03	2.30E-03	2.30E-03	2.20E-03	2.50E-02	6.00E-03	4E-01	6.00E-03	4E-01
INORG	Antimony	7440-36-0	T		5					2.20E-03	2.50E-02	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Arsenic	7440-38-2	D	A	5	2	4.40E-03	5.75E-03	7.10E-03	3.90E-03	1.00E-02	5.00E-02	1E-01	5.00E-02	1E-01
INORG	Arsenic	7440-38-2	T	A	5	1	8.80E-03	8.80E-03	8.80E-03	3.90E-03	1.00E-02	5.00E-02	2E-01	5.00E-02	2E-01
INORG	Barium	7440-39-3	D	D	5	5	1.15E-01	2.47E-01	3.73E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Barium	7440-39-3	T	D	5	5	1.26E-01	2.56E-01	4.14E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Beryllium	7440-41-7	D	B1	5					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Beryllium	7440-41-7	T	B1	5					5.40E-04	1.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Cadmium	7440-43-9	D	B1	5					2.80E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Cadmium	7440-43-9	T	B1	5					2.80E-04	5.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Chromium (total)	7440-47-3	D		5	1	2.30E-03	2.30E-03	2.30E-03	1.40E-03	1.00E-02	1.00E-01	2E-02	1.00E-01	2E-02
INORG	Chromium (total)	7440-47-3	T		5	2	3.40E-03	3.60E-03	3.80E-03	1.40E-03	1.00E-02	1.00E-01	4E-02	1.00E-01	4E-02
INORG	Cobalt	7440-48-4	D		5	1	2.40E-03	2.40E-03	2.40E-03	1.30E-03	2.00E-02	1.00E-01	2E-02	4.00E-02	6E-02
INORG	Cobalt	7440-48-4	T		5	1	2.20E-03	2.20E-03	2.20E-03	1.30E-03	2.00E-02	1.00E-01	2E-02	4.00E-02	6E-02
INORG	Copper	7440-50-8	D	D	5					4.20E-03	5.00E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Copper	7440-50-8	T	D	5					4.20E-03	5.00E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Lead	7439-92-1	D	B2	5					2.50E-03	3.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Lead	7439-92-1	T	B2	5					2.50E-03	3.00E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Manganese	7439-96-5	D	D	5	4	3.45E-02	5.26E-02	7.03E-02	9.00E-04	9.00E-04	2.50E+00	3E-02	8.60E-01	8E-02

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
INORG	Manganese	7439-96-5	T	D	5	3	4.86E-02	6.23E-02	7.12E-02	9.00E-04	9.00E-04	2.50E+00	3E-02	8.60E-01	8E-02
INORG	Mercury	7439-97-6	D	D	5	1	7.20E-05	7.20E-05	7.20E-05	6.90E-05	6.90E-05	2.00E-03	4E-02	2.00E-03	4E-02
INORG	Mercury	7439-97-6	T	D	5					6.90E-05	2.00E-04	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Nickel	7440-02-0	D	A	5	1	6.40E-03	6.40E-03	6.40E-03	2.20E-03	2.00E-02	1.00E-01	6E-02	1.00E-01	6E-02
INORG	Nickel	7440-02-0	T	A	5	2	3.00E-03	5.10E-03	7.20E-03	2.20E-03	2.00E-02	1.00E-01	7E-02	1.00E-01	7E-02
INORG	Selenium	7782-49-2	D	D	5					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Selenium	7782-49-2	T	D	5					4.50E-03	5.00E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Silver	7440-22-4	D	D	5					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Silver	7440-22-4	T	D	5					1.50E-03	5.00E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Thallium	7440-28-0	D		5					1.80E-05	1.00E-02	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Thallium	7440-28-0	T		5					1.80E-05	1.00E-02	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Vanadium	7440-62-2	D		5					8.20E-04	1.00E-02	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Vanadium	7440-62-2	T		5					8.20E-04	1.00E-02	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Zinc	7440-66-6	D	D	5	1	2.36E-02	2.36E-02	2.36E-02	1.20E-02	2.00E-02	5.00E+00	5E-03	2.40E+00	1E-02
INORG	Zinc	7440-66-6	T	D	5	1	1.65E-02	1.65E-02	1.65E-02	1.20E-02	2.00E-02	5.00E+00	3E-03	2.40E+00	7E-03
VOC	Acetone	67-64-1	T	D	2					5.10E-04	7.30E-03	2.10E+00	0E+00	7.30E-01	0E+00
VOC	Benzene	71-43-2	T	A	2					1.60E-04	2.30E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Bromodichloromethane	75-27-4	T	B2	2					1.70E-04	2.40E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromoform	75-25-2	T	B2	2					1.80E-04	2.60E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromomethane	74-83-9	T	D	2					2.00E-04	2.90E-03	2.90E-02	0E+00	1.00E-02	0E+00
VOC	2-Butanone	78-93-3	T	D	2					4.10E-04	5.90E-03	3.80E+01	0E+00	1.30E+01	0E+00
VOC	Carbon Disulfide	75-15-0	T		2					2.00E-04	2.90E-03	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Carbon Tetrachloride	56-23-5	T	B2	2					1.20E-04	1.70E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Chlorobenzene	108-90-7	T	D	2					1.40E-04	2.00E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloroethane	75-00-3	T		2					2.60E-04	3.70E-03	1.70E+00	0E+00	4.30E-01	0E+00
VOC	Chloroform	67-66-3	T	B2	2	1	1.70E-04	1.70E-04	1.70E-04	2.00E-03	2.00E-03	1.00E-01	2E-03	1.00E-01	2E-03
VOC	Chloromethane	74-87-3	T	D	2	1	2.10E-04	2.10E-04	2.10E-04	1.90E-03	1.90E-03	1.10E+00	2E-04	2.60E-01	8E-04
VOC	Cumene	98-82-8	T	D	2					1.20E-04	1.70E-03	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Cyclohexane	110-82-7	T		2					1.30E-04	1.90E-03		0E+00		0E+00
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	2					6.20E-04	8.90E-03	2.00E-04	0E+00	2.00E-04	0E+00
VOC	Dibromochloromethane	124-48-1	T	C	2					2.60E-04	3.70E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dibromoethane	106-93-4	T	B2	2					2.20E-04	3.10E-03	1.00E-03	0E+00	1.00E-03	0E+00
VOC	1,2-Dichlorobenzene	95-50-1	T	D	2					1.10E-04	1.60E-03	6.00E-01	0E+00	6.00E-01	0E+00

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	1,3-Dichlorobenzene	541-73-1	T	D	2					1.50E-04	2.10E-03	1.90E-02	0E+00	6.60E-03	0E+00
VOC	1,4-Dichlorobenzene	106-46-7	T	C	2					1.70E-04	2.40E-03	7.50E-02	0E+00	7.50E-02	0E+00
VOC	Dichlorodifluoromethane	75-71-8	T		2					2.60E-04	3.70E-03	4.80E+00	0E+00	1.70E+00	0E+00
VOC	1,1-Dichloroethane	75-34-3	T	C	2					1.60E-04	2.30E-03	2.50E+00	0E+00	8.80E-01	0E+00
VOC	1,2-Dichloroethane	107-06-2	T	B2	2					2.10E-04	3.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,1-Dichloroethene	75-35-4	T	C	2					2.40E-04	3.40E-03	7.00E-03	0E+00	7.00E-03	0E+00
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	2					2.20E-04	3.10E-03	7.00E-02	0E+00	7.00E-02	0E+00
VOC	trans-1,2-Dichloroethene	156-60-5	T		2					1.50E-04	2.10E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dichloropropane	78-87-5	T	B2	2					1.70E-04	2.40E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	2					2.70E-04	3.90E-03	6.30E-02	0E+00	2.10E-02	0E+00
VOC	Ethyl Benzene	100-41-4	T	D	2					1.20E-04	1.70E-03	7.00E-01	0E+00	7.00E-01	0E+00
VOC	2-Hexanone	591-78-6	T		2					4.60E-04	6.60E-03	2.90E+00	0E+00	1.00E+00	0E+00
VOC	Methyl Acetate	79-20-9	T		2					4.10E-04	5.90E-03		0E+00		0E+00
VOC	Methyl tert-butyl ether	1634-04-4	T		2					1.30E-04	1.90E-03	6.90E-01	0E+00	2.40E-01	0E+00
VOC	4-Methyl-2-pentanone	108-10-1	T		2					2.30E-04	3.30E-03	5.20E+00	0E+00	1.80E+00	0E+00
VOC	Methylcyclohexane	108-87-2	T		2					1.50E-04	2.10E-03		0E+00		0E+00
VOC	Methylene Chloride	75-09-2	T	B2	2					3.40E-04	4.90E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Styrene	100-42-5	T		2					1.50E-04	2.10E-03	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	2					2.50E-04	3.60E-03	3.50E-02	0E+00	8.50E-03	0E+00
VOC	Tetrachloroethene	127-18-4	T	C-B2	2					2.30E-04	3.30E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Toluene	108-88-3	T	D	2					1.80E-04	2.60E-03	1.00E+00	0E+00	1.00E+00	0E+00
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	2					1.70E-04	2.40E-03	7.00E-02	0E+00	7.00E-02	0E+00
VOC	1,1,1-Trichloroethane	71-55-6	T	D	2					1.50E-04	2.10E-03	2.00E-01	0E+00	2.00E-01	0E+00
VOC	1,1,2-Trichloroethane	79-00-5	T	C	2					3.00E-04	4.30E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichloroethene	79-01-6	T	C-B2	2					1.40E-04	2.00E-03	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichlorofluoromethane	75-69-4	T		2					2.80E-04	4.00E-03	7.30E+00	0E+00	2.60E+00	0E+00
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		2					3.20E-04	4.60E-03	1.70E+02	0E+00	1.70E+02	0E+00
VOC	Vinyl Chloride	75-01-4	T	A	2					1.50E-04	2.10E-03	2.00E-03	0E+00	2.00E-03	0E+00
VOC	Xylenes (total)	1330-20-7	T	D	2					3.30E-04	4.70E-03	1.00E+01	0E+00	1.00E+01	0E+00
SVOC	Acenaphthene	83-32-9	T		2					8.00E-04	8.00E-04	3.80E+00	0E+00	1.30E+00	0E+00
SVOC	Acenaphthylene	208-96-8	T	D	2					7.10E-04	7.10E-04	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Acetophenone	98-86-2	T	D	2					2.60E-03	2.60E-03	4.40E+00	0E+00	1.50E+00	0E+00
SVOC	Anthracene	120-12-7	T	D	2					6.80E-04	6.80E-04	4.30E-02	0E+00	4.30E-02	0E+00

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	Atrazine	1912-24-9	T		2					2.50E-03	2.50E-03	3.00E-03	0E+00	3.00E-03	0E+00
SVOC	Benzaldehyde	100-52-7	T		2					2.80E-03	2.80E-03		0E+00		0E+00
SVOC	Benzo(a)anthracene	56-55-3	T	B2	2					7.00E-04	7.00E-04	8.50E-03	0E+00	2.10E-03	0E+00
SVOC	Benzo(a)pyrene	50-32-8	T	B2	2					7.30E-04	7.30E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	2					9.40E-04	9.40E-04	2.00E-03	0E+00	2.00E-03	0E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	2					8.50E-04	8.50E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	2					8.40E-04	8.40E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Biphenyl	92-52-4	T		2					2.60E-03	2.60E-03		0E+00		0E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	2					8.70E-04	8.70E-04		0E+00		0E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	2					9.70E-04	9.70E-04	8.30E-03	0E+00	2.00E-03	0E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	2	1	8.80E-03	8.80E-03	8.80E-03	2.70E-03	2.70E-03	6.00E-03	**1E+00**	6.00E-03	**1E+00**
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	2					8.80E-04	8.80E-04		0E+00		0E+00
SVOC	Butylbenzylphthalate	85-68-7	T	C	2					8.80E-04	8.80E-04	2.70E+00	0E+00	1.20E+00	0E+00
SVOC	Caprolactam	105-60-2	T		2	1	3.90E-02	3.90E-02	3.90E-02	2.50E-03	2.50E-03	1.70E+01	2E-03	5.80E+00	7E-03
SVOC	Carbazole	86-74-8	T	B2	2					8.20E-04	8.20E-04	3.50E-01	0E+00	8.50E-02	0E+00
SVOC	4-Chloro-3-methylphenol	59-50-7	T		2					9.90E-04	9.90E-04	4.20E-01	0E+00	1.50E-01	0E+00
SVOC	4-Chloroaniline	106-47-8	T		2					6.10E-04	6.10E-04		0E+00		0E+00
SVOC	2-Chloronaphthalene	91-58-7	T		2					8.50E-04	8.50E-04	5.20E+00	0E+00	1.80E+00	0E+00
SVOC	2-Chlorophenol	95-57-8	T		2					1.00E-03	1.00E-03	1.30E-01	0E+00	4.50E-02	0E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		2					7.90E-04	7.90E-04		0E+00		0E+00
SVOC	Chrysene	218-01-9	T	B2	2					7.50E-04	7.50E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Di-n-butylphthalate	84-74-2	T	D	2					6.70E-04	6.70E-04	2.50E+00	0E+00	8.80E-01	0E+00
SVOC	Di-n-octylphthalate	117-84-0	T		2					1.10E-03	1.10E-03	3.80E-01	0E+00	1.30E-01	0E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	2					7.90E-04	7.90E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Dibenzofuran	132-64-9	T	D	2					1.10E-03	1.10E-03		0E+00		0E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	2					9.30E-04	9.30E-04	4.30E-03	0E+00	1.10E-03	0E+00
SVOC	2,4-Dichlorophenol	120-83-2	T		2					8.50E-04	8.50E-04	2.10E-01	0E+00	7.30E-02	0E+00
SVOC	Diethylphthalate	84-66-2	T	D	2					6.50E-04	6.50E-04	1.60E+01	0E+00	5.50E+00	0E+00
SVOC	2,4-Dimethylphenol	105-67-9	T		2					8.50E-04	8.50E-04	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Dimethylphthalate	131-11-3	T	D	2					7.60E-04	7.60E-04	2.10E+02	0E+00	7.30E+01	0E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		2					1.30E-03	1.30E-03	2.00E-02	0E+00	2.00E-02	0E+00
SVOC	2,4-Dinitrophenol	51-28-5	T		2					3.00E-03	3.00E-03		0E+00		0E+00
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	2					7.90E-04	7.90E-04	3.20E-02	0E+00	7.70E-03	0E+00

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SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	2					5.70E-04	5.70E-04		0E+00		0E+00
SVOC	Fluoranthene	206-44-0	T	D	2					8.10E-04	8.10E-04	2.10E-01	0E+00	2.10E-01	0E+00
SVOC	Fluorene	86-73-7	T	D	2					1.00E-03	1.00E-03	2.00E+00	0E+00	8.80E-01	0E+00
SVOC	Hexachlorobenzene	118-74-1	T	B2	2					7.40E-04	7.40E-04	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Hexachlorobutadiene	87-68-3	T	C	2					7.30E-04	7.30E-04	4.20E-02	0E+00	1.50E-02	0E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	2					1.10E-03	1.10E-03	5.00E-02	0E+00	5.00E-02	0E+00
SVOC	Hexachloroethane	67-72-1	T	C	2					7.40E-04	7.40E-04	2.10E-02	0E+00	7.30E-03	0E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	2					6.30E-04	6.30E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Isophorone	78-59-1	T	C	2					6.30E-04	6.30E-04	3.10E+00	0E+00	7.70E-01	0E+00
SVOC	2-Methylnaphthalene	91-57-6	T		2					6.40E-04	6.40E-04	7.50E-01	0E+00	2.60E-01	0E+00
SVOC	Methylphenol (summed)	1319-77-3	T		2	1	2.65E-03	2.65E-03	2.65E-03	1.30E-03	1.30E-03	1.00E+00	3E-03	3.70E-01	7E-03
SVOC	Naphthalene	91-20-3	T	C	2					7.50E-04	7.50E-04	1.50E+00	0E+00	5.20E-01	0E+00
SVOC	2-Nitroaniline	88-74-4	T		2					7.00E-04	7.00E-04		0E+00		0E+00
SVOC	3-Nitroaniline	99-09-2	T	C	2					7.10E-04	7.10E-04		0E+00		0E+00
SVOC	4-Nitroaniline	100-01-6	T	C	2					1.30E-03	1.30E-03		0E+00		0E+00
SVOC	Nitrobenzene	98-95-3	T	D	2					8.10E-04	8.10E-04	9.60E-03	0E+00	3.40E-03	0E+00
SVOC	2-Nitrophenol	88-75-5	T		2					2.10E-03	2.10E-03	5.80E-02	0E+00	2.00E-02	0E+00
SVOC	4-Nitrophenol	100-02-7	T		2					1.90E-03	1.90E-03		0E+00		0E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	2					1.40E-03	1.40E-03	1.10E+00	0E+00	2.70E-01	0E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	2					6.70E-04	6.70E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	2					7.80E-04	7.80E-04		0E+00		0E+00
SVOC	Pentachlorophenol	87-86-5	T	B2	2					2.40E-03	2.40E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Phenanthrene	85-01-8	T	D	2					8.20E-04	8.20E-04	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Phenol	108-95-2	T	D	2	1	7.00E-03	7.00E-03	7.00E-03	2.60E-03	2.60E-03	1.30E+01	5E-04	4.40E+00	2E-03
SVOC	Pyrene	129-00-0	T	D	2					1.10E-03	1.10E-03	1.40E-01	0E+00	1.40E-01	0E+00
SVOC	2,4,5-Trichlorophenol	95-95-4	T		2					1.20E-03	1.20E-03	2.10E+00	0E+00	7.30E-01	0E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	2					1.70E-03	1.70E-03	4.70E-01	0E+00	1.20E-01	0E+00
P/PCB	PCBs (summed)	1336-36-3	D	B2	1					8.20E-05	8.20E-05	5.00E-04	0E+00	5.00E-04	0E+00
P/PCB	PCBs (summed)	1336-36-3	T	B2	2					8.20E-05	8.20E-05	5.00E-04	0E+00	5.00E-04	0E+00
INORG	Antimony	7440-36-0	D		2					2.20E-03	2.20E-03	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Antimony	7440-36-0	T		2					2.20E-03	2.20E-03	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Arsenic	7440-38-2	D	A	2	1	6.20E-03	6.20E-03	6.20E-03	3.90E-03	3.90E-03	5.00E-02	1E-01	5.00E-02	1E-01
INORG	Arsenic	7440-38-2	T	A	2	2	4.40E-03	4.80E-03	5.20E-03			5.00E-02	1E-01	5.00E-02	1E-01

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
INORG	Barium	7440-39-3	D	D	2	2	4.00E-02	2.22E-01	4.44E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Barium	7440-39-3	T	D	2	2	6.77E-02	2.50E-01	4.32E-01			2.00E+00	2E-01	2.00E+00	2E-01
INORG	Beryllium	7440-41-7	D	B1	2					5.40E-04	5.40E-04	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Beryllium	7440-41-7	T	B1	2					5.40E-04	5.40E-04	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Cadmium	7440-43-9	D	B1	2	1	2.80E-04	2.80E-04	2.80E-04	2.80E-04	2.80E-04	5.00E-03	6E-02	5.00E-03	6E-02
INORG	Cadmium	7440-43-9	T	B1	2	2	2.80E-04	4.25E-04	5.70E-04			5.00E-03	1E-01	5.00E-03	1E-01
INORG	Chromium (total)	7440-47-3	D		2					1.40E-03	1.40E-03	1.00E-01	0E+00	1.00E-01	0E+00
INORG	Chromium (total)	7440-47-3	T		2	1	6.80E-03	6.80E-03	6.80E-03	1.40E-03	1.40E-03	1.00E-01	7E-02	1.00E-01	7E-02
INORG	Cobalt	7440-48-4	D		2					1.30E-03	1.30E-03	1.00E-01	0E+00	4.00E-02	0E+00
INORG	Cobalt	7440-48-4	T		2	1	1.40E-03	1.40E-03	1.40E-03	1.30E-03	1.30E-03	1.00E-01	1E-02	4.00E-02	4E-02
INORG	Copper	7440-50-8	D	D	2					4.20E-03	4.20E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Copper	7440-50-8	T	D	2					4.20E-03	4.20E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Lead	7439-92-1	D	B2	2					2.50E-03	2.50E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Lead	7439-92-1	T	B2	2	1	1.35E-02	1.35E-02	1.35E-02	2.50E-03	2.50E-03	4.00E-03	**3E+00**	4.00E-03	**3E+00**
INORG	Manganese	7439-96-5	D	D	2	2	2.80E-03	8.09E-02	1.59E-01			2.50E+00	6E-02	8.60E-01	2E-01
INORG	Manganese	7439-96-5	T	D	2	2	6.31E-02	1.20E-01	1.77E-01			2.50E+00	7E-02	8.60E-01	2E-01
INORG	Mercury	7439-97-6	D	D	2					6.90E-05	6.90E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Mercury	7439-97-6	T	D	2					6.90E-05	6.90E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Nickel	7440-02-0	D	A	2					2.20E-03	2.20E-03	1.00E-01	0E+00	1.00E-01	0E+00
INORG	Nickel	7440-02-0	T	A	2	1	5.70E-03	5.70E-03	5.70E-03	2.20E-03	2.20E-03	1.00E-01	6E-02	1.00E-01	6E-02
INORG	Selenium	7782-49-2	D	D	2					4.50E-03	4.50E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Selenium	7782-49-2	T	D	2					4.50E-03	4.50E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Silver	7440-22-4	D	D	2					1.50E-03	1.50E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Silver	7440-22-4	T	D	2					1.50E-03	1.50E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Thallium	7440-28-0	D		2					1.80E-05	5.00E-03	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Thallium	7440-28-0	T		2	1	4.40E-05	4.40E-05	4.40E-05	5.00E-03	5.00E-03	2.00E-03	2E-02	2.00E-03	2E-02
INORG	Vanadium	7440-62-2	D		2	1	2.50E-03	2.50E-03	2.50E-03	8.20E-04	8.20E-04	6.20E-02	4E-02	4.50E-03	6E-01
INORG	Vanadium	7440-62-2	T		2	1	4.90E-03	4.90E-03	4.90E-03	8.20E-04	8.20E-04	6.20E-02	8E-02	4.50E-03	**1E+00**
INORG	Zinc	7440-66-6	D	D	2					1.20E-02	1.20E-02	5.00E+00	0E+00	2.40E+00	0E+00
INORG	Zinc	7440-66-6	T	D	2	1	5.92E-01	5.92E-01	5.92E-01	1.20E-02	1.20E-02	5.00E+00	1E-01	2.40E+00	2E-01

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization

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TABLE 4-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-1 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria

3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-21

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-3 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	10	4	2.80E-03	9.73E-03	2.30E-02	2.20E-03	3.70E-01		1.10E+05	2E-07	1.60E+05	1E-07	1.70E+08	1E-10	1.10E+05	2E-07	1.10E+05	2E-07	1.30E+05	2E-07	3.90E+08	6E-11	2.30E+04	1E-06
VOC	Benzene	71-43-2	A	10	2	2.85E-01	6.18E-01	9.50E-01	6.30E-04	5.70E-02		8.40E+00	1E-01	4.50E+01	2E-02	4.70E+05	2E-06	4.00E+02	2E-03	1.60E+00	6E-01	1.30E+01	7E-02	3.80E+05	3E-06	1.80E+02	5E-03
VOC	Bromodichloromethane	75-27-4	B2	10					1.20E-03	5.00E-02		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	10					1.60E-03	7.90E-02		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	10					1.80E-03	1.30E-01		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	10	1	5.80E-03	5.80E-03	5.80E-03	2.60E-03	4.00E-01		2.70E+04	2E-07	3.50E+04	2E-07	2.90E+07	2E-10	2.70E+04	2E-07	2.70E+04	2E-07	2.90E+04	2E-07	6.70E+07	9E-11	2.70E+04	2E-07
VOC	Carbon Disulfide	75-15-0		10					7.60E-04	1.70E-01		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	10					9.80E-04	5.00E-02		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	10					5.10E-04	4.00E-02		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		10					2.10E-03	1.80E-01		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	10					8.00E-04	5.00E-02		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	10					1.30E-03	7.40E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	10	3	1.10E-03	3.16E-01	9.10E-01	6.80E-04	3.90E-02		3.90E+02	2E-03	2.00E+03	5E-04	2.60E+06	4E-07	3.90E+02	2E-03	3.90E+02	2E-03	1.70E+03	5E-04	5.80E+06	2E-07	3.90E+02	2E-03
VOC	Cyclohexane	110-82-7		10	1	1.20E-01	1.20E-01	1.20E-01	9.80E-04	4.20E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	10					1.60E-03	4.00E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	10					1.10E-03	6.40E-02		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	10					1.20E-03	9.40E-02		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	10					6.90E-04	7.90E-02		2.10E+02		4.60E+04		4.40E+03		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	10					7.80E-04	4.70E-02								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	10					6.50E-04	7.90E-02		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		10					1.10E-03	1.90E-01		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	10					5.70E-04	6.90E-02		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	10					7.10E-04	5.40E-02		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	10					1.20E-03	8.40E-02		3.30E-01		9.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	10					8.20E-04	7.90E-02		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		10					7.10E-04	8.90E-02		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	10					7.30E-04	4.70E-02		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	10					8.40E-04	5.90E-02		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	10	4	1.10E-01	7.53E-01	1.70E+00	5.80E-04	6.90E-04		1.40E+02	1E-02	1.10E+04	2E-04	2.90E+07	6E-08	1.40E+02	1E-02	1.40E+02	1E-02	9.50E+03	2E-04	6.70E+07	3E-08	1.40E+02	1E-02
VOC	2-Hexanone	591-78-6		10					1.70E-03	1.50E-01		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		10					1.10E-03	2.20E-01																	
VOC	Methyl tert-butyl ether	1634-04-4		10	1	7.80E-02	7.80E-02	7.80E-02	8.20E-04	5.40E-02		5.90E+03	1E-05	3.00E+04	3E-06	8.80E+07	9E-10	5.90E+03	1E-05	5.90E+03	1E-05	2.50E+04	3E-06	2.00E+08	4E-10	1.80E+03	4E-05
VOC	4-Methyl-2-pentanone	108-10-1		10					1.90E-03	1.40E-01		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		10	5	1.10E-02	3.45E-01	9.20E-01	5.80E-04	6.90E-04																	
VOC	Methylene Chloride	75-09-2	B2	10					1.30E-03	2.00E-01		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		10					4.90E-04	8.40E-02		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	10					1.80E-03	5.40E-02		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	10					1.20E-03	7.40E-02		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	10	3	7.40E-01	2.61E+00	5.30E+00	5.20E-04	3.30E-02		2.50E+02	2E-02	3.30E+03	2E-03	1.20E+07	4E-07	2.50E+02	2E-02	2.50E+02	2E-02	2.80E+03	2E-03	2.70E+07	2E-07	2.50E+02	2E-02
VOC	1,2,4-Trichlorobenzene	120-82-1	D	10					8.70E-04	5.40E-02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	10					9.00E-04	4.90E-02		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	10					1.20E-03	7.90E-02		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	10					7.40E-04	8.40E-02		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		10					1.10E-03	9.40E-02		5.60E+02		1.10E+03		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		10	1	3.00E-03	3.00E-03	3.00E-03	9.10E-04	1.80E-01		5.50E+02	5E-06	2.10E+05	1E-08	2.30E+09	1E-12	5.50E+02	5E-06	5.50E+02	5E-06	1.80E+05	2E-08	5.10E+09	6E-13	5.50E+02	5E-06
VOC	Vinyl Chloride	75-01-4	A	10					1.40E-03	5.40E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	10	6	2.00E-03	6.72E+00	3.40E+01	1.90E-03	2.20E-03		1.50E+02	2E-01	5.40E+04	6E-04	1.30E+08	3E-07	1.50E+02	2E-01	1.50E+02	2E-01	4.60E+04	7E-04	2.90E+08	1E-07	1.50E+02	2E-01
SVOC	Acenaphthene	83-32-9		10	3	6.20E-02	7.61E-01	1.80E+00	5.40E-02	5.90E-02		3.50E+05	5E-06	9.70E+04	2E-05	6.20E+06	3E-07	2.00E+05	9E-06	1.90E+05	9E-06	8.10E+04	2E-05	1.40E+07	1E-07	4.10E+04	4E-05
SVOC	Acenaphthylene	208-96-8	D	10					5.00E-02	1.10E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	10					5.30E-02	1.10E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	10					5.20E-02	1.10E+00		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		10					1.60E-01	3.40E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		10					1.80E-01	3.90E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	10					5.90E-02	1.30E+00								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	10					6.40E-02	1.40E+00						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	10					6.20E-02	1.30E+00								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	10	1	4.68E-02	4.68E-02	4.68E-02	5.90E-02	1.30E+00						3.50E+05	1E-07	9.10E+03	5E-06					8.00E+05	6E-08	2.50E+03	2E-05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	10					5.70E-02	1.20E+00								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		10	1	3.80E+00	3.80E+00	3.80E+00	1.50E-01	5.90E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	10					5.00E-02	1.10E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	10					5.40E-02	1.20E+00		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	10	1	3.40E-01	3.40E-01	3.40E-01	5.80E-02	1.20E+00						8.90E+05	4E-07	1.00E+04	3E-05					7.00E+05	5E-07	2.80E+03	1E-04
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	10					6.50E-02	1.40E+00																	
SVOC	Butylbenzylphthalate	85-68-7	C	10					5.40E-02	1.20E+00						2.10E+07		3.10E+02						4.70E+07		3.10E+02	
SVOC	Caprolactam	105-60-2		10					1.90E-01	4.10E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	

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TABLE 4-21

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-3 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Carbazole	86-74-8	B2	10					5.50E-02	1.20E+00								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		10					5.40E-02	1.20E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		10					5.40E-02	1.20E+00																	
SVOC	2-Chloronaphthalene	91-58-7		10					5.10E-02	1.10E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		10					5.50E-02	1.20E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		10					5.50E-02	1.20E+00																	
SVOC	Chrysene	218-01-9	B2	10	2	6.90E-02	7.15E-02	7.40E-02	4.90E-02	1.10E+00								1.00E+04	7E-06							2.00E+03	4E-05
SVOC	Di-n-butylphthalate	84-74-2	D	10					1.60E-01	3.40E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		10					5.80E-02	1.20E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	10					5.40E-02	1.20E+00								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	10					5.30E-02	1.10E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	10					4.20E-02	8.90E-01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		10					5.30E-02	1.10E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	10					1.60E-01	3.40E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		10					8.50E-02	1.80E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	10					1.70E-01	3.70E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		10					1.70E-01	3.70E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		10					1.20E-01	2.50E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	10					4.90E-02	1.10E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	10					5.10E-02	1.10E+00																	
SVOC	Fluoranthene	206-44-0	D	10	2	6.95E-02	8.48E-02	1.00E-01	6.00E-02	1.30E+00		1.00E+06	1E-07	8.30E+05	1E-07	4.10E+06	2E-08	1.80E+05	6E-07	1.00E+06	1E-07	7.40E+05	1E-07	9.30E+06	1E-08	4.60E+04	2E-06
SVOC	Fluorene	86-73-7	D	10	3	1.10E-01	1.12E+00	2.90E+00	5.10E-02	5.60E-02		1.00E+06	3E-06	1.50E+05	2E-05	4.10E+06	7E-07	1.30E+05	2E-05	5.80E+05	5E-06	1.30E+05	2E-05	9.30E+06	3E-07	2.70E+04	1E-04
SVOC	Hexachlorobenzene	118-74-1	B2	10					6.00E-02	1.30E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	10					4.80E-02	1.00E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	10					6.40E-02	1.40E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	10					5.10E-02	1.10E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	10					7.50E-02	1.60E+00								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	10					4.70E-02	1.00E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		10	6	8.90E-02	5.51E+00	2.30E+01	5.20E-02	5.60E-02								4.00E+04	6E-04							8.10E+03	3E-03
SVOC	Methylphenol (summed)	1319-77-3		10	1	5.05E-01	5.05E-01	5.05E-01	5.00E-02	1.10E+00						2.90E+06	2E-07	5.60E+04	9E-06					6.70E+06	8E-08	1.10E+04	5E-05
SVOC	Naphthalene	91-20-3	C	10	6	6.80E-02	1.38E+00	5.30E+00	5.30E-02	5.70E-02		4.70E+02	1E-02	3.50E+02	2E-02	8.80E+04	6E-05	8.00E+04	7E-05	2.50E+02	2E-02	3.00E+02	2E-02	2.00E+05	3E-05	1.60E+04	3E-04
SVOC	2-Nitroaniline	88-74-4		10					4.90E-02	1.10E+00																	
SVOC	3-Nitroaniline	99-09-2	C	10					1.50E-01	3.20E+00																	
SVOC	4-Nitroaniline	100-01-6	C	10					7.30E-02	1.60E+00																	
SVOC	Nitrobenzene	98-95-3	D	10					4.90E-02	1.10E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		10					4.90E-02	1.10E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		10					2.00E-01	4.30E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	10					5.20E-02	1.10E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	10					4.70E-02	1.00E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	10					5.50E-02	1.20E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	10					1.30E-01	2.70E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	10	5	6.60E-02	1.22E+00	4.90E+00	5.50E-02	6.00E-02		5.10E+03	1E-03	1.90E+02	3E-02	2.90E+03	2E-03	8.00E+03	6E-04	2.80E+03	2E-03	1.60E+02	3E-02	6.70E+03	7E-04	1.60E+03	3E-03
SVOC	Phenol	108-95-2	D	10					5.20E-02	1.10E+00						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	10	3	7.80E-02	1.58E-01	3.10E-01	5.40E-02	1.20E+00		1.00E+06	3E-07	7.80E+05	4E-07	2.90E+06	1E-07	1.10E+05	3E-06	1.00E+06	3E-07	6.50E+05	5E-07	6.70E+06	5E-08	2.90E+04	1E-05
SVOC	2,4,5-Trichlorophenol	95-95-4		10					5.90E-02	1.30E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	10					6.70E-02	1.40E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
INORG	Lead	7439-92-1	B2	10	10	2.69E+00	4.82E+01	2.43E+02			4.92E+01					4.40E+04	4E-03	9.00E+02	2E-01					1.00E+05	2E-03	4.00E+02	5E-01

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.

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TABLE 4-22

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	17	6	2.60E-03	3.71E-02	1.70E-01	1.80E-03	9.30E-01		1.10E+05	2E-06	1.60E+05	1E-06	1.70E+08	1E-09	1.10E+05	2E-06	1.10E+05	2E-06	1.30E+05	1E-06	3.90E+08	4E-10	2.30E+04	7E-06
VOC	Benzene	71-43-2	A	17	1	1.10E-03	1.10E-03	1.10E-03	5.50E-04	3.20E-01		8.40E+00	1E-04	4.50E+01	2E-05	4.70E+05	2E-09	4.00E+02	3E-06	1.60E+00	7E-04	1.30E+01	8E-05	3.80E+05	3E-09	1.80E+02	6E-06
VOC	Bromodichloromethane	75-27-4	B2	17					1.00E-03	3.20E-01		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	17					1.30E-03	3.20E-01		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	17					1.50E-03	6.40E-01		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	17	3	3.20E-03	4.33E-03	6.30E-03	2.30E-03	1.30E+00		2.70E+04	2E-07	3.50E+04	2E-07	2.90E+07	2E-10	2.70E+04	2E-07	2.70E+04	2E-07	2.90E+04	2E-07	6.70E+07	9E-11	2.70E+04	2E-07
VOC	Carbon Disulfide	75-15-0		17					6.50E-04	3.20E-01		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	17					8.40E-04	3.20E-01		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	17					4.40E-04	3.20E-01		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		17					1.80E-03	6.40E-01		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	17					6.90E-04	3.20E-01		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	17					1.10E-03	6.40E-01		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	17	2	1.40E-02	2.35E-02	3.30E-02	5.90E-04	5.35E-03		3.90E+02	8E-05	2.00E+03	2E-05	2.60E+06	1E-08	3.90E+02	8E-05	3.90E+02	8E-05	1.70E+03	2E-05	5.80E+06	6E-09	3.90E+02	8E-05
VOC	Cyclohexane	110-82-7		17					8.40E-04	6.40E-01																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	17					1.30E-03	6.40E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	17					9.20E-04	3.20E-01		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	17					1.00E-03	3.20E-01		3.60E+00		1.30E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	17					6.00E-04	3.20E-01		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	17					6.70E-04	3.20E-01								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	17					5.60E-04	3.20E-01		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		17					9.20E-04	6.40E-01		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	17	3	1.90E-02	1.32E-01	2.80E-01	4.90E-04	5.35E-03		4.30E+02	7E-04	2.50E+03	1E-04	1.50E+07	2E-08	8.90E+02	3E-04	2.30E+02	1E-03	2.10E+03	1E-04	3.30E+07	8E-09	8.90E+02	3E-04
VOC	1,2-Dichloroethane	107-06-2	B2	17					6.10E-04	3.20E-01		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	17	1	2.90E-02	2.90E-02	2.90E-02	1.00E-03	3.20E-01		3.30E-01	9E-02	7.70E+00	8E-03	7.80E+04	4E-07	5.70E+02	5E-05	6.20E-02	5E-01	1.10E+00	3E-02	6.20E+04	5E-07	2.00E+02	1E-04
VOC	cis-1,2-Dichloroethene	156-59-2	D	17					7.00E-04	3.20E-01		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		17					6.10E-04	3.20E-01		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	17					6.30E-04	3.20E-01		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	17					7.20E-04	3.20E-01		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	17	1	1.60E-01	1.60E-01	1.60E-01	4.90E-04	3.20E-01		1.40E+02	1E-03	1.10E+04	1E-05	2.90E+07	6E-09	1.40E+02	1E-03	1.40E+02	1E-03	9.50E+03	2E-05	6.70E+07	2E-09	1.40E+02	1E-03
VOC	2-Hexanone	591-78-6		17					1.40E-03	1.30E+00		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		17	2	8.90E-02	1.75E-01	2.60E-01	9.20E-04	1.05E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		17					7.00E-04	1.30E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		17	3	1.80E-03	2.63E-02	4.70E-02	1.60E-03	1.30E+00		2.70E+03	2E-05	5.30E+04	9E-07	6.00E+07	8E-10	2.70E+03	2E-05	2.70E+03	2E-05	4.50E+04	1E-06	1.40E+08	3E-10	2.70E+03	2E-05
VOC	Methylcyclohexane	108-87-2		17					4.90E-04	6.40E-01																	
VOC	Methylene Chloride	75-09-2	B2	17	1	9.50E-02	9.50E-02	9.50E-02	1.10E-03	2.30E-01		2.40E+02	4E-04	7.00E+02	1E-04	8.30E+06	1E-08	2.30E+03	4E-05	4.50E+01	2E-03	2.10E+02	5E-04	6.60E+06	1E-08	1.30E+03	7E-05
VOC	Styrene	100-42-5		17					4.20E-04	3.20E-01		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	17					1.50E-03	3.20E-01		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	17	2	2.10E-03	1.56E-02	2.90E-02	1.00E-03	3.20E-01		6.00E+01	5E-04	6.00E+02	5E-05	6.80E+06	4E-09	8.80E+01	3E-04	1.10E+01	3E-03	1.80E+02	2E-04	5.40E+06	5E-09	8.80E+01	3E-04
VOC	Toluene	108-88-3	D	17	12	9.90E-04	1.23E-01	1.40E+00	4.90E-04	5.35E-03		2.50E+02	6E-03	3.30E+03	4E-04	1.20E+07	1E-07	2.50E+02	6E-03	2.50E+02	6E-03	2.80E+03	5E-04	2.70E+07	5E-08	2.50E+02	6E-03
VOC	1,2,4-Trichlorobenzene	120-82-1	D	17					7.50E-04	3.20E-01		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	17					7.70E-04	3.20E-01		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	17					1.00E-03	3.20E-01		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	17					6.40E-04	3.20E-01		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		17					9.20E-04	6.40E-01		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		17					7.80E-04	3.20E-01		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	17					1.20E-03	6.40E-01		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	17	4	1.80E-03	2.51E-01	9.30E-01	1.60E-03	1.05E-02		1.50E+02	6E-03	5.40E+04	2E-05	1.30E+08	7E-09	1.50E+02	6E-03	1.50E+02	6E-03	4.60E+04	2E-05	2.90E+08	3E-09	1.50E+02	6E-03
SVOC	Acenaphthene	83-32-9		16	4	1.19E-01	6.77E-01	1.20E+00	5.60E-02	4.00E-01		3.50E+05	3E-06	9.70E+04	1E-05	6.20E+06	2E-07	2.00E+05	6E-06	1.90E+05	6E-06	8.10E+04	1E-05	1.40E+07	9E-08	4.10E+04	3E-05
SVOC	Acenaphthylene	208-96-8	D	16					5.10E-02	5.50E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	16					5.50E-02	5.90E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	16	5	1.89E-01	1.17E+00	1.90E+00	5.40E-02	4.00E-01		1.00E+06	2E-06	1.60E+06	1E-06	2.90E+07	7E-08	1.00E+06	2E-06	1.00E+06	2E-06	1.40E+06	1E-06	6.70E+07	3E-08	2.30E+05	8E-06
SVOC	Atrazine	1912-24-9		16					1.60E-01	1.80E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		16					1.90E-01	2.00E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	16	4	2.40E-01	9.29E-01	2.10E+00	6.10E-02	6.40E-01								1.00E+02	2E-02							2.00E+01	1E-01
SVOC	Benzo(a)pyrene	50-32-8	B2	16	3	7.92E-01	1.03E+00	1.40E+00	6.60E-02	4.00E-01						1.90E+03	7E-04	1.00E+01	1E-01					1.50E+03	9E-04	2.00E+00	7E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	16	3	1.30E+00	1.71E+00	2.30E+00	6.40E-02	4.00E-01								1.00E+02	2E-02							2.00E+01	1E-01
SVOC	Benzo(g,h,i)perylene	191-24-2	D	16	3	2.85E-01	5.55E-01	7.30E-01	6.10E-02	4.00E-01						3.50E+05	2E-06	9.10E+03	8E-05					8.00E+05	9E-07	2.50E+03	3E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	16	2	4.10E-01	6.15E-01	8.20E-01	5.90E-02	6.20E-01								1.00E+03	8E-04							2.00E+02	4E-03
SVOC	Biphenyl	92-52-4		16					1.50E-01	1.60E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	16					5.10E-02	5.50E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	16					5.60E-02	6.00E-01		4.40E+01		8.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	16	9	6.20E-02	1.41E+00	1.05E+01	6.00E-02	6.30E-01						8.90E+05	1E-05	1.00E+04	1E-03					7.00E+05	2E-05	2.80E+03	4E-03

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

TABLE 4-22

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	16					6.70E-02	7.10E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	16	1	8.40E-02	8.40E-02	8.40E-02	5.60E-02	6.00E-01						2.10E+07	4E-09	3.10E+02	3E-04					4.70E+07	2E-09	3.10E+02	3E-04
SVOC	Caprolactam	105-60-2		16					2.00E-01	2.10E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	16	1	1.04E-01	1.04E-01	1.04E-01	5.80E-02	6.10E-01								3.70E+03	3E-05							5.30E+02	2E-04
SVOC	4-Chloro-3-methylphenol	59-50-7		16					5.60E-02	6.00E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		16					5.60E-02	1.55E+00																	
SVOC	2-Chloronaphthalene	91-58-7		16					5.25E-02	5.60E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		16					5.70E-02	6.10E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		16					5.70E-02	6.10E-01																	
SVOC	Chrysene	218-01-9	B2	16	5	1.90E-01	1.02E+00	2.20E+00	5.10E-02	4.00E-01								1.00E+04	2E-04							2.00E+03	1E-03
SVOC	Di-n-butylphthalate	84-74-2	D	16					1.60E-01	1.80E+00						4.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		16	1	6.65E-01	6.65E-01	6.65E-01	6.00E-02	6.30E-01								2.80E+04	2E-05							6.90E+03	1E-04
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	16	1	9.90E-02	9.90E-02	9.90E-02	5.60E-02	6.00E-01								1.00E+01	1E-02							2.00E+00	5E-02
SVOC	Dibenzofuran	132-64-9	D	16	2	8.88E-02	4.69E-01	8.50E-01	5.50E-02	4.00E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	16					4.30E-02	2.40E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		16					5.50E-02	5.90E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	16					1.60E-01	1.80E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		16					8.75E-02	9.40E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	16					1.75E-01	1.90E+00						3.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		16					1.75E-01	2.05E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		16					1.20E-01	2.05E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	16					5.00E-02	5.40E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	16					5.25E-02	5.60E-01																	
SVOC	Fluoranthene	206-44-0	D	16	5	2.40E+00	3.13E+00	4.80E+00	6.20E-02	4.00E-01		1.00E+06	5E-06	8.60E+05	5E-06	4.10E+06	1E-06	1.80E+05	3E-05	1.00E+06	5E-06	7.40E+05	6E-06	9.30E+06	5E-07	4.60E+04	1E-04
SVOC	Fluorene	86-73-7	D	16	4	7.30E-02	4.54E+00	7.30E+00	5.30E-02	4.00E-01		1.00E+06	7E-06	1.50E+05	5E-05	4.10E+06	2E-06	1.30E+05	6E-05	5.80E+05	1E-05	1.30E+05	6E-05	9.30E+06	8E-07	2.70E+04	3E-04
SVOC	Hexachlorobenzene	118-74-1	B2	16					6.10E-02	6.60E-01		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	16					4.90E-02	5.30E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	16					6.60E-02	7.00E-01								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	16					5.25E-02	5.60E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	16	2	2.99E-01	4.85E-01	6.70E-01	7.80E-02	8.20E-01								1.00E+02	7E-03							2.00E+01	3E-02
SVOC	Isophorone	78-59-1	C	16					4.80E-02	5.20E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		16	4	4.35E-02	1.26E+00	1.90E+00	5.30E-02	4.00E-01								4.00E+04	5E-05							8.10E+03	2E-04
SVOC	Methylphenol (summed)	1319-77-3		16					5.10E-02	5.50E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	16	4	4.55E-02	8.34E-01	1.60E+00	5.40E-02	4.00E-01		4.70E+02	3E-03	3.50E+02	5E-03	8.80E+04	2E-05	8.00E+04	2E-05	2.50E+02	6E-03	3.00E+02	5E-03	2.00E+05	8E-06	1.60E+04	1E-04
SVOC	2-Nitroaniline	88-74-4		16					5.00E-02	2.05E+00																	
SVOC	3-Nitroaniline	99-09-2	C	16					1.50E-01	2.05E+00																	
SVOC	4-Nitroaniline	100-01-6	C	16					7.40E-02	2.05E+00																	
SVOC	Nitrobenzene	98-95-3	D	16					5.00E-02	5.40E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		16					5.00E-02	5.40E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		16					2.10E-01	2.20E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	16					5.40E-02	5.70E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	16					4.80E-02	5.20E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	16					5.70E-02	6.10E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	16					1.30E-01	4.10E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	16	5	1.04E+00	1.06E+01	2.00E+01	5.80E-02	4.00E-01		5.10E+03	4E-03	1.90E+02	1E-01	2.90E+03	7E-03	8.00E+03	3E-03	2.80E+03	7E-03	1.60E+02	1E-01	6.70E+03	3E-03	1.60E+03	1E-02
SVOC	Phenol	108-95-2	D	16					5.40E-02	5.70E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	16	5	1.82E+00	3.70E+00	5.70E+00	5.60E-02	4.00E-01		1.00E+06	6E-06	7.80E+05	7E-06	2.90E+06	2E-06	1.10E+05	5E-05	1.00E+06	6E-06	6.50E+05	9E-06	6.70E+06	9E-07	2.90E+04	2E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		16					6.00E-02	6.40E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	16					6.90E-02	7.40E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (total)	1336-36-3	B2	17	6	4.24E-02	6.01E+00	2.48E+01	2.20E-02	4.00E-02		1.60E+04	2E-03	8.10E+02	3E-02	6.50E+03	4E-03	2.00E+01	**1E+00**	3.00E+03	8E-03	2.40E+02	1E-01	5.20E+03	5E-03	4.00E+00	**6E+00**
INORG	Antimony	7440-36-0		17	2	7.54E-01	7.72E-01	7.89E-01	2.75E-01	2.42E+00						5.90E+03	1E-04	1.20E+03	7E-04					1.30E+04	6E-05	1.80E+02	4E-03
INORG	Arsenic	7440-38-2	A	17	17	2.78E+00	4.72E+00	9.43E+00			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	17	17	1.33E+01	5.29E+01	1.68E+02			1.10E+02					1.50E+05	4E-04	2.50E+05	2E-04					3.30E+05	2E-04	3.70E+04	2E-03
INORG	Beryllium	7440-41-7	B1	17	14	1.01E-01	1.99E-01	4.63E-01	2.58E-02	5.37E-02	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	17	15	5.09E-02	2.97E-01	6.35E-01	2.41E-02	5.71E-01	1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		17	17	7.11E+00	1.14E+01	1.52E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		17	17	2.67E+00	5.65E+00	8.55E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	17	17	6.55E+00	1.36E+01	2.15E+01			3.20E+01					5.90E+04		1.40E+05						1.30E+05		2.00E+04	
INORG	Lead	7439-92-1	B2	17	17	4.38E+00	1.77E+01	7.69E+01			4.92E+01					4.40E+04	6E-04	9.00E+02	3E-02					1.00E+05	3E-04	4.00E+02	7E-02
INORG	Manganese	7439-96-5	D	17	17	1.88E+02	3.46E+02	8.80E+02			5.10E+02					1.50E+03	2E-01	1.70E+05	2E-03					3.30E+03	1E-01	2.50E+04	1E-02
INORG	Mercury	7439-97-6	D	17	13	1.22E-02	5.24E-02	2.07E-01	9.30E-03	3.87E-02	1.30E-01							1.10E+03	7E-05							1.60E+02	5E-04
INORG	Nickel	7440-02-0	A	17	17	7.72E+00	1.37E+01	2.40E+01			3.01E+01					1.60E+04		2.70E+05						1.30E+04		4.00E+04	

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TABLE 4-22

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Selenium	7782-49-2	D	17	4	4.25E-01	5.81E-01	7.25E-01	1.74E-01	6.04E-01	4.10E-01					5.90E+04	5E-06	1.80E+04	2E-05					1.30E+05	2E-06	2.60E+03	1E-04
INORG	Silver	7440-22-4	D	17					8.42E-02	6.04E-01						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		17	2	4.67E-01	5.33E-01	5.99E-01	5.47E-01	1.21E+00								2.40E+02	2E-03							3.50E+01	2E-02
INORG	Vanadium	7440-62-2		17	17	8.29E+00	1.56E+01	2.41E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	17	17	1.77E+01	5.03E+01	1.37E+02			4.70E+01							1.00E+06	9E-05							1.70E+05	5E-04

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-23

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	8					5.10E-04	2.00E-02	1.00E+06		3.10E+04		1.00E+06	
VOC	Benzene	71-43-2	T	A	8	2	3.50E-04	4.20E-04	4.90E-04	1.60E-04	2.00E-03	3.60E+01	1E-05	1.10E+01	4E-05	5.60E+00	9E-05
VOC	Bromodichloromethane	75-27-4	T	B2	8	1	4.60E-04	4.60E-04	4.60E-04	1.70E-04	2.00E-03	3.60E+01	1E-05	1.40E+01	3E-05	4.80E+00	1E-04
VOC	Bromoform	75-25-2	T	B2	8					2.30E-04	2.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	8					2.90E-04	2.00E-03	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	8	2	1.78E-03	3.34E-03	4.90E-03	4.10E-04	2.00E-02	2.40E+05	2E-08	2.40E+05	2E-08	2.40E+05	2E-08
VOC	Carbon Disulfide	75-15-0	T		8					2.00E-04	2.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	8					1.20E-04	2.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	8					1.40E-04	2.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		8	2	3.60E-02	4.30E-02	5.00E-02	2.60E-04	1.43E-03	5.70E+03	9E-06	4.40E+02	1E-04	5.70E+03	9E-06
VOC	Chloroform	67-66-3	T	B2	8	4	5.50E-04	1.61E-03	2.10E-03	1.40E-04	7.70E-04	1.80E+02	1E-05	1.50E+02	1E-05	2.80E+01	8E-05
VOC	Chloromethane	74-87-3	T	D	8	2	3.00E-04	3.88E-04	4.75E-04	1.30E-04	2.00E-03	5.20E+01	9E-06	4.90E+02	1E-06	8.60E+00	6E-05
VOC	Cumene	98-82-8	T	D	8					1.20E-04	2.00E-03	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		8					1.30E-04	2.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	8					6.20E-04	4.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	8					2.60E-04	2.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	8					2.20E-04	2.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	8					1.10E-04	2.00E-03	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	8					1.50E-04	2.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	8					1.70E-04	2.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		8					2.60E-04	4.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	8	2	2.00E-02	2.50E-02	3.00E-02	1.60E-04	1.00E-03	2.30E+03	1E-05	2.40E+03	1E-05	1.00E+03	3E-05
VOC	1,2-Dichloroethane	107-06-2	T	B2	8					2.10E-04	2.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	8	1	7.80E-04	7.80E-04	7.80E-04	2.40E-04	1.32E-03	1.30E+00	6E-04	1.10E+01	7E-05	2.00E-01	4E-03
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	8	3	3.20E-04	6.03E-04	1.10E-03	2.20E-04	1.21E-03	2.20E+02	5E-06	2.00E+02	6E-06	9.60E+01	1E-05
VOC	trans-1,2-Dichloroethene	156-60-5	T		8					1.50E-04	1.00E-03	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	8					1.70E-04	2.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	8					2.70E-04	2.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	8					1.20E-04	2.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		8					4.60E-04	2.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		8					4.10E-04	2.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		8					1.30E-04	1.00E-02	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		8	3	5.00E-04	1.05E-03	1.60E-03	2.30E-04	2.00E-02	2.00E+04	8E-08	1.30E+04	1E-07	2.00E+04	8E-08
VOC	Methylcyclohexane	108-87-2	T		8					1.50E-04	2.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	8	1	7.70E-04	7.70E-04	7.70E-04	3.40E-04	1.87E-03	1.40E+03	6E-07	2.20E+02	4E-06	2.20E+02	4E-06

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Styrene	100-42-5	T		8					1.50E-04	2.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	8					2.50E-04	2.00E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	8					2.30E-04	2.00E-03	1.70E+02		1.20E+01		2.50E+01	
VOC	Toluene	108-88-3	T	D	8	3	2.60E-04	4.82E-04	6.90E-04	1.30E-04	1.00E-03	5.30E+02	1E-06	5.30E+02	1E-06	5.30E+02	1E-06
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	8					1.70E-04	2.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	8	1	5.65E-04	5.65E-04	5.65E-04	1.50E-04	2.00E-03	1.30E+03	4E-07	1.30E+03	4E-07	6.60E+02	9E-07
VOC	1,1,2-Trichloroethane	79-00-5	T	C	8					3.00E-04	2.00E-03	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	8					1.40E-04	2.00E-03	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		8					2.80E-04	2.00E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		8					3.20E-04	2.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	8	2	2.20E-04	2.45E-04	2.70E-04	1.50E-04	2.00E-03	6.90E-01	4E-04	5.70E-01	5E-04	1.10E-01	2E-03
VOC	Xylenes (total)	1330-20-7	T	D	8	1	4.30E-04	4.30E-04	4.30E-04	3.30E-04	2.00E-03	1.90E+02	2E-06	1.90E+02	2E-06	1.90E+02	2E-06
SVOC	Acenaphthene	83-32-9	T		8					8.00E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	8					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	8					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	8	2	1.15E-03	1.18E-03	1.20E-03	6.80E-04	5.00E-03	4.30E-02	3E-02	4.30E-02	3E-02	4.30E-02	3E-02
SVOC	Atrazine	1912-24-9	T		8					2.50E-03	6.20E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		8					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	8					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	8					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	8					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	8					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	8					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		8					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	8					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	8					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	8					2.70E-03	6.80E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	8					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	8					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		8					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	8	2	1.30E-03	1.43E-03	1.55E-03	8.20E-04	1.00E-02			7.40E+00	2E-04		
SVOC	4-Chloro-3-methylphenol	59-50-7	T		8					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		8					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		8					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		8					1.00E-03	5.00E-03			9.40E+01			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		8					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	8					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	8					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		8					1.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	8					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	8					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	8					9.30E-04	1.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		8					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	8					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		8					8.50E-04	5.00E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	8					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		8					1.30E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		8					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	8					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	8					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	8					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	8	2	2.80E-03	4.80E-03	6.80E-03	1.00E-03	5.00E-03	2.00E+00	3E-03	2.00E+00	3E-03	2.00E+00	3E-03
SVOC	Hexachlorobenzene	118-74-1	T	B2	8					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	8					7.30E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	8					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	8					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	8					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	8					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		8					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		8					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	8	1	2.50E-03	2.50E-03	2.50E-03	7.50E-04	5.00E-03	3.10E+01	8E-05	3.10E+01	8E-05	3.10E+01	8E-05
SVOC	2-Nitroaniline	88-74-4	T		8					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	8					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	8					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	8					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		8					2.10E-03	5.20E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		8					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	8					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	8					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	8					7.80E-04	5.00E-03						

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Pentachlorophenol	87-86-5	T	B2	8					2.40E-03	6.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	8	1	2.30E-03	2.30E-03	2.30E-03	8.20E-04	5.00E-03	1.00E+00	2E-03	1.00E+00	2E-03	1.00E+00	2E-03
SVOC	Phenol	108-95-2	T	D	8					2.60E-03	6.50E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	8					2.00E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		8					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	8					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	4					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	8					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		8	2	8.30E-03	9.05E-03	9.80E-03	2.20E-03	2.50E-02			6.80E+01	1E-04		
INORG	Antimony	7440-36-0	T		8	2	9.25E-03	9.98E-03	1.07E-02	2.20E-03	2.50E-02			6.80E+01	2E-04		
INORG	Arsenic	7440-38-2	D	A	8	4	5.10E-03	1.71E-02	4.72E-02	3.90E-03	1.00E-02			4.30E+00	1E-02		
INORG	Arsenic	7440-38-2	T	A	8	4	5.70E-03	1.95E-02	5.85E-02	3.90E-03	1.00E-02			4.30E+00	1E-02		
INORG	Barium	7440-39-3	D	D	8	8	3.06E-02	1.26E-01	3.00E-01					1.40E+04	2E-05		
INORG	Barium	7440-39-3	T	D	8	8	3.25E-02	1.22E-01	2.85E-01					1.40E+04	2E-05		
INORG	Beryllium	7440-41-7	D	B1	8					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	8	1	5.60E-04	5.60E-04	5.60E-04	5.40E-04	1.00E-03			2.90E+02	2E-06		
INORG	Cadmium	7440-43-9	D	B1	8	3	2.20E-04	3.23E-04	3.90E-04	2.80E-04	5.00E-03			1.90E+02	2E-06		
INORG	Cadmium	7440-43-9	T	B1	8	3	2.90E-04	3.67E-04	4.70E-04	2.80E-04	5.00E-03			1.90E+02	2E-06		
INORG	Chromium (total)	7440-47-3	D		8	2	9.60E-03	1.34E-02	1.72E-02	1.40E-03	1.00E-02			4.60E+02	4E-05		
INORG	Chromium (total)	7440-47-3	T		8	2	1.04E-02	1.38E-02	1.72E-02	1.40E-03	1.00E-02			4.60E+02	4E-05		
INORG	Cobalt	7440-48-4	D		8	4	3.00E-03	4.00E-03	5.80E-03	1.30E-03	2.00E-02			2.40E+03	2E-06		
INORG	Cobalt	7440-48-4	T		8	4	1.70E-03	3.63E-03	5.50E-03	1.30E-03	2.00E-02			2.40E+03	2E-06		
INORG	Copper	7440-50-8	D	D	8	2	1.05E-02	2.65E-02	4.26E-02	4.20E-03	5.00E-03			7.40E+03	6E-06		
INORG	Copper	7440-50-8	T	D	8	2	1.37E-02	3.06E-02	4.74E-02	4.20E-03	5.00E-03			7.40E+03	6E-06		
INORG	Lead	7439-92-1	D	B2	8					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	8					2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	8	8	1.38E-03	2.73E-01	8.15E-01					9.10E+03	9E-05		
INORG	Manganese	7439-96-5	T	D	8	8	2.48E-03	2.66E-01	7.66E-01					9.10E+03	8E-05		
INORG	Mercury	7439-97-6	D	D	8	2	8.20E-05	1.51E-04	2.20E-04	6.90E-05	2.00E-04			5.60E-02	4E-03		
INORG	Mercury	7439-97-6	T	D	8	1	3.00E-04	3.00E-04	3.00E-04	6.90E-05	2.00E-04			5.60E-02	5E-03		
INORG	Nickel	7440-02-0	D	A	8	6	2.70E-03	9.88E-03	1.63E-02	2.20E-03	2.00E-02			7.40E+04	2E-07		
INORG	Nickel	7440-02-0	T	A	8	6	2.90E-03	9.91E-03	1.62E-02	2.20E-03	2.00E-02			7.40E+04	2E-07		
INORG	Selenium	7782-49-2	D	D	8	2	2.78E-02	3.78E-02	4.78E-02	4.50E-03	5.00E-03			9.70E+02	5E-05		
INORG	Selenium	7782-49-2	T	D	8	2	2.88E-02	3.88E-02	4.89E-02	4.50E-03	5.00E-03			9.70E+02	5E-05		
INORG	Silver	7440-22-4	D	D	8					1.50E-03	5.00E-03			1.50E+03			

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RCRA FACILITY INVESTIGATION

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INORG	Silver	7440-22-4	T	D	8					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		8	5	3.25E-05	3.88E-03	9.00E-03	1.80E-05	5.00E-03			1.30E+01	7E-04		
INORG	Thallium	7440-28-0	T		8	3	3.60E-05	2.39E-03	7.10E-03	1.80E-05	1.00E-02			1.30E+01	5E-04		
INORG	Vanadium	7440-62-2	D		8	3	1.00E-03	3.99E-02	7.35E-02	8.20E-04	1.00E-02			9.70E+02	8E-05		
INORG	Vanadium	7440-62-2	T		8	4	8.30E-04	3.21E-02	7.35E-02	8.20E-04	1.00E-02			9.70E+02	8E-05		
INORG	Zinc	7440-66-6	D	D	8	1	1.28E-02	1.28E-02	1.28E-02	1.20E-02	2.00E-02			1.10E+05	1E-07		
INORG	Zinc	7440-66-6	T	D	8	2	1.33E-02	1.59E-02	1.85E-02	1.20E-02	2.00E-02			1.10E+05	2E-07		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-24

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-6 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	13	10	3.20E-03	1.15E-02	2.90E-02	1.90E-03	7.90E-02		1.10E+05	3E-07	1.60E+05	2E-07	1.70E+08	2E-10	1.10E+05	3E-07	1.10E+05	3E-07	1.30E+05	2E-07	3.90E+08	7E-11	2.30E+04	1E-06
VOC	Benzene	71-43-2	A	13	2	7.40E-04	2.14E-02	4.20E-02	5.50E-04	7.40E-04		8.40E+00	5E-03	4.50E+01	9E-04	4.70E+05	9E-08	4.00E+02	1E-04	1.60E+00	3E-02	1.30E+01	3E-03	3.80E+05	1E-07	1.80E+02	2E-04
VOC	Bromodichloromethane	75-27-4	B2	13					1.00E-03	1.00E-02		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	13					1.40E-03	1.70E-02		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	13					1.50E-03	2.70E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	13	3	3.30E-03	5.20E-03	8.20E-03	2.30E-03	8.50E-02		2.70E+04	3E-07	3.50E+04	2E-07	2.90E+07	3E-10	2.70E+04	3E-07	2.70E+04	3E-07	2.90E+04	3E-07	6.70E+07	1E-10	2.70E+04	3E-07
VOC	Carbon Disulfide	75-15-0		13	2	1.00E-03	1.35E-03	1.70E-03	6.60E-04	3.70E-02		1.40E+02	1E-05	1.60E+03	1E-06	2.10E+07	8E-11	2.80E+02	6E-06	7.60E+01	2E-05	1.30E+03	1E-06	4.70E+07	4E-11	2.80E+02	6E-06
VOC	Carbon Tetrachloride	56-23-5	B2	13					8.50E-04	1.00E-02		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	13					4.40E-04	8.50E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		13					1.90E-03	3.90E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	13					6.90E-04	1.00E-02		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	13					1.10E-03	1.60E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	13	2	6.10E-03	3.76E-02	6.90E-02	5.90E-04	8.00E-04		3.90E+02	2E-04	2.00E+03	3E-05	2.60E+06	3E-08	3.90E+02	2E-04	3.90E+02	2E-04	1.70E+03	4E-05	5.80E+06	1E-08	3.90E+02	2E-04
VOC	Cyclohexane	110-82-7		13	2	1.30E-03	9.15E-03	1.70E-02	8.50E-04	8.90E-03																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	13					1.40E-03	8.50E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	13					9.30E-04	1.40E-02		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	13					1.00E-03	2.00E-02		3.60E+00		5.30E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	13					6.00E-04	1.70E-02		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	13					6.80E-04	1.00E-02								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	13					5.70E-04	1.70E-02		1.00E+02		2.90E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		13					9.30E-04	4.00E-02		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	13					4.90E-04	1.50E-02		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	13					6.20E-04	1.20E-02		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	13					1.00E-03	1.80E-02		3.30E-01		5.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	13	1	1.50E-03	1.50E-03	1.50E-03	7.10E-04	1.70E-02		4.20E+01	4E-05	2.10E+02	7E-06	1.00E+06	2E-09	6.40E+02	2E-06	2.30E+01	7E-05	1.80E+02	8E-06	2.30E+06	7E-10	6.40E+02	2E-06
VOC	trans-1,2-Dichloroethene	156-60-5		13					6.20E-04	1.90E-02		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	13					6.40E-04	9.90E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	13					7.30E-04	1.30E-02		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	13	2	2.50E-02	1.18E-01	2.10E-01	5.00E-04	6.70E-04		1.40E+02	2E-03	1.10E+04	2E-05	2.90E+07	7E-09	1.40E+02	2E-03	1.40E+02	2E-03	9.50E+03	2E-05	6.70E+07	3E-09	1.40E+02	2E-03
VOC	2-Hexanone	591-78-6		13					1.40E-03	3.10E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		13					9.30E-04	4.70E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		13					7.10E-04	1.20E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		13					1.60E-03	3.00E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		13	3	1.60E-03	4.49E-02	1.00E-01	5.00E-04	6.70E-04																	
VOC	Methylene Chloride	75-09-2	B2	13					1.10E-03	4.30E-02		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		13					4.20E-04	1.80E-02		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	13					1.50E-03	1.20E-02		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	13	2	1.20E-03	3.20E-03	5.20E-03	1.00E-03	1.60E-02		6.00E+01	9E-05	6.00E+02	9E-06	6.80E+06	8E-10	8.80E+01	6E-05	1.10E+01	5E-04	1.80E+02	3E-05	5.40E+06	1E-09	8.80E+01	6E-05
VOC	Toluene	108-88-3	D	13	2	3.60E-02	1.78E-01	3.20E-01	4.50E-04	6.00E-04		2.50E+02	1E-03	3.30E+03	1E-04	1.20E+07	3E-08	2.50E+02	1E-03	2.50E+02	1E-03	2.80E+03	1E-04	2.70E+07	1E-08	2.50E+02	1E-03
VOC	1,2,4-Trichlorobenzene	120-82-1	D	13					7.50E-04	1.20E-02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	13					7.80E-04	1.00E-02		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	13					1.00E-03	1.70E-02		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	13	1	4.30E-03	4.30E-03	4.30E-03	6.40E-04	1.80E-02		3.70E+01	1E-04	2.60E+02	2E-05	2.30E+06	2E-09	5.00E+02	9E-06	7.10E+00	6E-04	7.80E+01	6E-05	1.80E+06	2E-09	5.00E+02	9E-06
VOC	Trichlorofluoromethane	75-69-4		13					9.30E-04	2.00E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		13					7.90E-04	3.90E-02		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	13					1.20E-03	1.20E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	13	2	1.30E-01	6.15E-01	1.10E+00	1.60E-03	2.20E-03		1.50E+02	7E-03	5.40E+04	2E-05	1.30E+08	8E-09	1.50E+02	7E-03	1.50E+02	7E-03	4.60E+04	2E-05	2.90E+08	4E-09	1.50E+02	7E-03
SVOC	Acenaphthene	83-32-9		13					5.30E-02	1.10E+00		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	13					4.90E-02	1.00E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	13					5.20E-02	1.10E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	13					5.10E-02	1.10E+00		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		13					1.60E-01	3.30E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		13					1.80E-01	3.80E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	13					5.70E-02	1.20E+00								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	13					6.20E-02	1.30E+00						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	13	1	7.30E-02	7.30E-02	7.30E-02	6.20E-02	1.30E+00								1.00E+02	7E-04							2.00E+01	4E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	13					5.70E-02	1.20E+00						3.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	13					5.50E-02	1.20E+00								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		13					1.40E-01	3.10E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	13					4.90E-02	1.00E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	13					5.30E-02	1.10E+00		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	13					5.60E-02	1.20E+00						8.90E+05		1.00E+04						7.00E+05		2.80E+03	
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	13					6.30E-02	1.40E+00																	

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Aug 07, 2009 15:19

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TABLE 4-24

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RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-6 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Butylbenzylphthalate	85-68-7	C	13	1	7.80E-02	7.80E-02	7.80E-02	5.50E-02	1.10E+00						2.10E+07	4E-09	3.10E+02	3E-04					4.70E+07	2E-09	3.10E+02	3E-04
SVOC	Caprolactam	105-60-2		13					1.90E-01	4.00E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	13					5.40E-02	1.20E+00								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		13					5.30E-02	1.10E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		13					5.30E-02	1.10E+00																	
SVOC	2-Chloronaphthalene	91-58-7		13					5.00E-02	1.10E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		13					5.40E-02	1.20E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		13					5.40E-02	1.20E+00																	
SVOC	Chrysene	218-01-9	B2	13	1	5.30E-02	5.30E-02	5.30E-02	4.90E-02	1.00E+00								1.00E+04	5E-06							2.00E+03	3E-05
SVOC	Di-n-butylphthalate	84-74-2	D	13					1.60E-01	3.30E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		13					5.60E-02	1.20E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	13					5.30E-02	1.10E+00								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	13					5.20E-02	1.10E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	13					4.00E-02	8.70E-01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		13					5.20E-02	1.10E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	13					1.60E-01	3.30E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		13					8.30E-02	1.80E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	13					1.70E-01	3.60E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		13					1.70E-01	3.60E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		13					1.10E-01	2.40E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	13					4.80E-02	1.00E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	13					5.00E-02	1.10E+00																	
SVOC	Fluoranthene	206-44-0	D	13	2	7.00E-02	6.85E-01	1.30E+00	6.00E-02	1.20E+00		1.00E+06	1E-06	3.90E+05	1E-06	4.10E+06	3E-07	1.80E+05	7E-06	1.00E+06	1E-06	7.40E+05	2E-06	9.30E+06	1E-07	4.60E+04	3E-05
SVOC	Fluorene	86-73-7	D	13	1	3.70E+00	3.70E+00	3.70E+00	5.00E-02	1.10E+00		1.00E+06	4E-06	5.50E+05	2E-05	4.10E+06	9E-07	1.30E+05	3E-05	5.80E+05	6E-06	1.30E+05	3E-05	9.30E+06	4E-07	2.70E+04	1E-04
SVOC	Hexachlorobenzene	118-74-1	B2	13					5.80E-02	1.20E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	13					4.70E-02	1.00E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	13					6.20E-02	1.30E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	13					5.00E-02	1.10E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	13					7.20E-02	1.60E+00								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	13					4.60E-02	9.80E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		13	2	8.40E-02	1.24E+00	2.40E+00	5.10E-02	1.10E+00								4.00E+04	6E-05							8.10E+03	3E-04
SVOC	Methylphenol (summed)	1319-77-3		13					4.90E-02	1.00E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	13	1	6.00E-02	6.00E-02	6.00E-02	5.30E-02	1.10E+00		4.70E+02	1E-04	3.50E+02	2E-04	8.80E+04	7E-07	8.00E+04	8E-07	2.50E+02	2E-04	3.00E+02	2E-04	2.00E+05	3E-07	1.60E+04	4E-06
SVOC	2-Nitroaniline	88-74-4		13					4.80E-02	1.00E+00																	
SVOC	3-Nitroaniline	99-09-2	C	13					1.40E-01	3.10E+00																	
SVOC	4-Nitroaniline	100-01-6	C	13					7.00E-02	1.50E+00																	
SVOC	Nitrobenzene	98-95-3	D	13					4.80E-02	1.00E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		13					4.80E-02	1.00E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		13					2.00E-01	4.20E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	13					5.10E-02	1.10E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	13					4.60E-02	9.80E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	13					5.40E-02	1.20E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	13					1.20E-01	2.70E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	13	2	1.80E+00	3.90E+00	6.00E+00	5.40E-02	1.10E+00		5.10E+03	1E-03	1.90E+02	3E-02	2.90E+03	2E-03	8.00E+03	8E-04	2.80E+03	2E-03	1.60E+02	4E-02	6.70E+03	9E-04	1.60E+03	4E-03
SVOC	Phenol	108-95-2	D	13					5.10E-02	1.10E+00						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	13	2	6.40E-02	7.32E-01	1.40E+00	5.50E-02	1.10E+00		1.00E+06	1E-06	7.80E+05	2E-06	2.90E+06	5E-07	1.10E+05	1E-05	1.00E+06	1E-06	6.50E+05	2E-06	6.70E+06	2E-07	2.90E+04	5E-05
SVOC	2,4,5-Trichlorophenol	95-95-4		13					5.70E-02	1.20E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	13					6.50E-02	1.40E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	13	4	3.09E-02	2.61E-01	8.01E-01	2.10E-02	2.20E+00		1.60E+04	5E-05	8.10E+02	1E-03	6.50E+03	1E-04	2.00E+01	4E-02	3.00E+03	3E-04	2.40E+02	3E-03	5.20E+03	2E-04	4.00E+00	2E-01
INORG	Lead	7439-92-1	B2	13	13	1.65E+00	6.78E+00	1.92E+01			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	30	14	7.10E-03	5.86E-02	3.00E-01	1.80E-03	6.50E-02		1.10E+05	3E-06	1.60E+05	2E-06	1.70E+08	2E-09	1.10E+05	3E-06	1.10E+05	3E-06	1.30E+05	2E-06	3.90E+08	8E-10	2.30E+04	1E-05
VOC	Benzene	71-43-2	A	29	3	8.40E-04	1.66E-02	4.50E-02	5.60E-04	2.00E-02		8.40E+00	5E-03	4.50E+01	1E-03	4.70E+05	1E-07	4.00E+02	1E-04	1.60E+00	3E-02	1.30E+01	3E-03	3.80E+05	1E-07	1.80E+02	3E-04
VOC	Bromodichloromethane	75-27-4	B2	29					6.70E-04	1.20E-02		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	29					5.20E-04	1.90E-02		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	30					1.20E-03	3.10E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	30	11	2.50E-03	1.56E-02	1.30E-01	2.30E-03	9.70E-02		2.70E+04	5E-06	3.50E+04	4E-06	2.90E+07	4E-09	2.70E+04	5E-06	2.70E+04	5E-06	2.90E+04	4E-06	6.70E+07	2E-09	2.70E+04	5E-06
VOC	Carbon Disulfide	75-15-0		30	2	1.60E-03	1.60E-03	1.60E-03	6.70E-04	4.20E-02		1.40E+02	1E-05	1.60E+03	1E-06	2.10E+07	8E-11	2.80E+02	6E-06	7.60E+01	2E-05	1.30E+03	1E-06	4.70E+07	3E-11	2.80E+02	6E-06
VOC	Carbon Tetrachloride	56-23-5	B2	29					6.40E-04	1.20E-02		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	30					4.50E-04	9.70E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		30					9.50E-04	4.40E-02		9.50E+02		3.60E+04		3.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	30					7.10E-04	1.20E-02		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	30					7.60E-04	1.80E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	30	5	8.60E-04	7.71E-03	2.20E-02	6.00E-04	8.05E-03		3.90E+02	6E-05	2.00E+03	1E-05	2.60E+06	8E-09	3.90E+02	6E-05	3.90E+02	6E-05	1.70E+03	1E-05	5.80E+06	4E-09	3.90E+02	6E-05
VOC	Cyclohexane	110-82-7		30	2	1.30E-03	7.15E-03	1.30E-02	8.60E-04	1.10E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	30					1.40E-03	9.70E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	29					5.90E-04	1.50E-02		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	29					6.50E-04	2.30E-02		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	30	1	3.20E-02	3.20E-02	3.20E-02	6.10E-04	1.90E-02		2.10E+02	2E-04	4.60E+01	7E-07	4.40E+07	7E-10	2.10E+02	2E-04	2.10E+02	2E-04	3.90E+04	8E-07	1.00E+08	3E-10	2.10E+02	2E-04
VOC	1,3-Dichlorobenzene	541-73-1	D	30					6.90E-04	1.10E-02								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	30	2	7.60E-04	1.01E-02	1.95E-02	5.80E-04	1.90E-02		1.00E+02	2E-04	2.50E+02	8E-05	5.70E+05	3E-08	2.90E+03	7E-06	1.90E+01	1E-03	7.70E+01	3E-04	4.50E+05	4E-08	4.00E+02	5E-05
VOC	Dichlorodifluoromethane	75-71-8		30					9.10E-04	4.50E-02		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	30	1	1.10E-03	1.10E-03	1.10E-03	5.00E-04	1.70E-02		4.30E+02	3E-06	2.50E+03	4E-07	1.50E+07	7E-11	8.90E+02	1E-06	2.30E+02	5E-06	2.10E+03	5E-07	3.30E+07	3E-11	8.90E+02	1E-06
VOC	1,2-Dichloroethane	107-06-2	B2	30					5.90E-04	1.30E-02		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	30					7.00E-04	2.00E-02		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	30					2.80E-04	1.90E-02		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		30					6.30E-04	2.10E-02		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	30					6.50E-04	1.10E-02		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	29					6.30E-04	1.40E-02		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	30	7	6.80E-04	1.75E-02	7.60E-02	5.10E-04	1.45E-02		1.40E+02	5E-04	1.10E+04	7E-06	2.90E+07	3E-09	1.40E+02	5E-04	1.40E+02	5E-04	9.50E+03	8E-06	6.70E+07	1E-09	1.40E+02	5E-04
VOC	2-Hexanone	591-78-6		30					1.20E-03	3.60E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		30	2	1.40E-03	6.07E-02	1.20E-01	9.50E-04	5.40E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		30					4.60E-04	2.20E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		30	2	2.40E-03	2.45E-03	2.50E-03	1.60E-03	3.50E-02		2.70E+03	9E-07	5.30E+04	5E-08	6.00E+07	4E-11	2.70E+03	9E-07	2.70E+03	9E-07	4.50E+04	6E-08	1.40E+08	2E-11	2.70E+03	9E-07
VOC	Methylcyclohexane	108-87-2		30	7	7.00E-04	1.85E-02	1.00E-01	5.20E-04	1.90E-02																	
VOC	Methylene Chloride	75-09-2	B2	30					1.10E-03	4.90E-02		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		30					4.30E-04	2.00E-02		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	30					7.30E-04	1.30E-02		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	30	1	1.10E-03	1.10E-03	1.10E-03	8.80E-04	1.80E-02		6.00E+01	2E-05	6.00E+02	2E-06	6.80E+06	2E-10	8.80E+01	1E-05	1.10E+01	1E-04	1.80E+02	6E-06	5.40E+06	2E-10	8.80E+01	1E-05
VOC	Toluene	108-88-3	D	30	24	7.30E-04	4.78E-03	5.60E-02	4.60E-04	9.70E-03		2.50E+02	2E-04	3.30E+03	2E-05	1.20E+07	5E-09	2.50E+02	2E-04	2.50E+02	2E-04	2.80E+03	2E-05	2.70E+07	2E-09	2.50E+02	2E-04
VOC	1,2,4-Trichlorobenzene	120-82-1	D	30					7.70E-04	1.30E-02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	29					7.40E-04	1.20E-02		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	29					5.60E-04	1.90E-02		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	30					6.60E-04	2.00E-02		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		30					9.50E-04	2.30E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		30					8.00E-04	4.40E-02		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	30					6.80E-04	1.30E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	30	8	1.90E-03	7.70E-02	4.10E-01	1.60E-03	1.60E-02		1.50E+02	3E-03	5.40E+04	8E-06	1.30E+08	3E-09	1.50E+02	3E-03	1.50E+02	3E-03	4.60E+04	9E-06	2.90E+08	1E-09	1.50E+02	3E-03
SVOC	Acenaphthene	83-32-9		30	3	2.70E-01	5.13E-01	6.90E-01	5.40E-02	3.00E+00		3.50E+05	2E-06	9.70E+04	7E-06	6.20E+06	1E-07	2.00E+05	3E-06	1.90E+05	4E-06	8.10E+04	9E-06	1.40E+07	5E-08	4.10E+04	2E-05
SVOC	Acenaphthylene	208-96-8	D	30					5.00E-02	2.80E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	30					5.30E-02	3.00E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	30	10	6.60E-02	7.64E-01	3.50E+00	5.20E-02	2.90E+00		1.00E+06	4E-06	1.60E+06	2E-06	2.90E+07	1E-07	1.00E+06	4E-06	1.00E+06	4E-06	1.40E+06	3E-06	6.70E+07	5E-08	2.30E+05	2E-05
SVOC	Atrazine	1912-24-9		30					1.60E-01	8.90E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		30					1.80E-01	1.00E+01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	30	11	7.30E-02	3.02E-01	9.00E-01	5.80E-02	3.30E+00								1.00E+02	9E-03							2.00E+01	5E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	30	6	7.10E-02	2.86E-01	7.60E-01	6.40E-02	3.60E+00						1.90E+03	4E-04	1.00E+01	8E-02					1.50E+03	5E-04	2.00E+00	4E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	30	9	5.55E-02	3.41E-01	9.90E-01	6.20E-02	3.40E+00								1.00E+02	1E-02							2.00E+01	5E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	30	4	1.10E-01	2.30E-01	4.80E-01	5.80E-02	3.30E+00						3.50E+05	1E-06	9.10E+03	5E-05					8.00E+05	6E-07	2.50E+03	2E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	30	5	6.70E-02	2.23E-01	4.80E-01	5.60E-02	3.10E+00								1.00E+03	5E-04							2.00E+02	2E-03
SVOC	Biphenyl	92-52-4		30	2	1.70E-01	2.05E-01	2.40E-01	1.50E-01	8.30E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	30					5.00E-02	2.80E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	30					5.40E-02	3.00E+00		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	30	15	6.10E-02	2.39E-01	1.80E+00	5.70E-02	3.20E+00						8.90E+05	2E-06	1.00E+04	2E-04					7.00E+05	3E-06	2.80E+03	6E-04
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	30					6.50E-02	3.60E+00																	

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Butylbenzylphthalate	85-68-7	C	30	1	7.70E-01	7.70E-01	7.70E-01	5.40E-02	3.00E+00						2.10E+07	4E-08	3.10E+02	2E-03					4.70E+07	2E-08	3.10E+02	2E-03
SVOC	Caprolactam	105-60-2		30					1.90E-01	1.10E+01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	30	1	9.00E-02	9.00E-02	9.00E-02	5.50E-02	3.10E+00								3.70E+03	2E-05							5.30E+02	2E-04
SVOC	4-Chloro-3-methylphenol	59-50-7		30					5.40E-02	3.00E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		30					5.40E-02	3.00E+00																	
SVOC	2-Chloronaphthalene	91-58-7		30					5.10E-02	2.80E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		30					5.50E-02	3.10E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		30					5.50E-02	3.10E+00																	
SVOC	Chrysene	218-01-9	B2	30	11	8.30E-02	3.45E-01	1.00E+00	4.90E-02	2.70E+00								1.00E+04	1E-04							2.00E+03	5E-04
SVOC	Di-n-butylphthalate	84-74-2	D	30					1.60E-01	8.90E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		30					5.70E-02	3.20E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	30					5.40E-02	3.00E+00								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	30	2	4.80E-01	5.45E-01	6.10E-01	5.30E-02	3.00E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	30					4.10E-02	2.40E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		30					5.30E-02	3.00E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	30					1.60E-01	8.90E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		30					8.50E-02	4.70E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	30					1.70E-01	9.50E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		30					1.70E-01	9.50E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		30					1.20E-01	6.50E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	30					4.90E-02	2.70E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	30					5.10E-02	2.80E+00																	
SVOC	Fluoranthene	206-44-0	D	30	15	6.80E-02	9.59E-01	3.90E+00	6.00E-02	3.30E+00		1.00E+06	6E-06	8.90E+05	4E-06	4.10E+06	1E-06	1.80E+05	2E-05	1.00E+06	4E-06	7.40E+05	5E-06	9.30E+06	4E-07	4.60E+04	8E-05
SVOC	Fluorene	86-73-7	D	30	11	1.00E-01	5.01E+00	2.10E+01	5.10E-02	2.80E+00		1.00E+06	2E-05	1.50E+05	1E-04	4.10E+06	5E-06	1.30E+05	2E-04	5.80E+05	4E-05	1.30E+05	2E-04	9.30E+06	2E-06	2.70E+04	8E-04
SVOC	Hexachlorobenzene	118-74-1	B2	30					6.00E-02	3.30E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	30					4.80E-02	2.70E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	28					6.40E-02	3.60E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	30					5.10E-02	2.80E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	30	4	1.00E-01	2.18E-01	4.60E-01	7.40E-02	4.10E+00								1.00E+02	5E-03							2.00E+01	2E-02
SVOC	Isophorone	78-59-1	C	30					4.70E-02	2.60E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		30	9	5.60E-02	1.01E+00	6.70E+00	5.10E-02	2.80E+00								4.00E+04	2E-04							8.10E+03	8E-04
SVOC	Methylphenol (summed)	1319-77-3		30					5.00E-02	2.80E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	30	5	6.50E-02	1.57E-01	2.70E-01	5.20E-02	2.90E+00		4.70E+02	6E-04	3.50E+02	8E-04	8.80E+04	3E-06	8.00E+04	3E-06	2.50E+02	1E-03	3.00E+02	9E-04	2.00E+05	1E-06	1.60E+04	2E-05
SVOC	2-Nitroaniline	88-74-4		30					4.90E-02	2.70E+00																	
SVOC	3-Nitroaniline	99-09-2	C	30					1.50E-01	8.30E+00																	
SVOC	4-Nitroaniline	100-01-6	C	30					7.20E-02	4.00E+00																	
SVOC	Nitrobenzene	98-95-3	D	30					4.90E-02	2.70E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		30					4.90E-02	2.70E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		30					2.00E-01	1.10E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	30					5.20E-02	2.90E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	30					4.70E-02	2.60E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	30					5.50E-02	3.10E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	30					1.30E-01	7.10E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	30	18	9.00E-02	5.71E+00	4.20E+01	5.50E-02	3.90E-01		5.10E+03	8E-03	1.90E+02	2E-01	2.90E+03	1E-02	8.00E+03	5E-03	2.80E+03	2E-02	1.60E+02	3E-01	6.70E+03	6E-03	1.60E+03	3E-02
SVOC	Phenol	108-95-2	D	30	1	1.10E-01	1.10E-01	1.10E-01	5.20E-02	2.90E+00						1.80E+07	6E-09	1.20E+04	9E-06					4.00E+07	3E-09	1.20E+04	9E-06
SVOC	Pyrene	129-00-0	D	30	15	6.30E-02	8.30E-01	4.10E+00	5.40E-02	3.00E+00		1.00E+06	4E-06	7.80E+05	5E-06	2.90E+06	1E-06	1.10E+05	4E-05	1.00E+06	4E-06	6.50E+05	6E-06	6.70E+06	6E-07	2.90E+04	1E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		30					5.80E-02	3.30E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	30					6.70E-02	3.70E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	30	14	3.36E-02	1.43E-01	6.22E-01	2.10E-02	3.90E-02		1.60E+04	4E-05	8.10E+02	8E-04	6.50E+03	1E-04	2.00E+01	3E-02	3.00E+03	2E-04	2.40E+02	3E-03	5.20E+03	1E-04	4.00E+00	2E-01
INORG	Antimony	7440-36-0		30	6	3.34E-01	1.89E+00	7.46E+00	2.71E-01	2.39E+00						5.90E+03	1E-03	1.20E+03	6E-03					1.30E+04	6E-04	1.80E+02	4E-02
INORG	Arsenic	7440-38-2	A	30	30	2.17E+00	6.06E+00	3.62E+01			1.32E+01					9.10E+02	3E-02	6.10E+01	4E-01					7.20E+02	3E-02	7.60E+00	**3E+00**
INORG	Barium	7440-39-3	D	30	30	7.06E+00	5.74E+01	5.09E+02			1.10E+02					1.50E+05	3E-03	2.50E+05	2E-03					3.30E+05	1E-03	3.70E+04	1E-02
INORG	Beryllium	7440-41-7	B1	30	20	3.86E-02	2.23E-01	1.07E+00	4.82E-02	5.66E-02	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	30	26	5.86E-02	4.27E-01	5.46E+00	4.69E-02	5.25E-02	1.20E+00					2.20E+03	2E-03	4.10E+03	1E-03					1.70E+03	3E-03	5.50E+02	8E-03
INORG	Chromium (total)	7440-47-3		32	32	4.17E+00	9.63E+01	1.26E+03			4.92E+01					2.40E+02	**5E+00**	1.70E+04	7E-02					2.60E+02	**5E+00**	2.50E+03	5E-01
INORG	Chromium III	16065-83-1	D	4	4	3.14E+01	4.68E+02	1.26E+03								1.50E+05	8E-03	1.00E+06	1E-03					3.30E+05	4E-03	7.90E+05	2E-03
INORG	Chromium VI	18540-29-9	A	2	2	6.00E-01	9.88E-01	1.38E+00								2.40E+02	6E-03	1.70E+04	8E-05					2.60E+02	5E-03	2.50E+03	6E-04
INORG	Cobalt	7440-48-4		30	30	1.62E+00	5.64E+00	4.06E+01			1.74E+01					5.90E+03	4E-03	1.80E+04	1E-03					1.30E+04	2E-03	2.60E+03	9E-03
INORG	Copper	7440-50-8	D	30	30	5.82E+00	8.66E+01	1.92E+03			3.20E+01					5.90E+04	3E-02	1.40E+05	1E-02					1.30E+05	1E-02	2.00E+04	9E-02
INORG	Cyanide (total)	57-12-5	D	2					1.88E-01	2.09E-01						2.50E+02		2.50E+02						2.50E+02		1.20E+01	
INORG	Lead	7439-92-1	B2	30	30	2.03E+00	3.19E+01	5.87E+02			4.92E+01					4.40E+04	1E-02	9.00E+02	6E-01					1.00E+05	5E-03	4.00E+02	**1E+00**
INORG	Manganese	7439-96-5	D	38	38	1.14E+02	5.79E+02	2.78E+03			5.10E+02					1.50E+03	**2E+00**	1.70E+05	1E-02					3.30E+03	7E-01	2.50E+04	9E-02
INORG	Mercury	7439-97-6	D	30	19	1.17E-02	1.15E-01	6.99E-01	8.90E-03	1.03E-02	1.30E-01							1.10E+03	5E-04							1.60E+02	4E-03

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Nickel	7440-02-0	A	30	30	4.82E+00	7.55E+01	1.89E+03			3.01E+01					1.60E+04	1E-01	2.70E+05	7E-03					1.30E+04	1E-01	4.00E+04	5E-02
INORG	Selenium	7782-49-2	D	30	10	1.56E-01	1.18E+00	8.62E+00	1.71E-01	5.97E-01	4.10E-01					5.90E+04	1E-04	1.80E+04	5E-04					1.30E+05	6E-05	2.60E+03	3E-03
INORG	Silver	7440-22-4	D	30	2	5.24E-01	7.25E-01	9.25E-01	8.29E-02	5.97E-01						2.90E+03	3E-04	1.70E+04	5E-05					6.70E+03	1E-04	2.50E+03	4E-04
INORG	Thallium	7440-28-0		30	11	5.05E-01	6.57E-01	8.43E-01	5.24E-01	6.15E-01								2.40E+02	4E-03							3.50E+01	2E-02
INORG	Vanadium	7440-62-2		30	30	4.94E+00	1.37E+01	2.93E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	30	30	1.78E+01	5.47E+01	3.79E+02			4.70E+01							1.00E+06	3E-04							1.70E+05	2E-03

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-26

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
VOC	Acetone	67-64-1	D	1					2.20E+00	2.20E+00
VOC	Benzene	71-43-2	A	1					5.00E-01	5.00E-01
VOC	Bromodichloromethane	75-27-4	B2	1					3.00E-01	3.00E-01
VOC	Bromoform	75-25-2	B2	1					4.90E-01	4.90E-01
VOC	Bromomethane	74-83-9	D	1					7.60E-01	7.60E-01
VOC	2-Butanone	78-93-3	D	1					2.40E+00	2.40E+00
VOC	Carbon Disulfide	75-15-0		1					1.00E+00	1.00E+00
VOC	Carbon Tetrachloride	56-23-5	B2	1					3.00E-01	3.00E-01
VOC	Chlorobenzene	108-90-7	D	1					2.40E-01	2.40E-01
VOC	Chloroethane	75-00-3		1					1.10E+00	1.10E+00
VOC	Chloroform	67-66-3	B2	1					3.00E-01	3.00E-01
VOC	Chloromethane	74-87-3	D	1					4.50E-01	4.50E-01
VOC	Cumene	98-82-8	D	1	1	8.09E-01	8.00E-01	8.00E-01		
VOC	Cyclohexane	110-82-7		1					3.00E+01	3.00E+01
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	1					2.40E+00	2.40E+00
VOC	Dibromochloromethane	124-48-1	C	1					3.70E-01	3.70E-01
VOC	1,2-Dibromoethane	106-93-4	B2	1					5.80E-01	5.80E-01
VOC	1,2-Dichlorobenzene	95-50-1	D	1					4.60E-01	4.60E-01
VOC	1,3-Dichlorobenzene	541-73-1	D	1					2.80E-01	2.80E-01
VOC	1,4-Dichlorobenzene	106-46-7	C	1					4.90E-01	4.90E-01
VOC	Dichlorodifluoromethane	75-71-8		1					1.10E+00	1.10E+00
VOC	1,1-Dichloroethane	75-34-3	C	1					4.00E-01	4.00E-01
VOC	1,2-Dichloroethane	107-06-2	B2	1					3.20E-01	3.20E-01
VOC	1,1-Dichloroethene	75-35-4	C	1					4.90E-01	4.90E-01
VOC	cis-1,2-Dichloroethene	156-59-2	D	1					4.70E-01	4.70E-01
VOC	trans-1,2-Dichloroethene	156-60-5		1					5.30E-01	5.30E-01
VOC	1,2-Dichloropropane	78-87-5	B2	1					2.70E-01	2.70E-01
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	1					3.40E-01	3.40E-01
VOC	Ethyl Benzene	100-41-4	D	1	1	1.20E+00	1.20E+00	1.20E+00		
VOC	2-Hexanone	591-78-6		1					9.00E-01	9.00E-01
VOC	Methyl Acetate	79-20-9		1					1.40E+01	1.40E+01
VOC	Methyl tert-butyl ether	1634-04-4		1					3.30E-01	3.30E-01
VOC	4-Methyl-2-pentanone	108-10-1		1					8.60E-01	8.60E-01
VOC	Methylcyclohexane	108-87-2		1	1	6.20E-01	6.20E-01	6.20E-01		
VOC	Methylene Chloride	75-09-2	B2	1					1.20E+00	1.20E+00
VOC	Styrene	100-42-5		1					5.00E-01	5.00E-01
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	1					3.20E-01	3.20E-01
VOC	Tetrachloroethene	127-18-4	C-B2	1					4.40E-01	4.40E-01
VOC	Toluene	108-88-3	D	1					3.00E-01	3.00E-01
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1					3.30E-01	3.30E-01
VOC	1,1,1-Trichloroethane	71-55-6	D	1					3.00E-01	3.00E-01
VOC	1,1,2-Trichloroethane	79-00-5	C	1					4.90E-01	4.90E-01
VOC	Trichloroethene	79-01-6	C-B2	1					5.10E-01	5.10E-01
VOC	Trichlorofluoromethane	75-69-4		1					5.70E-01	5.70E-01
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1					3.00E+01	3.00E+01
VOC	Vinyl Chloride	75-01-4	A	1					3.20E-01	3.20E-01
VOC	Xylenes (total)	1330-20-7	D	1	1	1.30E+00	1.30E+00	1.30E+00		

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TABLE 4-26

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	Acenaphthene	83-32-9		1					2.60E+00	2.60E+00
SVOC	Acenaphthylene	208-96-8	D	1					2.40E+00	2.40E+00
SVOC	Acetophenone	98-86-2	D	1					2.50E+00	2.50E+00
SVOC	Anthracene	120-12-7	D	1					2.40E+00	2.40E+00
SVOC	Atrazine	1912-24-9		1					7.50E+00	7.50E+00
SVOC	Benzaldehyde	100-52-7		1					8.50E+00	8.50E+00
SVOC	Benzo(a)anthracene	56-55-3	B2	1					2.80E+00	2.80E+00
SVOC	Benzo(a)pyrene	50-32-8	B2	1					3.00E+00	3.00E+00
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1					2.90E+00	2.90E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1					2.80E+00	2.80E+00
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1					2.60E+00	2.60E+00
SVOC	Biphenyl	92-52-4		1	1	1.60E+02	1.60E+02	1.60E+02		
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	1					2.40E+00	2.40E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	1					2.60E+00	2.60E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1					2.70E+00	2.70E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	1					3.00E+00	3.00E+00
SVOC	Butylbenzylphthalate	85-68-7	C	1					2.60E+00	2.60E+00
SVOC	Caprolactam	105-60-2		1					9.00E+00	9.00E+00
SVOC	Carbazole	86-74-8	B2	1					2.60E+00	2.60E+00
SVOC	4-Chloro-3-methylphenol	59-50-7		1					2.60E+00	2.60E+00
SVOC	4-Chloroaniline	106-47-8		1					2.60E+00	2.60E+00
SVOC	2-Chloronaphthalene	91-58-7		1					2.40E+00	2.40E+00
SVOC	2-Chlorophenol	95-57-8		1					2.60E+00	2.60E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		1					2.60E+00	2.60E+00
SVOC	Chrysene	218-01-9	B2	1					2.30E+00	2.30E+00
SVOC	Di-n-butylphthalate	84-74-2	D	1					7.50E+00	7.50E+00
SVOC	Di-n-octylphthalate	117-84-0		1					2.70E+00	2.70E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1					2.60E+00	2.60E+00
SVOC	Dibenzofuran	132-64-9	D	1					2.50E+00	2.50E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	1					2.00E+00	2.00E+00
SVOC	2,4-Dichlorophenol	120-83-2		1					2.50E+00	2.50E+00
SVOC	Diethylphthalate	84-66-2	D	1					7.50E+00	7.50E+00
SVOC	2,4-Dimethylphenol	105-67-9		1					4.00E+00	4.00E+00
SVOC	Dimethylphthalate	131-11-3	D	1					8.00E+00	8.00E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		1					8.00E+00	8.00E+00
SVOC	2,4-Dinitrophenol	51-28-5		1					5.50E+00	5.50E+00
SVOC	2,4-Dinitrotoluene	121-14-2	B2	1					2.30E+00	2.30E+00
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1					2.40E+00	2.40E+00
SVOC	Fluoranthene	206-44-0	D	1					2.80E+00	2.80E+00
SVOC	Fluorene	86-73-7	D	1	1	1.90E+02	1.90E+02	1.90E+02		
SVOC	Hexachlorobenzene	118-74-1	B2	1					2.80E+00	2.80E+00
SVOC	Hexachlorobutadiene	87-68-3	C	1					2.20E+00	2.20E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	E	1					3.00E+00	3.00E+00
SVOC	Hexachloroethane	67-72-1	C	1					2.40E+00	2.40E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1					3.50E+00	3.50E+00
SVOC	Isophorone	78-59-1	C	1					2.20E+00	2.20E+00
SVOC	2-Methylnaphthalene	91-57-6		1	1	1.20E+02	1.20E+02	1.20E+02		
SVOC	Methylphenol (summed)	1319-77-3		1					2.40E+00	2.40E+00

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TABLE 4-26

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	Naphthalene	91-20-3	C	1					2.40E+00	2.40E+00
SVOC	2-Nitroaniline	88-74-4		1					2.30E+00	2.30E+00
SVOC	3-Nitroaniline	99-09-2	C	1					7.00E+00	7.00E+00
SVOC	4-Nitroaniline	100-01-6	C	1					3.40E+00	3.40E+00
SVOC	Nitrobenzene	98-95-3	D	1					2.30E+00	2.30E+00
SVOC	2-Nitrophenol	88-75-5		1					2.30E+00	2.30E+00
SVOC	4-Nitrophenol	100-02-7		1					9.50E+00	9.50E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	1					2.40E+00	2.40E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	1					2.20E+00	2.20E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	1					2.60E+00	2.60E+00
SVOC	Pentachlorophenol	87-86-5	B2	1					6.00E+00	6.00E+00
SVOC	Phenanthrene	85-01-8	D	1	1	7.80E+02	7.80E+02	7.80E+02		
SVOC	Phenol	108-95-2	D	1					2.40E+00	2.40E+00
SVOC	Pyrene	129-00-0	D	1					2.60E+00	2.60E+00
SVOC	2,4,5-Trichlorophenol	95-95-4		1					2.80E+00	2.80E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	1					3.20E+00	3.20E+00
P/PCB	PCBs (summed)	1336-36-3	B2	1	1	2.71E+00	2.71E+00	2.71E+00		
INORG	Antimony	7440-36-0		1					4.90E-01	4.90E-01
INORG	Arsenic	7440-38-2	A	1					3.00E-01	3.00E-01
INORG	Barium	7440-39-3	D	1					1.30E-01	1.30E-01
INORG	Beryllium	7440-41-7	B1	1					4.60E-02	4.60E-02
INORG	Cadmium	7440-43-9	B1	1					4.30E-02	4.30E-02
INORG	Chromium (total)	7440-47-3		1					3.80E-01	3.80E-01
INORG	Cobalt	7440-48-4		1					1.50E-01	1.50E-01
INORG	Copper	7440-50-8	D	1	1	2.90E-01	2.90E-01	2.90E-01		
INORG	Lead	7439-92-1	B2	1					2.40E-01	2.40E-01
INORG	Manganese	7439-96-5	D	1					1.50E-01	1.50E-01
INORG	Mercury	7439-97-6	D	1					4.70E-03	4.70E-03
INORG	Nickel	7440-02-0	A	1					2.70E-01	2.70E-01
INORG	Selenium	7782-49-2	D	1					3.10E-01	3.10E-01
INORG	Silver	7440-22-4	D	1					1.50E-01	1.50E-01
INORG	Thallium	7440-28-0		1					5.00E-01	5.00E-01
INORG	Vanadium	7440-62-2		1					1.30E-01	1.30E-01
INORG	Zinc	7440-66-6	D	1					1.20E+00	1.20E+00
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	1	1	7.38E-06	7.38E-06	7.38E-06		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit

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TABLE 4-27

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	14	6	1.63E-03	3.84E-02	1.60E-01	5.10E-04	5.10E-04	1.00E+06	2E-07	3.10E+04	5E-06	1.00E+06	2E-07
VOC	Benzene	71-43-2	T	A	14	5	1.80E-04	3.59E-04	6.25E-04	1.60E-04	4.00E-03	3.60E+01	2E-05	1.10E+01	6E-05	5.60E+00	1E-04
VOC	Bromodichloromethane	75-27-4	T	B2	14					1.70E-04	4.00E-03	3.80E+01		1.40E+01		4.80E+00	
VOC	Bromoform	75-25-2	T	B2	14					1.30E-04	4.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	14					2.00E-04	4.00E-03	9.80E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	14	3	5.40E-04	1.93E-03	4.40E-03	4.00E-04	4.00E-02	2.40E+05	2E-08	2.40E+05	2E-08	2.40E+05	2E-08
VOC	Carbon Disulfide	75-15-0	T		14	4	2.40E-04	4.28E-04	7.00E-04	2.00E-04	4.00E-03	3.50E+02	1E-06	1.20E+03	6E-07	2.50E+02	3E-06
VOC	Carbon Tetrachloride	56-23-5	T	B2	14					1.20E-04	4.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	14					1.40E-04	4.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		14					2.60E-04	4.00E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	14	4	1.40E-04	2.10E-04	2.40E-04	1.40E-04	4.00E-03	1.80E+02	1E-06	1.50E+02	2E-06	2.80E+01	9E-06
VOC	Chloromethane	74-87-3	T	D	14	1	2.60E-04	2.60E-04	2.60E-04	1.30E-04	4.00E-03	5.20E+01	5E-06	4.90E+02	5E-07	8.60E+00	3E-05
VOC	Cumene	98-82-8	T	D	14	6	1.80E-04	5.83E-04	1.70E-03	1.20E-04	4.00E-03	5.60E+01	3E-05	5.60E+01	3E-05	5.60E+01	3E-05
VOC	Cyclohexane	110-82-7	T		14	1	2.20E-04	2.20E-04	2.20E-04	1.30E-04	4.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	14					6.20E-04	8.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	14					2.60E-04	4.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	14					2.20E-04	4.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	14					1.10E-04	4.00E-03	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	14					1.50E-04	4.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	14					1.70E-04	4.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		14					2.60E-04	8.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	14	6	1.90E-04	6.82E-04	3.00E-03	1.60E-04	4.00E-03	2.30E+03	1E-06	2.40E+03	1E-06	1.00E+03	3E-06
VOC	1,2-Dichloroethane	107-06-2	T	B2	14					2.10E-04	4.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	14					2.40E-04	4.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	14	2	3.00E-04	1.30E-03	2.30E-03	2.20E-04	2.00E-03	2.20E+02	1E-05	2.00E+02	1E-05	9.60E+01	2E-05
VOC	trans-1,2-Dichloroethene	156-60-5	T		14	1	6.30E-04	6.30E-04	6.30E-04	1.50E-04	2.00E-03	2.00E+02	3E-06	2.20E+02	3E-06	8.50E+01	7E-06
VOC	1,2-Dichloropropane	78-87-5	T	B2	14					1.70E-04	4.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	14					2.70E-04	4.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	14	7	1.50E-04	2.72E-04	4.20E-04	1.20E-04	4.00E-03	1.70E+02	2E-06	1.70E+02	2E-06	1.70E+02	2E-06
VOC	2-Hexanone	591-78-6	T		14					4.60E-04	4.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		14					4.10E-04	4.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		14					1.30E-04	2.00E-02	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		14	5	4.30E-04	8.38E-04	1.70E-03	2.30E-04	4.00E-02	2.00E+04	9E-08	1.30E+04	1E-07	2.00E+04	9E-08
VOC	Methylcyclohexane	108-87-2	T		14	1	1.90E-04	1.90E-04	1.90E-04	1.50E-04	4.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	14	1	5.00E-04	5.00E-04	5.00E-04	3.40E-04	4.00E-03	1.40E+03	4E-07	2.20E+02	2E-06	2.20E+02	2E-06
VOC	Styrene	100-42-5	T		14					1.50E-04	4.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	14					2.50E-04	4.00E-03	7.70E+01		4.70E+00		1.20E+01	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Tetrachloroethene	127-18-4	T	C-B2	14	1	8.90E-04	8.90E-04	8.90E-04	2.30E-04	4.00E-03	1.70E+02	5E-06	1.20E+01	7E-05	2.50E+01	4E-05
VOC	Toluene	108-88-3	T	D	14	7	2.00E-04	9.84E-04	2.00E-03	1.80E-04	2.00E-03	5.30E+02	4E-06	5.30E+02	4E-06	5.30E+02	4E-06
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	14					1.70E-04	4.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	14					1.50E-04	4.00E-03	1.30E+03		1.30E+03		6.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	T	C	14					3.00E-04	4.00E-03	1.40E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	14	2	2.00E-04	1.40E-03	2.60E-03	1.40E-04	4.00E-03	9.70E+01	3E-05	3.70E+01	7E-05	1.50E+01	2E-04
VOC	Trichlorofluoromethane	75-69-4	T		14					2.80E-04	4.00E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		14					3.20E-04	4.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	14	1	3.10E-04	3.10E-04	3.10E-04	1.50E-04	4.00E-03	6.90E-01	4E-04	5.70E-01	5E-04	1.10E-01	3E-03
VOC	Xylenes (total)	1330-20-7	T	D	14	8	5.10E-04	1.38E-03	2.65E-03	3.30E-04	4.00E-03	1.90E+02	1E-05	1.90E+02	1E-05	1.90E+02	1E-05
SVOC	Acenaphthene	83-32-9	T		14	1	2.20E-03	2.20E-03	2.20E-03	6.00E-04	8.00E-03	4.20E+00	5E-04	4.20E+00	5E-04	4.20E+00	5E-04
SVOC	Acenaphthylene	208-96-8	T	D	14					7.10E-04	7.10E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	14					2.60E-03	2.60E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	14	2	7.30E-04	7.60E-04	7.90E-04	6.80E-04	6.80E-03	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02
SVOC	Atrazine	1912-24-9	T		14					2.50E-03	2.50E-02			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		14					2.80E-03	2.80E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	14					7.00E-04	7.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	14					7.30E-04	7.30E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	14					9.40E-04	9.40E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	14					8.50E-04	8.50E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	14					8.40E-04	8.40E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		14					2.60E-03	2.60E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	14					8.70E-04	8.70E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	14					9.70E-04	9.70E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	14					2.70E-03	2.70E-02			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	14					8.80E-04	8.80E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	14					8.80E-04	8.80E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		14					2.50E-03	2.50E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	14					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		14					9.90E-04	9.90E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		13					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		14					8.50E-04	8.50E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		14					1.00E-03	1.00E-02			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		14					7.90E-04	7.90E-03						
SVOC	Chrysene	218-01-9	T	B2	14					7.50E-04	7.50E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	14					6.70E-04	6.70E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		14					1.10E-03	1.10E-02			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	14					7.90E-04	7.90E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	14					1.00E-03	1.10E-02						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	12					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		14					8.50E-04	1.00E-02			4.80E+01			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-8 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Diethylphthalate	84-66-2	T	D	14					6.50E-04	6.50E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		14					8.50E-04	8.50E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	14					7.60E-04	7.60E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		14					1.30E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		14					3.00E-03	3.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	14					7.90E-04	7.90E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	14					5.70E-04	5.70E-03						
SVOC	Fluoranthene	206-44-0	T	D	14					8.10E-04	8.10E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	14	7	1.50E-03	7.10E-03	2.10E-02	1.00E-03	1.00E-02	2.00E+00	1E-02	2.00E+00	1E-02	2.00E+00	1E-02
SVOC	Hexachlorobenzene	118-74-1	T	B2	14					7.40E-04	7.40E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	14					7.30E-04	7.30E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	13					1.10E-03	1.10E-02			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	14					7.40E-04	7.40E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	14					6.30E-04	6.30E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	14					6.30E-04	6.30E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		14	4	6.50E-04	2.79E-03	5.10E-03	6.40E-04	6.40E-03			2.50E+01	2E-04		
SVOC	Methylphenol (summed)	1319-77-3	T		14					1.30E-03	1.30E-02			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	14	4	1.70E-03	2.03E-03	2.60E-03	7.50E-04	7.50E-03	3.10E+01	8E-05	3.10E+01	8E-05	3.10E+01	8E-05
SVOC	2-Nitroaniline	88-74-4	T		14					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	13					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	14					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	14					8.10E-04	8.10E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		14					2.10E-03	2.10E-02			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		14					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	14					1.40E-03	1.40E-02			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	14					6.70E-04	6.70E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	14					7.80E-04	7.80E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	14					2.40E-03	2.40E-02			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	14	7	1.00E-03	2.11E-03	3.90E-03	8.20E-04	8.20E-03	1.00E+00	4E-03	1.00E+00	4E-03	1.00E+00	4E-03
SVOC	Phenol	108-95-2	T	D	14					2.60E-03	2.60E-02			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	14					1.10E-03	1.10E-02	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		14					1.20E-03	1.20E-02			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	14					1.70E-03	1.70E-02			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	5					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	14					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		14	3	2.50E-03	5.03E-03	8.00E-03	2.20E-03	2.20E-03			6.80E+01	1E-04		
INORG	Antimony	7440-36-0	T		14	3	2.80E-03	5.17E-03	7.90E-03	2.20E-03	2.20E-03			6.80E+01	1E-04		
INORG	Arsenic	7440-38-2	D	A	14	10	4.10E-03	1.53E-02	3.41E-02	3.90E-03	1.00E-02			4.30E+00	8E-03		
INORG	Arsenic	7440-38-2	T	A	14	10	4.10E-03	1.81E-02	3.60E-02	3.90E-03	1.00E-02			4.30E+00	8E-03		
INORG	Barium	7440-39-3	D	D	14	14	2.60E-02	1.05E-01	2.01E-01					1.40E+04	2E-05		
INORG	Barium	7440-39-3	T	D	14	14	2.65E-02	1.26E-01	4.60E-01					1.40E+04	3E-05		
INORG	Beryllium	7440-41-7	D	B1	14					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	14	1	6.20E-04	6.20E-04	6.20E-04	5.40E-04	1.00E-03			2.90E+02	2E-06		

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Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Cadmium	7440-43-9	D	B1	14	3	2.80E-04	3.77E-04	5.50E-04	2.80E-04	2.80E-04			1.90E+02	3E-06		
INORG	Cadmium	7440-43-9	T	B1	14	6	2.90E-04	4.88E-04	1.10E-03	2.80E-04	2.80E-04			1.90E+02	6E-06		
INORG	Chromium (total)	7440-47-3	D		14	2	5.00E-03	2.63E-02	4.76E-02	1.40E-03	1.00E-02			4.60E+02	1E-04		
INORG	Chromium (total)	7440-47-3	T		14	4	1.15E-03	2.78E-02	6.07E-02	1.40E-03	1.00E-02			4.60E+02	1E-04		
INORG	Cobalt	7440-48-4	D		14	5	1.40E-03	3.68E-03	9.30E-03	1.30E-03	2.00E-02			2.40E+03	4E-06		
INORG	Cobalt	7440-48-4	T		14	5	1.90E-03	9.06E-03	2.75E-02	1.30E-03	2.00E-02			2.40E+03	1E-05		
INORG	Copper	7440-50-8	D	D	14	2	4.40E-03	4.80E-03	5.20E-03	4.20E-03	5.00E-03			7.40E+03	7E-07		
INORG	Copper	7440-50-8	T	D	14	2	6.60E-03	3.11E-02	5.56E-02	4.20E-03	5.00E-03			7.40E+03	8E-06		
INORG	Lead	7439-92-1	D	B2	14					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	14	2	5.70E-03	2.09E-02	3.60E-02	2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	14	14	2.10E-03	9.19E-01	3.24E+00					9.10E+03	4E-04		
INORG	Manganese	7439-96-5	T	D	14	14	2.47E-02	1.03E+00	3.20E+00					9.10E+03	4E-04		
INORG	Mercury	7439-97-6	D	D	14	2	1.10E-04	1.50E-04	1.90E-04	6.90E-05	2.00E-04			5.60E-02	3E-03		
INORG	Mercury	7439-97-6	T	D	14	3	7.00E-05	1.60E-04	2.60E-04	6.90E-05	2.00E-04			5.60E-02	5E-03		
INORG	Nickel	7440-02-0	D	A	14	11	2.30E-03	5.62E-03	1.56E-02	2.20E-03	2.20E-03			7.40E+04	2E-07		
INORG	Nickel	7440-02-0	T	A	14	9	3.40E-03	1.41E-02	7.45E-02	2.20E-03	2.00E-02			7.40E+04	1E-06		
INORG	Selenium	7782-49-2	D	D	14					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	14					4.50E-03	5.00E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	14					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	14					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		14	3	2.10E-05	2.48E-03	7.40E-03	1.80E-05	5.00E-03			1.30E+01	6E-04		
INORG	Thallium	7440-28-0	T		14	2	1.00E-03	3.55E-03	6.10E-03	1.80E-05	1.00E-02			1.30E+01	5E-04		
INORG	Vanadium	7440-62-2	D		14	4	6.40E-04	1.96E-03	3.80E-03	8.20E-04	1.00E-02			9.70E+02	4E-06		
INORG	Vanadium	7440-62-2	T		14	5	6.70E-04	1.77E-02	8.02E-02	8.20E-04	1.00E-02			9.70E+02	8E-05		
INORG	Zinc	7440-66-6	D	D	14	2	2.25E-02	2.73E-02	3.21E-02	1.20E-02	2.00E-02			1.10E+05	3E-07		
INORG	Zinc	7440-66-6	T	D	14	2	3.38E-02	1.01E-01	1.69E-01	1.20E-02	2.00E-02			1.10E+05	2E-06		
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	4	4	1.95E-09	6.47E-09	1.97E-08					1.00E-08	**2E+00**		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
12. The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	20	2	3.20E-03	1.57E-01	3.10E-01	1.80E-03	2.90E-02		1.10E+05	3E-06	1.60E+05	2E-06	1.70E+08	2E-09	1.10E+05	3E-06	1.10E+05	3E-06	1.30E+05	2E-06	3.90E+08	8E-10	2.30E+04	1E-05
VOC	Benzene	71-43-2	A	20	1	8.00E-04	8.00E-04	8.00E-04	5.40E-04	2.60E-02		8.40E+00	1E-04	4.50E+01	2E-05	4.70E+05	2E-09	4.00E+02	2E-06	1.60E+00	5E-04	1.30E+01	6E-05	3.80E+05	2E-09	1.80E+02	4E-06
VOC	Bromodichloromethane	75-27-4	B2	20					1.00E-03	1.50E-02		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	20					1.30E-03	2.40E-02		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	20					1.50E-03	4.00E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	20					2.30E-03	1.20E-01		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		20					6.50E-04	5.30E-02		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	20					8.40E-04	1.50E-02		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	20					4.40E-04	1.20E-02		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		20					1.80E-03	5.70E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	20					6.90E-04	1.50E-02		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	20					1.10E-03	2.30E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	20	1	3.11E-03	3.11E-03	3.11E-03	5.90E-04	1.20E-02		3.90E+02	8E-06	2.00E+03	2E-07	2.60E+06	1E-09	3.90E+02	8E-06	3.90E+02	8E-06	1.70E+03	2E-06	5.80E+06	5E-10	3.90E+02	8E-06
VOC	Cyclohexane	110-82-7		20	1	2.90E-02	2.90E-02	2.90E-02	8.40E-04	1.50E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	20					1.30E-03	1.20E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	20					9.20E-04	2.00E-02		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	20					1.00E-03	2.90E-02		3.60E+00		5.20E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	20					5.90E-04	2.40E-02		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	20					6.70E-04	1.50E-02								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	20					5.60E-04	2.40E-02		1.00E+02		2.50E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		20					9.20E-04	5.80E-02		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	20					4.90E-04	2.10E-02		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	20					6.10E-04	1.70E-02		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	20					1.00E-03	2.60E-02		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	20					7.00E-04	2.40E-02		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		20					6.10E-04	2.70E-02		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	20					6.30E-04	1.40E-02		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	20					7.20E-04	1.80E-02		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	20					4.90E-04	2.10E-02		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	2-Hexanone	591-78-6		20					1.40E-03	4.60E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		20	1	2.60E+00	2.60E+00	2.60E+00	9.20E-04	1.50E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		20					7.00E-04	2.90E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		20					1.60E-03	4.40E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		20	2	8.70E-04	2.84E-02	5.60E-02	4.90E-04	1.50E-02																	
VOC	Methylene Chloride	75-09-2	B2	20	1	1.30E-01	1.30E-01	1.30E-01	1.10E-03	7.30E-03		2.40E+02	5E-04	7.00E+02	2E-04	8.30E+06	2E-08	2.30E+03	6E-05	4.50E+01	3E-03	2.10E+02	6E-04	6.60E+06	2E-08	1.30E+03	1E-04
VOC	Styrene	100-42-5		20					4.20E-04	2.60E-02		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	20					1.50E-03	1.70E-02		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	20					1.00E-03	2.30E-02		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	20	3	5.28E-04	1.27E-02	3.70E-02	4.40E-04	7.30E-03		2.50E+02	1E-04	3.30E+03	1E-05	1.20E+07	3E-09	2.50E+02	1E-04	2.50E+02	1E-04	2.80E+03	1E-05	2.70E+07	1E-09	2.50E+02	1E-04
VOC	1,2,4-Trichlorobenzene	120-82-1	D	20					7.50E-04	1.70E-02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	20					7.70E-04	1.50E-02		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	20					1.00E-03	2.40E-02		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	20	1	4.08E-03	4.08E-03	4.08E-03	6.40E-04	2.60E-02		3.70E+01	1E-04	2.60E+02	2E-05	2.30E+06	2E-09	5.00E+02	8E-06	7.10E+00	6E-04	7.80E+01	5E-05	1.80E+06	2E-09	5.00E+02	8E-06
VOC	Trichlorofluoromethane	75-69-4		20					9.20E-04	2.90E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		20	2	6.90E-03	7.55E-03	8.20E-03	7.80E-04	5.70E-02		5.50E+02	1E-05	2.10E+05	4E-08	2.30E+09	4E-12	5.50E+02	1E-05	5.50E+02	1E-05	1.80E+05	5E-08	5.10E+09	2E-12	5.50E+02	1E-05
VOC	Vinyl Chloride	75-01-4	A	20					1.20E-03	1.70E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	20	1	6.30E-02	6.30E-02	6.30E-02	1.60E-03	1.50E-02		1.50E+02	4E-04	5.40E+04	1E-06	1.30E+08	5E-10	1.50E+02	4E-04	1.50E+02	4E-04	4.60E+04	1E-06	2.90E+08	2E-10	1.50E+02	4E-04
SVOC	Acenaphthene	83-32-9		20	6	5.40E-02	6.34E-01	2.20E+00	5.30E-02	1.10E+00		3.50E+05	6E-06	9.70E+04	2E-05	6.20E+06	4E-07	2.00E+05	1E-05	1.90E+05	1E-05	8.10E+04	3E-05	1.40E+07	2E-07	4.10E+04	5E-05
SVOC	Acenaphthylene	208-96-8	D	20					4.80E-02	4.10E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	20					5.10E-02	4.10E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	20	7	5.40E-02	9.15E-01	3.40E+00	5.10E-02	1.00E+00		1.00E+06	3E-06	1.60E+06	2E-06	2.90E+07	1E-07	1.00E+06	3E-06	1.00E+06	3E-06	1.40E+06	2E-06	6.70E+07	5E-08	2.30E+05	1E-05
SVOC	Atrazine	1912-24-9		20					1.50E-01	4.10E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		20					1.80E-01	4.10E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	20	12	6.00E-02	1.70E+00	1.20E+01	5.70E-02	1.20E+00								1.00E+02	1E-01							2.00E+01	6E-01
SVOC	Benzo(a)pyrene	50-32-8	B2	20	11	8.00E-02	1.59E+00	8.80E+00	6.30E-02	1.30E+00						1.90E+03	5E-03	1.00E+01	9E-01					1.50E+03	6E-03	2.00E+00	**4E+00**
SVOC	Benzo(b)fluoranthene	205-99-2	B2	20	13	6.80E-02	1.72E+00	1.00E+01	6.10E-02	1.20E+00								1.00E+02	1E-01							2.00E+01	5E-01
SVOC	Benzo(g,h,i)perylene	191-24-2	D	20	11	6.30E-02	1.06E+00	4.80E+00	5.70E-02	1.20E+00						3.50E+05	1E-05	9.10E+03	5E-04					8.00E+05	6E-06	2.50E+03	2E-03
SVOC	Benzo(k)fluoranthene	207-08-9	B2	20	9	6.70E-02	1.07E+00	4.50E+00	5.50E-02	1.10E+00								1.00E+03	5E-03							2.00E+02	2E-02
SVOC	Biphenyl	92-52-4		20					1.40E-01	4.10E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	20					4.80E-02	4.10E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	20					5.30E-02	4.10E+00		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	20	13	9.20E-02	5.53E+00	5.30E+01	5.70E-02	4.10E+00						8.90E+05	6E-05	1.00E+04	5E-03					7.00E+05	8E-05	2.80E+03	2E-02
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	20					6.30E-02	4.10E+00																	

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Butylbenzylphthalate	85-68-7	C	20	6	1.20E-01	6.02E+00	2.80E+01	5.30E-02	4.10E+00						2.10E+07	1E-06	3.10E+02	9E-02					4.70E+07	6E-07	3.10E+02	9E-02
SVOC	Caprolactam	105-60-2		20					1.90E-01	4.10E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	20	6	5.60E-02	5.36E-01	1.40E+00	5.40E-02	1.10E+00								3.70E+03	4E-04							5.30E+02	3E-03
SVOC	4-Chloro-3-methylphenol	59-50-7		20					5.30E-02	4.10E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		20					5.30E-02	1.60E+01																	
SVOC	2-Chloronaphthalene	91-58-7		20					4.90E-02	4.10E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		20					5.40E-02	4.10E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		20					5.40E-02	4.10E+00																	
SVOC	Chrysene	218-01-9	B2	20	12	7.10E-02	2.03E+00	1.40E+01	4.80E-02	9.80E-01								1.00E+04	1E-03							2.00E+03	7E-03
SVOC	Di-n-butylphthalate	84-74-2	D	20					1.50E-01	4.10E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		20	1	2.90E+00	2.90E+00	2.90E+00	5.60E-02	4.10E+00								2.80E+04	1E-04							6.90E+03	4E-04
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	20	5	6.40E-02	5.91E-01	1.40E+00	5.30E-02	1.10E+00								1.00E+01	1E-01							2.00E+00	7E-01
SVOC	Dibenzofuran	132-64-9	D	20	8	5.20E-02	2.92E-01	1.00E+00	5.20E-02	1.10E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	20					4.00E-02	2.50E+01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		20					5.10E-02	4.10E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	20					1.50E-01	4.10E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		20					8.20E-02	4.10E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	20					1.60E-01	4.10E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		20					1.60E-01	2.10E+01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		20					1.10E-01	2.10E+01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	20					4.70E-02	4.10E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	20					4.90E-02	4.10E+00																	
SVOC	Fluoranthene	206-44-0	D	20	12	9.20E-02	3.97E+00	2.80E+01	5.80E-02	1.20E+00		1.00E+06	3E-05	6.90E+05	3E-05	4.10E+06	7E-06	1.80E+05	2E-04	1.00E+06	3E-05	7.40E+05	4E-05	9.30E+06	3E-06	4.60E+04	6E-04
SVOC	Fluorene	86-73-7	D	20	5	8.50E-02	5.77E-01	1.50E+00	5.00E-02	1.00E+00		1.00E+06	2E-06	1.50E+05	1E-05	4.10E+06	4E-07	1.30E+05	1E-05	5.80E+05	3E-06	1.30E+05	1E-05	9.30E+06	2E-07	2.70E+04	6E-05
SVOC	Hexachlorobenzene	118-74-1	B2	20					5.80E-02	4.10E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	20					4.60E-02	4.10E+00		3.50E+02		3.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	20					6.20E-02	4.10E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	20					4.90E-02	1.20E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	20	9	8.10E-02	1.11E+00	4.50E+00	7.30E-02	1.50E+00								1.00E+02	5E-02							2.00E+01	2E-01
SVOC	Isophorone	78-59-1	C	20					4.50E-02	4.10E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		20	9	5.05E-02	3.48E-01	8.70E-01	5.00E-02	1.00E+00								4.00E+04	2E-05							8.10E+03	1E-04
SVOC	Methylphenol (summed)	1319-77-3		20					4.80E-02	4.10E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	20	9	5.40E-02	3.15E-01	7.90E-01	5.10E-02	1.00E+00		4.70E+02	2E-03	3.50E+02	2E-03	8.80E+04	9E-06	8.00E+04	1E-05	2.50E+02	3E-03	3.00E+02	3E-03	2.00E+05	4E-06	1.60E+04	5E-05
SVOC	2-Nitroaniline	88-74-4		20					4.70E-02	2.10E+01																	
SVOC	3-Nitroaniline	99-09-2	C	20					1.40E-01	2.10E+01																	
SVOC	4-Nitroaniline	100-01-6	C	20					7.00E-02	2.10E+01																	
SVOC	Nitrobenzene	98-95-3	D	20					4.70E-02	4.10E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		20					4.70E-02	4.10E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		20					2.00E-01	2.10E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	20					5.00E-02	4.10E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	20					4.50E-02	4.10E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	20					5.40E-02	4.10E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	20					1.20E-01	4.20E+01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	20	12	8.20E-02	2.66E+00	1.60E+01	5.40E-02	1.10E+00		5.10E+03	3E-03	1.90E+02	8E-02	2.90E+03	6E-03	8.00E+03	2E-03	2.80E+03	6E-03	1.60E+02	1E-01	6.70E+03	2E-03	1.60E+03	1E-02
SVOC	Phenol	108-95-2	D	20	3	6.10E-02	8.90E-02	1.10E-01	5.00E-02	4.10E+00						1.80E+07	6E-09	1.20E+04	9E-06					4.00E+07	3E-09	1.20E+04	9E-06
SVOC	Pyrene	129-00-0	D	20	12	7.40E-02	3.61E+00	2.80E+01	5.30E-02	1.10E+00		1.00E+06	3E-05	7.80E+05	4E-05	2.90E+06	1E-05	1.10E+05	3E-04	1.00E+06	3E-05	6.50E+05	4E-05	6.70E+06	4E-06	2.90E+04	1E-03
SVOC	2,4,5-Trichlorophenol	95-95-4		20					5.70E-02	4.10E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	20					6.50E-02	4.10E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	318	198	2.08E-02	1.32E+01	3.76E+02	2.10E-02	4.10E+00		1.60E+04	2E-02	8.10E+02	5E-01	6.50E+03	6E-02	2.00E+01	**2E+01**	3.00E+03	1E-01	2.40E+02	**2E+00**	5.20E+03	7E-02	4.00E+00	**9E+01**
INORG	Antimony	7440-36-0		20	9	6.87E-01	3.18E+00	6.26E+00	5.12E-01	2.54E+00						5.90E+03	1E-03	1.20E+03	5E-03					1.30E+04	5E-04	1.80E+02	3E-02
INORG	Arsenic	7440-38-2	A	21	21	1.77E+00	7.18E+00	1.92E+01			1.32E+01					9.10E+02	7E-03	6.10E+01	1E-01					7.20E+02	8E-03	7.60E+00	8E-01
INORG	Barium	7440-39-3	D	20	20	3.74E+00	7.17E+01	3.78E+02			1.10E+02					1.50E+05	2E-03	2.50E+05	1E-03					3.30E+05	8E-04	3.70E+04	7E-03
INORG	Beryllium	7440-41-7	B1	20	10	5.37E-02	1.32E-01	2.44E-01	4.74E-02	1.24E-01	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	20	17	1.24E-01	2.07E+00	5.86E+00	4.49E-02	4.86E-02	1.20E+00					2.20E+03	2E-03	4.10E+03	1E-03					1.70E+03	3E-03	5.50E+02	8E-03
INORG	Chromium (total)	7440-47-3		21	21	2.89E+00	9.34E+01	5.23E+02			4.92E+01					2.40E+02	**2E+00**	1.70E+04	3E-02					2.60E+02	**2E+00**	2.50E+03	2E-01
INORG	Chromium III	16065-83-1	D	1	1	1.94E+02	1.94E+02	1.94E+02								1.50E+05	1E-03	1.00E+06	2E-04					3.30E+05	6E-04	7.90E+05	2E-04
INORG	Chromium VI	18540-29-9	A	1	1	6.38E-01	6.38E-01	6.38E-01								2.40E+02	3E-03	1.70E+04	4E-05					2.60E+02	2E-03	2.50E+03	3E-04
INORG	Cobalt	7440-48-4		20	20	1.38E+00	5.66E+00	1.41E+01			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	20	20	3.36E+00	8.74E+01	4.60E+02			3.20E+01					5.90E+04	7E-03	1.40E+05	3E-03					1.30E+05	3E-03	2.00E+04	2E-02
INORG	Cyanide (total)	57-12-5	D	4	2	2.60E-01	4.36E-01	6.12E-01	1.80E-01	1.87E-01						2.50E+02	2E-03	2.50E+02	2E-03					2.50E+02	2E-03	1.20E+01	5E-02
INORG	Lead	7439-92-1	B2	20	20	3.45E+00	1.39E+02	4.29E+02			4.92E+01					4.40E+04	9E-03	9.00E+02	4E-01					1.00E+05	4E-03	4.00E+02	9E-01
INORG	Manganese	7439-96-5	D	23	23	1.09E+02	9.48E+02	3.02E+03			5.10E+02					1.50E+03	**2E+00**	1.70E+05	1E-02					3.30E+03	8E-01	2.50E+04	1E-01
INORG	Mercury	7439-97-6	D	20	17	1.07E-02	1.07E-01	3.28E-01	8.80E-03	9.50E-03	1.30E-01							1.10E+03	2E-04							1.60E+02	1E-03

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TABLE 4-25

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Nickel	7440-02-0	A	20	20	3.18E+00	3.06E+01	1.54E+02			3.01E+01					1.60E+04	8E-03	2.70E+05	5E-04					1.30E+04	1E-02	4.00E+04	3E-03
INORG	Selenium	7782-49-2	D	20	2	4.97E-01	1.10E+00	1.71E+00	3.24E-01	6.18E+00	4.10E-01					5.90E+04	2E-05	1.80E+04	7E-05					1.30E+05	1E-05	2.60E+03	5E-04
INORG	Silver	7440-22-4	D	20	8	2.29E-01	4.55E-01	6.53E-01	1.56E-01	6.14E-01						2.90E+03	2E-04	1.70E+04	4E-05					6.70E+03	1E-04	2.50E+03	3E-04
INORG	Thallium	7440-28-0		20	4	8.81E-01	1.65E+00	3.32E+00	5.15E-01	1.24E+01								2.40E+02	1E-02							3.50E+01	9E-02
INORG	Vanadium	7440-62-2		20	20	4.50E+00	1.31E+01	1.88E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	20	20	3.31E+01	5.90E+02	2.34E+03			4.70E+01							1.00E+06	2E-03							1.70E+05	1E-02

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-29

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	2	1	3.50E-02	3.50E-02	3.50E-02	5.10E-04	5.10E-04	1.00E+06	4E-08	3.10E+04	1E-06	1.00E+06	4E-08
VOC	Benzene	71-43-2	T	A	2					1.60E-04	1.00E-03	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	2					1.70E-04	1.00E-03	3.80E+01		1.40E+01		4.80E+00	
VOC	Bromoform	75-25-2	T	B2	2					2.80E-04	1.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	2					2.00E-04	1.00E-03	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	2					4.10E-04	1.00E-02	2.40E+05		2.40E+05		2.40E+05	
VOC	Carbon Disulfide	75-15-0	T		2					2.00E-04	1.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	2					1.20E-04	1.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	2					1.40E-04	1.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		2					2.50E-04	1.00E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	2					1.40E-04	1.00E-03	1.80E+02		1.50E+02		2.80E+01	
VOC	Chloromethane	74-87-3	T	D	2					1.30E-04	1.00E-03	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	2					1.20E-04	1.00E-03	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		2					1.30E-04	1.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	2					6.20E-04	2.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	2					2.60E-04	1.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	2					2.20E-04	1.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	2					1.10E-04	1.00E-03	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	2					1.50E-04	1.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	2					1.70E-04	1.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		2					2.60E-04	2.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	2					1.60E-04	1.00E-03	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	2					2.10E-04	1.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	2					2.40E-04	1.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	2					2.20E-04	5.00E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		2					1.50E-04	5.00E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	2					1.70E-04	1.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	2					2.70E-04	1.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	2					1.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		2					4.60E-04	1.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		2					4.10E-04	1.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		2					1.30E-04	5.00E-03	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		2					2.30E-04	1.00E-02	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		2					1.50E-04	1.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	2					3.40E-04	1.00E-03	1.40E+03		2.20E+02		2.20E+02	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Styrene	100-42-5	T		2					1.50E-04	1.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	2					2.50E-04	1.00E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	2					2.30E-04	1.00E-03	1.70E+02		1.20E+01		2.50E+01	
VOC	Toluene	108-88-3	T	D	2					2.80E-04	1.00E-03	5.30E+02		5.30E+02		5.30E+02	
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	2					1.70E-04	1.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	2	1	2.50E-04	2.50E-04	2.50E-04	1.00E-03	1.00E-03	1.30E+03	2E-07	1.30E+03	2E-07	6.60E+02	4E-07
VOC	1,1,2-Trichloroethane	79-00-5	T	C	2					3.00E-04	1.00E-03	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	2					1.40E-04	1.00E-03	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		2	2	9.50E-04	1.58E-03	2.20E-03			1.10E+03	2E-06	1.10E+03	2E-06	1.10E+03	2E-06
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		2					3.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	2					1.50E-04	1.00E-03	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	2					3.30E-04	1.00E-03	1.90E+02		1.90E+02		1.90E+02	
SVOC	Acenaphthene	83-32-9	T		2					8.00E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	2					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	2					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	2					6.80E-04	5.00E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		2					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		2					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	2					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	2					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	2					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	2					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	2					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		2					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	2					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	2					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	2					2.70E-03	5.00E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	2					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	2					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		2					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	2					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		2					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		1					1.00E-03	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		2					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		2					1.00E-03	5.00E-03			9.40E+01			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		2					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	2					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	2					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		2					2.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	2					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	2					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	1					2.00E-02	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		2					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	2					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		2					8.50E-04	5.00E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	2					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		2					1.30E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		2					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	2					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	2					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	2					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	2					1.00E-03	5.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	2					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	2					7.30E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	2					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	2					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	2					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	2					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		2					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		2					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	2					7.50E-04	5.00E-03	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		2					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	1					2.00E-02	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	2					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	2					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		2					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		2					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	2					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	2					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	2					7.80E-04	5.00E-03						

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Pentachlorophenol	87-86-5	T	B2	2					2.40E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	2					8.20E-04	5.00E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	2					2.60E-03	5.00E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	2					2.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		2					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	2					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	1					2.00E-04	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	2					8.20E-0	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		2					2.20E-03	2.50E-02			6.80E+01			
INORG	Antimony	7440-36-0	T		2					2.20E-03	2.50E-02			6.80E+01			
INORG	Arsenic	7440-38-2	D	A	2					3.90E-03	1.00E-02			4.30E+00			
INORG	Arsenic	7440-38-2	T	A	2					3.90E-03	1.00E-02			4.30E+00			
INORG	Barium	7440-39-3	D	D	2	2	5.40E-02	1.01E-01	1.47E-01					1.40E+04	1E-05		
INORG	Barium	7440-39-3	T	D	2	2	5.61E-02	1.29E-01	2.01E-01					1.40E+04	1E-05		
INORG	Beryllium	7440-41-7	D	B1	2					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	2					5.40E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	2					2.80E-04	5.00E-03			1.90E+02			
INORG	Cadmium	7440-43-9	T	B1	2					2.80E-04	5.00E-03			1.90E+02			
INORG	Chromium (total)	7440-47-3	D		2	1	1.04E-02	1.04E-02	1.04E-02	1.00E-02	1.00E-02			4.60E+02	2E-05		
INORG	Chromium (total)	7440-47-3	T		2	1	1.12E-02	1.12E-02	1.12E-02	1.00E-02	1.00E-02			4.60E+02	2E-05		
INORG	Cobalt	7440-48-4	D		2	1	1.40E-03	1.40E-03	1.40E-03	1.30E-03	1.30E-03			2.40E+03	6E-07		
INORG	Cobalt	7440-48-4	T		2	1	2.90E-03	2.90E-03	2.90E-03	1.30E-03	1.30E-03			2.40E+03	1E-06		
INORG	Copper	7440-50-8	D	D	2					4.20E-03	5.00E-03			7.40E+03			
INORG	Copper	7440-50-8	T	D	2					4.20E-03	5.00E-03			7.40E+03			
INORG	Lead	7439-92-1	D	B2	2					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	2					2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	2	2	1.98E-02	1.31E-01	2.42E-01					9.10E+03	3E-05		
INORG	Manganese	7439-96-5	T	D	2	2	1.65E-02	1.99E-01	3.82E-01					9.10E+03	4E-05		
INORG	Mercury	7439-97-6	D	D	2					6.90E-05	2.00E-04			5.60E-02			
INORG	Mercury	7439-97-6	T	D	2					6.90E-05	2.00E-04			5.60E-02			
INORG	Nickel	7440-02-0	D	A	2	1	2.20E-03	2.20E-03	2.20E-03	2.20E-03	2.20E-03			7.40E+04	3E-08		
INORG	Nickel	7440-02-0	T	A	2	1	3.80E-03	3.80E-03	3.80E-03	2.20E-03	2.20E-03			7.40E+04	5E-08		
INORG	Selenium	7782-49-2	D	D	2					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	2					4.50E-03	5.00E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	2					1.50E-03	5.00E-03			1.50E+03			

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TABLE 4-29

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (SHALLOW GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Silver	7440-22-4	T	D	2					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		2	2	3.80E-05	2.67E-03	5.30E-03					1.30E+01	4E-04		
INORG	Thallium	7440-28-0	T		2	1	1.24E-02	1.24E-02	1.24E-02	1.80E-05	1.80E-05			1.30E+01	1E-03		
INORG	Vanadium	7440-62-2	D		2					8.20E-04	1.00E-02			9.70E+02			
INORG	Vanadium	7440-62-2	T		2					8.20E-04	1.00E-02			9.70E+02			
INORG	Zinc	7440-66-6	D	D	2					1.20E-02	2.00E-02			1.10E+05			
INORG	Zinc	7440-66-6	T	D	2					1.20E-02	2.00E-02			1.10E+05			

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-30

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	Acetone	67-64-1	T	D	2	2	6.60E-04	1.13E-03	1.60E-03			2.10E+00	8E-04	7.30E-01	2E-03
VOC	Benzene	71-43-2	T	A	2					1.60E-04	1.60E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Bromodichloromethane	75-27-4	T	B2	2					1.70E-04	1.70E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromoform	75-25-2	T	B2	2					1.80E-04	1.80E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Bromomethane	74-83-9	T	D	2					2.00E-04	2.00E-04	2.90E-02	0E+00	1.00E-02	0E+00
VOC	2-Butanone	78-93-3	T	D	2					4.10E-04	4.10E-04	3.80E+01	0E+00	1.30E+01	0E+00
VOC	Carbon Disulfide	75-15-0	T		2	1	2.40E-04	2.40E-04	2.40E-04	2.00E-04	2.00E-04	2.30E+00	1E-04	8.00E-01	3E-04
VOC	Carbon Tetrachloride	56-23-5	T	B2	2					1.20E-04	1.20E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Chlorobenzene	108-90-7	T	D	2					1.40E-04	1.40E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	Chloroethane	75-00-3	T		2					2.60E-04	2.60E-04	1.70E+00	0E+00	4.30E-01	0E+00
VOC	Chloroform	67-66-3	T	B2	2	1	2.80E-04	2.80E-04	2.80E-04	1.40E-04	1.40E-04	1.00E-01	3E-03	1.00E-01	3E-03
VOC	Chloromethane	74-87-3	T	D	2					1.30E-04	1.30E-04	1.10E+00	0E+00	2.60E-01	0E+00
VOC	Cumene	98-82-8	T	D	2					1.20E-04	1.20E-04	2.30E+00	0E+00	8.00E-01	0E+00
VOC	Cyclohexane	110-82-7	T		2					1.30E-04	1.30E-04		0E+00		0E+00
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	2					6.20E-04	6.20E-04	2.00E-04	0E+00	2.00E-04	0E+00
VOC	Dibromochloromethane	124-48-1	T	C	2					2.60E-04	2.60E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dibromoethane	106-93-4	T	B2	2					2.20E-04	2.20E-04	1.00E-03	0E+00	1.00E-03	0E+00
VOC	1,2-Dichlorobenzene	95-50-1	T	D	2					1.10E-04	1.10E-04	6.00E-01	0E+00	6.00E-01	0E+00
VOC	1,3-Dichlorobenzene	541-73-1	T	D	2					1.50E-04	1.50E-04	1.90E-02	0E+00	6.60E-03	0E+00
VOC	1,4-Dichlorobenzene	106-46-7	T	C	2					1.70E-04	1.70E-04	7.50E-02	0E+00	7.50E-02	0E+00
VOC	Dichlorodifluoromethane	75-71-8	T		2					2.60E-04	2.60E-04	4.80E+00	0E+00	1.70E+00	0E+00
VOC	1,1-Dichloroethane	75-34-3	T	C	2					1.60E-04	1.60E-04	2.50E+00	0E+00	8.80E-01	0E+00
VOC	1,2-Dichloroethane	107-06-2	T	B2	2					2.10E-04	2.10E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,1-Dichloroethene	75-35-4	T	C	2					2.40E-04	2.40E-04	7.00E-03	0E+00	7.00E-03	0E+00
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	2					2.20E-04	2.20E-04	7.00E-02	0E+00	7.00E-02	0E+00
VOC	trans-1,2-Dichloroethene	156-60-5	T		2					1.50E-04	1.50E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,2-Dichloropropane	78-87-5	T	B2	2					1.70E-04	1.70E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	2					2.70E-04	2.70E-04	6.30E-02	0E+00	2.10E-02	0E+00
VOC	Ethyl Benzene	100-41-4	T	D	2					1.20E-04	1.20E-04	7.00E-01	0E+00	7.00E-01	0E+00
VOC	2-Hexanone	591-78-6	T		2					4.60E-04	4.60E-04	2.90E+00	0E+00	1.00E+00	0E+00
VOC	Methyl Acetate	79-20-9	T		2					4.10E-04	4.10E-04		0E+00		0E+00
VOC	Methyl tert-butyl ether	1634-04-4	T		2	2	2.40E-04	3.72E-03	5.20E-03			6.90E-01	8E-03	2.40E-01	2E-02
VOC	4-Methyl-2-pentanone	108-10-1	T		2					2.30E-04	2.30E-04	5.20E+00	0E+00	1.80E+00	0E+00

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TABLE 4-30

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
VOC	Methylcyclohexane	108-87-2	T		2					1.50E-04	1.50E-04		0E+00		0E+00
VOC	Methylene Chloride	75-09-2	T	B2	2					3.40E-04	3.40E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Styrene	100-42-5	T		2					1.50E-04	1.50E-04	1.00E-01	0E+00	1.00E-01	0E+00
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	2					2.50E-04	2.50E-04	3.50E-02	0E+00	8.50E-03	0E+00
VOC	Tetrachloroethene	127-18-4	T	C-B2	2					2.30E-04	2.30E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Toluene	108-88-3	T	D	2					1.80E-04	1.80E-04	1.00E+00	0E+00	1.00E+00	0E+00
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	2					1.70E-04	1.70E-04	7.00E-02	0E+00	7.00E-02	0E+00
VOC	1,1,1-Trichloroethane	71-55-6	T	D	2					1.50E-04	1.50E-04	2.00E-01	0E+00	2.00E-01	0E+00
VOC	1,1,2-Trichloroethane	79-00-5	T	C	2					3.00E-04	3.00E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichloroethene	79-01-6	T	C-B2	2					1.40E-04	1.40E-04	5.00E-03	0E+00	5.00E-03	0E+00
VOC	Trichlorofluoromethane	75-69-4	T		2					2.80E-04	2.80E-04	7.30E+00	0E+00	2.60E+00	0E+00
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		2					3.20E-04	3.20E-04	1.70E+02	0E+00	1.70E+02	0E+00
VOC	Vinyl Chloride	75-01-4	T	A	2					1.50E-04	1.50E-04	2.00E-03	0E+00	2.00E-03	0E+00
VOC	Xylenes (total)	1330-20-7	T	D	2					3.30E-04	3.30E-04	1.00E+01	0E+00	1.00E+01	0E+00
SVOC	Acenaphthene	83-32-9	T		2					8.00E-04	8.00E-04	3.80E+00	0E+00	1.30E+00	0E+00
SVOC	Acenaphthylene	208-96-8	T	D	2					7.10E-04	7.10E-04	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Acetophenone	98-86-2	T	D	2					2.60E-03	2.60E-03	4.40E+00	0E+00	1.50E+00	0E+00
SVOC	Anthracene	120-12-7	T	D	2					6.80E-04	6.80E-04	4.30E-02	0E+00	4.30E-02	0E+00
SVOC	Atrazine	1912-24-9	T		2					2.50E-03	2.50E-03	3.00E-03	0E+00	3.00E-03	0E+00
SVOC	Benzaldehyde	100-52-7	T		2					2.80E-03	2.80E-03		0E+00		0E+00
SVOC	Benzo(a)anthracene	56-55-3	T	B2	2					7.00E-04	7.00E-04	8.50E-03	0E+00	2.10E-03	0E+00
SVOC	Benzo(a)pyrene	50-32-8	T	B2	2					7.30E-04	7.30E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	2					9.40E-04	9.40E-04	2.00E-03	0E+00	2.00E-03	0E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	2					8.50E-04	8.50E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	2					8.40E-04	8.40E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Biphenyl	92-52-4	T		2					2.60E-03	2.60E-03		0E+00		0E+00
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	2					8.70E-04	8.70E-04		0E+00		0E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	1					9.70E-04	9.70E-04	8.30E-03	0E+00	2.00E-03	0E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	2					2.70E-03	2.70E-03	6.00E-03	0E+00	6.00E-03	0E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	2					8.80E-04	8.80E-04		0E+00		0E+00
SVOC	Butylbenzylphthalate	85-68-7	T	C	2					8.80E-04	8.80E-04	2.70E+00	0E+00	1.20E+00	0E+00
SVOC	Caprolactam	105-60-2	T		2					2.50E-03	2.50E-03	1.70E+01	0E+00	5.80E+00	0E+00
SVOC	Carbazole	86-74-8	T	B2	2					8.20E-04	8.20E-04	3.50E-01	0E+00	8.50E-02	0E+00

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TABLE 4-30

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	4-Chloro-3-methylphenol	59-50-7	T		2					9.90E-04	9.90E-04	4.20E-01	0E+00	1.50E-01	0E+00
SVOC	4-Chloroaniline	106-47-8	T		2					6.10E-04	6.10E-04		0E+00		0E+00
SVOC	2-Chloronaphthalene	91-58-7	T		2					8.50E-04	8.50E-04	5.20E+00	0E+00	1.80E+00	0E+00
SVOC	2-Chlorophenol	95-57-8	T		2					1.00E-03	1.00E-03	1.30E-01	0E+00	4.50E-02	0E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		2					7.90E-04	7.90E-04		0E+00		0E+00
SVOC	Chrysene	218-01-9	T	B2	2					7.50E-04	7.50E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Di-n-butylphthalate	84-74-2	T	D	2					6.70E-04	6.70E-04	2.50E+00	0E+00	8.80E-01	0E+00
SVOC	Di-n-octylphthalate	117-84-0	T		2					1.10E-03	1.10E-03	3.80E-01	0E+00	1.30E-01	0E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	2					7.90E-04	7.90E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Dibenzofuran	132-64-9	T	D	2					1.10E-03	1.10E-03		0E+00		0E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	2					9.30E-04	9.30E-04	4.30E-03	0E+00	1.10E-03	0E+00
SVOC	2,4-Dichlorophenol	120-83-2	T		2					8.50E-04	8.50E-04	2.10E-01	0E+00	7.30E-02	0E+00
SVOC	Diethylphthalate	84-66-2	T	D	2					6.50E-04	6.50E-04	1.60E+01	0E+00	5.50E+00	0E+00
SVOC	2,4-Dimethylphenol	105-67-9	T		2					8.50E-04	8.50E-04	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Dimethylphthalate	131-11-3	T	D	2					7.60E-04	7.60E-04	2.10E+02	0E+00	7.30E+01	0E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		2					1.30E-03	1.30E-03	2.00E-02	0E+00	2.00E-02	0E+00
SVOC	2,4-Dinitrophenol	51-28-5	T		2					3.00E-03	3.00E-03		0E+00		0E+00
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	2					7.90E-04	7.90E-04	3.20E-02	0E+00	7.70E-03	0E+00
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	2					5.70E-04	5.70E-04		0E+00		0E+00
SVOC	Fluoranthene	206-44-0	T	D	2					8.10E-04	8.10E-04	2.10E-01	0E+00	2.10E-01	0E+00
SVOC	Fluorene	86-73-7	T	D	2					1.00E-03	1.00E-03	2.00E+00	0E+00	8.80E-01	0E+00
SVOC	Hexachlorobenzene	118-74-1	T	B2	2					7.40E-04	7.40E-04	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Hexachlorobutadiene	87-68-3	T	C	1					7.30E-04	7.30E-04	4.20E-02	0E+00	1.50E-02	0E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	1					1.10E-03	1.10E-03	5.00E-02	0E+00	5.00E-02	0E+00
SVOC	Hexachloroethane	67-72-1	T	C	2					7.40E-04	7.40E-04	2.10E-02	0E+00	7.30E-03	0E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	2					6.30E-04	6.30E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	Isophorone	78-59-1	T	C	2					6.30E-04	6.30E-04	3.10E+00	0E+00	7.70E-01	0E+00
SVOC	2-Methylnaphthalene	91-57-6	T		1					6.40E-04	6.40E-04	7.50E-01	0E+00	2.60E-01	0E+00
SVOC	Methylphenol (summed)	1319-77-3	T		2					1.30E-03	1.30E-03	1.00E+00	0E+00	3.70E-01	0E+00
SVOC	Naphthalene	91-20-3	T	C	1					7.50E-04	7.50E-04	1.50E+00	0E+00	5.20E-01	0E+00
SVOC	2-Nitroaniline	88-74-4	T		2					7.00E-04	7.00E-04		0E+00		0E+00
SVOC	3-Nitroaniline	99-09-2	T	C	2					7.10E-04	7.10E-04		0E+00		0E+00
SVOC	4-Nitroaniline	100-01-6	T	C	2					1.30E-03	1.30E-03		0E+00		0E+00

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TABLE 4-30

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SVOC	Nitrobenzene	98-95-3	T	D	2					8.10E-04	8.10E-04	9.60E-03	0E+00	3.40E-03	0E+00
SVOC	2-Nitrophenol	88-75-5	T		2					2.10E-03	2.10E-03	5.80E-02	0E+00	2.00E-02	0E+00
SVOC	4-Nitrophenol	100-02-7	T		2					1.90E-03	1.90E-03		0E+00		0E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	2					1.40E-03	1.40E-03	1.10E+00	0E+00	2.70E-01	0E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	2					6.70E-04	6.70E-04	5.00E-03	0E+00	5.00E-03	0E+00
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	2					7.80E-04	7.80E-04		0E+00		0E+00
SVOC	Pentachlorophenol	87-86-5	T	B2	2					2.40E-03	2.40E-03	1.00E-03	0E+00	1.00E-03	0E+00
SVOC	Phenanthrene	85-01-8	T	D	2					8.20E-04	8.20E-04	1.50E-01	0E+00	5.20E-02	0E+00
SVOC	Phenol	108-95-2	T	D	2					2.60E-03	2.60E-03	1.30E+01	0E+00	4.40E+00	0E+00
SVOC	Pyrene	129-00-0	T	D	2					1.10E-03	1.10E-03	1.40E-01	0E+00	1.40E-01	0E+00
SVOC	2,4,5-Trichlorophenol	95-95-4	T		2					1.20E-03	1.20E-03	2.10E+00	0E+00	7.30E-01	0E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	2					1.70E-03	1.70E-03	4.70E-01	0E+00	1.20E-01	0E+00
P/PCB	PCBs (summed)	1336-36-3	T	B2	2					8.20E-05	8.20E-05	5.00E-04	0E+00	5.00E-04	0E+00
INORG	Antimony	7440-36-0	D		2	1	2.70E-03	2.70E-03	2.70E-03	2.20E-03	2.20E-03	6.00E-03	5E-01	6.00E-03	5E-01
INORG	Antimony	7440-36-0	T		2					2.20E-03	2.20E-03	6.00E-03	0E+00	6.00E-03	0E+00
INORG	Arsenic	7440-38-2	D	A	2	2	5.20E-03	1.56E-02	2.59E-02			5.00E-02	5E-01	5.00E-02	5E-01
INORG	Arsenic	7440-38-2	T	A	2	2	5.90E-03	1.86E-02	3.12E-02			5.00E-02	6E-01	5.00E-02	6E-01
INORG	Barium	7440-39-3	D	D	2	2	9.89E-02	1.50E-01	2.02E-01			2.00E+00	1E-01	2.00E+00	1E-01
INORG	Barium	7440-39-3	T	D	2	2	1.02E-01	1.59E-01	2.15E-01			2.00E+00	1E-01	2.00E+00	1E-01
INORG	Beryllium	7440-41-7	D	B1	2					5.40E-04	5.40E-04	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Beryllium	7440-41-7	T	B1	2					5.40E-04	5.40E-04	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Cadmium	7440-43-9	D	B1	2					2.80E-04	2.80E-04	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Cadmium	7440-43-9	T	B1	2					2.80E-04	2.80E-04	5.00E-03	0E+00	5.00E-03	0E+00
INORG	Chromium (total)	7440-47-3	D		2					1.40E-03	1.40E-03	1.00E-01	0E+00	1.00E-01	0E+00
INORG	Chromium (total)	7440-47-3	T		2	1	7.70E-03	7.70E-03	7.70E-03	1.40E-03	1.40E-03	1.00E-01	8E-02	1.00E-01	8E-02
INORG	Cobalt	7440-48-4	D		2					1.30E-03	1.30E-03	1.00E-01	0E+00	4.00E-02	0E+00
INORG	Cobalt	7440-48-4	T		2	1	1.60E-03	1.60E-03	1.60E-03	1.30E-03	1.30E-03	1.00E-01	2E-02	4.00E-02	4E-02
INORG	Copper	7440-50-8	D	D	2					4.20E-03	4.20E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Copper	7440-50-8	T	D	2					4.20E-03	4.20E-03	4.00E+00	0E+00	1.40E+00	0E+00
INORG	Lead	7439-92-1	D	B2	2					2.50E-03	2.50E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Lead	7439-92-1	T	B2	2					2.50E-03	2.50E-03	4.00E-03	0E+00	4.00E-03	0E+00
INORG	Manganese	7439-96-5	D	D	2	1	6.18E-02	6.18E-02	6.18E-02	9.00E-04	9.00E-04	2.50E+00	2E-02	8.60E-01	7E-02
INORG	Manganese	7439-96-5	T	D	2	1	7.26E-02	7.26E-02	7.26E-02	9.00E-04	9.00E-04	2.50E+00	3E-02	8.60E-01	8E-02

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TABLE 4-30

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-9 (DEEP AND INTERMEDIATE GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
INORG	Mercury	7439-97-6	D	D	2					6.90E-05	6.90E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Mercury	7439-97-6	T	D	2					6.90E-05	6.90E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Nickel	7440-02-0	D	A	2					2.20E-03	2.20E-03	1.00E-01	0E+00	1.00E-01	0E+00
INORG	Nickel	7440-02-0	T	A	2	1	6.70E-03	6.70E-03	6.70E-03	2.20E-03	2.20E-03	1.00E-01	7E-02	1.00E-01	7E-02
INORG	Selenium	7782-49-2	D	D	2					4.50E-03	4.50E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Selenium	7782-49-2	T	D	2					4.50E-03	4.50E-03	5.00E-02	0E+00	5.00E-02	0E+00
INORG	Silver	7440-22-4	D	D	2					1.50E-03	1.50E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Silver	7440-22-4	T	D	2					1.50E-03	1.50E-03	9.80E-02	0E+00	3.40E-02	0E+00
INORG	Thallium	7440-28-0	D		2					1.80E-05	1.80E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Thallium	7440-28-0	T		2					1.80E-05	1.80E-05	2.00E-03	0E+00	2.00E-03	0E+00
INORG	Vanadium	7440-62-2	D		2					8.20E-04	8.20E-04	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Vanadium	7440-62-2	T		2					8.20E-04	8.20E-04	6.20E-02	0E+00	4.50E-03	0E+00
INORG	Zinc	7440-66-6	D	D	2					1.20E-02	1.20E-02	5.00E+00	0E+00	2.40E+00	0E+00
INORG	Zinc	7440-66-6	T	D	2					1.20E-02	1.20E-02	5.00E+00	0E+00	2.40E+00	0E+00

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-31

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	34	13	4.50E-03	2.28E-02	8.90E-02	2.00E-03	1.02E+00		1.10E+05	8E-07	1.60E+05	6E-07	1.70E+08	5E-10	1.10E+05	8E-07	1.10E+05	8E-07	1.30E+05	7E-07	3.90E+08	2E-10	2.30E+04	4E-06
VOC	Benzene	71-43-2	A	34	2	6.00E-04	6.40E-04	6.80E-04	5.10E-04	2.55E-01		8.40E+00	8E-05	4.50E+01	2E-05	4.70E+05	1E-09	4.00E+02	2E-06	1.60E+00	4E-04	1.30E+01	5E-05	3.80E+05	2E-09	1.80E+02	4E-06
VOC	Bromodichloromethane	75-27-4	B2	34					9.40E-04	2.55E-01		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	34					1.30E-03	2.55E-01		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	34					1.40E-03	5.00E-01		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	34	8	2.40E-03	5.54E-03	1.00E-02	2.10E-03	1.02E+00		2.70E+04	4E-07	3.50E+04	3E-07	2.90E+07	3E-10	2.70E+04	4E-07	2.70E+04	4E-07	2.90E+04	3E-07	6.70E+07	1E-10	2.70E+04	4E-07
VOC	Carbon Disulfide	75-15-0		34	2	2.80E-03	3.10E-03	3.40E-03	6.10E-04	2.55E-01		1.40E+02	2E-05	1.60E+03	2E-06	2.10E+07	2E-10	2.80E+02	1E-05	7.60E+01	4E-05	1.30E+03	3E-06	4.70E+07	7E-11	2.80E+02	1E-05
VOC	Carbon Tetrachloride	56-23-5	B2	34					7.80E-04	2.55E-01		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	34					4.10E-04	2.55E-01		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		34	1	6.60E-03	6.60E-03	6.60E-03	1.70E-03	5.00E-01		9.50E+02	7E-06	3.60E+04	2E-07	2.90E+08	2E-11	9.50E+02	7E-06	9.50E+02	7E-06	3.00E+04	2E-07	6.70E+08	1E-11	9.50E+02	7E-06
VOC	Chloroform	67-66-3	B2	34					6.40E-04	2.55E-01		3.80E+01		1.50E+02		1.10E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	34					1.00E-03	5.00E-01		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	34	8	8.00E-04	3.62E-02	2.50E-01	6.10E-04	2.50E-01		3.90E+02	6E-04	2.00E+03	1E-03	2.60E+06	1E-07	3.90E+02	6E-04	3.90E+02	6E-04	1.70E+03	1E-04	5.80E+06	4E-08	3.90E+02	6E-04
VOC	Cyclohexane	110-82-7		34	2	5.40E-02	6.23E-02	7.05E-02	7.80E-04	5.00E-01																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	34					1.30E-03	5.00E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	34					8.60E-04	2.55E-01		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	34					9.40E-04	2.55E-01		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	34					5.60E-04	2.55E-01		2.10E+02		7.50E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	34					6.30E-04	2.55E-01								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	34	1	1.40E-02	1.40E-02	1.40E-02	5.20E-04	2.55E-01		1.00E+02	1E-04	2.60E+02	5E-05	5.70E+05	2E-08	2.90E+03	5E-06	1.90E+01	7E-04	7.70E+01	2E-04	4.50E+05	3E-08	4.00E+02	4E-05
VOC	Dichlorodifluoromethane	75-71-8		34					8.60E-04	5.00E-01		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	34					4.50E-04	2.55E-01		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	34					5.70E-04	2.55E-01		1.10E+01		2.30E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	34					9.40E-04	2.55E-01		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	34					6.60E-04	2.55E-01		4.20E+01		2.40E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		34					5.70E-04	2.55E-01		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	34					5.90E-04	2.55E-01		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	34					6.70E-04	2.55E-01		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	34	9	7.70E-04	2.01E-02	7.00E-02	5.10E-04	2.50E-01		1.40E+02	5E-04	1.10E+04	6E-06	2.90E+07	2E-09	1.40E+02	5E-04	1.40E+02	5E-04	9.50E+03	7E-06	6.70E+07	1E-09	1.40E+02	5E-04
VOC	2-Hexanone	591-78-6		34					1.30E-03	1.02E+00		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		34	9	1.50E-03	9.04E-02	1.80E-01	8.60E-04	4.90E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		34					6.60E-04	1.02E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		34	2	8.30E-03	1.82E-02	2.80E-02	1.50E-03	1.02E+00		2.70E+03	1E-05	5.30E+04	5E-07	6.00E+07	5E-10	2.70E+03	1E-05	2.70E+03	1E-05	4.50E+04	6E-07	1.40E+08	2E-10	2.70E+03	1E-05
VOC	Methylcyclohexane	108-87-2		34	6	1.00E-03	9.87E-02	4.45E-01	4.60E-04	5.00E-01																	
VOC	Methylene Chloride	75-09-2	B2	34	4	5.50E-02	1.67E-01	3.30E-01	1.00E-03	2.50E-01		2.40E+02	1E-03	7.00E+02	5E-04	8.30E+06	4E-08	2.30E+03	1E-04	4.50E+01	7E-03	2.10E+02	2E-03	6.60E+06	5E-08	1.30E+03	3E-04
VOC	Styrene	100-42-5		34					3.90E-04	2.55E-01		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	34					1.40E-03	2.55E-01		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	34					9.40E-04	2.55E-01		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	34	19	4.70E-04	2.00E-02	1.20E-01	4.20E-04	2.50E-01		2.50E+02	5E-04	3.30E+03	4E-05	1.20E+07	1E-08	2.50E+02	5E-04	2.50E+02	5E-04	2.80E+03	4E-05	2.70E+07	4E-09	2.50E+02	5E-04
VOC	1,2,4-Trichlorobenzene	120-82-1	D	34					7.00E-04	2.55E-01		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	34	1	2.10E-03	2.10E-03	2.10E-03	7.20E-04	2.55E-01		4.60E+02	5E-06	4.50E+03	5E-07	2.90E+07	7E-11	4.60E+02	5E-06	2.50E+02	8E-06	3.80E+03	6E-07	6.70E+07	3E-11	4.60E+02	5E-06
VOC	1,1,2-Trichloroethane	79-00-5	C	34					9.40E-04	2.55E-01		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	34	1	2.30E-02	2.30E-02	2.30E-02	6.00E-04	2.55E-01		3.70E+01	6E-04	2.60E+02	9E-05	2.30E+06	1E-08	5.00E+02	5E-05	7.10E+00	3E-03	7.80E+01	3E-04	1.80E+06	1E-08	5.00E+02	5E-05
VOC	Trichlorofluoromethane	75-69-4		34					8.60E-04	5.00E-01		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		34					7.30E-04	2.55E-01		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	34					1.10E-03	5.00E-01		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	34	14	2.90E-03	5.41E-02	2.10E-01	1.70E-03	5.00E-01		1.50E+02	1E-03	5.40E+04	4E-06	1.30E+08	2E-09	1.50E+02	1E-03	1.50E+02	1E-03	4.60E+04	5E-06	2.90E+08	7E-10	1.50E+02	1E-03
SVOC	Acenaphthene	83-32-9		34	1	1.70E-01	1.70E-01	1.70E-01	5.30E-02	9.15E+00		3.50E+05	5E-07	9.70E+04	2E-06	6.20E+06	3E-08	2.00E+05	9E-07	1.90E+05	9E-07	8.10E+04	2E-06	1.40E+07	1E-08	4.10E+04	4E-06
SVOC	Acenaphthylene	208-96-8	D	34	2	6.80E-02	7.40E-02	8.00E-02	4.90E-02	9.15E+00		3.00E+03	3E-05	2.70E+03	3E-05	1.00E+06	8E-08	8.00E+03	1E-05	1.60E+03	5E-05	2.20E+03	4E-05	2.30E+06	3E-08	1.60E+03	5E-05
SVOC	Acetophenone	98-86-2	D	34					5.20E-02	9.15E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	34	4	5.80E-02	1.43E-01	3.70E-01	5.10E-02	9.15E+00		1.00E+06	4E-07	1.60E+06	2E-07	2.90E+07	1E-08	1.00E+06	4E-07	1.00E+06	4E-07	1.40E+06	3E-07	6.70E+07	6E-09	2.30E+05	2E-06
SVOC	Atrazine	1912-24-9		34					1.60E-01	9.15E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		34					1.80E-01	9.15E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	34	4	1.20E-01	3.80E-01	8.00E-01	5.70E-02	9.15E+00								1.00E+02	8E-03							2.00E+01	4E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	34	4	1.40E-01	5.43E-01	1.20E+00	6.20E-02	9.15E+00						1.90E+03	6E-04	1.00E+01	1E-01					1.50E+03	8E-04	2.00E+00	6E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	34	4	2.60E-01	1.04E+00	2.40E+00	6.00E-02	9.15E+00								1.00E+02	2E-02							2.00E+01	1E-01
SVOC	Benzo(g,h,i)perylene	191-24-2	D	34	3	1.40E-01	3.93E-01	5.50E-01	5.70E-02	9.15E+00						3.50E+05	2E-06	9.10E+03	6E-05					8.00E+05	7E-07	2.50E+03	2E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	34	6	6.80E-02	2.51E-01	5.10E-01	5.50E-02	9.15E+00								1.00E+03	5E-04							2.00E+02	3E-03
SVOC	Biphenyl	92-52-4		34					1.40E-01	9.15E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	34					4.90E-02	9.15E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	34					5.30E-02	9.15E+00		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	34	5	7.70E-02	2.29E-01	5.80E-01	5.60E-02	9.15E+00						8.90E+05	7E-07	1.00E+04	6E-05					7.00E+05	8E-07	2.80E+03	2E-04

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

TABLE 4-31

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	34					6.30E-02	9.15E+00																	
SVOC	Butylbenzylphthalate	85-68-7	C	34	2	8.60E-02	1.18E-01	1.50E-01	5.30E-02	9.15E+00						2.10E+07	7E-09	3.10E+02	5E-04					4.70E+07	3E-09	3.10E+02	5E-04
SVOC	Caprolactam	105-60-2		34					1.90E-01	9.15E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	34					5.40E-02	9.15E+00								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		34					5.30E-02	9.15E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		34					5.30E-02	3.60E+01																	
SVOC	2-Chloronaphthalene	91-58-7		34					5.00E-02	9.15E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		34					5.40E-02	9.15E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		34					5.40E-02	9.15E+00																	
SVOC	Chrysene	218-01-9	B2	34	8	7.30E-02	4.99E-01	1.50E+00	4.80E-02	9.15E+00								1.00E+04	2E-04							2.00E+03	8E-04
SVOC	Di-n-butylphthalate	84-74-2	D	34					1.60E-01	9.15E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		34					5.60E-02	9.15E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	34	2	8.50E-02	1.18E-01	1.50E-01	5.30E-02	9.15E+00								1.00E+01	2E-02							2.00E+00	8E-02
SVOC	Dibenzofuran	132-64-9	D	34	1	1.70E-01	1.70E-01	1.70E-01	5.20E-02	9.15E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	34					4.00E-02	5.55E+01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		34					5.20E-02	9.15E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	34					1.60E-01	9.15E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		34					8.30E-02	9.15E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	34					1.70E-01	9.15E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		34					1.70E-01	4.70E+01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		34					1.10E-01	4.70E+01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	34					4.80E-02	9.15E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	34					5.00E-02	9.15E+00																	
SVOC	Fluoranthene	206-44-0	D	34	11	6.60E-02	8.09E-01	3.10E+00	5.80E-02	9.15E+00		1.00E+06	3E-06	8.90E+05	3E-06	4.10E+06	8E-07	1.80E+05	2E-05	1.00E+06	3E-06	7.40E+05	4E-06	9.30E+06	3E-07	4.60E+04	7E-05
SVOC	Fluorene	86-73-7	D	34	11	6.90E-02	8.07E-01	4.60E+00	5.00E-02	9.15E+00		1.00E+06	5E-06	1.60E+05	3E-05	4.10E+06	1E-06	1.30E+05	4E-05	5.80E+05	8E-06	1.30E+05	4E-05	9.30E+06	5E-07	2.70E+04	2E-04
SVOC	Hexachlorobenzene	118-74-1	B2	34					5.80E-02	9.15E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	34					4.70E-02	9.15E+00		3.50E+02		9.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	34					6.20E-02	9.15E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	34					5.00E-02	2.75E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	34	3	1.40E-01	3.57E-01	4.70E-01	7.20E-02	9.15E+00								1.00E+02	5E-03							2.00E+01	2E-02
SVOC	Isophorone	78-59-1	C	34					4.50E-02	9.15E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		34	8	8.30E-02	2.92E-01	1.30E+00	5.00E-02	9.15E+00								4.00E+04	3E-05							8.10E+03	2E-04
SVOC	Methylphenol (summed)	1319-77-3		34					4.90E-02	9.15E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	34	2	6.70E-02	8.20E-02	9.70E-02	5.10E-02	9.15E+00		4.70E+02	2E-04	3.50E+02	3E-04	8.80E+04	1E-06	8.00E+04	1E-06	2.50E+02	4E-04	3.00E+02	3E-04	2.00E+05	5E-07	1.60E+04	6E-06
SVOC	2-Nitroaniline	88-74-4		34					4.80E-02	4.70E+01																	
SVOC	3-Nitroaniline	99-09-2	C	34					1.40E-01	4.70E+01																	
SVOC	4-Nitroaniline	100-01-6	C	34					7.00E-02	4.70E+01																	
SVOC	Nitrobenzene	98-95-3	D	34					4.80E-02	9.15E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		34					4.80E-02	9.15E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		34					2.00E-01	4.70E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	34					5.10E-02	9.15E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	34					4.50E-02	9.15E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	34					5.40E-02	9.15E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	34					1.20E-01	9.40E+01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	34	14	1.50E-01	1.59E+00	7.00E+00	5.40E-02	7.50E+00		5.10E+03	1E-03	1.90E+02	4E-02	2.90E+03	2E-03	8.00E+03	9E-04	2.80E+03	3E-03	1.60E+02	4E-02	6.70E+03	1E-03	1.60E+03	4E-03
SVOC	Phenol	108-95-2	D	34	1	9.20E-02	9.20E-02	9.20E-02	5.10E-02	9.15E+00						1.80E+07	5E-09	1.20E+04	8E-06					4.00E+07	2E-09	1.20E+04	8E-06
SVOC	Pyrene	129-00-0	D	34	15	7.90E-02	9.17E-01	2.90E+00	5.30E-02	9.15E+00		1.00E+06	3E-06	7.80E+05	4E-06	2.90E+06	1E-06	1.10E+05	3E-05	1.00E+06	3E-06	6.50E+05	4E-06	6.70E+06	4E-07	2.90E+04	1E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		34					5.70E-02	9.15E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	34					6.50E-02	9.15E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	34	21	2.72E-02	1.48E+00	7.22E+00	2.10E-02	2.20E+00		1.60E+04	5E-04	8.10E+02	9E-03	6.50E+03	1E-03	2.00E+01	4E-01	3.00E+03	2E-03	2.40E+02	3E-02	5.20E+03	1E-03	4.00E+00	**2E+00**
INORG	Antimony	7440-36-0		34	13	3.37E-01	1.86E+00	1.12E+01	2.53E-01	5.41E+00						5.90E+03	2E-03	1.20E+03	9E-03					1.30E+04	9E-04	1.80E+02	6E-02
INORG	Arsenic	7440-38-2	A	34	34	1.71E+00	6.89E+00	2.74E+01			1.32E+01					9.10E+02	2E-02	6.10E+01	2E-01					7.20E+02	2E-02	7.60E+00	**2E+00**
INORG	Barium	7440-39-3	D	34	34	6.91E+00	6.88E+01	2.87E+02			1.10E+02					1.50E+05	1E-03	2.50E+05	7E-04					3.30E+05	5E-04	3.70E+04	5E-03
INORG	Beryllium	7440-41-7	B1	34	25	2.86E-02	5.29E-01	2.80E+00	2.38E-02	4.89E-01	1.53E+00					5.90E+02	2E-03	3.10E+03	4E-04					1.30E+03	1E-03	4.10E+02	3E-03
INORG	Cadmium	7440-43-9	B1	34	26	6.54E-02	4.44E-01	3.15E+00	2.41E-02	2.80E+00	1.20E+00					2.20E+03	9E-04	4.10E+03	5E-04					1.70E+03	1E-03	5.50E+02	4E-03
INORG	Chromium (total)	7440-47-3		34	34	3.35E+00	7.12E+01	5.96E+02			4.92E+01					2.40E+02	**2E+00**	1.70E+04	3E-02					2.60E+02	**2E+00**	2.50E+03	2E-01
INORG	Chromium III	16065-83-1	D	6	6	1.11E+01	2.05E+01	6.00E+01								1.50E+05	4E-04	1.00E+06	6E-05					3.30E+05	2E-04	7.90E+05	8E-05
INORG	Chromium VI	18540-29-9	A	6					3.89E-01	4.22E-01						2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		34	34	1.37E+00	5.38E+00	2.03E+01			1.74E+01					5.90E+03	5E-04	1.80E+04	2E-04					1.30E+04	2E-04	2.60E+03	1E-03
INORG	Copper	7440-50-8	D	34	34	3.28E+00	4.53E+01	2.59E+02			3.20E+01					5.90E+04	4E-03	1.40E+05	2E-03					1.30E+05	2E-03	2.00E+04	1E-02
INORG	Cyanide (total)	57-12-5	D	2					1.76E-01	1.86E-01						2.50E+02		2.50E+02						2.50E+02		1.20E+01	
INORG	Lead	7439-92-1	B2	34	34	2.81E+00	1.84E+02	4.02E+03			4.92E+01					4.40E+04	9E-02	9.00E+02	**4E+00**					1.00E+05	4E-02	4.00E+02	**1E+01**

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TABLE 4-31

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Manganese	7439-96-5	D	40	40	1.23E+02	8.45E+02	1.00E+04			5.10E+02					1.50E+03	**6E+00**	1.70E+05	6E-02					3.30E+03	**3E+00**	2.50E+04	4E-01
INORG	Mercury	7439-97-6	D	34	23	1.33E-02	7.98E-02	2.61E-01	8.70E-03	3.69E-02	1.30E-01							1.10E+03	1E-04							1.60E+02	8E-04
INORG	Nickel	7440-02-0	A	34	34	5.07E+00	2.70E+01	1.37E+02			3.01E+01					1.60E+04	7E-03	2.70E+05	4E-04					1.30E+04	8E-03	4.00E+04	3E-03
INORG	Selenium	7782-49-2	D	34	18	1.98E-01	1.29E+00	7.88E+00	1.60E-01	5.83E-01	4.10E-01					5.90E+04	1E-04	1.80E+04	4E-04					1.30E+05	6E-05	2.60E+03	3E-03
INORG	Silver	7440-22-4	D	34					7.75E-02	1.66E+00						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		34	18	4.43E-01	8.11E-01	1.78E+00	5.67E-01	5.60E+00								2.40E+02	7E-03							3.50E+01	5E-02
INORG	Vanadium	7440-62-2		34	34	5.27E+00	1.56E+01	8.00E+01			3.28E+01							1.00E+04	5E-03							7.50E+02	6E-02
INORG	Zinc	7440-66-6	D	34	34	9.91E+00	8.32E+01	5.05E+02			4.70E+01							1.00E+06	5E-04							1.70E+05	3E-03

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-32

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
VOC	Acetone	67-64-1	D	1					2.20E-01	2.20E-01
VOC	Benzene	71-43-2	A	1					4.80E-02	4.80E-02
VOC	Bromodichloromethane	75-27-4	B2	1					2.90E-02	2.90E-02
VOC	Bromoform	75-25-2	B2	1					4.70E-02	4.70E-02
VOC	Bromomethane	74-83-9	D	1					7.40E-02	7.40E-02
VOC	2-Butanone	78-93-3	D	1	1	6.20E-01	6.20E-01	6.20E-01		
VOC	Carbon Disulfide	75-15-0		1					9.90E-02	9.90E-02
VOC	Carbon Tetrachloride	56-23-5	B2	1					2.90E-02	2.90E-02
VOC	Chlorobenzene	108-90-7	D	1					2.30E-02	2.30E-02
VOC	Chloroethane	75-00-3		1					1.10E-01	1.10E-01
VOC	Chloroform	67-66-3	B2	1					2.90E-02	2.90E-02
VOC	Chloromethane	74-87-3	D	1	1	2.30E-01	2.30E-01	2.30E-01		
VOC	Cumene	98-82-8	D	1	1	2.10E+00	2.10E+00	2.10E+00		
VOC	Cyclohexane	110-82-7		1	1	2.60E-01	2.60E-01	2.60E-01		
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	1					2.30E-01	2.30E-01
VOC	Dibromochloromethane	124-48-1	C	1					3.60E-02	3.60E-02
VOC	1,2-Dibromoethane	106-93-4	B2	1					5.60E-02	5.60E-02
VOC	1,2-Dichlorobenzene	95-50-1	D	1					4.50E-02	4.50E-02
VOC	1,3-Dichlorobenzene	541-73-1	D	1					2.80E-02	2.80E-02
VOC	1,4-Dichlorobenzene	106-46-7	C	1					4.70E-02	4.70E-02
VOC	Dichlorodifluoromethane	75-71-8		1					1.10E-01	1.10E-01
VOC	1,1-Dichloroethane	75-34-3	C	1					3.90E-02	3.90E-02
VOC	1,2-Dichloroethane	107-06-2	B2	1					3.10E-02	3.10E-02
VOC	1,1-Dichloroethene	75-35-4	C	1					4.70E-02	4.70E-02
VOC	cis-1,2-Dichloroethene	156-59-2	D	1					4.60E-02	4.60E-02
VOC	trans-1,2-Dichloroethene	156-60-5		1					5.20E-02	5.20E-02
VOC	1,2-Dichloropropane	78-87-5	B2	1					2.60E-02	2.60E-02
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	1					3.30E-02	3.30E-02
VOC	Ethyl Benzene	100-41-4	D	1	1	2.10E+00	2.10E+00	2.10E+00		
VOC	2-Hexanone	591-78-6		1					8.70E-02	8.70E-02
VOC	Methyl Acetate	79-20-9		1					1.40E+00	1.40E+00
VOC	Methyl tert-butyl ether	1634-04-4		1					3.20E-02	3.20E-02
VOC	4-Methyl-2-pentanone	108-10-1		1					8.40E-02	8.40E-02
VOC	Methylcyclohexane	108-87-2		1	1	1.70E+00	1.70E+00	1.70E+00		
VOC	Methylene Chloride	75-09-2	B2	1					1.20E-01	1.20E-01
VOC	Styrene	100-42-5		1					4.80E-02	4.80E-02
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	1					3.10E-02	3.10E-02
VOC	Tetrachloroethene	127-18-4	C-B2	1					4.30E-02	4.30E-02
VOC	Toluene	108-88-3	D	1	1	1.40E+00	1.40E+00	1.40E+00		
VOC	1,2,4-Trichlorobenzene	120-82-1	D	1					3.20E-02	3.20E-02
VOC	1,1,1-Trichloroethane	71-55-6	D	1					2.90E-02	2.90E-02
VOC	1,1,2-Trichloroethane	79-00-5	C	1					4.70E-02	4.70E-02
VOC	Trichloroethene	79-01-6	C-B2	1					4.90E-02	4.90E-02
VOC	Trichlorofluoromethane	75-69-4		1					5.50E-02	5.50E-02
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1					2.90E+00	2.90E+00
VOC	Vinyl Chloride	75-01-4	A	1					3.10E-02	3.10E-02
VOC	Xylenes (total)	1330-20-7	D	1	1	1.50E+01	1.50E+01	1.50E+01		
SVOC	Acenaphthene	83-32-9		1					1.30E+00	1.30E+00
SVOC	Acenaphthylene	208-96-8	D	1					1.20E+00	1.20E+00
SVOC	Acetophenone	98-86-2	D	1					1.20E+00	1.20E+00
SVOC	Anthracene	120-12-7	D	1	1	6.40E+01	6.40E+01	6.40E+01		
SVOC	Atrazine	1912-24-9		1					3.80E+00	3.80E+00
SVOC	Benzaldehyde	100-52-7		1					4.20E+00	4.20E+00
SVOC	Benzo(a)anthracene	56-55-3	B2	1					1.40E+00	1.40E+00
SVOC	Benzo(a)pyrene	50-32-8	B2	1					1.50E+00	1.50E+00

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS, PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	Benzo(b)fluoranthene	205-99-2	B2	1					1.40E+00	1.40E+00
SVOC	Benzo(g,h,i)perylene	191-24-2	D	1					1.40E+00	1.40E+00
SVOC	Benzo(k)fluoranthene	207-08-9	B2	1					1.30E+00	1.30E+00
SVOC	Biphenyl	92-52-4		1	1	5.10E+01	5.10E+01	5.10E+01		
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	1					1.20E+00	1.20E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	1					1.30E+00	1.30E+00
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	1					1.40E+00	1.40E+00
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	1					1.50E+00	1.50E+00
SVOC	Butylbenzylphthalate	85-68-7	C	1					1.30E+00	1.30E+00
SVOC	Caprolactam	105-60-2		1					4.50E+00	4.50E+00
SVOC	Carbazole	86-74-8	B2	1					1.30E+00	1.30E+00
SVOC	4-Chloro-3-methylphenol	59-50-7		1					1.30E+00	1.30E+00
SVOC	4-Chloroaniline	106-47-8		1					1.30E+00	1.30E+00
SVOC	2-Chloronaphthalene	91-58-7		1					1.20E+00	1.20E+00
SVOC	2-Chlorophenol	95-57-8		1					1.30E+00	1.30E+00
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		1					1.30E+00	1.30E+00
SVOC	Chrysene	218-01-9	B2	1					1.20E+00	1.20E+00
SVOC	Di-n-butylphthalate	84-74-2	D	1					3.80E+00	3.80E+00
SVOC	Di-n-octylphthalate	117-84-0		1					1.40E+00	1.40E+00
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	1					1.30E+00	1.30E+00
SVOC	Dibenzofuran	132-64-9	D	1					1.20E+00	1.20E+00
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	1					9.80E-01	9.80E-01
SVOC	2,4-Dichlorophenol	120-83-2		1					1.20E+00	1.20E+00
SVOC	Diethylphthalate	84-66-2	D	1					3.80E+00	3.80E+00
SVOC	2,4-Dimethylphenol	105-67-9		1					2.00E+00	2.00E+00
SVOC	Dimethylphthalate	131-11-3	D	1					4.00E+00	4.00E+00
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		1					4.00E+00	4.00E+00
SVOC	2,4-Dinitrophenol	51-28-5		1					2.80E+00	2.80E+00
SVOC	2,4-Dinitrotoluene	121-14-2	B2	1					1.20E+00	1.20E+00
SVOC	2,6-Dinitrotoluene	606-20-2	B2	1					1.20E+00	1.20E+00
SVOC	Fluoranthene	206-44-0	D	1	1	9.00E+01	9.00E+01	9.00E+01		
SVOC	Fluorene	86-73-7	D	1	1	1.30E+02	1.30E+02	1.30E+02		
SVOC	Hexachlorobenzene	118-74-1	B2	1					1.40E+00	1.40E+00
SVOC	Hexachlorobutadiene	87-68-3	C	1					1.10E+00	1.10E+00
SVOC	Hexachlorocyclopentadiene	77-47-4	E	1					1.50E+00	1.50E+00
SVOC	Hexachloroethane	67-72-1	C	1					1.20E+00	1.20E+00
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	1					1.80E+00	1.80E+00
SVOC	Isophorone	78-59-1	C	1					1.10E+00	1.10E+00
SVOC	2-Methylnaphthalene	91-57-6		1	1	1.70E+02	1.70E+02	1.70E+02		
SVOC	Methylphenol (summed)	1319-77-3		1					1.20E+00	1.20E+00
SVOC	Naphthalene	91-20-3	C	1					1.20E+00	1.20E+00
SVOC	2-Nitroaniline	88-74-4		1					1.20E+00	1.20E+00
SVOC	3-Nitroaniline	99-09-2	C	1					3.50E+00	3.50E+00
SVOC	4-Nitroaniline	100-01-6	C	1					1.70E+00	1.70E+00
SVOC	Nitrobenzene	98-95-3	D	1					1.20E+00	1.20E+00
SVOC	2-Nitrophenol	88-75-5		1					1.20E+00	1.20E+00
SVOC	4-Nitrophenol	100-02-7		1					4.80E+00	4.80E+00
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	1					1.20E+00	1.20E+00
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	1					1.10E+00	1.10E+00

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (LNAPL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	1					1.30E+00	1.30E+00
SVOC	Pentachlorophenol	87-86-5	B2	1					3.00E+00	3.00E+00
SVOC	Phenanthrene	85-01-8	D	1	1	5.40E+02	5.40E+02	5.40E+02		
SVOC	Phenol	108-95-2	D	1					1.20E+00	1.20E+00
SVOC	Pyrene	129-00-0	D	1	1	1.10E+02	1.10E+02	1.10E+02		
SVOC	2,4,5-Trichlorophenol	95-95-4		1					1.40E+00	1.40E+00
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	1					1.60E+00	1.60E+00
P/PCB	PCBs (summed)	1336-36-3	B2	1	1	1.89E+02	1.89E+02	1.89E+02		
INORG	Antimony	7440-36-0		1					4.90E-01	4.90E-01
INORG	Arsenic	7440-38-2	A	1	1	7.20E+00	7.20E+00	7.20E+00		
INORG	Barium	7440-39-3	D	1	1	2.20E+00	2.20E+00	2.20E+00		
INORG	Beryllium	7440-41-7	B1	1					4.60E-02	4.60E-02
INORG	Cadmium	7440-43-9	B1	1					4.30E-02	4.30E-02
INORG	Chromium (total)	7440-47-3		1	1	2.50E+00	2.50E+00	2.50E+00		
INORG	Cobalt	7440-48-4		1					1.50E-01	1.50E-01
INORG	Copper	7440-50-8	D	1	1	6.20E-01	6.20E-01	6.20E-01		
INORG	Lead	7439-92-1	B2	1	1	6.80E-01	6.80E-01	6.80E-01		
INORG	Manganese	7439-96-5	D	1	1	2.20E-01	2.20E-01	2.20E-01		
INORG	Mercury	7439-97-6	D	1					4.70E-03	4.70E-03
INORG	Nickel	7440-02-0	A	1	1	1.60E+00	1.60E+00	1.60E+00		
INORG	Selenium	7782-49-2	D	1	1	8.30E-01	8.30E-01	8.30E-01		
INORG	Silver	7440-22-4	D	1					1.50E-01	1.50E-01
INORG	Thallium	7440-28-0		1					5.00E-01	5.00E-01
INORG	Vanadium	7440-62-2		1	1	2.50E+00	2.50E+00	2.50E+00		
INORG	Zinc	7440-66-6	D	1					1.20E+00	1.20E+00
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	1	1	5.31E-04	5.31E-04	5.31E-04		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	5	1	3.10E-03	3.10E-03	3.10E-03	5.10E-04	5.10E-04	1.00E+06	3E-09	3.10E+04	1E-07	1.00E+06	3E-09
VOC	Benzene	71-43-2	T	A	5	3	1.90E-04	3.60E-04	5.80E-04	1.60E-04	1.60E-04	3.60E+01	2E-05	1.10E+01	5E-05	5.60E+00	1E-04
VOC	Bromodichloromethane	75-27-4	T	B2	5	1	3.00E-04	3.00E-04	3.00E-04	1.70E-04	1.70E-04	3.80E+01	8E-06	1.40E+01	2E-05	4.80E+00	6E-05
VOC	Bromoform	75-25-2	T	B2	5					1.80E-04	1.80E-04	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	5					2.00E-04	2.00E-04	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	5	1	1.00E-03	1.00E-03	1.00E-03	4.10E-04	4.10E-04	2.40E+05	4E-09	2.40E+05	4E-09	2.40E+05	4E-09
VOC	Carbon Disulfide	75-15-0	T		5	1	2.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	5.50E+02	4E-07	1.20E+03	2E-07	2.50E+02	8E-07
VOC	Carbon Tetrachloride	56-23-5	T	B2	5					1.20E-04	1.20E-04	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	5					1.40E-04	1.40E-04	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		5					2.60E-04	2.60E-04	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	5	3	2.00E-04	4.47E-04	5.70E-04	1.40E-04	1.40E-04	1.80E+02	3E-06	1.50E+02	4E-06	2.80E+01	2E-05
VOC	Chloromethane	74-87-3	T	D	5					1.30E-04	1.30E-04	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	5	1	3.00E-04	3.00E-04	3.00E-04	1.20E-04	1.20E-04	5.60E+01	5E-06	5.60E+01	5E-06	5.60E+01	5E-06
VOC	Cyclohexane	110-82-7	T		5					1.30E-04	1.30E-04						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	5					6.20E-04	6.20E-04	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	5					2.60E-04	2.60E-04	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	5					2.20E-04	2.20E-04	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	5					1.10E-04	1.10E-04	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	5					1.50E-04	1.50E-04			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	5					1.70E-04	1.70E-04	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		5					2.60E-04	2.60E-04	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	5	2	7.30E-04	7.85E-04	8.40E-04	1.60E-04	1.60E-04	2.30E+03	4E-07	2.40E+03	4E-07	1.00E+03	8E-07
VOC	1,2-Dichloroethane	107-06-2	T	B2	5					2.10E-04	2.10E-04	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	5					2.40E-04	2.40E-04	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	5					2.20E-04	2.20E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		5					1.50E-04	1.50E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	5					1.70E-04	1.70E-04	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	5					2.70E-04	2.70E-04	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	5	4	1.50E-04	3.83E-04	1.00E-03	1.20E-04	1.20E-04	1.70E+02	6E-06	1.70E+02	6E-06	1.70E+02	6E-06
VOC	2-Hexanone	591-78-6	T		5					4.60E-04	4.60E-04	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		5					4.10E-04	4.10E-04						
VOC	Methyl tert-butyl ether	1634-04-4	T		5	3	6.70E-04	1.58E-03	3.40E-03	1.30E-04	1.30E-04	4.70E+04	7E-08	6.90E+02	5E-06	4.70E+04	7E-08
VOC	4-Methyl-2-pentanone	108-10-1	T		5	1	2.40E-04	2.40E-04	2.40E-04	2.30E-04	2.30E-04	2.00E+04	1E-08	1.30E+04	2E-08	2.00E+04	1E-08
VOC	Methylcyclohexane	108-87-2	T		5					1.50E-04	1.50E-04						
VOC	Methylene Chloride	75-09-2	T	B2	5					3.40E-04	3.40E-04	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		5					1.50E-04	1.50E-04	3.10E+02		9.70E+00		1.70E+02	

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RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	5					2.50E-04	2.50E-04	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	5					2.30E-04	2.30E-04	1.70E+02		1.20E+01		2.50E+01	
VOC	Toluene	108-88-3	T	D	5	4	5.90E-04	1.08E-03	1.90E-03	1.80E-04	1.80E-04	5.30E+02	4E-06	5.30E+02	4E-06	5.30E+02	4E-06
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	5					1.70E-04	1.70E-04	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	5	1	6.20E-04	6.20E-04	6.20E-04	1.50E-04	1.50E-04	1.30E+03	5E-07	1.30E+03	5E-07	6.60E+02	9E-07
VOC	1,1,2-Trichloroethane	79-00-5	T	C	5					3.00E-04	3.00E-04	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	5					1.40E-04	1.40E-04	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		5					2.80E-04	2.80E-04	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		5					3.20E-04	3.20E-04	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	5					1.50E-04	1.50E-04	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	5	4	5.80E-04	2.59E-03	7.80E-03	3.30E-04	3.30E-04	1.90E+02	4E-05	1.90E+02	4E-05	1.90E+02	4E-05
SVOC	Acenaphthene	83-32-9	T		5					8.00E-04	3.20E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	5					7.10E-04	2.80E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	5					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	5					6.80E-04	2.70E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		5					2.50E-03	1.00E-02			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		5					2.80E-03	1.10E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	5					7.00E-04	2.80E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	5					7.30E-04	2.90E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	5					9.40E-04	3.80E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	5					8.50E-04	3.40E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	5					8.40E-04	3.40E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		5					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	5					8.70E-04	3.50E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	5					9.70E-04	3.90E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	5	1	1.50E-01	1.50E-01	1.50E-01	2.70E-03	1.10E-02			3.20E-01	5E-01		
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	5					8.80E-04	3.50E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	5					8.80E-04	3.50E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		5					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	5					8.20E-04	3.30E-03			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		5					9.90E-04	4.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		5					6.10E-04	2.40E-03						
SVOC	2-Chloronaphthalene	91-58-7	T		5					8.50E-04	3.40E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		5					1.00E-03	4.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		5					7.90E-04	3.20E-03						
SVOC	Chrysene	218-01-9	T	B2	5					7.50E-04	3.00E-03			5.00E-03			

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PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Di-n-butylphthalate	84-74-2	T	D	5					6.70E-04	2.70E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		5					1.10E-03	4.40E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	5					7.90E-04	3.20E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	5					1.10E-03	4.40E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	5					9.30E-04	3.70E-03			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		5					8.50E-04	3.40E-03			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	5					6.50E-04	2.60E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		5					8.50E-04	3.40E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	5					7.60E-04	3.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		5					1.30E-03	5.20E-03			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		5					3.00E-03	1.20E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	5					7.90E-04	3.20E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	5					5.70E-04	2.30E-03						
SVOC	Fluoranthene	206-44-0	T	D	5	1	8.20E-04	8.20E-04	8.20E-04	8.10E-04	3.20E-03	2.10E-01	4E-03	2.10E-01	4E-03	2.10E-01	4E-03
SVOC	Fluorene	86-73-7	T	D	5	1	1.90E-03	1.90E-03	1.90E-03	1.00E-03	4.00E-03	2.00E+00	1E-03	2.00E+00	1E-03	2.00E+00	1E-03
SVOC	Hexachlorobenzene	118-74-1	T	B2	5					7.40E-04	3.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	5					7.30E-04	2.90E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	5					1.10E-03	4.40E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	5					7.40E-04	3.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	5					6.30E-04	2.50E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	5					6.30E-04	2.50E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		5	1	7.50E-03	7.50E-03	7.50E-03	6.40E-04	6.40E-04			2.50E+01	3E-04		
SVOC	Methylphenol (summed)	1319-77-3	T		5					1.30E-03	5.20E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	5	1	6.90E-03	6.90E-03	6.90E-03	7.50E-04	7.50E-04	3.10E+01	2E-04	3.10E+01	2E-04	3.10E+01	2E-04
SVOC	2-Nitroaniline	88-74-4	T		5					7.00E-04	2.80E-03						
SVOC	3-Nitroaniline	99-09-2	T	C	5					7.10E-04	2.80E-03						
SVOC	4-Nitroaniline	100-01-6	T	C	5					1.30E-03	5.20E-03						
SVOC	Nitrobenzene	98-95-3	T	D	5					8.10E-04	3.20E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		5					2.10E-03	8.40E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		5					1.90E-03	7.60E-03						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	5					1.40E-03	5.60E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	5					6.70E-04	2.70E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	5					7.80E-04	3.10E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	5					2.40E-03	9.60E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	5					8.20E-04	3.30E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	5					2.60E-03	1.00E-02			2.90E+04			

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DATA SUMMARY FOR AOI W-10 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Pyrene	129-00-0	T	D	5					1.10E-03	4.40E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		5					1.20E-03	4.80E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	5					1.70E-03	6.80E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	1					8.20E-05	8.20E-05	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	5	1	3.43E-04	3.43E-04	3.43E-04	8.20E-05	8.20E-05	4.50E-02	8E-03	3.30E-03	1E-01	4.50E-02	8E-03
INORG	Antimony	7440-36-0	D		5					2.20E-03	2.20E-03			6.80E+01			
INORG	Antimony	7440-36-0	T		5	1	2.30E-03	2.30E-03	2.30E-03	2.20E-03	2.20E-03			6.80E+01	3E-05		
INORG	Arsenic	7440-38-2	D	A	5	2	5.00E-03	3.21E-02	5.91E-02	3.90E-03	3.90E-03			4.30E+00	1E-02		
INORG	Arsenic	7440-38-2	T	A	5	2	4.90E-03	3.41E-02	6.33E-02	3.90E-03	3.90E-03			4.30E+00	1E-02		
INORG	Barium	7440-39-3	D	D	5	5	1.05E-02	6.38E-02	1.09E-01					1.40E+04	8E-06		
INORG	Barium	7440-39-3	T	D	5	5	1.16E-02	6.36E-02	1.14E-01					1.40E+04	8E-06		
INORG	Beryllium	7440-41-7	D	B1	5					5.40E-04	5.40E-04			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	5					5.40E-04	5.40E-04			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	5					2.80E-04	2.80E-04			1.90E+02			
INORG	Cadmium	7440-43-9	T	B1	5					2.80E-04	2.80E-04			1.90E+02			
INORG	Chromium (total)	7440-47-3	D		5	2	5.30E-03	5.90E-03	6.50E-03	1.40E-03	1.40E-03			4.60E+02	1E-05		
INORG	Chromium (total)	7440-47-3	T		5	2	5.60E-03	6.05E-03	6.50E-03	1.40E-03	1.40E-03			4.60E+02	1E-05		
INORG	Cobalt	7440-48-4	D		5	2	2.50E-03	6.80E-03	1.11E-02	1.30E-03	1.30E-03			2.40E+03	5E-06		
INORG	Cobalt	7440-48-4	T		5	2	2.70E-03	7.05E-03	1.14E-02	1.30E-03	1.30E-03			2.40E+03	5E-06		
INORG	Copper	7440-50-8	D	D	5	1	4.60E-03	4.60E-03	4.60E-03	4.20E-03	4.20E-03			7.40E+03	6E-07		
INORG	Copper	7440-50-8	T	D	5	1	4.30E-03	4.30E-03	4.30E-03	4.20E-03	4.20E-03			7.40E+03	6E-07		
INORG	Lead	7439-92-1	D	B2	5					2.50E-03	2.50E-03						
INORG	Lead	7439-92-1	T	B2	5					2.50E-03	2.50E-03						
INORG	Manganese	7439-96-5	D	D	5	5	1.09E-02	2.06E-01	4.83E-01					9.10E+03	5E-05		
INORG	Manganese	7439-96-5	T	D	5	5	1.35E-02	2.05E-01	4.78E-01					9.10E+03	5E-05		
INORG	Mercury	7439-97-6	D	D	5					6.90E-05	6.90E-05			5.60E-02			
INORG	Mercury	7439-97-6	T	D	5	2	7.50E-05	8.30E-05	9.10E-05	6.90E-05	6.90E-05			5.60E-02	2E-03		
INORG	Nickel	7440-02-0	D	A	5	3	3.10E-03	1.02E-02	2.42E-02	2.20E-03	2.20E-03			7.40E+04	3E-07		
INORG	Nickel	7440-02-0	T	A	5	3	3.50E-03	1.10E-02	2.47E-02	2.20E-03	2.20E-03			7.40E+04	3E-07		
INORG	Selenium	7782-49-2	D	D	5					4.50E-03	4.50E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	5					4.50E-03	4.50E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	5					1.50E-03	1.50E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	5					1.50E-03	1.50E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		5	2	2.80E-05	2.76E-02	5.50E-03	1.80E-05	1.80E-05			1.30E+01	4E-04		
INORG	Thallium	7440-28-0	T		5	1	6.80E-03	6.80E-03	6.80E-03	1.80E-05	1.80E-05			1.30E+01	5E-04		
INORG	Vanadium	7440-62-2	D		5	2	1.70E-03	2.05E-03	2.40E-03	8.20E-04	8.20E-04			9.70E+02	2E-06		

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TABLE 4-33

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-10 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Vanadium	7440-62-2	T		5	3	1.20E-03	1.93E-03	3.00E-03	8.20E-04	8.20E-04			9.70E+02	3E-06		
INORG	Zinc	7440-66-6	D	D	5					1.20E-02	1.20E-02			1.10E+05			
INORG	Zinc	7440-66-6	T	D	5	1	1.46E-02	1.46E-02	1.46E-02	1.20E-02	1.20E-02			1.10E+05	1E-07		
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	4	3	1.74E-09	2.79E-09	4.83E-09	2.71E-09	2.71E-09			1.00E-08	5E-01		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
12. The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

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TABLE 4-34

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-13 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Acenaphthene	83-32-9		6					5.50E-02	5.60E-01		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	6					5.10E-02	5.10E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	6					5.40E-02	5.50E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	6					5.30E-02	5.40E-01		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		6					1.60E-01	1.60E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		6					1.80E-01	1.90E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	6					5.90E-02	6.00E-01								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	6					6.50E-02	6.60E-01						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	6					6.20E-02	6.30E-01								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	6					5.90E-02	6.00E-01						4.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	6					5.70E-02	5.80E-01								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		6					1.50E-01	1.50E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	6					5.10E-02	5.10E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	6					5.50E-02	5.60E-01		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	6	4	6.30E-02	6.13E-01	1.70E+00	1.40E-01	2.40E-01						8.90E+05	2E-06	1.00E+04	2E-04					7.00E+05	2E-06	2.80E+03	6E-04
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	6					6.60E-02	6.70E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	6	2	2.70E-01	3.70E-01	4.70E-01	5.50E-02	5.60E-01						2.90E+07	2E-08	3.10E+02	2E-03					4.70E+07	1E-08	3.10E+02	2E-03
SVOC	Caprolactam	105-60-2		6					1.90E-01	2.00E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	6					5.60E-02	5.70E-01								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		6					5.50E-02	5.60E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		6					5.50E-02	5.60E-01																	
SVOC	2-Chloronaphthalene	91-58-7		6					5.20E-02	5.20E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		6					5.60E-02	5.70E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		6					5.60E-02	5.70E-01																	
SVOC	Chrysene	218-01-9	B2	6					4.90E-02	5.00E-01								1.00E+04								2.00E+03	
SVOC	Di-n-butylphthalate	84-74-2	D	6					1.60E-01	1.60E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		6	1	2.80E+00	2.80E+00	2.80E+00	5.80E-02	5.90E-01								2.80E+04	1E-04							6.90E+03	4E-04
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	6					5.50E-02	5.60E-01								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	6					5.40E-02	5.50E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	6					4.20E-02	4.30E-01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		6					5.40E-02	5.50E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	6					1.60E-01	1.60E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		6					8.60E-02	8.70E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	6					1.70E-01	1.70E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		6					1.70E-01	1.70E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		6					1.20E-01	1.20E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	6					4.90E-02	5.00E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	6					5.20E-02	5.20E-01																	
SVOC	Fluoranthene	206-44-0	D	6					6.00E-02	6.10E-01		1.00E+06		8.90E+05		4.10E+06		1.80E+05		1.00E+06		7.40E+05		9.30E+06		4.60E+04	
SVOC	Fluorene	86-73-7	D	6					5.20E-02	5.20E-01		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	6					6.00E-02	6.10E-01		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	6					4.80E-02	4.90E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachloroethane	67-72-1	C	6					5.20E-02	5.20E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6					7.50E-02	7.60E-01								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	6					4.70E-02	4.80E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		6					5.20E-02	5.20E-01								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		6					5.10E-02	5.10E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	6					5.30E-02	5.40E-01		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		6					4.90E-02	5.00E-01																	
SVOC	3-Nitroaniline	99-09-2	C	6					1.50E-01	1.50E+00																	
SVOC	4-Nitroaniline	100-01-6	C	6					7.30E-02	7.40E-01																	
SVOC	Nitrobenzene	98-95-3	D	6					4.90E-02	5.00E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		6					4.90E-02	5.00E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		6					2.00E-01	2.10E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	6					5.30E-02	5.40E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	6					4.70E-02	4.80E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	6					5.60E-02	5.70E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	6					1.30E-01	1.30E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	6	1	1.10E+00	1.10E+00	1.10E+00	5.60E-02	2.30E-01		5.10E+03	2E-04	1.90E+02	6E-03	2.90E+03	4E-04	8.00E+03	1E-04	2.80E+03	4E-04	1.60E+02	7E-03	6.70E+03	2E-04	1.60E+03	7E-04

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TABLE 4-34

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI W-13 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Phenol	108-95-2	D	6					5.30E-02	5.40E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	6					5.50E-02	5.60E-01		1.00E+06		7.80E+05		2.90E+06		1.10E+05		1.00E+06		6.50E+05		6.70E+06		2.90E+04	
SVOC	2,4,5-Trichlorophenol	95-95-4		6					5.90E-02	6.00E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	6					6.80E-02	6.90E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	6	5	2.33E-02	2.22E-01	6.05E-01	2.20E-02	2.20E-02		1.60E+04	4E-05	8.10E+02	7E-04	6.50E+03	9E-05	2.00E+01	3E-02	3.00E+03	2E-04	2.40E+02	3E-03	5.20E+03	1E-04	4.00E+00	2E-01

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.

Confidential under FOIA
Lowell McBurney
Arcadis
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Aug 07, 2009 15:19

TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	41	7	6.20E-03	1.86E-02	3.60E-02	1.90E-03	3.30E-02		1.10E+05	3E-07	1.60E+05	2E-07	1.70E+08	2E-10	1.10E+05	3E-07	1.10E+05	3E-07	1.30E+05	3E-07	3.90E+08	9E-11	2.30E+04	2E-06
VOC	Benzene	71-43-2	A	41					5.95E-04	8.20E-03		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	41					1.10E-03	8.20E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	41					1.45E-03	8.20E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	41					1.65E-03	1.60E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	41	5	2.70E-03	8.98E-03	2.80E-02	2.45E-03	3.30E-02		2.70E+04	1E-06	3.50E+04	8E-07	2.90E+07	1E-09	2.70E+04	1E-06	2.70E+04	1E-06	2.90E+04	1E-06	6.70E+07	4E-10	2.70E+04	1E-06
VOC	Carbon Disulfide	75-15-0		41	1	1.30E-03	1.30E-03	1.30E-03	7.15E-04	8.20E-03		1.40E+02	9E-06	1.60E+03	8E-07	2.10E+07	6E-11	2.80E+02	5E-06	7.60E+01	2E-05	1.30E+03	1E-06	4.70E+07	3E-11	2.80E+02	5E-06
VOC	Carbon Tetrachloride	56-23-5	B2	41					9.15E-04	8.20E-03		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	41					4.75E-04	8.20E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		41					2.00E-03	1.60E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	41	1	2.20E-03	2.20E-03	2.20E-03	7.50E-04	8.20E-03		3.80E+01	6E-05	1.50E+02	1E-05	1.50E+06	1E-09	1.50E+03	1E-06	7.20E+00	3E-04	4.50E+01	5E-05	1.30E+06	2E-09	1.20E+03	2E-06
VOC	Chloromethane	74-87-3	D	41					1.20E-03	1.60E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	41	1	5.10E-03	5.10E-03	5.10E-03	6.40E-04	8.20E-03		3.90E+02	1E-05	2.00E+03	1E-06	2.60E+06	2E-09	3.90E+02	1E-05	3.90E+02	1E-05	1.70E+03	3E-06	5.80E+06	9E-10	3.90E+02	1E-05
VOC	Cyclohexane	110-82-7		41	1	1.00E-03	1.00E-03	1.00E-03	9.15E-04	1.60E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	41					1.45E-03	1.60E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	41					1.00E-03	8.20E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	41					1.10E-03	8.20E-03		3.60E+00		5.20E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	41					6.50E-04	8.20E-03		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	41					7.30E-04	8.20E-03								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	41					6.15E-04	8.20E-03		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		41	1	1.40E-01	1.40E-01	1.40E-01	1.00E-03	1.60E-02		1.00E+03	1E-04	6.30E+04	2E-06	1.50E+09	9E-11	1.00E+03	1E-04	9.00E+02	2E-04	5.30E+04	3E-06	3.30E+09	4E-11	1.00E+03	1E-04
VOC	1,1-Dichloroethane	75-34-3	C	41	1	2.20E-03	2.20E-03	2.20E-03	5.30E-04	8.20E-03		4.30E+02	5E-03	2.50E+03	9E-07	1.50E+07	1E-10	8.90E+02	2E-06	2.30E+02	1E-05	2.10E+03	1E-06	3.30E+07	7E-11	8.90E+02	2E-06
VOC	1,2-Dichloroethane	107-06-2	B2	41					6.65E-04	8.20E-03		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	41					1.10E-03	8.20E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	41	2	1.80E-03	3.60E-03	5.40E-03	7.70E-04	8.20E-03		4.20E+01	1E-04	2.10E+02	3E-05	1.00E+06	5E-09	6.40E+02	8E-06	2.30E+01	2E-04	1.80E+02	3E-05	2.30E+06	2E-09	6.40E+02	8E-06
VOC	trans-1,2-Dichloroethene	156-60-5		41	1	1.00E-03	1.00E-03	1.00E-03	6.65E-04	8.20E-03		4.30E+01	2E-05	2.30E+02	3E-06	2.10E+06	5E-10	1.40E+03	7E-07	2.30E+01	4E-05	2.80E+02	4E-06	4.70E+06	2E-10	1.40E+03	7E-07
VOC	1,2-Dichloropropane	78-87-5	B2	41					6.85E-04	8.20E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	41					7.85E-04	8.20E-03		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	41	2	1.20E-03	4.30E-03	7.40E-03	5.40E-04	6.20E-03		1.40E+02	5E-05	1.10E+04	7E-07	2.90E+07	3E-10	1.40E+02	5E-05	1.40E+02	5E-05	9.50E+03	8E-07	6.70E+07	1E-10	1.40E+02	5E-05
VOC	2-Hexanone	591-78-6		41					1.55E-03	3.30E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		41					1.00E-03	1.60E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		41					7.70E-04	3.30E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		41					1.70E-03	3.30E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		41	3	8.00E-04	2.10E-03	3.80E-03	5.40E-04	1.60E-02																	
VOC	Methylene Chloride	75-09-2	B2	41	3	2.90E-03	5.80E-03	7.80E-03	1.20E-03	8.20E-03		2.40E+02	3E-05	7.00E+02	1E-05	8.30E+06	9E-10	2.30E+03	3E-06	4.50E+01	2E-04	2.10E+02	4E-05	6.60E+06	1E-09	1.30E+03	6E-06
VOC	Styrene	100-42-5		41					4.55E-04	8.20E-03		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	41					1.65E-03	8.20E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	41	4	4.30E-03	5.55E-03	7.20E-03	1.10E-03	8.20E-03		6.00E+01	1E-04	6.00E+02	1E-05	6.80E+06	1E-09	8.80E+01	8E-05	1.10E+01	7E-04	1.80E+02	4E-05	5.40E+06	1E-09	8.80E+01	8E-05
VOC	Toluene	108-88-3	D	41	12	6.60E-04	5.58E-03	3.70E-02	4.85E-04	5.60E-03		2.50E+02	1E-04	3.30E+03	1E-05	1.20E+07	3E-09	2.50E+02	1E-04	2.50E+02	1E-04	2.80E+03	1E-05	2.70E+07	1E-09	2.50E+02	1E-04
VOC	1,2,4-Trichlorobenzene	120-82-1	D	41					8.15E-04	8.20E-03		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	41					8.40E-04	8.20E-03		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	41					1.10E-03	8.20E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	41	1	4.80E-03	4.80E-03	4.80E-03	6.95E-04	8.20E-03		3.70E+01	1E-04	2.60E+02	2E-05	2.30E+06	2E-09	5.00E+02	1E-05	7.10E+00	7E-04	7.80E+01	6E-05	1.80E+06	3E-09	5.00E+02	1E-05
VOC	Trichlorofluoromethane	75-69-4		41					1.00E-03	1.60E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		41	1	5.70E-03	5.70E-03	5.70E-03	8.50E-04	8.20E-03		5.50E+02	1E-05	2.10E+05	3E-08	2.30E+09	2E-12	5.50E+02	1E-05	5.50E+02	1E-05	1.80E+05	3E-08	5.10E+09	1E-12	5.50E+02	1E-05
VOC	Vinyl Chloride	75-01-4	A	41					1.30E-03	1.60E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	41	3	2.00E-03	1.69E-02	4.60E-02	1.70E-03	1.60E-02		1.50E+02	3E-04	5.40E+04	9E-07	1.30E+08	4E-10	1.50E+02	3E-04	1.50E+02	3E-04	4.60E+04	1E-06	2.90E+08	2E-10	1.50E+02	3E-04
SVOC	Acenaphthene	83-32-9		41	2	7.00E-02	1.55E-01	2.40E-01	5.30E-02	4.00E+00		3.50E+05	7E-07	9.70E+04	2E-06	6.20E+06	4E-08	2.00E+05	1E-06	1.90E+05	1E-06	8.10E+04	3E-06	1.40E+07	2E-08	4.10E+04	6E-06
SVOC	Acenaphthylene	208-96-8	D	41					4.90E-02	4.00E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	41	1	1.70E+00	1.70E+00	1.70E+00	5.20E-02	4.00E+00		1.10E+03	2E-03	5.20E+04	3E-05	1.40E+07	1E-07	1.10E+03	2E-03	1.10E+03	2E-03	4.40E+04	4E-05	3.30E+07	5E-08	1.10E+03	2E-03
SVOC	Anthracene	120-12-7	D	41	8	6.80E-02	6.15E-01	1.70E+00	5.10E-02	4.00E+00		1.00E+06	2E-06	1.60E+06	1E-06	2.90E+07	6E-08	1.00E+06	2E-06	1.00E+06	2E-06	1.40E+06	1E-06	6.70E+07	3E-08	2.30E+05	7E-06
SVOC	Atrazine	1912-24-9		41					1.60E-01	4.00E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		41	1	1.20E+00	1.20E+00	1.20E+00	1.80E-01	4.00E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	41	12	8.40E-02	4.07E-01	1.20E+00	5.90E-02	4.00E+00								1.00E+02	1E-02							2.00E+01	6E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	41	12	7.20E-02	3.75E-01	1.10E+00	6.50E-02	4.00E+00						1.90E+03	6E-04	1.00E+01	1E-01					1.50E+03	7E-04	2.00E+00	6E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	41	12	9.10E-02	5.30E-01	1.50E+00	6.20E-02	4.00E+00								1.00E+02	2E-02							2.00E+01	8E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	41	9	6.70E-02	3.37E-01	8.90E-01	5.70E-02	4.00E+00						3.50E+05	3E-06	9.10E+03	1E-04					8.00E+05	1E-06	2.50E+03	4E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	41	11	6.50E-02	2.77E-01	5.90E-01	5.50E-02	4.00E+00								1.00E+03	6E-04							2.00E+02	3E-03
SVOC	Biphenyl	92-52-4		41					1.40E-01	4.00E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	41					4.90E-02	4.00E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	41					5.30E-02	4.00E+00		4.40E+01		8.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	41	11	6.80E-02	2.08E+00	1.20E+01	5.60E-02	4.00E+00						8.90E+05	1E-05	1.00E+04	1E-03					7.00E+05	2E-05	2.80E+03	4E-03

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TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	41					6.30E-02	4.00E+00																	
SVOC	Butylbenzylphthalate	85-68-7	C	41	18	6.30E-02	1.60E+00	9.90E+00	5.30E-02	4.00E+00						2.10E+07	5E-07	3.10E+02	3E-02					4.70E+07	2E-07	3.10E+02	3E-02
SVOC	Caprolactam	105-60-2		41					1.90E-01	4.00E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	41	5	6.00E-02	1.32E-01	2.50E-01	5.40E-02	4.00E+00								3.70E+03	7E-05							5.30E+02	5E-04
SVOC	4-Chloro-3-methylphenol	59-50-7		41					5.30E-02	4.00E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		41					5.30E-02	1.60E+01																	
SVOC	2-Chloronaphthalene	91-58-7		41					5.00E-02	4.00E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		41					5.40E-02	4.00E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		41					5.40E-02	4.00E+00																	
SVOC	Chrysene	218-01-9	B2	41	13	9.90E-02	5.57E-01	1.60E+00	5.00E-02	4.00E+00								1.00E+04	2E-04							2.00E+03	8E-04
SVOC	Di-n-butylphthalate	84-74-2	D	41	1	5.20E-01	5.20E-01	5.20E-01	1.60E-01	4.00E+00						1.50E+06	3E-07	7.60E+02	7E-04					3.30E+06	2E-07	7.60E+02	7E-04
SVOC	Di-n-octylphthalate	117-84-0		41	1	8.30E-02	8.30E-02	8.30E-02	5.60E-02	4.00E+00								2.80E+04	3E-06							6.90E+03	1E-05
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	41	3	6.60E-02	9.30E-02	1.30E-01	5.30E-02	4.00E+00								1.00E+01	1E-02							2.00E+00	7E-02
SVOC	Dibenzofuran	132-64-9	D	41	4	5.80E-02	7.48E-02	1.10E-01	5.20E-02	4.00E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	41					4.00E-02	2.40E+01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		41					5.20E-02	4.00E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	41					1.60E-01	4.00E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		41					8.30E-02	4.00E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	41					1.70E-01	4.00E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		41					1.70E-01	2.00E+01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		41					1.10E-01	2.00E+01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	41					4.80E-02	4.00E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	41					5.00E-02	4.00E+00																	
SVOC	Fluoranthene	206-44-0	D	41	20	7.10E-02	1.01E+00	2.62E+00	6.00E-02	4.00E+00		1.00E+06	3E-06	8.60E+05	3E-06	4.10E+06	6E-07	1.80E+05	1E-05	1.00E+06	3E-06	7.40E+05	4E-06	9.30E+06	3E-07	4.60E+04	6E-05
SVOC	Fluorene	86-73-7	D	41	8	6.40E-02	1.81E+00	6.30E+00	5.00E-02	4.00E+00		1.00E+06	6E-06	1.50E+05	4E-05	4.10E+06	2E-06	1.30E+05	5E-05	5.80E+05	1E-05	1.30E+05	5E-05	9.30E+06	7E-07	2.70E+04	2E-04
SVOC	Hexachlorobenzene	118-74-1	B2	41					5.80E-02	4.00E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	41					4.70E-02	4.00E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	41					6.20E-02	4.00E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	41					5.00E-02	1.20E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	41	8	8.10E-02	3.15E-01	6.60E-01	7.30E-02	4.00E+00								1.00E+02	7E-03							2.00E+01	3E-02
SVOC	Isophorone	78-59-1	C	41					4.60E-02	4.00E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		41	6	5.70E-02	2.21E-01	8.50E-01	5.00E-02	4.00E+00								4.00E+04	2E-05							8.10E+03	1E-04
SVOC	Methylphenol (summed)	1319-77-3		41					4.90E-02	4.00E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	41	3	5.70E-02	8.67E-02	1.30E-01	5.10E-02	4.00E+00		4.70E+02	3E-04	3.50E+02	4E-04	8.80E+04	1E-06	8.00E+04	2E-06	2.50E+02	5E-04	3.00E+02	4E-04	2.00E+05	7E-07	1.60E+04	8E-06
SVOC	2-Nitroaniline	88-74-4		41					4.80E-02	2.00E+01																	
SVOC	3-Nitroaniline	99-09-2	C	41					1.40E-01	2.00E+01																	
SVOC	4-Nitroaniline	100-01-6	C	41					7.00E-02	2.00E+01																	
SVOC	Nitrobenzene	98-95-3	D	41					4.80E-02	4.00E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		41					4.80E-02	4.00E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		41					2.00E-01	2.00E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	41					5.10E-02	4.00E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	41					4.60E-02	4.00E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	41					5.40E-02	4.00E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	41					1.20E-01	4.10E+01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	41	18	1.10E-01	1.95E+00	1.10E+01	5.60E-02	4.00E+00		5.10E+03	2E-03	1.90E+02	6E-02	2.90E+03	4E-03	8.00E+03	1E-03	2.80E+03	4E-03	1.60E+02	7E-02	6.70E+03	2E-03	1.60E+03	7E-03
SVOC	Phenol	108-95-2	D	41	1	7.50E-02	7.50E-02	7.50E-02	5.10E-02	4.00E+00						1.80E+07	4E-09	1.20E+04	6E-06					4.00E+07	2E-09	1.20E+04	6E-06
SVOC	Pyrene	129-00-0	D	41	21	6.50E-02	1.49E+00	5.10E+00	5.50E-02	4.00E+00		1.00E+06	5E-06	7.80E+05	7E-06	2.90E+06	2E-06	1.10E+05	5E-05	1.00E+06	5E-06	6.50E+05	8E-06	6.70E+06	8E-07	2.90E+04	2E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		41					5.70E-02	4.00E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	41					6.50E-02	4.00E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	87	49	2.56E-02	6.40E+00	8.13E+01	2.10E-02	4.80E+00		1.60E+04	5E-03	8.10E+02	1E-01	6.50E+03	1E-02	2.00E+01	**4E+00**	3.00E+03	3E-02	2.40E+02	3E-01	5.20E+03	2E-02	4.00E+00	**2E+01**
INORG	Antimony	7440-36-0		41	18	3.08E-01	1.61E+00	4.65E+00	5.07E-01	2.30E+00						5.90E+03	8E-04	1.20E+03	4E-03					1.30E+04	4E-04	1.80E+02	3E-02
INORG	Arsenic	7440-38-2	A	41	41	1.18E+00	8.35E+00	3.83E+01			1.32E+01					9.10E+02	3E-02	6.10E+01	4E-01					7.20E+02	3E-02	7.60E+00	**3E+00**
INORG	Barium	7440-39-3	D	41	41	4.07E+00	5.78E+01	3.03E+02			1.10E+02					1.50E+05	1E-03	2.50E+05	8E-04					3.30E+05	6E-04	3.70E+04	5E-03
INORG	Beryllium	7440-41-7	B1	41	29	3.36E-02	5.87E-01	3.02E+00	4.76E-02	1.15E-01	1.53E+00					5.90E+02	3E-03	3.10E+03	5E-04					1.30E+03	1E-03	4.10E+02	4E-03
INORG	Cadmium	7440-43-9	B1	41	41	6.74E-02	4.22E-01	2.83E+00			1.20E+00					2.20E+03	7E-04	4.10E+03	4E-04					1.70E+03	1E-03	5.50E+02	3E-03
INORG	Chromium III	16065-83-1	D	41	41	3.62E+00	2.36E+01	2.07E+02								1.50E+05	1E-03	1.00E+06	2E-04					3.30E+05	6E-04	7.90E+05	3E-04
INORG	Chromium VI	18540-29-9	A	41	24	4.00E-05	1.85E+00	1.14E+01	3.64E-01	7.88E+00						2.40E+02	5E-02	1.70E+04	7E-04					2.60E+02	4E-02	2.50E+03	5E-03
INORG	Cobalt	7440-48-4		41	41	7.75E-01	2.88E+00	8.20E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	41	41	3.66E+00	6.53E+01	5.05E+02			3.20E+01					5.90E+04	8E-03	1.40E+05	3E-03					1.30E+05	4E-03	2.00E+04	2E-02
INORG	Cyanide (total)	57-12-5	D	41	17	1.93E-01	2.55E+00	2.59E+01	1.76E-01	6.23E-01						2.50E+02	1E-01	2.50E+02	1E-01					2.50E+02	1E-01	1.20E+01	**2E+00**
INORG	Lead	7439-92-1	B2	41	41	2.30E+00	8.38E+01	6.58E+02			4.92E+01					4.40E+04	1E-02	9.00E+02	7E-01					1.00E+05	6E-03	4.00E+02	**2E+00**
INORG	Manganese	7439-96-5	D	41	41	7.70E+01	3.36E+02	1.29E+03			5.10E+02					1.50E+03	5E-01	1.70E+05	5E-03					3.30E+03	2E-01	2.50E+04	3E-02

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TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Mercury	7439-97-6	D	41	24	1.14E-02	8.12E-02	4.17E-01	8.70E-03	3.80E-02	1.30E-01							1.10E+03	3E-04							1.60E+02	2E-03
INORG	Nickel	7440-02-0	A	41	41	3.31E+00	3.84E+01	5.97E+02			3.01E+01					1.60E+04	4E-02	2.70E+05	2E-03					1.30E+04	4E-02	4.00E+04	1E-02
INORG	Selenium	7782-49-2	D	41	8	5.18E-01	7.59E-01	1.37E+00	3.21E-01	6.23E-01	4.10E-01					5.90E+04	2E-05	1.80E+04	5E-05					1.30E+05	7E-06	2.60E+03	4E-04
INORG	Silver	7440-22-4	D	41	5	1.77E-01	4.65E-01	1.25E+00	1.55E-01	6.23E-01						2.90E+03	4E-04	1.70E+04	7E-05					6.70E+03	2E-04	2.50E+03	5E-04
INORG	Thallium	7440-28-0		41	18	4.66E-01	9.06E-01	1.89E+00	5.21E-01	1.25E+00								2.40E+02	8E-03							3.50E+01	5E-02
INORG	Vanadium	7440-62-2		41	41	3.17E+00	8.82E+00	2.25E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	41	41	1.58E+01	8.22E+01	6.02E+02			4.70E+01							1.00E+06	6E-04							1.70E+05	3E-03

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-36

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	6					5.10E-04	1.00E-02	1.00E+06		3.10E+04		1.00E+06	
VOC	Benzene	71-43-2	T	A	6					1.60E-04	1.00E-03	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	6	1	1.90E-04	1.90E-04	1.90E-04	1.70E-04	1.00E-03	3.80E+01	5E-06	1.40E+01	1E-05	4.80E+00	4E-05
VOC	Bromoform	75-25-2	T	B2	6					1.80E-04	1.00E-03	8.50E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	6					2.60E-04	1.00E-03	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	6					4.10E-04	1.00E-02	2.40E+05		2.40E+05		2.40E+05	
VOC	Carbon Disulfide	75-15-0	T		6					2.00E-04	1.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	6					1.20E-04	1.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	6					1.40E-04	1.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		6					2.60E-04	1.00E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	6	3	4.20E-04	5.13E-04	6.70E-04	1.40E-04	1.40E-04	1.80E+02	4E-06	1.50E+02	4E-06	2.80E+01	2E-05
VOC	Chloromethane	74-87-3	T	D	6					1.30E-04	1.00E-03	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	6					1.20E-04	1.00E-03	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		6					1.30E-04	1.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	6					6.20E-04	2.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	6					2.60E-04	1.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	6					2.20E-04	1.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	6					1.10E-04	1.00E-03	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	6					1.50E-04	1.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	6					1.70E-04	1.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		6	4	6.70E-04	1.07E-02	2.40E-02	2.60E-04	2.60E-04	3.00E+02	8E-05	3.00E+02	8E-05	2.20E+02	1E-04
VOC	1,1-Dichloroethane	75-34-3	T	C	6					1.60E-04	1.00E-03	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	6					2.10E-04	1.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	6					2.40E-04	1.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	6					2.20E-04	5.00E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		6					1.50E-04	5.00E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	6					1.70E-04	1.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	6					2.70E-04	1.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	6					1.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		6					4.60E-04	1.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		6					4.10E-04	1.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		6					1.30E-04	5.00E-03	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		6					2.30E-04	1.00E-02	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		6					2.00E-04	1.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	6					3.40E-04	1.00E-03	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		6					1.50E-04	1.00E-03	3.10E+02		9.70E+00		1.70E+02	

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TABLE 4-36

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	6					2.50E-04	1.00E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	6	2	3.80E-04	3.95E-04	4.10E-04	2.30E-04	1.00E-03	1.70E+02	2E-06	1.20E+01	3E-05	2.50E+01	2E-05
VOC	Toluene	108-88-3	T	D	6	1	4.40E-04	4.40E-04	4.40E-04	1.80E-04	1.00E-03	5.30E+02	8E-07	5.30E+02	8E-07	5.30E+02	8E-07
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	6					1.70E-04	1.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	6	3	5.30E-04	6.93E-04	1.00E-03	2.50E-04	1.00E-03	1.30E+03	8E-07	1.30E+03	8E-07	6.60E+02	2E-06
VOC	1,1,2-Trichloroethane	79-00-5	T	C	6					3.00E-04	1.00E-03	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	6					1.40E-04	1.00E-03	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		6					2.80E-04	1.00E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		6					3.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	6					1.50E-04	1.00E-03	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	6	1	3.70E-04	3.70E-04	3.70E-04	3.30E-04	1.00E-03	1.90E+02	2E-06	1.90E+02	2E-06	1.90E+02	2E-06
SVOC	Acenaphthene	83-32-9	T		6					8.00E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	6					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	6					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	6					6.80E-04	5.00E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		6					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		6					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	6					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	6					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	6					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	6					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	6					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		6					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	6					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	6					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	6					2.70E-03	5.00E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	6					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	6					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		6					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	6					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		6					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		3					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		6					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		6					1.00E-03	5.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		6					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	6					2.50E-04	5.00E-03			5.00E-03			

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TABLE 4-36

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Di-n-butylphthalate	84-74-2	T	D	6					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		6					1.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	6					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	6					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	3					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		6					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	6					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		6					8.50E-04	5.00E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	6					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		6					1.30E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		6					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	6					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	6					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	6					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	6					1.00E-03	5.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	6					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	6					7.30E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	6					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	6					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	6					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	6					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		6					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		6					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	6					7.50E-04	5.00E-03	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		6					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	3					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	6					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	6					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		6					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		6					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	6					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	6					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	6					7.80E-04	5.00E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	6					2.00E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	6					8.20E-04	5.00E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	6					1.60E-03	5.00E-03			2.90E+04			

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TABLE 4-36

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RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	Pyrene	129-00-0	T	D	6					1.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		6					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	6					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	3					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	6					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		6	2	4.20E-03	5.10E-03	6.00E-03	2.20E-03	2.50E-02			6.80E+01	9E-05		
INORG	Antimony	7440-36-0	T		6	2	5.00E-03	6.35E-03	7.70E-03	2.20E-03	2.50E-02			6.80E+01	1E-04		
INORG	Arsenic	7440-38-2	D	A	6	3	4.20E-03	5.13E-03	6.40E-03	3.90E-03	1.00E-02			4.30E+00	1E-03		
INORG	Arsenic	7440-38-2	T	A	6	5	4.70E-03	5.60E-03	7.00E-03	1.00E-02	1.00E-02			4.30E+00	2E-03		
INORG	Barium	7440-39-3	D	D	6	6	1.41E-02	8.86E-02	1.72E-01					1.40E+04	1E-05		
INORG	Barium	7440-39-3	T	D	6	6	1.36E-02	8.87E-02	1.72E-01					1.40E+04	1E-05		
INORG	Beryllium	7440-41-7	D	B1	6					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	6					5.40E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	6					2.80E-04	5.00E-03			1.90E+02			
INORG	Cadmium	7440-43-9	T	B1	6	1	3.80E-04	3.80E-04	3.80E-04	2.80E-04	5.00E-03			1.90E+02	2E-06		
INORG	Chromium (total)	7440-47-3	D		4	1	3.64E-02	3.64E-02	3.64E-02	1.40E-03	1.00E-02			4.60E+02	8E-05		
INORG	Chromium III	16065-83-1	D	D	2	1	3.87E-02	3.87E-02	3.87E-02	1.40E-03	1.40E-03			2.90E+05	1E-07		
INORG	Chromium III	16065-83-1	T	D	6	2		2.42E-02	4.85E-02	1.40E-03	1.00E-02			2.90E+05	2E-07		
INORG	Chromium VI	18540-29-9	D	A	2					6.90E-03	6.90E-03			4.60E+02			
INORG	Chromium VI	18540-29-9	T	A	6	1	3.38E-02	3.38E-02	3.38E-02	6.90E-03	2.00E-02			4.60E+02	7E-05		
INORG	Cobalt	7440-48-4	D		6	4	2.20E-03	2.45E-03	2.90E-03	1.30E-03	1.30E-03			2.40E+03	1E-06		
INORG	Cobalt	7440-48-4	T		6	4	2.20E-03	2.50E-03	2.80E-03	1.30E-03	1.30E-03			2.40E+03	1E-06		
INORG	Copper	7440-50-8	D	D	6					4.20E-03	5.00E-03			7.40E+03			
INORG	Copper	7440-50-8	T	D	6					4.20E-03	5.00E-03			7.40E+03			
INORG	Cyanide (total)	57-12-5	T	D	6	4	5.50E-03	4.35E-01	8.97E-01	1.70E-03	1.70E-03			5.70E+01	2E-02		
INORG	Lead	7439-92-1	D	B2	6					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	6					2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	6	5	9.40E-04	2.22E-01	5.46E-01	9.00E-04	9.00E-04			9.10E+03	6E-05		
INORG	Manganese	7439-96-5	T	D	6	5	2.63E-02	2.29E-01	5.48E-01	9.00E-04	9.00E-04			9.10E+03	6E-05		
INORG	Mercury	7439-97-6	D	D	6					6.90E-05	2.00E-04			5.60E-02			
INORG	Mercury	7439-97-6	T	D	6					6.90E-05	2.00E-04			5.60E-02			
INORG	Nickel	7440-02-0	D	A	6	2	2.40E-03	2.70E-03	3.00E-03	2.20E-03	2.20E-03			7.40E+04	4E-08		
INORG	Nickel	7440-02-0	T	A	6	1	3.70E-03	3.70E-03	3.70E-03	2.20E-03	2.00E-02			7.40E+04	5E-08		
INORG	Selenium	7782-49-2	D	D	6	2	5.00E-03	5.30E-03	5.60E-03	4.50E-03	5.00E-03			9.70E+02	6E-06		
INORG	Selenium	7782-49-2	T	D	6	2	4.50E-03	5.50E-03	6.50E-03	4.50E-03	5.00E-03			9.70E+02	7E-06		
INORG	Silver	7440-22-4	D	D	6					1.50E-03	5.00E-03			1.50E+03			

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TABLE 4-36

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-1 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Silver	7440-22-4	T	D	6					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		6	3	2.60E-05	3.90E-05	5.40E-05	5.00E-03	1.00E-02			1.30E+01	4E-06		
INORG	Thallium	7440-28-0	T		6	1	4.50E-05	4.50E-05	4.50E-05	1.80E-05	1.00E-02			1.30E+01	3E-06		
INORG	Vanadium	7440-62-2	D		6	2	1.00E-03	1.35E-03	1.70E-03	8.20E-04	1.00E-02			9.70E+02	2E-06		
INORG	Vanadium	7440-62-2	T		6	1	2.80E-03	2.80E-03	2.80E-03	8.20E-04	1.00E-02			9.70E+02	3E-06		
INORG	Zinc	7440-66-6	D	D	6	1	1.89E-02	1.89E-02	1.89E-02	1.20E-02	2.00E-02			1.10E+05	2E-07		
INORG	Zinc	7440-66-6	T	D	6					1.20E-02	2.00E-02			1.10E+05			

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-37

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	73	14	2.18E-03	3.81E-02	3.20E-01	1.70E-03	1.00E+00		1.10E+05	3E-06	1.60E+05	2E-06	1.70E+08	2E-09	1.10E+05	3E-06	1.10E+05	3E-06	1.30E+05	2E-06	3.90E+08	8E-10	2.30E+04	1E-05
VOC	Benzene	71-43-2	A	73	4	1.10E-03	7.33E-03	2.50E-02	4.80E-04	2.60E-01		8.40E+00	3E-03	4.50E+01	6E-04	4.70E+05	5E-08	4.00E+02	6E-05	1.60E+00	2E-02	1.30E+01	2E-03	3.80E+05	7E-08	1.80E+02	1E-04
VOC	Bromodichloromethane	75-27-4	B2	73					8.90E-04	2.60E-01		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	73					1.20E-03	2.60E-01		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	73					1.30E-03	5.10E-01		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	73	6	2.80E-03	4.01E-02	1.50E-01	2.00E-03	1.00E+00		2.70E+04	6E-06	3.50E+04	4E-06	2.90E+07	5E-09	2.70E+04	6E-06	2.70E+04	6E-06	2.90E+04	5E-06	6.70E+07	2E-09	2.70E+04	6E-06
VOC	Carbon Disulfide	75-15-0		73	8	1.00E-03	1.71E-02	7.20E-02	5.80E-04	2.60E-01		1.40E+02	5E-04	1.60E+03	5E-05	2.10E+07	3E-09	2.80E+02	3E-04	7.60E+01	9E-04	1.30E+03	6E-05	4.70E+07	2E-09	2.80E+02	3E-04
VOC	Carbon Tetrachloride	56-23-5	B2	73					7.40E-04	2.60E-01		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	73					3.90E-04	2.60E-01		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		73	2	2.40E-03	5.20E-03	8.00E-03	1.60E-03	5.10E-01		9.50E+02	8E-06	3.60E+04	2E-07	2.90E+08	3E-11	9.50E+02	8E-06	9.50E+02	8E-06	3.00E+04	3E-07	6.70E+08	1E-11	9.50E+02	8E-06
VOC	Chloroform	67-66-3	B2	73	4	9.90E-04	1.60E-03	3.10E-03	6.10E-04	2.60E-01		3.80E+01	8E-05	1.50E+02	2E-05	1.60E+06	2E-09	1.50E+03	2E-06	7.20E+00	4E-04	4.50E+01	7E-05	1.30E+06	2E-09	1.20E+03	3E-06
VOC	Chloromethane	74-87-3	D	73					9.70E-04	5.10E-01		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	73	3	8.00E-04	1.53E-03	2.30E-03	5.20E-04	2.60E-01		3.90E+02	6E-06	2.00E+03	1E-06	2.60E+06	9E-10	3.90E+02	6E-06	3.90E+02	6E-06	1.70E+03	1E-06	5.80E+06	4E-10	3.90E+02	6E-06
VOC	Cyclohexane	110-82-7		73					7.40E-04	5.10E-01																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	73					1.20E-03	5.80E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	73					8.20E-04	2.60E-01		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	73					8.90E-04	2.60E-01		3.60E+00		5.40E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	73	2	9.20E-04	8.46E-03	1.60E-02	5.30E-04	2.60E-01		2.10E+02	8E-05	4.60E+04	3E-07	4.40E+07	4E-10	2.10E+02	8E-05	2.10E+02	8E-05	3.90E+04	4E-07	1.00E+08	2E-10	2.10E+02	8E-05
VOC	1,3-Dichlorobenzene	541-73-1	D	73	1	8.70E-04	8.70E-04	8.70E-04	5.90E-04	2.60E-01								1.70E+02	5E-06							1.70E+02	5E-06
VOC	1,4-Dichlorobenzene	106-46-7	C	73	1	1.30E-03	1.30E-03	1.30E-03	5.00E-04	2.60E-01		1.00E+02	1E-05	2.60E+02	5E-06	5.70E+05	2E-09	2.90E+03	4E-07	1.90E+01	7E-05	7.70E+01	2E-05	4.50E+05	3E-09	4.00E+02	3E-06
VOC	Dichlorodifluoromethane	75-71-8		73					8.20E-04	5.10E-01		1.00E+03		5.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	73	36	1.20E-03	1.57E+00	4.40E+01	4.60E-04	2.60E-01		4.30E+02	1E-01	2.50E+03	2E-02	1.50E+07	3E-06	8.90E+02	5E-02	2.30E+02	2E-01	2.10E+03	2E-02	3.30E+07	1E-06	8.90E+02	5E-02
VOC	1,2-Dichloroethane	107-06-2	B2	73	3	1.60E-03	1.23E-01	3.30E-01	5.40E-04	2.60E-01		1.10E+01	3E-02	2.10E+01	2E-02	1.50E+05	2E-06	6.40E+02	5E-04	2.10E+00	2E-01	6.20E+00	5E-02	1.20E+05	3E-06	9.10E+01	4E-03
VOC	1,1-Dichloroethene	75-35-4	C	73	13	1.20E-03	2.18E-01	1.80E+00	8.90E-04	2.60E-01		3.30E-01	5E+00	3.70E+00	5E-01	7.80E+04	2E-05	5.70E+02	3E-03	6.20E-02	**3E+01**	1.10E+00	**2E+00**	6.20E+04	3E-05	2.00E+02	9E-03
VOC	cis-1,2-Dichloroethene	156-59-2	D	73					6.20E-04	2.60E-01		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		73					5.40E-04	2.60E-01		4.30E+01		3.50E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	73					5.60E-04	2.60E-01		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	73					6.40E-04	2.60E-01		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	72	5	5.10E-04	6.86E-03	2.40E-02	4.40E-04	2.60E-01		1.40E+02	2E-04	1.10E+04	2E-06	2.90E+07	8E-10	1.40E+02	2E-04	1.40E+02	2E-04	9.50E+03	3E-06	6.70E+07	4E-10	1.40E+02	2E-04
VOC	2-Hexanone	591-78-6		73	1	5.60E-03	5.60E-03	5.60E-03	1.30E-03	1.00E+00		1.80E+03	3E-06	1.30E+03	4E-06	1.20E+06	5E-09	2.50E+03	2E-06	9.90E+02	6E-06	1.10E+03	5E-06	2.70E+06	2E-09	2.50E+03	2E-06
VOC	Methyl Acetate	79-20-9		73	9	1.18E-03	1.21E-01	5.70E-01	8.20E-04	5.10E-01																	
VOC	Methyl tert-butyl ether	1634-04-4		73					6.20E-04	1.00E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		73	10	1.80E-03	3.40E-01	1.80E+00	1.40E-03	1.00E+00		2.70E+03	7E-04	5.30E+04	3E-05	6.00E+07	3E-08	2.70E+03	7E-04	2.70E+03	7E-04	4.50E+04	4E-05	1.40E+08	1E-08	2.70E+03	7E-04
VOC	Methylcyclohexane	108-87-2		73	2	7.50E-04	8.75E-04	1.00E-03	4.40E-04	5.10E-01																	
VOC	Methylene Chloride	75-09-2	B2	73	3	1.70E-03	1.59E-01	4.70E-01	9.70E-04	2.90E-01		2.40E+02	2E-03	7.00E+02	7E-04	8.30E+06	6E-08	2.30E+03	2E-04	4.50E+01	1E-02	2.10E+02	2E-03	6.60E+06	7E-08	1.30E+03	4E-04
VOC	Styrene	100-42-5		73					3.70E-04	2.60E-01		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	73					1.30E-03	2.60E-01		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	73	34	1.30E-03	1.83E-01	1.90E+00	8.90E-04	2.60E-01		6.00E+01	3E-02	6.00E+02	3E-03	6.80E+06	3E-07	8.80E+01	2E-02	1.10E+01	2E-01	1.80E+02	1E-02	5.40E+06	4E-07	8.80E+01	2E-02
VOC	Toluene	108-88-3	D	73	28	5.00E-04	1.29E-01	2.90E+00	3.90E-04	2.60E-01		2.50E+02	1E-02	3.30E+03	9E-04	1.20E+07	2E-07	2.50E+02	1E-02	2.50E+02	1E-02	2.80E+03	1E-03	2.70E+07	1E-07	2.50E+02	1E-02
VOC	1,2,4-Trichlorobenzene	120-82-1	D	73					6.60E-04	2.60E-01		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	73	39	9.10E-04	3.06E-01	4.60E+00	6.80E-04	2.30E-01		4.60E+02	1E-02	4.50E+03	1E-03	2.90E+07	2E-07	4.60E+02	1E-02	2.50E+02	2E-02	3.80E+03	1E-03	6.70E+07	7E-08	4.60E+02	1E-02
VOC	1,1,2-Trichloroethane	79-00-5	C	67	1	4.10E-03	4.10E-03	4.10E-03	8.90E-04	2.60E-01		2.40E+01	2E-04	5.70E+01	7E-05	2.50E+05	2E-08	9.20E+02	4E-06	4.60E+00	9E-04	1.70E+01	2E-04	1.90E+05	2E-08	1.80E+02	2E-05
VOC	Trichloroethene	79-01-6	C-B2	73	12	5.53E-04	4.66E-02	4.40E-01	5.70E-04	2.60E-01		3.70E+01	1E-02	2.60E+02	2E-03	2.30E+06	2E-07	5.00E+02	9E-04	7.10E+00	6E-02	7.80E+01	6E-03	1.80E+06	2E-07	5.00E+02	9E-04
VOC	Trichlorofluoromethane	75-69-4		73					8.20E-04	5.10E-01		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		73	2	7.80E-04	1.49E-03	2.20E-03	6.90E-04	2.60E-01		5.50E+02	4E-06	2.10E+05	1E-08	2.30E+09	1E-12	5.50E+02	4E-06	5.50E+02	4E-06	1.80E+05	1E-08	5.10E+09	4E-13	5.50E+02	4E-06
VOC	Vinyl Chloride	75-01-4	A	73					1.00E-03	5.10E-01		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	73	6	3.20E-03	5.47E-02	1.50E-01	1.40E-03	5.10E-01		1.50E+02	1E-03	5.40E+04	3E-06	1.30E+08	1E-09	1.50E+02	1E-03	1.50E+02	1E-03	4.60E+04	3E-06	2.90E+08	5E-10	1.50E+02	1E-03
SVOC	Acenaphthene	83-32-9		69	4	1.30E-01	7.45E-01	1.40E+00	5.40E-02	7.80E+00		3.50E+05	4E-06	9.70E+04	1E-05	6.20E+06	2E-07	2.00E+05	7E-06	1.90E+05	7E-06	8.10E+04	2E-05	1.40E+07	1E-07	4.10E+04	3E-05
SVOC	Acenaphthylene	208-96-8	D	69					4.90E-02	7.80E+00		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	69					5.30E-02	7.80E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	69	7	5.50E-01	2.29E+00	8.50E+00	5.20E-02	7.30E+00		1.00E+06	9E-06	1.60E+06	5E-06	2.90E+07	3E-07	1.00E+06	9E-06	1.00E+06	9E-06	1.40E+06	6E-06	6.70E+07	1E-07	2.30E+05	4E-05
SVOC	Atrazine	1912-24-9		69					1.60E-01	8.50E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		69					1.80E-01	9.60E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	69					5.80E-02	7.80E+00								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	69					6.30E-02	7.80E+00						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	69					6.10E-02	7.80E+00								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	69	2	1.10E-01	1.10E-01	1.10E-01	5.80E-02	7.80E+00						3.50E+05	3E-07	9.10E+03	1E-05					8.00E+05	1E-07	2.50E+03	4E-05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	69					5.60E-02	7.80E+00								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		69					1.50E-01	7.90E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	69					4.90E-02	7.80E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	69					5.40E-02	7.80E+00		4.40E+01		1.10E+02		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	69	19	6.10E-02	3.93E+00	5.80E+01	5.70E-02	7.80E+00						8.90E+05	7E-05	1.00E+04	6E-03					7.00E+05	8E-05	2.80E+03	2E-02

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TABLE 4-37

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	69					6.40E-02	7.80E+00																	
SVOC	Butylbenzylphthalate	85-68-7	C	69	1	1.50E+00	1.50E+00	1.50E+00	5.40E-02	7.80E+00						2.10E+07	7E-08	3.10E+02	5E-03					4.70E+07	3E-08	3.10E+02	5E-03
SVOC	Caprolactam	105-60-2		69					1.90E-01	1.00E+01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	69					5.50E-02	7.80E+00								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		69					5.40E-02	7.80E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		69					5.40E-02	3.10E+01																	
SVOC	2-Chloronaphthalene	91-58-7		69					5.10E-02	7.80E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		69					5.50E-02	7.80E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		69					5.50E-02	7.80E+00																	
SVOC	Chrysene	218-01-9	B2	69	3	8.10E-02	6.70E-01	1.30E+00	4.80E-02	7.80E+00								1.00E+04	1E-04							2.00E+03	7E-04
SVOC	Di-n-butylphthalate	84-74-2	D	69					1.60E-01	8.50E+00						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		69					5.70E-02	7.80E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	69					5.40E-02	7.80E+00								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	69	1	8.40E-02	8.40E-02	8.40E-02	5.30E-02	7.80E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	69					4.10E-02	4.70E+01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		69					5.30E-02	7.80E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	69					1.60E-01	8.50E+00						1.50E+08		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		69					8.40E-02	7.80E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	69					1.70E-01	9.00E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		69					1.70E-01	4.00E+01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		69					1.20E-01	4.00E+01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	69					4.80E-02	7.80E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	69					5.10E-02	7.80E+00																	
SVOC	Fluoranthene	206-44-0	D	69	10	7.00E-02	1.48E+00	5.20E+00	5.90E-02	7.30E+00		1.00E+06	5E-06	8.90E+05	6E-06	4.10E+06	1E-06	1.80E+05	3E-05	1.00E+06	5E-06	7.40E+05	7E-06	9.30E+06	6E-07	4.60E+04	1E-04
SVOC	Fluorene	86-73-7	D	69	10	3.00E-01	8.20E+00	5.70E+01	5.10E-02	7.30E+00		1.00E+06	6E-05	1.50E+05	4E-04	4.10E+06	1E-05	1.30E+05	4E-04	5.80E+05	1E-04	1.30E+05	4E-04	9.30E+06	6E-06	2.70E+04	2E-03
SVOC	Hexachlorobenzene	118-74-1	B2	69					5.90E-02	7.80E+00		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	69					4.70E-02	7.80E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	69					6.30E-02	7.80E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	69					5.10E-02	2.70E+00		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	69					7.40E-02	7.80E+00								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	69					4.60E-02	7.80E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		69	6	7.60E-02	7.66E-01	2.10E+00	5.10E-02	7.30E+00								4.00E+04	5E-05							8.10E+03	3E-04
SVOC	Methylphenol (summed)	1319-77-3		69	1	1.38E-01	1.38E-01	1.38E-01	4.90E-02	7.80E+00						2.90E+06	5E-08	5.60E+04	2E-06					6.70E+06	2E-08	1.10E+04	1E-05
SVOC	Naphthalene	91-20-3	C	69	3	5.60E-02	1.37E-01	2.90E-01	5.20E-02	7.80E+00		4.70E+02	6E-04	3.50E+02	8E-04	8.80E+04	3E-06	8.00E+04	4E-06	2.50E+02	1E-03	3.00E+02	1E-03	2.00E+05	1E-06	1.60E+04	2E-05
SVOC	2-Nitroaniline	88-74-4		69					4.80E-02	4.00E+01																	
SVOC	3-Nitroaniline	99-09-2	C	69					1.50E-01	4.00E+01																	
SVOC	4-Nitroaniline	100-01-6	C	69					7.20E-02	4.00E+01																	
SVOC	Nitrobenzene	98-95-3	D	69					4.80E-02	7.80E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		69					4.80E-02	7.80E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		69					2.00E-01	4.00E+01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	69					5.20E-02	7.80E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	69					4.60E-02	7.80E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	69					5.50E-02	7.80E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	69					1.30E-01	8.00E+01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	69	19	6.50E-02	6.59E+00	5.70E+01	5.50E-02	1.70E+00		5.10E+03	1E-02	1.90E+02	3E-01	2.90E+03	2E-02	8.00E+03	7E-03	2.80E+03	2E-02	1.60E+02	4E-01	6.70E+03	9E-03	1.60E+03	4E-02
SVOC	Phenol	108-95-2	D	69					5.20E-02	7.80E+00						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	69	16	5.60E-02	1.69E+00	7.30E+00	5.40E-02	1.70E+00		1.00E+06	7E-06	7.80E+05	9E-06	2.90E+06	3E-06	1.10E+05	7E-05	1.00E+06	7E-06	6.50E+05	1E-05	6.70E+06	1E-06	2.90E+04	3E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		69					5.80E-02	7.80E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	69					6.60E-02	7.80E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	61	7	9.10E-02	1.20E+00	3.69E+00	2.10E-02	2.30E-01		1.60E+04	2E-04	8.10E+02	5E-03	6.50E+03	6E-04	2.00E+01	2E-01	3.00E+03	1E-03	2.40E+02	2E-02	5.20E+03	7E-04	4.00E+00	9E-01
INORG	Antimony	7440-36-0		69	3	3.52E-01	1.44E+00	3.17E+00	2.63E-01	2.53E+00						5.90E+03	5E-04	1.20E+03	3E-03					1.30E+04	2E-04	1.80E+02	2E-02
INORG	Arsenic	7440-38-2	A	69	69	6.45E-01	4.23E+00	1.94E+01			1.32E+01					9.10E+02	7E-03	6.10E+01	1E-01					7.20E+02	9E-03	7.60E+00	8E-01
INORG	Barium	7440-39-3	D	69	68	2.88E+00	3.73E+01	3.44E+02	7.12E-02	7.12E-02	1.10E+02					1.50E+05	2E-03	2.50E+05	9E-04					3.30E+05	7E-04	3.70E+04	6E-03
INORG	Beryllium	7440-41-7	B1	69	62	3.31E-02	3.77E-01	4.53E+00	2.46E-02	5.09E-02	1.53E+00					5.90E+02	5E-03	3.10E+03	1E-03					1.30E+03	2E-03	4.10E+02	7E-03
INORG	Cadmium	7440-43-9	B1	69	55	3.81E-02	2.41E-01	3.98E+00	2.30E-02	1.11E+00	1.20E+00					2.20E+03	1E-03	4.10E+03	7E-04					1.70E+03	2E-03	5.50E+02	5E-03
INORG	Chromium (total)	7440-47-3		2	2	8.91E+00	8.98E+00	9.05E+00			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Chromium III	16065-83-1	D	67	67	1.91E+00	2.02E+01	6.70E+02								1.50E+05	4E-03	1.00E+06	7E-04					3.30E+05	2E-03	7.90E+05	8E-04
INORG	Chromium VI	18540-29-9	A	68	14	7.07E-02	1.20E+00	7.76E+00	3.69E-01	6.31E-01						2.40E+02	3E-02	1.70E+04	5E-04					2.60E+02	3E-02	2.50E+03	3E-03
INORG	Cobalt	7440-48-4		69	69	1.20E+00	4.68E+00	3.01E+01			1.74E+01					5.90E+03	2E-03	1.80E+04	7E-04					1.30E+04	1E-03	2.60E+03	5E-03
INORG	Copper	7440-50-8	D	69	69	2.06E+00	1.20E+02	2.60E+03			3.20E+01					5.90E+04	4E-02	1.40E+05	2E-02					1.30E+05	2E-02	2.00E+04	1E-01
INORG	Cyanide (total)	57-12-5	D	67	31	1.92E-01	9.81E+00	5.18E+01	1.79E-01	5.96E-01						2.50E+02	2E-01	2.50E+02	2E-01					2.50E+02	2E-01	1.20E+01	**4E+00**
INORG	Lead	7439-92-1	B2	69	69	1.57E+00	8.47E+00	4.52E+01			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	

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PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

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Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Manganese	7439-96-5	D	81	81	5.30E+01	3.56E+02	2.22E+03			5.10E+02					1.50E+03	**1E+00**	1.70E+05	1E-02					3.30E+03	5E-01	2.50E+04	7E-02
INORG	Mercury	7439-97-6	D	69	43	9.60E-03	2.37E-02	1.21E-01	8.80E-03	3.88E-02	1.30E-01							1.10E+03								1.60E+02	
INORG	Nickel	7440-02-0	A	69	69	3.49E+00	2.28E+02	4.14E+03			3.01E+01					1.60E+04	3E-01	2.70E+05	2E-02					1.30E+04	3E-01	4.00E+04	1E-01
INORG	Selenium	7782-49-2	D	69	4	3.82E-01	1.12E+00	2.96E+00	1.66E-01	1.11E+00	4.10E-01					5.90E+04	4E-05	1.80E+04	1E-04					1.30E+05	2E-05	2.60E+03	1E-03
INORG	Silver	7440-22-4	D	69	1	2.45E-01	2.45E-01	2.45E-01	8.04E-02	6.31E-01						2.90E+03	8E-05	1.70E+04	1E-05					6.70E+03	4E-05	2.50E+03	1E-04
INORG	Thallium	7440-28-0		69	16	2.80E-01	6.30E-01	1.14E+00	2.87E-01	1.26E+00								2.40E+02	5E-03							3.50E+01	3E-02
INORG	Vanadium	7440-62-2		69	69	3.42E+00	1.29E+01	3.32E+01			3.28E+01							1.00E+04	4E-05							7.50E+02	5E-04
INORG	Zinc	7440-66-6	D	69	69	9.37E+00	4.58E+01	3.64E+02			4.70E+01							1.00E+06	3E-04							1.70E+05	2E-03

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-38

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	14	7	4.40E-03	8.01E-01	3.40E+00	5.10E-04	2.50E-03	1.00E+06	3E-06	3.10E+04	1E-04	1.00E+06	3E-06
VOC	Benzene	71-43-2	T	A	14					1.60E-04	2.50E-02	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	14	2	4.80E-04	6.00E-04	7.20E-04	1.70E-04	2.50E-02	3.80E+01	2E-05	1.40E+01	5E-05	4.80E+00	2E-04
VOC	Bromoform	75-25-2	T	B2	14					2.80E-04	2.50E-02	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	14					2.00E-04	2.50E-02	2.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	14					4.10E-04	2.50E-01	2.40E+05		2.40E+05		2.40E+05	
VOC	Carbon Disulfide	75-15-0	T		14					2.00E-04	2.50E-02	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	14					1.20E-04	2.50E-02	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	14					1.40E-04	2.50E-02	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		14	3	9.10E-03	1.47E-02	2.30E-02	2.60E-04	1.70E-02	5.70E+03	4E-06	4.40E+02	5E-05	5.70E+03	4E-06
VOC	Chloroform	67-66-3	T	B2	14	8	2.00E-04	1.73E-03	8.30E-03	1.40E-04	9.30E-03	1.80E+02	3E-05	1.50E+02	4E-05	2.80E+01	2E-04
VOC	Chloromethane	74-87-3	T	D	14	1	1.60E-04	1.60E-04	1.60E-04	1.30E-04	2.50E-02	5.20E+01	3E-06	4.90E+02	3E-07	8.60E+00	2E-05
VOC	Cumene	98-82-8	T	D	14					1.20E-04	2.50E-02	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		14					1.30E-04	2.50E-02						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	14					6.20E-04	5.00E-02	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	14					2.60E-04	2.50E-02	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	14					2.20E-04	2.50E-02	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	14					1.10E-04	2.50E-02	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	14					1.50E-04	2.50E-02			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	14					1.70E-04	2.50E-02	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		14					2.60E-04	5.00E-02	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	14	12	4.80E-04	1.95E-01	1.30E+00	3.20E-03	1.10E-02	2.30E+03	6E-04	2.40E+03	5E-04	1.00E+03	1E-03
VOC	1,2-Dichloroethane	107-06-2	T	B2	14	3	6.20E-04	3.97E-03	1.00E-02	2.10E-04	2.50E-02	5.90E+01	2E-04	1.90E+01	5E-04	9.60E+00	1E-03
VOC	1,1-Dichloroethene	75-35-4	T	C	14	10	8.20E-04	1.81E-02	8.00E-02	2.40E-04	1.60E-02	1.30E+00	6E-02	1.10E+01	7E-03	2.00E-01	4E-01
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	14	2	5.40E-03	1.97E-02	3.40E-02	2.20E-04	1.50E-02	2.20E+02	2E-04	2.00E+02	2E-04	9.60E+01	4E-04
VOC	trans-1,2-Dichloroethene	156-60-5	T		14	1	1.10E-03	1.10E-03	1.10E-03	1.50E-04	1.20E-02	2.00E+02	6E-06	2.20E+02	5E-06	8.50E+01	1E-05
VOC	1,2-Dichloropropane	78-87-5	T	B2	14					1.70E-04	2.50E-02	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	14					2.70E-04	2.50E-02	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	14					1.20E-04	2.50E-02	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		14					4.60E-04	2.50E-01	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		14					4.10E-04	2.50E-01						
VOC	Methyl tert-butyl ether	1634-04-4	T		14					1.30E-04	1.20E-01	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		14	2	5.40E-03	1.87E-02	3.20E-02	2.30E-04	2.50E-01	2.00E+04	2E-06	1.30E+04	2E-06	2.00E+04	2E-06
VOC	Methylcyclohexane	108-87-2	T		14					1.50E-04	2.50E-02						
VOC	Methylene Chloride	75-09-2	T	B2	14	3	4.00E-04	9.97E-04	1.90E-03	3.40E-04	2.50E-02	1.40E+03	1E-06	2.20E+02	9E-06	2.20E+02	9E-06
VOC	Styrene	100-42-5	T		14					1.20E-04	2.50E-02	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	14					2.50E-04	2.50E-02	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	14	1	8.00E-04	8.00E-04	8.00E-04	2.30E-04	2.50E-02	1.70E+02	5E-06	1.20E+01	7E-05	2.50E+01	3E-05

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TABLE 4-38

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Toluene	108-88-3	T	D	14					1.80E-04	2.50E-02	5.30E+02		5.30E+02		5.30E+02	
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	14					1.70E-04	2.50E-02	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	14	10	1.90E-03	1.18E-01	4.80E-01	1.50E-04	2.00E-02	1.30E+03	4E-04	1.30E+03	4E-04	6.60E+02	7E-04
VOC	1,1,2-Trichloroethane	79-00-5	T	C	14	2	1.00E-02	1.10E-02	1.20E-02	2.00E-04	2.00E-02	1.10E+02	1E-04	2.10E+01	6E-04	1.70E+01	7E-04
VOC	Trichloroethene	79-01-6	T	C-B2	14	2	1.70E-03	2.05E-03	2.40E-03	1.40E-04	2.50E-02	9.70E+01	2E-05	3.70E+01	6E-05	1.50E+01	2E-04
VOC	Trichlorofluoromethane	75-69-4	T		14					2.80E-04	2.50E-02	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		14					3.20E-04	2.50E-02	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	14	2	1.00E-03	2.15E-03	3.30E-03	1.50E-04	2.50E-02	6.90E-01	5E-03	5.70E-01	6E-03	1.10E-01	3E-02
VOC	Xylenes (total)	1330-20-7	T	D	14					3.30E-04	2.50E-02	1.90E+02		1.90E+02		1.90E+02	
SVOC	Acenaphthene	83-32-9	T		11	1	8.40E-04	8.40E-04	8.40E-04	8.00E-04	5.00E-03	4.20E+00	2E-04	4.20E+00	2E-04	4.20E+00	2E-04
SVOC	Acenaphthylene	208-96-8	T	D	11					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	11					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	11	1	7.80E-04	7.80E-04	7.80E-04	6.80E-04	5.00E-03	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02
SVOC	Atrazine	1912-24-9	T		11					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		11					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	11					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	11					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	11					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	11					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	11					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		11					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	11					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	11					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	11					2.70E-03	5.00E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	11					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	11					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		11					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	11					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		11					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		9					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		11					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		11					1.00E-03	5.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		11					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	11					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	11	2	1.10E-03	1.10E-03	1.10E-03	6.70E-04	5.00E-03			1.10E+01	1E-04		
SVOC	Di-n-octylphthalate	117-84-0	T		11					1.00E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	11					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	11					7.10E-03	5.00E-03						

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RCRA FACILITY INVESTIGATION

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SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	7					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		11					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	11					6.50E-04	2.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		11	1	1.10E-03	1.10E-03	1.10E-03	9.50E-04	5.00E-03			5.20E+02	2E-06		
SVOC	Dimethylphthalate	131-11-3	T	D	11					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		11					1.20E-03	2.00E-02			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		11					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	11					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	11					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	11					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	11	2	3.80E-03	4.10E-03	4.20E-03	1.00E-03	5.00E-03	2.00E+00	2E-03	2.00E+00	2E-03	2.00E+00	2E-03
SVOC	Hexachlorobenzene	118-74-1	T	B2	11					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	11					7.30E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	11					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	11					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	11					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	11					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		11	2	1.50E-03	1.70E-03	1.90E-03	6.40E-04	5.00E-03			2.50E+01	8E-05		
SVOC	Methylphenol (summed)	1319-77-3	T		11					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	11	2	1.30E-03	1.45E-03	1.60E-03	7.50E-04	5.00E-03	3.10E+01	5E-05	3.10E+01	5E-05	3.10E+01	5E-05
SVOC	2-Nitroaniline	88-74-4	T		11					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	7					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	9					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	11					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		11					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		11					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	11					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	11					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	11					7.80E-04	5.00E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	11					2.40E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	11	2	4.20E-03	5.85E-03	7.50E-03	8.20E-04	5.00E-03	1.00E+00	8E-03	1.00E+00	8E-03	1.00E+00	8E-03
SVOC	Phenol	108-95-2	T	D	11					2.60E-03	5.00E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	11					1.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		11					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	11					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	5					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	11					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		13	2	3.40E-03	3.65E-03	3.90E-03	2.00E-03	2.50E-02			6.80E+01	6E-05		

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TABLE 4-38

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Antimony	7440-36-0	T		13	2	2.30E-03	2.40E-03	2.50E-03	2.20E-03	2.50E-02			6.80E+01	4E-05		
INORG	Arsenic	7440-38-2	D	A	13	2	1.27E-02	2.17E-02	3.07E-02	3.90E-03	1.00E-02			4.30E+00	7E-03		
INORG	Arsenic	7440-38-2	T	A	13	3	4.70E-03	1.83E-02	3.81E-02	3.90E-03	1.00E-02			4.30E+00	9E-03		
INORG	Barium	7440-39-3	D	D	13	13	2.05E-02	1.17E-01	2.09E-01					1.40E+04	1E-05		
INORG	Barium	7440-39-3	T	D	13	13	3.56E-02	1.19E-01	2.07E-01					1.40E+04	1E-05		
INORG	Beryllium	7440-41-7	D	B1	13					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	13					5.40E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	13	2	3.00E-04	3.15E-04	3.30E-04	2.80E-04	5.00E-03			1.90E+02	2E-06		
INORG	Cadmium	7440-43-9	T	B1	13	2	3.20E-04	3.25E-04	3.30E-04	2.80E-04	5.00E-03			1.90E+02	2E-06		
INORG	Chromium (total)	7440-47-3	D		7					1.40E-03	1.40E-03			4.60E+02			
INORG	Chromium (total)	7440-47-3	T		2	2	2.90E-03	3.05E-03	3.20E-03					4.60E+02	7E-06		
INORG	Chromium III	16065-83-1	D	D	4	1	3.45E-03	3.45E-03	3.45E-03	1.40E-03	1.40E-03			2.90E+05	1E-08		
INORG	Chromium III	16065-83-1	T	D	9					1.40E-03	1.40E-03			2.90E+05			
INORG	Chromium VI	18540-29-9	D	A	4	1	7.90E-03	7.90E-03	7.90E-03	6.90E-03	6.90E-03			4.60E+02	2E-05		
INORG	Chromium VI	18540-29-9	T	A	9					6.90E-03	6.90E-03			4.60E+02			
INORG	Cobalt	7440-48-4	D		13	10	1.50E-03	7.62E-03	1.87E-02	1.30E-03	1.30E-03			2.40E+03	8E-06		
INORG	Cobalt	7440-48-4	T		13	11	2.40E-03	7.18E-03	1.91E-02	1.30E-03	1.30E-03			2.40E+03	8E-06		
INORG	Copper	7440-50-8	D	D	13	5	4.80E-03	8.48E-03	1.68E-02	4.20E-03	5.00E-03			7.40E+03	2E-06		
INORG	Copper	7440-50-8	T	D	13	7	4.60E-03	4.40E-02	2.51E-01	4.20E-03	5.00E-03			7.40E+03	3E-05		
INORG	Cyanide (total)	57-12-5	T	D	11	5	4.80E-03	1.19E-02	3.07E-02	1.70E-03	1.00E-02			5.70E+01	5E-04		
INORG	Lead	7439-92-1	D	B2	13					2.50E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	13	1	2.20E-02	2.20E-02	2.20E-02	2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	13	13	3.70E-03	4.61E-01	1.17E+00					9.10E+03	1E-04		
INORG	Manganese	7439-96-5	T	D	13	13	3.60E-03	4.75E-01	1.21E+00					9.10E+03	1E-04		
INORG	Mercury	7439-97-6	D	D	11	1	7.70E-05	7.70E-05	7.70E-05	6.90E-05	2.00E-04			5.60E-02	1E-03		
INORG	Mercury	7439-97-6	T	D	11	2	7.70E-05	8.85E-05	1.00E-04	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Nickel	7440-02-0	D	A	13	13	2.70E-03	3.12E-02	1.68E-01					7.40E+04	2E-06		
INORG	Nickel	7440-02-0	T	A	13	13	3.20E-03	2.93E-02	1.53E-01					7.40E+04	2E-06		
INORG	Selenium	7782-49-2	D	D	13	2	5.70E-03	5.70E-03	5.70E-03	4.50E-03	5.00E-03			9.70E+02	6E-06		
INORG	Selenium	7782-49-2	T	D	13	3	5.00E-03	5.13E-03	5.40E-03	4.50E-03	5.00E-03			9.70E+02	6E-06		
INORG	Silver	7440-22-4	D	D	13					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	13					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		13	7	4.80E-05	3.08E-03	5.60E-03	1.80E-05	5.00E-03			1.30E+01	4E-04		
INORG	Thallium	7440-28-0	T		13	5	2.00E-05	1.18E-03	5.50E-03	1.80E-05	1.00E-02			1.30E+01	4E-04		
INORG	Vanadium	7440-62-2	D		13	6	1.90E-03	4.22E-03	5.80E-03	8.20E-04	1.00E-02			9.70E+02	6E-06		
INORG	Vanadium	7440-62-2	T		13	7	1.30E-03	4.90E-03	8.20E-03	8.20E-04	1.00E-02			9.70E+02	1E-05		
INORG	Zinc	7440-66-6	D	D	13	3	2.41E-02	4.84E-02	8.48E-02	1.20E-02	2.00E-02			1.10E+05	8E-07		
INORG	Zinc	7440-66-6	T	D	13	3	1.52E-02	3.08E-02	8.48E-02	1.20E-02	2.00E-02			1.10E+05	5E-07		

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-2 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-39

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-4 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	12					2.00E-03	7.70E-02		1.10E+05		1.60E+05		1.70E+08		1.10E+05		1.10E+05		1.30E+05		3.90E+08		2.30E+04	
VOC	Benzene	71-43-2	A	12					6.10E-04	1.70E-02		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	12					1.10E-03	1.00E-02		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	12					1.50E-03	1.60E-02		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	12					1.70E-03	2.70E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	12					2.50E-03	8.30E-02		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		12					7.30E-04	3.60E-02		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	12					9.40E-04	1.00E-02		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	12					4.90E-04	8.30E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		12					2.10E-03	3.80E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	12					7.70E-04	1.00E-02		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	12					1.20E-03	1.50E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	12	1	1.80E-02	1.80E-02	1.80E-02	6.60E-04	5.20E-03		3.90E+02	5E-05	2.00E+03	9E-06	2.60E+06	7E-09	3.90E+02	5E-05	3.90E+02	5E-05	1.70E+03	1E-05	5.80E+06	3E-09	3.90E+02	5E-05
VOC	Cyclohexane	110-82-7		12					9.40E-04	1.00E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	12					1.50E-03	8.30E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	12					1.00E-03	1.30E-02		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	12					1.10E-03	1.90E-02		3.60E+00		5.60E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	12					6.70E-04	1.60E-02		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	12					7.50E-04	9.70E-03								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	12	1	1.50E-03	1.50E-03	1.50E-03	6.30E-04	1.60E-02		1.00E+02	2E-05	2.60E+02	6E-06	5.70E+05	3E-09	2.90E+03	5E-07	1.90E+01	8E-05	7.70E+01	2E-05	4.50E+05	3E-09	4.00E+02	4E-06
VOC	Dichlorodifluoromethane	75-71-8		12					1.00E-03	3.90E-02		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	12					5.40E-04	1.40E-02		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	12					6.80E-04	1.10E-02		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	12					1.10E-03	1.70E-02		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	12					7.90E-04	1.60E-02		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		12					6.80E-04	1.80E-02		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	12					7.00E-04	9.60E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	12					8.10E-04	1.20E-02		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	12	1	1.00E-01	1.00E-01	1.00E-01	5.50E-04	5.20E-03		1.40E+02	7E-04	1.10E+04	9E-06	2.90E+07	3E-09	1.40E+02	7E-04	1.40E+02	7E-04	9.50E+03	1E-05	6.70E+07	1E-09	1.40E+02	7E-04
VOC	2-Hexanone	591-78-6		12					1.60E-03	3.10E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		12					1.00E-03	4.60E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		12					7.90E-04	2.10E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		12					1.80E-03	3.00E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		12	1	4.50E-02	4.50E-02	4.50E-02	5.50E-04	1.00E-02																	
VOC	Methylene Chloride	75-09-2	B2	12					1.20E-03	4.20E-02		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		12					4.70E-04	1.70E-02		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	12					1.70E-03	1.10E-02		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	12					1.10E-03	1.50E-02		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	12	8	6.30E-04	2.84E-03	1.50E-02	5.20E-04	4.20E-03		2.50E+02	6E-05	3.30E+03	5E-06	1.20E+07	1E-09	2.50E+02	6E-05	2.50E+02	6E-05	2.80E+03	5E-06	2.70E+07	6E-10	2.50E+02	6E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	12					8.30E-04	1.10E-02		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	12					8.60E-04	1.00E-02		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	12					1.10E-03	1.60E-02		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	12					7.10E-04	1.70E-02		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		12					1.00E-03	1.90E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		12					8.70E-04	3.80E-02		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	12					1.30E-03	1.10E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	12	1	1.20E-01	1.20E-01	1.20E-01	1.80E-03	1.00E-02		1.50E+02	8E-04	5.40E+04	2E-06	1.30E+08	9E-10	1.50E+02	8E-04	1.50E+02	8E-04	4.60E+04	3E-06	2.90E+08	4E-10	1.50E+02	8E-04
INORG	Lead	7439-92-1	B2	13	13	1.85E+00	5.38E+00	8.91E+00			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.

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TABLE 4-40

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-4 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	8	3	2.10E-03	5.88E-02	1.70E-01	5.10E-04	1.70E-02	1.00E+06	2E-07	3.10E+04	5E-06	1.00E+06	2E-07
VOC	Benzene	71-43-2	T	A	8	3	3.30E-04	2.20E-01	5.50E-01	1.60E-04	4.00E-04	3.60E+01	2E-02	1.10E+01	5E-02	5.60E+00	1E-01
VOC	Bromodichloromethane	75-27-4	T	B2	8	1	3.00E-04	3.00E-04	3.00E-04	1.70E-04	6.70E-03	3.80E+01	8E-06	1.40E+01	2E-05	4.80E+00	6E-05
VOC	Bromoform	75-25-2	T	B2	8					1.80E-04	6.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	8					2.00E-04	6.70E-03	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	8					4.10E-04	1.40E-02	2.40E+05		2.40E+05		2.40E+05	
VOC	Carbon Disulfide	75-15-0	T		8					2.00E-04	6.70E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	8					1.20E-04	4.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	8					1.40E-04	4.70E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		8					2.60E-04	8.70E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	8	3	8.90E-04	1.06E-03	1.20E-03	1.40E-04	4.70E-03	1.80E+02	7E-06	1.50E+02	9E-06	2.80E+01	5E-05
VOC	Chloromethane	74-87-3	T	D	8					1.30E-04	4.30E-03	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	8	3	2.70E-04	1.14E-02	1.90E-02	1.20E-04	3.00E-04	5.60E+01	3E-04	5.60E+01	3E-04	5.60E+01	3E-04
VOC	Cyclohexane	110-82-7	T		8	2	1.30E-01	2.15E-01	3.00E-01	1.30E-04	3.20E-04						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	8					6.20E-04	2.10E-02	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	8					2.60E-04	8.70E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	8					2.20E-04	7.30E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	8	1	2.10E-04	2.10E-04	2.10E-04	1.10E-04	3.70E-03	1.60E+02	1E-06	1.60E+02	1E-06	1.60E+02	1E-06
VOC	1,3-Dichlorobenzene	541-73-1	T	D	8					1.50E-04	5.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	8	1	1.90E-04	1.90E-04	1.90E-04	1.70E-04	5.70E-03	7.40E+01	3E-06	6.40E+00	3E-05	1.60E+01	1E-05
VOC	Dichlorodifluoromethane	75-71-8	T		8					2.60E-04	8.70E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	8					1.60E-04	5.30E-03	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	8					2.10E-04	7.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	8					2.40E-04	8.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	8					2.20E-04	7.30E-03	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		8					1.50E-04	5.00E-03	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	8					1.70E-04	5.70E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	8					2.70E-04	9.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	8	3	4.90E-04	3.37E-01	8.50E-01	1.20E-04	3.00E-04	1.70E+02	5E-03	1.70E+02	5E-03	1.70E+02	5E-03
VOC	2-Hexanone	591-78-6	T		8					4.60E-04	1.50E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		8					4.10E-04	1.40E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		8	1	1.20E-03	1.20E-03	1.20E-03	1.30E-04	4.30E-03	4.70E+04	3E-08	6.90E+02	2E-06	4.70E+04	3E-08
VOC	4-Methyl-2-pentanone	108-10-1	T		8					2.30E-04	7.70E-03	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		8	2	2.50E-02	4.40E-02	6.30E-02	1.50E-04	3.80E-04						
VOC	Methylene Chloride	75-09-2	T	B2	8	2	3.50E-04	8.75E-04	1.40E-03	3.40E-04	1.10E-02	1.40E+03	1E-06	2.20E+02	6E-06	2.20E+02	6E-06
VOC	Styrene	100-42-5	T		8					1.50E-04	5.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	8					2.50E-04	8.30E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	8					2.30E-04	7.70E-03	1.70E+02		1.20E+01		2.50E+01	

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TABLE 4-40

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-4 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Toluene	108-88-3	T	D	8	3	3.10E-04	2.14E-02	3.40E-02	1.80E-04	4.90E-04	5.30E+02	6E-05	5.30E+02	6E-05	5.30E+02	6E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	8	1	2.40E-04	2.40E-04	2.40E-04	1.70E-04	5.70E-03	3.00E+02	8E-07	1.90E+01	1E-05	3.00E+02	8E-07
VOC	1,1,1-Trichloroethane	71-55-6	T	D	8					1.50E-04	2.30E-03	1.30E+03		1.30E+03		6.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	T	C	8					3.00E-04	1.00E-02	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	8					1.40E-04	4.70E-03	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		8					2.80E-04	9.30E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		8					3.20E-04	1.10E-02	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	8					1.50E-04	5.00E-03	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	8	2	3.70E-01	8.35E-01	1.30E+00	3.30E-04	9.20E-04	1.90E+02	7E-03	1.90E+02	7E-03	1.90E+02	7E-03
INORG	Lead	7439-92-1	D	B2	8					2.50E-03	2.50E-03						
INORG	Lead	7439-92-1	T	B2	8					2.50E-03	2.50E-03						

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
7. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-41

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-5 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	10	4	5.10E-03	7.40E-03	9.60E-03	1.80E-03	2.30E-03		1.10E+05	9E-08	1.60E+05	6E-08	1.70E+08	6E-11	1.10E+05	9E-08	1.10E+05	9E-08	1.30E+05	7E-08	3.90E+08	2E-11	2.30E+04	4E-07
VOC	Benzene	71-43-2	A	10	2	8.90E-04	1.50E-03	2.10E-03	5.70E-04	7.10E-04		8.40E+00	3E-04	4.50E+01	5E-05	4.70E+05	4E-09	4.00E+02	5E-06	1.60E+00	1E-03	1.30E+01	2E-04	3.80E+05	6E-09	1.80E+02	1E-05
VOC	Bromodichloromethane	75-27-4	B2	10					1.00E-03	1.30E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	10					1.40E-03	1.70E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	10					1.60E-03	2.00E-03		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	10	2	2.90E-03	2.95E-03	3.00E-03	2.30E-03	2.90E-03		2.70E+04	1E-07	3.50E+04	9E-08	2.90E+07	1E-10	2.70E+04	1E-07	2.70E+04	1E-07	2.90E+04	1E-07	6.70E+07	4E-11	2.70E+04	1E-07
VOC	Carbon Disulfide	75-15-0		10	1	2.10E-03	2.10E-03	2.10E-03	6.80E-04	8.50E-04		1.40E+02	2E-05	1.60E+03	1E-06	2.10E+07	1E-10	2.80E+02	8E-06	7.60E+01	3E-05	1.30E+03	2E-06	4.70E+07	4E-11	2.80E+02	8E-06
VOC	Carbon Tetrachloride	56-23-5	B2	10					8.70E-04	1.10E-03		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	10					4.50E-04	5.70E-04		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		10					1.90E-03	2.40E-03		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	10					7.10E-04	8.90E-04		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	10					1.10E-03	1.40E-03		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	10	1	3.10E-03	3.10E-03	3.10E-03	6.10E-04	7.60E-04		3.90E+02	8E-06	2.00E+03	4E-06	2.60E+06	1E-09	3.90E+02	8E-06	3.90E+02	8E-06	1.70E+03	2E-06	5.80E+06	5E-10	3.90E+02	8E-06
VOC	Cyclohexane	110-82-7		10	1	2.30E-03	2.30E-03	2.30E-03	8.70E-04	1.10E-03																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	10					1.40E-03	1.70E-03		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	10					9.60E-04	1.20E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	10					1.00E-03	1.30E-03		3.60E+00		1.40E+01		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	10					6.20E-04	7.70E-04		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	10					7.00E-04	8.70E-04								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	10					5.80E-04	7.30E-04		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		10					9.60E-04	1.20E-03		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	10					5.00E-04	6.30E-04		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	10					6.30E-04	7.90E-04		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	10					1.00E-03	1.30E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	10					7.30E-04	9.10E-04		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		10					6.30E-04	7.90E-04		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	10					6.50E-04	8.20E-04		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	10					7.50E-04	9.40E-04		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	10	1	4.00E-03	4.00E-03	4.00E-03	5.10E-04	6.40E-04		1.40E+02	3E-05	1.10E+04	4E-07	2.90E+07	1E-10	1.40E+02	3E-05	1.40E+02	3E-05	9.50E+03	4E-07	6.70E+07	6E-11	1.40E+02	3E-05
VOC	2-Hexanone	591-78-6		10	1	3.80E-03	3.80E-03	3.80E-03	1.50E-03	1.80E-03		1.80E+03	2E-06	1.30E+03	3E-06	1.20E+06	3E-09	2.50E+03	2E-06	9.90E+02	4E-06	1.10E+03	3E-06	2.70E+06	1E-09	2.50E+03	2E-06
VOC	Methyl Acetate	79-20-9		10					9.60E-04	1.20E-03																	
VOC	Methyl tert-butyl ether	1634-04-4		10					7.30E-04	9.10E-04		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		10	1	1.80E-03	1.80E-03	1.80E-03	1.70E-03	2.10E-03		2.70E+03	7E-07	5.30E+04	3E-08	6.00E+07	3E-11	2.70E+03	7E-07	2.70E+03	7E-07	4.50E+04	4E-08	1.40E+08	1E-11	2.70E+03	7E-07
VOC	Methylcyclohexane	108-87-2		10	2	9.80E-04	3.34E-03	5.70E-03	5.10E-04	6.40E-04																	
VOC	Methylene Chloride	75-09-2	B2	10					1.10E-03	1.40E-03		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		10					4.30E-04	5.40E-04		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	10					1.60E-03	2.00E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	10					1.00E-03	1.30E-03		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	10	3	7.30E-04	2.02E-03	4.50E-03	4.70E-04	5.80E-04		2.50E+02	2E-05	3.30E+03	1E-06	1.20E+07	4E-10	2.50E+02	2E-05	2.50E+02	2E-05	2.80E+03	2E-06	2.70E+07	2E-10	2.50E+02	2E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	10					7.70E-04	9.70E-04		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	10					8.00E-04	1.00E-03		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	10					1.00E-03	1.30E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	10					6.60E-04	8.30E-04		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		10					9.60E-04	1.20E-03		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		10					8.10E-04	1.00E-03		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	10					1.20E-03	1.50E-03		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	10	2	1.80E-03	1.04E-02	1.90E-02	1.70E-03	2.10E-03		1.50E+02	1E-04	5.40E+04	4E-07	1.30E+08	1E-10	1.50E+02	1E-04	1.50E+02	1E-04	4.60E+04	4E-07	2.90E+08	7E-11	1.50E+02	1E-04
P/PCB	PCBs (summed)	1336-36-3	B2	10	7	4.32E-02	7.40E-01	1.85E+00	2.10E-02	2.30E-02		1.60E+04	1E-04	8.10E+02	2E-03	6.50E+03	3E-04	2.00E+01	9E-02	3.00E+03	6E-04	2.40E+02	8E-03	5.20E+03	4E-04	4.00E+00	5E-01
INORG	Antimony	7440-36-0		9	5	2.91E-01	3.28E+00	1.41E+01	2.75E-01	2.92E-01						5.90E+03	2E-03	1.20E+03	1E-02					1.30E+04	1E-03	1.80E+02	8E-02
INORG	Arsenic	7440-38-2	A	9	9	2.32E+00	4.87E+00	9.26E+00			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	9	9	8.86E+00	5.86E+01	1.57E+02			1.10E+02					1.50E+05	3E-04	2.50E+05	2E-04					3.30E+05	1E-04	3.70E+04	1E-03
INORG	Beryllium	7440-41-7	B1	9	6	6.50E-02	1.29E-01	2.01E-01	2.58E-02	2.61E-02	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	9	6	5.01E-02	6.01E-01	1.21E+00	2.41E-02	2.47E-02	1.20E+00					2.20E+03	5E-06	4.10E+03	2E-06					1.70E+03	6E-06	5.50E+02	2E-05
INORG	Chromium (total)	7440-47-3		9	9	5.48E+00	5.70E+01	2.02E+02			4.92E+01					2.40E+02	6E-01	1.70E+04	9E-03					2.60E+02	6E-01	2.50E+03	6E-02
INORG	Cobalt	7440-48-4		9	9	2.47E+00	5.15E+00	7.52E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	9	9	7.74E+00	1.88E+02	7.24E+02			3.20E+01					5.90E+04	1E-02	1.40E+05	5E-03					1.30E+05	5E-03	2.00E+04	3E-02
INORG	Lead	7439-92-1	B2	13	13	4.05E+00	1.48E+02	1.56E+03			4.92E+01					4.40E+04	3E-02	9.00E+02	**2E+00**					1.00E+05	2E-02	4.00E+02	**4E+00**
INORG	Manganese	7439-96-5	D	9	9	1.82E+02	4.48E+02	9.19E+02			5.10E+02					1.50E+03	3E-01	1.70E+05	2E-03					3.30E+03	1E-01	2.50E+04	2E-02
INORG	Mercury	7439-97-6	D	9	9	3.48E-02	7.48E-02	1.41E-01			1.30E-01							1.10E+03	1E-05							1.60E+02	7E-05
INORG	Nickel	7440-02-0	A	9	9	7.07E+00	6.04E+01	1.92E+02			3.01E+01					1.60E+04	1E-02	2.70E+05	6E-04					1.30E+04	1E-02	4.00E+04	4E-03
INORG	Selenium	7782-49-2	D	9					1.74E-01	3.55E-01	4.10E-01					5.90E+04		1.80E+04						1.30E+05		2.60E+03	
INORG	Silver	7440-22-4	D	9	3	1.15E-01	3.43E-01	6.99E-01	8.42E-02	8.93E-02						2.90E+03	2E-04	1.70E+04	4E-05					6.70E+03	1E-04	2.50E+03	3E-04

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TABLE 4-41

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-5 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Thallium	7440-28-0		9	3	4.57E-01	5.33E-01	6.76E-01	2.82E-01	5.72E-01								2.40E+02	3E-03							3.50E+01	2E-02
INORG	Vanadium	7440-62-2		9	9	6.74E+00	1.35E+01	1.78E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	9	9	1.69E+01	9.74E+01	2.58E+02			4.70E+01							1.00E+06	2E-04							1.70E+05	1E-03
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	10	9	2.28E-07	3.01E-05	1.06E-04	7.68E-07	7.68E-07						8.90E-02	1E-03	9.90E-04	1E-01					7.10E-02	1E-03	9.00E-05	**1E+00**

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
7. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
8. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-42

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
P/PCB	PCBs (summed)	1336-36-3	D	B2	2					8.20E-05	8.20E-05	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	4	2	7.12E-04	1.14E-03	1.57E-03	8.20E-05	8.20E-05	4.50E-02	3E-02	3.30E-03	5E-01	4.50E-02	3E-02
INORG	Antimony	7440-36-0	D		4	1	4.30E-03	4.30E-03	4.30E-03	2.20E-03	2.20E-03			6.80E+01	6E-05		
INORG	Antimony	7440-36-0	T		4	1	3.50E-03	3.50E-03	3.50E-03	2.20E-03	2.20E-03			6.80E+01	5E-05		
INORG	Arsenic	7440-38-2	D	A	4	2	2.49E-02	2.58E-02	2.67E-02	3.90E-03	3.90E-03			4.30E+00	6E-03		
INORG	Arsenic	7440-38-2	T	A	4	3	4.10E-03	1.91E-02	2.73E-02	3.90E-03	3.90E-03			4.30E+00	6E-03		
INORG	Barium	7440-39-3	D	D	4	4	1.28E+00	2.35E+00	4.72E+00					1.40E+04	3E-04		
INORG	Barium	7440-39-3	T	D	4	4	1.31E+00	2.36E+00	4.89E+00					1.40E+04	3E-04		
INORG	Beryllium	7440-41-7	D	B1	4					5.40E-04	5.40E-04			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	4					5.40E-04	5.40E-04			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	4	3	3.00E-04	4.63E-04	6.60E-04	2.80E-04	2.80E-04			1.90E+02	3E-06		
INORG	Cadmium	7440-43-9	T	B1	4	3	3.60E-04	5.37E-04	7.10E-04	2.80E-04	2.80E-04			1.90E+02	4E-06		
INORG	Chromium (total)	7440-47-3	D		4	3	1.80E-03	2.03E-03	2.20E-03	1.40E-03	1.40E-03			4.60E+02	5E-06		
INORG	Chromium (total)	7440-47-3	T		4	3	2.50E-03	8.57E-03	2.05E-02	1.40E-03	1.40E-03			4.60E+02	4E-05		
INORG	Cobalt	7440-48-4	D		4	1	8.00E-03	8.00E-03	8.00E-03	1.30E-03	1.30E-03			2.40E+03	3E-06		
INORG	Cobalt	7440-48-4	T		4	1	7.90E-03	7.90E-03	7.90E-03	1.30E-03	1.30E-03			2.40E+03	3E-06		
INORG	Copper	7440-50-8	D	D	4					4.20E-03	4.20E-03			7.40E+03			
INORG	Copper	7440-50-8	T	D	4	1	5.20E-03	5.20E-03	5.20E-03	4.20E-03	4.20E-03			7.40E+03	7E-07		
INORG	Lead	7439-92-1	D	B2	4					2.50E-03	2.50E-03						
INORG	Lead	7439-92-1	T	B2	4					2.50E-03	2.50E-03						
INORG	Manganese	7439-96-5	D	D	4	4	9.53E-01	1.83E+00	3.57E+00					9.10E+03	4E-04		
INORG	Manganese	7439-96-5	T	D	4	4	9.83E-01	1.88E+00	3.63E+00					9.10E+03	4E-04		
INORG	Mercury	7439-97-6	D	D	4					6.90E-05	6.90E-05			5.60E-02			
INORG	Mercury	7439-97-6	T	D	4					6.90E-05	6.90E-05			5.60E-02			
INORG	Nickel	7440-02-0	D	A	4	2	1.06E-02	1.33E-02	1.60E-02	2.20E-03	2.20E-03			7.40E+04	2E-07		
INORG	Nickel	7440-02-0	T	A	4	2	1.69E-02	1.72E-02	1.75E-02	2.20E-03	2.20E-03			7.40E+04	2E-07		
INORG	Selenium	7782-49-2	D	D	4					4.50E-03	4.50E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	4					4.50E-03	4.50E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	4					1.50E-03	1.50E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	4					1.50E-03	1.50E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		4	2	5.00E-03	5.45E-03	5.90E-03	1.80E-05	1.80E-05			1.30E+01	5E-04		
INORG	Thallium	7440-28-0	T		4	1	3.00E-05	3.00E-05	3.00E-05	1.80E-05	5.00E-03			1.30E+01	2E-06		
INORG	Vanadium	7440-62-2	D		4	2	8.00E-03	9.00E-03	1.00E-02	8.20E-04	8.20E-04			9.70E+02	1E-05		
INORG	Vanadium	7440-62-2	T		4	2	7.80E-03	9.10E-03	1.04E-02	8.20E-04	8.20E-04			9.70E+02	1E-05		
INORG	Zinc	7440-66-6	D	D	4	1	1.33E-02	1.33E-02	1.33E-02	1.20E-02	1.20E-02			1.10E+05	1E-07		
INORG	Zinc	7440-66-6	T	D	4					1.20E-02	1.20E-02			1.10E+05			

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PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-5 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	D	B2	2					5.02E-09	6.62E-09			1.00E-08			
CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	2					5.85E-09	9.14E-09			1.00E-08			

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
7. The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

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TABLE 4-43

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	21	6	2.10E-03	5.08E-03	8.10E-03	1.70E-03	7.10E+00		1.10E+05	7E-08	1.60E+05	5E-08	1.70E+08	5E-11	1.10E+05	7E-08	1.10E+05	7E-08	1.30E+05	6E-08	3.90E+08	2E-11	2.30E+04	4E-07
VOC	Benzene	71-43-2	A	21	2	3.30E-03	1.02E-02	1.70E-02	5.20E-04	1.80E+00		8.40E+00	2E-03	4.50E+01	4E-04	4.70E+05	4E-08	4.00E+02	4E-05	1.60E+00	1E-02	1.30E+01	1E-03	3.80E+05	4E-08	1.80E+02	9E-05
VOC	Bromodichloromethane	75-27-4	B2	21					9.50E-04	1.80E+00		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	21					1.30E-03	1.80E+00		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	21					1.40E-03	3.50E+00		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	21					2.10E-03	7.10E+00		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		21	1	2.50E-03	2.50E-03	2.50E-03	6.20E-04	1.80E+00		1.40E+02	2E-05	1.60E+03	2E-06	2.10E+07	1E-10	2.80E+02	9E-06	7.60E+01	3E-05	1.30E+03	2E-06	4.70E+07	5E-11	2.80E+02	9E-06
VOC	Carbon Tetrachloride	56-23-5	B2	21					7.90E-04	1.80E+00		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	21					4.10E-04	1.80E+00		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		21					1.70E-03	3.50E+00		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	21					6.50E-04	1.80E+00		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	21					1.00E-03	3.50E+00		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	21	1	4.60E-02	4.60E-02	4.60E-02	5.60E-04	1.80E+00		3.90E+02	1E-04	2.00E+03	2E-05	2.60E+06	2E-08	3.90E+02	1E-04	3.90E+02	1E-04	1.70E+03	3E-05	5.80E+06	8E-09	3.90E+02	1E-04
VOC	Cyclohexane	110-82-7		21	3	4.60E-03	6.58E-01	1.20E+00	7.90E-04	3.50E+00																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	21					1.30E-03	3.50E+00		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	21					8.70E-04	1.80E+00		2.10E+01		8.60E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	21					9.50E-04	1.80E+00		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	21					5.60E-04	1.80E+00		2.10E+02		9.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	21					6.30E-04	1.80E+00								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	21	1	2.90E-03	2.90E-03	2.90E-03	5.30E-04	1.80E+00		1.00E+02	2E-05	2.50E+02	1E-05	5.70E+05	5E-09	2.90E+03	1E-06	1.90E+01	2E-04	7.70E+01	4E-05	4.50E+05	6E-09	4.00E+02	7E-06
VOC	Dichlorodifluoromethane	75-71-8		21					8.70E-04	3.50E+00		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	21					4.60E-04	1.80E+00		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	21					5.80E-04	1.80E+00		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	21					9.50E-04	1.80E+00		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	21	2	9.30E-03	3.02E-02	5.10E-02	6.70E-04	1.80E+00		4.20E+01	1E-03	2.10E+02	2E-04	1.00E+06	5E-08	6.40E+02	8E-05	2.30E+01	2E-03	1.80E+02	3E-04	2.30E+06	2E-08	6.40E+02	8E-05
VOC	trans-1,2-Dichloroethene	156-60-5		21	2	2.20E-03	3.95E-03	5.70E-03	5.80E-04	1.80E+00		4.30E+01	1E-04	3.30E+02	2E-05	2.10E+06	3E-09	1.40E+03	4E-06	2.30E+01	2E-04	2.80E+02	2E-05	4.70E+06	1E-09	1.40E+03	4E-06
VOC	1,2-Dichloropropane	78-87-5	B2	21					6.00E-04	1.80E+00		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	21					6.80E-04	1.80E+00		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	21	2	8.80E-04	6.94E-03	1.30E-02	4.70E-04	1.80E+00		1.40E+02	9E-05	1.10E+04	1E-06	2.90E+07	4E-10	1.40E+02	9E-05	1.40E+02	9E-05	9.50E+03	1E-06	6.70E+07	2E-10	1.40E+02	9E-05
VOC	2-Hexanone	591-78-6		21					1.30E-03	7.10E+00		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		21	1	6.50E-02	6.50E-02	6.50E-02	8.70E-04	3.50E+00																	
VOC	Methyl tert-butyl ether	1634-04-4		21					6.70E-04	7.10E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		21					1.50E-03	7.10E+00		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		21	6	8.80E-04	1.11E+00	3.90E+00	4.70E-04	9.00E-03																	
VOC	Methylene Chloride	75-09-2	B2	21	2	9.00E-02	9.50E-02	1.00E-01	1.00E-03	1.80E+00		2.40E+02	4E-04	7.00E+02	1E-04	8.30E+06	1E-08	2.30E+03	4E-05	4.50E+01	2E-03	2.10E+02	5E-04	6.60E+06	2E-08	1.30E+03	8E-05
VOC	Styrene	100-42-5		21					4.00E-04	1.80E+00		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	21					1.40E-03	1.80E+00		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	21	3	3.40E-03	1.67E+01	5.00E+01	9.50E-04	1.50E-02		6.00E+01	8E-01	6.00E+02	8E-02	6.80E+06	7E-06	8.80E+01	6E-01	1.10E+01	**5E+00**	1.80E+02	3E-01	5.40E+06	9E-06	8.80E+01	6E-01
VOC	Toluene	108-88-3	D	21	2	1.10E-02	1.60E-02	2.10E-02	4.20E-04	1.80E+00		2.50E+02	8E-05	3.30E+03	6E-06	1.20E+07	2E-09	2.50E+02	8E-05	2.50E+02	8E-05	2.80E+03	8E-06	2.70E+07	8E-10	2.50E+02	8E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	21					7.10E-04	1.80E+00		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	21	1	5.30E-01	5.30E-01	5.30E-01	7.30E-04	9.60E-03		4.60E+02	1E-03	4.50E+03	1E-04	2.90E+07	2E-08	4.60E+02	1E-03	2.50E+02	2E-03	3.80E+03	1E-04	6.70E+07	8E-09	4.60E+02	1E-03
VOC	1,1,2-Trichloroethane	79-00-5	C	21					9.50E-04	1.80E+00		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	21	3	1.30E-02	4.43E-01	1.30E+00	6.00E-04	1.70E-02		3.70E+01	4E-02	2.60E+02	5E-03	2.30E+06	6E-07	5.00E+02	3E-03	7.10E+00	2E-01	7.80E+01	2E-02	1.80E+06	7E-07	5.00E+02	3E-03
VOC	Trichlorofluoromethane	75-69-4		21					8.70E-04	3.50E+00		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		21	1	6.40E-01	6.40E-01	6.40E-01	7.40E-04	3.60E-02		5.50E+02	1E-03	2.10E+05	3E-06	2.30E+09	3E-10	5.50E+02	1E-03	5.50E+02	1E-03	1.80E+05	4E-06	5.10E+09	1E-10	5.50E+02	1E-03
VOC	Vinyl Chloride	75-01-4	A	21					1.10E-03	3.50E+00		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	21	1	2.00E-02	2.00E-02	2.00E-02	1.50E-03	3.50E+00		1.50E+02	1E-04	5.40E+04	4E-07	1.30E+08	2E-10	1.50E+02	1E-04	1.50E+02	1E-04	4.60E+04	4E-07	2.90E+08	7E-11	1.50E+02	1E-04
SVOC	Acenaphthene	83-32-9		21					5.30E-02	3.80E-01		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	21					4.80E-02	3.80E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	21					5.20E-02	3.80E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	21					5.10E-02	3.80E-01		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		21					1.50E-01	3.80E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		21					1.80E-01	3.80E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	21	1	3.40E-01	3.40E-01	3.40E-01	5.70E-02	3.80E-01								1.00E+02	3E-03							2.00E+01	2E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	21	1	5.10E-01	5.10E-01	5.10E-01	6.20E-02	3.80E-01						1.90E+03	3E-04	1.00E+01	5E-02					1.50E+03	3E-04	2.00E+00	3E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	21	1	7.50E-01	7.50E-01	7.50E-01	6.00E-02	3.80E-01								1.00E+02	8E-03							2.00E+01	4E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	21	1	3.70E-01	3.70E-01	3.70E-01	5.70E-02	3.80E-01						3.50E+05	1E-06	9.10E+03	4E-05					8.00E+05	5E-07	2.50E+03	1E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	21	1	3.40E-01	3.40E-01	3.40E-01	5.50E-02	3.80E-01								1.00E+03	3E-04							2.00E+02	2E-03
SVOC	Biphenyl	92-52-4		21					1.40E-01	3.80E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	21					4.80E-02	3.80E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	21					5.30E-02	3.80E-01		4.40E+01				1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	21	1	1.10E-01	1.10E-01	1.10E-01	5.60E-02	3.80E-01						8.90E+05	1E-07	1.00E+04	1E-05					7.00E+05	2E-07	2.80E+03	4E-05

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TABLE 4-43

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	21					6.30E-02	3.80E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	21	1	8.10E-01	8.10E-01	8.10E-01	5.30E-02	3.80E-01						2.10E+07	4E-08	3.10E+02	3E-03					4.70E+07	2E-08	3.10E+02	3E-03
SVOC	Caprolactam	105-60-2		21					1.90E-01	3.80E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	21					5.40E-02	3.80E-01								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		21					5.30E-02	3.80E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		21					5.30E-02	1.50E+00																	
SVOC	2-Chloronaphthalene	91-58-7		21					4.90E-02	3.80E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		21					5.40E-02	3.80E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		21					5.40E-02	3.80E-01																	
SVOC	Chrysene	218-01-9	B2	21	1	4.60E-01	4.60E-01	4.60E-01	4.70E-02	3.80E-01								1.00E+04	5E-05							2.00E+03	2E-04
SVOC	Di-n-butylphthalate	84-74-2	D	21					1.50E-01	3.80E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		21					5.60E-02	3.80E-01								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	21	1	1.30E-01	1.30E-01	1.30E-01	5.30E-02	3.80E-01								1.00E+01	1E-02							2.00E+00	7E-02
SVOC	Dibenzofuran	132-64-9	D	21					5.20E-02	3.80E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	21					4.00E-02	2.30E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		21					5.20E-02	3.80E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	21					1.50E-01	3.80E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		21					8.20E-02	3.80E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	21					1.60E-01	3.80E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		21					1.60E-01	2.00E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		21					1.10E-01	2.00E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	21					4.70E-02	3.80E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	21					4.90E-02	3.80E-01																	
SVOC	Fluoranthene	206-44-0	D	21	1	2.60E-01	2.60E-01	2.60E-01	5.80E-02	3.80E-01		1.00E+06	3E-07	8.90E+05	3E-07	4.10E+06	6E-08	1.80E+05	1E-06	1.00E+06	3E-07	7.40E+05	4E-07	9.30E+06	3E-08	4.60E+04	6E-06
SVOC	Fluorene	86-73-7	D	21					4.90E-02	3.80E-01		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	21					5.80E-02	3.80E-01		2.20E+02		9.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	21					4.60E-02	3.80E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	21					6.20E-02	3.80E-01								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	21					4.90E-02	1.20E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	21	1	3.40E-01	3.40E-01	3.40E-01	7.20E-02	3.80E-01								1.00E+02	3E-03							2.00E+01	2E-02
SVOC	Isophorone	78-59-1	C	21					4.50E-02	3.80E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		21	1	1.90E-01	1.90E-01	1.90E-01	4.90E-02	3.80E-01								4.00E+04	5E-06							8.10E+03	2E-05
SVOC	Methylphenol (summed)	1319-77-3		21					4.80E-02	3.80E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	21	1	1.70E-01	1.70E-01	1.70E-01	5.10E-02	3.80E-01		4.70E+02	4E-04	3.50E+02	5E-04	8.80E+04	2E-06	8.00E+04	2E-06	2.50E+02	7E-04	3.00E+02	6E-04	2.00E+05	9E-07	1.60E+04	1E-05
SVOC	2-Nitroaniline	88-74-4		21					4.70E-02	2.00E+00																	
SVOC	3-Nitroaniline	99-09-2	C	21					1.40E-01	2.00E+00																	
SVOC	4-Nitroaniline	100-01-6	C	21					7.00E-02	2.00E+00																	
SVOC	Nitrobenzene	98-95-3	D	21					4.70E-02	3.80E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		21					4.70E-02	3.80E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		21					2.00E-01	2.00E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	21					5.10E-02	3.80E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	21					4.50E-02	3.80E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	21					5.40E-02	3.80E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	21					1.20E-01	3.90E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	21	1	1.40E-01	1.40E-01	1.40E-01	5.40E-02	3.80E-01		5.10E+03	3E-05	1.90E+02	7E-04	2.90E+03	5E-05	8.00E+03	2E-05	2.80E+03	5E-05	1.60E+02	9E-04	6.70E+03	2E-05	1.60E+03	9E-05
SVOC	Phenol	108-95-2	D	21					5.10E-02	3.80E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	21	1	2.90E-01	2.90E-01	2.90E-01	5.30E-02	3.80E-01		1.00E+06	3E-07	7.80E+05	4E-07	2.90E+06	1E-07	1.10E+05	3E-06	1.00E+06	3E-07	6.50E+05	4E-07	6.70E+06	4E-08	2.90E+04	1E-05
SVOC	2,4,5-Trichlorophenol	95-95-4		21					5.70E-02	3.80E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	21					6.50E-02	3.80E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	21					2.10E-02	3.80E-02		1.60E+04		8.10E+02		6.50E+03		2.00E+01		3.00E+03		2.40E+02		5.20E+03		4.00E+00	
INORG	Antimony	7440-36-0		21	2	5.84E-01	6.24E-01	6.64E-01	5.05E-01	2.29E+00						5.90E+03	1E-04	1.20E+03	6E-04					1.30E+04	5E-05	1.80E+02	4E-03
INORG	Arsenic	7440-38-2	A	21	21	2.57E+00	5.63E+00	1.30E+01			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	21	21	1.02E+01	3.15E+01	6.33E+01			1.10E+02					1.50E+05		2.50E+05						3.30E+05		3.70E+04	
INORG	Beryllium	7440-41-7	B1	21	19	6.33E-02	1.97E-01	4.75E-01	4.74E-02	5.04E-02	1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	21	16	7.41E-02	2.66E-01	6.25E-01	4.67E-02	4.87E-02	1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		21	21	4.83E+00	1.08E+01	3.00E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		21	21	2.36E+00	5.14E+00	8.74E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	21	21	7.48E+00	1.36E+01	2.73E+01			3.20E+01					5.90E+04		1.40E+05						1.30E+05		2.00E+04	
INORG	Lead	7439-92-1	B2	21	21	3.02E+00	2.52E+01	3.56E+02			4.92E+01					4.40E+04	7E-03	9.00E+02	3E-01					1.00E+05	3E-03	4.00E+02	8E-01
INORG	Manganese	7439-96-5	D	21	21	1.77E+02	3.12E+02	1.03E+03			5.10E+02					1.50E+03	3E-01	1.70E+05	3E-03					3.30E+03	2E-01	2.50E+04	2E-02
INORG	Mercury	7439-97-6	D	21	14	8.15E-03	1.94E-02	6.62E-02	8.70E-03	3.76E-02	1.30E-01							1.10E+03								1.60E+02	
INORG	Nickel	7440-02-0	A	21	21	6.71E+00	1.49E+01	2.42E+01			3.01E+01					1.60E+04		2.70E+05						1.30E+04		4.00E+04	

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TABLE 4-43

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Selenium	7782-49-2	D	21	1	5.87E-01	5.87E-01	5.87E-01	3.20E-01	5.77E-01	4.10E-01					5.90E+04	3E-06	1.80E+04	1E-05					1.30E+05	1E-06	2.60E+03	7E-05
INORG	Silver	7440-22-4	D	21					1.55E-01	5.77E-01						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		21	12	4.86E-01	7.42E-01	1.08E+00	5.56E-01	1.15E+00								2.40E+02	5E-03							3.50E+01	3E-02
INORG	Vanadium	7440-62-2		21	21	7.07E+00	1.39E+01	1.88E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	21	21	1.73E+01	3.96E+01	9.34E+01			4.70E+01							1.00E+06	5E-05							1.70E+05	3E-04

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-44

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	8	4	3.50E-03	1.09E+01	4.20E+01	5.10E-04	5.10E-03	1.00E+06	4E-05	3.10E+04	1E-03	1.00E+06	4E-05
VOC	Benzene	71-43-2	T	A	8	2	2.40E-04	3.25E-04	4.10E-04	1.60E-04	1.30E-01	3.60E+01	1E-05	1.10E+01	4E-05	5.60E+00	7E-05
VOC	Bromodichloromethane	75-27-4	T	B2	8					1.70E-04	1.40E-01	3.80E+01		1.40E+01		4.80E+00	
VOC	Bromoform	75-25-2	T	B2	8					1.80E-04	1.50E-01	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	8					1.00E-04	8.50E-01	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	8	1	4.70E-03	4.70E-03	4.70E-03	4.10E-04	3.40E-01	2.40E+05	2E-08	2.40E+05	2E-08	2.40E+05	2E-08
VOC	Carbon Disulfide	75-15-0	T		8					2.00E-04	1.70E-01	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	8					1.20E-04	1.00E-01	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	8					1.40E-04	1.20E-01	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		8					2.60E-04	2.20E-01	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	8					1.40E-04	1.20E-01	1.80E+02		1.50E+02		2.80E+01	
VOC	Chloromethane	74-87-3	T	D	8	1	3.70E-04	3.70E-04	3.70E-04	1.30E-04	1.10E-01	5.20E+01	7E-06	4.90E+02	8E-07	8.60E+00	4E-05
VOC	Cumene	98-82-8	T	D	8					1.20E-04	1.00E-01	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		8	1	2.50E-04	2.50E-04	2.50E-04	1.30E-04	1.10E-01						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	8					6.20E-04	5.20E-01	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	8					2.60E-04	2.20E-01	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	8					2.20E-04	1.80E-01	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	8					1.10E-04	9.20E-02	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	8					1.50E-04	1.20E-01			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	8					1.70E-04	1.40E-01	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		8					2.60E-04	2.20E-01	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	8					1.60E-04	1.30E-01	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	8					2.10E-04	1.70E-01	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	8					2.40E-04	2.00E-01	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	8					2.20E-04	1.80E-01	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		8					1.50E-04	1.20E-01	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	8					1.70E-04	1.40E-01	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	8					2.70E-04	2.20E-01	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	8	1	2.30E-04	2.30E-04	2.30E-04	1.20E-04	1.00E-01	1.70E+02	1E-06	1.70E+02	1E-06	1.70E+02	1E-06
VOC	2-Hexanone	591-78-6	T		8					4.60E-04	3.80E-01	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		8					4.10E-04	3.40E-01						
VOC	Methyl tert-butyl ether	1634-04-4	T		8					1.30E-04	1.10E-01	4.70E+04		6.90E+02		4.70E+04	
VOC	4-Methyl-2-pentanone	108-10-1	T		8					2.30E-04	1.90E-01	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		8	1	4.60E-04	4.60E-04	4.60E-04	1.50E-04	1.20E-01						
VOC	Methylene Chloride	75-09-2	T	B2	8					3.40E-04	2.80E-01	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		8					1.50E-04	1.20E-01	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	8					2.50E-04	2.10E-01	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	8	1	3.60E-03	3.60E-03	3.60E-03	2.30E-04	1.90E-01	1.70E+02	2E-05	1.20E+01	3E-04	2.50E+01	1E-04
VOC	Toluene	108-88-3	T	D	8	2	3.50E-04	1.08E-03	1.80E-03	1.80E-04	1.50E-01	5.30E+02	3E-06	5.30E+02	3E-06	5.30E+02	3E-06
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	8					1.70E-04	1.40E-01	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	8					1.50E-04	1.20E-01	1.30E+03		1.30E+03		6.60E+02	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	1,1,2-Trichloroethane	79-00-5	T	C	8					3.00E-04	2.50E-01	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	8					1.40E-04	1.20E-01	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		8					2.80E-04	2.30E-01	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		8					3.30E-04	2.70E-01	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	8					8.50E-04	7.00E-01	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	8	1	1.20E-03	1.20E-03	1.20E-03	3.30E-04	2.70E-01	1.90E+02	6E-06	1.90E+02	6E-06	1.90E+02	6E-06
SVOC	Acenaphthene	83-32-9	T		8					3.90E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	8					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	8					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	8					6.80E-04	5.00E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		8					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		8					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	8					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	8					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	8					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	8					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	8					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		8					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	8					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	8					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	8					2.70E-03	5.00E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	8					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	8					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		8	1	1.20E-01	1.20E-01	1.20E-01	2.50E-03	1.00E-02			3.90E+05	3E-07		
SVOC	Carbazole	86-74-8	T	B2	8					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		8					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		8					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		8					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		8					1.00E-03	5.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		8					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	8					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	8					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		8					1.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	8					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	8					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	8					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		8					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	8					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		8					8.50E-04	5.00E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	8					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		8					1.30E-03	2.00E-02			9.50E+00			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-7 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	2,4-Dinitrophenol	51-28-5	T		8					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	8					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	8					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	8					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	8					1.00E-03	5.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	8					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	8					7.20E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	8					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	8					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	8					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	8					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		8					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		8					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	8					7.50E-04	5.00E-03	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		8					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	8					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	8					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	8					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		8					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		8					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	8					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	8					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	8					7.80E-04	5.00E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	8					2.40E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	8					8.20E-04	5.00E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	8					2.60E-03	5.00E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	8					1.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		8					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	8					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	4					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	8					8.20E-05	4.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		8					2.20E-03	2.50E-02			6.80E+01			
INORG	Antimony	7440-36-0	T		8	1	2.70E-03	2.70E-03	2.70E-03	2.20E-03	2.50E-02			6.80E+01	4E-05		
INORG	Arsenic	7440-38-2	D	A	8	2	4.20E-03	5.15E-03	6.10E-03	3.90E-03	1.00E-02			4.30E+00	1E-03		
INORG	Arsenic	7440-38-2	T	A	8	4	4.00E-03	8.35E-03	1.46E-02	3.90E-03	1.00E-02			4.30E+00	3E-03		
INORG	Barium	7440-39-3	D	D	8	8	1.47E-01	2.35E-01	3.15E-01					1.40E+04	2E-05		
INORG	Barium	7440-39-3	T	D	8	8	1.47E-01	2.54E-01	3.86E-01					1.40E+04	3E-05		
INORG	Beryllium	7440-41-7	D	B1	8					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	8	1	7.20E-04	7.20E-04	7.20E-04	5.40E-04	1.00E-03			2.90E+02	2E-06		
INORG	Cadmium	7440-43-9	D	B1	8	5	4.00E-04	5.52E-04	6.60E-04	2.60E-04	2.80E-04			1.90E+02	4E-06		
INORG	Cadmium	7440-43-9	T	B1	8	7	3.50E-04	7.10E-04	1.40E-03	2.80E-04	2.80E-04			1.90E+02	7E-06		

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Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Chromium (total)	7440-47-3	D		8	1	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.00E-02			4.60E+02	3E-06		
INORG	Chromium (total)	7440-47-3	T		8	3	8.50E-03	6.67E-02	1.39E-01	1.40E-03	1.00E-02			4.60E+02	3E-04		
INORG	Cobalt	7440-48-4	D		8	4	3.70E-03	8.90E-03	1.36E-02	1.30E-03	2.00E-02			2.40E+03	6E-06		
INORG	Cobalt	7440-48-4	T		8	5	1.40E-03	1.26E-02	2.28E-02	1.30E-03	2.00E-02			2.40E+03	1E-05		
INORG	Copper	7440-50-8	D	D	8	1	5.60E-03	5.60E-03	5.60E-03	1.20E-03	5.00E-03			7.40E+03	8E-07		
INORG	Copper	7440-50-8	T	D	8	3	1.20E-02	3.09E-02	5.11E-02	4.20E-03	5.00E-03			7.40E+03	7E-06		
INORG	Lead	7439-92-1	D	B2	8					2.00E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	8	2	1.22E-02	1.80E-02	2.38E-02	2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	8	8	8.62E-02	6.03E-01	1.72E+00					9.10E+03	2E-04		
INORG	Manganese	7439-96-5	T	D	8	8	8.47E-02	7.70E-01	1.53E+00					9.10E+03	2E-04		
INORG	Mercury	7439-97-6	D	D	8	1	9.40E-05	9.40E-05	9.40E-05	6.90E-05	2.00E-04			5.60E-02	2E-03		
INORG	Mercury	7439-97-6	T	D	8	2	6.90E-05	2.05E-04	3.40E-04	6.90E-05	2.00E-04			5.60E-02	6E-03		
INORG	Nickel	7440-02-0	D	A	8	7	4.00E-03	3.58E-02	7.04E-02	2.20E-03	2.20E-03			7.40E+04	1E-06		
INORG	Nickel	7440-02-0	T	A	8	7	3.40E-03	4.66E-02	9.41E-02	2.20E-03	2.20E-03			7.40E+04	1E-06		
INORG	Selenium	7782-49-2	D	D	8					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	8					4.50E-03	5.00E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	8					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	8					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		8	8	2.10E-05	5.08E-03	1.43E-02					1.30E+01	1E-03		
INORG	Thallium	7440-28-0	T		8	6	6.40E-05	5.40E-03	1.56E-02	1.80E-05	5.00E-03			1.30E+01	1E-03		
INORG	Vanadium	7440-62-2	D		8					8.20E-04	1.00E-02			9.70E+02			
INORG	Vanadium	7440-62-2	T		8	3	1.17E-02	3.48E-02	5.90E-02	8.20E-04	1.00E-02			9.70E+02	6E-05		
INORG	Zinc	7440-66-6	D	D	8	5	1.57E-02	5.04E-02	1.46E-01	1.20E-02	2.00E-02			1.10E+05	1E-06		
INORG	Zinc	7440-66-6	T	D	8	4	3.46E-02	1.10E-01	1.46E-01	1.20E-02	2.00E-02			1.10E+05	1E-06		

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-45

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	7	5	2.00E-03	4.93E-02	2.30E-01	1.90E-03	3.50E-02		1.10E+05	2E-06	1.60E+05	1E-06	1.70E+08	1E-09	1.10E+05	2E-06	1.10E+05	2E-06	1.30E+05	2E-06	3.90E+08	6E-10	2.30E+04	1E-05
VOC	Benzene	71-43-2	A	7					5.30E-04	4.60E-01		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	7					9.70E-04	4.60E-01		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	7					1.30E-03	4.60E-01		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	7					1.50E-03	9.30E-01		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	7					2.20E-03	1.90E+00		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		7	1	1.40E-03	1.40E-03	1.40E-03	6.30E-04	4.60E-01		1.40E+02	1E-05	1.60E+03	9E-07	2.10E+07	7E-11	2.80E+02	5E-06	7.60E+01	2E-05	1.30E+03	1E-06	4.70E+07	3E-11	2.80E+02	5E-06
VOC	Carbon Tetrachloride	56-23-5	B2	7					8.10E-04	4.60E-01		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	7					4.20E-04	4.60E-01		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		7					1.80E-03	9.30E-01		9.50E+02		3.60E+04		2.30E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	7					6.60E-04	4.60E-01		3.80E+01		1.50E+02		2.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	7					1.10E-03	9.30E-01		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	7					5.70E-04	4.60E-01		3.90E+02		2.00E+03		2.60E+06		3.90E+02		3.90E+02		1.70E+03		5.80E+06		3.90E+02	
VOC	Cyclohexane	110-82-7		7	1	1.40E-03	1.40E-03	1.40E-03	8.10E-04	9.30E-01																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	7					1.30E-03	9.30E-01		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	7					8.90E-04	4.60E-01		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	7					9.70E-04	4.60E-01		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	7					5.70E-04	4.60E-01		2.10E+02		4.60E+02		4.20E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	7					6.50E-04	4.60E-01								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	7					5.40E-04	4.60E-01		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		7					8.90E-04	9.30E-01		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	7					4.70E-04	4.60E-01		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	7					5.90E-04	4.60E-01		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	7					9.70E-04	4.60E-01		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	7					6.80E-04	4.60E-01		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		7					5.90E-04	4.60E-01		4.30E+01		3.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	7					6.10E-04	4.60E-01		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	7					7.00E-04	4.60E-01		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	6	1	8.00E-04	8.00E-04	8.00E-04	4.80E-04	4.60E-01		1.40E+02	6E-06	1.10E+04	7E-08	2.90E+07	3E-11	1.40E+02	6E-06	1.40E+02	6E-06	9.50E+03	8E-08	6.70E+07	1E-11	1.40E+02	6E-06
VOC	2-Hexanone	591-78-6		7					1.40E-03	1.90E+00		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		7					8.90E-04	9.30E-01																	
VOC	Methyl tert-butyl ether	1634-04-4		7					6.80E-04	1.90E+00		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		7					1.50E-03	1.90E+00		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		7	3	1.10E-03	1.53E-03	2.30E-03	4.80E-04	9.30E-01																	
VOC	Methylene Chloride	75-09-2	B2	7					1.10E-03	4.60E-01		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		7					4.00E-04	4.60E-01		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	7					1.50E-03	4.60E-01		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	7	1	3.70E-03	3.70E-03	3.70E-03	9.70E-04	4.60E-01		6.00E+01	6E-05	6.00E+02	6E-06	6.80E+06	5E-10	8.80E+01	4E-05	1.10E+01	3E-04	1.80E+02	2E-05	5.40E+06	7E-10	8.80E+01	4E-05
VOC	Toluene	108-88-3	D	7	3	6.40E-04	1.75E-03	3.60E-03	4.30E-04	4.60E-01		2.50E+02	1E-05	3.30E+03	1E-06	1.20E+07	3E-10	2.50E+02	1E-05	2.50E+02	1E-05	2.80E+03	1E-06	2.70E+07	1E-10	2.50E+02	1E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	7					7.20E-04	4.60E-01		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	7					7.40E-04	4.60E-01		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	6					9.70E-04	4.60E-01		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	7					6.10E-04	4.60E-01		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		7					8.90E-04	9.30E-01		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		7					7.50E-04	4.60E-01		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	7					1.10E-03	9.30E-01		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	7	1	2.30E-03	2.30E-03	2.30E-03	1.50E-03	9.30E-01		1.50E+02	2E-05	5.40E+04	4E-08	1.30E+08	2E-11	1.50E+02	2E-05	1.50E+02	2E-05	4.60E+04	5E-08	2.90E+08	8E-12	1.50E+02	2E-05
SVOC	Acenaphthene	83-32-9		7					5.70E-02	5.40E-01		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	7					5.20E-02	5.40E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	7					5.50E-02	5.40E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	7					5.40E-02	5.40E-01		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		7					1.70E-01	5.40E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		7					1.90E-01	5.40E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	7					6.10E-02	5.40E-01								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	7					6.60E-02	5.40E-01						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	7					6.40E-02	5.40E-01								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	7					6.10E-02	5.40E-01						3.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	7					5.90E-02	5.40E-01								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		7					1.60E-01	5.40E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	7					5.20E-02	5.40E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	7					5.70E-02	5.40E-01		4.40E+01		3.30E+02		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	1	1.70E-01	1.70E-01	1.70E-01	6.00E-02	5.40E-01						8.90E+05	2E-07	1.00E+04	2E-05					7.00E+05	2E-07	2.80E+03	6E-05

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TABLE 4-45

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	7					6.80E-02	5.40E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	7					5.70E-02	5.40E-01						2.10E+07		3.10E+02						4.70E+07		3.10E+02	
SVOC	Caprolactam	105-60-2		7					2.00E-01	5.40E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	7					5.80E-02	5.40E-01								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		7					5.70E-02	5.40E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		7					5.70E-02	2.10E+00																	
SVOC	2-Chloronaphthalene	91-58-7		7					5.30E-02	5.40E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		7					5.80E-02	5.40E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		7					5.80E-02	5.40E-01																	
SVOC	Chrysene	218-01-9	B2	7					5.10E-02	5.40E-01								1.00E+04								2.00E+03	
SVOC	Di-n-butylphthalate	84-74-2	D	7					1.70E-01	5.40E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		7					6.00E-02	5.40E-01								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	7					5.70E-02	5.40E-01								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	7					5.50E-02	5.40E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	7					4.30E-02	3.30E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		7					5.50E-02	5.40E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	7					1.70E-01	5.40E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		7					8.90E-02	5.40E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	7					1.80E-01	5.40E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		7					1.80E-01	2.80E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		7					1.20E-01	2.80E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	7					5.10E-02	5.40E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	7					5.30E-02	5.40E-01																	
SVOC	Fluoranthene	206-44-0	D	7					6.20E-02	5.40E-01		1.00E+06		6.90E+05		4.10E+06		1.80E+05		1.00E+06		7.40E+05		9.30E+06		4.60E+04	
SVOC	Fluorene	86-73-7	D	7					5.30E-02	5.40E-01		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	7					6.20E-02	5.40E-01		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	7					5.00E-02	5.40E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	7					6.60E-02	5.40E-01								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	7					5.30E-02	1.60E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	7					7.80E-02	5.40E-01								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	7					4.90E-02	5.40E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		7					5.30E-02	5.40E-01								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		7					5.20E-02	5.40E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	7					5.40E-02	5.40E-01		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		7					5.10E-02	2.80E+00																	
SVOC	3-Nitroaniline	99-09-2	C	7					1.60E-01	2.80E+00																	
SVOC	4-Nitroaniline	100-01-6	C	7					7.50E-02	2.80E+00																	
SVOC	Nitrobenzene	98-95-3	D	7					5.10E-02	5.40E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		7					5.10E-02	5.40E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		7					2.10E-01	2.80E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	7					5.40E-02	5.40E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	7					4.90E-02	5.40E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	7					5.80E-02	5.40E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	7					1.30E-01	5.50E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	7					5.80E-02	5.40E-01		5.10E+03		1.90E+02		2.90E+03		8.00E+03		2.80E+03		1.60E+02		6.70E+03		1.60E+03	
SVOC	Phenol	108-95-2	D	7					5.40E-02	5.40E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	7					5.70E-02	5.40E-01		1.00E+06		7.80E+05		2.90E+06		1.10E+05		1.00E+06		6.50E+05		6.70E+06		2.90E+04	
SVOC	2,4,5-Trichlorophenol	95-95-4		7					6.10E-02	5.40E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	7					7.00E-02	5.40E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	7	2	2.81E-02	4.99E-02	7.18E-02	5.40E-02	3.60E-01		1.60E+04	4E-06	8.10E+02	9E-05	6.50E+03	1E-05	2.00E+01	4E-03	3.00E+03	2E-05	2.40E+02	3E-04	5.20E+03	1E-05	4.00E+00	2E-02
INORG	Antimony	7440-36-0		7					2.71E-01	6.51E+00						5.90E+03		1.20E+03						1.30E+04		1.80E+02	
INORG	Arsenic	7440-38-2	A	7	7	3.61E+00	1.04E+01	2.47E+01			1.32E+01					9.10E+02	1E-02	6.10E+01	2E-01					7.20E+02	2E-02	7.60E+00	**2E+00**
INORG	Barium	7440-39-3	D	7	7	1.72E+01	9.09E+01	2.41E+02			1.10E+02					1.50E+05	9E-04	2.50E+05	5E-04					3.30E+05	4E-04	3.70E+04	4E-03
INORG	Beryllium	7440-41-7	B1	7	7	1.01E-01	1.20E+00	4.15E+00			1.53E+00					5.90E+02	4E-03	3.10E+03	8E-04					1.30E+03	2E-03	4.10E+02	6E-03
INORG	Cadmium	7440-43-9	B1	7	7	7.49E-02	1.65E-01	2.70E-01			1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		7	7	4.89E+00	1.15E+01	1.80E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		7	7	3.94E+00	7.31E+00	1.32E+01			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	7	7	7.79E+00	1.65E+01	3.04E+01			3.20E+01					5.90E+04		1.40E+05						1.30E+05		2.00E+04	
INORG	Lead	7439-92-1	B2	7	7	5.09E+00	8.01E+00	1.48E+01			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	
INORG	Manganese	7439-96-5	D	7	7	3.70E+01	2.17E+02	4.25E+02			5.10E+02					1.50E+03		1.70E+05						3.30E+03		2.50E+04	
INORG	Mercury	7439-97-6	D	7	7	1.38E-02	5.95E-02	1.53E-01			1.30E-01							1.10E+03	2E-05							1.60E+02	1E-04
INORG	Nickel	7440-02-0	A	7	7	6.03E+00	1.40E+01	1.86E+01			3.01E+01					1.60E+04		2.70E+05						1.30E+04		4.00E+04	

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TABLE 4-45

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Selenium	7782-49-2	D	7	2	4.49E+00	9.55E+00	1.46E+01	1.72E-01	5.61E-01	4.10E-01					5.90E+04	2E-04	1.80E+04	8E-04					1.30E+05	1E-04	2.60E+03	5E-03
INORG	Silver	7440-22-4	D	7					8.31E-02	1.63E+00						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		7	3	8.98E-01	1.18E+00	1.52E+00	1.08E+00	3.26E+00								2.40E+02	6E-03							3.50E+01	4E-02
INORG	Vanadium	7440-62-2		7	7	6.29E+00	2.24E+01	4.69E+01			3.28E+01							1.00E+04	1E-03							7.50E+02	2E-02
INORG	Zinc	7440-66-6	D	7	7	1.72E+01	2.76E+01	3.63E+01			4.70E+01							1.00E+06								1.70E+05	

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-46

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	1	1	2.00E-02	2.00E-02	2.00E-02			1.00E+06	2E-08	3.10E+04	6E-07	1.00E+06	2E-08
VOC	Benzene	71-43-2	T	A	1					1.60E-04	1.60E-04	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	1	1	3.90E-04	3.90E-04	3.90E-04			3.80E+01	1E-05	1.40E+01	3E-05	4.80E+00	8E-05
VOC	Bromoform	75-25-2	T	B2	1					1.80E-04	1.80E-04	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	1					2.00E-04	2.00E-04	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	1	1	1.90E-03	1.90E-03	1.90E-03			2.40E+05	8E-09	2.40E+05	8E-09	2.40E+05	8E-09
VOC	Carbon Disulfide	75-15-0	T		1	1	4.10E-04	4.10E-04	4.10E-04			5.30E+02	7E-07	1.20E+03	3E-07	2.50E+02	2E-06
VOC	Carbon Tetrachloride	56-23-5	T	B2	1					1.20E-04	1.20E-04	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	1					1.40E-04	1.40E-04	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		1					2.60E-04	2.60E-04	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	1	1	2.40E-03	2.40E-03	2.40E-03			1.80E+02	1E-05	1.50E+02	2E-05	2.80E+01	9E-05
VOC	Chloromethane	74-87-3	T	D	1					1.30E-04	1.30E-04	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	1					1.20E-04	1.20E-04	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		1					1.30E-04	1.30E-04						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	1					6.20E-04	6.20E-04	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	1					2.60E-04	2.60E-04	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	1					2.20E-04	2.20E-04	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	1					1.10E-04	1.10E-04	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	1					1.50E-04	1.50E-04			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	1					1.70E-04	1.70E-04	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		1					2.60E-04	2.60E-04	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	1					1.60E-04	1.60E-04	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	1					2.10E-04	2.10E-04	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	1					2.40E-04	2.40E-04	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	1					2.20E-04	2.20E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		1					1.50E-04	1.50E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	1					1.70E-04	1.70E-04	3.60E+01		1.60E+01		1.60E+01	
VOC	Ethyl Benzene	100-41-4	T	D	1					1.20E-04	1.20E-04	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		1					4.60E-04	4.60E-04	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		1					4.10E-04	4.10E-04						
VOC	Methyl tert-butyl ether	1634-04-4	T		1	1	8.10E-04	8.10E-04	8.10E-04			4.70E+04	2E-08	6.90E+02	1E-06	4.70E+04	2E-08
VOC	Methylcyclohexane	108-87-2	T		1					1.50E-04	1.50E-04						
VOC	Methylene Chloride	75-09-2	T	B2	1					3.40E-04	3.40E-04	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		1					1.50E-04	1.50E-04	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	1					2.50E-04	2.50E-04	7.70E+01		4.70E+00		1.20E+01	
VOC	Toluene	108-88-3	T	D	1					1.80E-04	1.80E-04	5.30E+02		5.30E+02		5.30E+02	
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	1					1.70E-04	1.70E-04	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	1					1.50E-04	1.50E-04	1.30E+03		1.30E+03		6.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	T	C	1					3.00E-04	3.00E-04	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	1					1.40E-04	1.40E-04	9.70E+01		3.70E+01		1.50E+01	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Trichlorofluoromethane	75-69-4	T		1					2.80E-04	2.80E-04	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		1					3.20E-04	3.20E-04	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	1					1.50E-04	1.50E-04	6.90E-01		5.70E-01		1.10E-01	
VOC	Xylenes (total)	1330-20-7	T	D	1					3.30E-04	3.30E-04	1.90E+02		1.90E+02		1.90E+02	
SVOC	Acenaphthene	83-32-9	T		1					8.00E-04	8.00E-04	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	1					7.10E-04	7.10E-04	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	1					2.60E-03	2.60E-03	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	1					6.80E-04	6.80E-04	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		1					2.50E-03	2.50E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		1					2.80E-03	2.80E-03						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	1					7.00E-04	7.00E-04			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	1					7.30E-04	7.30E-04			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	1					9.40E-04	9.40E-04			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	1					8.50E-04	8.50E-04			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	1					8.40E-04	8.40E-04			5.00E-03			
SVOC	Biphenyl	92-52-4	T		1					2.60E-03	2.60E-03						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	1					8.70E-04	8.70E-04						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	1					9.70E-04	9.70E-04	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	1					2.70E-03	2.70E-03			3.20E-01			
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	1					8.80E-04	8.80E-04						
SVOC	Butylbenzylphthalate	85-68-7	T	C	1					8.80E-04	8.80E-04			2.70E+00			
SVOC	Caprolactam	105-60-2	T		1					2.50E-03	2.50E-03			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	1					8.20E-04	8.20E-04			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		1					9.90E-04	9.90E-04			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		1					6.10E-04	6.10E-04						
SVOC	2-Chloronaphthalene	91-58-7	T		1					8.50E-04	8.50E-04			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		1					1.00E-03	1.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		1					7.90E-04	7.90E-04						
SVOC	Chrysene	218-01-9	T	B2	1					7.50E-04	7.50E-04			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	1					6.70E-04	6.70E-04			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		1					1.10E-03	1.10E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	1					7.90E-04	7.90E-04			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	1					1.10E-03	1.10E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	1					9.30E-04	9.30E-04			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		1					8.50E-04	8.50E-04			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	1					6.50E-04	6.50E-04			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		1					8.50E-04	8.50E-04			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	1					7.60E-04	7.60E-04			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		1					1.30E-03	1.30E-03			9.50E+00			
SVOC	2,4-Dinitrophenol	51-28-5	T		1					3.00E-03	3.00E-03						

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TABLE 4-46

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	1					7.90E-04	7.90E-04			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	1					5.70E-04	5.70E-04						
SVOC	Fluoranthene	206-44-0	T	D	1					8.10E-04	8.10E-04	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	1					1.00E-03	1.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	1					7.40E-04	7.40E-04	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	1					7.30E-04	7.30E-04	2.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	1					1.10E-03	1.10E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	1					7.40E-04	7.40E-04	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	1					6.30E-04	6.30E-04			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	1					6.30E-04	6.30E-04			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		1					6.40E-04	6.40E-04			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		1					1.30E-03	1.30E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	1					7.50E-04	7.50E-04	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		1					7.00E-04	7.00E-04						
SVOC	3-Nitroaniline	99-09-2	T	C	1					7.10E-04	7.10E-04						
SVOC	4-Nitroaniline	100-01-6	T	C	1					1.30E-03	1.30E-03						
SVOC	Nitrobenzene	98-95-3	T	D	1					8.10E-04	8.10E-04	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		1					2.10E-03	2.10E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		1					1.90E-03	1.90E-03						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	1					1.40E-03	1.40E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	1					6.70E-04	6.70E-04			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	1					7.80E-04	7.80E-04						
SVOC	Pentachlorophenol	87-86-5	T	B2	1					2.40E-03	2.40E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	1					8.20E-04	8.20E-04	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	1					2.60E-03	2.60E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	1					1.10E-03	1.10E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		1					1.20E-03	1.20E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	1					1.70E-03	1.70E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	T	B2	1					8.20E-05	8.20E-05	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		1					2.20E-03	2.20E-03			6.80E+01			
INORG	Antimony	7440-36-0	T		1	1	3.30E-03	3.30E-03	3.30E-03					6.80E+01	5E-05		
INORG	Arsenic	7440-38-2	D	A	1	1	5.70E-03	5.70E-03	5.70E-03					4.30E+00	1E-03		
INORG	Arsenic	7440-38-2	T	A	1	1	4.20E-03	4.20E-03	4.20E-03					4.30E+00	1E-03		
INORG	Barium	7440-39-3	D	D	1	1	5.48E-01	5.48E-01	5.48E-01					1.40E+04	4E-05		
INORG	Barium	7440-39-3	T	D	1	1	5.04E-01	5.04E-01	5.04E-01					1.40E+04	4E-05		
INORG	Beryllium	7440-41-7	D	B1	1					5.40E-04	5.40E-04			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	1					5.40E-04	5.40E-04			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	1					2.80E-04	2.80E-04			1.90E+02			
INORG	Cadmium	7440-43-9	T	B1	1					2.80E-04	2.80E-04			1.90E+02			
INORG	Chromium (total)	7440-47-3	D		1	1	2.80E-03	2.80E-03	2.80E-03					4.60E+02	6E-06		

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TABLE 4-46

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-9 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Chromium (total)	7440-47-3	T		1	1	3.00E-03	3.00E-03	3.00E-03					4.60E+02	7E-06		
INORG	Cobalt	7440-48-4	D		1	1	2.20E-03	2.20E-03	2.20E-03					2.40E+03	9E-07		
INORG	Cobalt	7440-48-4	T		1	1	2.20E-03	2.20E-03	2.20E-03					2.40E+03	9E-07		
INORG	Copper	7440-50-8	D	D	1					4.20E-03	4.20E-03			7.40E+03			
INORG	Copper	7440-50-8	T	D	1					4.20E-03	4.20E-03			7.40E+03			
INORG	Lead	7439-92-1	D	B2	1					2.50E-03	2.50E-03						
INORG	Lead	7439-92-1	T	B2	1					2.50E-03	2.50E-03						
INORG	Manganese	7439-96-5	D	D	1					9.00E-04	9.00E-04			9.10E+03			
INORG	Manganese	7439-96-5	T	D	1					9.00E-04	9.00E-04			9.10E+03			
INORG	Mercury	7439-97-6	D	D	1					6.90E-05	6.90E-05			5.60E-02			
INORG	Mercury	7439-97-6	T	D	1					6.90E-05	6.90E-05			5.60E-02			
INORG	Nickel	7440-02-0	D	A	1	1	4.10E-03	4.10E-03	4.10E-03					7.40E+04	6E-08		
INORG	Nickel	7440-02-0	T	A	1	1	3.50E-03	3.50E-03	3.50E-03					7.40E+04	5E-08		
INORG	Selenium	7782-49-2	D	D	1					4.50E-03	4.50E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	1					4.50E-03	4.50E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	1					1.50E-03	1.50E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	1					1.50E-03	1.50E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		1	1	5.10E-05	5.10E-05	5.10E-05					1.30E+01	4E-06		
INORG	Thallium	7440-28-0	T		1	1	7.20E-05	7.20E-05	7.20E-05					1.30E+01	6E-06		
INORG	Vanadium	7440-62-2	D		1	1	3.70E-03	3.70E-03	3.70E-03					9.70E+02	4E-06		
INORG	Vanadium	7440-62-2	T		1	1	4.10E-03	4.10E-03	4.10E-03					9.70E+02	4E-06		
INORG	Zinc	7440-66-6	D	D	1	1	1.39E-02	1.39E-02	1.39E-02					1.10E+05	1E-07		
INORG	Zinc	7440-66-6	T	D	1					1.20E-02	1.20E-02			1.10E+05			

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-47

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-11 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Benzene	71-43-2	A	9	1	5.40E-03	5.40E-03	5.40E-03	3.50E-03	5.20E-03		8.40E+00	6E-04	4.50E+01	1E-04	4.70E+05	1E-08	4.00E+02	1E-05	1.60E+00	3E-03	1.30E+01	4E-04	3.80E+05	1E-08	1.80E+02	3E-05
VOC	Ethyl Benzene	100-41-4	D	9					3.50E-03	5.20E-03		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	Toluene	108-88-3	D	9					3.50E-03	5.20E-03		2.50E+02		3.30E+03		1.20E+07		2.50E+02		2.50E+02		2.80E+03		2.70E+07		2.50E+02	
VOC	Xylenes (total)	1330-20-7	D	9					3.50E-03	5.20E-03		1.50E+02		5.40E+04		1.30E+08		1.50E+02		1.50E+02		4.60E+04		2.90E+08		1.50E+02	

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-43

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-13 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Benzene	71-43-2	A	4					5.90E-04	7.20E-04		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Ethyl Benzene	100-41-4	D	4	1	5.38E-04	5.38E-04	5.38E-04	5.40E-04	6.60E-04		1.40E+02	4E-06	1.10E+04	5E-08	2.90E+07	2E-11	1.40E+02	4E-06	1.40E+02	4E-06	9.50E+03	6E-08	6.70E+07	8E-12	1.40E+02	4E-06
VOC	Toluene	108-88-3	D	4	1	5.12E-03	5.12E-03	5.12E-03	4.80E-04	5.90E-04		2.50E+02	2E-05	3.30E+03	2E-06	1.20E+07	4E-10	2.50E+02	2E-05	2.50E+02	2E-05	2.80E+03	2E-06	2.70E+07	2E-10	2.50E+02	2E-05
VOC	Xylenes (total)	1330-20-7	D	4	1	1.53E-03	1.53E-03	1.53E-03	1.70E-03	2.10E-03		1.50E+02	1E-05	5.40E+04	3E-08	1.30E+08	1E-11	1.50E+02	1E-05	1.50E+02	1E-05	4.60E+04	3E-08	2.90E+08	5E-12	1.50E+02	1E-05
SVOC	Acenaphthene	83-32-9		4					5.35E-02	5.60E-02		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	4					4.95E-02	5.15E-02		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	4					5.25E-02	5.50E-02		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	4					5.15E-02	5.40E-02		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		4					1.60E-01	1.65E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		4					1.80E-01	1.90E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	4	3	6.30E-02	8.27E-02	1.00E-01	6.00E-02	6.00E-02								1.00E+02	1E-03							2.00E+01	5E-03
SVOC	Benzo(a)pyrene	50-32-8	B2	4	3	6.48E-02	8.04E-02	1.10E-01	6.60E-02	6.60E-02						1.90E+03	6E-05	1.00E+01	1E-02					1.50E+03	7E-05	2.00E+00	6E-02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	4	3	7.65E-02	1.06E-01	1.40E-01	6.30E-02	6.30E-02								1.00E+02	1E-03							2.00E+01	7E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	4	3	5.30E-02	6.23E-02	8.00E-02	6.00E-02	6.00E-02						3.50E+05	2E-07	9.10E+03	9E-06					8.00E+05	1E-07	2.50E+03	3E-05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	4	3	4.70E-02	5.45E-02	6.60E-02	5.80E-02	5.80E-02								1.00E+03	7E-05							2.00E+02	3E-04
SVOC	Biphenyl	92-52-4		4					1.50E-01	1.55E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	4					4.95E-02	5.15E-02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	4					5.35E-02	5.60E-02		4.40E+01		1.20E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	4					5.70E-02	5.95E-02						8.90E+05		1.00E+04						7.00E+05		2.80E+03	
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	4					6.40E-02	6.70E-02																	
SVOC	Butylbenzylphthalate	85-68-7	C	4					5.35E-02	5.60E-02						2.10E+07		3.10E+02						4.70E+07		3.10E+02	
SVOC	Caprolactam	105-60-2		4					1.90E-01	2.00E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	4					5.50E-02	5.70E-02								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		4					5.35E-02	5.60E-02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		4					5.35E-02	5.60E-02																	
SVOC	2-Chloronaphthalene	91-58-7		4					5.05E-02	5.25E-02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		4					5.50E-02	5.70E-02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		4					5.50E-02	5.70E-02																	
SVOC	Chrysene	218-01-9	B2	4	3	7.30E-02	9.80E-02	1.20E-01	5.00E-02	5.00E-02								1.00E+04	1E-05							2.00E+03	6E-05
SVOC	Di-n-butylphthalate	84-74-2	D	4					1.60E-01	1.65E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		4					5.70E-02	5.95E-02								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	4					5.35E-02	5.60E-02								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	4					5.25E-02	5.50E-02																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	4					4.10E-02	4.30E-02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		4					5.25E-02	5.50E-02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	4					1.60E-01	1.65E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		4					8.45E-02	8.80E-02						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	4					1.70E-01	1.75E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		4					1.70E-01	1.75E-01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		4					1.20E-01	1.20E-01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	4					4.85E-02	5.05E-02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	4					5.05E-02	5.25E-02																	
SVOC	Fluoranthene	206-44-0	D	4	3	1.51E-01	2.27E-01	3.00E-01	6.10E-02	6.10E-02		1.00E+06	3E-07	8.90E+05	3E-07	4.10E+06	7E-08	1.80E+05	2E-06	1.00E+06	3E-07	7.40E+05	4E-07	9.30E+06	3E-08	4.60E+04	7E-06
SVOC	Fluorene	86-73-7	D	4					5.05E-02	5.25E-02		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	4					5.90E-02	6.20E-02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	4					4.75E-02	4.95E-02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	4					6.30E-02	6.60E-02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	4					5.05E-02	5.25E-02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	4					7.35E-02	7.70E-02								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	4					4.60E-02	4.85E-02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		4					5.05E-02	5.25E-02								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		4					4.95E-02	5.15E-02						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	4					5.15E-02	5.40E-02		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		4					4.85E-02	5.05E-02																	
SVOC	3-Nitroaniline	99-09-2	C	4					1.50E-01	1.55E-01																	
SVOC	4-Nitroaniline	100-01-6	C	4					7.15E-02	7.50E-02																	
SVOC	Nitrobenzene	98-95-3	D	4					4.85E-02	5.05E-02		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		4					4.85E-02	5.05E-02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		4					2.00E-01	2.10E-01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	4					5.15E-02	5.40E-02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	4					4.60E-02	4.85E-02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	4					5.50E-02	5.70E-02																	

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TABLE 4-43

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-13 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Pentachlorophenol	87-86-5	B2	4					1.30E-01	1.35E-01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	4	3	8.98E-02	1.25E-01	1.80E-01	5.70E-02	5.70E-02		5.10E+03	4E-05	1.90E+02	9E-04	2.90E+03	6E-05	8.00E+03	2E-05	2.80E+03	6E-05	1.60E+02	1E-03	6.70E+03	3E-05	1.60E+03	1E-04
SVOC	Phenol	108-95-2	D	4					5.15E-02	5.40E-02						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	4	3	1.20E-01	1.88E-01	2.35E-01	5.60E-02	5.60E-02		1.00E+06	2E-07	7.80E+05	3E-07	2.90E+06	8E-08	1.10E+05	2E-06	1.00E+06	2E-07	6.50E+05	4E-07	6.70E+06	4E-08	2.90E+04	8E-06
SVOC	2,4,5-Trichlorophenol	95-95-4		4					5.80E-02	6.05E-02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	4					6.65E-02	6.90E-02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
INORG	Lead	7439-92-1	B2	4	4	3.02E+00	6.09E+00	8.70E+00			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-49

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	6					2.30E-03	2.50E-02		1.10E+05		1.60E+05		1.70E+08		1.10E+05		1.10E+05		1.30E+05		3.90E+08		2.30E+04	
VOC	Benzene	71-43-2	A	6					7.10E-04	6.30E-03		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	6					1.30E-03	6.30E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	6					1.70E-03	6.30E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	6					2.00E-03	1.30E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	6					2.90E-03	2.50E-02		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		6					8.50E-04	6.30E-03		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	6					1.10E-03	6.30E-03		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	6					5.70E-04	6.30E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		6					2.40E-03	1.30E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	6					8.90E-04	6.30E-03		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	6					1.40E-03	1.30E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	6					7.60E-04	6.30E-03		3.90E+02		2.00E+03		2.60E+06		3.90E+02		3.90E+02		1.70E+03		5.80E+06		3.90E+02	
VOC	Cyclohexane	110-82-7		6					1.10E-03	1.30E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	6					1.70E-03	1.30E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	6					1.20E-03	6.30E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	6					1.30E-03	6.30E-03		3.60E+00		1.40E+01		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	6					7.70E-04	6.30E-03		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	6					8.70E-04	6.30E-03								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	6					7.30E-04	6.30E-03		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		6					1.20E-03	1.30E-02		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	6					6.30E-04	6.30E-03		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	6					7.90E-04	6.30E-03		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	6					1.30E-03	6.30E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	6					9.10E-04	6.30E-03		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		6					7.90E-04	6.30E-03		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	6					8.20E-04	6.30E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	6					9.40E-04	6.30E-03		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	6					6.40E-04	6.30E-03		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	2-Hexanone	591-78-6		6					1.80E-03	2.50E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		6	1	2.50E-02	2.50E-02	2.50E-02	1.20E-03	1.30E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		6					9.10E-04	2.50E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		6					2.10E-03	2.50E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		6					6.40E-04	1.30E-02																	
VOC	Methylene Chloride	75-09-2	B2	6					1.40E-03	6.30E-03		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		6					5.40E-04	6.30E-03		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	6					2.00E-03	6.30E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	6					1.30E-03	6.30E-03		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	6	3	9.60E-04	1.69E-03	2.70E-03	7.40E-04	5.00E-03		2.50E+02	1E-05	3.30E+03	8E-07	1.20E+07	2E-10	2.50E+02	1E-05	2.50E+02	1E-05	2.80E+03	1E-06	2.70E+07	1E-10	2.50E+02	1E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	6					9.70E-04	6.30E-03		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	6					1.00E-03	6.30E-03		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	3					4.50E-03	6.30E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	6					8.30E-04	6.30E-03		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		6					1.20E-03	1.30E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		6					1.00E-03	6.30E-03		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	6					1.50E-03	1.30E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	6					2.10E-03	1.30E-02		1.50E+02		5.40E+04		1.30E+08		1.50E+02		1.50E+02		4.60E+04		2.90E+08		1.50E+02	
SVOC	Acenaphthene	83-32-9		6					5.40E-02	3.70E-01		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	6					5.00E-02	3.70E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	6					5.30E-02	3.70E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	6					5.20E-02	3.70E-01		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		6					1.60E-01	3.70E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		6					1.80E-01	3.70E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	6	1	6.00E-02	6.00E-02	6.00E-02	6.00E-02	3.70E-01								1.00E+02	6E-04							2.00E+01	3E-03
SVOC	Benzo(a)pyrene	50-32-8	B2	6	1	1.30E-01	1.30E-01	1.30E-01	6.50E-02	3.70E-01						1.90E+03	7E-05	1.00E+01	1E-02					1.50E+03	9E-05	2.00E+00	7E-02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	6	1	2.60E-01	2.60E-01	2.60E-01	6.30E-02	3.70E-01								1.00E+02	3E-03							2.00E+01	1E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	6	1	2.90E-01	2.90E-01	2.90E-01	6.00E-02	3.70E-01						3.50E+05	8E-07	9.10E+03	3E-05					8.00E+05	4E-07	2.50E+03	1E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	6	2	6.50E-02	6.95E-02	7.40E-02	5.70E-02	3.70E-01								1.00E+03	7E-05							2.00E+02	4E-04
SVOC	Biphenyl	92-52-4		6					1.50E-01	3.70E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	6					5.00E-02	3.70E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	6					5.40E-02	3.70E-01		4.40E+01				1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	6	5	7.60E-02	3.25E-01	7.30E-01	6.80E-02	6.80E-02						8.90E+05	8E-07	1.00E+04	7E-05					7.00E+05	1E-06	2.80E+03	3E-04

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

TABLE 4-49

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	6					6.50E-02	3.70E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	6	1	1.50E-01	1.50E-01	1.50E-01	5.50E-02	3.70E-01						2.10E+07	7E-09	3.10E+02	5E-04					4.70E+07	3E-09	3.10E+02	5E-04
SVOC	Caprolactam	105-60-2		6					1.90E-01	3.70E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	6					5.50E-02	3.70E-01								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		6					5.40E-02	3.70E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		6					5.40E-02	1.50E+00																	
SVOC	2-Chloronaphthalene	91-58-7		6					5.10E-02	3.70E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		6					5.50E-02	3.70E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		6					5.50E-02	3.70E-01																	
SVOC	Chrysene	218-01-9	B2	6	1	1.10E-01	1.10E-01	1.10E-01	5.00E-02	3.70E-01								1.00E+04	1E-05							2.00E+03	6E-05
SVOC	Di-n-butylphthalate	84-74-2	D	6					1.60E-01	3.70E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		6					5.80E-02	3.70E-01								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	6					5.40E-02	3.70E-01								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	6					5.30E-02	3.70E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	6					4.20E-02	2.30E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		6					5.30E-02	3.70E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	6					1.60E-01	3.70E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		6					8.50E-02	3.70E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	6					1.70E-01	3.70E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		6					1.70E-01	1.90E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		6					1.20E-01	1.90E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	6					4.90E-02	3.70E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	6					5.10E-02	3.70E-01																	
SVOC	Fluoranthene	206-44-0	D	6	1	1.30E-01	1.30E-01	1.30E-01	6.10E-02	3.70E-01		1.00E+06	1E-07	8.30E+05	1E-07	4.10E+06	3E-08	1.80E+05	7E-07	1.00E+06	1E-07	7.40E+05	2E-07	9.30E+06	1E-08	4.60E+04	3E-06
SVOC	Fluorene	86-73-7	D	6					5.10E-02	3.70E-01		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	6					6.00E-02	3.70E-01		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	6					4.80E-02	3.70E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	6					6.40E-02	3.70E-01								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	6					5.10E-02	1.10E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	6	1	2.10E-01	2.10E-01	2.10E-01	7.60E-02	3.70E-01								1.00E+02	2E-03							2.00E+01	1E-02
SVOC	Isophorone	78-59-1	C	6					4.70E-02	3.70E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		6					5.10E-02	3.70E-01								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		6					5.00E-02	3.70E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	6					5.20E-02	3.70E-01		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		6					4.90E-02	1.90E+00																	
SVOC	3-Nitroaniline	99-09-2	C	6					1.50E-01	1.90E+00																	
SVOC	4-Nitroaniline	100-01-6	C	6					7.30E-02	1.90E+00																	
SVOC	Nitrobenzene	98-95-3	D	6					4.90E-02	3.70E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		6					4.90E-02	3.70E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		6					2.00E-01	1.90E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	6					5.20E-02	3.70E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	6					4.70E-02	3.70E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	6					5.50E-02	3.70E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	6					1.30E-01	3.80E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	6					5.50E-02	3.70E-01		5.10E+03		1.90E+02		2.90E+03		8.00E+03		2.80E+03		1.60E+02		6.70E+03		1.60E+03	
SVOC	Phenol	108-95-2	D	6					5.20E-02	3.70E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	6	1	1.10E-01	1.10E-01	1.10E-01	5.50E-02	3.70E-01		1.00E+06	1E-07	7.80E+05	1E-07	2.90E+06	4E-08	1.10E+05	1E-06	1.00E+06	1E-07	6.50E+05	2E-07	6.70E+06	2E-08	2.90E+04	4E-06
SVOC	2,4,5-Trichlorophenol	95-95-4		6					5.90E-02	3.70E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	6					6.70E-02	3.70E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	6	3	6.00E-02	2.02E-01	4.61E-01	2.20E-02	3.70E-02		1.60E+04	3E-05	8.10E+02	6E-04	6.50E+03	7E-05	2.00E+01	2E-02	3.00E+03	2E-04	2.40E+02	2E-03	5.20E+03	9E-05	4.00E+00	1E-01
INORG	Antimony	7440-36-0		6	3	5.62E-01	6.04E-01	6.68E-01	2.61E-01	3.10E-01						5.90E+03	1E-04	1.20E+03	6E-04					1.30E+04	5E-05	1.80E+02	4E-03
INORG	Arsenic	7440-38-2	A	6	6	2.81E+00	5.25E+00	8.99E+00			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	6	6	8.60E+00	1.87E+02	9.41E+02			1.10E+02					1.50E+05	6E-03	2.50E+05	3E-03					3.30E+05	3E-03	3.70E+04	2E-02
INORG	Beryllium	7440-41-7	B1	6	4	1.86E-01	6.33E-01	1.62E+00	2.49E-02	1.13E-01	1.53E+00					5.90E+02	2E-04	3.10E+03	3E-05					1.30E+03	7E-05	4.10E+02	2E-04
INORG	Cadmium	7440-43-9	B1	6	6	8.94E-02	2.32E-01	4.32E-01			1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		6	6	4.28E+00	1.17E+01	1.76E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		6	6	2.23E+00	5.41E+00	1.61E+01			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	6	6	8.16E+00	1.67E+01	2.27E+01			3.20E+01					5.90E+04		1.40E+05						1.30E+05		2.00E+04	
INORG	Lead	7439-92-1	B2	6	6	3.24E+00	2.15E+01	7.49E+01			4.92E+01					4.40E+04	6E-04	9.00E+02	3E-02					1.00E+05	3E-04	4.00E+02	6E-02
INORG	Manganese	7439-96-5	D	6	6	1.67E+02	4.96E+02	1.13E+03			5.10E+02					1.50E+03	4E-01	1.70E+05	4E-03					3.30E+03	2E-01	2.50E+04	2E-02
INORG	Mercury	7439-97-6	D	6	3	1.30E-02	5.63E-02	1.26E-01	9.10E-03	3.72E-02	1.30E-01							1.10E+03								1.60E+02	
INORG	Nickel	7440-02-0	A	6	6	5.16E+00	1.39E+01	3.13E+01			3.01E+01					1.60E+04	7E-05	2.70E+05	4E-06					1.30E+04	9E-05	4.00E+04	3E-05

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TABLE 4-49

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Selenium	7782-49-2	D	6	1	3.97E-01	3.97E-01	3.97E-01	1.68E-01	5.65E-01	4.10E-01					5.90E+04		1.80E+04						1.30E+05		2.60E+03	
INORG	Silver	7440-22-4	D	6					8.00E-02	5.65E-01						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		6	3	3.27E-01	4.12E-01	5.58E-01	1.09E+00	1.13E+00								2.40E+02	2E-03							3.50E+01	2E-02
INORG	Vanadium	7440-62-2		6	6	7.57E+00	1.29E+01	2.59E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	6	6	2.74E+01	4.44E+01	6.06E+01			4.70E+01							1.00E+06	1E-05							1.70E+05	8E-05

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-50

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	Acetone	67-64-1	T	D	3	1	6.95E-03	6.95E-03	6.95E-03	5.10E-04	1.00E-02	1.00E+06	7E-09	3.10E+04	2E-07	1.00E+06	7E-09
VOC	Benzene	71-43-2	T	A	3					1.60E-04	1.00E-03	3.60E+01		1.10E+01		5.60E+00	
VOC	Bromodichloromethane	75-27-4	T	B2	3	1	2.15E-04	2.15E-04	2.15E-04	1.70E-04	1.00E-03	3.80E+01	6E-06	1.40E+01	2E-05	4.80E+00	4E-05
VOC	Bromoform	75-25-2	T	B2	3					1.80E-04	1.00E-03	3.10E+03		1.40E+02		4.80E+02	
VOC	Bromomethane	74-83-9	T	D	3					2.00E-04	1.00E-03	9.00E+00		7.00E+01		4.00E+00	
VOC	2-Butanone	78-93-3	T	D	3					4.10E-04	1.00E-02	2.40E+05		2.40E+05		2.40E+05	
VOC	Carbon Disulfide	75-15-0	T		3					2.00E-04	1.00E-03	5.50E+02		1.20E+03		2.50E+02	
VOC	Carbon Tetrachloride	56-23-5	T	B2	3					1.20E-04	1.00E-03	2.40E+00		4.60E+00		3.70E-01	
VOC	Chlorobenzene	108-90-7	T	D	3					1.40E-04	1.00E-03	4.70E+02		8.60E+01		2.10E+02	
VOC	Chloroethane	75-00-3	T		3					2.60E-04	1.00E-03	5.70E+03		4.40E+02		5.70E+03	
VOC	Chloroform	67-66-3	T	B2	3	2	2.00E-04	4.28E-04	6.55E-04	1.40E-04	1.40E-04	1.80E+02	4E-06	1.50E+02	4E-06	2.80E+01	2E-05
VOC	Chloromethane	74-87-3	T	D	3					1.30E-04	1.00E-03	5.20E+01		4.90E+02		8.60E+00	
VOC	Cumene	98-82-8	T	D	3					1.20E-04	1.00E-03	5.60E+01		5.60E+01		5.60E+01	
VOC	Cyclohexane	110-82-7	T		3					1.30E-04	1.00E-03						
VOC	1,2-Dibromo-3-chloropropane	96-12-8	T	B2	3					6.20E-04	2.00E-03	1.20E+00		3.90E-01		1.20E+00	
VOC	Dibromochloromethane	124-48-1	T	C	3					2.60E-04	1.00E-03	1.10E+02		1.80E+01		1.50E+01	
VOC	1,2-Dibromoethane	106-93-4	T	B2	3					2.20E-04	1.00E-03	1.50E+01		2.50E-02		2.40E+00	
VOC	1,2-Dichlorobenzene	95-50-1	T	D	3					1.10E-04	1.00E-03	1.60E+02		1.60E+02		1.60E+02	
VOC	1,3-Dichlorobenzene	541-73-1	T	D	3					1.50E-04	1.00E-03			2.00E+00			
VOC	1,4-Dichlorobenzene	106-46-7	T	C	3					1.70E-04	1.00E-03	7.40E+01		6.40E+00		1.60E+01	
VOC	Dichlorodifluoromethane	75-71-8	T		3					2.60E-04	2.00E-03	3.00E+02		3.00E+02		2.20E+02	
VOC	1,1-Dichloroethane	75-34-3	T	C	3					1.60E-04	1.00E-03	2.30E+03		2.40E+03		1.00E+03	
VOC	1,2-Dichloroethane	107-06-2	T	B2	3					2.10E-04	1.00E-03	5.90E+01		1.90E+01		9.60E+00	
VOC	1,1-Dichloroethene	75-35-4	T	C	3					2.40E-04	1.00E-03	1.30E+00		1.10E+01		2.00E-01	
VOC	cis-1,2-Dichloroethene	156-59-2	T	D	3					2.20E-04	5.00E-04	2.20E+02		2.00E+02		9.60E+01	
VOC	trans-1,2-Dichloroethene	156-60-5	T		3					1.50E-04	5.00E-04	2.00E+02		2.20E+02		8.50E+01	
VOC	1,2-Dichloropropane	78-87-5	T	B2	3					1.70E-04	1.00E-03	3.60E+01		1.60E+01		1.60E+01	
VOC	1,3-Dichloropropene (summed)	542-75-6	T	B2	3					2.70E-04	1.00E-03	1.30E-02		1.30E+01		2.00E-03	
VOC	Ethyl Benzene	100-41-4	T	D	3					1.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	2-Hexanone	591-78-6	T		3					4.60E-04	1.00E-02	8.80E+03		5.20E+03		4.20E+03	
VOC	Methyl Acetate	79-20-9	T		3					4.10E-04	1.00E-02						
VOC	Methyl tert-butyl ether	1634-04-4	T		3	1	7.15E-03	7.15E-03	7.15E-03	1.30E-04	5.00E-03	4.70E+04	2E-07	6.90E+02	1E-05	4.70E+04	2E-07
VOC	4-Methyl-2-pentanone	108-10-1	T		3					2.30E-04	1.00E-02	2.00E+04		1.30E+04		2.00E+04	
VOC	Methylcyclohexane	108-87-2	T		3					1.50E-04	1.00E-03						
VOC	Methylene Chloride	75-09-2	T	B2	3					3.40E-04	1.00E-03	1.40E+03		2.20E+02		2.20E+02	
VOC	Styrene	100-42-5	T		3					1.50E-04	1.00E-03	3.10E+02		9.70E+00		1.70E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	T	C	3					2.50E-04	1.00E-03	7.70E+01		4.70E+00		1.20E+01	
VOC	Tetrachloroethene	127-18-4	T	C-B2	3					2.30E-04	1.00E-03	1.70E+02		1.20E+01		2.50E+01	
VOC	Toluene	108-88-3	T	D	3	1	1.90E-04	1.90E-04	1.90E-04	1.80E-04	1.00E-03	5.30E+02	4E-07	5.30E+02	4E-07	5.30E+02	4E-07
VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	3					1.70E-04	1.00E-03	3.00E+02		1.90E+01		3.00E+02	
VOC	1,1,1-Trichloroethane	71-55-6	T	D	3	1	3.00E-03	3.00E-03	3.00E-03	1.50E-04	1.00E-03	1.30E+03	2E-06	1.30E+03	2E-06	6.60E+02	5E-06

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TABLE 4-50

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
VOC	1,1,2-Trichloroethane	79-00-5	T	C	3					3.00E-04	1.00E-03	1.10E+02		2.10E+01		1.70E+01	
VOC	Trichloroethene	79-01-6	T	C-B2	3					1.40E-04	1.00E-03	9.70E+01		3.70E+01		1.50E+01	
VOC	Trichlorofluoromethane	75-69-4	T		3					2.80E-04	1.00E-03	1.10E+03		1.10E+03		1.10E+03	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	T		3					3.20E-04	1.00E-03	1.70E+02		1.70E+02		1.70E+02	
VOC	Vinyl Chloride	75-01-4	T	A	3	2	1.70E-02	2.00E-02	2.30E-02	1.50E-04	1.50E-04	6.90E-01	3E-02	5.70E-01	4E-02	1.10E-01	2E-01
VOC	Xylenes (total)	1330-20-7	T	D	3					3.30E-04	1.00E-03	1.90E+02		1.90E+02		1.90E+02	
SVOC	Acenaphthene	83-32-9	T		3					9.00E-04	5.00E-03	4.20E+00		4.20E+00		4.20E+00	
SVOC	Acenaphthylene	208-96-8	T	D	3					7.10E-04	5.00E-03	3.90E+00		3.90E+00		3.90E+00	
SVOC	Acetophenone	98-86-2	T	D	3					2.60E-03	1.00E-02	6.10E+03		6.10E+03		6.10E+03	
SVOC	Anthracene	120-12-7	T	D	3					6.80E-04	5.00E-03	4.30E-02		4.30E-02		4.30E-02	
SVOC	Atrazine	1912-24-9	T		3					2.50E-03	5.00E-03			5.40E+00			
SVOC	Benzaldehyde	100-52-7	T		3					2.80E-03	1.00E-02						
SVOC	Benzo(a)anthracene	56-55-3	T	B2	3					7.00E-04	5.00E-03			9.40E-03			
SVOC	Benzo(a)pyrene	50-32-8	T	B2	3					7.30E-04	5.00E-03			5.00E-03			
SVOC	Benzo(b)fluoranthene	205-99-2	T	B2	3					9.40E-04	5.00E-03			2.00E-03			
SVOC	Benzo(g,h,i)perylene	191-24-2	T	D	3					8.50E-04	5.00E-03			5.00E-03			
SVOC	Benzo(k)fluoranthene	207-08-9	T	B2	3					8.40E-04	5.00E-03			5.00E-03			
SVOC	Biphenyl	92-52-4	T		3					2.60E-03	1.00E-02						
SVOC	bis(2-Chloroethoxy)methane	111-91-1	T	D	3					8.70E-04	5.00E-03						
SVOC	bis(2-Chloroethyl) ether	111-44-4	T	B2	3					9.70E-04	5.00E-03	2.10E+02		5.70E+00		3.80E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	3	3	2.03E-03	3.30E-03	5.50E-03					3.20E-01	2E-02		
SVOC	4-Bromophenyl-phenyl ether	101-55-3	T	D	3					8.80E-04	5.00E-03						
SVOC	Butylbenzylphthalate	85-68-7	T	C	3					8.80E-04	5.00E-03			2.70E+00			
SVOC	Caprolactam	105-60-2	T		3					2.50E-03	1.00E-02			3.90E+05			
SVOC	Carbazole	86-74-8	T	B2	3					8.20E-04	1.00E-02			7.40E+00			
SVOC	4-Chloro-3-methylphenol	59-50-7	T		3					9.90E-04	5.00E-03			7.90E+01			
SVOC	4-Chloroaniline	106-47-8	T		3					6.10E-04	1.00E-02						
SVOC	2-Chloronaphthalene	91-58-7	T		3					8.50E-04	5.00E-03			6.70E+00			
SVOC	2-Chlorophenol	95-57-8	T		3					1.00E-03	5.00E-03			9.40E+01			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	T		3					7.90E-04	5.00E-03						
SVOC	Chrysene	218-01-9	T	B2	3					7.50E-04	5.00E-03			5.00E-03			
SVOC	Di-n-butylphthalate	84-74-2	T	D	3					6.70E-04	5.00E-03			1.10E+01			
SVOC	Di-n-octylphthalate	117-84-0	T		3					1.10E-03	5.00E-03			4.00E-01			
SVOC	Dibenz(a,h)anthracene	53-70-3	T	B2	3					7.90E-04	5.00E-03			5.00E-03			
SVOC	Dibenzofuran	132-64-9	T	D	3					1.10E-03	5.00E-03						
SVOC	3,3'-Dichlorobenzidine	91-94-1	T	B2	3					9.30E-04	2.00E-02			1.80E-01			
SVOC	2,4-Dichlorophenol	120-83-2	T		3					8.50E-04	1.00E-02			4.80E+01			
SVOC	Diethylphthalate	84-66-2	T	D	3					6.50E-04	5.00E-03			1.10E+03			
SVOC	2,4-Dimethylphenol	105-67-9	T		3					8.50E-04	5.00E-03			5.20E+02			
SVOC	Dimethylphthalate	131-11-3	T	D	3					7.60E-04	5.00E-03			4.20E+03			
SVOC	4,6-Dinitro-2-methylphenol	534-52-1	T		3					1.30E-03	2.00E-02			9.50E+00			

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
SVOC	2,4-Dinitrophenol	51-28-5	T		3					3.00E-03	2.00E-02						
SVOC	2,4-Dinitrotoluene	121-14-2	T	B2	3					7.90E-04	5.00E-03			8.60E+00			
SVOC	2,6-Dinitrotoluene	606-20-2	T	B2	3					5.70E-04	5.00E-03						
SVOC	Fluoranthene	206-44-0	T	D	3					8.10E-04	5.00E-03	2.10E-01		2.10E-01		2.10E-01	
SVOC	Fluorene	86-73-7	T	D	3					1.00E-03	5.00E-03	2.00E+00		2.00E+00		2.00E+00	
SVOC	Hexachlorobenzene	118-74-1	T	B2	3					7.40E-04	5.00E-03	3.00E+00		4.60E-03		4.40E-01	
SVOC	Hexachlorobutadiene	87-68-3	T	C	3					7.20E-04	5.00E-03	3.20E+00		4.00E-01		1.60E+00	
SVOC	Hexachlorocyclopentadiene	77-47-4	T	E	3					1.10E-03	5.00E-03			1.80E+00			
SVOC	Hexachloroethane	67-72-1	T	C	3					7.40E-04	5.00E-03	5.00E+01		1.90E+00		2.70E+01	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	B2	3					6.30E-04	5.00E-03			5.00E-03			
SVOC	Isophorone	78-59-1	T	C	3					6.30E-04	5.00E-03			9.90E+02			
SVOC	2-Methylnaphthalene	91-57-6	T		3					6.40E-04	5.00E-03			2.50E+01			
SVOC	Methylphenol (summed)	1319-77-3	T		3					1.30E-03	5.00E-03			8.10E+02			
SVOC	Naphthalene	91-20-3	T	C	3					7.50E-04	5.00E-03	3.10E+01		3.10E+01		3.10E+01	
SVOC	2-Nitroaniline	88-74-4	T		3					7.00E-04	2.00E-02						
SVOC	3-Nitroaniline	99-09-2	T	C	3					7.10E-04	2.00E-02						
SVOC	4-Nitroaniline	100-01-6	T	C	3					1.30E-03	2.00E-02						
SVOC	Nitrobenzene	98-95-3	T	D	3					8.10E-04	5.00E-03	2.10E+03		1.10E+01		2.10E+03	
SVOC	2-Nitrophenol	88-75-5	T		3					2.10E-03	5.00E-03			7.90E+01			
SVOC	4-Nitrophenol	100-02-7	T		3					1.90E-03	2.00E-02						
SVOC	N-Nitrosodiphenylamine	86-30-6	T	B2	3					1.40E-03	5.00E-03			3.50E+01			
SVOC	N-Nitroso-di-n-propylamine	621-64-7	T	B2	3					6.70E-04	5.00E-03			3.60E-01			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	T	C	3					7.80E-04	5.00E-03						
SVOC	Pentachlorophenol	87-86-5	T	B2	3					2.40E-03	5.00E-03			2.00E-01			
SVOC	Phenanthrene	85-01-8	T	D	3					8.20E-04	5.00E-03	1.00E+00		1.00E+00		1.00E+00	
SVOC	Phenol	108-95-2	T	D	3					2.60E-03	5.00E-03			2.90E+04			
SVOC	Pyrene	129-00-0	T	D	3					1.10E-03	5.00E-03	1.40E-01		1.40E-01		1.40E-01	
SVOC	2,4,5-Trichlorophenol	95-95-4	T		3					1.20E-03	5.00E-03			1.70E+02			
SVOC	2,4,6-Trichlorophenol	88-06-2	T	B2	3					1.70E-03	5.00E-03			1.00E+01			
P/PCB	PCBs (summed)	1336-36-3	D	B2	1					2.00E-04	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
P/PCB	PCBs (summed)	1336-36-3	T	B2	3					8.20E-05	2.00E-04	4.50E-02		3.30E-03		4.50E-02	
INORG	Antimony	7440-36-0	D		3					2.20E-03	2.50E-02			6.80E+01			
INORG	Antimony	7440-36-0	T		3					2.20E-03	2.50E-02			6.80E+01			
INORG	Arsenic	7440-38-2	D	A	3	1	8.30E-03	8.30E-03	8.30E-03	3.90E-03	1.00E-02			4.30E+00	2E-03		
INORG	Arsenic	7440-38-2	T	A	3	1	8.80E-03	8.80E-03	8.80E-03	3.90E-03	1.00E-02			4.30E+00	2E-03		
INORG	Barium	7440-39-3	D	D	3	3	4.58E-02	1.40E-01	2.12E-01					1.40E+04	2E-05		
INORG	Barium	7440-39-3	T	D	3	3	4.66E-02	1.42E-01	2.15E-01					1.40E+04	2E-05		
INORG	Beryllium	7440-41-7	D	B1	3					5.40E-04	1.00E-03			2.90E+02			
INORG	Beryllium	7440-41-7	T	B1	3					5.40E-04	1.00E-03			2.90E+02			
INORG	Cadmium	7440-43-9	D	B1	3					2.80E-04	5.00E-03			1.90E+02			
INORG	Cadmium	7440-43-9	T	B1	3					2.80E-04	5.00E-03			1.90E+02			

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TABLE 4-50

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-16 (GROUNDWATER)

Chem Group	Chemical	CASRN	Meas Basis	Carc Class	No of Analyses	No of Detects	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Min QL (mg/L)	Max QL (mg/L)	Industrial GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Industrial GW Volatilization to Indoor Air	Groundwater Contact Criteria (mg/L)	Ratio of Max Detect to Groundwater Contact Criteria	Residential GW Volatilization to Indoor Air (mg/L)	Ratio of Max Detect to Residential GW Volatilization to Indoor Air
INORG	Chromium (total)	7440-47-3	D		3					1.40E-03	1.00E-02			4.60E+02			
INORG	Chromium (total)	7440-47-3	T		3	1	1.40E-03	1.40E-03	1.40E-03	1.40E-03	1.00E-02			4.60E+02	3E-06		
INORG	Cobalt	7440-48-4	D		3	1	2.60E-03	2.60E-03	2.60E-03	1.30E-03	2.00E-02			2.40E+03	1E-06		
INORG	Cobalt	7440-48-4	T		3	2	9.75E-04	1.81E-03	2.65E-03	2.00E-02	2.00E-02			2.40E+03	1E-06		
INORG	Copper	7440-50-8	D	D	3					4.20E-03	5.00E-03			7.40E+03			
INORG	Copper	7440-50-8	T	D	3					4.20E-03	5.00E-03			7.40E+03			
INORG	Lead	7439-92-1	D	B2	3					2.00E-03	3.00E-03						
INORG	Lead	7439-92-1	T	B2	3					2.50E-03	3.00E-03						
INORG	Manganese	7439-96-5	D	D	3	3	9.66E-02	6.52E-01	1.05E+00					9.10E+03	1E-04		
INORG	Manganese	7439-96-5	T	D	3	3	9.65E-02	6.70E-01	1.09E+00					9.10E+03	1E-04		
INORG	Mercury	7439-97-6	D	D	3					6.90E-05	2.00E-04			5.60E-02			
INORG	Mercury	7439-97-6	T	D	3					6.90E-05	2.00E-04			5.60E-02			
INORG	Nickel	7440-02-0	D	A	3	1	3.10E-03	3.10E-03	3.10E-03	2.20E-03	2.00E-02			7.40E+04	4E-08		
INORG	Nickel	7440-02-0	T	A	3	1	4.70E-03	4.70E-03	4.70E-03	2.20E-03	2.00E-02			7.40E+04	6E-08		
INORG	Selenium	7782-49-2	D	D	3					4.50E-03	5.00E-03			9.70E+02			
INORG	Selenium	7782-49-2	T	D	3					4.50E-03	5.00E-03			9.70E+02			
INORG	Silver	7440-22-4	D	D	3					1.50E-03	5.00E-03			1.50E+03			
INORG	Silver	7440-22-4	T	D	3					1.50E-03	5.00E-03			1.50E+03			
INORG	Thallium	7440-28-0	D		3					1.80E-05	1.00E-02			1.30E+01			
INORG	Thallium	7440-28-0	T		3					1.80E-05	1.00E-02			1.30E+01			
INORG	Vanadium	7440-62-2	D		3					8.20E-04	1.00E-02			9.70E+02			
INORG	Vanadium	7440-62-2	T		3					8.20E-04	1.00E-02			9.70E+02			
INORG	Zinc	7440-66-6	D	D	3	2	1.04E-02	1.30E-02	1.56E-02	2.00E-02	2.00E-02			1.10E+05	1E-07		
INORG	Zinc	7440-66-6	T	D	3	1	1.35E-02	1.35E-02	1.35E-02	1.20E-02	2.00E-02			1.10E+05	1E-07		

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Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-51

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-19 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	7					1.60E-02	2.20E-02		1.10E+05		1.60E+05		1.70E+08		1.10E+05		1.10E+05		1.30E+05		3.90E+08		2.30E+04	
VOC	Benzene	71-43-2	A	7					4.10E-03	5.50E-03		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	7					4.10E-03	5.50E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	7					4.10E-03	5.50E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	7					8.20E-03	1.10E-02		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	7					1.60E-02	2.20E-02		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		7					4.10E-03	5.50E-03		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	7					4.10E-03	5.50E-03		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	7					4.10E-03	5.50E-03		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		7					8.20E-03	1.10E-02		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	7					4.10E-03	5.50E-03		3.80E+01		1.50E+02		1.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	7					8.20E-03	1.10E-02		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	7					4.10E-03	5.50E-03		3.90E+02		2.00E+03		2.60E+06		3.90E+02		3.90E+02		1.70E+03		5.80E+06		3.90E+02	
VOC	Cyclohexane	110-82-7		7					8.20E-03	1.10E-02																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	7					8.20E-03	1.10E-02		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	7					4.10E-03	5.50E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	7					4.10E-03	5.50E-03		3.60E+00		5.60E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	7					4.10E-03	5.50E-03		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	7					4.10E-03	5.50E-03								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	7					4.10E-03	5.50E-03		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		7					8.20E-03	1.10E-02		1.00E+03		5.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	7					4.10E-03	5.50E-03		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	7					4.10E-03	5.50E-03		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	7					4.10E-03	5.50E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	7					4.10E-03	5.50E-03		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		7					4.10E-03	5.50E-03		4.30E+01		2.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	7					4.10E-03	5.50E-03		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	7					4.10E-03	5.50E-03		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	7					4.10E-03	5.50E-03		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	2-Hexanone	591-78-6		7					1.60E-02	2.20E-02		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		7					8.20E-03	1.10E-02																	
VOC	Methyl tert-butyl ether	1634-04-4		7					1.60E-02	2.20E-02		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		7					1.60E-02	2.20E-02		2.70E+03		5.30E+04		6.00E+07		2.70E+03		2.70E+03		4.50E+04		1.40E+08		2.70E+03	
VOC	Methylcyclohexane	108-87-2		7	1	1.30E-03	1.30E-03	1.30E-03	8.20E-03	1.10E-02																	
VOC	Methylene Chloride	75-09-2	B2	7					4.10E-03	5.50E-03		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		7					4.10E-03	5.50E-03		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	7					4.10E-03	5.50E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	7					4.10E-03	5.50E-03		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	7	6	6.40E-04	2.07E-03	6.60E-03	5.30E-03	5.30E-03		2.50E+02	3E-05	3.30E+03	2E-06	1.20E+07	6E-10	2.50E+02	3E-05	2.50E+02	3E-05	2.80E+03	2E-06	2.70E+07	2E-10	2.50E+02	3E-05
VOC	1,2,4-Trichlorobenzene	120-82-1	D	7					4.10E-03	5.50E-03		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	7					4.10E-03	5.50E-03		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	7					4.10E-03	5.50E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	7					4.10E-03	5.50E-03		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		7					8.20E-03	1.10E-02		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		7					4.10E-03	5.50E-03		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	7					8.20E-03	1.10E-02		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	7					8.20E-03	1.10E-02		1.50E+02		5.40E+04		1.30E+08		1.50E+02		1.50E+02		4.60E+04		2.90E+08		1.50E+02	
SVOC	Acenaphthene	83-32-9		7	1	6.20E-02	6.20E-02	6.20E-02	3.65E-01	1.80E+00		3.50E+05	2E-07	9.70E+04	6E-07	6.20E+06	1E-08	2.00E+05	3E-07	1.90E+05	3E-07	8.10E+04	8E-07	1.40E+07	4E-09	4.10E+04	2E-06
SVOC	Acenaphthylene	208-96-8	D	7	2	7.60E-02	8.43E-02	9.25E-02	3.70E-01	1.80E+00		3.00E+03	3E-05	2.70E+03	3E-05	1.00E+06	9E-08	8.00E+03	1E-05	1.60E+03	6E-05	2.20E+03	4E-05	2.30E+06	4E-08	1.60E+03	6E-05
SVOC	Acetophenone	98-86-2	D	7					3.60E-01	1.80E+00		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	7	3	5.45E-02	2.77E-01	5.55E-01	3.70E-01	1.80E+00		1.00E+06	6E-07	1.60E+06	3E-07	2.90E+07	2E-08	1.00E+06	6E-07	1.00E+06	6E-07	1.40E+06	4E-07	6.70E+07	8E-09	2.30E+05	2E-06
SVOC	Atrazine	1912-24-9		7					3.60E-01	1.80E+00								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		7					3.60E-01	1.80E+00																	
SVOC	Benzo(a)anthracene	56-55-3	B2	7	6	1.40E-01	4.93E-01	8.70E-01	1.80E+00	1.80E+00								1.00E+02	9E-03							2.00E+01	4E-02
SVOC	Benzo(a)pyrene	50-32-8	B2	7	7	2.10E-01	5.75E-01	9.50E-01								1.90E+03	5E-04	1.00E+01	1E-01					1.50E+03	6E-04	2.00E+00	5E-01
SVOC	Benzo(b)fluoranthene	205-99-2	B2	7	7	2.90E-01	8.54E-01	1.40E+00										1.00E+02	1E-02							2.00E+01	7E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	7	7	2.40E-01	5.95E-01	1.13E+00								3.50E+05	3E-06	9.10E+03	1E-04					8.00E+05	1E-06	2.50E+03	5E-04
SVOC	Benzo(k)fluoranthene	207-08-9	B2	7	6	1.60E-01	4.09E-01	6.25E-01	1.80E+00	1.80E+00								1.00E+03	6E-04							2.00E+02	3E-03
SVOC	Biphenyl	92-52-4		7					3.60E-01	1.80E+00																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	7					3.60E-01	1.80E+00																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	7					3.60E-01	1.80E+00		4.40E+01				1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	7	5	6.00E-02	6.80E-01	2.00E+00	3.65E-01	1.40E+00						8.90E+05	2E-06	1.00E+04	2E-04					7.00E+05	3E-06	2.80E+03	7E-04

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TABLE 4-51

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-19 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	7					3.60E-01	1.80E+00																	
SVOC	Butylbenzylphthalate	85-68-7	C	7	7	3.00E-01	2.71E+00	6.53E+00								2.10E+07	3E-07	3.10E+02	2E-02					4.70E+07	1E-07	3.10E+02	2E-02
SVOC	Caprolactam	105-60-2		7					3.60E-01	1.80E+00						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	7	1	1.20E-01	1.20E-01	1.20E-01	3.65E-01	1.80E+00								3.70E+03	3E-05							5.30E+02	2E-04
SVOC	4-Chloro-3-methylphenol	59-50-7		7					3.60E-01	1.80E+00								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		7					1.40E+00	7.10E+00																	
SVOC	2-Chloronaphthalene	91-58-7		7					3.60E-01	1.80E+00								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		7					3.60E-01	1.80E+00								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		7					3.60E-01	1.80E+00																	
SVOC	Chrysene	218-01-9	B2	7	7	1.80E-01	6.53E-01	1.30E+00										1.00E+04	1E-04							2.00E+03	7E-04
SVOC	Di-n-butylphthalate	84-74-2	D	7	2	1.70E+00	1.80E+00	1.90E+00	3.60E-01	1.80E+00						1.50E+06	1E-06	7.60E+02	3E-03					3.30E+06	6E-07	7.60E+02	3E-03
SVOC	Di-n-octylphthalate	117-84-0		7					3.60E-01	1.80E+00								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	7	3	9.35E-02	2.90E-01	5.65E-01	3.70E-01	1.80E+00								1.00E+01	6E-02							2.00E+00	3E-01
SVOC	Dibenzofuran	132-64-9	D	7	1	5.40E-02	5.40E-02	5.40E-02	3.65E-01	1.80E+00																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	7					2.20E+00	1.10E+01						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		7					3.60E-01	1.80E+00						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	7					3.60E-01	1.80E+00						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		7					3.60E-01	1.80E+00						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	7					3.60E-01	1.80E+00						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		7					1.80E+00	9.30E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		7					1.80E+00	9.30E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	7					3.60E-01	1.80E+00						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	7					3.60E-01	1.80E+00																	
SVOC	Fluoranthene	206-44-0	D	7	7	2.40E-01	9.30E-01	2.10E+00				1.00E+06	2E-06	8.90E+05	2E-06	4.10E+06	5E-07	1.80E+05	1E-05	1.00E+06	2E-06	7.40E+05	3E-06	9.30E+06	2E-07	4.60E+04	5E-05
SVOC	Fluorene	86-73-7	D	7	1	6.60E-02	6.60E-02	6.60E-02	3.65E-01	1.80E+00		1.00E+06	7E-08	1.50E+05	4E-07	4.10E+06	2E-08	1.30E+05	5E-07	5.80E+05	1E-07	1.30E+05	5E-07	9.30E+06	7E-09	2.70E+04	2E-06
SVOC	Hexachlorobenzene	118-74-1	B2	7					3.60E-01	1.80E+00		2.20E+02		5.50E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	7					3.60E-01	1.80E+00		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	7					3.60E-01	1.80E+00								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	7					1.10E-01	5.50E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	7	6	2.00E-01	4.76E-01	7.65E-01	1.80E+00	1.80E+00								1.00E+02	8E-03							2.00E+01	4E-02
SVOC	Isophorone	78-59-1	C	7					3.60E-01	1.80E+00						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		7					3.60E-01	1.80E+00								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		7					3.60E-01	1.80E+00						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	7	1	5.20E-02	5.20E-02	5.20E-02	3.65E-01	1.80E+00		4.70E+02	1E-04	3.50E+02	1E-04	8.80E+04	6E-07	8.00E+04	7E-07	2.50E+02	2E-04	3.00E+02	2E-04	2.00E+05	3E-07	1.60E+04	3E-06
SVOC	2-Nitroaniline	88-74-4		7					1.80E+00	9.30E+00																	
SVOC	3-Nitroaniline	99-09-2	C	7					1.80E+00	9.30E+00																	
SVOC	4-Nitroaniline	100-01-6	C	7					1.80E+00	9.30E+00																	
SVOC	Nitrobenzene	98-95-3	D	7					3.60E-01	1.80E+00		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		7					3.60E-01	1.80E+00								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		7					1.80E+00	9.30E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	7					3.60E-01	1.80E+00								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	7					3.60E-01	1.80E+00						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	7					3.60E-01	1.80E+00																	
SVOC	Pentachlorophenol	87-86-5	B2	7					3.70E+00	1.90E+01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	7	6	9.00E-02	4.42E-01	7.60E-01	1.80E+00	1.80E+00		5.10E+03	1E-04	1.90E+02	4E-03	2.90E+03	3E-04	8.00E+03	1E-04	2.80E+03	3E-04	1.60E+02	5E-03	6.70E+03	1E-04	1.60E+03	5E-04
SVOC	Phenol	108-95-2	D	7					3.60E-01	1.80E+00						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	7	7	2.20E-01	8.16E-01	1.50E+00				1.00E+06	2E-06	7.80E+05	2E-06	2.90E+06	5E-07	1.10E+05	1E-05	1.00E+06	2E-06	6.50E+05	2E-06	6.70E+06	2E-07	2.90E+04	5E-05
SVOC	2,4,5-Trichlorophenol	95-95-4		7					3.60E-01	1.80E+00						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	7					3.60E-01	1.80E+00						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	7	7	1.34E-01	7.49E-01	1.86E+00				1.60E+04	1E-04	8.10E+02	2E-03	6.50E+03	3E-04	2.00E+01	9E-02	3.00E+03	6E-04	2.40E+02	8E-03	5.20E+03	4E-04	4.00E+00	5E-01
INORG	Antimony	7440-36-0		7	6	1.33E+00	4.19E+00	1.02E+01	2.21E+00	2.21E+00						5.90E+03	2E-03	1.20E+03	8E-03					1.30E+04	8E-04	1.80E+02	6E-02
INORG	Arsenic	7440-38-2	A	7	7	2.04E+00	2.67E+01	5.56E+01			1.32E+01					9.10E+02	5E-02	6.10E+01	7E-01					7.20E+02	6E-02	7.60E+00	**6E+00**
INORG	Barium	7440-39-3	D	7	7	5.32E+01	2.09E+02	3.92E+02			1.10E+02					1.50E+05	2E-03	2.50E+05	1E-03					3.30E+05	9E-04	3.70E+04	8E-03
INORG	Beryllium	7440-41-7	B1	7	5	6.49E-02	9.80E-01	3.65E+00	1.08E-01	1.10E-01	1.53E+00					5.90E+02	4E-03	3.10E+03	7E-04					1.30E+03	2E-03	4.10E+02	5E-03
INORG	Cadmium	7440-43-9	B1	7	7	2.32E-01	1.87E+00	4.25E+00			1.20E+00					2.20E+03	1E-03	4.10E+03	7E-04					1.70E+03	2E-03	5.50E+02	6E-03
INORG	Chromium (total)	7440-47-3		7	7	1.46E+01	1.86E+02	5.15E+02			4.92E+01					2.40E+02	**2E+00**	1.70E+04	3E-02					2.60E+02	**2E+00**	2.50E+03	2E-01
INORG	Chromium III	16065-83-1	D	4	4	7.22E+00	1.98E+02	6.67E+02								1.50E+05	4E-03	1.00E+06	7E-04					3.30E+05	2E-03	7.90E+05	8E-04
INORG	Chromium VI	18540-29-9	A	4	4	3.96E-01	1.02E+00	1.96E+00								2.40E+02	8E-03	1.70E+04	1E-04					2.60E+02	8E-03	2.50E+03	8E-04
INORG	Cobalt	7440-48-4		7	7	1.26E+00	4.58E+00	8.73E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	7	7	2.14E+01	9.68E+01	1.67E+02			3.20E+01					5.90E+04	2E-03	1.40E+05	1E-03					1.30E+05	1E-03	2.00E+04	7E-03
INORG	Lead	7439-92-1	B2	7	7	4.23E+01	2.20E+02	6.06E+02			4.92E+01					4.40E+04	1E-02	9.00E+02	6E-01					1.00E+05	6E-03	4.00E+02	**1E+00**
INORG	Manganese	7439-96-5	D	11	10	1.77E+02	3.13E+03	1.26E+04	7.85E-02	7.85E-02	5.10E+02					1.50E+03	**8E+00**	1.70E+05	7E-02					3.30E+03	**4E+00**	2.50E+04	5E-01

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-19 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Mercury	7439-97-6	D	7	7	2.05E-02	8.92E-01	5.39E+00			1.30E-01							1.10E+03	5E-03							1.60E+02	3E-02
INORG	Nickel	7440-02-0	A	7	7	7.99E+00	4.40E+01	9.05E+01			3.01E+01					1.60E+04	4E-03	2.70E+05	2E-04					1.30E+04	5E-03	4.00E+04	2E-03
INORG	Selenium	7782-49-2	D	7	3	5.43E-01	9.24E-01	1.14E+00	1.10E+00	5.50E+00	4.10E-01					5.90E+04	1E-05	1.80E+04	4E-05					1.30E+05	6E-06	2.60E+03	3E-04
INORG	Silver	7440-22-4	D	7	1	3.80E-01	3.80E-01	3.80E-01	5.31E-01	5.40E+00						2.90E+03	1E-04	1.70E+04	2E-05					6.70E+03	6E-05	2.50E+03	2E-04
INORG	Thallium	7440-28-0		7	4	1.02E+00	2.30E+00	3.44E+00	1.06E+00	1.10E+01								2.40E+02	1E-02							3.50E+01	1E-01
INORG	Vanadium	7440-62-2		7	7	4.48E+00	4.48E+01	1.71E+02			3.28E+01							1.00E+04	1E-02							7.50E+02	2E-01
INORG	Zinc	7440-66-6	D	7	7	4.13E+01	3.44E+02	1.14E+03			4.70E+01							1.00E+06	1E-03							1.70E+05	6E-03

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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TABLE 4-52

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-21 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Acenaphthene	83-32-9		4					5.50E-02	5.90E-02		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	4					5.00E-02	5.40E-02		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	4					5.40E-02	5.80E-02		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	4					5.30E-02	5.70E-02		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		4					1.60E-01	1.70E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		4					1.80E-01	2.00E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	4	1	1.10E-01	1.10E-01	1.10E-01	5.90E-02	6.40E-02								1.00E+02	1E-03							2.00E+01	6E-03
SVOC	Benzo(a)pyrene	50-32-8	B2	4	1	1.20E-01	1.20E-01	1.20E-01	6.40E-02	6.90E-02						1.90E+03	6E-05	1.00E+01	1E-02					1.50E+03	8E-05	2.00E+00	6E-02
SVOC	Benzo(b)fluoranthene	205-99-2	B2	4	1	3.15E-01	3.15E-01	3.15E-01	6.20E-02	6.70E-02								1.00E+02	3E-03							2.00E+01	2E-02
SVOC	Benzo(g,h,i)perylene	191-24-2	D	4	1	1.35E-01	1.35E-01	1.35E-01	5.90E-02	6.40E-02						2.80E+05	4E-07	9.10E+03	1E-05					8.00E+05	2E-07	2.50E+03	5E-05
SVOC	Benzo(k)fluoranthene	207-08-9	B2	4	1	1.45E-01	1.45E-01	1.45E-01	5.70E-02	6.10E-02								1.00E+03	1E-04							2.00E+02	7E-04
SVOC	Biphenyl	92-52-4		4					1.50E-01	1.60E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	4					5.00E-02	5.40E-02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	4					5.50E-02	5.90E-02		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	4	3	3.10E-01	6.40E-01	1.17E+00	5.80E-02	5.80E-02						8.90E+05	1E-06	1.00E+04	1E-04					7.00E+05	2E-06	2.80E+03	4E-04
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	4					6.50E-02	7.00E-02																	
SVOC	Butylbenzylphthalate	85-68-7	C	4	1	1.35E+00	1.35E+00	1.35E+00	5.50E-02	5.90E-02						2.10E+07	6E-08	3.10E+02	4E-03					4.70E+07	3E-08	3.10E+02	4E-03
SVOC	Caprolactam	105-60-2		4					1.90E-01	2.10E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	4					5.60E-02	6.00E-02								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		4					5.50E-02	5.90E-02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		4					5.50E-02	5.90E-02																	
SVOC	2-Chloronaphthalene	91-58-7		4					5.10E-02	5.50E-02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		4					5.60E-02	6.00E-02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		4					5.60E-02	6.00E-02																	
SVOC	Chrysene	218-01-9	B2	4	2	5.90E-02	1.70E-01	2.80E-01	4.90E-02	5.30E-02								1.00E+04	3E-05							2.00E+03	1E-04
SVOC	Di-n-butylphthalate	84-74-2	D	4					1.60E-01	1.70E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		4	1	3.60E-01	3.60E-01	3.60E-01	5.80E-02	6.15E-02								2.80E+04	1E-05							6.90E+03	5E-05
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	4					5.50E-02	5.90E-02								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	4					5.40E-02	5.80E-02																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	4					4.20E-02	4.50E-02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		4					5.40E-02	5.80E-02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	4					1.60E-01	1.70E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		4					8.60E-02	9.20E-02						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	4					1.70E-01	1.80E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		4					1.70E-01	1.80E-01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		4					1.20E-01	1.30E-01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	4					4.90E-02	5.30E-02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	4					5.10E-02	5.50E-02																	
SVOC	Fluoranthene	206-44-0	D	4	2	7.10E-02	1.53E-01	2.35E-01	6.00E-02	6.50E-02		1.00E+06	2E-07	8.90E+05	3E-07	4.10E+06	6E-08	1.80E+05	1E-06	1.00E+06	2E-07	7.40E+05	3E-07	9.30E+06	3E-08	4.60E+04	5E-06
SVOC	Fluorene	86-73-7	D	4					5.10E-02	5.50E-02		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	4					6.00E-02	6.50E-02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	4					4.80E-02	5.20E-02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	4					6.40E-02	6.90E-02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	4					5.10E-02	5.50E-02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	4	1	1.20E-01	1.20E-01	1.20E-01	7.50E-02	8.10E-02								1.00E+02	1E-03							2.00E+01	6E-03
SVOC	Isophorone	78-59-1	C	4					4.70E-02	5.10E-02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		4	1	4.73E-02	4.73E-02	4.73E-02	5.10E-02	5.50E-02								4.00E+04	1E-06							8.10E+03	6E-06
SVOC	Methylphenol (summed)	1319-77-3		4					5.00E-02	5.40E-02						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	4					5.30E-02	5.70E-02		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		4					4.90E-02	5.30E-02																	
SVOC	3-Nitroaniline	99-09-2	C	4					1.50E-01	1.60E-01																	
SVOC	4-Nitroaniline	100-01-6	C	4					7.30E-02	7.90E-02																	
SVOC	Nitrobenzene	98-95-3	D	4					4.90E-02	5.30E-02		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		4					4.90E-02	5.30E-02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		4					2.00E-01	2.20E-01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	4					5.30E-02	5.70E-02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	4					4.70E-02	5.10E-02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	4					5.60E-02	6.00E-02																	
SVOC	Pentachlorophenol	87-86-5	B2	4					1.30E-01	1.40E-01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	4	2	5.80E-02	9.40E-02	1.30E-01	5.60E-02	6.00E-02		5.10E+03	3E-05	1.90E+02	7E-04	2.90E+03	4E-05	8.00E+03	2E-05	2.80E+03	5E-05	1.60E+02	8E-04	6.70E+03	2E-05	1.60E+03	8E-05

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TABLE 4-52

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-21 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Phenol	108-95-2	D	4	1	6.90E-02	6.90E-02	6.90E-02	5.30E-02	5.70E-02						1.80E+07	4E-09	1.20E+04	6E-06					4.00E+07	2E-09	1.20E+04	6E-06
SVOC	Pyrene	129-00-0	D	4	2	8.80E-02	1.79E-01	2.70E-01	5.50E-02	5.90E-02		1.00E+06	3E-07	7.80E+05	3E-07	2.90E+06	9E-08	1.10E+05	2E-06	1.00E+06	3E-07	6.50E+05	4E-07	6.70E+06	4E-08	2.90E+04	9E-06
SVOC	2,4,5-Trichlorophenol	95-95-4		4					5.90E-02	6.40E-02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	4					6.80E-02	7.30E-02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	4	2	7.44E-01	1.04E+00	1.34E+00	2.10E-02	2.20E-02		1.60E+04	8E-05	8.10E+02	2E-03	6.50E+03	2E-04	2.00E+01	7E-02	3.00E+03	4E-04	2.40E+02	6E-03	5.20E+03	3E-04	4.00E+00	3E-01

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.

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TABLE 4-53

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-23 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Acenaphthene	83-32-9		4					5.80E-02	3.70E-01		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	4					5.40E-02	3.70E-01		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	4					5.70E-02	3.70E-01		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	4					5.60E-02	3.70E-01		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		4					1.70E-01	3.70E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		4					1.90E-01	3.70E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	4					6.30E-02	3.70E-01								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	4					6.90E-02	3.70E-01						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	4	1	9.50E-02	9.50E-02	9.50E-02	6.60E-02	7.00E-02								1.00E+02	1E-03							2.00E+01	5E-03
SVOC	Benzo(g,h,i)perylene	191-24-2	D	4					6.30E-02	3.70E-01						3.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	4					6.10E-02	3.70E-01								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		4					1.60E-01	3.70E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	4					5.40E-02	3.70E-01																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	4					5.80E-02	3.70E-01		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	4					6.20E-02	3.70E-01						8.90E+05		1.00E+04						7.00E+05		2.80E+03	
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	4					7.00E-02	3.70E-01																	
SVOC	Butylbenzylphthalate	85-68-7	C	4	1	8.90E-02	8.90E-02	8.90E-02	5.80E-02	6.10E-02						2.10E+07	4E-09	3.10E+02	3E-04					4.70E+07	2E-09	3.10E+02	3E-04
SVOC	Caprolactam	105-60-2		4					2.10E-01	3.70E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	4					6.00E-02	3.70E-01								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		4					5.80E-02	3.70E-01								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		4					5.80E-02	1.50E+00																	
SVOC	2-Chloronaphthalene	91-58-7		4					5.50E-02	3.70E-01								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		4					6.00E-02	3.70E-01								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		4					6.00E-02	3.70E-01																	
SVOC	Chrysene	218-01-9	B2	4	1	6.90E-02	6.90E-02	6.90E-02	5.30E-02	5.50E-02								1.00E+04	7E-06							2.00E+03	3E-05
SVOC	Di-n-butylphthalate	84-74-2	D	4					1.70E-01	3.70E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		4					6.20E-02	3.70E-01								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	4					5.80E-02	3.70E-01								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	4					5.70E-02	3.70E-01																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	4					4.50E-02	2.30E+00						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		4					5.70E-02	3.70E-01						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	4					1.70E-01	3.70E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		4					9.20E-02	3.70E-01						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	4					1.80E-01	3.70E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		4					1.80E-01	1.90E+00								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		4					1.30E-01	1.90E+00																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	4					5.30E-02	3.70E-01						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	4					5.50E-02	3.70E-01																	
SVOC	Fluoranthene	206-44-0	D	4	1	7.30E-02	7.30E-02	7.30E-02	6.40E-02	6.70E-02		1.00E+06	7E-08	8.90E+05	8E-08	4.10E+06	2E-08	1.80E+05	4E-07	1.00E+06	7E-08	7.40E+05	1E-07	9.30E+06	8E-09	4.60E+04	2E-06
SVOC	Fluorene	86-73-7	D	4					5.50E-02	3.70E-01		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	4					6.40E-02	3.70E-01		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	4					5.10E-02	3.70E-01		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	4					6.90E-02	3.70E-01								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	4					5.50E-02	1.10E-01		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	4					8.00E-02	3.70E-01								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	4					5.00E-02	3.70E-01						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		4					5.50E-02	3.70E-01								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		4					5.40E-02	3.70E-01						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	4					5.60E-02	3.70E-01		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		4					5.30E-02	1.90E+00																	
SVOC	3-Nitroaniline	99-09-2	C	4					1.60E-01	1.90E+00																	
SVOC	4-Nitroaniline	100-01-6	C	4					7.80E-02	1.90E+00																	
SVOC	Nitrobenzene	98-95-3	D	4					5.30E-02	3.70E-01		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		4					5.30E-02	3.70E-01								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		4					2.20E-01	1.90E+00																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	4					5.60E-02	3.70E-01								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	4					5.00E-02	3.70E-01						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	4					6.00E-02	3.70E-01																	
SVOC	Pentachlorophenol	87-86-5	B2	4					1.40E-01	3.90E+00						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	4					6.00E-02	3.70E-01		5.10E+03		1.90E+02		2.90E+03		8.00E+03		2.80E+03		1.60E+02		6.70E+03		1.60E+03	

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TABLE 4-53

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-23 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Phenol	108-95-2	D	4					5.60E-02	3.70E-01						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	4	1	6.80E-02	6.80E-02	6.80E-02	5.80E-02	6.10E-02		1.00E+06	7E-08	7.80E+05	9E-08	2.90E+06	2E-08	1.10E+05	6E-07	1.00E+06	7E-08	6.50E+05	1E-07	6.70E+06	1E-08	2.90E+04	2E-06
SVOC	2,4,5-Trichlorophenol	95-95-4		4					6.30E-02	3.70E-01						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	4					7.20E-02	3.70E-01						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	4	1	6.60E-02	6.60E-02	6.60E-02	2.30E-02	2.40E-02		1.60E+04	4E-06	8.10E+02	8E-05	6.50E+03	1E-05	2.00E+01	3E-03	3.00E+03	2E-05	2.40E+02	3E-04	5.20E+03	1E-05	4.00E+00	2E-02

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.

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TABLE 4-54

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-24 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Acenaphthene	83-32-9		2					5.80E-02	5.90E-02		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	2					5.35E-02	5.40E-02		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	2					5.65E-02	5.80E-02		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	2					5.55E-02	5.60E-02		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		2					1.70E-01	1.70E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		2					1.95E-01	2.00E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	2					6.20E-02	6.30E-02								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	2					6.80E-02	6.90E-02						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	2					6.60E-02	6.70E-02								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	2					6.20E-02	6.30E-02						3.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	2					6.00E-02	6.10E-02								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		2					1.55E-01	1.60E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	2					5.35E-02	5.40E-02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	2					5.80E-02	5.90E-02		4.40E+01		1.30E+01		1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	2					6.10E-02	6.20E-02						8.90E+05		1.00E+04						7.00E+05		2.80E+03	
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	2					6.90E-02	7.00E-02																	
SVOC	Butylbenzylphthalate	85-68-7	C	2					5.80E-02	5.90E-02						2.10E+07		3.10E+02						4.70E+07		3.10E+02	
SVOC	Caprolactam	105-60-2		2					2.05E-01	2.10E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	2					5.90E-02	6.00E-02								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		2					5.80E-02	5.90E-02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		2					5.80E-02	5.90E-02																	
SVOC	2-Chloronaphthalene	91-58-7		2					5.45E-02	5.50E-02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		2					5.90E-02	6.00E-02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		2					5.90E-02	6.00E-02																	
SVOC	Chrysene	218-01-9	B2	2					5.25E-02	5.30E-02								1.00E+04								2.00E+03	
SVOC	Di-n-butylphthalate	84-74-2	D	2					1.70E-01	1.70E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		2					6.10E-02	6.20E-02								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	2					5.80E-02	5.90E-02								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	2					5.65E-02	5.80E-02																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	2					4.45E-02	4.50E-02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		2					5.65E-02	5.80E-02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	2					1.70E-01	1.70E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		2					9.05E-02	9.20E-02						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	2					1.80E-01	1.85E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		2					1.80E-01	1.85E-01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		2					1.25E-01	1.30E-01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	2					5.25E-02	5.30E-02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	2					5.45E-02	5.50E-02																	
SVOC	Fluoranthene	206-44-0	D	2					6.35E-02	6.50E-02		1.00E+06		8.90E+05		4.10E+06		1.80E+05		1.00E+06		7.40E+05		9.30E+06		4.60E+04	
SVOC	Fluorene	86-73-7	D	2					5.45E-02	5.50E-02		1.00E+06		1.50E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	2					6.35E-02	6.50E-02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	2					5.10E-02	5.20E-02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	2					6.80E-02	6.90E-02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	2					5.45E-02	5.50E-02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	2					7.95E-02	8.10E-02								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	2					4.95E-02	5.10E-02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		2					5.45E-02	5.50E-02								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		2					5.35E-02	5.40E-02						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	2					5.55E-02	5.60E-02		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		2					5.25E-02	5.30E-02																	
SVOC	3-Nitroaniline	99-09-2	C	2					1.55E-01	1.60E-01																	
SVOC	4-Nitroaniline	100-01-6	C	2					7.70E-02	7.80E-02																	
SVOC	Nitrobenzene	98-95-3	D	2					5.25E-02	5.30E-02		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		2					5.25E-02	5.30E-02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		2					2.15E-01	2.20E-01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	2					5.55E-02	5.60E-02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	2					4.95E-02	5.10E-02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	2					5.90E-02	6.00E-02																	
SVOC	Pentachlorophenol	87-86-5	B2	2					1.35E-01	1.40E-01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	2					5.90E-02	6.00E-02		5.10E+03		1.90E+02		2.90E+03		8.00E+03		2.80E+03		1.60E+02		6.70E+03		1.60E+03	

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TABLE 4-54

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-24 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	Phenol	108-95-2	D	2					5.55E-02	5.60E-02						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	2					5.80E-02	5.90E-02		1.00E+06		7.80E+05		2.90E+06		1.10E+05		1.00E+06		6.50E+05		6.70E+06		2.90E+04	
SVOC	2,4,5-Trichlorophenol	95-95-4		2					6.20E-02	6.30E-02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	2					7.15E-02	7.30E-02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	2					2.25E-02	2.30E-02		1.60E+04		8.10E+02		6.50E+03		2.00E+01		3.00E+03		2.40E+02		5.20E+03		4.00E+00	

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.

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TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-25 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
VOC	Acetone	67-64-1	D	3	1	1.80E-02	1.80E-02	1.80E-02	2.00E-03	2.00E-03		1.10E+05	2E-07	1.60E+05	1E-07	1.70E+08	1E-10	1.10E+05	2E-07	1.10E+05	2E-07	1.30E+05	1E-07	3.90E+08	5E-11	2.30E+04	8E-07
VOC	Benzene	71-43-2	A	3					6.20E-04	6.30E-04		8.40E+00		4.50E+01		4.70E+05		4.00E+02		1.60E+00		1.30E+01		3.80E+05		1.80E+02	
VOC	Bromodichloromethane	75-27-4	B2	3					1.10E-03	1.20E-03		6.40E+00		3.10E+01		1.10E+05		7.50E+02		1.20E+00		9.10E+00		8.40E+04		1.10E+02	
VOC	Bromoform	75-25-2	B2	3					1.50E-03	1.60E-03		7.70E+02		3.10E+03		3.60E+06		8.70E+02		1.50E+02		9.00E+02		2.80E+06		8.20E+02	
VOC	Bromomethane	74-83-9	D	3					1.70E-03	1.70E-03		1.60E+00		1.30E+01		1.50E+05		1.60E+03		8.60E-01		1.10E+01		3.30E+05		3.20E+02	
VOC	2-Butanone	78-93-3	D	3					2.60E-03	2.60E-03		2.70E+04		3.50E+04		2.90E+07		2.70E+04		2.70E+04		2.90E+04		6.70E+07		2.70E+04	
VOC	Carbon Disulfide	75-15-0		3					7.40E-04	7.60E-04		1.40E+02		1.60E+03		2.10E+07		2.80E+02		7.60E+01		1.30E+03		4.70E+07		2.80E+02	
VOC	Carbon Tetrachloride	56-23-5	B2	3					9.50E-04	9.70E-04		9.90E-01		1.20E+01		1.70E+05		3.90E+02		1.90E-01		3.50E+00		1.30E+05		9.60E+01	
VOC	Chlorobenzene	108-90-7	D	3					5.00E-04	5.10E-04		2.20E+02		9.20E+02		2.10E+06		2.60E+02		1.20E+02		7.70E+02		4.70E+06		2.60E+02	
VOC	Chloroethane	75-00-3		3					2.10E-03	2.10E-03		9.50E+02		3.60E+04		2.90E+08		9.50E+02		9.50E+02		3.00E+04		6.70E+08		9.50E+02	
VOC	Chloroform	67-66-3	B2	3					7.80E-04	8.00E-04		3.80E+01		1.50E+02		2.60E+06		1.50E+03		7.20E+00		4.50E+01		1.30E+06		1.20E+03	
VOC	Chloromethane	74-87-3	D	3					1.20E-03	1.30E-03		1.20E+01		1.40E+02		6.10E+06		1.10E+03		2.30E+00		4.00E+01		4.90E+06		1.10E+03	
VOC	Cumene	98-82-8	D	3					6.70E-04	6.80E-04		3.90E+02		2.00E+03		2.60E+06		3.90E+02		3.90E+02		1.70E+03		5.80E+06		3.90E+02	
VOC	Cyclohexane	110-82-7		3					9.50E-04	9.70E-04																	
VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2	3					1.50E-03	1.60E-03		1.20E+00		1.50E+01		5.90E+03		1.20E+00		1.20E+00		1.30E+01		1.30E+04		1.20E+00	
VOC	Dibromochloromethane	124-48-1	C	3					1.00E-03	1.10E-03		2.10E+01		8.00E+01		1.60E+05		6.10E+02		3.90E+00		2.40E+01		1.30E+05		1.10E+02	
VOC	1,2-Dibromoethane	106-93-4	B2	3					1.10E-03	1.20E-03		3.60E+00		5.80E+00		1.80E+04		6.60E-01		6.70E-01		1.70E+00		1.40E+04		9.20E-02	
VOC	1,2-Dichlorobenzene	95-50-1	D	3					6.80E-04	6.90E-04		2.10E+02		4.60E+04		4.40E+07		2.10E+02		2.10E+02		3.90E+04		1.00E+08		2.10E+02	
VOC	1,3-Dichlorobenzene	541-73-1	D	3					7.60E-04	7.80E-04								1.70E+02								1.70E+02	
VOC	1,4-Dichlorobenzene	106-46-7	C	3					6.40E-04	6.50E-04		1.00E+02		2.60E+02		5.70E+05		2.90E+03		1.90E+01		7.70E+01		4.50E+05		4.00E+02	
VOC	Dichlorodifluoromethane	75-71-8		3					1.00E-03	1.10E-03		1.00E+03		6.30E+04		1.50E+09		1.00E+03		9.00E+02		5.30E+04		3.30E+09		1.00E+03	
VOC	1,1-Dichloroethane	75-34-3	C	3					5.50E-04	5.60E-04		4.30E+02		2.50E+03		1.50E+07		8.90E+02		2.30E+02		2.10E+03		3.30E+07		8.90E+02	
VOC	1,2-Dichloroethane	107-06-2	B2	3					7.00E-04	7.10E-04		1.10E+01		2.10E+01		1.50E+05		6.40E+02		2.10E+00		6.20E+00		1.20E+05		9.10E+01	
VOC	1,1-Dichloroethene	75-35-4	C	3					1.10E-03	1.20E-03		3.30E-01		3.70E+00		7.80E+04		5.70E+02		6.20E-02		1.10E+00		6.20E+04		2.00E+02	
VOC	cis-1,2-Dichloroethene	156-59-2	D	3					8.00E-04	8.20E-04		4.20E+01		2.10E+02		1.00E+06		6.40E+02		2.30E+01		1.80E+02		2.30E+06		6.40E+02	
VOC	trans-1,2-Dichloroethene	156-60-5		3					7.00E-04	7.10E-04		4.30E+01		5.30E+02		2.10E+06		1.40E+03		2.30E+01		2.80E+02		4.70E+06		1.40E+03	
VOC	1,2-Dichloropropane	78-87-5	B2	3					7.10E-04	7.30E-04		7.40E+00		3.00E+01		1.20E+05		5.50E+02		4.00E+00		2.50E+01		2.70E+05		1.40E+02	
VOC	1,3-Dichloropropene (summed)	542-75-6	B2	3					8.20E-04	8.40E-04		1.00E-02		3.10E-02		5.00E+02		6.20E+02		1.00E-02		1.00E-02		4.00E+02		1.30E+02	
VOC	Ethyl Benzene	100-41-4	D	3					5.60E-04	5.70E-04		1.40E+02		1.10E+04		2.90E+07		1.40E+02		1.40E+02		9.50E+03		6.70E+07		1.40E+02	
VOC	2-Hexanone	591-78-6		3					1.60E-03	1.70E-03		1.80E+03		1.30E+03		1.20E+06		2.50E+03		9.90E+02		1.10E+03		2.70E+06		2.50E+03	
VOC	Methyl Acetate	79-20-9		3					1.00E-03	1.10E-03																	
VOC	Methyl tert-butyl ether	1634-04-4		3					8.00E-04	8.20E-04		5.90E+03		3.00E+04		8.80E+07		5.90E+03		5.90E+03		2.50E+04		2.00E+08		1.80E+03	
VOC	4-Methyl-2-pentanone	108-10-1		3	1	2.00E-03	2.00E-03	2.00E-03	1.80E-03	1.80E-03		2.70E+03	7E-07	5.30E+04	4E-08	6.00E+07	3E-11	2.70E+03	7E-07	2.70E+03	7E-07	4.50E+04	4E-08	1.40E+08	1E-11	2.70E+03	7E-07
VOC	Methylcyclohexane	108-87-2		3					5.60E-04	5.70E-04																	
VOC	Methylene Chloride	75-09-2	B2	3					1.20E-03	1.30E-03		2.40E+02		7.00E+02		8.30E+06		2.30E+03		4.50E+01		2.10E+02		6.60E+06		1.30E+03	
VOC	Styrene	100-42-5		3					4.80E-04	4.90E-04		5.20E+02		3.30E+03		6.90E+06		5.20E+02		2.50E+02		9.70E+02		5.50E+06		4.00E+02	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	C	3					1.70E-03	1.70E-03		2.30E+01		3.40E+01		6.80E+04		3.70E+02		4.30E+00		1.00E+01		5.40E+04		5.30E+01	
VOC	Tetrachloroethene	127-18-4	C-B2	3					1.10E-03	1.20E-03		6.00E+01		6.00E+02		6.80E+06		8.80E+01		1.10E+01		1.80E+02		5.40E+06		8.80E+01	
VOC	Toluene	108-88-3	D	3					5.10E-04	5.20E-04		2.50E+02		3.30E+03		1.20E+07		2.50E+02		2.50E+02		2.80E+03		2.70E+07		2.50E+02	
VOC	1,2,4-Trichlorobenzene	120-82-1	D	3					8.50E-04	8.60E-04		1.10E+03		3.40E+04		1.10E+07		1.10E+03		1.10E+03		2.80E+04		2.50E+07		9.90E+02	
VOC	1,1,1-Trichloroethane	71-55-6	D	3					8.80E-04	8.90E-04		4.60E+02		4.50E+03		2.90E+07		4.60E+02		2.50E+02		3.80E+03		6.70E+07		4.60E+02	
VOC	1,1,2-Trichloroethane	79-00-5	C	3					1.10E-03	1.20E-03		2.40E+01		5.70E+01		2.50E+05		9.20E+02		4.60E+00		1.70E+01		1.90E+05		1.80E+02	
VOC	Trichloroethene	79-01-6	C-B2	3					7.20E-04	7.40E-04		3.70E+01		2.60E+02		2.30E+06		5.00E+02		7.10E+00		7.80E+01		1.80E+06		5.00E+02	
VOC	Trichlorofluoromethane	75-69-4		3					1.00E-03	1.10E-03		5.60E+02		1.10E+05		1.70E+09		5.60E+02		5.60E+02		9.20E+04		3.80E+09		5.60E+02	
VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		3					8.90E-04	9.00E-04		5.50E+02		2.10E+05		2.30E+09		5.50E+02		5.50E+02		1.80E+05		5.10E+09		5.50E+02	
VOC	Vinyl Chloride	75-01-4	A	3					1.30E-03	1.40E-03		1.50E-01		1.50E+00		4.70E+04		2.90E+01		2.80E-02		4.40E-01		3.70E+04		4.00E+00	
VOC	Xylenes (total)	1330-20-7	D	3					1.80E-03	1.80E-03		1.50E+02		5.40E+04		1.30E+08		1.50E+02		1.50E+02		4.60E+04		2.90E+08		1.50E+02	
SVOC	Acenaphthene	83-32-9		3					5.50E-02	6.00E-02		3.50E+05		9.70E+04		6.20E+06		2.00E+05		1.90E+05		8.10E+04		1.40E+07		4.10E+04	
SVOC	Acenaphthylene	208-96-8	D	3					5.10E-02	5.50E-02		3.00E+03		2.70E+03		1.00E+06		8.00E+03		1.60E+03		2.20E+03		2.30E+06		1.60E+03	
SVOC	Acetophenone	98-86-2	D	3					5.40E-02	5.90E-02		1.10E+03		5.20E+04		1.40E+07		1.10E+03		1.10E+03		4.40E+04		3.30E+07		1.10E+03	
SVOC	Anthracene	120-12-7	D	3					5.30E-02	5.80E-02		1.00E+06		1.60E+06		2.90E+07		1.00E+06		1.00E+06		1.40E+06		6.70E+07		2.30E+05	
SVOC	Atrazine	1912-24-9		3					1.60E-01	1.80E-01								5.00E+02								7.10E+01	
SVOC	Benzaldehyde	100-52-7		3					1.80E-01	2.00E-01																	
SVOC	Benzo(a)anthracene	56-55-3	B2	3					5.90E-02	6.50E-02								1.00E+02								2.00E+01	
SVOC	Benzo(a)pyrene	50-32-8	B2	3					6.50E-02	7.10E-02						1.90E+03		1.00E+01						1.50E+03		2.00E+00	
SVOC	Benzo(b)fluoranthene	205-99-2	B2	3					6.30E-02	6.80E-02								1.00E+02								2.00E+01	
SVOC	Benzo(g,h,i)perylene	191-24-2	D	3					5.90E-02	6.50E-02						3.50E+05		9.10E+03						8.00E+05		2.50E+03	
SVOC	Benzo(k)fluoranthene	207-08-9	B2	3					5.70E-02	6.20E-02								1.00E+03								2.00E+02	
SVOC	Biphenyl	92-52-4		3					1.50E-01	1.60E-01																	
SVOC	bis(2-Chloroethoxy)methane	111-91-1	D	3					5.10E-02	5.50E-02																	
SVOC	bis(2-Chloroethyl) ether	111-44-4	B2	3					5.50E-02	6.00E-02		4.40E+01				1.20E+04		8.90E+01		8.30E+00		3.80E+00		9.40E+03		1.30E+01	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	3					5.80E-02	6.40E-02						8.90E+05		1.00E+04						7.00E+05		2.80E+03	

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TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-25 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
SVOC	4-Bromophenyl-phenyl ether	101-55-3	D	3					6.60E-02	7.20E-02																	
SVOC	Butylbenzylphthalate	85-68-7	C	3	1	3.20E+00	3.20E+00	3.20E+00	5.80E-02	6.00E-02						2.10E+07	2E-07	3.10E+02	1E-02					4.70E+07	7E-08	3.10E+02	1E-02
SVOC	Caprolactam	105-60-2		3					1.90E-01	2.10E-01						2.90E+05		4.50E+05						6.70E+05		5.30E+04	
SVOC	Carbazole	86-74-8	B2	3					5.60E-02	6.10E-02								3.70E+03								5.30E+02	
SVOC	4-Chloro-3-methylphenol	59-50-7		3					5.50E-02	6.00E-02								2.20E+04								4.50E+03	
SVOC	4-Chloroaniline	106-47-8		3					5.50E-02	6.00E-02																	
SVOC	2-Chloronaphthalene	91-58-7		3					5.20E-02	5.60E-02								2.80E+05								5.60E+04	
SVOC	2-Chlorophenol	95-57-8		3					5.60E-02	6.10E-02								6.90E+03								1.40E+03	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3		3					5.60E-02	6.10E-02																	
SVOC	Chrysene	218-01-9	B2	3					5.00E-02	5.40E-02								1.00E+04								2.00E+03	
SVOC	Di-n-butylphthalate	84-74-2	D	3					1.60E-01	1.80E-01						1.50E+06		7.60E+02						3.30E+06		7.60E+02	
SVOC	Di-n-octylphthalate	117-84-0		3					5.80E-02	6.40E-02								2.80E+04								6.90E+03	
SVOC	Dibenz(a,h)anthracene	53-70-3	B2	3					5.50E-02	6.00E-02								1.00E+01								2.00E+00	
SVOC	Dibenzofuran	132-64-9	D	3					5.40E-02	5.90E-02																	
SVOC	3,3'-Dichlorobenzidine	91-94-1	B2	3					4.20E-02	4.60E-02						8.20E+03		4.70E+01						6.50E+03		6.60E+00	
SVOC	2,4-Dichlorophenol	120-83-2		3					5.40E-02	5.90E-02						2.30E+06		1.80E+03						5.10E+06		6.60E+02	
SVOC	Diethylphthalate	84-66-2	D	3					1.60E-01	1.80E-01						1.50E+06		7.40E+02						3.30E+06		7.40E+02	
SVOC	2,4-Dimethylphenol	105-67-9		3					8.60E-02	9.40E-02						2.10E+06		5.60E+04						4.70E+06		1.10E+04	
SVOC	Dimethylphthalate	131-11-3	D	3					1.70E-01	1.90E-01						1.50E+06		7.90E+02						3.30E+06		7.90E+02	
SVOC	4,6-Dinitro-2-methylphenol	534-52-1		3					1.70E-01	1.90E-01								3.90E+02								7.90E+01	
SVOC	2,4-Dinitrophenol	51-28-5		3					1.20E-01	1.30E-01																	
SVOC	2,4-Dinitrotoluene	121-14-2	B2	3					5.00E-02	5.40E-02						2.00E+04		3.40E+02						1.60E+04		4.80E+01	
SVOC	2,6-Dinitrotoluene	606-20-2	B2	3					5.20E-02	5.60E-02																	
SVOC	Fluoranthene	206-44-0	D	3					6.00E-02	6.60E-02		1.00E+06		8.30E+05		4.10E+06		1.80E+05		1.00E+06		7.40E+05		9.30E+06		4.60E+04	
SVOC	Fluorene	86-73-7	D	3					5.20E-02	5.60E-02		1.00E+06		1.30E+05		4.10E+06		1.30E+05		5.80E+05		1.30E+05		9.30E+06		2.70E+04	
SVOC	Hexachlorobenzene	118-74-1	B2	3					6.00E-02	6.60E-02		2.20E+02		5.60E+01		8.50E+03		5.10E+01		4.10E+01		1.70E+01		6.80E+03		8.90E+00	
SVOC	Hexachlorobutadiene	87-68-3	C	3					4.90E-02	5.30E-02		3.50E+02		4.60E+02		1.80E+05		3.50E+02		1.30E+02		1.30E+02		1.40E+05		1.00E+02	
SVOC	Hexachlorocyclopentadiene	77-47-4	E	3					6.50E-02	7.10E-02								7.20E+02								7.20E+02	
SVOC	Hexachloroethane	67-72-1	C	3					5.20E-02	5.60E-02		7.90E+01		6.60E+02		1.00E+05		1.10E+03		4.00E+01		5.50E+02		2.30E+05		2.30E+02	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2	3					7.60E-02	8.20E-02								1.00E+02								2.00E+01	
SVOC	Isophorone	78-59-1	C	3					4.80E-02	5.20E-02						8.20E+06		2.40E+03						1.20E+07		2.40E+03	
SVOC	2-Methylnaphthalene	91-57-6		3					5.20E-02	5.60E-02								4.00E+04								8.10E+03	
SVOC	Methylphenol (summed)	1319-77-3		3					5.10E-02	5.50E-02						2.90E+06		5.60E+04						6.70E+06		1.10E+04	
SVOC	Naphthalene	91-20-3	C	3					5.30E-02	5.80E-02		4.70E+02		3.50E+02		8.80E+04		8.00E+04		2.50E+02		3.00E+02		2.00E+05		1.60E+04	
SVOC	2-Nitroaniline	88-74-4		3					5.00E-02	5.40E-02																	
SVOC	3-Nitroaniline	99-09-2	C	3					1.50E-01	1.60E-01																	
SVOC	4-Nitroaniline	100-01-6	C	3					7.30E-02	8.00E-02																	
SVOC	Nitrobenzene	98-95-3	D	3					5.00E-02	5.40E-02		4.90E+02		4.60E+03		1.50E+06		4.90E+02		4.90E+02		3.90E+03		3.30E+06		1.00E+02	
SVOC	2-Nitrophenol	88-75-5		3					5.00E-02	5.40E-02								3.10E+03								6.30E+02	
SVOC	4-Nitrophenol	100-02-7		3					2.10E-01	2.20E-01																	
SVOC	N-Nitrosodiphenylamine	86-30-6	B2	3					5.30E-02	5.80E-02								1.20E+04								1.70E+03	
SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2	3					4.80E-02	5.20E-02						2.00E+03		8.30E+00						1.60E+03		1.20E+00	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C	3					5.60E-02	6.10E-02																	
SVOC	Pentachlorophenol	87-86-5	B2	3					1.30E-01	1.40E-01						1.30E+05		3.90E+02						1.00E+05		9.00E+01	
SVOC	Phenanthrene	85-01-8	D	3					5.60E-02	6.10E-02		5.10E+03		1.90E+02		2.90E+03		8.00E+03		2.80E+03		1.60E+02		6.70E+03		1.60E+03	
SVOC	Phenol	108-95-2	D	3					5.30E-02	5.80E-02						1.80E+07		1.20E+04						4.00E+07		1.20E+04	
SVOC	Pyrene	129-00-0	D	3					5.50E-02	6.00E-02		1.00E+06		7.80E+05		2.90E+06		1.10E+05		1.00E+06		6.50E+05		6.70E+06		2.90E+04	
SVOC	2,4,5-Trichlorophenol	95-95-4		3					5.90E-02	6.50E-02						1.00E+07		1.10E+05						2.30E+07		2.30E+04	
SVOC	2,4,6-Trichlorophenol	88-06-2	B2	3					6.80E-02	7.40E-02						1.30E+06		5.00E+03						1.00E+06		7.10E+02	
P/PCB	PCBs (summed)	1336-36-3	B2	3	2	1.15E-01	1.46E-01	1.76E-01	2.30E-02	2.30E-02		1.60E+04	1E-05	8.10E+02	2E-04	6.50E+03	3E-05	2.00E+01	9E-03	3.00E+03	6E-05	2.40E+02	7E-04	5.20E+03	3E-05	4.00E+00	4E-02
INORG	Antimony	7440-36-0		3					5.29E-01	5.77E-01						5.90E+03		1.20E+03						1.30E+04		1.80E+02	
INORG	Arsenic	7440-38-2	A	3	3	3.38E+00	5.30E+00	8.65E+00			1.32E+01					9.10E+02		6.10E+01						7.20E+02		7.60E+00	
INORG	Barium	7440-39-3	D	3	3	2.33E+01	4.49E+01	8.18E+01			1.10E+02					1.50E+05		2.50E+05						3.30E+05		3.70E+04	
INORG	Beryllium	7440-41-7	B1	3	3	2.26E-01	4.30E-01	6.37E-01			1.53E+00					5.90E+02		3.10E+03						1.30E+03		4.10E+02	
INORG	Cadmium	7440-43-9	B1	3	3	9.95E-02	2.01E-01	3.01E-01			1.20E+00					2.20E+03		4.10E+03						1.70E+03		5.50E+02	
INORG	Chromium (total)	7440-47-3		3	3	8.79E+00	1.50E+01	2.51E+01			4.92E+01					2.40E+02		1.70E+04						2.60E+02		2.50E+03	
INORG	Cobalt	7440-48-4		3	3	3.33E+00	6.00E+00	9.04E+00			1.74E+01					5.90E+03		1.80E+04						1.30E+04		2.60E+03	
INORG	Copper	7440-50-8	D	3	3	9.95E+00	2.27E+01	4.14E+01			3.20E+01					5.90E+04	2E-04	1.40E+05	7E-05					1.30E+05	7E-05	2.00E+04	5E-04
INORG	Lead	7439-92-1	B2	3	3	7.33E+00	9.49E+00	1.30E+01			4.92E+01					4.40E+04		9.00E+02						1.00E+05		4.00E+02	
INORG	Manganese	7439-96-5	D	3	3	1.44E+02	3.74E+02	7.31E+02			5.10E+02					1.50E+03	1E-01	1.70E+05	1E-03					3.30E+03	7E-02	2.50E+04	9E-03
INORG	Mercury	7439-97-6	D	3	2	1.79E-02	2.34E-02	2.89E-02	9.10E-03	9.10E-03	1.30E-01							1.10E+03								1.60E+02	
INORG	Nickel	7440-02-0	A	3	3	1.14E+01	1.70E+01	2.53E+01			3.01E+01					1.60E+04		2.70E+05						1.30E+04		4.00E+04	

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TABLE 4-35

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

DATA SUMMARY FOR AOI M-25 (SOIL)

Chem Group	Chemical	CASRN	Carc Class	No of Analyses	No of Detects	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Min QL (mg/kg)	Max QL (mg/kg)	Site Specific Background (mg/kg)	Industrial Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Soil Volatilization to Indoor Air Inhalation Criteria	Industrial Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Industrial Infinite Source Volatile Soil Inhalation Criteria	Industrial Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Soil Inhalation Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (mg/kg)	Ratio of Max Detects to Residential Infinite Source Volatile Soil Inhalation Criteria	Residential Particulate Soil Inhalation Criteria (mg/kg)	Ratio of Max Detect to Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Residential Direct Contact Criteria
INORG	Selenium	7782-49-2	D	3					3.35E-01	3.65E-01	4.10E-01					5.90E+04		1.80E+04						1.30E+05		2.60E+03	
INORG	Silver	7440-22-4	D	3					1.62E-01	1.76E-01						2.90E+03		1.70E+04						6.70E+03		2.50E+03	
INORG	Thallium	7440-28-0		3					5.40E-01	5.88E-01								2.40E+02								3.50E+01	
INORG	Vanadium	7440-62-2		3	3	9.10E+00	1.48E+01	1.91E+01			3.28E+01							1.00E+04								7.50E+02	
INORG	Zinc	7440-66-6	D	3	3	2.95E+01	4.64E+01	6.43E+01			4.70E+01							1.00E+06	2E-05							1.70E+05	1E-04

Notes:

1. Chem Group - Chemical Group
2. Carc Class - Carcinogen Class; Weight-of-Evidence Characterization
3. Min QL - Minimum Quantitation Limit
4. Max QL - Maximum Quantitation Limit
5. Screening Criteria is from Michigan DEQ Part 201.
6. The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
7. The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
8. The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
9. The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
10. The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
11. The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

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Table 5-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-01	VOC	Acetone	67-64-1	D			1.10E+05		1.60E+05		1.70E+08		1.10E+05	
W-01	VOC	Benzene	71-43-2	A	5.93E-02		8.40E+00	7E-03	4.50E+01	1E-03	4.70E+05	1E-07	4.00E+02	1E-04
W-01	VOC	Bromodichloromethane	75-27-4	B2			6.40E+00		3.10E+01		1.10E+05		7.50E+02	
W-01	VOC	Bromoform	75-25-2	B2			7.70E+02		3.10E+03		3.60E+06		8.70E+02	
W-01	VOC	Bromomethane	74-83-9	D			1.60E+00		1.30E+01		1.50E+05		1.60E+03	
W-01	VOC	2-Butanone	78-93-3	D	8.77E-02		2.70E+04	3E-06	3.50E+04	3E-06	2.90E+07	3E-09	2.70E+04	3E-06
W-01	VOC	Carbon Disulfide	75-15-0				1.40E+02		1.60E+03		2.10E+07		2.80E+02	
W-01	VOC	Carbon Tetrachloride	56-23-5	B2			9.90E-01		1.20E+01		1.70E+05		3.90E+02	
W-01	VOC	Chlorobenzene	108-90-7	D	1.70E-01		2.20E+02	8E-04	9.20E+02	2E-04	2.10E+06	8E-08	2.60E+02	7E-04
W-01	VOC	Chloroethane	75-00-3				6.50E+02		3.60E+04		2.90E+08		9.50E+02	
W-01	VOC	Chloroform	67-66-3	B2			3.80E+01		1.50E+02		1.60E+06		1.50E+03	
W-01	VOC	Chloromethane	74-87-3	D			1.20E+01		1.40E+02		6.10E+06		1.10E+03	
W-01	VOC	Cumene	98-82-8	D	3.87E-01		3.90E+02	1E-03	2.00E+03	2E-04	2.60E+06	1E-07	3.90E+02	1E-03
W-01	VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2			1.20E+00		1.50E+01		5.90E+03		1.20E+00	
W-01	VOC	Dibromochloromethane	124-48-1	C			2.10E+01		8.00E+01		1.60E+05		6.10E+02	
W-01	VOC	1,2-Dibromoethane	106-93-4	B2			3.60E+00		5.80E+00		1.80E+04		6.60E-01	
W-01	VOC	1,2-Dichlorobenzene	95-50-1	D	7.74E+00		2.10E+02	4E-02	4.60E+04	2E-04	4.40E+07	2E-07	2.10E+02	4E-02
W-01	VOC	1,3-Dichlorobenzene	541-73-1	D	1.44E-01								1.70E+02	8E-04
W-01	VOC	1,4-Dichlorobenzene	106-46-7	C	3.10E-01		1.00E+02	3E-03	2.60E+02	1E-03	5.70E+05	5E-07	2.90E+03	1E-04
W-01	VOC	Dichlorodifluoromethane	75-71-8				1.00E+03		6.30E+04		1.50E+09		1.00E+03	
W-01	VOC	1,1-Dichloroethane	75-34-3	C			4.30E+02		2.50E+03		1.50E+07		8.90E+02	
W-01	VOC	1,2-Dichloroethane	107-06-2	B2			1.10E+01		2.10E+01		1.50E+05		6.40E+02	
W-01	VOC	1,1-Dichloroethene	75-35-4	C	4.39E+00		3.30E-01	**1E+01**	3.70E+00	**1E+00**	7.80E+04	6E-05	5.70E+02	8E-03
W-01	VOC	cis-1,2-Dichloroethene	156-59-2	D	2.06E-02		4.20E+01	5E-04	2.10E+02	1E-04	1.00E+06	2E-08	6.40E+02	3E-05
W-01	VOC	trans-1,2-Dichloroethene	156-60-5				4.30E+01		3.30E+02		2.10E+06		1.40E+03	
W-01	VOC	1,2-Dichloropropane	78-87-5	B2			7.40E+00		3.00E+01		1.20E+05		5.50E+02	
W-01	VOC	1,3-Dichloropropene (summed)	542-75-6	B2			1.00E-02		3.10E-02		5.00E+02		6.20E+02	
W-01	VOC	Ethyl Benzene	100-41-4	D	2.50E+01		1.40E+02	2E-01	1.10E+04	2E-03	2.90E+07	9E-07	1.40E+02	2E-01
W-01	VOC	2-Hexanone	591-78-6				1.80E+03		1.30E+03		1.20E+06		2.50E+03	
W-01	VOC	Methyl Acetate	79-20-9											
W-01	VOC	Methyl tert-butyl ether	1634-04-4				5.90E+03		3.00E+04		8.80E+07		5.90E+03	
W-01	VOC	4-Methyl-2-pentanone	108-10-1				2.70E+03		5.30E+04		6.00E+07		2.70E+03	
W-01	VOC	Methylcyclohexane	108-87-2		2.84E+00									
W-01	VOC	Methylene Chloride	75-09-2	B2	1.34E-01		2.40E+02	6E-04	7.00E+02	2E-04	8.30E+06	2E-08	2.30E+03	6E-05
W-01	VOC	Styrene	100-42-5				5.20E+02		3.30E+03		6.90E+06		5.20E+02	
W-01	VOC	1,1,2,2-Tetrachloroethane	79-34-5	C			2.30E+01		3.40E+01		6.80E+04		3.70E+02	
W-01	VOC	Tetrachloroethene	127-18-4	C-B2	1.68E+00		6.00E+01	3E-02	6.00E+02	3E-03	6.80E+06	2E-07	8.80E+01	2E-02
W-01	VOC	Toluene	108-88-3	D	8.77E+00		2.50E+02	4E-02	3.30E+03	3E-03	1.20E+07	7E-07	2.50E+02	4E-02
W-01	VOC	1,2,4-Trichlorobenzene	120-82-1	D			1.10E+03		3.40E+04		1.10E+07		1.10E+03	
W-01	VOC	1,1,1-Trichloroethane	71-55-6	D			4.60E+02		4.50E+03		2.90E+07		4.60E+02	
W-01	VOC	1,1,2-Trichloroethane	79-00-5	C			2.40E+01		5.70E+01		2.50E+05		9.20E+02	
W-01	VOC	Trichloroethene	79-01-6	C-B2			3.70E+01		2.60E+02		2.30E+06		5.00E+02	
W-01	VOC	Trichlorofluoromethane	75-69-4				5.60E+02		1.10E+05		1.70E+09		5.60E+02	
W-01	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1				5.50E+02		2.10E+05		2.30E+09		5.50E+02	
W-01	VOC	Vinyl Chloride	75-01-4	A			1.50E-01		1.50E+00		4.70E+04		2.90E+01	
W-01	VOC	Xylenes (total)	1330-20-7	D	6.71E+01		1.50E+02	4E-01	5.40E+04	1E-03	1.30E+08	5E-07	1.50E+02	4E-01
W-01	SVOC	Acenaphthene	83-32-9		1.03E+01		3.00E+02	3E-05	9.70E+04	1E-04	6.20E+06	2E-06	2.00E+05	5E-05
W-01	SVOC	Acenaphthylene	208-96-8	D			3.00E+03		2.70E+03		1.00E+06		8.00E+03	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-01	SVOC	Acetophenone	98-86-2	D			1.10E+03		5.20E+04		1.40E+07		1.10E+03	
W-01	SVOC	Anthracene	120-12-7	D	1.11E+01		1.00E+06	1E-05	1.60E+06	7E-06	2.90E+07	4E-07	1.00E+06	1E-05
W-01	SVOC	Atrazine	1912-24-9										5.00E+02	
W-01	SVOC	Benzaldehyde	100-52-7											
W-01	SVOC	Benzo(a)anthracene	56-55-3	B2	1.81E+01								1.00E+02	2E-01
W-01	SVOC	Benzo(a)pyrene	50-32-8	B2	1.39E+01						1.90E+03	7E-03	1.00E+01	**1E+00**
W-01	SVOC	Benzo(b)fluoranthene	205-99-2	B2	1.94E+01								1.00E+02	2E-01
W-01	SVOC	Benzo(g,h,i)perylene	191-24-2	D							3.50E+05		9.10E+03	
W-01	SVOC	Benzo(k)fluoranthene	207-08-9	B2									1.00E+03	
W-01	SVOC	Biphenyl	92-52-4											
W-01	SVOC	bis(2-Chloroethoxy)methane	111-91-1	D										
W-01	SVOC	bis(2-Chloroethyl) ether	111-44-4	B2			4.40E+01		1.30E+01		1.20E+04		8.90E+01	
W-01	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2	2.84E+01						8.90E+05	3E-05	1.00E+04	3E-03
W-01	SVOC	4-Bromophenyl-phenyl ether	101-55-3	D										
W-01	SVOC	Butylbenzylphthalate	85-68-7	C							2.10E+07		3.10E+02	
W-01	SVOC	Caprolactam	105-60-2								2.90E+05		4.50E+05	
W-01	SVOC	Carbazole	86-74-8	B2									3.70E+03	
W-01	SVOC	4-Chloro-3-methylphenol	59-50-7										2.20E+04	
W-01	SVOC	4-Chloroaniline	106-47-8											
W-01	SVOC	2-Chloronaphthalene	91-58-7										2.80E+05	
W-01	SVOC	2-Chlorophenol	95-57-8										6.90E+03	
W-01	SVOC	4-Chlorophenyl-phenyl ether	7005-72-3											
W-01	SVOC	Chrysene	218-01-9	B2	2.43E+01								1.00E+04	2E-03
W-01	SVOC	Di-n-butylphthalate	84-74-2	D	3.35E+01						1.50E+06	2E-05	7.60E+02	4E-02
W-01	SVOC	Di-n-octylphthalate	117-84-0										2.80E+04	
W-01	SVOC	Dibenz(a,h)anthracene	53-70-3	B2									1.00E+01	
W-01	SVOC	Dibenzofuran	132-64-9	D										
W-01	SVOC	3,3'-Dichlorobenzidine	91-94-1	B2							8.20E+03		4.70E+01	
W-01	SVOC	2,4-Dichlorophenol	120-83-2								2.30E+06		1.80E+03	
W-01	SVOC	Diethylphthalate	84-66-2	D							1.50E+06		7.40E+02	
W-01	SVOC	2,4-Dimethylphenol	105-67-9								2.10E+06		5.60E+04	
W-01	SVOC	Dimethylphthalate	131-11-3	D							1.50E+06		7.90E+02	
W-01	SVOC	4,6-Dinitro-2-methylphenol	534-52-1										3.90E+02	
W-01	SVOC	2,4-Dinitrophenol	51-28-5											
W-01	SVOC	2,4-Dinitrotoluene	121-14-2	B2							2.00E+04		3.40E+02	
W-01	SVOC	2,6-Dinitrotoluene	606-20-2	B2										
W-01	SVOC	Fluoranthene	206-44-0	D	5.42E+01		1.00E+06	5E-05	8.90E+05	6E-05	4.10E+06	1E-05	1.80E+05	3E-04
W-01	SVOC	Fluorene	86-73-7	D	1.39E+01		1.00E+06	1E-05	1.50E+05	9E-05	4.10E+06	3E-06	1.30E+05	1E-04
W-01	SVOC	Hexachlorobenzene	118-74-1	B2			2.20E+02		5.60E+01		8.50E+03		5.10E+01	
W-01	SVOC	Hexachlorobutadiene	87-68-3	C			3.50E+02		4.60E+02		1.80E+05		3.50E+02	
W-01	SVOC	Hexachlorocyclopentadiene	77-47-4	E									7.20E+02	
W-01	SVOC	Hexachloroethane	67-72-1	C			7.90E+01		6.60E+02		1.00E+05		1.10E+03	
W-01	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2									1.00E+02	
W-01	SVOC	Isophorone	78-59-1	C							8.20E+06		2.40E+03	
W-01	SVOC	2-Methylnaphthalene	91-57-6		1.24E+01								4.00E+04	3E-04
W-01	SVOC	Methylphenol (summed)	1319-77-3								2.90E+06		5.60E+04	
W-01	SVOC	Naphthalene	91-20-3	C					3.50E+02		8.80E+04		8.00E+04	
W-01	SVOC	2-Nitroaniline	88-74-4											

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RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-01	SVOC	3-Nitroaniline	99-09-2	C										
W-01	SVOC	4-Nitroaniline	100-01-6	C										
W-01	SVOC	Nitrobenzene	98-95-3	D			4.90E+02		4.60E+03		1.50E+06		4.90E+02	
W-01	SVOC	2-Nitrophenol	88-75-5										3.10E+03	
W-01	SVOC	4-Nitrophenol	100-02-7											
W-01	SVOC	N-Nitrosodiphenylamine	86-30-6	B2									1.20E+04	
W-01	SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2							2.00E+03		8.30E+00	
W-01	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C										
W-01	SVOC	Pentachlorophenol	87-86-5	B2							1.30E+05		3.90E+02	
W-01	SVOC	Phenanthrene	85-01-8	D	5.42E+01		5.10E+03	1E-02	1.90E+02	3E-01	2.90E+03	2E-02	8.00E+03	7E-03
W-01	SVOC	Phenol	108-95-2	D							1.80E+07		1.20E+04	
W-01	SVOC	Pyrene	129-00-0	D	7.74E+01		1.00E+06	8E-05	7.80E+05	1E-04	2.90E+06	3E-05	1.10E+05	7E-04
W-01	SVOC	2,4,5-Trichlorophenol	95-95-4								1.00E+07		1.10E+05	
W-01	SVOC	2,4,6-Trichlorophenol	88-06-2	B2							1.30E+06		5.00E+03	
W-01	P/PCB	PCBs (total)	1336-36-3	B2	3.62E+02		1.60E+04	2E-02	8.10E+02	4E-01	6.50E+03	6E-02	2.00E+01	**2E+01**
W-01	INORG	Aluminum	7429-90-5	D	4.93E+01								6.60E+05	7E-05
W-01	INORG	Antimony	7440-36-0		1.34E-01						5.90E+03	2E-05	1.20E+03	1E-04
W-01	INORG	Arsenic	7440-38-2	A	5.42E-01	1.32E+01					9.10E+02	6E-04	6.10E+01	9E-03
W-01	INORG	Barium	7440-39-3	D	7.25E+00	1.10E+02					1.50E+05	5E-05	2.50E+05	3E-05
W-01	INORG	Beryllium	7440-41-7	B1	1.29E-02	1.53E+00					5.90E+02	2E-05	3.10E+03	4E-06
W-01	INORG	Cadmium	7440-43-9	B1	4.39E-02	1.20E+00					2.20E+03	2E-05	4.10E+03	1E-05
W-01	INORG	Chromium (total)	7440-47-3		2.45E+01	4.92E+01					2.40E+02	1E-01	1.70E+04	1E-03
W-01	INORG	Cobalt	7440-48-4		6.45E-02	1.74E+01					5.90E+03	1E-05	1.80E+04	4E-06
W-01	INORG	Copper	7440-50-8	D	9.37E+00	3.20E+01					5.90E+04	2E-04	1.40E+05	7E-05
W-01	INORG	Cyanide (total)	57-12-5	D	1.01E-01						2.50E+02	4E-04	2.50E+02	4E-04
W-01	INORG	Iron	7439-89-6	D	1.10E+02								1.00E+06	1E-04
W-01	INORG	Lead	7439-92-1	B2	2.22E+00	4.92E+01					4.40E+04	5E-05	9.00E+02	2E-03
W-01	INORG	Manganese	7439-96-5	D	4.70E+00	5.10E+02					1.50E+03	3E-03	1.70E+05	3E-05
W-01	INORG	Mercury	7439-97-6	D	2.32E-02	1.30E-01							1.10E+03	2E-05
W-01	INORG	Nickel	7440-02-0	A	3.02E+00	3.01E+01					1.60E+04	2E-04	2.70E+05	1E-05
W-01	INORG	Selenium	7782-49-2	D	1.57E-01	4.10E-01					5.90E+04	3E-06	1.80E+04	9E-06
W-01	INORG	Silver	7440-22-4	D							2.90E+03		1.70E+04	
W-01	INORG	Thallium	7440-28-0										2.40E+02	
W-01	INORG	Vanadium	7440-62-2		5.93E-01	3.28E+01							1.00E+04	6E-05
W-01	INORG	Zinc	7440-66-6	D	2.30E+00	4.70E+01							1.00E+06	2E-06
W-01	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	1.07E-03						8.90E-02	1E-02	9.90E-04	**1E+00**
W-08	VOC	Acetone	67-64-1	D			1.10E+05		1.60E+05		1.70E+08		1.10E+05	
W-08	VOC	Benzene	71-43-2	A			8.40E+00		4.50E+01		4.70E+05		4.00E+02	
W-08	VOC	Bromodichloromethane	75-27-4	B2			6.40E+00		3.10E+01		1.10E+05		7.50E+02	
W-08	VOC	Bromoform	75-25-2	B2			7.70E+02		3.10E+03		3.60E+06		8.70E+02	
W-08	VOC	Bromomethane	74-83-9	D			1.60E+00		1.30E+01		1.50E+05		1.60E+03	
W-08	VOC	2-Butanone	78-93-3	D			2.70E+04		3.50E+04		2.90E+07		2.70E+04	
W-08	VOC	Carbon Disulfide	75-15-0				1.40E+02		1.60E+03		2.10E+07		2.80E+02	
W-08	VOC	Carbon Tetrachloride	56-23-5	B2			9.90E-01		1.20E+01		1.70E+05		3.90E+02	
W-08	VOC	Chlorobenzene	108-90-7	D			2.20E+02		9.20E+02		2.10E+06		2.60E+02	
W-08	VOC	Chloroethane	75-00-3				9.50E+02		3.60E+04		2.90E+08		9.50E+02	
W-08	VOC	Chloroform	67-66-3	B2			1.20E+01		1.50E+02		1.60E+06		1.50E+03	
W-08	VOC	Chloromethane	74-87-3	D			1.20E+01		1.40E+02		6.10E+06		1.10E+03	

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W-08	VOC	Cumene	98-82-8	D	2.06E-01		3.90E+02	5E-04	2.00E+03	1E-04	2.60E+06	8E-08	3.90E+02	5E-04
W-08	VOC	Cyclohexane	110-82-7											
W-08	VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2			1.20E+00		1.50E+01		5.90E+03		1.20E+00	
W-08	VOC	Dibromochloromethane	124-48-1	C			2.10E+01		8.00E+01		1.60E+05		6.10E+02	
W-08	VOC	1,2-Dibromoethane	106-93-4	B2			3.60E+00		5.80E+00		1.80E+04		6.60E-01	
W-08	VOC	1,2-Dichlorobenzene	95-50-1	D			2.10E+02		4.60E+04		4.40E+07		2.10E+02	
W-08	VOC	1,3-Dichlorobenzene	541-73-1	D									1.70E+02	
W-08	VOC	1,4-Dichlorobenzene	106-46-7	C			1.00E+02		2.60E+02		5.70E+05		2.90E+03	
W-08	VOC	Dichlorodifluoromethane	75-71-8				1.00E+03		6.30E+04		1.50E+09		1.00E+03	
W-08	VOC	1,1-Dichloroethane	75-34-3	C			1.30E+02		2.50E+03		1.50E+07		8.90E+02	
W-08	VOC	1,2-Dichloroethane	107-06-2	B2			1.10E+01		2.10E+01		1.50E+05		6.40E+02	
W-08	VOC	1,1-Dichloroethene	75-35-4	C			3.30E-01		3.70E+00		7.80E+04		5.70E+02	
W-08	VOC	cis-1,2-Dichloroethene	156-59-2	D			4.20E+01		2.10E+02		1.00E+06		6.40E+02	
W-08	VOC	trans-1,2-Dichloroethene	156-60-5				4.30E+01		3.30E+02		2.10E+06		1.40E+03	
W-08	VOC	1,2-Dichloropropane	78-87-5	B2			7.40E+00		3.00E+01		1.20E+05		5.50E+02	
W-08	VOC	1,3-Dichloropropene (summed)	542-75-6	B2			1.00E-02		3.10E-02		5.00E+02		6.20E+02	
W-08	VOC	Ethyl Benzene	100-41-4	D	3.10E-01		4.40E+02	2E-03	1.10E+04	3E-05	2.90E+07	1E-08	1.40E+02	2E-03
W-08	VOC	2-Hexanone	591-78-6				1.80E+03		1.30E+03		1.20E+06		2.50E+03	
W-08	VOC	Methyl Acetate	79-20-9											
W-08	VOC	Methyl tert-butyl ether	1634-04-4				5.90E+03		3.00E+04		8.80E+07		5.90E+03	
W-08	VOC	4-Methyl-2-pentanone	108-10-1				2.70E+03		5.30E+04		6.00E+07		2.70E+03	
W-08	VOC	Methylcyclohexane	108-87-2		1.60E-01									
W-08	VOC	Methylene Chloride	75-09-2	B2			2.40E+02		7.00E+02		8.30E+06		2.30E+03	
W-08	VOC	Styrene	100-42-5				5.20E+02		3.30E+03		6.90E+06		5.20E+02	
W-08	VOC	1,1,2,2-Tetrachloroethane	79-34-5	C			2.30E+01		3.40E+01		6.80E+04		3.70E+02	
W-08	VOC	Tetrachloroethene	127-18-4	C-B2			6.00E+01		6.00E+02		6.80E+06		8.80E+01	
W-08	VOC	Toluene	108-88-3	D			2.50E+02		3.30E+03		1.20E+07		2.50E+02	
W-08	VOC	1,2,4-Trichlorobenzene	120-82-1	D			1.10E+03		3.40E+04		1.10E+07		1.10E+03	
W-08	VOC	1,1,1-Trichloroethane	71-55-6	D			4.60E+02		4.50E+03		2.90E+07		4.60E+02	
W-08	VOC	1,1,2-Trichloroethane	79-00-5	C			2.40E+01		5.70E+01		2.50E+05		9.20E+02	
W-08	VOC	Trichloroethene	79-01-6	C-B2			3.70E+01		2.60E+02		2.30E+06		5.00E+02	
W-08	VOC	Trichlorofluoromethane	75-69-4				5.60E+02		1.10E+05		1.70E+09		5.60E+02	
W-08	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1				5.50E+02		2.10E+05		2.30E+09		5.50E+02	
W-08	VOC	Vinyl Chloride	75-01-4	A			1.50E-01		1.50E+00		4.70E+04		2.90E+01	
W-08	VOC	Xylenes (total)	1330-20-7	D	3.35E-01		1.50E+02	2E-03	5.40E+04	6E-06	1.30E+08	3E-09	1.50E+02	2E-03
W-08	SVOC	Acenaphthene	83-32-9				3.50E+05		9.70E+04		6.20E+06		2.00E+05	
W-08	SVOC	Acenaphthylene	208-96-8	D			3.00E+03		2.70E+03		1.00E+06		8.00E+03	
W-08	SVOC	Acetophenone	98-86-2	D			1.10E+03		5.20E+04		1.40E+07		1.10E+03	
W-08	SVOC	Anthracene	120-12-7	D			1.00E+06		1.60E+06		2.90E+07		1.00E+06	
W-08	SVOC	Atrazine	1912-24-9										5.00E+02	
W-08	SVOC	Benzaldehyde	100-52-7											
W-08	SVOC	Benzo(a)anthracene	56-55-3	B2									1.00E+02	
W-08	SVOC	Benzo(a)pyrene	50-32-8	B2							1.90E+03		1.00E+01	
W-08	SVOC	Benzo(b)fluoranthene	205-99-2	B2									1.00E+02	
W-08	SVOC	Benzo(g,h,i)perylene	191-24-2	D							3.50E+05		9.10E+03	
W-08	SVOC	Benzo(k)fluoranthene	207-08-9	B2									1.00E+03	
W-08	SVOC	Biphenyl	92-52-4		4.13E+01									
W-08	SVOC	bis(2-Chloroethoxy)methane	111-91-1	D										

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-08	SVOC	bis(2-Chloroethyl) ether	111-44-4	B2			4.40E+01		1.30E+01		1.20E+04		8.90E+01	
W-08	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2							8.90E+05		1.00E+04	
W-08	SVOC	4-Bromophenyl-phenyl ether	101-55-3	D										
W-08	SVOC	Butylbenzylphthalate	85-68-7	C							2.10E+07		3.10E+02	
W-08	SVOC	Caprolactam	105-60-2								2.90E+05		4.50E+05	
W-08	SVOC	Carbazole	86-74-8	B2									3.70E+03	
W-08	SVOC	4-Chloro-3-methylphenol	59-50-7										2.20E+04	
W-08	SVOC	4-Chloroaniline	106-47-8											
W-08	SVOC	2-Chloronaphthalene	91-58-7										2.80E+05	
W-08	SVOC	2-Chlorophenol	95-57-8										6.90E+03	
W-08	SVOC	4-Chlorophenyl-phenyl ether	7005-72-3											
W-08	SVOC	Chrysene	218-01-9	B2									1.00E+04	
W-08	SVOC	Di-n-butylphthalate	84-74-2	D							1.50E+06		7.60E+02	
W-08	SVOC	Di-n-octylphthalate	117-84-0										2.80E+04	
W-08	SVOC	Dibenz(a,h)anthracene	53-70-3	B2									1.00E+01	
W-08	SVOC	Dibenzofuran	132-64-9	D										
W-08	SVOC	3,3'-Dichlorobenzidine	91-94-1	B2							8.20E+03		4.70E+01	
W-08	SVOC	2,4-Dichlorophenol	120-83-2								2.30E+06		1.80E+03	
W-08	SVOC	Diethylphthalate	84-66-2	D							1.50E+06		7.40E+02	
W-08	SVOC	2,4-Dimethylphenol	105-67-9								2.10E+06		5.60E+04	
W-08	SVOC	Dimethylphthalate	131-11-3	D							1.50E+06		7.90E+02	
W-08	SVOC	4,6-Dinitro-2-methylphenol	534-52-1										3.90E+02	
W-08	SVOC	2,4-Dinitrophenol	51-28-5											
W-08	SVOC	2,4-Dinitrotoluene	121-14-2	B2							2.00E+04		3.40E+02	
W-08	SVOC	2,6-Dinitrotoluene	606-20-2	B2										
W-08	SVOC	Fluoranthene	206-44-0	D			1.00E+06		8.90E+05		4.10E+06		1.80E+05	
W-08	SVOC	Fluorene	86-73-7	D	4.90E+01		1.00E+06	5E-05	1.50E+05	3E-04	4.10E+06	1E-05	1.30E+05	4E-04
W-08	SVOC	Hexachlorobenzene	118-74-1	B2			2.20E+02		5.60E+01		8.50E+03		5.10E+01	
W-08	SVOC	Hexachlorobutadiene	87-68-3	C			3.50E+02		4.60E+02		1.80E+05		3.50E+02	
W-08	SVOC	Hexachlorocyclopentadiene	77-47-4	E									7.20E+02	
W-08	SVOC	Hexachloroethane	67-72-1	C			7.90E+01		6.60E+02		1.00E+05		1.10E+03	
W-08	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2									1.00E+02	
W-08	SVOC	Isophorone	78-59-1	C							8.20E+06		2.40E+03	
W-08	SVOC	2-Methylnaphthalene	91-57-6		3.10E+01								4.00E+04	8E-04
W-08	SVOC	Methylphenol (summed)	1319-77-3								2.90E+06		5.60E+04	
W-08	SVOC	Naphthalene	91-20-3	C			4.70E+02		3.50E+02		8.80E+04		8.00E+04	
W-08	SVOC	2-Nitroaniline	88-74-4											
W-08	SVOC	3-Nitroaniline	99-09-2	C										
W-08	SVOC	4-Nitroaniline	100-01-6	C										
W-08	SVOC	Nitrobenzene	98-95-3	D			4.90E+02		4.60E+03		1.50E+06		4.90E+02	
W-08	SVOC	2-Nitrophenol	88-75-5										3.10E+03	
W-08	SVOC	4-Nitrophenol	100-02-7											
W-08	SVOC	N-Nitrosodiphenylamine	86-30-6	B2									1.20E+04	
W-08	SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2							2.00E+03		8.30E+00	
W-08	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C										
W-08	SVOC	Pentachlorophenol	87-86-5	B2							1.30E+05		3.90E+02	
W-08	SVOC	Phenanthrene	85-01-8	D	2.01E+02			4E-02	1.90E+02	**1E+00**	2.90E+03	7E-02	8.00E+03	3E-02
W-08	SVOC	Phenol	108-95-2	D							1.80E+07		1.20E+04	

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-08	SVOC	Pyrene	129-00-0	D			1.00E+06		7.80E+05		2.90E+06		1.10E+05	
W-08	SVOC	2,4,5-Trichlorophenol	95-95-4								1.00E+07		1.10E+05	
W-08	SVOC	2,4,6-Trichlorophenol	88-06-2	B2							1.30E+06		5.00E+03	
W-08	P/PCB	PCBs (total)	1336-36-3	B2	7.05E-01		1.60E+04	4E-05	8.10E+02	9E-04	6.50E+03	1E-04	2.00E+01	4E-02
W-08	INORG	Antimony	7440-36-0								5.90E+03		1.20E+03	
W-08	INORG	Arsenic	7440-38-2	A		1.32E+01					9.10E+02		6.10E+01	
W-08	INORG	Barium	7440-39-3	D		1.10E+02					1.50E+05		2.50E+05	
W-08	INORG	Beryllium	7440-41-7	B1		1.53E+00					5.90E+02		3.10E+03	
W-08	INORG	Cadmium	7440-43-9	B1		1.20E+00					2.20E+03		4.10E+03	
W-08	INORG	Chromium (total)	7440-47-3			4.92E+01					2.40E+02		1.70E+04	
W-08	INORG	Cobalt	7440-48-4			1.74E+01					5.90E+03		1.80E+04	
W-08	INORG	Copper	7440-50-8	D	7.48E-02	3.20E+01					5.90E+04	1E-06	1.40E+05	5E-07
W-08	INORG	Lead	7439-92-1	B2		4.92E+01					4.40E+04		9.00E+02	
W-08	INORG	Manganese	7439-96-5	D		5.10E+02					1.50E+03		1.70E+05	
W-08	INORG	Mercury	7439-97-6	D		1.30E-01							1.10E+03	
W-08	INORG	Nickel	7440-02-0	A		3.01E+01					1.60E+04		2.70E+05	
W-08	INORG	Selenium	7782-49-2	D		8.10E-01					5.90E+04		1.80E+04	
W-08	INORG	Silver	7440-22-4	D							2.90E+03		1.70E+04	
W-08	INORG	Thallium	7440-28-0										2.40E+02	
W-08	INORG	Vanadium	7440-62-2			3.28E+01							1.00E+04	
W-08	INORG	Zinc	7440-66-6	D		4.70E+01							1.00E+06	
W-08	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	1.90E-06						8.90E-02	2E-05	9.90E-04	2E-03
W-10	VOC	Acetone	67-64-1	D			1.10E+05		1.60E+05		1.70E+08		1.10E+05	
W-10	VOC	Benzene	71-43-2	A			8.40E+00		4.50E+01		4.70E+05		4.00E+02	
W-10	VOC	Bromodichloromethane	75-27-4	B2			6.40E+00		3.10E+01		1.10E+05		7.50E+02	
W-10	VOC	Bromoform	75-25-2	B2			7.70E+02		3.10E+03		3.60E+06		8.70E+02	
W-10	VOC	Bromomethane	74-83-9	D			1.60E+00		1.30E+01		1.50E+05		1.60E+03	
W-10	VOC	2-Butanone	78-93-3	D	1.60E-01		2.70E+04	6E-06	3.50E+04	5E-06	2.90E+07	6E-09	2.70E+04	6E-06
W-10	VOC	Carbon Disulfide	75-15-0				1.40E+02		1.60E+03		2.10E+07		2.80E+02	
W-10	VOC	Carbon Tetrachloride	56-23-5	B2			9.90E-01		1.20E+01		1.70E+05		3.90E+02	
W-10	VOC	Chlorobenzene	108-90-7	D			2.20E+02		9.20E+02		2.10E+06		2.60E+02	
W-10	VOC	Chloroethane	75-00-3				9.50E+02		3.60E+04		2.90E+08		9.50E+02	
W-10	VOC	Chloroform	67-66-3	B2			3.80E+01		1.50E+02		1.60E+06		1.50E+03	
W-10	VOC	Chloromethane	74-87-3	D	5.93E-02		1.20E+01	5E-03	1.40E+02	4E-04	6.10E+06	1E-08	1.10E+03	5E-05
W-10	VOC	Cumene	98-82-8	D	5.42E-01		3.90E+02	1E-03	2.00E+03	3E-04	2.60E+06	2E-07	3.90E+02	1E-03
W-10	VOC	Cyclohexane	110-82-7		6.71E-02									
W-10	VOC	1,2-Dibromo-3-chloropropane	96-12-8	B2			1.20E+00		1.50E+01		5.90E+03		1.20E+00	
W-10	VOC	Dibromochloromethane	124-48-1	C			2.10E+01		8.00E+01		1.60E+05		6.10E+02	
W-10	VOC	1,2-Dibromoethane	106-93-4	B2			3.60E+00		5.80E+00		1.80E+04		6.60E-01	
W-10	VOC	1,2-Dichlorobenzene	95-50-1	D			2.10E+02		4.60E+04		4.40E+07		2.10E+02	
W-10	VOC	1,3-Dichlorobenzene	541-73-1	D									1.70E+02	
W-10	VOC	1,4-Dichlorobenzene	106-46-7	C			1.00E+02		2.60E+02		5.70E+05		2.90E+03	
W-10	VOC	Dichlorodifluoromethane	75-71-8				1.00E+03		6.30E+04		1.50E+09		1.00E+03	
W-10	VOC	1,1-Dichloroethane	75-34-3	C			4.30E+02		2.50E+03		1.50E+07		8.90E+02	
W-10	VOC	1,2-Dichloroethane	107-06-2	B2			1.10E+01		2.10E+01		1.50E+05		6.40E+02	
W-10	VOC	1,1-Dichloroethene	75-35-4	C			3.30E-01		3.70E+00		7.80E+04		5.70E+02	
W-10	VOC	cis-1,2-Dichloroethene	156-59-2	D					2.10E+02		1.00E+06		6.40E+02	
W-10	VOC	trans-1,2-Dichloroethene	156-60-5				4.30E+01		3.30E+02		2.10E+06		1.40E+03	

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W-10	VOC	1,2-Dichloropropane	78-87-5	B2			7.40E+00		3.00E+01		1.20E+05		5.50E+02	
W-10	VOC	1,3-Dichloropropene (summed)	542-75-6	B2			1.00E-02		3.10E-02		5.00E+02		6.20E+02	
W-10	VOC	Ethyl Benzene	100-41-4	D	5.42E-01		1.40E+02	4E-03	1.10E+04	5E-05	2.90E+07	2E-08	1.40E+02	4E-03
W-10	VOC	2-Hexanone	591-78-6				1.80E+03		1.30E+03		1.20E+06		2.50E+03	
W-10	VOC	Methyl Acetate	79-20-9											
W-10	VOC	Methyl tert-butyl ether	1634-04-4				5.90E+03		3.00E+04		8.80E+07		5.90E+03	
W-10	VOC	4-Methyl-2-pentanone	108-10-1				2.70E+03		5.30E+04		6.00E+07		2.70E+03	
W-10	VOC	Methylcyclohexane	108-87-2		4.39E-01									
W-10	VOC	Methylene Chloride	75-09-2	B2			2.40E+02		7.00E+02		8.30E+06		2.30E+03	
W-10	VOC	Styrene	100-42-5				5.20E+02		3.30E+03		6.90E+06		5.20E+02	
W-10	VOC	1,1,2,2-Tetrachloroethane	79-34-5	C			2.30E+01		3.40E+01		6.80E+04		3.70E+02	
W-10	VOC	Tetrachloroethene	127-18-4	C-B2			6.00E+01		6.00E+02		6.80E+06		8.80E+01	
W-10	VOC	Toluene	108-88-3	D	3.61E-01		2.50E+02	1E-03	3.30E+03	1E-04	1.20E+07	3E-08	2.50E+02	1E-03
W-10	VOC	1,2,4-Trichlorobenzene	120-82-1	D			1.10E+03		3.40E+04		1.10E+07		1.10E+03	
W-10	VOC	1,1,1-Trichloroethane	71-55-6	D			4.60E+02		4.50E+03		2.90E+07		4.60E+02	
W-10	VOC	1,1,2-Trichloroethane	79-00-5	C			2.40E+01		5.70E+01		2.50E+05		9.20E+02	
W-10	VOC	Trichloroethene	79-01-6	C-B2			3.70E+01		2.60E+02		2.30E+06		5.00E+02	
W-10	VOC	Trichlorofluoromethane	75-69-4				5.60E+02		1.10E+05		1.70E+09		5.60E+02	
W-10	VOC	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1				5.50E+02		2.10E+05		2.30E+09		5.50E+02	
W-10	VOC	Vinyl Chloride	75-01-4	A			1.50E-01		1.50E+00		4.70E+04		2.90E+01	
W-10	VOC	Xylenes (total)	1330-20-7	D	3.87E+00		1.50E+02	3E-02	5.40E+04	7E-05	1.30E+08	3E-08	1.50E+02	3E-02
W-10	SVOC	Acenaphthene	83-32-9				3.50E+05		9.70E+04		6.20E+06		2.00E+05	
W-10	SVOC	Acenaphthylene	208-96-8	D			3.00E+03		2.70E+03		1.00E+06		8.00E+03	
W-10	SVOC	Acetophenone	98-86-2	D			1.10E+03		5.20E+04		1.40E+07		1.10E+03	
W-10	SVOC	Anthracene	120-12-7	D	1.65E+01		1.00E+06	2E-05	1.60E+06	1E-05	2.90E+07	6E-07	1.00E+06	2E-05
W-10	SVOC	Atrazine	1912-24-9										5.00E+02	
W-10	SVOC	Benzaldehyde	100-52-7											
W-10	SVOC	Benzo(a)anthracene	56-55-3	B2									1.00E+02	
W-10	SVOC	Benzo(a)pyrene	50-32-8	B2							1.90E+03		1.00E+01	
W-10	SVOC	Benzo(b)fluoranthene	205-99-2	B2									1.00E+02	
W-10	SVOC	Benzo(g,h,i)perylene	191-24-2	D							3.50E+05		9.10E+03	
W-10	SVOC	Benzo(k)fluoranthene	207-08-9	B2									1.00E+03	
W-10	SVOC	Biphenyl	92-52-4		1.32E+01									
W-10	SVOC	bis(2-Chloroethoxy)methane	111-91-1	D										
W-10	SVOC	bis(2-Chloroethyl) ether	111-44-4	B2			4.40E+01		1.30E+01		1.20E+04		8.90E+01	
W-10	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	B2							8.90E+05		1.00E+04	
W-10	SVOC	4-Bromophenyl-phenyl ether	101-55-3	D										
W-10	SVOC	Butylbenzylphthalate	85-68-7	C							2.10E+07		3.10E+02	
W-10	SVOC	Caprolactam	105-60-2								2.90E+05		4.50E+05	
W-10	SVOC	Carbazole	86-74-8	B2									3.70E+03	
W-10	SVOC	4-Chloro-3-methylphenol	59-50-7										2.20E+04	
W-10	SVOC	4-Chloroaniline	106-47-8											
W-10	SVOC	2-Chloronaphthalene	91-58-7										2.80E+05	
W-10	SVOC	2-Chlorophenol	95-57-8										6.90E+03	
W-10	SVOC	4-Chlorophenyl-phenyl ether	7005-72-3											
W-10	SVOC	Chrysene	218-01-9	B2									1.00E+04	
W-10	SVOC	Di-n-butylphthalate	84-74-2	D							1.50E+06		7.60E+02	
W-10	SVOC	Di-n-octylphthalate	117-84-0										2.80E+04	

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Table 5-1

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-10	SVOC	Dibenz(a,h)anthracene	53-70-3	B2									1.00E+01	
W-10	SVOC	Dibenzofuran	132-64-9	D										
W-10	SVOC	3,3'-Dichlorobenzidine	91-94-1	B2							8.20E+03		4.70E+01	
W-10	SVOC	2,4-Dichlorophenol	120-83-2								2.30E+06		1.80E+03	
W-10	SVOC	Diethylphthalate	84-66-2	D							1.50E+06		7.40E+02	
W-10	SVOC	2,4-Dimethylphenol	105-67-9								2.10E+06		5.60E+04	
W-10	SVOC	Dimethylphthalate	131-11-3	D							1.50E+06		7.90E+02	
W-10	SVOC	4,6-Dinitro-2-methylphenol	534-52-1										3.90E+02	
W-10	SVOC	2,4-Dinitrophenol	51-28-5											
W-10	SVOC	2,4-Dinitrotoluene	121-14-2	B2							2.00E+04		3.40E+02	
W-10	SVOC	2,6-Dinitrotoluene	606-20-2	B2										
W-10	SVOC	Fluoranthene	206-44-0	D	2.32E+01		1.00E+06	2E-05	8.90E+05	3E-05	4.10E+06	6E-06	1.80E+05	1E-04
W-10	SVOC	Fluorene	86-73-7	D	3.35E+01		1.00E+06	3E-05	1.50E+05	2E-04	4.10E+06	8E-06	1.30E+05	3E-04
W-10	SVOC	Hexachlorobenzene	118-74-1	B2			2.20E+02		5.60E+01		8.50E+03		5.10E+01	
W-10	SVOC	Hexachlorobutadiene	87-68-3	C			3.50E+02		4.60E+02		1.80E+05		3.50E+02	
W-10	SVOC	Hexachlorocyclopentadiene	77-47-4	E									7.20E+02	
W-10	SVOC	Hexachloroethane	67-72-1	C			7.90E+01		6.60E+02		1.00E+05		1.10E+03	
W-10	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	B2									1.00E+02	
W-10	SVOC	Isophorone	78-59-1	C							8.20E+06		2.40E+03	
W-10	SVOC	2-Methylnaphthalene	91-57-6		4.39E+01								4.00E+04	1E-03
W-10	SVOC	Methylphenol (summed)	1319-77-3								2.90E+06		5.60E+04	
W-10	SVOC	Naphthalene	91-20-3	C			4.70E+02		3.50E+02		8.80E+04		8.00E+04	
W-10	SVOC	2-Nitroaniline	88-74-4											
W-10	SVOC	3-Nitroaniline	99-09-2	C										
W-10	SVOC	4-Nitroaniline	100-01-6	C										
W-10	SVOC	Nitrobenzene	98-95-3	D			4.90E+02		4.60E+03		1.50E+06		4.90E+02	
W-10	SVOC	2-Nitrophenol	88-75-5										3.10E+03	
W-10	SVOC	4-Nitrophenol	100-02-7											
W-10	SVOC	N-Nitrosodiphenylamine	86-30-6	B2									1.20E+04	
W-10	SVOC	N-Nitroso-di-n-propylamine	621-64-7	B2							2.00E+03		8.30E+00	
W-10	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	C										
W-10	SVOC	Pentachlorophenol	87-86-5	B2							1.30E+05		3.90E+02	
W-10	SVOC	Phenanthrene	85-01-8	D	1.39E+02		5.10E+03	3E-02	1.90E+02	7E-01	2.90E+03	5E-02	8.00E+03	2E-02
W-10	SVOC	Phenol	108-95-2	D							1.80E+07		1.20E+04	
W-10	SVOC	Pyrene	129-00-0	D	2.84E+01		1.00E+06	3E-05	7.80E+05	4E-05	2.90E+06	1E-05	1.10E+05	3E-04
W-10	SVOC	2,4,5-Trichlorophenol	95-95-4								1.00E+07		1.10E+05	
W-10	SVOC	2,4,6-Trichlorophenol	88-06-2	B2							1.30E+06		5.00E+03	
W-10	P/PCB	PCBs (total)	1336-36-3	B2	4.87E+01		1.60E+04	3E-03	8.10E+02	6E-02	6.50E+03	7E-03	2.00E+01	**2E+00**
W-10	INORG	Antimony	7440-36-0								5.90E+03		1.20E+03	
W-10	INORG	Arsenic	7440-38-2	A	1.86E+00	1.32E+01					9.10E+02	2E-03	6.10E+01	3E-02
W-10	INORG	Barium	7440-39-3	D	5.68E-01	1.10E+02					1.50E+05	4E-06	2.50E+05	2E-06
W-10	INORG	Beryllium	7440-41-7	B1		1.53E+00					5.90E+02		3.10E+03	
W-10	INORG	Cadmium	7440-43-9	B1		1.20E+00					2.20E+03		4.10E+03	
W-10	INORG	Chromium (total)	7440-47-3		6.45E-01	4.92E+01					2.40E+02	3E-03	1.70E+04	4E-05
W-10	INORG	Cobalt	7440-48-4			1.74E+01					5.90E+03		1.80E+04	
W-10	INORG	Copper	7440-50-8	D	1.60E-01	3.20E+01					5.90E+04	3E-06	1.40E+05	1E-06
W-10	INORG	Lead	7439-92-1	B2	1.75E-01	4.92E+01					4.40E+04	4E-06	9.00E+02	2E-04
W-10	INORG	Manganese	7439-96-5	D	5.68E-02	5.10E+02					1.50E+03	4E-05	1.70E+05	3E-07

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

SMEAR ZONE SOIL SCREENING RESULTS

Area	Chem Group	Chemical Name	CASRN	Carc Class	LNAPL Saturated Soil Conc (mg/kg)	Site Specific Background (mg/kg)	Industrial Volatilization to Indoor Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Industrial Volatilization to Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Volatilization to Ambient Air Criteria	Industrial Particulate Inhalation in Ambient Air Criteria (mg/kg)	Ratio of Max Detect to Industrial Particulate Inhalation in Ambient Air Criteria	Industrial Direct Contact Criteria (mg/kg)	Ratio of Max Detect to Industrial Direct Contact Criteria
W-10	INORG	Mercury	7439-97-6	D		1.30E-01							1.10E+03	
W-10	INORG	Nickel	7440-02-0	A	4.13E-01	3.01E+01					1.60E+04	3E-05	2.70E+05	2E-06
W-10	INORG	Selenium	7782-49-2	D	2.14E-01	4.10E-01					5.90E+04	4E-06	1.80E+04	1E-05
W-10	INORG	Silver	7440-22-4	D							2.90E+03		1.70E+04	
W-10	INORG	Thallium	7440-28-0										2.40E+02	
W-10	INORG	Vanadium	7440-62-2		6.45E-01	3.28E+01							1.00E+04	6E-05
W-10	INORG	Zinc	7440-66-6	D		4.70E+01							1.00E+06	
W-10	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	B2	1.37E-04						8.90E-02	2E-03	9.90E-04	1E-01

Notes:
NAPL Concentration adjustment factor = 0.258
Screening Criteria is from Michigan DEQ Part 201.
The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.
The non-cancer Screening Criteria for Aroclor 1254 was used as a surrogate for PCB (total).

Chem Group - Chemical Group
Carc Class - EPA Weight-of-Evidence Cancer Classification

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
F-07	VOC	Bromodichloromethane	75-27-4	T	B2	4	2	2.00E-03	2.20E-03	1.00E-01	2E-02	3.80E+01	6E-05	1.40E+01	2E-04	1.00E-01	2E-02	4.80E+00	5E-04
F-07	VOC	Carbon Disulfide	75-15-0	T		4	1	4.70E-04	4.70E-04	2.30E+00	2E-04	5.50E+02	9E-07	1.20E+03	4E-07	8.00E-01	6E-04	2.50E+02	2E-06
F-07	VOC	Chloroethane	75-00-3	T		4	2	3.30E-03	4.70E-03	1.70E+00	3E-03	5.70E+03	8E-07	4.40E+02	1E-05	4.30E-01	1E-02	5.70E+03	8E-07
F-07	VOC	Chloroform	67-66-3	T	B2	4	3	2.90E-04	9.50E-03	1.00E-01	1E-01	1.80E+02	5E-05	1.50E+02	6E-05	1.00E-01	1E-01	2.80E+01	3E-04
F-07	VOC	Chloromethane	74-87-3	T	D	4	1	2.80E-04	2.80E-04	1.10E+00	3E-04	5.20E+01	5E-06	4.90E+02	6E-07	2.60E-01	1E-03	8.60E+00	3E-05
F-07	VOC	1,1-Dichloroethane	75-34-3	T	C	4	4	6.00E-03	2.30E-02	2.50E+00	9E-03	2.30E+03	1E-05	2.40E+03	1E-05	8.80E-01	3E-02	1.00E+03	2E-05
F-07	VOC	1,1-Dichloroethene	75-35-4	T	C	4	4	1.10E-03	2.00E-02	7.00E-03	**3E+00**	1.30E+00	2E-02	1.10E+01	2E-03	7.00E-03	**3E+00**	2.00E-01	1E-01
F-07	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	4	4	2.30E-04	5.60E-04	7.00E-02	8E-03	2.20E+02	3E-06	2.00E+02	3E-06	7.00E-02	8E-03	9.60E+01	6E-06
F-07	VOC	Tetrachloroethene	127-18-4	T	C-B2	4	4	5.60E-04	6.30E-03	5.00E-03	**1E+00**	1.70E+02	4E-05	1.20E+01	5E-04	5.00E-03	**1E+00**	2.50E+01	3E-04
F-07	VOC	Toluene	108-88-3	T	D	4	3	2.00E-04	2.60E-04	1.00E+00	3E-04	5.30E+02	5E-07	5.30E+02	5E-07	1.00E+00	3E-04	5.30E+02	5E-07
F-07	VOC	1,1,1-Trichloroethane	71-55-6	T	D	4	4	6.30E-03	1.00E-02	2.00E-01	5E-02	1.30E+03	8E-06	1.30E+03	8E-06	2.00E-01	5E-02	6.60E+02	2E-05
F-07	VOC	Trichloroethene	79-01-6	T	C-B2	4	2	3.90E-04	4.20E-04	5.00E-03	8E-02	9.70E+01	4E-06	3.70E+01	1E-05	5.00E-03	8E-02	1.50E+01	3E-05
F-07	SVOC	Caprolactam	105-60-2	T		4	1	4.10E-03	4.10E-03	1.70E+01	2E-04			3.90E+05	1E-08	5.80E+00	7E-04		
F-07	INORG	Antimony	7440-36-0	D		4	1	3.00E-03	3.00E-03	6.00E-03	5E-01			6.80E+01	4E-05	6.00E-03	5E-01		
F-07	INORG	Arsenic	7440-38-2	D	A	4	2	1.24E-02	4.16E-02	5.00E-02	8E-01			4.30E+00	1E-02	5.00E-02	8E-01		
F-07	INORG	Arsenic	7440-38-2	T	A	4	2	2.36E-02	3.00E-02	5.00E-02	6E-01			4.30E+00	7E-03	5.00E-02	6E-01		
F-07	INORG	Barium	7440-39-3	D	D	4	4	1.85E-02	6.46E-02	2.00E+00	3E-02			1.40E+04	5E-06	2.00E+00	3E-02		
F-07	INORG	Barium	7440-39-3	T	D	4	4	1.73E-02	5.72E-02	2.00E+00	3E-02			1.40E+04	4E-06	2.00E+00	3E-02		
F-07	INORG	Cadmium	7440-43-9	T	B1	4	1	3.80E-04	3.80E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
F-07	INORG	Chromium (total)	7440-47-3	T		4	2	1.50E-03	2.90E-03	1.00E-01	3E-02			4.60E+02	6E-06	1.00E-01	3E-02		
F-07	INORG	Copper	7440-50-8	D	D	4	1	1.54E-02	1.54E-02	4.00E+00	4E-03			7.40E+03	2E-06	1.40E+00	1E-02		
F-07	INORG	Copper	7440-50-8	T	D	4	1	1.79E-02	1.79E-02	4.00E+00	4E-03			7.40E+03	2E-06	1.40E+00	1E-02		
F-07	INORG	Lead	7439-92-1	T	B2	4	1	3.00E-03	3.00E-03	4.00E-03	8E-01					4.00E-03	8E-01		
F-07	INORG	Manganese	7439-96-5	D	D	4	4	1.10E-03	2.69E-01	2.50E+00	1E-01			9.10E+03	3E-05	8.60E-01	3E-01		
F-07	INORG	Manganese	7439-96-5	T	D	4	4	1.50E-03	2.34E-01	2.50E+00	9E-02			9.10E+03	3E-05	8.60E-01	3E-01		
F-07	INORG	Mercury	7439-97-6	T	D	4	1	1.70E-04	1.70E-04	2.00E-03	9E-02			5.60E-02	3E-03	2.00E-03	9E-02		
F-07	INORG	Nickel	7440-02-0	D	A	4	2	2.70E-03	3.60E-03	1.00E-01	4E-02			7.40E+04	5E-08	1.00E-01	4E-02		
F-07	INORG	Nickel	7440-02-0	T	A	4	2	4.10E-03	4.90E-03	1.00E-01	5E-02			7.40E+04	7E-08	1.00E-01	5E-02		
F-07	INORG	Thallium	7440-28-0	D		4	1	2.50E-05	2.50E-05	2.00E-03	1E-02			1.30E+01	2E-06	2.00E-03	1E-02		
F-07	INORG	Thallium	7440-28-0	T		4	1	2.50E-05	2.50E-05	2.00E-03	1E-02			1.30E+01	2E-06	2.00E-03	1E-02		
F-07	INORG	Vanadium	7440-62-2	D		4	3	8.40E-04	2.47E-02	6.20E-02	4E-01			9.70E+02	3E-05	4.50E-03	**5E+00**		
F-07	INORG	Vanadium	7440-62-2	T		4	2	7.80E-03	1.71E-02	6.20E-02	3E-01			9.70E+02	2E-05	4.50E-03	**4E+00**		
F-07	INORG	Zinc	7440-66-6	D	D	4	2	1.58E-02	2.08E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	9E-03		
F-07	INORG	Zinc	7440-66-6	T	D	4	3	1.24E-02	1.69E-01	5.00E+00	3E-02			1.10E+05	2E-06	2.40E+00	7E-02		
F-08	VOC	Chloroform	67-66-3	T	B2	2	2	9.60E-04	2.80E-03	1.00E-01	3E-02	1.80E+02	2E-05	1.50E+02	2E-05	1.00E-01	3E-02	2.80E+01	1E-04
F-08	INORG	Barium	7440-39-3	D	D	2	2	5.46E-02	5.75E-02	2.00E+00	3E-02			1.40E+04	4E-06	2.00E+00	3E-02		
F-08	INORG	Barium	7440-39-3	T	D	2	2	5.49E-02	5.82E-02	2.00E+00	3E-02			1.40E+04	4E-06	2.00E+00	3E-02		
F-08	INORG	Cadmium	7440-43-9	D	B1	2	1	3.20E-04	3.20E-04	5.00E-03	6E-02			1.90E+02	2E-06	5.00E-03	6E-02		
F-08	INORG	Cobalt	7440-48-4	D		2	2	1.40E-03	2.80E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
F-08	INORG	Cobalt	7440-48-4	T		2	1	3.00E-03	3.00E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	8E-02		
F-08	INORG	Manganese	7439-96-5	D	D	2	1	3.60E-01	3.60E-01	2.50E+00	1E-01			9.10E+03	4E-05	8.60E-01	4E-01		
F-08	INORG	Manganese	7439-96-5	T	D	2	2	1.06E-01	3.64E-01	2.50E+00	1E-01			9.10E+03	4E-05	8.60E-01	4E-01		
F-08	INORG	Nickel	7440-02-0	D	A	2	2	6.20E-03	6.70E-03	1.00E-01	7E-02			7.40E+04	9E-08	1.00E-01	7E-02		
F-08	INORG	Nickel	7440-02-0	T	A	2	2	5.00E-03	7.70E-03	1.00E-01	8E-02			7.40E+04	1E-07	1.00E-01	8E-02		
F-08	INORG	Thallium	7440-28-0	D		2	2	4.10E-05	5.40E-03	2.00E-03	**3E+00**			1.30E+01	4E-04	2.00E-03	**3E+00**		
F-08	INORG	Thallium	7440-28-0	T		2	1	4.30E-05	4.30E-05	2.00E-03	2E-02			1.30E+01	3E-06	2.00E-03	2E-02		
F-08	INORG	Zinc	7440-66-6	D	D	2	1	1.33E-02	1.33E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
F-08	INORG	Zinc	7440-66-6	T	D	2	1	2.12E-02	2.12E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	9E-03		
F-12	VOC	Acetone	67-64-1	T	D	4	1	7.05E-04	7.05E-04	2.10E+00	3E-04	1.00E+06	7E-10	3.10E+04	2E-08	7.30E-01	1E-03	1.00E+06	7E-10

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
F-12	VOC	Chloroform	67-66-3	T	B2	4	1	1.60E-04	1.60E-04	1.00E-01	2E-03	1.80E+02	9E-07	1.50E+02	1E-06	1.00E-01	2E-03	2.80E+01	6E-06
F-12	VOC	1,1-Dichloroethane	75-34-3	T	C	4	4	5.05E-04	5.40E-03	2.50E+00	2E-03	2.30E+03	2E-06	2.40E+03	2E-06	8.80E-01	6E-03	1.00E+03	5E-06
F-12	VOC	1,1-Dichloroethene	75-35-4	T	C	4	3	1.21E-03	3.50E-03	7.00E-03	5E-01	1.30E+00	3E-03	1.10E+01	3E-04	7.00E-03	5E-01	2.00E-01	2E-02
F-12	VOC	Toluene	108-88-3	T	D	4	1	4.70E-04	4.70E-04	1.00E+00	5E-04	5.30E+02	9E-07	5.30E+02	9E-07	1.00E+00	5E-04	5.30E+02	9E-07
F-12	VOC	1,1,1-Trichloroethane	71-55-6	T	D	4	4	1.38E-04	3.50E-02	2.00E-01	2E-01	1.30E+03	3E-05	1.30E+03	3E-05	2.00E-01	2E-01	6.60E+02	5E-05
F-12	VOC	Trichloroethene	79-01-6	T	C-B2	4	1	1.40E-04	1.40E-04	5.00E-03	3E-02	3.70E+01	1E-06	3.70E+01	4E-06	5.00E-03	3E-02	1.50E+01	9E-06
F-12	VOC	Xylenes (total)	1330-20-7	T	D	4	1	3.48E-04	3.48E-04	1.00E+01	3E-05	1.90E+02	2E-06	1.90E+02	2E-06	1.00E+01	3E-05	1.90E+02	2E-06
F-12	INORG	Antimony	7440-36-0	T		4	1	1.65E-03	1.65E-03	6.00E-03	3E-01			6.80E+01	2E-05	6.00E-03	3E-01		
F-12	INORG	Barium	7440-39-3	D	D	4	4	3.70E-02	6.92E-02	2.00E+00	3E-02			1.40E+04	5E-06	2.00E+00	3E-02		
F-12	INORG	Barium	7440-39-3	T	D	4	4	3.53E-02	6.69E-02	2.00E+00	3E-02			1.40E+04	5E-06	2.00E+00	3E-02		
F-12	INORG	Beryllium	7440-41-7	D	B1	4	2	4.70E-04	4.70E-04	4.00E-03	1E-01			2.90E+02	2E-06	4.00E-03	1E-01		
F-12	INORG	Cobalt	7440-48-4	D		4	2	2.88E-03	3.75E-03	1.00E-01	4E-02			2.40E+03	2E-06	4.00E-02	9E-02		
F-12	INORG	Cobalt	7440-48-4	T		4	2	2.93E-03	3.90E-03	1.00E-01	4E-02			2.40E+03	2E-06	4.00E-02	1E-01		
F-12	INORG	Manganese	7439-96-5	D	D	4	4	1.20E+00	1.46E+00	2.50E+00	6E-01			9.10E+03	2E-04	8.60E-01	**2E+00**		
F-12	INORG	Manganese	7439-96-5	T	D	4	4	1.11E+00	1.35E+00	2.50E+00	5E-01			9.10E+03	1E-04	8.60E-01	**2E+00**		
F-12	INORG	Nickel	7440-02-0	D	A	4	4	3.40E-03	5.45E-03	1.00E-01	5E-02			7.40E+04	7E-08	1.00E-01	5E-02		
F-12	INORG	Nickel	7440-02-0	T	A	4	2	3.70E-03	6.55E-03	1.00E-01	7E-02			7.40E+04	9E-08	1.00E-01	7E-02		
F-12	INORG	Selenium	7782-49-2	T	D	4	2	3.43E-03	3.43E-03	5.00E-02	7E-02			9.70E+02	4E-06	5.00E-02	7E-02		
F-12	INORG	Thallium	7440-28-0	D		4	4	2.90E-05	1.29E-03	2.00E-03	6E-01			1.30E+01	1E-04	2.00E-03	6E-01		
F-12	INORG	Thallium	7440-28-0	T		4	4	1.90E-05	1.29E-03	2.00E-03	6E-01			1.30E+01	1E-04	2.00E-03	6E-01		
F-15	VOC	Chloroform	67-66-3	T	B2	2	1	5.40E-04	5.40E-04	1.00E-01	5E-03	1.80E+02	3E-06	1.50E+02	4E-06	1.00E-01	5E-03	2.80E+01	2E-05
F-15	VOC	Chloromethane	74-87-3	T	D	2	1	4.10E-04	4.10E-04	1.10E+00	4E-04	5.20E+01	8E-06	4.90E+02	8E-07	2.60E-01	2E-03	8.60E+00	5E-05
F-15	VOC	1,1-Dichloroethane	75-34-3	T	C	2	2	2.00E-03	7.60E-03	2.50E+00	3E-03	2.30E+03	3E-06	2.40E+03	3E-06	8.80E-01	9E-03	1.00E+03	8E-06
F-15	VOC	Tetrachloroethene	127-18-4	T	C-B2	2	1	2.80E-04	2.80E-04	5.00E-03	6E-02	1.70E+02	2E-06	1.20E+01	2E-05	5.00E-03	6E-02	2.50E+01	1E-05
F-15	VOC	Toluene	108-88-3	T	D	2	2	2.90E-04	3.60E-04	1.00E+00	4E-04	5.30E+02	7E-07	5.30E+02	7E-07	1.00E+00	4E-04	5.30E+02	7E-07
F-15	VOC	1,1,1-Trichloroethane	71-55-6	T	D	2	1	6.10E-04	6.10E-04	2.00E-01	3E-03	1.30E+03	5E-07	1.30E+03	5E-07	2.00E-01	3E-03	6.60E+02	9E-07
F-15	VOC	Xylenes (total)	1330-20-7	T	D	2	1	6.40E-04	6.40E-04	1.00E+01	6E-05	1.90E+02	3E-06	1.90E+02	3E-06	1.00E+01	6E-05	1.90E+02	3E-06
F-15	INORG	Barium	7440-39-3	D	D	2	2	1.78E-02	2.14E-02	2.00E+00	1E-02			1.40E+04	2E-06	2.00E+00	1E-02		
F-15	INORG	Barium	7440-39-3	T	D	2	2	1.81E-02	2.15E-02	2.00E+00	1E-02			1.40E+04	2E-06	2.00E+00	1E-02		
F-15	INORG	Cadmium	7440-43-9	T	B1	2	1	4.10E-04	4.10E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
F-15	INORG	Cobalt	7440-48-4	T		2	2	1.60E-03	1.70E-03	1.00E-01	2E-02			2.40E+03	7E-07	4.00E-02	4E-02		
F-15	INORG	Manganese	7439-96-5	D	D	2	2	3.99E-01	6.33E-01	2.50E+00	3E-01			9.10E+03	7E-05	8.60E-01	7E-01		
F-15	INORG	Manganese	7439-96-5	T	D	2	2	3.93E-01	6.57E-01	2.50E+00	3E-01			9.10E+03	7E-05	8.60E-01	8E-01		
F-15	INORG	Nickel	7440-02-0	D	A	2	1	6.60E-03	6.60E-03	1.00E-01	7E-02			7.40E+04	9E-08	1.00E-01	7E-02		
F-15	INORG	Nickel	7440-02-0	T	A	2	2	2.80E-03	7.40E-03	1.00E-01	7E-02			7.40E+04	1E-07	1.00E-01	7E-02		
F-15	INORG	Thallium	7440-28-0	D		2	1	6.40E-05	6.40E-05	2.00E-03	3E-02			1.30E+01	5E-06	2.00E-03	3E-02		
F-15	INORG	Thallium	7440-28-0	T		2	1	5.40E-05	5.40E-05	2.00E-03	3E-02			1.30E+01	4E-06	2.00E-03	3E-02		
M-01	VOC	Bromodichloromethane	75-27-4	T	B2	6	1	1.90E-04	1.90E-04	1.00E-01	2E-03	3.80E+01	5E-06	1.40E+01	1E-05	1.00E-01	2E-03	4.80E+00	4E-05
M-01	VOC	Chloroform	67-66-3	T	B2	6	3	4.20E-04	6.70E-04	1.00E-01	7E-03	1.80E+02	4E-06	1.50E+02	4E-06	1.00E-01	7E-03	2.80E+01	2E-05
M-01	VOC	Dichlorodifluoromethane	75-71-8	T		6	4	6.70E-04	2.40E-02	4.80E+00	5E-03	3.00E+02	8E-05	3.00E+02	8E-05	1.70E+00	1E-02	2.20E+02	1E-04
M-01	VOC	Tetrachloroethene	127-18-4	T	C-B2	6	2	3.80E-04	4.10E-04	5.00E-03	8E-02	1.70E+02	2E-06	1.20E+01	3E-05	5.00E-03	8E-02	2.50E+01	2E-05
M-01	VOC	Toluene	108-88-3	T	D	6	1	4.40E-04	4.40E-04	1.00E+00	4E-04	5.30E+02	8E-07	5.30E+02	8E-07	1.00E+00	4E-04	5.30E+02	8E-07
M-01	VOC	1,1,1-Trichloroethane	71-55-6	T	D	6	3	5.30E-04	1.00E-03	2.00E-01	5E-03	1.30E+03	8E-07	1.30E+03	8E-07	2.00E-01	5E-03	6.60E+02	2E-06
M-01	VOC	Xylenes (total)	1330-20-7	T	D	6	1	3.70E-04	3.70E-04	1.00E+01	4E-05	1.90E+02	2E-06	1.90E+02	2E-06	1.00E+01	4E-05	1.90E+02	2E-06
M-01	INORG	Antimony	7440-36-0	D		6	2	4.20E-03	6.00E-03	6.00E-03	1E+00			6.80E+01	9E-05	6.00E-03	1E+00		
M-01	INORG	Antimony	7440-36-0	T		6	2	5.00E-03	7.70E-03	6.00E-03	**1E+00**			6.80E+01	1E-04	6.00E-03	**1E+00**		
M-01	INORG	Arsenic	7440-38-2	D	A	6	3	4.20E-03	6.40E-03	5.00E-02	1E-01			4.30E+00	1E-03	5.00E-02	1E-01		
M-01	INORG	Arsenic	7440-38-2	T	A	6	5	4.70E-03	7.00E-03	5.00E-02	1E-01			4.30E+00	2E-03	5.00E-02	1E-01		
M-01	INORG	Barium	7440-39-3	D	D	6	6	1.41E-02	1.77E-01	2.00E+00	9E-02			1.40E+04	1E-05	2.00E+00	9E-02		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
M-01	INORG	Barium	7440-39-3	T	D	6	6	1.36E-02	1.72E-01	2.00E+00	9E-02			1.40E+04	1E-05	2.00E+00	9E-02		
M-01	INORG	Cadmium	7440-43-9	T	B1	6	1	3.80E-04	3.80E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
M-01	INORG	Chromium (total)	7440-47-3	D		4	1	3.64E-02	3.64E-02	1.00E-01	4E-01			4.60E+02	8E-05	1.00E-01	4E-01		
M-01	INORG	Chromium III	16065-83-1	D	D	2	1	3.87E-02	3.87E-02	1.00E-01	4E-01			2.90E+05	1E-07	1.00E-01	4E-01		
M-01	INORG	Chromium III	16065-83-1	T	D	6	2		4.85E-02	1.00E-01	5E-01			2.90E+05	2E-07	1.00E-01	5E-01		
M-01	INORG	Chromium VI	18540-29-9	T	A	6	1	3.38E-02	3.38E-02	1.00E-01	3E-01			4.60E+02	7E-05	1.00E-01	3E-01		
M-01	INORG	Cobalt	7440-48-4	D		6	4	2.20E-03	2.90E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
M-01	INORG	Cobalt	7440-48-4	T		6	4	2.20E-03	2.80E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
M-01	INORG	Cyanide (total)	57-12-5	T	D	6	4	5.50E-03	8.97E-01	2.00E-01	4E+00			5.70E+01	2E-02	2.00E-01	**4E+00**		
M-01	INORG	Manganese	7439-96-5	D	D	6	5	9.40E-04	5.46E-01	2.50E+00	2E-01			9.10E+03	6E-05	8.60E-01	6E-01		
M-01	INORG	Manganese	7439-96-5	T	D	6	5	2.63E-02	5.48E-01	2.50E+00	2E-01			9.10E+03	6E-05	8.60E-01	6E-01		
M-01	INORG	Nickel	7440-02-0	D	A	6	2	2.40E-03	3.00E-03	1.00E-01	3E-02			7.40E+04	4E-08	1.00E-01	3E-02		
M-01	INORG	Nickel	7440-02-0	T	A	6	1	3.70E-03	3.70E-03	1.00E-01	4E-02			7.40E+04	5E-08	1.00E-01	4E-02		
M-01	INORG	Selenium	7782-49-2	D	D	6	2	5.00E-03	5.60E-03	5.00E-02	1E-01			9.70E+02	6E-06	5.00E-02	1E-01		
M-01	INORG	Selenium	7782-49-2	T	D	6	2	4.50E-03	6.50E-03	5.00E-02	1E-01			9.70E+02	7E-06	5.00E-02	1E-01		
M-01	INORG	Thallium	7440-28-0	D		6	3	2.60E-05	5.40E-05	2.00E-03	3E-02			1.30E+01	4E-06	2.00E-03	3E-02		
M-01	INORG	Thallium	7440-28-0	T		6	1	4.50E-05	4.50E-05	2.00E-03	2E-02			1.30E+01	3E-06	2.00E-03	2E-02		
M-01	INORG	Vanadium	7440-62-2	D		6	2	1.00E-03	1.70E-03	6.20E-02	3E-02			9.70E+02	2E-06	4.50E-03	4E-01		
M-01	INORG	Vanadium	7440-62-2	T		6	1	2.80E-03	2.80E-03	5.20E-02	5E-02			9.70E+02	3E-06	4.50E-03	6E-01		
M-01	INORG	Zinc	7440-66-6	D	D	6	1	1.89E-02	1.89E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	8E-03		
M-02	VOC	Acetone	67-64-1	T	D	14	7	4.40E-03	3.40E+00	2.10E+00	**2E+00**	1.00E+06	3E-06	3.10E+04	1E-04	7.30E-01	**5E+00**	1.00E+06	3E-06
M-02	VOC	Bromodichloromethane	75-27-4	T	B2	14	2	4.80E-04	7.20E-04	1.00E-01	7E-03	3.80E+01	2E-05	1.40E+01	5E-05	1.00E-01	7E-03	4.80E+00	2E-04
M-02	VOC	Chloroethane	75-00-3	T		14	3	9.10E-03	2.30E-02	1.70E+00	1E-02	5.70E+03	4E-06	4.40E+02	5E-05	4.30E-01	5E-02	5.70E+03	4E-06
M-02	VOC	Chloroform	67-66-3	T	B2	14	8	2.00E-04	5.80E-03	1.00E-01	6E-02	1.80E+02	3E-05	1.50E+02	4E-05	1.00E-01	6E-02	2.80E+01	2E-04
M-02	VOC	Chloromethane	74-87-3	T	D	14	1	1.60E-04	1.60E-04	1.10E+00	1E-04	5.20E+01	3E-06	4.90E+02	3E-07	2.60E-01	6E-04	8.60E+00	2E-05
M-02	VOC	1,1-Dichloroethane	75-34-3	T	C	14	12	4.80E-04	1.30E+00	2.50E+00	5E-01	2.30E+03	6E-04	2.40E+03	5E-04	8.80E-01	**1E+00**	1.00E+03	1E-03
M-02	VOC	1,2-Dichloroethane	107-06-2	T	B2	14	3	6.20E-04	1.00E-02	5.00E-03	**2E+00**	5.90E+01	2E-04	1.90E+01	5E-04	5.00E-03	**2E+00**	9.60E+00	1E-03
M-02	VOC	1,1-Dichloroethene	75-35-4	T	C	14	10	8.20E-04	8.00E-02	7.00E-03	**1E+01**	1.30E+00	6E-02	1.10E+01	7E-03	7.00E-03	**1E+01**	2.00E-01	4E-01
M-02	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	14	2	5.40E-03	3.40E-02	7.00E-02	5E-01	2.20E+02	2E-04	2.00E+02	2E-04	7.00E-02	5E-01	9.60E+01	4E-04
M-02	VOC	trans-1,2-Dichloroethene	156-60-5	T		14	1	1.10E-03	1.10E-03	1.00E-01	1E-02	2.00E+02	6E-06	2.20E+02	5E-06	1.00E-01	1E-02	8.50E+01	1E-05
M-02	VOC	4-Methyl-2-pentanone	108-10-1	T		14	2	5.40E-03	3.20E-02	5.20E+00	6E-03	2.00E+04	2E-06	1.30E+04	2E-06	1.80E+00	2E-02	2.00E+04	2E-06
M-02	VOC	Methylene Chloride	75-09-2	T	B2	14	3	4.00E-04	1.90E-03	5.00E-03	4E-01	1.40E+03	1E-06	2.20E+02	9E-06	5.00E-03	4E-01	2.20E+02	9E-06
M-02	VOC	Tetrachloroethene	127-18-4	T	C-B2	14	1	8.00E-04	8.00E-04	5.00E-03	2E-01	1.70E+02	5E-06	1.20E+01	7E-05	5.00E-03	2E-01	2.50E+01	3E-05
M-02	VOC	1,1,1-Trichloroethane	71-55-6	T	D	14	10	1.90E-03	4.80E-01	2.00E-01	**2E+00**	1.30E+03	4E-04	1.30E+03	4E-04	2.00E-01	**2E+00**	6.60E+02	7E-04
M-02	VOC	1,1,2-Trichloroethane	79-00-5	T	C	14	2	1.00E-02	1.20E-02	5.00E-03	**2E+00**	1.10E+02	1E-04	2.10E+01	6E-04	5.00E-03	**2E+00**	1.70E+01	7E-04
M-02	VOC	Trichloroethene	79-01-6	T	C-B2	14	2	1.70E-03	2.40E-03	5.00E-03	5E-01	9.70E+01	2E-05	3.70E+01	6E-05	5.00E-03	5E-01	1.50E+01	2E-04
M-02	VOC	Vinyl Chloride	75-01-4	T	A	14	2	1.00E-03	3.30E-03	2.00E-03	**2E+00**	6.90E-01	5E-03	5.70E-01	6E-03	2.00E-03	**2E+00**	1.10E-01	3E-02
M-02	SVOC	Acenaphthene	83-32-9	T		11	1	8.40E-04	8.40E-04	3.80E+00	2E-04	4.20E+00	2E-04	4.20E+00	2E-04	1.30E+00	6E-04	4.20E+00	2E-04
M-02	SVOC	Anthracene	120-12-7	T	D	11	1	7.80E-04	7.80E-04	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02
M-02	SVOC	Di-n-butylphthalate	84-74-2	T	D	11	2	1.10E-03	1.10E-03	2.50E+00	4E-04			1.10E+01	1E-04	8.80E-01	1E-03		
M-02	SVOC	2,4-Dimethylphenol	105-67-9	T		11	1	1.10E-03	1.10E-03	1.00E+00	1E-03			5.20E+02	2E-06	3.70E-01	3E-03		
M-02	SVOC	Fluorene	86-73-7	T	D	11	2	3.80E-03	4.40E-03	2.00E+00	2E-03	2.00E+00	2E-03	2.00E+00	2E-03	8.80E-01	5E-03	2.00E+00	2E-03
M-02	SVOC	2-Methylnaphthalene	91-57-6	T		11	2	1.50E-03	1.90E-03	7.50E-01	3E-03			2.50E+01	8E-05	2.60E-01	7E-03		
M-02	SVOC	Naphthalene	91-20-3	T	C	11	2	1.30E-03	1.60E-03	1.50E+00	1E-03	3.10E+01	5E-05	3.10E+01	5E-05	5.20E-01	3E-03	3.10E+01	5E-05
M-02	SVOC	Phenanthrene	85-01-8	T	D	11	2	4.20E-03	7.50E-03	1.50E-01	5E-02	1.00E+00	8E-03	1.00E+00	8E-03	5.20E-02	1E-01	1.00E+00	8E-03
M-02	P/PCB	PCBs (total)	1336-36-3	T	B2	11	1	4.39E-04	4.39E-04	5.00E-04	9E-01	4.50E-02	1E-02	3.30E-03	1E-01	5.00E-04	9E-01	4.50E-02	1E-02
M-02	INORG	Antimony	7440-36-0	D		13	2	3.40E-03	3.90E-03	6.00E-03	7E-01			6.80E+01	6E-05	6.00E-03	7E-01		
M-02	INORG	Antimony	7440-36-0	T		13	2	2.30E-03	2.50E-03	6.00E-03	4E-01			6.80E+01	4E-05	6.00E-03	4E-01		
M-02	INORG	Arsenic	7440-38-2	D	A	13	2	1.27E-02	3.07E-02	5.00E-02	6E-01			4.30E+00	7E-03	5.00E-02	6E-01		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
M-02	INORG	Arsenic	7440-38-2	T	A	13	3	4.70E-03	3.81E-02	5.00E-02	8E-01			4.30E+00	9E-03	5.00E-02	8E-01		
M-02	INORG	Barium	7440-39-3	D	D	13	13	2.05E-02	2.09E-01	2.00E+00	1E-01			1.40E+04	1E-05	2.00E+00	1E-01		
M-02	INORG	Barium	7440-39-3	T	D	13	13	3.56E-02	2.02E-01	2.00E+00	1E-01			1.40E+04	1E-05	2.00E+00	1E-01		
M-02	INORG	Cadmium	7440-43-9	D	B1	13	2	3.00E-04	3.30E-04	5.00E-03	7E-02			1.90E+02	2E-06	5.00E-03	7E-02		
M-02	INORG	Cadmium	7440-43-9	T	B1	13	2	3.20E-04	3.30E-04	5.00E-03	7E-02			1.90E+02	2E-06	5.00E-03	7E-02		
M-02	INORG	Chromium (total)	7440-47-3	T		2	2	2.90E-03	3.20E-03	1.00E-01	3E-02			4.60E+02	7E-06	1.00E-01	3E-02		
M-02	INORG	Chromium III	16065-83-1	D	D	4	1	3.45E-03	3.45E-03	1.00E-01	3E-02			2.90E+05	1E-08	1.00E-01	3E-02		
M-02	INORG	Chromium VI	18540-29-9	D	A	4	1	7.90E-03	7.90E-03	1.00E-01	8E-02			4.60E+02	2E-05	1.00E-01	8E-02		
M-02	INORG	Cobalt	7440-48-4	D		13	10	1.50E-03	1.87E-02	1.00E-01	2E-01			2.40E+03	8E-06	4.00E-02	5E-01		
M-02	INORG	Cobalt	7440-48-4	T		13	11	2.40E-03	1.91E-02	1.00E-01	2E-01			2.40E+03	8E-06	4.00E-02	5E-01		
M-02	INORG	Copper	7440-50-8	D	D	13	5	4.80E-03	1.68E-02	4.00E+00	4E-03			7.40E+03	2E-06	1.40E+00	1E-02		
M-02	INORG	Copper	7440-50-8	T	D	13	7	4.60E-03	2.51E-01	4.00E+00	6E-02			7.40E+03	3E-05	1.40E+00	2E-01		
M-02	INORG	Cyanide (total)	57-12-5	T	D	11	5	4.80E-03	3.07E-02	2.00E-01	2E-01			5.70E+01	5E-04	2.00E-01	2E-01		
M-02	INORG	Lead	7439-92-1	T	B2	13	1	2.20E-02	2.20E-02	4.00E-03	**6E+00**					4.00E-03	**6E+00**		
M-02	INORG	Manganese	7439-96-5	D	D	13	13	3.70E-03	1.17E+00	2.50E+00	5E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
M-02	INORG	Manganese	7439-96-5	T	D	13	13	3.60E-03	1.21E+00	2.50E+00	5E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
M-02	INORG	Mercury	7439-97-6	D	D	11	1	7.70E-05	7.70E-05	2.00E-03	4E-02			5.60E-02	1E-03	2.00E-03	4E-02		
M-02	INORG	Mercury	7439-97-6	T	D	11	2	7.70E-05	1.00E-04	2.00E-03	5E-02			5.60E-02	2E-03	2.00E-03	5E-02		
M-02	INORG	Nickel	7440-02-0	D	A	13	13	2.70E-03	1.68E-01	1.00E-01	**2E+00**			7.40E+04	2E-06	1.00E-01	**2E+00**		
M-02	INORG	Nickel	7440-02-0	T	A	13	13	3.20E-03	1.53E-01	1.00E-01	**2E+00**			7.40E+04	2E-06	1.00E-01	**2E+00**		
M-02	INORG	Selenium	7782-49-2	D	D	13	2	5.70E-03	5.70E-03	5.00E-02	1E-01			9.70E+02	6E-06	5.00E-02	1E-01		
M-02	INORG	Selenium	7782-49-2	T	D	13	3	5.00E-03	5.40E-03	5.00E-02	1E-01			9.70E+02	6E-06	5.00E-02	1E-01		
M-02	INORG	Thallium	7440-28-0	D		13	7	4.80E-05	5.60E-03	2.00E-03	**3E+00**			1.30E+01	4E-04	2.00E-03	**3E+00**		
M-02	INORG	Thallium	7440-28-0	T		13	5	2.00E-05	5.50E-03	2.00E-03	**3E+00**			1.30E+01	4E-04	2.00E-03	**3E+00**		
M-02	INORG	Vanadium	7440-62-2	D		13	6	1.90E-03	5.80E-03	6.20E-02	9E-02			9.70E+02	6E-06	4.50E-03	**1E+00**		
M-02	INORG	Vanadium	7440-62-2	T		13	7	1.30E-03	1.16E-02	6.20E-02	2E-01			9.70E+02	1E-05	4.50E-03	**3E+00**		
M-02	INORG	Zinc	7440-66-6	D	D	13	3	2.41E-02	8.48E-02	5.00E+00	2E-02			1.10E+05	8E-07	2.40E+00	4E-02		
M-02	INORG	Zinc	7440-66-6	T	D	13	3	1.52E-02	5.18E-02	5.00E+00	1E-02			1.10E+05	5E-07	2.40E+00	2E-02		
M-04	VOC	Acetone	67-64-1	T	D	8	3	2.10E-03	1.70E-01	2.10E+00	8E-02	1.00E+06	2E-07	3.10E+04	5E-06	7.30E-01	2E-01	1.00E+06	2E-07
M-04	VOC	Benzene	71-43-2	T	A	8	3	3.30E-04	5.50E-01	5.00E-03	**1E+02**	3.60E+01	2E-02	1.10E+01	5E-02	5.00E-03	**1E+02**	5.60E+00	1E-01
M-04	VOC	Bromodichloromethane	75-27-4	T	B2	8	1	3.00E-04	3.00E-04	1.00E-01	3E-03	3.80E+01	8E-06	1.40E+01	2E-05	1.00E-01	3E-03	4.80E+00	6E-05
M-04	VOC	Chloroform	67-66-3	T	B2	8	3	8.90E-04	1.30E-03	1.00E-01	1E-02	1.80E+02	7E-06	1.50E+02	9E-06	1.00E-01	1E-02	2.80E+01	5E-05
M-04	VOC	Cumene	98-82-8	T	D	8	3	2.70E-04	1.90E-02	2.30E+00	8E-03	5.60E+01	3E-04	5.60E+01	3E-04	8.00E-01	2E-02	5.60E+01	3E-04
M-04	VOC	Cyclohexane	110-82-7	T		8	2	1.30E-01	3.00E-01										
M-04	VOC	1,2-Dichlorobenzene	95-50-1	T	D	8	1	2.10E-04	2.10E-04	6.00E-01	4E-04	1.60E+02	1E-06	1.60E+02	1E-06	6.00E-01	4E-04	1.60E+02	1E-06
M-04	VOC	1,4-Dichlorobenzene	106-46-7	T	C	8	1	1.90E-04	1.90E-04	7.50E-02	3E-03	7.40E+01	3E-06	6.40E+00	3E-05	7.50E-02	3E-03	1.60E+01	1E-05
M-04	VOC	Ethyl Benzene	100-41-4	T	D	8	3	4.90E-04	8.50E-01	7.00E-01	**1E+00**	1.70E+02	5E-03	1.70E+02	5E-03	7.00E-01	**1E+00**	1.70E+02	5E-03
M-04	VOC	Methyl tert-butyl ether	1634-04-4	T		8	1	1.20E-03	1.20E-03	6.90E-01	2E-03	4.70E+04	3E-08	6.90E+02	2E-06	2.40E-01	5E-03	4.70E+04	3E-08
M-04	VOC	Methylcyclohexane	108-87-2	T		8	2	2.50E-02	6.30E-02										
M-04	VOC	Methylene Chloride	75-09-2	T	B2	8	2	3.50E-04	1.40E-03	5.00E-03	3E-01	1.40E+03	1E-06	2.20E+02	6E-06	5.00E-03	3E-01	2.20E+02	6E-06
M-04	VOC	Toluene	108-88-3	T	D	8	3	3.10E-04	3.40E-02	1.00E+00	3E-02	5.30E+02	6E-05	5.30E+02	6E-05	1.00E+00	3E-02	5.30E+02	6E-05
M-04	VOC	1,2,4-Trichlorobenzene	120-82-1	T	D	8	1	2.40E-04	2.40E-04	7.00E-02	3E-03	3.00E+02	8E-07	1.90E+01	1E-05	7.00E-02	3E-03	3.00E+02	8E-07
M-04	VOC	Xylenes (total)	1330-20-7	T	D	8	2	3.70E-01	1.30E+00	1.00E+01	1E-01	1.90E+02	7E-03	1.90E+02	7E-03	1.00E+01	1E-01	1.90E+02	7E-03
M-05	P/PCB	PCBs (total)	1336-36-3	T	B2	4	2	8.04E-04	1.66E-03	5.00E-04	**3E+00**	4.50E-02	4E-02	3.30E-03	5E-01	5.00E-04	**3E+00**	4.50E-02	4E-02
M-05	INORG	Antimony	7440-36-0	D		4	1	4.30E-03	4.30E-03	6.00E-03	7E-01			6.80E+01	6E-05	6.00E-03	7E-01		
M-05	INORG	Antimony	7440-36-0	T		4	1	3.50E-03	3.50E-03	6.00E-03	6E-01			6.80E+01	5E-05	6.00E-03	6E-01		
M-05	INORG	Arsenic	7440-38-2	D	A	4	2	2.49E-02	2.67E-02	5.00E-02	5E-01			4.30E+00	6E-03	5.00E-02	5E-01		
M-05	INORG	Arsenic	7440-38-2	T	A	4	3	4.10E-03	2.73E-02	5.00E-02	5E-01			4.30E+00	6E-03	5.00E-02	5E-01		
M-05	INORG	Barium	7440-39-3	D	D	4	4	1.28E+00	4.72E+00	2.00E+00	**2E+00**			1.40E+04	3E-04	2.00E+00	**2E+00**		

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
M-05	INORG	Barium	7440-39-3	T	D	4	4	1.31E+00	4.80E+00	2.00E+00	**2E+00**			1.40E+04	3E-04	2.00E+00	**2E+00**		
M-05	INORG	Cadmium	7440-43-9	D	B1	4	3	3.00E-04	6.60E-04	5.00E-03	1E-01			1.90E+02	3E-06	5.00E-03	1E-01		
M-05	INORG	Cadmium	7440-43-9	T	B1	4	3	3.60E-04	7.10E-04	5.00E-03	1E-01			1.90E+02	4E-06	5.00E-03	1E-01		
M-05	INORG	Chromium (total)	7440-47-3	D		4	3	1.80E-03	2.20E-03	1.00E-01	2E-02			4.60E+02	5E-06	1.00E-01	2E-02		
M-05	INORG	Chromium (total)	7440-47-3	T		4	3	2.50E-03	2.05E-02	1.00E-01	2E-01			4.60E+02	4E-05	1.00E-01	2E-01		
M-05	INORG	Cobalt	7440-48-4	D		4	1	8.00E-03	8.00E-03	1.00E-01	8E-02			2.40E+03	3E-06	4.00E-02	2E-01		
M-05	INORG	Cobalt	7440-48-4	T		4	1	7.90E-03	7.90E-03	1.00E-01	8E-02			2.40E+03	3E-06	4.00E-02	2E-01		
M-05	INORG	Copper	7440-50-8	T	D	4	1	5.20E-03	5.20E-03	4.00E+00	1E-03			7.40E+03	7E-07	1.40E+00	4E-03		
M-05	INORG	Manganese	7439-96-5	D	D	4	4	9.53E-01	3.57E+00	2.50E+00	**1E+00**			9.10E+03	4E-04	8.60E-01	**4E+00**		
M-05	INORG	Manganese	7439-96-5	T	D	4	4	9.83E-01	3.63E+00	2.50E+00	**1E+00**			9.10E+03	4E-04	8.60E-01	**4E+00**		
M-05	INORG	Nickel	7440-02-0	D	A	4	2	1.06E-02	1.60E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
M-05	INORG	Nickel	7440-02-0	T	A	4	2	1.69E-02	1.75E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
M-05	INORG	Thallium	7440-28-0	D		4	2	5.00E-03	5.90E-03	2.00E-03	**3E+00**			1.30E+01	5E-04	2.00E-03	**3E+00**		
M-05	INORG	Thallium	7440-28-0	T		4	1	3.00E-05	3.00E-05	2.00E-03	2E-02			1.30E+01	2E-06	2.00E-03	2E-02		
M-05	INORG	Vanadium	7440-62-2	D		4	2	8.00E-03	1.00E-02	6.20E-02	2E-01			9.70E+02	1E-05	4.50E-03	**2E+00**		
M-05	INORG	Vanadium	7440-62-2	T		4	2	7.80E-03	1.04E-02	6.20E-02	2E-01			9.70E+02	1E-05	4.50E-03	**2E+00**		
M-05	INORG	Zinc	7440-66-6	D	D	4	1	1.33E-02	1.33E-02	3.00E-02	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
M-07	VOC	Acetone	67-64-1	T	D	8	4	3.50E-03	4.20E+01	2.10E+00	**2E+01**	1.00E+06	4E-05	3.10E+04	1E-03	7.30E-01	**6E+01**	1.00E+06	4E-05
M-07	VOC	Benzene	71-43-2	T	A	8	2	2.40E-04	4.10E-04	5.00E-03	8E-02	3.60E+01	1E-05	1.10E+01	4E-05	5.00E-03	8E-02	5.60E+00	7E-05
M-07	VOC	2-Butanone	78-93-3	T	D	8	1	4.70E-03	4.70E-03	3.80E+01	1E-04	2.40E+05	2E-08	2.40E+05	2E-08	1.30E+01	4E-04	2.40E+05	2E-08
M-07	VOC	Chloromethane	74-87-3	T	D	8	1	3.70E-04	3.70E-04	1.10E+00	3E-04	5.20E+01	7E-06	4.90E+02	8E-07	2.60E-01	1E-03	8.60E+00	4E-05
M-07	VOC	Cyclohexane	110-82-7	T		8	1	2.50E-04	2.50E-04										
M-07	VOC	Ethyl Benzene	100-41-4	T	D	8	1	2.30E-04	2.30E-04	7.00E-01	3E-04	1.70E+02	1E-06	1.70E+02	1E-06	7.00E-01	3E-04	1.70E+02	1E-06
M-07	VOC	Methylcyclohexane	108-87-2	T		8	1	4.60E-04	4.60E-04										
M-07	VOC	Tetrachloroethene	127-18-4	T	C-B2	8	1	3.60E-03	3.60E-03	5.00E-03	7E-01	1.70E+02	2E-05	1.20E+01	3E-04	5.00E-03	7E-01	2.50E+01	1E-04
M-07	VOC	Toluene	108-88-3	T	D	8	2	3.50E-04	1.80E-03	1.00E+00	2E-03	5.30E+02	3E-06	5.30E+02	3E-06	1.00E+00	2E-03	5.30E+02	3E-06
M-07	VOC	Xylenes (total)	1330-20-7	T	D	8	1	1.20E-03	1.20E-03	1.00E+01	1E-04	1.90E+02	6E-06	1.90E+02	6E-06	1.00E+01	1E-04	1.90E+02	6E-06
M-07	SVOC	Caprolactam	105-60-2	T		8	1	1.20E-01	1.20E-01	1.70E+01	7E-03			3.90E+05	3E-07	5.80E+00	2E-02		
M-07	INORG	Antimony	7440-36-0	T		8	1	2.70E-03	2.70E-03	6.00E-03	5E-01			6.80E+01	4E-05	6.00E-03	5E-01		
M-07	INORG	Arsenic	7440-38-2	D	A	8	2	4.20E-03	6.10E-03	5.00E-02	1E-01			4.30E+00	1E-03	5.00E-02	1E-01		
M-07	INORG	Arsenic	7440-38-2	T	A	8	4	4.00E-03	1.46E-02	5.00E-02	3E-01			4.30E+00	3E-03	5.00E-02	3E-01		
M-07	INORG	Barium	7440-39-3	D	D	8	8	1.47E-01	3.15E-01	2.00E+00	2E-01			1.40E+04	2E-05	2.00E+00	2E-01		
M-07	INORG	Barium	7440-39-3	T	D	8	8	1.47E-01	3.86E-01	2.00E+00	2E-01			1.40E+04	3E-05	2.00E+00	2E-01		
M-07	INORG	Beryllium	7440-41-7	T	B1	8	1	7.20E-04	7.20E-04	4.00E-03	2E-01			2.90E+02	2E-06	4.00E-03	2E-01		
M-07	INORG	Cadmium	7440-43-9	D	B1	8	5	4.00E-04	6.80E-04	5.00E-03	1E-01			1.90E+02	4E-06	5.00E-03	1E-01		
M-07	INORG	Cadmium	7440-43-9	T	B1	8	7	3.50E-04	1.40E-03	5.00E-03	3E-01			1.90E+02	7E-06	5.00E-03	3E-01		
M-07	INORG	Chromium (total)	7440-47-3	D		8	1	1.40E-03	1.40E-03	1.00E-01	1E-02			4.60E+02	3E-06	1.00E-01	1E-02		
M-07	INORG	Chromium (total)	7440-47-3	T		8	3	8.50E-03	1.39E-01	1.00E-01	**1E+00**			4.60E+02	3E-04	1.00E-01	**1E+00**		
M-07	INORG	Cobalt	7440-48-4	D		8	4	3.70E-03	1.36E-02	1.00E-01	1E-01			2.40E+03	6E-06	4.00E-02	3E-01		
M-07	INORG	Cobalt	7440-48-4	T		8	5	1.40E-03	2.28E-02	1.00E-01	2E-01			2.40E+03	1E-05	4.00E-02	6E-01		
M-07	INORG	Copper	7440-50-8	D	D	8	1	5.60E-03	5.60E-03	4.00E+00	1E-03			7.40E+03	8E-07	1.40E+00	4E-03		
M-07	INORG	Copper	7440-50-8	T	D	8	3	1.20E-02	5.11E-02	4.00E+00	1E-02			7.40E+03	7E-06	1.40E+00	4E-02		
M-07	INORG	Lead	7439-92-1	T	B2	8	2	1.22E-02	2.38E-02	4.00E-03	**6E+00**					4.00E-03	**6E+00**		
M-07	INORG	Manganese	7439-96-5	D	D	8	8	8.62E-02	1.72E+00	2.50E+00	7E-01			9.10E+03	2E-04	8.60E-01	**2E+00**		
M-07	INORG	Manganese	7439-96-5	T	D	8	8	8.47E-02	1.53E+00	2.50E+00	6E-01			9.10E+03	2E-04	8.60E-01	**2E+00**		
M-07	INORG	Mercury	7439-97-6	D	D	8	1	9.40E-05	9.40E-05	2.00E-03	5E-02			5.60E-02	2E-03	2.00E-03	5E-02		
M-07	INORG	Mercury	7439-97-6	T	D	8	2	6.90E-05	3.40E-04	2.00E-03	2E-01			5.60E-02	6E-03	2.00E-03	2E-01		
M-07	INORG	Nickel	7440-02-0	D	A	8	7	4.00E-03	7.04E-02	1.00E-01	7E-01			7.40E+04	1E-06	1.00E-01	7E-01		
M-07	INORG	Nickel	7440-02-0	T	A	8	7	3.40E-03	9.41E-02	1.00E-01	9E-01			7.40E+04	1E-06	1.00E-01	9E-01		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
M-07	INORG	Thallium	7440-28-0	D		8	8	2.10E-05	1.43E-02	2.00E-03	**7E+00**			1.30E+01	1E-03	2.00E-03	**7E+00**		
M-07	INORG	Thallium	7440-28-0	T		8	6	6.40E-05	1.56E-02	2.00E-03	**8E+00**			1.30E+01	1E-03	2.00E-03	**8E+00**		
M-07	INORG	Vanadium	7440-62-2	T		8	3	1.17E-02	5.90E-02	6.20E-02	1E+00			9.70E+02	6E-05	4.50E-03	**1E+01**		
M-07	INORG	Zinc	7440-66-6	D	D	8	5	1.57E-02	1.46E-01	5.00E+00	3E-02			1.10E+05	1E-06	2.40E+00	6E-02		
M-07	INORG	Zinc	7440-66-6	T	D	8	4	3.46E-02	1.46E-01	5.00E+00	3E-02			1.10E+05	1E-06	2.40E+00	6E-02		
M-09	VOC	Acetone	67-64-1	T	D	1	1	2.00E-02	2.00E-02	2.10E+00	1E-02	1.00E+06	2E-08	3.10E+04	6E-07	7.30E-01	3E-02	1.00E+06	2E-08
M-09	VOC	Bromodichloromethane	75-27-4	T	B2	1	1	3.90E-04	3.90E-04	1.00E-01	4E-03	3.80E+01	1E-05	1.40E+01	3E-05	1.00E-01	4E-03	4.80E+00	8E-05
M-09	VOC	2-Butanone	78-93-3	T	D	1	1	1.90E-03	1.90E-03	3.80E+01	5E-05	2.40E+05	8E-09	2.40E+05	8E-09	1.30E+01	1E-04	2.40E+05	8E-09
M-09	VOC	Carbon Disulfide	75-15-0	T		1	1	4.10E-04	4.10E-04	2.30E+00	2E-04	5.50E+02	7E-07	1.20E+03	3E-07	8.00E-01	5E-04	2.50E+02	2E-06
M-09	VOC	Chloroform	67-66-3	T	B2	1	1	2.40E-03	2.40E-03	1.00E-01	2E-02	1.80E+02	1E-05	1.50E+02	2E-05	1.00E-01	2E-02	2.80E+01	9E-05
M-09	VOC	Methyl tert-butyl ether	1634-04-4	T		1	1	8.10E-04	8.10E-04	6.90E-01	1E-03	4.70E+04	2E-08	6.90E+02	1E-06	2.40E-01	3E-03	4.70E+04	2E-08
M-09	INORG	Antimony	7440-36-0	T		1	1	3.30E-03	3.30E-03	6.00E-03	6E-01			6.80E+01	5E-05	6.00E-03	6E-01		
M-09	INORG	Arsenic	7440-38-2	D	A	1	1	5.70E-03	5.70E-03	5.00E-02	1E-01			4.30E+00	1E-03	5.00E-02	1E-01		
M-09	INORG	Arsenic	7440-38-2	T	A	1	1	4.20E-03	4.20E-03	5.00E-02	8E-02			4.30E+00	1E-03	5.00E-02	8E-02		
M-09	INORG	Barium	7440-39-3	D	D	1	1	5.48E-01	5.48E-01	2.00E+00	3E-01			1.40E+04	4E-05	2.00E+00	3E-01		
M-09	INORG	Barium	7440-39-3	T	D	1	1	5.04E-01	5.04E-01	2.00E+00	3E-01			1.40E+04	4E-05	2.00E+00	3E-01		
M-09	INORG	Chromium (total)	7440-47-3	D		1	1	2.80E-03	2.80E-03	1.00E-01	3E-02			4.60E+02	6E-06	1.00E-01	3E-02		
M-09	INORG	Chromium (total)	7440-47-3	T		1	1	3.00E-03	3.00E-03	1.00E-01	3E-02			4.60E+02	7E-06	1.00E-01	3E-02		
M-09	INORG	Cobalt	7440-48-4	D		1	1	2.20E-03	2.20E-03	1.00E-01	2E-02			2.40E+03	9E-07	4.00E-02	6E-02		
M-09	INORG	Cobalt	7440-48-4	T		1	1	2.20E-03	2.20E-03	1.00E-01	2E-02			2.40E+03	9E-07	4.00E-02	6E-02		
M-09	INORG	Nickel	7440-02-0	D	A	1	1	4.10E-03	4.10E-03	1.00E-01	4E-02			7.40E+04	6E-08	1.00E-01	4E-02		
M-09	INORG	Nickel	7440-02-0	T	A	1	1	3.50E-03	3.50E-03	1.00E-01	4E-02			7.40E+04	5E-08	1.00E-01	4E-02		
M-09	INORG	Thallium	7440-28-0	D		1	1	5.10E-05	5.10E-05	2.00E-03	3E-02			1.30E+01	4E-06	2.00E-03	3E-02		
M-09	INORG	Thallium	7440-28-0	T		1	1	7.20E-05	7.20E-05	2.00E-03	4E-02			1.30E+01	6E-06	2.00E-03	4E-02		
M-09	INORG	Vanadium	7440-62-2	D		1	1	3.70E-03	3.70E-03	6.20E-02	6E-02			9.70E+02	4E-06	4.50E-03	8E-01		
M-09	INORG	Vanadium	7440-62-2	T		1	1	4.10E-03	4.10E-03	6.20E-02	7E-02			9.70E+02	4E-06	4.50E-03	9E-01		
M-09	INORG	Zinc	7440-66-6	D	D	1	1	1.39E-02	1.39E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
M-16	VOC	Acetone	67-64-1	T	D	3	1	6.95E-03	6.95E-03	2.10E+00	3E-03	1.00E+06	7E-09	3.10E+04	2E-07	7.30E-01	1E-02	1.00E+06	7E-09
M-16	VOC	Bromodichloromethane	75-27-4	T	B2	3	1	2.15E-04	2.15E-04	1.00E-01	2E-03	3.80E+01	6E-06	1.40E+01	2E-05	1.00E-01	2E-03	4.80E+00	4E-05
M-16	VOC	Chloroform	67-66-3	T	B2	3	2	2.00E-04	6.55E-04	1.00E-01	7E-03	1.80E+02	4E-06	1.50E+02	4E-06	1.00E-01	7E-03	2.80E+01	2E-05
M-16	VOC	Methyl tert-butyl ether	1634-04-4	T		3	1	7.15E-03	7.15E-03	6.90E-01	1E-02	4.70E+04	2E-07	6.90E+02	1E-05	2.40E-01	3E-02	4.70E+04	2E-07
M-16	VOC	Toluene	108-88-3	T	D	3	1	1.90E-04	1.90E-04	1.00E+00	2E-04	5.30E+02	4E-07	5.30E+02	4E-07	1.00E+00	2E-04	5.30E+02	4E-07
M-16	VOC	1,1,1-Trichloroethane	71-55-6	T	D	3	1	3.00E-03	3.00E-03	2.00E-01	2E-02	1.30E+03	2E-06	1.30E+03	2E-06	2.00E-01	2E-02	6.60E+02	5E-06
M-16	VOC	Vinyl Chloride	75-01-4	T	A	3	2	1.70E-02	2.30E-02	2.00E-03	**1E+01**	6.90E-01	3E-02	5.70E-01	4E-02	2.00E-03	**1E+01**	1.10E-01	2E-01
M-16	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	3	3	2.03E-03	5.50E-03	6.00E-03	9E-01			3.20E-01	2E-02	6.00E-03	9E-01		
M-16	INORG	Arsenic	7440-38-2	D	A	3	1	8.30E-03	8.30E-03	5.00E-02	2E-01			4.30E+00	2E-03	5.00E-02	2E-01		
M-16	INORG	Arsenic	7440-38-2	T	A	3	1	8.80E-03	8.80E-03	5.00E-02	2E-01			4.30E+00	2E-03	5.00E-02	2E-01		
M-16	INORG	Barium	7440-39-3	D	D	3	3	4.58E-02	2.12E-01	2.00E+00	1E-01			1.40E+04	2E-05	2.00E+00	1E-01		
M-16	INORG	Barium	7440-39-3	T	D	3	3	4.66E-02	2.15E-01	2.00E+00	1E-01			1.40E+04	2E-05	2.00E+00	1E-01		
M-16	INORG	Chromium (total)	7440-47-3	T		3	1	1.40E-03	1.40E-03	1.00E-01	1E-02			4.60E+02	3E-06	1.00E-01	1E-02		
M-16	INORG	Cobalt	7440-48-4	D		3	1	2.60E-03	2.60E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
M-16	INORG	Cobalt	7440-48-4	T		3	2	9.75E-04	2.65E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
M-16	INORG	Manganese	7439-96-5	D	D	3	3	9.66E-02	1.05E+00	2.50E+00	4E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
M-16	INORG	Manganese	7439-96-5	T	D	3	3	9.65E-02	1.09E+00	2.50E+00	4E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
M-16	INORG	Nickel	7440-02-0	D	A	3	1	3.10E-03	3.10E-03	1.00E-01	3E-02			7.40E+04	4E-08	1.00E-01	3E-02		
M-16	INORG	Nickel	7440-02-0	T	A	3	1	4.70E-03	4.70E-03	1.00E-01	5E-02			7.40E+04	6E-08	1.00E-01	5E-02		
M-16	INORG	Zinc	7440-66-6	D	D	3	2	1.04E-02	1.56E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
M-16	INORG	Zinc	7440-66-6	T	D	3	1	1.35E-02	1.35E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
P-06	VOC	Acetone	67-64-1	T	D	9	2	1.20E-02	2.10E-02	2.10E+00	1E-02	1.00E+06	2E-08	3.10E+04	7E-07	7.30E-01	3E-02	1.00E+06	2E-08

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
P-06	VOC	Benzene	71-43-2	T	A	9	7	3.10E-04	1.20E+00	5.00E-03	**2E+02**	3.60E+01	3E-02	1.10E+01	1E-01	5.00E-03	**2E+02**	5.60E+00	2E-01
P-06	VOC	Bromodichloromethane	75-27-4	T	B2	9	1	3.40E-04	3.40E-04	1.00E-01	3E-03	3.80E+01	9E-06	1.40E+01	2E-05	1.00E-01	3E-03	4.80E+00	7E-05
P-06	VOC	2-Butanone	78-93-3	T	D	9	2	5.90E-04	2.00E-03	3.80E+01	5E-05	2.40E+05	8E-09	2.40E+05	8E-09	1.30E+01	2E-04	2.40E+05	8E-09
P-06	VOC	Chloroform	67-66-3	T	B2	9	4	6.50E-04	1.50E-03	1.00E-01	2E-02	1.80E+02	8E-06	1.50E+02	1E-05	1.00E-01	2E-02	2.80E+01	5E-05
P-06	VOC	Chloromethane	74-87-3	T	D	9	1	1.80E-04	1.80E-04	1.10E+00	2E-04	5.60E+01	3E-06	4.90E+02	4E-07	2.60E-01	7E-04	8.60E+00	2E-05
P-06	VOC	Cumene	98-82-8	T	D	9	1	3.30E-02	3.30E-02	2.30E+00	1E-02	5.60E+01	6E-04	5.60E+01	6E-04	8.00E-01	4E-02	5.60E+01	6E-04
P-06	VOC	Cyclohexane	110-82-7	T		9	4	4.20E-04	1.10E-01										
P-06	VOC	1,1-Dichloroethane	75-34-3	T	C	9	1	5.10E-04	5.10E-04	2.50E+00	2E-04	2.30E+03	2E-07	2.40E+03	2E-07	8.80E-01	6E-04	1.00E+03	5E-07
P-06	VOC	Ethyl Benzene	100-41-4	T	D	9	6	1.50E-04	1.30E+00	7.00E-01	2E-00	1.70E+02	8E-03	1.70E+02	8E-03	7.00E-01	**2E+00**	1.70E+02	8E-03
P-06	VOC	Methyl tert-butyl ether	1634-04-4	T		9	1	2.10E-03	2.10E-03	6.90E-01	3E-03	4.70E+04	4E-08	6.90E+02	3E-06	2.40E-01	9E-03	4.70E+04	4E-08
P-06	VOC	4-Methyl-2-pentanone	108-10-1	T		8	1	7.90E-04	7.90E-04	5.20E+00	2E-04	2.00E+04	4E-08	1.30E+04	6E-08	1.80E+00	4E-04	2.00E+04	4E-08
P-06	VOC	Methylcyclohexane	108-87-2	T		9	1	4.90E-02	4.90E-02										
P-06	VOC	Toluene	108-88-3	T	D	9	7	1.90E-04	5.40E+00	1.00E+00	**5E+00**	5.30E+02	1E-02	5.30E+02	1E-02	1.00E+00	**5E+00**	5.30E+02	1E-02
P-06	VOC	Xylenes (total)	1330-20-7	T	D	9	3	3.70E-04	4.20E+00	1.00E+01	4E-01	1.90E+02	2E-02	1.90E+02	2E-02	1.00E+01	4E-01	1.90E+02	2E-02
P-06	SVOC	2,4-Dimethylphenol	105-67-9	T		9	2	3.50E-03	2.80E-02	1.00E+00	3E-02			5.20E+02	5E-05	3.70E-01	8E-02		
P-06	SVOC	2-Methylnaphthalene	91-57-6	T		9	2	9.90E-03	1.60E-02	7.50E-01	2E-02			2.50E+01	6E-04	2.60E-01	6E-02		
P-06	SVOC	Methylphenol (summed)	1319-77-3	T		9	1	2.95E-01	2.95E-01	1.00E+00	3E-01			8.10E+02	4E-04	3.70E-01	8E-01		
P-06	SVOC	Naphthalene	91-20-3	T	C	9	2	8.60E-02	9.30E-02	1.50E+00	6E-02	3.10E+01	3E-03	3.10E+01	3E-03	5.20E-01	2E-01	3.10E+01	3E-03
P-06	SVOC	Phenol	108-95-2	T	D	9	1	3.60E-02	3.60E-02	1.30E+01	3E-03			2.90E+04	1E-06	4.40E+00	8E-03		
P-06	INORG	Barium	7440-39-3	D	D	1	1	9.78E-01	9.78E-01	2.00E+00	5E-01			1.40E+04	7E-05	2.00E+00	5E-01		
P-06	INORG	Barium	7440-39-3	T	D	1	1	9.94E-01	9.94E-01	2.00E+00	5E-01			1.40E+04	7E-05	2.00E+00	5E-01		
P-06	INORG	Cadmium	7440-43-9	D	B1	1	1	3.80E-04	3.80E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
P-06	INORG	Cadmium	7440-43-9	T	B1	1	1	3.80E-04	3.80E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
P-06	INORG	Cobalt	7440-48-4	D		1	1	8.30E-03	8.30E-03	1.00E-01	8E-02			2.40E+03	3E-06	4.00E-02	2E-01		
P-06	INORG	Cobalt	7440-48-4	T		1	1	8.00E-03	8.00E-03	1.00E-01	8E-02			2.40E+03	3E-06	4.00E-02	2E-01		
P-06	INORG	Manganese	7439-96-5	D	D	1	1	7.22E-01	7.22E-01	2.50E+00	3E-01			9.10E+03	8E-05	8.60E-01	8E-01		
P-06	INORG	Manganese	7439-96-5	T	D	1	1	7.41E-01	7.41E-01	2.50E+00	3E-01			9.10E+03	8E-05	8.60E-01	9E-01		
P-06	INORG	Nickel	7440-02-0	D	A	1	1	1.30E-02	1.30E-02	1.00E-01	1E-01			7.40E+04	2E-07	1.00E-01	1E-01		
P-06	INORG	Nickel	7440-02-0	T	A	1	1	1.32E-02	1.32E-02	1.00E-01	1E-01			7.40E+04	2E-07	1.00E-01	1E-01		
P-06	INORG	Thallium	7440-28-0	D		1	1	1.50E-04	1.50E-04	2.00E-03	8E-02			1.30E+01	1E-05	2.00E-03	8E-02		
P-06	INORG	Thallium	7440-28-0	T		1	1	1.70E-04	1.70E-04	2.00E-03	9E-02			1.30E+01	1E-05	2.00E-03	9E-02		
P-06	INORG	Zinc	7440-66-6	D	D	1	1	1.25E-02	1.25E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	5E-03		
PSB	VOC	Benzene	71-43-2	T	A	4	2	1.20E-03	1.40E-03	5.00E-03	3E-01	3.60E+01	4E-05	1.10E+01	1E-04	5.00E-03	3E-01	5.60E+00	3E-04
PSB	VOC	2-Butanone	78-93-3	T	D	4	1	4.00E-03	4.00E-03	3.80E+01	1E-04	2.40E+05	2E-08	2.40E+05	2E-08	1.30E+01	3E-04	2.40E+05	2E-08
PSB	VOC	Carbon Disulfide	75-15-0	T		4	1	8.30E-04	8.30E-04	2.30E+00	4E-04	5.50E+02	2E-06	1.20E+03	7E-07	8.00E-01	1E-03	2.50E+02	3E-06
PSB	VOC	Cumene	98-82-8	T	D	4	3	1.70E-04	3.20E-04	2.30E+00	1E-04	5.60E+01	6E-06	5.60E+01	6E-06	8.00E-01	4E-04	5.60E+01	6E-06
PSB	VOC	Cyclohexane	110-82-7	T		4	4	2.00E-04	4.40E-04										
PSB	VOC	Ethyl Benzene	100-41-4	T	D	4	2	5.70E-04	7.40E-04	7.00E-01	1E-03	1.70E+02	4E-06	1.70E+02	4E-06	7.00E-01	1E-03	1.70E+02	4E-06
PSB	VOC	Methylcyclohexane	108-87-2	T		4	4	1.60E-04	4.70E-04										
PSB	VOC	Toluene	108-88-3	T	D	4	2	1.20E-03	2.40E-03	1.00E+00	2E-03	5.30E+02	5E-06	5.30E+02	5E-06	1.00E+00	2E-03	5.30E+02	5E-06
PSB	VOC	Xylenes (total)	1330-20-7	T	D	4	3	4.90E-04	9.50E-03	1.00E+01	1E-03	1.90E+02	5E-05	1.90E+02	5E-05	1.00E+01	1E-03	1.90E+02	5E-05
PSB	SVOC	Acenaphthene	83-32-9	T		4	1	1.50E-03	1.50E-03	3.80E+00	4E-04	4.20E+00	4E-04	4.20E+00	4E-04	1.30E+00	1E-03	4.20E+00	4E-04
PSB	SVOC	Carbazole	86-74-8	T	B2	4	2	1.10E-03	1.40E-03	3.50E-01	4E-03			7.40E+00	2E-04	8.50E-02	2E-02		
PSB	SVOC	2-Methylnaphthalene	91-57-6	T		4	1	8.90E-04	8.90E-04	7.50E-01	1E-03			2.50E+01	4E-05	2.60E-01	3E-03		
PSB	SVOC	Methylphenol (summed)	1319-77-3	T		4	2	3.75E-03	4.55E-03	1.00E+00	5E-03			8.10E+02	6E-06	3.70E-01	1E-02		
PSB	SVOC	Naphthalene	91-20-3	T	C	4	2	5.30E-03	6.80E-03	1.50E+00	5E-03	3.10E+01	2E-04	3.10E+01	2E-04	5.20E-01	1E-02	3.10E+01	2E-04
PSB	SVOC	Phenanthrene	85-01-8	T	D	4	1	1.10E-03	1.10E-03	1.50E-01	7E-03	1.00E+00	1E-03	1.00E+00	1E-03	5.20E-02	2E-02	1.00E+00	1E-03
PSB	SVOC	Phenol	108-95-2	T	D	4	2	6.10E-02	6.70E-02	1.30E+01	5E-03			2.90E+04	2E-06	4.40E+00	2E-02		
PSB	INORG	Antimony	7440-36-0	D		4	1	2.70E-03	2.70E-03	6.00E-03	5E-01			6.80E+01	4E-05	6.00E-03	5E-01		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
PSB	INORG	Arsenic	7440-38-2	D	A	4	4	4.50E-03	1.51E-02	5.00E-02	3E-01			4.30E+00	4E-03	5.00E-02	3E-01		
PSB	INORG	Arsenic	7440-38-2	T	A	4	3	6.00E-03	1.42E-02	5.00E-02	3E-01			4.30E+00	3E-03	5.00E-02	3E-01		
PSB	INORG	Barium	7440-39-3	D	D	4	4	5.55E-01	9.09E-01	2.00E+00	5E-01			1.40E+04	6E-05	2.00E+00	5E-01		
PSB	INORG	Barium	7440-39-3	T	D	4	4	5.66E-01	8.79E-01	2.00E+00	4E-01			1.40E+04	6E-05	2.00E+00	4E-01		
PSB	INORG	Manganese	7439-96-5	D	D	4	2	3.43E-01	4.14E-01	2.50E+00	2E-01			9.10E+03	5E-05	8.60E-01	5E-01		
PSB	INORG	Manganese	7439-96-5	T	D	4	4	4.50E-03	3.97E-01	2.50E+00	2E-01			9.10E+03	4E-05	8.60E-01	5E-01		
PSB	INORG	Mercury	7439-97-6	D	D	4	1	2.50E-04	2.50E-04	2.00E-03	1E-01			5.60E-02	4E-03	2.00E-03	1E-01		
PSB	INORG	Mercury	7439-97-6	T	D	4	2	9.20E-05	1.10E-04	2.00E-03	6E-02			5.60E-02	2E-03	2.00E-03	6E-02		
PSB	INORG	Nickel	7440-02-0	D	A	4	2	4.30E-03	1.56E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
PSB	INORG	Nickel	7440-02-0	T	A	4	2	3.90E-03	1.55E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
PSB	INORG	Vanadium	7440-62-2	D		4	1	2.50E-03	2.50E-03	6.20E-02	4E-02			9.70E+02	3E-06	4.50E-03	6E-01		
PSB	INORG	Vanadium	7440-62-2	T		4	1	2.40E-03	2.40E-03	6.20E-02	4E-02			9.70E+02	2E-06	4.50E-03	5E-01		
PSB	INORG	Zinc	7440-66-6	T	D	4	3	1.33E-02	1.97E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	8E-03		
SWHI	VOC	Acetone	67-64-1	T	D	22	6	1.50E-02	7.80E-02	2.10E+00	4E-02	1.00E+06	8E-08	3.10E+04	3E-06	7.30E-01	1E-01	1.00E+06	8E-08
SWHI	VOC	Bromodichloromethane	75-27-4	T	B2	22	2	1.80E-04	4.20E-04	1.00E-01	4E-03	3.80E+01	1E-05	1.40E+01	3E-05	1.00E-01	4E-03	4.80E+00	9E-05
SWHI	VOC	2-Butanone	78-93-3	T	D	22	1	5.00E-04	5.00E-04	3.80E+01	1E-05	2.40E+05	2E-09	2.40E+05	2E-09	1.30E+01	4E-05	2.40E+05	2E-09
SWHI	VOC	Chloroform	67-66-3	T	B2	22	6	1.40E-04	1.70E-03	1.00E+00	2E-02	1.80E+02	9E-06	1.50E+02	1E-05	1.00E-01	2E-02	2.80E+01	6E-05
SWHI	VOC	Chloromethane	74-87-3	T	D	22	3	1.30E-04	3.35E-04	1.10E+00	3E-04	5.20E+01	6E-06	4.90E+02	7E-07	2.60E-01	1E-03	8.60E+00	4E-05
SWHI	VOC	1,2-Dichlorobenzene	95-50-1	T	D	22	1	2.20E-04	2.20E-04	6.00E-01	4E-04	1.60E+02	1E-06	1.60E+02	1E-06	6.00E-01	4E-04	1.60E+02	1E-06
SWHI	VOC	1,1-Dichloroethane	75-34-3	T	C	22	1	1.00E-03	1.00E-03	2.30E+00	4E-04	2.30E+03	4E-07	2.40E+03	4E-07	8.80E-01	1E-03	1.00E+03	1E-06
SWHI	VOC	1,1-Dichloroethene	75-35-4	T	C	22	1	9.70E-04	9.70E-04	7.00E-03	1E-01	1.30E+00	7E-04	1.10E+01	9E-05	7.00E-03	1E-01	2.00E-01	5E-03
SWHI	VOC	Ethyl Benzene	100-41-4	T	D	22	1	1.80E-04	1.80E-04	7.00E-01	3E-04	1.70E+02	1E-06	1.70E+02	1E-06	7.00E-01	3E-04	1.70E+02	1E-06
SWHI	VOC	Tetrachloroethene	127-18-4	T	C-B2	22	1	5.50E-04	5.50E-04	5.00E-03	1E-01	1.70E+02	3E-06	1.20E+01	5E-05	5.00E-03	1E-01	2.50E+01	2E-05
SWHI	VOC	Toluene	108-88-3	T	D	22	5	1.90E-04	8.10E-04	1.00E+00	8E-04	5.30E+02	2E-06	5.30E+02	2E-06	1.00E+00	8E-04	5.30E+02	2E-06
SWHI	VOC	1,1,1-Trichloroethane	71-55-6	T	D	22	4	5.25E-04	7.00E-03	2.00E-01	4E-02	1.30E+03	5E-06	1.30E+03	5E-06	2.00E-01	4E-02	6.60E+02	1E-05
SWHI	VOC	Trichloroethene	79-01-6	T	C-B2	22	2	7.10E-04	1.10E-03	5.00E-03	2E-01	9.70E+01	1E-05	3.70E+01	3E-05	5.00E-03	2E-01	1.50E+01	7E-05
SWHI	VOC	Xylenes (total)	1330-20-7	T	D	22	1	9.90E-04	9.90E-04	1.00E+01	1E-04	1.90E+02	5E-06	1.90E+02	5E-06	1.00E+01	1E-04	1.90E+02	5E-06
SWHI	INORG	Antimony	7440-36-0	D		22	1	2.60E-03	2.60E-03	6.00E-03	4E-01			6.80E+01	4E-05	6.00E-03	4E-01		
SWHI	INORG	Arsenic	7440-38-2	D	A	22	6	3.90E-03	7.80E-03	5.00E-02	2E-01			4.30E+00	2E-03	5.00E-02	2E-01		
SWHI	INORG	Arsenic	7440-38-2	T	A	22	5	4.00E-03	9.60E-03	5.00E-02	2E-01			4.30E+00	2E-03	5.00E-02	2E-01		
SWHI	INORG	Barium	7440-39-3	D	D	22	22	5.33E-02	9.29E-01	2.00E+00	5E-01			1.40E+04	7E-05	2.00E+00	5E-01		
SWHI	INORG	Barium	7440-39-3	T	D	22	22	5.04E-02	9.29E-01	2.00E+00	5E-01			1.40E+04	7E-05	2.00E+00	5E-01		
SWHI	INORG	Cadmium	7440-43-9	D	B1	22	9	2.90E-04	1.47E-03	5.00E-03	3E-01			1.90E+02	8E-06	5.00E-03	3E-01		
SWHI	INORG	Cadmium	7440-43-9	T	B1	22	6	3.50E-04	1.45E-03	5.00E-03	3E-01			1.90E+02	8E-06	5.00E-03	3E-01		
SWHI	INORG	Chromium (total)	7440-47-3	D		22	4	1.80E-03	2.70E-03	1.00E-01	3E-02			4.60E+02	6E-06	1.00E-01	3E-02		
SWHI	INORG	Chromium (total)	7440-47-3	T		22	6	1.40E-03	2.50E-03	1.00E-01	3E-02			4.60E+02	5E-06	1.00E-01	3E-02		
SWHI	INORG	Cobalt	7440-48-4	D		22	5	1.30E-03	4.60E-03	1.00E-01	5E-02			2.40E+03	2E-06	4.00E-02	1E-01		
SWHI	INORG	Cobalt	7440-48-4	T		22	4	1.40E-03	4.10E-03	1.00E-01	4E-02			2.40E+03	2E-06	4.00E-02	1E-01		
SWHI	INORG	Copper	7440-50-8	D	D	22	4	4.40E-03	6.00E-03	4.00E+00	2E-03			7.40E+03	8E-07	1.40E+00	4E-03		
SWHI	INORG	Copper	7440-50-8	T	D	22	2	4.70E-03	4.70E-03	4.00E+00	1E-03			7.40E+03	6E-07	1.40E+00	3E-03		
SWHI	INORG	Lead	7439-92-1	T	B2	22	1	3.50E-03	3.50E-03	4.00E-03	9E-01					4.00E-03	9E-01		
SWHI	INORG	Manganese	7439-96-5	D	D	22	22	1.60E-03	6.17E-01	2.50E+00	2E-01			9.10E+03	7E-05	8.60E-01	7E-01		
SWHI	INORG	Manganese	7439-96-5	T	D	22	22	9.30E-04	6.37E-01	2.50E+00	3E-01			9.10E+03	7E-05	8.60E-01	7E-01		
SWHI	INORG	Mercury	7439-97-6	D	D	22	2	9.40E-05	1.00E-04	2.00E-03	5E-02			5.60E-02	2E-03	2.00E-03	5E-02		
SWHI	INORG	Mercury	7439-97-6	T	D	22	2	7.50E-05	9.00E-05	2.00E-03	5E-02			5.60E-02	2E-03	2.00E-03	5E-02		
SWHI	INORG	Nickel	7440-02-0	D	A	22	11	2.40E-03	1.08E-02	1.00E-01	1E-01			7.40E+04	1E-07	1.00E-01	1E-01		
SWHI	INORG	Nickel	7440-02-0	T	A	22	13	2.20E-03	1.06E-02	1.00E-01	1E-01			7.40E+04	1E-07	1.00E-01	1E-01		
SWHI	INORG	Selenium	7782-49-2	T	D	22	2	5.10E-03	6.00E-03	5.00E-02	1E-01			9.70E+02	6E-06	5.00E-02	1E-01		
SWHI	INORG	Thallium	7440-28-0	D		22	13	3.10E-05	1.50E-02	2.00E-03	**8E+00**			1.30E+01	1E-03	2.00E-03	**8E+00**		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
SWHI	INORG	Thallium	7440-28-0	T		22	12	1.80E-05	1.59E-02	2.00E-03	**8E+00**			1.30E+01	1E-03	2.00E-03	**8E+00**		
SWHI	INORG	Vanadium	7440-62-2	D		22	4	1.40E-03	6.50E-03	6.20E-02	1E-01			9.70E+02	7E-06	4.50E-03	**1E+00**		
SWHI	INORG	Vanadium	7440-62-2	T		22	4	1.10E-03	6.40E-03	6.20E-02	1E-01			9.70E+02	7E-06	4.50E-03	**1E+00**		
SWHI	INORG	Zinc	7440-66-6	D	D	22	3	1.73E-02	2.90E-02	5.00E+00	6E-03			1.10E+05	3E-07	2.40E+00	1E-02		
SWHI	INORG	Zinc	7440-66-6	T	D	22	7	1.30E-02	3.46E-02	5.00E+00	7E-03			1.10E+05	3E-07	2.40E+00	1E-02		
W-01	VOC	Acetone	67-64-1	T	D	28	8	6.80E-04	3.30E-02	2.10E+00	2E-02	1.00E+06	3E-08	3.10E+04	1E-06	7.30E-01	5E-02	1.00E+06	3E-08
W-01	VOC	Benzene	71-43-2	T	A	28	17	1.60E-04	9.10E-02	5.00E-03	**2E+01**	3.60E+01	3E-03	1.10E+01	8E-03	5.00E-03	**2E+01**	5.60E+00	2E-02
W-01	VOC	2-Butanone	78-93-3	T	D	28	14	4.30E-04	7.30E-03	3.80E+01	2E-04	2.40E+05	3E-08	2.40E+05	3E-08	1.30E+01	6E-04	2.40E+05	3E-08
W-01	VOC	Chloroethane	75-00-3	T		28	10	1.30E-03	4.50E-02	1.70E+00	3E-02	5.70E+03	8E-06	4.40E+02	1E-04	4.30E-01	1E-01	5.70E+03	8E-06
W-01	VOC	Chloroform	67-66-3	T	B2	28	1	8.10E-04	8.10E-04	1.00E-01	8E-03	1.80E+02	5E-06	1.50E+02	5E-06	1.00E-01	8E-03	2.80E+01	3E-05
W-01	VOC	Chloromethane	74-87-3	T	D	28	4	1.30E-04	1.70E-04	1.10E+00	2E-04	5.20E+01	3E-06	4.90E+02	3E-07	2.60E-01	7E-04	8.60E+00	2E-05
W-01	VOC	Cumene	98-82-8	T	D	28	12	1.70E-04	8.60E-03	2.30E+00	4E-03	5.60E+01	2E-04	5.60E+01	2E-04	8.00E-01	1E-02	5.60E+01	2E-04
W-01	VOC	Cyclohexane	110-82-7	T		28	11	1.70E-04	1.90E-02										
W-01	VOC	1,2-Dichlorobenzene	95-50-1	T	D	28	4	4.80E-04	2.00E-03	6.00E-01	3E-03	1.60E+02	1E-05	1.60E+02	1E-05	6.00E-01	3E-03	1.60E+02	1E-05
W-01	VOC	1,1-Dichloroethane	75-34-3	T	C	28	11	1.60E-04	2.30E-02	2.50E+00	9E-03	2.30E+03	1E-05	2.40E+03	1E-05	8.80E-01	3E-02	1.00E+03	2E-05
W-01	VOC	1,2-Dichloroethane	107-06-2	T	B2	28	1	4.50E-04	4.50E-04	5.00E-03	9E-02	5.90E+01	8E-06	1.90E+01	2E-05	5.00E-03	9E-02	9.60E+00	5E-05
W-01	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	28	6	4.50E-04	3.90E-03	7.00E-02	6E-02	2.20E+02	2E-05	2.00E+02	2E-05	7.00E-02	6E-02	9.60E+01	4E-05
W-01	VOC	trans-1,2-Dichloroethene	156-60-5	T		28	3	1.80E-04	2.10E-03	1.00E-01	2E-02	2.00E+02	1E-05	2.20E+02	1E-05	1.00E-01	2E-02	8.50E+01	2E-05
W-01	VOC	Ethyl Benzene	100-41-4	T	D	28	8	2.40E-04	1.90E-02	7.00E-01	3E-02	1.70E+02	1E-04	1.70E+02	1E-04	7.00E-01	3E-02	1.70E+02	1E-04
W-01	VOC	Methyl tert-butyl ether	1634-04-4	T		28	3	8.40E-04	7.10E-03	6.90E-01	1E-02	4.70E+04	2E-07	6.90E+02	1E-05	2.40E-01	3E-02	4.70E+04	2E-07
W-01	VOC	4-Methyl-2-pentanone	108-10-1	T		28	4	2.88E-04	1.60E-03	5.20E+00	3E-04	2.00E+04	8E-08	1.30E+04	1E-07	1.80E+00	9E-04	2.00E+04	8E-08
W-01	VOC	Methylcyclohexane	108-87-2	T		28	11	3.30E-04	7.60E-03										
W-01	VOC	Methylene Chloride	75-09-2	T	B2	28	4	5.00E-04	4.50E-03	5.00E-03	9E-01	1.40E+03	3E-06	2.20E+02	2E-05	5.00E-03	9E-01	2.20E+02	2E-05
W-01	VOC	Tetrachloroethene	127-18-4	T	C-B2	28	2	4.30E-04	7.00E-04	5.00E-03	1E-01	1.70E+02	4E-06	1.20E+01	6E-05	5.00E-03	1E-01	2.50E+01	3E-05
W-01	VOC	Toluene	108-88-3	T	D	28	14	2.50E-04	1.50E-02	1.00E+00	2E-02	5.30E+02	3E-05	5.30E+02	3E-05	1.00E+00	2E-02	5.30E+02	3E-05
W-01	VOC	Trichloroethene	79-01-6	T	C-B2	28	5	2.40E-04	8.45E-04	5.00E-03	2E-01	9.70E+01	9E-06	3.70E+01	2E-05	5.00E-03	2E-01	1.50E+01	6E-05
W-01	VOC	Trichlorofluoromethane	75-69-4	T		28	1	6.60E-04	6.60E-04	7.30E+00	9E-05	1.10E+03	6E-07	1.10E+03	6E-07	2.60E+00	3E-04	1.10E+03	6E-07
W-01	VOC	Vinyl Chloride	75-01-4	T	A	28	9	1.80E-04	1.80E-02	2.00E-03	**9E+00**	6.90E-01	3E-02	5.70E-01	3E-02	2.00E-03	**9E+00**	1.10E-01	2E-01
W-01	VOC	Xylenes (total)	1330-20-7	T	D	28	10	6.90E-04	2.00E-01	1.00E+01	2E-02	1.90E+02	1E-03	1.90E+02	1E-03	1.00E+01	2E-02	1.90E+02	1E-03
W-01	SVOC	Acenaphthene	83-32-9	T		28	1	2.40E-03	2.40E-03	3.80E+00	6E-04	4.20E+00	6E-04	4.20E+00	6E-04	1.30E+00	2E-03	4.20E+00	6E-04
W-01	SVOC	Acetophenone	98-86-2	T	D	28	1	2.70E-03	2.70E-03	4.40E+00	6E-04	6.10E+03	4E-07	6.10E+03	4E-07	1.50E+00	2E-03	6.10E+03	4E-07
W-01	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	28	1	2.70E-03	2.70E-03	6.00E-03	5E-01			3.20E-01	8E-03	6.00E-03	5E-01		
W-01	SVOC	Carbazole	86-74-8	T	B2	28	2	1.50E-03	2.80E-03	3.50E-01	8E-03			7.40E+00	4E-04	8.50E-02	3E-02		
W-01	SVOC	Di-n-butylphthalate	84-74-2	T	D	28	3	1.35E-03	2.30E-03	2.50E+00	9E-04			1.10E+01	2E-04	8.80E-01	3E-03		
W-01	SVOC	Dibenzofuran	132-64-9	T	D	28	1	1.80E-03	1.80E-03										
W-01	SVOC	2,4-Dimethylphenol	105-67-9	T		28	3	1.90E-03	1.10E-02	1.00E+00	1E-02			5.20E+02	2E-05	3.70E-01	3E-02		
W-01	SVOC	Fluoranthene	206-44-0	T	D	28	1	9.90E-04	9.90E-04	2.10E-01	5E-03	2.10E-01	5E-03	2.10E-01	5E-03	2.10E-01	5E-03	2.10E-01	5E-03
W-01	SVOC	Fluorene	86-73-7	T	D	28	1	2.20E-03	2.20E-03	2.00E+00	1E-03	2.00E+00	1E-03	2.00E+00	1E-03	8.80E-01	3E-03	2.00E+00	1E-03
W-01	SVOC	2-Methylnaphthalene	91-57-6	T		28	6	8.50E-04	6.10E-03	7.50E-01	8E-03			2.50E+01	2E-04	2.60E-01	2E-02		
W-01	SVOC	Methylphenol (summed)	1319-77-3	T		28	1	2.16E-02	2.16E-02	1.00E+00	2E-02			8.10E+02	3E-05	3.70E-01	6E-02		
W-01	SVOC	Naphthalene	91-20-3	T	C	27	4	6.20E-03	1.30E-02	1.50E+00	9E-03	3.10E+01	4E-04	3.10E+01	4E-04	5.20E-01	3E-02	3.10E+01	4E-04
W-01	SVOC	Phenol	108-95-2	T	D	28	1	1.90E-02	1.90E-02	1.30E+01	1E-03			2.90E+04	7E-07	4.40E+00	4E-03		
W-01	P/PCB	PCBs (total)	1336-36-3	D	B2	12	1	5.49E-04	5.49E-04	5.00E-04	**1E+00**	4.50E-02	1E-02	3.30E-03	2E-01	5.00E-04	**1E+00**	4.50E-02	1E-02
W-01	P/PCB	PCBs (total)	1336-36-3	T	B2	28	6	3.94E-04	4.86E-03	5.00E-04	**1E+01**	4.50E-02	1E-01	3.30E-03	**1E+00**	5.00E-04	**1E+01**	4.50E-02	1E-01
W-01	INORG	Antimony	7440-36-0	D		28	4	5.80E-03	7.90E-03	6.00E-03	**1E+00**			6.80E+01	1E-04	6.00E-03	**1E+00**		
W-01	INORG	Antimony	7440-36-0	T		28	4	2.60E-03	8.60E-03	6.00E-03	**1E+00**			6.80E+01	1E-04	6.00E-03	**1E+00**		
W-01	INORG	Arsenic	7440-38-2	D	A	28	19	4.00E-03	2.69E-02	5.00E-02	5E-01			4.30E+00	6E-03	5.00E-02	5E-01		
W-01	INORG	Arsenic	7440-38-2	T	A	28	18	4.10E-03	2.64E-02	5.00E-02	5E-01			4.30E+00	6E-03	5.00E-02	5E-01		
W-01	INORG	Barium	7440-39-3	D	D	28	28	5.63E-02	4.07E+00	2.00E+00	**2E+00**			1.40E+04	3E-04	2.00E+00	**2E+00**		

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GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
W-01	INORG	Barium	7440-39-3	T	D	28	28	5.75E-02	4.57E+00	2.00E+00	**2E+00**			1.40E+04	3E-04	2.00E+00	**2E+00**		
W-01	INORG	Beryllium	7440-41-7	D	B1	28	1	7.50E-04	7.50E-04	4.00E-03	2E-01			2.90E+02	3E-06	4.00E-03	2E-01		
W-01	INORG	Cadmium	7440-43-9	D	B1	28	4	3.00E-04	6.90E-04	5.00E-03	1E-01			1.90E+02	4E-06	5.00E-03	1E-01		
W-01	INORG	Cadmium	7440-43-9	T	B1	28	6	2.20E-04	1.10E-03	5.00E-03	2E-01			1.90E+02	6E-06	5.00E-03	2E-01		
W-01	INORG	Chromium (total)	7440-47-3	D		28	3	1.80E-03	8.50E-03	1.00E-01	9E-02			4.60E+02	2E-05	1.00E-01	9E-02		
W-01	INORG	Chromium (total)	7440-47-3	T		28	3	1.40E-03	2.70E-03	1.00E-01	3E-02			4.60E+02	6E-06	1.00E-01	3E-02		
W-01	INORG	Cobalt	7440-48-4	D		28	9	1.30E-03	3.50E-03	1.00E-01	4E-02			2.40E+03	1E-06	4.00E-02	9E-02		
W-01	INORG	Cobalt	7440-48-4	T		28	8	1.70E-03	3.20E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	8E-02		
W-01	INORG	Copper	7440-50-8	D	D	28	2	4.50E-03	5.60E-03	4.00E+00	1E-03			7.40E+03	8E-07	1.40E+00	4E-03		
W-01	INORG	Copper	7440-50-8	T	D	28	4	4.70E-03	1.94E-02	4.00E+00	5E-03			7.40E+03	3E-06	1.40E+00	1E-02		
W-01	INORG	Cyanide (total)	57-12-5	T	D	25	17	2.00E-03	1.11E-02	2.00E-01	6E-02			5.70E+01	2E-04	2.00E-01	6E-02		
W-01	INORG	Lead	7439-92-1	T	B2	28	5	4.00E-03	2.71E-02	4.00E-03	**7E+00**					4.00E-03	**7E+00**		
W-01	INORG	Manganese	7439-96-5	D	D	28	27	4.72E-02	9.52E-01	2.50E+00	4E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
W-01	INORG	Manganese	7439-96-5	T	D	28	28	1.60E-03	9.40E-01	2.50E+00	4E-01			9.10E+03	1E-04	8.60E-01	**1E+00**		
W-01	INORG	Mercury	7439-97-6	D	D	28	6	8.00E-05	1.30E-04	2.00E-03	7E-02			5.60E-02	2E-03	2.00E-03	7E-02		
W-01	INORG	Mercury	7439-97-6	T	D	28	6	6.73E-05	1.20E-04	2.00E-03	6E-02			5.60E-02	2E-03	2.00E-03	6E-02		
W-01	INORG	Nickel	7440-02-0	D	A	28	19	2.40E-03	1.59E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
W-01	INORG	Nickel	7440-02-0	T	A	28	19	2.60E-03	1.94E-02	1.00E-01	2E-01			7.40E+04	3E-07	1.00E-01	2E-01		
W-01	INORG	Selenium	7782-49-2	T	D	28	1	4.90E-03	4.90E-03	5.00E-02	1E-01			9.70E+02	5E-06	5.00E-02	1E-01		
W-01	INORG	Silver	7440-22-4	T	D	28	1	1.50E-03	1.50E-03	9.80E-02	2E-02			1.50E+03	1E-06	3.40E-02	4E-02		
W-01	INORG	Thallium	7440-28-0	D		28	6	4.30E-05	9.10E-03	2.00E-03	**5E+00**			1.30E+01	7E-04	2.00E-03	**5E+00**		
W-01	INORG	Thallium	7440-28-0	T		28	4	1.80E-05	1.02E-02	2.00E-03	**5E+00**			1.30E+01	8E-04	2.00E-03	**5E+00**		
W-01	INORG	Vanadium	7440-62-2	D		28	4	1.00E-03	2.45E-02	6.20E-02	4E-01			9.70E+02	3E-05	4.50E-03	**5E+00**		
W-01	INORG	Vanadium	7440-62-2	T		28	5	1.00E-03	2.38E-02	6.20E-02	4E-01			9.70E+02	2E-05	4.50E-03	**5E+00**		
W-01	INORG	Zinc	7440-66-6	D	D	28	2	1.56E-02	2.09E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	9E-03		
W-01	INORG	Zinc	7440-66-6	T	D	28	6	1.85E-02	3.82E-02	5.00E+00	8E-03			1.10E+05	3E-07	2.40E+00	2E-02		
W-01	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	D	B2	4	3	1.99E-09	3.03E-09	3.00E-08	1E-01			1.00E-08	3E-01	3.00E-08	1E-01		
W-01	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	23	15	1.63E-09	2.16E-08	3.00E-08	7E-01			1.00E-08	**2E+00**	3.00E-08	7E-01		
W-05	VOC	Benzene	71-43-2	T	A	8	2	3.50E-04	4.90E-04	5.00E-03	1E-01	3.60E+01	1E-05	1.10E+01	4E-05	5.00E-03	1E-01	5.60E+00	9E-05
W-05	VOC	Bromodichloromethane	75-27-4	T	B2	8	1	4.60E-04	4.60E-04	1.00E-01	5E-03	3.80E+01	1E-05	1.40E+01	3E-05	1.00E-01	5E-03	4.80E+00	1E-04
W-05	VOC	2-Butanone	78-93-3	T	D	8	2	1.78E-03	4.90E-03	3.80E+01	1E-04	2.40E+05	2E-08	2.40E+05	2E-08	1.30E+01	4E-04	2.40E+05	2E-08
W-05	VOC	Chloroethane	75-00-3	T		8	2	3.60E-02	5.00E-02	1.70E+00	3E-02	5.70E+03	9E-06	4.40E+02	1E-04	4.30E-01	1E-01	5.70E+03	9E-06
W-05	VOC	Chloroform	67-66-3	T	B2	8	4	5.50E-04	2.10E-03	1.00E-01	2E-02	1.80E+02	1E-05	1.50E+02	1E-05	1.00E-01	2E-02	2.80E+01	8E-05
W-05	VOC	Chloromethane	74-87-3	T	D	8	2	3.00E-04	4.75E-04	1.10E+00	4E-04	5.20E+01	9E-06	4.90E+02	1E-06	2.60E-01	2E-03	8.60E+00	6E-05
W-05	VOC	1,1-Dichloroethane	75-34-3	T	C	8	2	2.00E-02	3.00E-02	2.50E+00	1E-02	2.30E+03	1E-05	2.40E+03	1E-05	8.80E-01	3E-02	1.00E+03	3E-05
W-05	VOC	1,1-Dichloroethene	75-35-4	T	C	8	1	7.80E-04	7.80E-04	7.00E-03	1E-01	1.30E+00	6E-04	1.10E+01	7E-05	7.00E-03	1E-01	2.00E-01	4E-03
W-05	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	8	3	3.20E-04	1.10E-03	7.00E-02	2E-02	2.20E+02	5E-06	2.00E+02	6E-06	7.00E-02	2E-02	9.60E+01	1E-05
W-05	VOC	4-Methyl-2-pentanone	108-10-1	T		8	3	5.00E-04	1.60E-03	5.20E+00	3E-04	2.00E+04	8E-08	1.30E+04	1E-07	1.80E+00	9E-04	2.00E+04	8E-08
W-05	VOC	Methylene Chloride	75-09-2	T	B2	8	1	7.70E-04	7.70E-04	5.00E-03	2E-01	1.40E+03	6E-07	2.20E+02	4E-06	5.00E-03	2E-01	2.20E+02	4E-06
W-05	VOC	Toluene	108-88-3	T	D	8	3	2.60E-04	6.05E-04	1.00E+00	6E-04	5.30E+02	1E-06	5.30E+02	1E-06	1.00E+00	6E-04	5.30E+02	1E-06
W-05	VOC	1,1,1-Trichloroethane	71-55-6	T	D	8	1	5.65E-04	5.65E-04	2.00E-01	3E-03	1.30E+03	4E-07	1.30E+03	4E-07	2.00E-01	3E-03	6.60E+02	9E-07
W-05	VOC	Vinyl Chloride	75-01-4	T	A	8	2	2.20E-04	2.70E-04	2.00E-03	1E-01	6.90E-01	4E-04	5.70E-01	5E-04	2.00E-03	1E-01	1.10E-01	2E-03
W-05	VOC	Xylenes (total)	1330-20-7	T	D	8	1	4.30E-04	4.30E-04	1.00E+01	4E-05	1.90E+02	2E-06	1.90E+02	2E-06	1.00E+01	4E-05	1.90E+02	2E-06
W-05	SVOC	Anthracene	120-12-7	T	D	8	2	1.15E-03	1.20E-03	4.30E-02	3E-02	4.30E-02	3E-02	4.30E-02	3E-02	4.30E-02	3E-02	4.30E-02	3E-02
W-05	SVOC	Carbazole	86-74-8	T	B2	8	2	1.30E-03	1.55E-03	3.50E-01	4E-03			7.40E+00	2E-04	8.50E-02	2E-02		
W-05	SVOC	Fluorene	86-73-7	T	D	8	2	2.80E-03	6.80E-03	2.00E+00	3E-03	2.00E+00	3E-03	2.00E+00	3E-03	8.80E-01	8E-03	2.00E+00	3E-03
W-05	SVOC	Naphthalene	91-20-3	T	C	8	1	2.50E-03	2.50E-03	1.50E+00	2E-03	3.10E+01	8E-05	3.10E+01	8E-05	5.20E-01	5E-03	3.10E+01	8E-05
W-05	SVOC	Phenanthrene	85-01-8	T	D	8	1	2.30E-03	2.30E-03	1.50E-01	2E-02	1.00E+00	2E-03	1.00E+00	2E-03	5.20E-02	4E-02	1.00E+00	2E-03
W-05	INORG	Antimony	7440-36-0	D		8	2	8.30E-03	9.80E-03	6.00E-03	**2E+00**			6.80E+01	1E-04	6.00E-03	**2E+00**		

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
W-05	INORG	Antimony	7440-36-0	T		8	2	9.25E-03	1.07E-02	6.00E-03	**2E+00**			6.80E+01	2E-04	6.00E-03	**2E+00**		
W-05	INORG	Arsenic	7440-38-2	D	A	8	4	5.10E-03	4.73E-02	5.00E-02	9E-01			4.30E+00	1E-02	5.00E-02	9E-01		
W-05	INORG	Arsenic	7440-38-2	T	A	8	4	5.70E-03	5.85E-02	5.00E-02	**1E+00**			4.30E+00	1E-02	5.00E-02	**1E+00**		
W-05	INORG	Barium	7440-39-3	D	D	8	8	3.06E-02	3.00E-01	2.00E+00	2E-01			1.40E+04	2E-05	2.00E+00	2E-01		
W-05	INORG	Barium	7440-39-3	T	D	8	8	3.25E-02	2.85E-01	2.00E+00	1E-01			1.40E+04	2E-05	2.00E+00	1E-01		
W-05	INORG	Beryllium	7440-41-7	T	B1	8	1	5.60E-04	5.60E-04	4.00E-03	1E-01			2.90E+02	2E-06	4.00E-03	1E-01		
W-05	INORG	Cadmium	7440-43-9	D	B1	8	3	2.20E-04	3.90E-04	5.00E-03	8E-02			1.90E+02	2E-06	5.00E-03	8E-02		
W-05	INORG	Cadmium	7440-43-9	T	B1	8	3	2.90E-04	4.70E-04	5.00E-03	9E-02			1.90E+02	2E-06	5.00E-03	9E-02		
W-05	INORG	Chromium (total)	7440-47-3	D		8	2	9.60E-03	1.72E-02	1.00E-01	2E-01			4.60E+02	4E-05	1.00E-01	2E-01		
W-05	INORG	Chromium (total)	7440-47-3	T		8	2	1.04E-02	1.72E-02	1.00E-01	2E-01			4.60E+02	4E-05	1.00E-01	2E-01		
W-05	INORG	Cobalt	7440-48-4	D		8	4	3.00E-03	5.80E-03	1.00E-01	6E-02			2.40E+03	2E-06	4.00E-02	1E-01		
W-05	INORG	Cobalt	7440-48-4	T		8	4	1.70E-03	5.50E-03	1.00E-01	6E-02			2.40E+03	2E-06	4.00E-02	1E-01		
W-05	INORG	Copper	7440-50-8	D	D	8	2	1.05E-02	4.26E-02	4.00E+00	1E-02			7.40E+03	6E-06	1.40E+00	3E-02		
W-05	INORG	Copper	7440-50-8	T	D	8	2	1.37E-02	4.74E-02	4.00E+00	1E-02			7.40E+03	6E-06	1.40E+00	3E-02		
W-05	INORG	Manganese	7439-96-5	D	D	8	8	1.38E-03	8.15E-01	2.50E+00	3E-01			9.10E+03	9E-05	8.60E-01	9E-01		
W-05	INORG	Manganese	7439-96-5	T	D	8	8	2.48E-03	7.66E-01	2.50E+00	3E-01			9.10E+03	8E-05	8.60E-01	9E-01		
W-05	INORG	Mercury	7439-97-6	D	D	8	2	8.20E-05	2.20E-04	2.00E-03	1E-01			5.60E-02	4E-03	2.00E-03	1E-01		
W-05	INORG	Mercury	7439-97-6	T	D	8	1	3.00E-04	3.00E-04	2.00E-03	2E-01			5.60E-02	5E-03	2.00E-03	2E-01		
W-05	INORG	Nickel	7440-02-0	D	A	8	6	2.70E-03	1.63E-02	1.00E+01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
W-05	INORG	Nickel	7440-02-0	T	A	8	6	2.90E-03	1.62E-02	1.00E+01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
W-05	INORG	Selenium	7782-49-2	D	D	8	2	2.78E-02	4.78E-02	5.00E-02	1E+00			9.70E+02	5E-05	5.00E-02	1E+00		
W-05	INORG	Selenium	7782-49-2	T	D	8	2	2.88E-02	4.89E-02	5.00E-02	1E+00			9.70E+02	5E-05	5.00E-02	1E+00		
W-05	INORG	Thallium	7440-28-0	D		8	5	3.25E-05	9.00E-03	2.00E-03	**5E+00**			1.30E+01	7E-04	2.00E-03	**5E+00**		
W-05	INORG	Thallium	7440-28-0	T		8	3	3.60E-05	7.10E-03	2.00E-03	**4E+00**			1.30E+01	5E-04	2.00E-03	**4E+00**		
W-05	INORG	Vanadium	7440-62-2	D		8	3	1.00E-03	7.32E-02	6.20E-02	**1E+00**			9.70E+02	8E-05	4.50E-03	**2E+01**		
W-05	INORG	Vanadium	7440-62-2	T		8	4	8.30E-04	7.66E-02	6.20E-02	**1E+00**			9.70E+02	8E-05	4.50E-03	**2E+01**		
W-05	INORG	Zinc	7440-66-6	D	D	8	1	1.28E-02	1.28E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	5E-03		
W-05	INORG	Zinc	7440-66-6	T	D	8	2	1.33E-02	1.85E-02	5.00E+00	4E-03			1.10E+05	2E-07	2.40E+00	8E-03		
W-08	VOC	Acetone	67-64-1	T	D	14	6	1.63E-03	1.60E-01	2.10E+00	8E-02	1.00E+06	2E-07	3.10E+04	5E-06	7.30E-01	2E-01	1.00E+06	2E-07
W-08	VOC	Benzene	71-43-2	T	A	14	5	1.80E-04	6.25E-04	5.00E-03	1E-01	3.60E+01	2E-05	1.10E+01	6E-05	5.00E-03	1E-01	5.60E+00	1E-04
W-08	VOC	2-Butanone	78-93-3	T	D	14	3	5.40E-04	4.40E-03	3.80E+01	1E-04	2.40E+05	2E-08	2.40E+05	2E-08	1.30E+01	3E-04	2.40E+05	2E-08
W-08	VOC	Carbon Disulfide	75-15-0	T		14	4	2.40E-04	7.00E-04	2.30E+00	3E-04	5.50E+02	1E-06	1.20E+03	6E-07	8.00E-01	9E-04	2.50E+02	3E-06
W-08	VOC	Chloroform	67-66-3	T	B2	14	4	1.40E-04	2.40E-04	1.00E-01	2E-03	1.80E+02	1E-06	1.50E+02	2E-06	1.00E-01	2E-03	2.80E+01	9E-06
W-08	VOC	Chloromethane	74-87-3	T	D	14	1	2.60E-04	2.60E-04	1.10E+00	2E-04	5.20E+01	5E-06	4.90E+02	5E-07	2.60E-01	1E-03	8.60E+00	3E-05
W-08	VOC	Cumene	98-82-8	T	D	14	6	1.80E-04	1.70E-03	2.30E+00	7E-04	5.60E+01	3E-05	5.60E+01	3E-05	8.00E-01	2E-03	5.60E+01	3E-05
W-08	VOC	Cyclohexane	110-82-7	T		14	1	2.20E-04	2.20E-04										
W-08	VOC	1,1-Dichloroethane	75-34-3	T	C	14	6	1.90E-04	3.00E-03	2.50E+00	1E-03	2.30E+03	1E-06	2.40E+03	1E-06	8.80E-01	3E-03	1.00E+03	3E-06
W-08	VOC	cis-1,2-Dichloroethene	156-59-2	T	D	14	2	3.00E-04	2.30E-03	7.00E-02	3E-02	2.20E+02	1E-05	2.00E+02	1E-05	7.00E-02	3E-02	9.60E+01	2E-05
W-08	VOC	trans-1,2-Dichloroethene	156-60-5	T		14	1	6.30E-04	6.30E-04	1.00E-01	6E-03	2.00E+02	3E-06	2.20E+02	3E-06	1.00E-01	6E-03	8.50E+01	7E-06
W-08	VOC	Ethyl Benzene	100-41-4	T	D	14	7	1.50E-04	4.20E-04	7.00E-01	6E-04	1.70E+02	2E-06	1.70E+02	2E-06	7.00E-01	6E-04	1.70E+02	2E-06
W-08	VOC	4-Methyl-2-pentanone	108-10-1	T		14	5	4.30E-04	1.70E-03	5.20E+00	3E-04	2.00E+04	9E-08	1.30E+04	1E-07	1.80E+00	9E-04	2.00E+04	9E-08
W-08	VOC	Methylcyclohexane	108-87-2	T		14	1	1.90E-04	1.90E-04										
W-08	VOC	Methylene Chloride	75-09-2	T	B2	14	1	5.00E-04	5.00E-04	5.00E-03	1E-01	1.40E+03	4E-07	2.20E+02	2E-06	5.00E-03	1E-01	2.20E+02	2E-06
W-08	VOC	Tetrachloroethene	127-18-4	T	C-B2	14	1	8.90E-04	8.90E-04	5.00E-03	2E-01	1.70E+02	5E-06	1.20E+01	7E-05	5.00E-03	2E-01	2.50E+01	4E-05
W-08	VOC	Toluene	108-88-3	T	D	14	7	2.00E-04	2.00E-03	1.00E+00	2E-03	5.30E+02	4E-06	5.30E+02	4E-06	1.00E+00	2E-03	5.30E+02	4E-06
W-08	VOC	Trichloroethene	79-01-6	T	C-B2	14	2	2.00E-04	2.60E-03	5.00E-03	5E-01	9.70E+01	3E-05	3.70E+01	7E-05	5.00E-03	5E-01	1.50E+01	2E-04
W-08	VOC	Vinyl Chloride	75-01-4	T	A	14	1	3.10E-04	3.10E-04	2.00E-03	2E-01	6.90E-01	4E-04	5.70E-01	5E-04	2.00E-03	2E-01	1.10E-01	3E-03
W-08	VOC	Xylenes (total)	1330-20-7	T	D	14	8	5.10E-04	2.65E-03	1.00E+01	3E-04	1.90E+02	1E-05	1.90E+02	1E-05	1.00E+01	3E-04	1.90E+02	1E-05
W-08	SVOC	Acenaphthene	83-32-9	T		14	1	2.20E-03	2.20E-03	3.80E+00	6E-04	4.20E+00	5E-04	4.20E+00	5E-04	1.30E+00	2E-03	4.20E+00	5E-04

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Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
W-08	SVOC	Anthracene	120-12-7	T	D	14	2	7.30E-04	7.90E-04	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02	4.30E-02	2E-02
W-08	SVOC	Fluorene	86-73-7	T	D	14	7	1.50E-03	2.10E-02	2.00E+00	1E-02	2.00E+00	1E-02	2.00E+00	1E-02	8.80E-01	2E-02	2.00E+00	1E-02
W-08	SVOC	2-Methylnaphthalene	91-57-6	T		14	4	6.50E-04	5.10E-03	7.50E-01	7E-03			2.50E+01	2E-04	2.60E-01	2E-02		
W-08	SVOC	Naphthalene	91-20-3	T	C	14	4	1.70E-03	2.60E-03	1.50E+00	2E-03	3.10E+01	8E-05	3.10E+01	8E-05	5.20E-01	5E-03	3.10E+01	8E-05
W-08	SVOC	Phenanthrene	85-01-8	T	D	14	7	1.00E-03	3.90E-03	1.50E-01	3E-02	1.00E+00	4E-03	1.00E+00	4E-03	5.20E-02	8E-02	1.00E+00	4E-03
W-08	P/PCB	PCBs (total)	1336-36-3	T	B2	14	1	8.22E-04	8.22E-04	5.00E-04	**2E+00**	4.50E-02	2E-02	3.30E-03	2E-01	5.00E-04	**2E+00**	4.50E-02	2E-02
W-08	INORG	Antimony	7440-36-0	D		14	3	2.50E-03	8.00E-03	6.00E-03	**1E+00**			6.80E+01	1E-04	6.00E-03	**1E+00**		
W-08	INORG	Antimony	7440-36-0	T		14	3	2.80E-03	7.90E-03	6.00E-03	**1E+00**			6.80E+01	1E-04	6.00E-03	**1E+00**		
W-08	INORG	Arsenic	7440-38-2	D	A	14	10	4.10E-03	3.41E-02	5.00E-02	7E-01			4.30E+00	8E-03	5.00E-02	7E-01		
W-08	INORG	Arsenic	7440-38-2	T	A	14	10	4.10E-03	3.60E-02	5.00E-02	7E-01			4.30E+00	8E-03	5.00E-02	7E-01		
W-08	INORG	Barium	7440-39-3	D	D	14	14	2.60E-02	3.01E-01	2.00E+00	2E-01			1.40E+04	2E-05	2.00E+00	2E-01		
W-08	INORG	Barium	7440-39-3	T	D	14	14	2.65E-02	4.60E-01	2.00E+00	2E-01			1.40E+04	3E-05	2.00E+00	2E-01		
W-08	INORG	Beryllium	7440-41-7	T	B1	14	1	6.20E-04	6.20E-04	4.00E-03	2E-01			2.90E+02	2E-06	4.00E-03	2E-01		
W-08	INORG	Cadmium	7440-43-9	D	B1	14	3	2.80E-04	5.50E-04	5.00E-03	1E-01			1.90E+02	3E-06	5.00E-03	1E-01		
W-08	INORG	Cadmium	7440-43-9	T	B1	14	6	2.90E-04	1.10E-03	5.00E-03	2E-01			1.90E+02	6E-06	5.00E-03	2E-01		
W-08	INORG	Chromium (total)	7440-47-3	D		14	2	5.00E-03	4.76E-02	1.00E-01	5E-01			4.60E+02	1E-04	1.00E-01	5E-01		
W-08	INORG	Chromium (total)	7440-47-3	T		14	4	1.15E-03	6.07E-02	1.00E-01	6E-01			4.60E+02	1E-04	1.00E-01	6E-01		
W-08	INORG	Cobalt	7440-48-4	D		14	5	1.40E-03	9.30E-03	1.00E-01	9E-02			2.40E+03	4E-06	4.00E-02	2E-01		
W-08	INORG	Cobalt	7440-48-4	T		14	5	1.90E-03	2.75E-02	1.00E-01	3E-01			2.40E+03	1E-05	4.00E-02	7E-01		
W-08	INORG	Copper	7440-50-8	D	D	14	2	4.40E-03	5.20E-03	4.00E+00	1E-03			7.40E+03	7E-07	1.40E+00	4E-03		
W-08	INORG	Copper	7440-50-8	T	D	14	2	6.60E-03	5.56E-02	4.00E+00	1E-02			7.40E+03	8E-06	1.40E+00	4E-02		
W-08	INORG	Lead	7439-92-1	T	B2	14	2	5.70E-03	3.60E-02	4.00E-02	**9E+00**					4.00E-03	**9E+00**		
W-08	INORG	Manganese	7439-96-5	D	D	14	14	2.10E-03	3.24E+00	2.50E+00	**1E+00**			9.10E+03	4E-04	8.60E-01	**4E+00**		
W-08	INORG	Manganese	7439-96-5	T	D	14	14	2.47E-02	3.20E+00	2.50E+00	**1E+00**			9.10E+03	4E-04	8.60E-01	**4E+00**		
W-08	INORG	Mercury	7439-97-6	D	D	14	2	1.10E-04	1.90E-04	2.00E-03	1E-01			5.60E-02	3E-03	2.00E-03	1E-01		
W-08	INORG	Mercury	7439-97-6	T	D	14	3	7.00E-05	2.60E-04	2.00E-03	1E-01			5.60E-02	5E-03	2.00E-03	1E-01		
W-08	INORG	Nickel	7440-02-0	D	A	14	11	2.30E-03	1.56E-02	1.00E-01	2E-01			7.40E+04	2E-07	1.00E-01	2E-01		
W-08	INORG	Nickel	7440-02-0	T	A	14	9	3.40E-03	7.45E-02	1.00E-01	7E-01			7.40E+04	1E-06	1.00E-01	7E-01		
W-08	INORG	Thallium	7440-28-0	D		14	3	2.10E-05	7.40E-03	2.00E-03	**4E+00**			1.30E+01	6E-04	2.00E-03	**4E+00**		
W-08	INORG	Thallium	7440-28-0	T		14	2	1.00E-03	6.10E-03	2.00E-03	**3E+00**			1.30E+01	5E-04	2.00E-03	**3E+00**		
W-08	INORG	Vanadium	7440-62-2	D		14	4	6.40E-04	3.80E-03	6.20E-02	6E-02			9.70E+02	4E-06	4.50E-03	8E-01		
W-08	INORG	Vanadium	7440-62-2	T		14	5	6.70E-04	8.02E-02	6.20E-02	**1E+00**			9.70E+02	8E-05	4.50E-03	**2E+01**		
W-08	INORG	Zinc	7440-66-6	D	D	14	2	2.25E-02	3.21E-02	5.00E+00	6E-03			1.10E+05	3E-07	2.40E+00	1E-02		
W-08	INORG	Zinc	7440-66-6	T	D	14	2	3.38E-02	1.69E-01	5.00E+00	3E-02			1.10E+05	2E-06	2.40E+00	7E-02		
W-08	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	4	4	1.95E-09	1.97E-08	3.00E-08	7E-01			1.00E-08	**2E+00**	3.00E-08	7E-01		
W-09	VOC	Acetone	67-64-1	T	D	2	1	3.50E-02	3.50E-02	2.10E+00	2E-02	1.00E+06	4E-08	3.10E+04	1E-06	7.30E-01	5E-02	1.00E+06	4E-08
W-09	VOC	1,1,1-Trichloroethane	71-55-6	T	D	2	1	2.50E-04	2.50E-04	2.00E-01	1E-03	1.30E+03	2E-07	1.30E+03	2E-07	2.00E-01	1E-03	6.60E+02	4E-07
W-09	VOC	Trichlorofluoromethane	75-69-4	T		2	2	9.50E-04	2.20E-03	7.30E+00	3E-04	1.10E+03	2E-06	1.10E+03	2E-06	2.60E+00	8E-04	1.10E+03	2E-06
W-09	INORG	Barium	7440-39-3	D	D	2	2	5.40E-02	1.47E-01	2.00E+00	7E-02			1.40E+04	1E-05	2.00E+00	7E-02		
W-09	INORG	Barium	7440-39-3	T	D	2	2	5.61E-02	2.01E-01	2.00E+00	1E-01			1.40E+04	1E-05	2.00E+00	1E-01		
W-09	INORG	Chromium (total)	7440-47-3	D		2	1	1.04E-02	1.04E-02	1.00E-01	1E-01			4.60E+02	2E-05	1.00E-01	1E-01		
W-09	INORG	Chromium (total)	7440-47-3	T		2	1	1.12E-02	1.12E-02	1.00E-01	1E-01			4.60E+02	2E-05	1.00E-01	1E-01		
W-09	INORG	Cobalt	7440-48-4	D		2	1	1.40E-03	1.40E-03	1.00E-01	1E-02			2.40E+03	6E-07	4.00E-02	4E-02		
W-09	INORG	Cobalt	7440-48-4	T		2	1	2.90E-03	2.90E-03	1.00E-01	3E-02			2.40E+03	1E-06	4.00E-02	7E-02		
W-09	INORG	Manganese	7439-96-5	D	D	2	2	1.98E-02	2.42E-01	2.50E+00	1E-01			9.10E+03	3E-05	8.60E-01	3E-01		
W-09	INORG	Manganese	7439-96-5	T	D	2	2	1.65E-02	3.82E-01	2.50E+00	2E-01			9.10E+03	4E-05	8.60E-01	4E-01		
W-09	INORG	Nickel	7440-02-0	D	A	2	1	2.20E-03	2.20E-03	1.00E-01	2E-02			7.40E+04	3E-08	1.00E-01	2E-02		
W-09	INORG	Nickel	7440-02-0	T	A	2	1	3.80E-03	3.80E-03	1.00E-01	4E-02			7.40E+04	5E-08	1.00E-01	4E-02		
W-09	INORG	Thallium	7440-28-0	D		2	2	3.80E-05	5.30E-03	2.00E-03	**3E+00**			1.30E+01	4E-04	2.00E-03	**3E+00**		
W-09	INORG	Thallium	7440-28-0	T		2	1	1.24E-02	1.24E-02	2.00E-03	**6E+00**			1.30E+01	1E-03	2.00E-03	**6E+00**		
W-10	VOC	Acetone	67-64-1	T	D	5	1	3.10E-03	3.10E-03	2.10E+00	1E-03	1.00E+06	3E-09	3.10E+04	1E-07	7.30E-01	4E-03	1.00E+06	3E-09
W-10	VOC	Benzene	71-43-2	T	A	5	3	1.90E-04	5.80E-04	5.00E-03	1E-01	3.60E+01	2E-05	1.10E+01	5E-05	5.00E-03	1E-01	5.60E+00	1E-04
W-10	VOC	Bromodichloromethane	75-27-4	T	B2	5	1	3.00E-04	3.00E-04	1.00E-03	3E-01	3.80E+01	8E-06	1.40E+01	2E-05	1.00E-01	3E-03	4.80E+00	6E-05
W-10	VOC	2-Butanone	78-93-3	T	D	5	1	1.00E-03	1.00E-03	3.80E+01	3E-05	2.40E+05	4E-09	2.40E+05	4E-09	1.30E+01	8E-05	2.40E+05	4E-09
W-10	VOC	Carbon Disulfide	75-15-0	T		5	1	2.00E-04	2.00E-04	2.30E+00	9E-05	5.50E+02	4E-07	1.20E+03	2E-07	8.00E-01	3E-04	2.50E+02	8E-07
W-10	VOC	Chloroform	67-66-3	T	B2	5	3	2.00E-04	5.70E-04	1.00E-01	6E-03	1.80E+02	3E-06	1.50E+02	4E-06	1.00E-01	6E-03	2.80E+01	2E-05

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Table 5-2a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SHALLOW GROUNDWATER SCREENING RESULTS

Area	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Industrial Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Industrial Volatilization to Indoor Air Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Setect to Residential Drinking Water Criteria	Residential Volatilization to Indoor Air Criteria (mg/L)	Ratio of Max Detect to Residential Volatilization to Indoor Air Criteria
W-10	VOC	Cumene	98-82-8	T	D	5	1	3.00E-04	3.00E-04	2.30E+00	1E-04	5.60E+01	5E-06	5.60E+01	5E-06	8.00E-01	4E-04	5.60E+01	5E-06
W-10	VOC	1,1-Dichloroethane	75-34-3	T	C	5	2	7.30E-04	8.40E-04	2.50E+00	3E-04	2.30E+03	4E-07	2.40E+03	4E-07	8.80E-01	1E-03	1.00E+03	8E-07
W-10	VOC	Ethyl Benzene	100-41-4	T	D	5	4	1.50E-04	1.00E-03	7.00E-01	1E-03	1.70E+02	6E-06	1.70E+02	6E-06	7.00E-01	1E-03	1.70E+02	6E-06
W-10	VOC	Methyl tert-butyl ether	1634-04-4	T		5	3	6.70E-04	3.40E-03	6.90E-01	5E-03	4.70E+04	7E-08	6.90E+02	5E-06	2.40E-01	1E-02	4.70E+04	7E-08
W-10	VOC	4-Methyl-2-pentanone	108-10-1	T		5	1	2.40E-04	2.40E-04	5.20E+00	5E-05	2.00E+04	1E-08	1.30E+04	2E-08	1.80E+00	1E-04	2.00E+04	1E-08
W-10	VOC	Toluene	108-88-3	T	D	5	4	5.90E-04	1.90E-03	1.00E+00	2E-03	5.30E+02	4E-06	5.30E+02	4E-06	1.00E+00	2E-03	5.30E+02	4E-06
W-10	VOC	1,1,1-Trichloroethane	71-55-6	T	D	5	1	6.20E-04	6.20E-04	2.00E-01	3E-03	1.30E+03	5E-07	1.30E+03	5E-07	2.00E-01	3E-03	6.60E+02	9E-07
W-10	VOC	Xylenes (total)	1330-20-7	T	D	5	4	5.80E-04	7.80E-03	1.00E+01	8E-04	1.90E+02	4E-05	1.90E+02	4E-05	1.00E+01	8E-04	1.90E+02	4E-05
W-10	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	5	1	1.50E-01	1.50E-01	6.00E-03	**3E+01**			3.20E-01	5E-01	6.00E-03	**3E+01**		
W-10	SVOC	Fluoranthene	206-44-0	T	D	5	1	8.20E-04	8.20E-04	2.10E-01	4E-03	2.10E-01	4E-03	2.10E-01	4E-03	2.10E-01	4E-03	2.10E-01	4E-03
W-10	SVOC	Fluorene	86-73-7	T	D	5	1	1.90E-03	1.90E-03	2.00E+00	1E-03	2.00E+00	1E-03	2.00E+00	1E-03	8.80E-01	2E-03	2.00E+00	1E-03
W-10	SVOC	2-Methylnaphthalene	91-57-6	T		5	1	7.50E-03	7.50E-03	7.50E-01	1E-02			2.50E+01	3E-04	2.60E-01	3E-02		
W-10	SVOC	Naphthalene	91-20-3	T	C	5	1	6.90E-03	6.90E-03	1.50E+00	5E-03	3.10E+01	2E-04	3.10E+01	2E-04	5.20E-01	1E-02	3.10E+01	2E-04
W-10	P/PCB	PCBs (total)	1336-36-3	T	B2	5	2	4.36E-04	8.58E-04	5.00E-04	**2E+00**	4.50E-02	2E-02	3.30E-03	3E-01	5.00E-04	**2E+00**	4.50E-02	2E-02
W-10	INORG	Antimony	7440-36-0	T		5	1	2.30E-03	2.30E-03	6.00E-03	4E-01			6.80E+01	3E-05	6.00E-03	4E-01		
W-10	INORG	Arsenic	7440-38-2	D	A	5	2	5.00E-03	5.91E-02	5.00E-02	**1E+00**			4.30E+00	1E-02	5.00E-02	**1E+00**		
W-10	INORG	Arsenic	7440-38-2	T	A	5	2	4.90E-03	6.33E-02	5.00E-02	**1E+00**			4.30E+00	1E-02	5.00E-02	**1E+00**		
W-10	INORG	Barium	7440-39-3	D	D	5	5	1.05E-02	1.09E-01	2.00E+00	5E-02			1.40E+04	8E-06	2.00E+00	5E-02		
W-10	INORG	Barium	7440-39-3	T	D	5	5	1.16E-02	1.10E-01	2.00E+00	6E-02			1.40E+04	8E-06	2.00E+00	6E-02		
W-10	INORG	Chromium (total)	7440-47-3	D		5	2	5.30E-03	6.50E-03	1.00E-01	7E-02			4.60E+02	1E-05	1.00E-01	7E-02		
W-10	INORG	Chromium (total)	7440-47-3	T		5	2	5.60E-03	6.50E-03	1.00E-01	7E-02			4.60E+02	1E-05	1.00E-01	7E-02		
W-10	INORG	Cobalt	7440-48-4	D		5	2	2.50E-03	1.11E-02	1.00E-01	1E-01			2.40E+03	5E-06	4.00E-02	3E-01		
W-10	INORG	Cobalt	7440-48-4	T		5	2	2.70E-03	1.14E-02	1.00E-01	1E-01			2.40E+03	5E-06	4.00E-02	3E-01		
W-10	INORG	Copper	7440-50-8	D	D	5	1	4.60E-03	4.60E-03	4.00E+00	1E-03			7.40E+03	6E-07	1.40E+00	3E-03		
W-10	INORG	Copper	7440-50-8	T	D	5	1	4.30E-03	4.30E-03	4.00E+00	1E-03			7.40E+03	6E-07	1.40E+00	3E-03		
W-10	INORG	Manganese	7439-96-5	D	D	5	5	1.09E-02	4.83E-01	2.50E+00	2E-01			9.10E+03	5E-05	8.60E-01	6E-01		
W-10	INORG	Manganese	7439-96-5	T	D	5	5	1.35E-02	4.78E-01	2.50E+00	2E-01			9.10E+03	5E-05	8.60E-01	6E-01		
W-10	INORG	Mercury	7439-97-6	T	D	5	2	7.50E-05	9.10E-05	2.00E-03	5E-02			5.60E-02	2E-03	2.00E-03	5E-02		
W-10	INORG	Nickel	7440-02-0	D	A	5	3	3.10E-03	2.42E-02	1.00E-01	2E-01			7.40E+04	3E-07	1.00E-01	2E-01		
W-10	INORG	Nickel	7440-02-0	T	A	5	3	3.50E-03	2.47E-02	1.00E-01	2E-01			7.40E+04	3E-07	1.00E-01	2E-01		
W-10	INORG	Thallium	7440-28-0	D		5	2	2.80E-05	5.50E-03	2.00E-03	**3E+00**			1.30E+01	4E-04	2.00E-03	**3E+00**		
W-10	INORG	Thallium	7440-28-0	T		5	1	6.80E-03	6.80E-03	2.00E-03	**3E+00**			1.30E+01	5E-04	2.00E-03	**3E+00**		
W-10	INORG	Vanadium	7440-62-2	D		5	2	1.70E-03	2.40E-03	6.20E-02	4E-02			9.70E+02	2E-06	4.50E-03	5E-01		
W-10	INORG	Vanadium	7440-62-2	T		5	3	1.20E-03	3.00E-03	6.20E-02	5E-02			9.70E+02	3E-06	4.50E-03	7E-01		
W-10	INORG	Zinc	7440-66-6	T	D	5	1	1.46E-02	1.46E-02	5.00E+00	3E-03			1.10E+05	1E-07	2.40E+00	6E-03		
W-10	CDD/F	2,3,7,8-TCDD Equivalent	1746-01-6-TEF	T	B2	4	3	1.74E-09	4.88E-09	3.00E-08	2E-01			1.00E-08	5E-01	3.00E-08	2E-01		

Notes:
Screening Criteria is from Michigan DEQ Part 201.
The Screening Levels for Pyrene was used as a surrogate for Phenanthrene.
The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.
The concentrations for the Target Dioxin congeners were used to calculate an 2,3,7,8-TCDD Equivalent, using EPA 1998 TEFs, before comparing to the Screening Levels for 2,3,7,8-TCDD.

Chem Group - Chemical Group
Meas Basis - Measured Basis; T = Total, D = Dissolved
Carc Class - EPA Weight-of-Evidence Cancer Classification

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Table 3-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

INTERMEDIATE AND DEEP GROUNDWATER SCREENING RESULTS

Area	Zone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SWHI	Deep	VOC	Acetone	67-64-1	T	D	10	3	2.40E-02	7.10E+00	2.10E+00	**3E+00**	7.30E-01	**1E+01**
SWHI	Deep	VOC	Benzene	71-43-2	T	A	10	2	2.60E-04	1.60E-03	5.00E-03	3E-01	5.00E-03	3E-01
SWHI	Deep	VOC	Chloroform	67-66-3	T	B2	10	1	3.55E-04	3.55E-04	1.00E-01	4E-03	1.00E-01	4E-03
SWHI	Deep	VOC	Toluene	108-88-3	T	D	10	3	4.30E-04	1.00E-03	1.00E+00	1E-03	1.00E+00	1E-03
SWHI	Deep	VOC	Xylenes (total)	1330-20-7	T	D	10	3	3.50E-04	6.10E-04	1.00E+01	6E-05	1.00E+01	6E-05
SWHI	Deep	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	10	1	3.90E-03	3.90E-03	6.00E-03	7E-01	6.00E-03	7E-01
SWHI	Deep	SVOC	Caprolactam	105-60-2	T		10	5	9.70E-02	5.40E-01	1.70E+01	3E-02	5.80E+00	9E-02
SWHI	Deep	SVOC	Isophorone	78-59-1	T	C	10	1	2.65E-03	2.65E-03	3.10E+00	9E-04	7.70E-01	3E-03
SWHI	Deep	INORG	Arsenic	7440-38-2	D	A	10	6	6.90E-03	1.88E-02	5.00E-02	4E-01	5.00E-02	4E-01
SWHI	Deep	INORG	Arsenic	7440-38-2	T	A	10	6	7.80E-03	1.94E-02	5.00E-02	4E-01	5.00E-02	4E-01
SWHI	Deep	INORG	Barium	7440-39-3	D	D	10	10	6.46E-02	3.24E-01	2.00E+00	2E-01	2.00E+00	2E-01
SWHI	Deep	INORG	Barium	7440-39-3	T	D	10	10	5.99E-02	3.31E-01	2.00E+00	2E-01	2.00E+00	2E-01
SWHI	Deep	INORG	Cadmium	7440-43-9	T	B1	10	2	3.10E-04	3.30E-04	5.00E-03	7E-02	5.00E-03	7E-02
SWHI	Deep	INORG	Chromium (total)	7440-47-3	D		10	1	1.50E-03	1.50E-03	1.00E-01	2E-02	1.00E-01	2E-02
SWHI	Deep	INORG	Chromium (total)	7440-47-3	T		10	5	3.60E-03	1.13E-02	1.00E-01	1E-01	1.00E-01	1E-01
SWHI	Deep	INORG	Cobalt	7440-48-4	T		10	1	1.30E-03	1.30E-03	1.00E-01	1E-02	4.00E-02	3E-02
SWHI	Deep	INORG	Manganese	7439-96-5	D	D	10	10	3.11E-02	2.32E-01	2.50E+00	9E-02	8.60E-01	3E-01
SWHI	Deep	INORG	Manganese	7439-96-5	T	D	10	10	3.44E-02	2.52E-01	2.50E+00	1E-01	8.60E-01	3E-01
SWHI	Deep	INORG	Mercury	7439-97-6	T	D	10	1	8.80E-05	8.80E-05	2.00E-03	4E-02	2.00E-03	4E-02
SWHI	Deep	INORG	Nickel	7440-02-0	D	A	10	3	2.40E-03	5.60E-03	1.00E-01	6E-02	1.00E-01	6E-02
SWHI	Deep	INORG	Nickel	7440-02-0	T	A	10	6	2.90E-03	7.40E-03	1.00E-01	7E-02	1.00E-01	7E-02
SWHI	Deep	INORG	Zinc	7440-66-6	T	D	10	2	1.28E-02	2.76E-02	5.00E+00	6E-03	2.40E+00	1E-02
SWHI	Intermediate	VOC	Acetone	67-64-1	T	D	6	5	6.50E-01	1.30E+01	2.10E+00	**6E+00**	7.30E-01	**2E+01**
SWHI	Intermediate	VOC	Ethyl Benzene	100-41-4	T	D	6	1	6.50E-03	6.50E-03	7.00E-01	9E-03	7.00E-01	9E-03
SWHI	Intermediate	VOC	4-Methyl-2-pentanone	108-10-1	T		6	1	8.50E-03	8.50E-03	5.20E+00	2E-03	1.80E+00	5E-03
SWHI	Intermediate	VOC	Toluene	108-88-3	T	D	6	1	1.90E-02	1.90E-02	1.00E+00	2E-02	1.00E+00	2E-02
SWHI	Intermediate	VOC	Xylenes (total)	1330-20-7	T	D	6	1	2.50E-02	2.50E-02	1.00E+01	3E-03	1.00E+01	3E-03
SWHI	Intermediate	SVOC	Caprolactam	105-60-2	T		6	5	3.30E-03	8.20E-01	1.70E+01	5E-02	5.80E+00	1E-01
SWHI	Intermediate	INORG	Arsenic	7440-38-2	D	A	6	4	6.10E-03	2.74E-02	5.00E-02	5E-01	5.00E-02	5E-01
SWHI	Intermediate	INORG	Arsenic	7440-38-2	T	A	6	4	7.40E-03	2.66E-02	5.00E-02	5E-01	5.00E-02	5E-01
SWHI	Intermediate	INORG	Barium	7440-39-3	D	D	6	6	8.18E-02	3.04E-01	2.00E+00	2E-01	2.00E+00	2E-01
SWHI	Intermediate	INORG	Barium	7440-39-3	T	D	6	6	1.01E-01	2.88E-01	2.00E+00	1E-01	2.00E+00	1E-01
SWHI	Intermediate	INORG	Cadmium	7440-43-9	T	B1	6	1	3.30E-04	3.30E-04	5.00E-03	7E-02	5.00E-03	7E-02
SWHI	Intermediate	INORG	Chromium (total)	7440-47-3	T		6	4	1.90E-03	6.05E-02	1.00E-01	6E-01	1.00E-01	6E-01
SWHI	Intermediate	INORG	Cobalt	7440-48-4	D		6	2	1.90E-03	2.10E-03	1.00E-01	2E-02	4.00E-02	5E-02
SWHI	Intermediate	INORG	Cobalt	7440-48-4	T		6	2	1.90E-03	6.20E-03	1.00E-01	6E-02	4.00E-02	2E-01
SWHI	Intermediate	INORG	Copper	7440-50-8	T	D	6	3	5.60E-03	9.90E-03	4.00E+00	2E-03	1.40E+00	7E-03
SWHI	Intermediate	INORG	Lead	7439-92-1	T	B2	6	1	2.80E-03	2.80E-03	4.00E-03	7E-01	4.00E-03	7E-01
SWHI	Intermediate	INORG	Manganese	7439-96-5	D	D	6	6	3.49E-02	2.19E-01	2.50E+00	9E-02	8.60E-01	3E-01

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Table 3-20

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

INTERMEDIATE AND DEEP GROUNDWATER SCREENING RESULTS

Area	Zone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
SWHI	Intermediate	INORG	Manganese	7439-96-5	T	D	6	6	3.75E-02	3.52E-01	2.50E+00	1E-01	8.60E-01	4E-01
SWHI	Intermediate	INORG	Nickel	7440-02-0	D	A	6	2	2.30E-03	2.32E-02	1.00E-01	2E-01	1.00E-01	2E-01
SWHI	Intermediate	INORG	Nickel	7440-02-0	T	A	6	5	2.30E-03	5.90E-02	1.00E-01	6E-01	1.00E-01	6E-01
SWHI	Intermediate	INORG	Thallium	7440-28-0	D		6	2	6.80E-04	6.10E-03	2.00E-03	**3E+00**	2.00E-03	**3E+00**
SWHI	Intermediate	INORG	Thallium	7440-28-0	T		6	1	9.20E-05	9.20E-05	2.00E-03	5E-02	2.00E-03	5E-02
SWHI	Intermediate	INORG	Vanadium	7440-62-2	T		6	2	2.20E-03	3.40E-03	6.20E-02	5E-02	4.50E-03	8E-01
SWHI	Intermediate	INORG	Zinc	7440-66-6	D		6	1	1.56E-02	1.56E-02	5.00E+00	3E-03	2.40E+00	7E-03
SWHI	Intermediate	INORG	Zinc	7440-66-6	T	D	6	4	1.34E-02	3.03E-02	5.00E+00	6E-03	2.40E+00	1E-02
W-01	Deep	VOC	Acetone	67-64-1	T	D	5	3	1.40E-01	3.10E+00	2.10E+00	**1E+00**	7.30E-01	**4E+00**
W-01	Deep	VOC	Benzene	71-43-2	T	A	5	1	4.50E-03	4.50E-03	5.00E-03	9E-01	5.00E-03	9E-01
W-01	Deep	VOC	Chloroform	67-66-3	T	B2	5	1	1.60E-04	1.60E-04	1.00E-01	2E-03	1.00E-01	2E-03
W-01	Deep	SVOC	Phenol	108-95-2	T	D	5	1	5.20E-03	5.20E-03	1.30E+01	4E-04	4.40E+00	1E-03
W-01	Deep	INORG	Antimony	7440-36-0	D		5	1	2.30E-03	2.30E-03	6.00E-03	4E-01	6.00E-03	4E-01
W-01	Deep	INORG	Arsenic	7440-38-2	D	A	5	2	4.40E-03	7.10E-03	5.00E-02	1E-01	5.00E-02	1E-01
W-01	Deep	INORG	Arsenic	7440-38-2	T	A	5	1	8.80E-03	8.80E-03	5.00E-02	2E-01	5.00E-02	2E-01
W-01	Deep	INORG	Barium	7440-39-3	D	D	5	5	1.15E-01	3.73E-01	2.00E+00	2E-01	2.00E+00	2E-01
W-01	Deep	INORG	Barium	7440-39-3	T	D	5	5	1.26E-01	4.14E-01	2.00E+00	2E-01	2.00E+00	2E-01
W-01	Deep	INORG	Chromium (total)	7440-47-3	D		5	1	2.30E-03	2.30E-03	1.00E-01	2E-02	1.00E-01	2E-02
W-01	Deep	INORG	Chromium (total)	7440-47-3	T		5	2	3.40E-03	3.80E-03	1.00E-01	4E-02	1.00E-01	4E-02
W-01	Deep	INORG	Cobalt	7440-48-4	D		5	1	2.40E-03	2.40E-03	1.00E-01	2E-02	4.00E-02	6E-02
W-01	Deep	INORG	Cobalt	7440-48-4	T		5	1	2.20E-03	2.20E-03	1.00E-01	2E-02	4.00E-02	6E-02
W-01	Deep	INORG	Manganese	7439-96-5	D	D	5	4	3.45E-02	7.03E-02	2.50E+00	3E-02	8.60E-01	8E-02
W-01	Deep	INORG	Manganese	7439-96-5	T	D	5	3	4.86E-02	7.12E-02	2.50E+00	3E-02	8.60E-01	8E-02
W-01	Deep	INORG	Mercury	7439-97-6	D	D	5	1	7.20E-05	7.20E-05	2.00E-03	4E-02	2.00E-03	4E-02
W-01	Deep	INORG	Nickel	7440-02-0	D	A	5	1	6.40E-03	6.40E-03	1.00E-01	6E-02	1.00E-01	6E-02
W-01	Deep	INORG	Nickel	7440-02-0	T	A	5	2	3.00E-03	7.20E-03	1.00E-01	7E-02	1.00E-01	7E-02
W-01	Deep	INORG	Zinc	7440-66-6	D	D	5	1	2.36E-02	2.36E-02	5.00E+00	5E-03	2.40E+00	1E-02
W-01	Deep	INORG	Zinc	7440-66-6	T	D	5	1	1.65E-02	1.65E-02	5.00E+00	3E-03	2.40E+00	7E-03
W-01	Intermediate	VOC	Chloroform	67-66-3	T	B2	2	1	1.70E-04	1.70E-04	1.00E-01	2E-03	1.00E-01	2E-03
W-01	Intermediate	VOC	Chloromethane	74-87-3	T	D	2	1	2.10E-04	2.10E-04	1.10E+00	2E-04	2.60E-01	8E-04
W-01	Intermediate	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	T	B2	2	1	8.80E-03	8.80E-03	6.00E-03	**1E+00**	6.00E-03	**1E+00**
W-01	Intermediate	SVOC	Caprolactam	105-60-2	T		2	1	3.90E-02	3.90E-02	1.70E+01	2E-03	5.80E+00	7E-03
W-01	Intermediate	SVOC	Methylphenol (summed)	1319-77-3	T		2	1	2.65E-03	2.65E-03	1.00E+00	3E-03	3.70E-01	7E-03
W-01	Intermediate	SVOC	Phenol	108-95-2	T	D	2	1	7.00E-03	7.00E-03	1.30E+01	5E-04	4.40E+00	2E-03
W-01	Intermediate	INORG	Arsenic	7440-38-2	D	A	2	1	6.20E-03	6.20E-03	5.00E-02	1E-01	5.00E-02	1E-01
W-01	Intermediate	INORG	Arsenic	7440-38-2	T	A	2	2	4.40E-03	5.20E-03	5.00E-02	1E-01	5.00E-02	1E-01
W-01	Intermediate	INORG	Barium	7440-39-3	D	D	2	2	4.00E-02	4.04E-01	2.00E+00	2E-01	2.00E+00	2E-01
W-01	Intermediate	INORG	Barium	7440-39-3	T	D	2	2	6.77E-02	4.32E-01	2.00E+00	2E-01	2.00E+00	2E-01
W-01	Intermediate	INORG	Cadmium	7440-43-9	D	B1	2	1	2.80E-04	2.80E-04	5.00E-03	6E-02	5.00E-03	6E-02

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PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION

INTERMEDIATE AND DEEP GROUNDWATER SCREENING RESULTS

Area	Zone	Chem Group	Chemical	CASRN	Meas Basis	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Industrial Drinking Water Criteria (mg/L)	Ratio of Max Detect to Industrial Drinking Water Criteria	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria
W-01	Intermediate	INORG	Cadmium	7440-43-9	T	B1	2	2	2.80E-04	5.70E-04	5.00E-03	1E-01	5.00E-03	1E-01
W-01	Intermediate	INORG	Chromium (total)	7440-47-3	T		2	1	6.80E-03	6.80E-03	1.00E-01	7E-02	1.00E-01	7E-02
W-01	Intermediate	INORG	Cobalt	7440-48-4	T		2	1	1.40E-03	1.40E-03	1.00E-01	1E-02	4.00E-02	4E-02
W-01	Intermediate	INORG	Lead	7439-92-1	T	B2	2	1	1.35E-02	1.35E-02	4.00E-03	**3E+00**	4.00E-03	**3E+00**
W-01	Intermediate	INORG	Manganese	7439-96-5	D	D	2	2	2.80E-03	1.59E-01	2.50E+00	6E-02	8.60E-01	2E-01
W-01	Intermediate	INORG	Manganese	7439-96-5	T	D	2	2	6.31E-03	1.77E-01	2.50E+00	7E-02	8.60E-01	2E-01
W-01	Intermediate	INORG	Nickel	7440-02-0	T	A	2	1	5.70E-03	5.70E-03	1.00E-01	6E-02	1.00E-01	6E-02
W-01	Intermediate	INORG	Thallium	7440-28-0	T		2	1	4.40E-05	4.40E-05	2.00E-03	2E-02	2.00E-03	2E-02
W-01	Intermediate	INORG	Vanadium	7440-62-2	D		2	1	2.50E-03	2.50E-03	6.20E-02	4E-02	4.50E-03	6E-01
W-01	Intermediate	INORG	Vanadium	7440-62-2	T		2	1	4.90E-03	4.90E-03	6.20E-02	8E-02	4.50E-03	**1E+00**
W-01	Intermediate	INORG	Zinc	7440-66-6	T	D	2	1	5.92E-01	5.92E-01	5.00E+00	1E-01	2.40E+00	2E-01
W-09	Deep	VOC	Acetone	67-64-1	T	D	2	2	6.60E-04	1.60E-03	2.10E+00	8E-04	7.30E-01	2E-03
W-09	Deep	VOC	Carbon Disulfide	75-15-0	T		2	1	2.40E-04	2.40E-04	2.30E+00	1E-04	8.00E-01	3E-04
W-09	Deep	VOC	Chloroform	67-66-3	T	B2	2	1	2.80E-04	2.80E-04	1.00E-01	3E-03	1.00E-01	3E-03
W-09	Deep	VOC	Methyl tert-butyl ether	1634-04-4	T		2	2	2.40E-04	5.20E-03	6.90E-01	8E-03	2.40E-01	2E-02
W-09	Deep	INORG	Antimony	7440-36-0	D		2	1	2.70E-03	2.70E-03	6.00E-03	5E-01	6.00E-03	5E-01
W-09	Deep	INORG	Arsenic	7440-38-2	D	A	2	2	5.20E-03	2.59E-02	5.00E-02	5E-01	5.00E-02	5E-01
W-09	Deep	INORG	Arsenic	7440-38-2	T	A	2	2	5.90E-03	3.12E-02	5.00E-02	6E-01	5.00E-02	6E-01
W-09	Deep	INORG	Barium	7440-39-3	D	D	2	2	9.89E-02	2.02E-01	2.00E+00	1E-01	2.00E+00	1E-01
W-09	Deep	INORG	Barium	7440-39-3	T	D	2	2	1.02E-01	2.15E-01	2.00E+00	1E-01	2.00E+00	1E-01
W-09	Deep	INORG	Chromium (total)	7440-47-3	T		2	1	7.70E-03	7.70E-03	1.00E-01	8E-02	1.00E-01	8E-02
W-09	Deep	INORG	Cobalt	7440-48-4	T		2	1	1.60E-03	1.60E-03	1.00E-01	2E-02	4.00E-02	4E-02
W-09	Deep	INORG	Manganese	7439-96-5	D	D	2	1	6.18E-02	6.18E-02	2.50E+00	2E-02	8.60E-01	7E-02
W-09	Deep	INORG	Manganese	7439-96-5	T	D	2	1	7.26E-02	7.26E-02	2.50E+00	3E-02	8.60E-01	8E-02
W-09	Deep	INORG	Nickel	7440-02-0	T	A	2	1	6.70E-03	6.70E-03	1.00E-01	7E-02	1.00E-01	7E-02

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Notes:
Screening Criteria is from Michigan DEQ Part 201.
The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

Chem Group - Chemical Group
Meas Basis - Measured Basis; T = Total, D = Dissolved
Carc Class - EPA Weight-of-Evidence Cancer Classification

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Table 5-3a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SURFACE WATER SCREENING RESULTS

AOI	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria
HL	VOC	Acetone	67-64-1	D	10	3	7.60E-04	9.50E-04	7.30E-01	1E-03	3.10E+04	3E-08
HL	VOC	Benzene	71-43-2	A	10	4	1.90E-04	3.40E-04	5.00E-03	7E-02	1.10E+01	3E-05
HL	VOC	2-Butanone	78-93-3	D	10	1	7.20E-04	7.20E-04	1.30E+01	6E-05	2.40E+05	3E-09
HL	VOC	Ethyl Benzene	100-41-4	D	10	2	1.20E-04	1.70E-04	7.00E-01	2E-04	1.70E+02	1E-06
HL	VOC	Methyl tert-butyl ether	1634-04-4	C	10	1	1.10E-03	1.10E-03	2.40E-01	5E-03	6.90E+02	2E-06
HL	VOC	4-Methyl-2-pentanone	108-10-1		10	1	1.70E-03	1.70E-03	1.80E+00	9E-04	1.30E+04	1E-07
HL	VOC	Toluene	108-88-3	D	10	9	2.20E-04	1.10E-03	1.00E+00	1E-03	5.30E+02	2E-06
HL	VOC	Xylenes (total)	1330-20-7	D	10	3	5.50E-04	1.00E-03	1.00E+01	1E-04	1.90E+02	5E-06
HL	SVOC	2-Methylnaphthalene	91-57-6		10	1	1.01E-03	1.01E-03	2.60E-01	4E-03	2.50E+01	4E-05
HL	SVOC	Naphthalene	91-20-3	C	10	1	1.19E-03	1.19E-03	5.20E-01	2E-03	3.10E+01	4E-05
HL	INORG	Antimony	7440-36-0		10	2	3.00E-03	3.80E-03	6.00E-03	6E-01	6.80E+01	6E-05
HL	INORG	Arsenic	7440-38-2	A	10	5	4.10E-03	6.70E-03	5.00E-02	1E-01	4.30E+00	2E-03
HL	INORG	Barium	7440-39-3	D	10	10	2.14E-01	1.32E+00	2.00E+00	7E-01	1.40E+04	9E-05
HL	INORG	Cadmium	7440-43-9	B1	10	7	2.80E-04	3.80E-04	5.00E-03	8E-02	1.90E+02	2E-06
HL	INORG	Chromium (total)	7440-47-3		10	2	1.15E-03	2.40E-03	1.00E-01	2E-02	4.60E+02	5E-06
HL	INORG	Copper	7440-50-8	D	10	7	4.20E-03	8.00E-03	1.40E+00	6E-03	7.40E+03	1E-06
HL	INORG	Manganese	7439-96-5	D	10	10	2.49E-02	2.95E-01	8.60E-01	3E-01	9.10E+03	3E-05
HL	INORG	Nickel	7440-02-0	A	10	10	3.00E-03	6.40E-03	1.00E-01	6E-02	7.40E+04	9E-08
HL	INORG	Thallium	7440-28-0		10	4	6.60E-03	1.18E-02	2.00E-03	**6E+00**	1.30E+01	9E-04
HL	INORG	Vanadium	7440-62-2		10	1	9.70E-04	9.70E-04	4.50E-03	2E-01	9.70E+02	1E-06
HL	INORG	Zinc	7440-66-6	D	10	4	1.29E-02	1.87E-02	2.40E+00	8E-03	1.10E+05	2E-07
OUTFALL 001	VOC	Bromodichloromethane	75-27-4	B2	2	2	5.80E-04	7.30E-03	1.00E-01	7E-02	1.40E+01	5E-04
OUTFALL 001	VOC	2-Butanone	78-93-3	D	2	1	7.90E-04	7.90E-04	1.30E+01	6E-05	2.40E+05	3E-09
OUTFALL 001	VOC	Chloroform	67-66-3	B2	2	2	9.40E-04	1.20E-02	1.00E-01	1E-01	1.50E+02	8E-05
OUTFALL 001	VOC	Dibromochloromethane	124-48-1	C	2	1	2.90E-03	2.90E-03	1.00E-01	3E-02	1.80E+01	2E-04
OUTFALL 001	VOC	4-Methyl-2-pentanone	108-10-1		2	1	1.90E-03	1.90E-03	1.80E+00	1E-03	1.30E+04	1E-07
OUTFALL 001	P/PCB	PCBs (total)	1336-36-3	B2	2	1	4.50E-04	4.50E-04	5.00E-04	9E-01	3.30E-03	1E-01
OUTFALL 001	INORG	Barium	7440-39-3	D	2	2	1.47E-02	3.29E-02	2.00E+00	2E-02	1.40E+04	2E-06
OUTFALL 001	INORG	Cadmium	7440-43-9	B1	2	1	5.60E-04	5.60E-04	5.00E-03	1E-01	1.90E+02	3E-06
OUTFALL 001	INORG	Chromium (total)	7440-47-3		2	1	3.40E-03	3.40E-03	1.00E-01	3E-02	4.60E+02	7E-06
OUTFALL 001	INORG	Cobalt	7440-48-4		2	1	1.80E-03	1.80E-03	4.00E-02	5E-02	2.40E+03	8E-07
OUTFALL 001	INORG	Copper	7440-50-8	D	2	1	1.49E-02	1.49E-02	1.40E+00	1E-02	7.40E+03	2E-06
OUTFALL 001	INORG	Lead	7439-92-1	B2	2	1	7.70E-03	7.70E-03	4.00E-03	**2E+00**		0E+00

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Table 5-3a

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SURFACE WATER SCREENING RESULTS

AOI	Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria
OUTFALL 001	INORG	Manganese	7439-96-5	D	2	2	1.20E-03	1.35E-01	8.60E-01	2E-01	9.10E+03	1E-05
OUTFALL 001	INORG	Nickel	7440-02-0	A	2	1	4.60E-03	4.60E-03	1.00E-01	5E-02	7.40E+04	6E-08
OUTFALL 001	INORG	Thallium	7440-28-0		2	2	1.03E-02	1.03E-02	2.00E-03	**5E+00**	1.30E+01	8E-04
OUTFALL 001	INORG	Vanadium	7440-62-2		2	1	4.00E-03	4.00E-03	4.50E-03	9E-01	9.70E+02	4E-06
OUTFALL 001	INORG	Zinc	7440-66-6	D	2	1	1.18E-01	1.18E-01	2.40E+00	5E-02	1.10E+05	1E-06

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Notes:
Screening Criteria is from Michigan DEQ Part 201.
The Screening Levels for Pyrene was used as a surrogate for Phenanthrene and Benzo(g,h,i)perylene.
The Screening Levels for Naphthalene was used as a surrogate for 2-Methylnaphthalene.
The concentrations for the Methylphenol (2, 3, & 4) were summed before comparing to the Screening Levels.
The concentrations for all PCB isomers were summed before comparing to the Screening Levels.
The concentrations for the 1,3-Dichloropropene isomers (cis and trans) were summed before comparing to the Screening Levels.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the Screening Levels.

Chem Group - Chemical Group
Meas Basis - Measured Basis; T = Total, D = Dissolved
Carc Class - EPA Weight-of-Evidence Cancer Classification

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Table 5-3b

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

SEEP WATER SCREENING RESULTS

Chem Group	Chemical	CASRN	Carc Class	Analyzed	Detected	Min Detected (mg/L)	Max Detected (mg/L)	Residential Drinking Water Criteria (mg/L)	Ratio of Max Detect to Residential Drinking Water Criteria	Contact Criteria (mg/L)	Ratio of Max Detect to Contact Criteria
VOC	Acetone	67-64-1	D	5	5	7.60E-03	3.70E-02	7.30E-01	5E-02	3.10E+04	1E-06
VOC	2-Butanone	78-93-3	D	5	3	6.50E-03	1.40E-02	1.30E+01	1E-03	2.40E+05	6E-08
VOC	Chloromethane	74-87-3	D	5	1	5.90E-04	5.90E-04	2.60E-01	2E-03	4.90E+02	1E-06
VOC	1,1-Dichloroethane	75-34-3	C	5	1	5.30E-04	5.30E-04	8.30E-01	6E-04	2.40E+03	2E-07
VOC	cis-1,2-Dichloroethene	156-59-2	D	5	1	5.00E-04	5.00E-04	7.00E-02	7E-03	2.00E+02	3E-06
VOC	trans-1,2-Dichloroethene	156-60-5		5	1	5.00E-04	5.00E-04	1.00E-01	5E-03	2.20E+02	2E-06
P/PCB	PCBs (total)	1336-36-3	B2	5	2	6.40E-04	6.60E-04	5.00E-04	**1E+00**	3.30E-03	2E-01
INORG	Antimony	7440-36-0		5	4	4.60E-03	1.65E-02	6.00E-03	**3E+00**	6.80E+01	2E-04
INORG	Arsenic	7440-38-2	A	5	4	1.00E-02	8.70E-02	5.00E-02	**2E+00**	4.30E+00	2E-02
INORG	Barium	7440-39-3	D	5	5	6.30E-02	2.90E-01	2.00E+00	1E-01	1.40E+04	2E-05
INORG	Beryllium	7440-41-7	B1	5	1	5.70E-04	5.70E-04	4.00E-03	1E-01	2.90E+02	2E-06
INORG	Cadmium	7440-43-9	B1	5	4	5.20E-04	2.20E-03	5.00E-03	4E-01	1.90E+02	1E-05
INORG	Chromium (total)	7440-47-3		5	3	1.40E-02	2.35E-02	1.00E-01	2E-01	4.60E+02	5E-05
INORG	Cobalt	7440-48-4		5	5	1.90E-03	7.90E-03	4.00E-02	2E-01	2.40E+03	3E-06
INORG	Copper	7440-50-8	D	5	5	2.50E-02	1.10E-01	1.40E+00	8E-02	7.40E+03	1E-05
INORG	Lead	7439-92-1	B2	5	5	5.50E-03	5.10E-01	4.00E-03	**1E+02**		
INORG	Manganese	7439-96-5	D	5	5	6.40E-01	1.55E+00	8.60E-01	**2E+00**	9.10E+03	2E-04
INORG	Mercury	7439-97-6	D	5	1	1.45E-04	1.45E-04	2.00E-03	7E-02	5.60E-02	3E-03
INORG	Nickel	7440-02-0	A	5	5	6.30E-03	7.90E-02	1.00E-01	8E-01	7.40E+04	1E-06
INORG	Selenium	7782-49-2	D	5	1	5.00E-03	5.00E-03	5.00E-02	1E-01	9.70E+02	5E-06
INORG	Thallium	7440-28-0		5	4	8.45E-03	1.20E-02	2.00E-03	**6E+00**	1.30E+01	9E-04
INORG	Vanadium	7440-62-2		5	4	6.00E-03	2.60E-02	4.50E-03	**6E+00**	9.70E+02	3E-05
INORG	Zinc	7440-66-6	D	5	5	2.70E-02	4.20E-01	2.40E+00	2E-01	1.10E+05	4E-06

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NOTES:
Screening Criteria is from Michigan DEQ Part 201.
The concentrations for all PCB isomers were summed before comparing to the Screening Levels.

Chem Group - Chemical Group
Carc Class - EPA Weight-of-Evidence Cancer Classification

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Table 5-4

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN

RCRA FACILITY INVESTIGATION

ESTIMATED CUMULATIVE CANCER RISK AND HI FOR AOIs WITH "CONTAMINATED" SOIL - BASED ON MAXIMUM CONCENTRATIONS

AOI	Cumulative Risk	HI
F-07	1E-05	3E-01
F-15	3E-05	2E-01
M-01	**1E-04**	**7E+00**
M-02	2E-05	**2E+00**
M-05	6E-05	2E-01
M-19	3E-05	**1E+00**
W-01	**2E-04**	**1E+01**
W-05	3E-05	**2E+00**
W-08	2E-05	5E-01
W-09	**4E-04**	**3E+01**
W-10	2E-05	**1E+00**

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Table 5-5

GENERAL MOTORS CORPORATION
PONTIAC NORTH CAMPUS - PONTIAC, MICHIGAN
RCRA FACILITY INVESTIGATION
ESTIMATED CUMULATIVE CANCER RISK HI FOR AOIs WITH "CONTAMINATED" SOILS - BASED ON MAXIMUM CONCENTRATIONS AND 95% UCLs

AOI	Cumulative Risk	HI
M-01	2E-05	5E-01
M-02	2E-05	5E-01
M-19	2E-05	7E-01
W-01	3E-05	1E+00
W-05	2E-05	6E-01
W-09	3E-05	7E-01
W-10	1E-05	4E-01

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Figures

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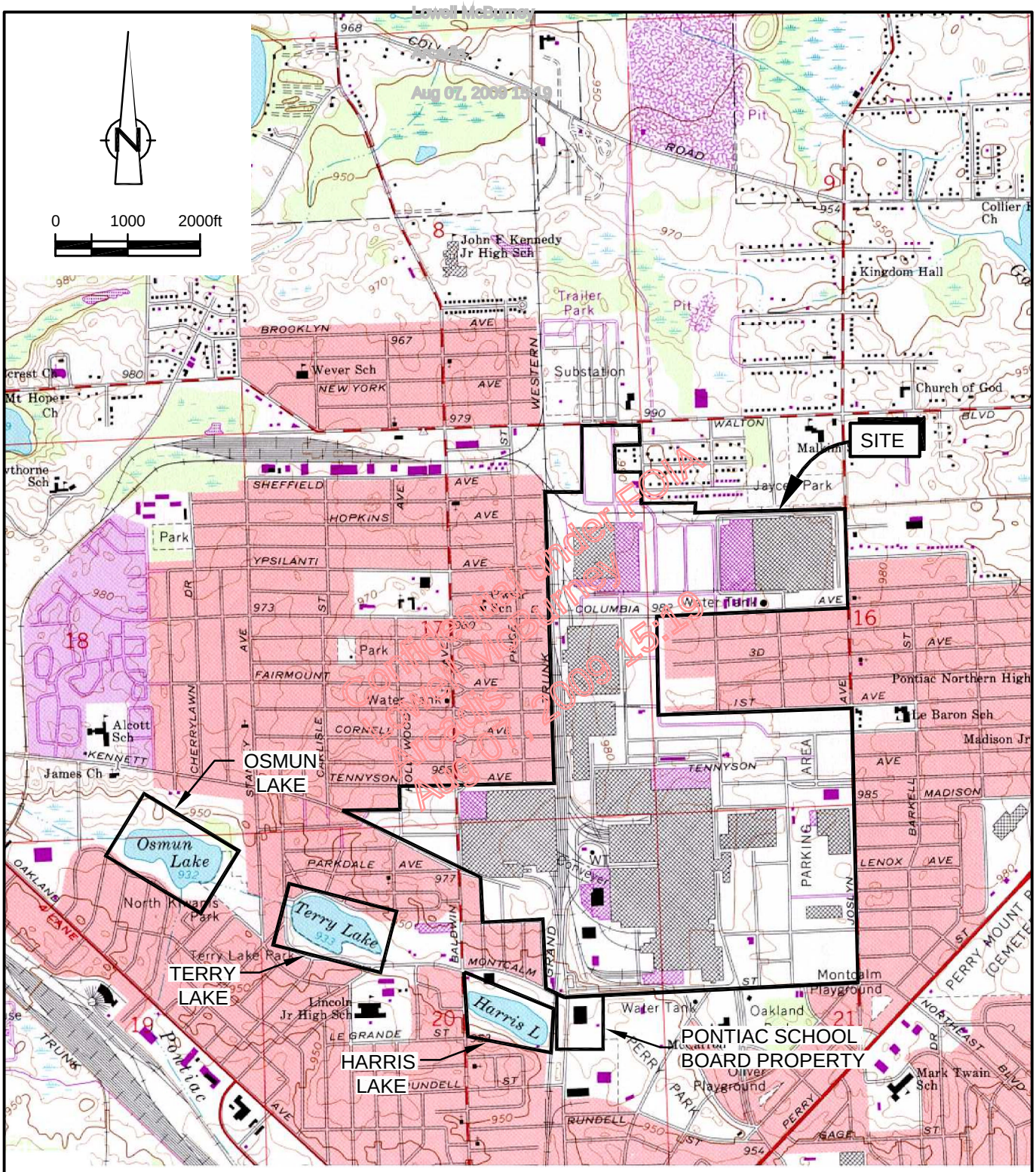

SOURCE: USGS QUADRANGLE MAP;
PONTIAC NORTH, MICHIGAN

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

SITE LOCATION

ENCORE

FIGURE
1-1

17487-17(001)GN-WA010 APR 08/2002

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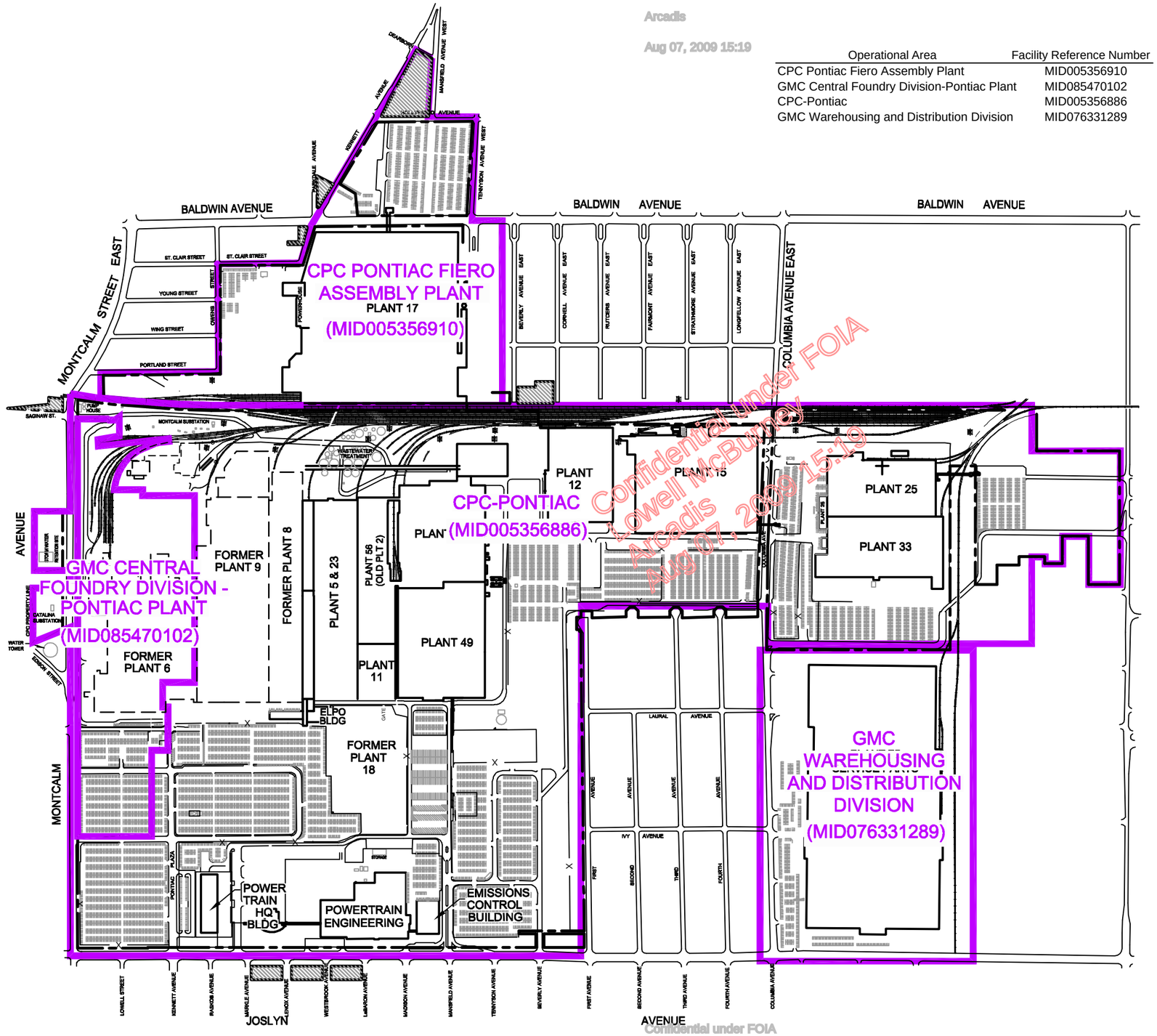
Operational Area	Facility Reference Number
CPC Pontiac Fiero Assembly Plant	MID005356910
GMC Central Foundry Division-Pontiac Plant	MID085470102
CPC-Pontiac	MID005356886
GMC Warehousing and Distribution Division	MID076331289



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0 400 800ft

LEGEND

- PROPERTY BOUNDARY
- RAILROAD TRACKS
- FENCE
- FACILITY BOUNDARY
- FOOTPRINT OF FORMER STRUCTURE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

SITE FACILITIES

ENCORE

FIGURE 1-2

17487-17(001)GN-WA016 APR 24/2002

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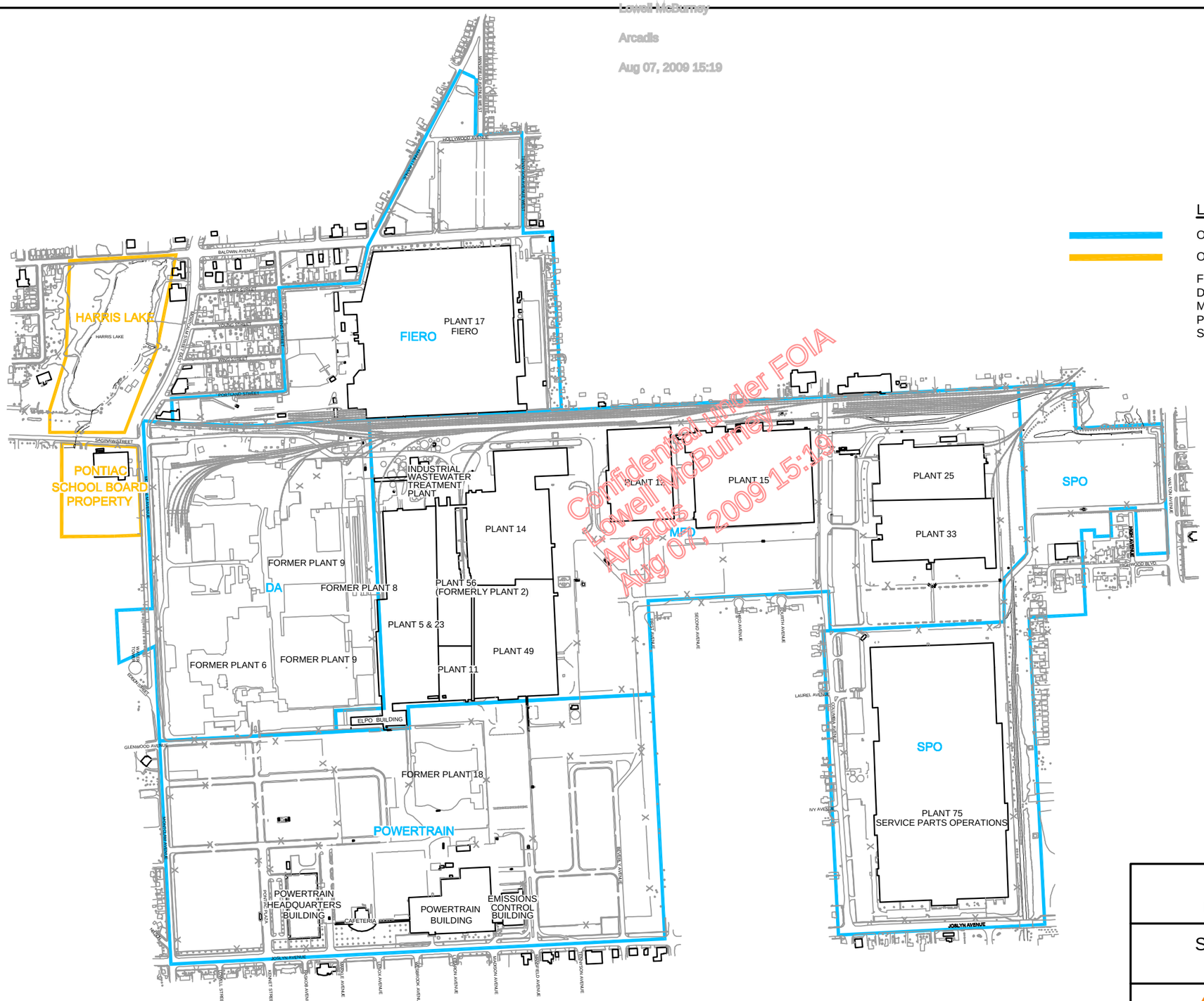

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LEGEND

OPERATIONAL AREA BOUNDARY

OFFSITE AREA BOUNDARY

FIERO (FORMER PONTIAC FIERO ASSEMBLY)
DA (DEMOLITION AREA)
MFD (METAL FABRICATION DIVISION)
POWERTRAIN
SPO (SERVICE PARTS OPERATIONS)

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

SITE OPERATIONAL AREAS
AND OFFSITE AREAS

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FIGURE
1-3

17487-17(001)GN-WA008 APR 24/2002

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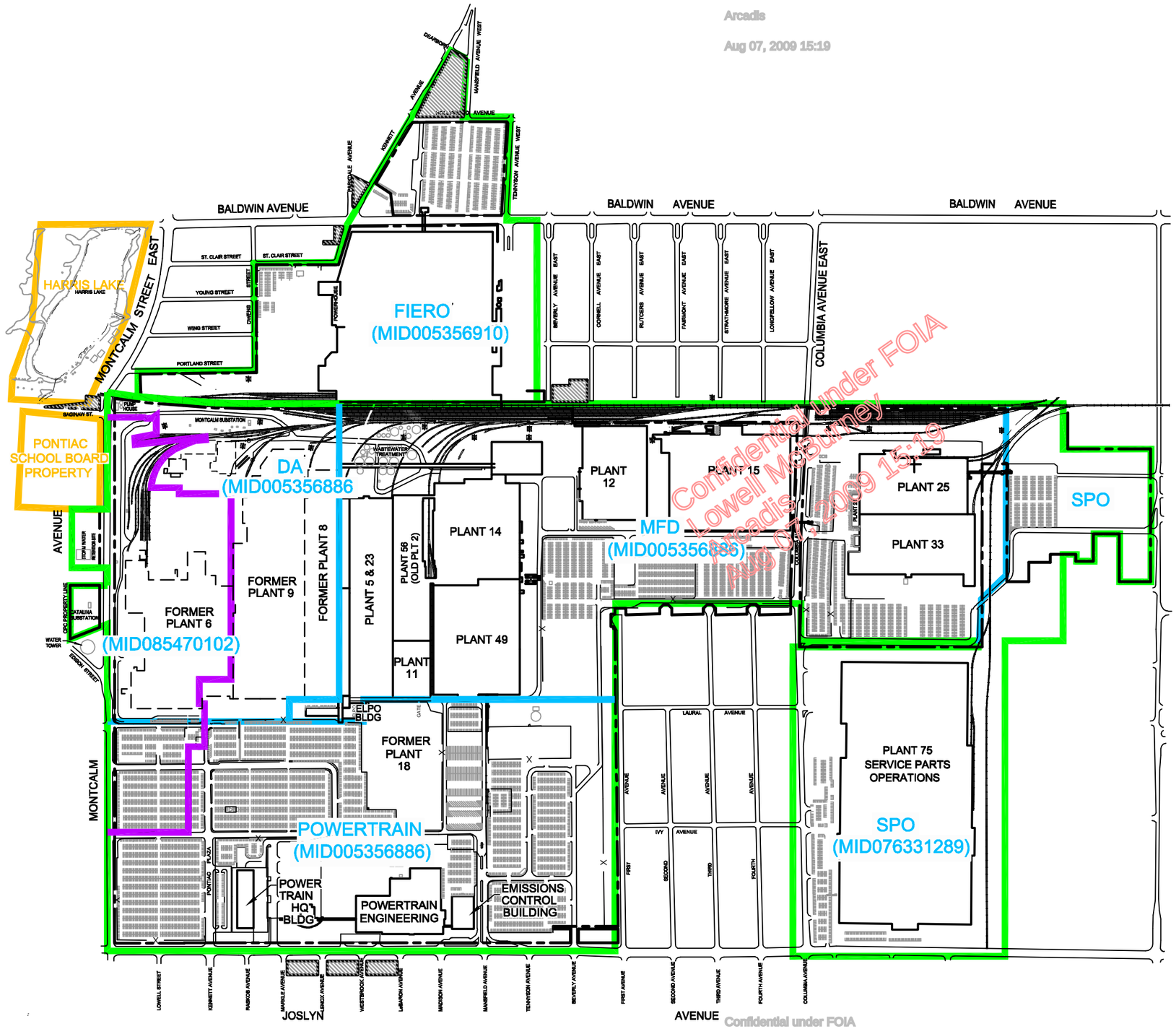

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N

0 400 800ft

LEGEND

- FOOTPRINT OF FORMER STRUCTURE
- PROPERTY BOUNDARY
- RAILROAD TRACKS
- FENCE
- OPERATIONAL AREA BOUNDARY
- FACILITY BOUNDARY
- COMMON OPERATIONAL AREA AND FACILITY BOUNDARY
- OFFSITE AREA BOUNDARY

FIERO (FORMER PONTIAC FIERO ASSEMBLY)
DA (DEMOLITION AREA)
MFD (METAL FABRICATION DIVISION)
POWERTRAIN
SPO (SERVICE PARTS OPERATIONS)

Operational Area	Facility USEPA ID Number
Fiero	MID005356910
Demolition Area (DA)	MID005356886
	MID085470102
Metal Fabrication Division (MFD)	MID005356886
Powertrain	MID005356886
	MID085470102
Service Parts Operations (SPO)	MID076331289

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

SUMMARY OF SITE OPERATIONAL AREAS AND FACILITIES

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FIGURE 1-4

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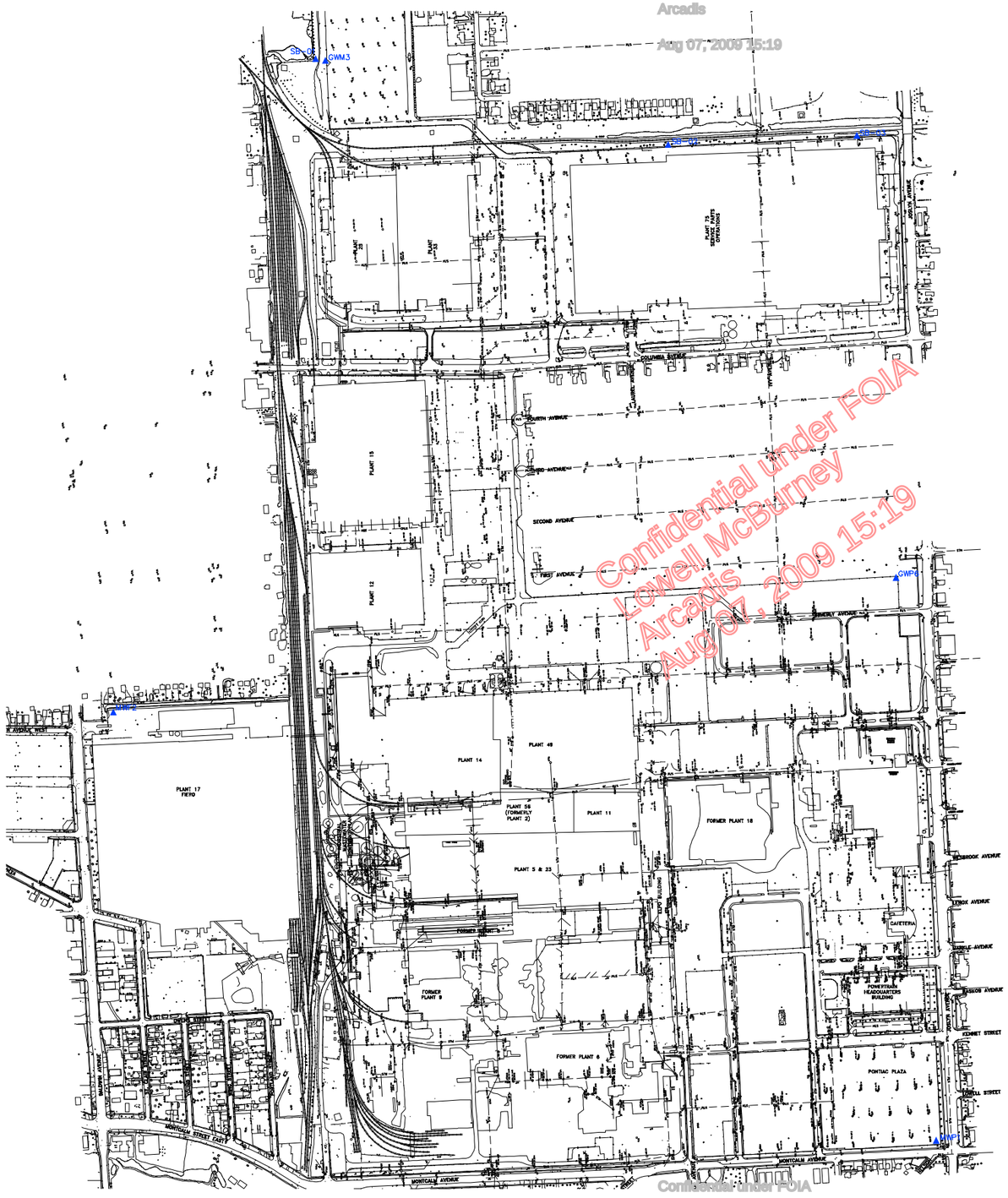

LEGEND:

BM5-02 ▲ SOIL BORING SAMPLE LOCATION

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

0 400' 800'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

BACKGROUND SOIL SAMPLE LOCATIONS

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FIGURE 2-2

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS NES DJP
64411210/64411C51.DWG

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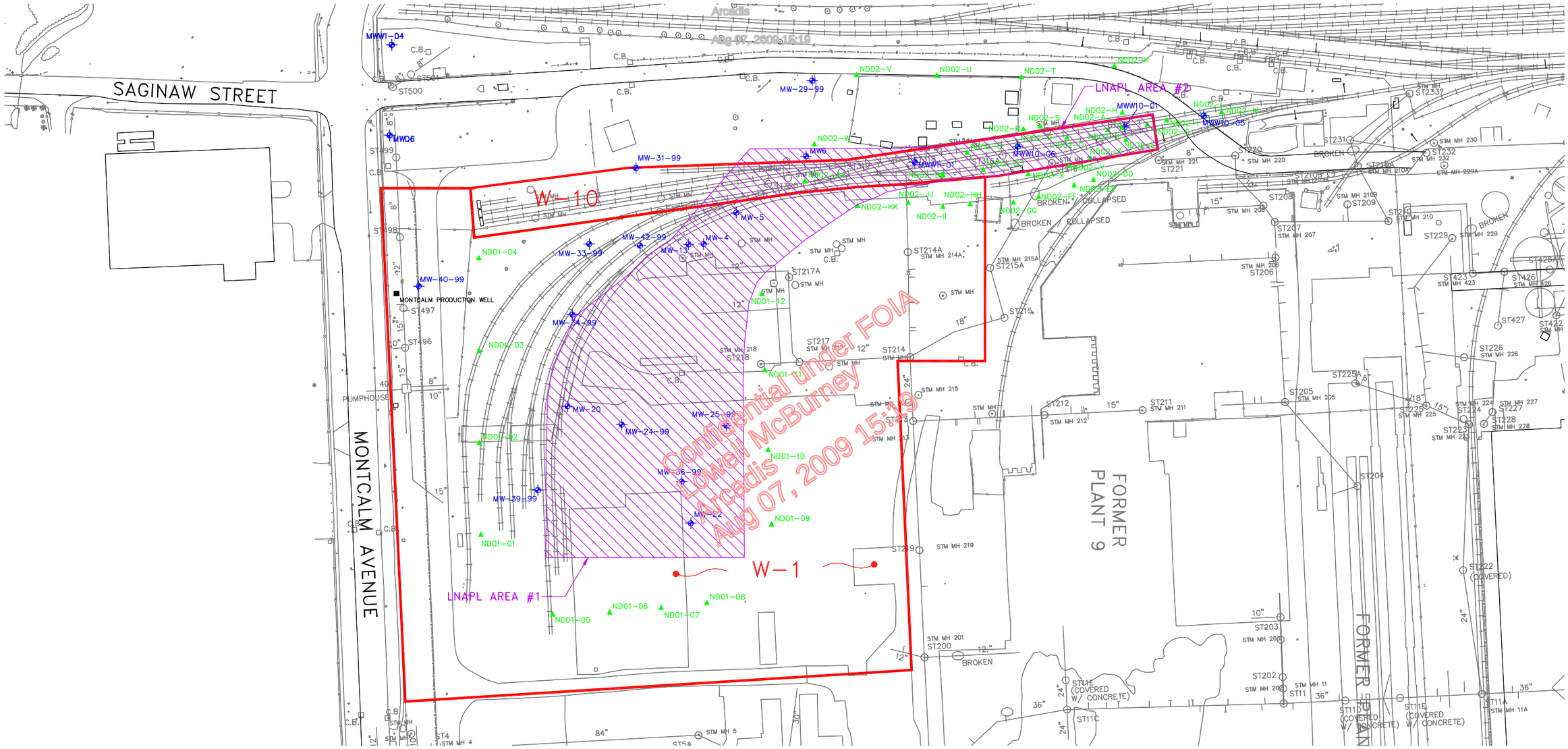

REVISED 7/31/02

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

0 80' 160'
GRAPHIC SCALE

LEGEND:

- MWM1 — EXISTING GROUNDWATER MONITORING WELL
- ND01-08 — SOIL BORING COMPLETED FOR LNAPL SCREENING
- APPROXIMATE AOI AREA
  - W-1 = WEST YARD
  - W-10 = RAILROAD MARSHALLING AREA
- LNAPL AREA

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

LNAPL AREAS 1 AND 2

ENCORE

FIGURE 2-3

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
8/1/02 SYR-54-GMS GMS LJP
64411210/64411C52.DWG

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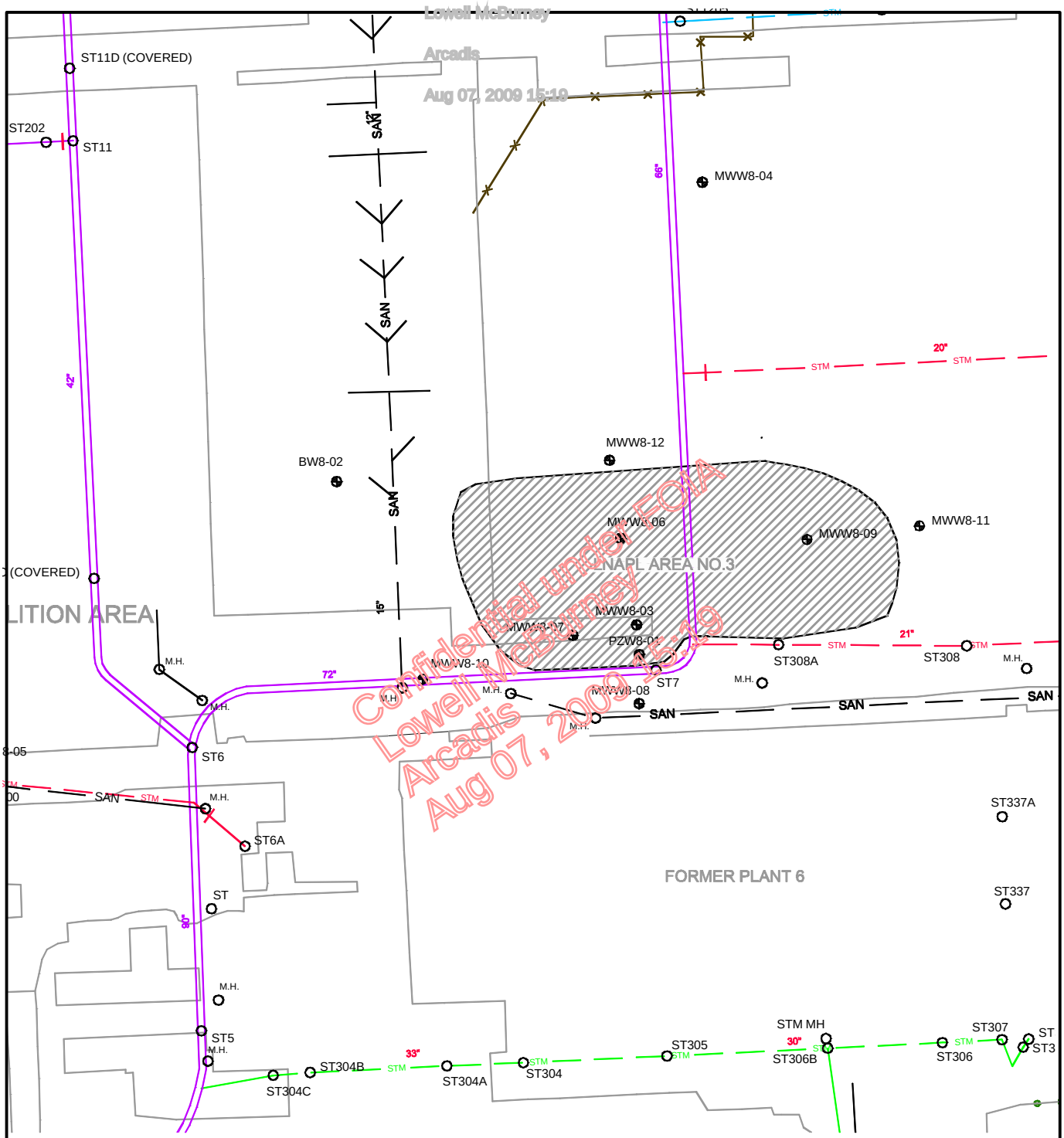
Arcadis
Aug 07, 2009 15:19



LEGEND

- EXISTING MANHOLE
- EXISTING CATCH BASIN
- SANITARY SEWER
- STORM SEWER
- STORM SEWER - ABANDONED
- FENCELINE
- EXISTING MONITORING WELL

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

LNAPL AREA NO. 3

ENCORE

FIGURE
2-4

17487-17(001)GN-WA009 APR 12/2002

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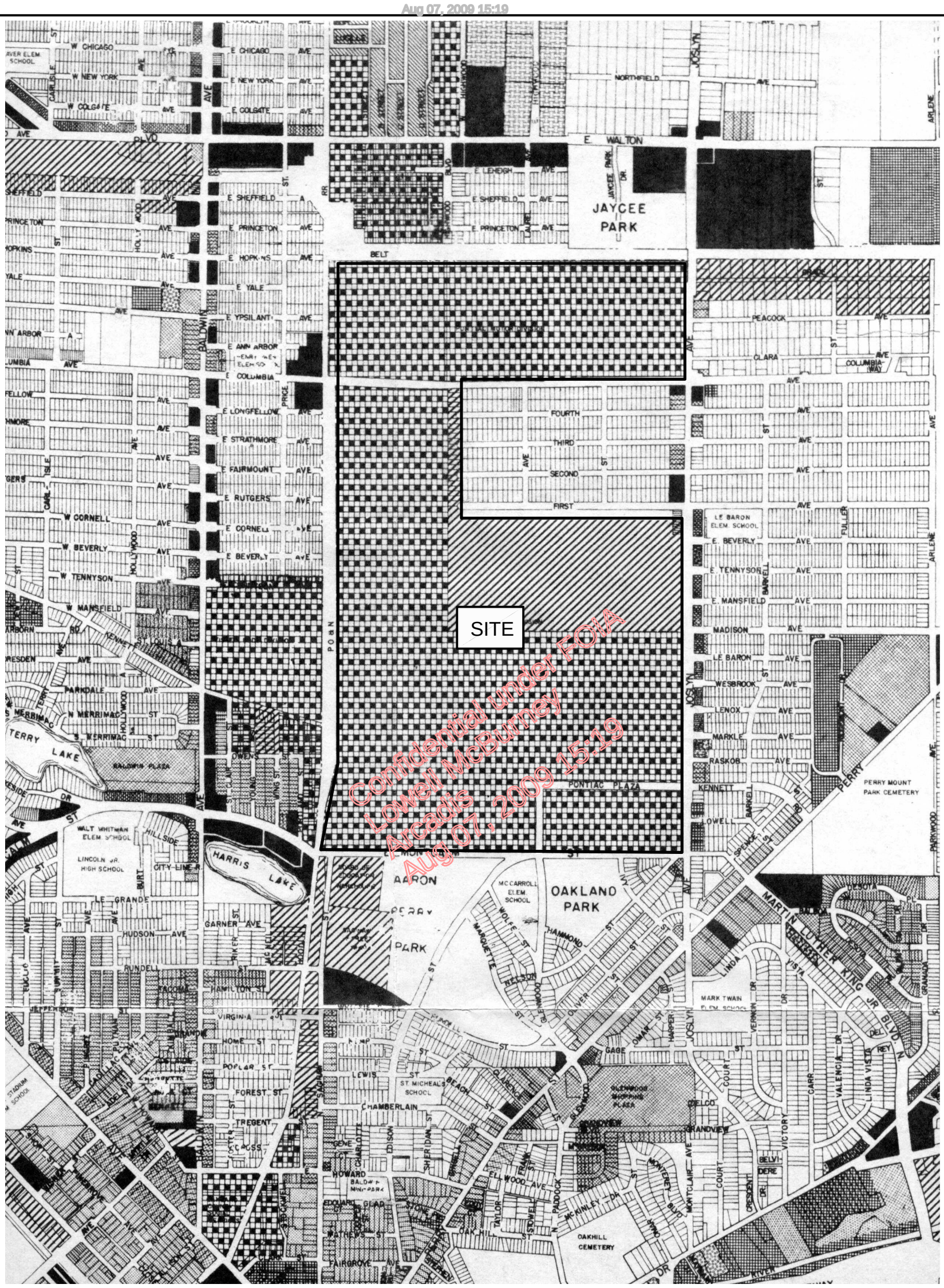

SOURCE: CITY OF PONTIAC PLANNING DIVISION;
COMMUNITY DEVELOPMENT DEPT. - D.B.

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

CITY OF PONTIAC LAND USE MAP

ENCORE

FIGURE
3-1

17487-17(001)GN-WA012 APR 05/2002

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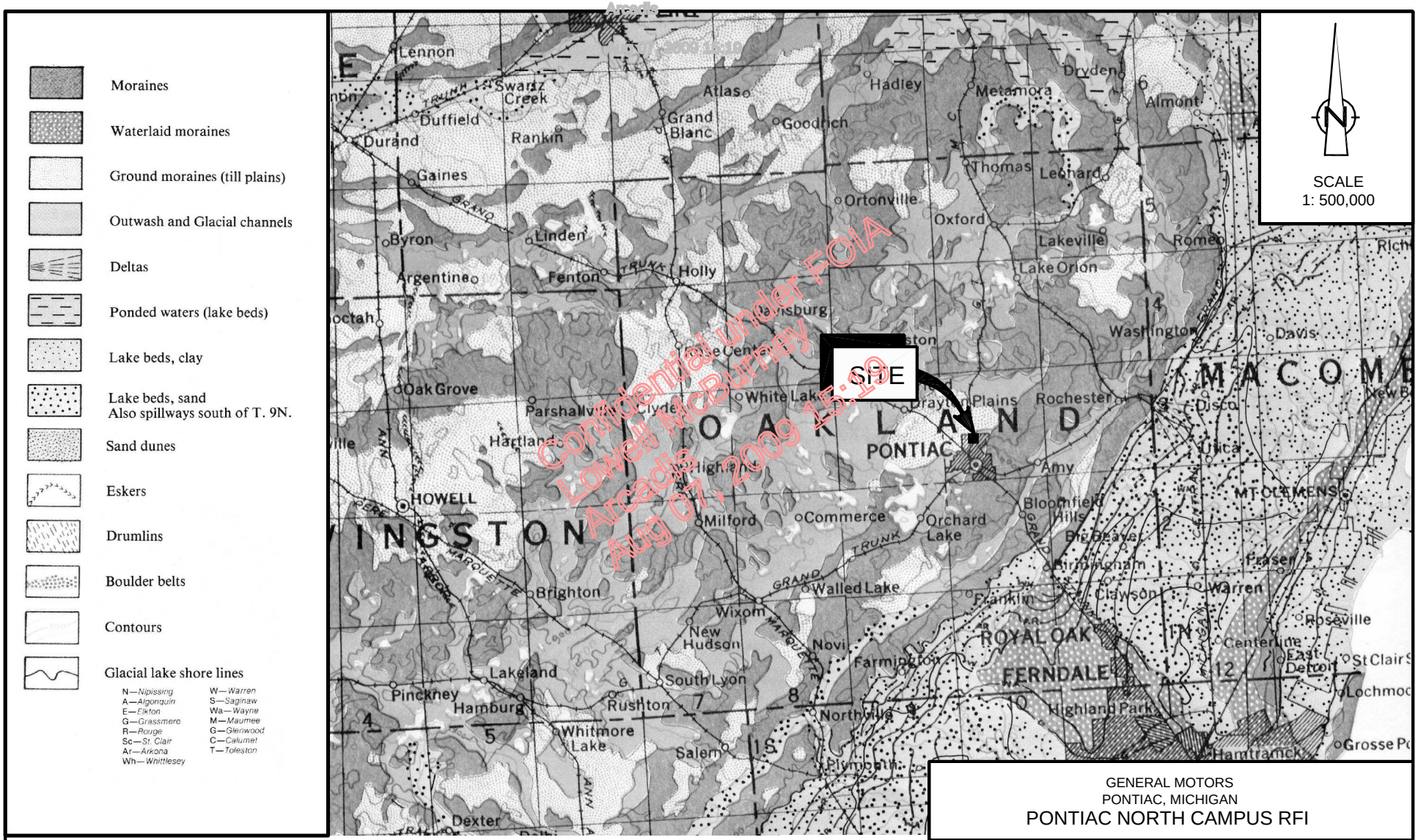

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Aug 07, 2009 15:19

SOURCE: HYDROGEOLOGIC ATLAS OF MICHIGAN, 1955
WESTERN MICHIGAN UNIVERSITY,
DEPARTMENT OF GEOLOGY

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

REGIONAL SURFICIAL GEOLOGY

ENCORE

FIGURE
3-2

17487-17(001)GN-WA013 APR 05/2002

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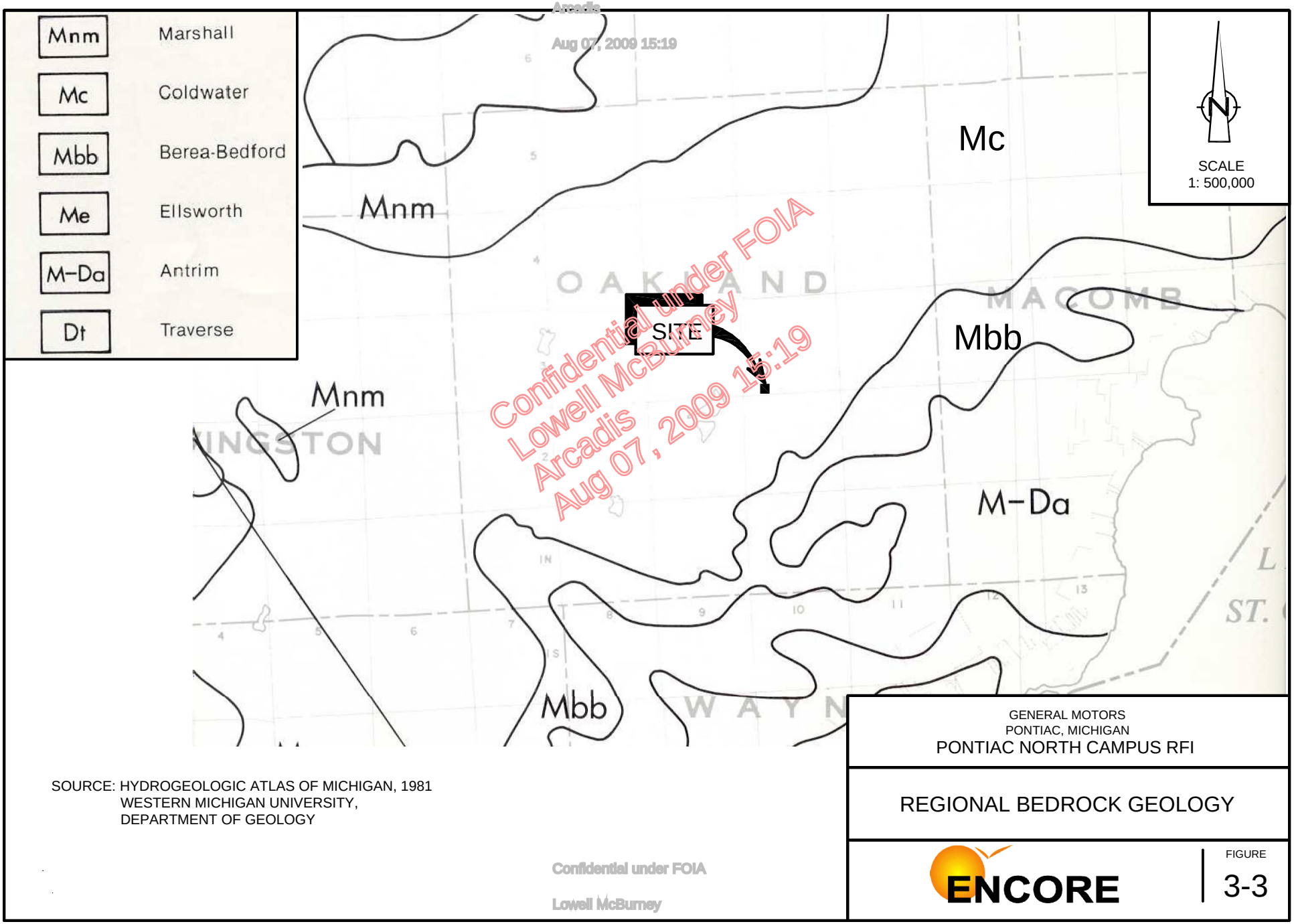

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SOURCE: HYDROGEOLOGIC ATLAS OF MICHIGAN, 1981
WESTERN MICHIGAN UNIVERSITY,
DEPARTMENT OF GEOLOGY

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

REGIONAL BEDROCK GEOLOGY

ENCORE

FIGURE
3-3

17487-17(001)GN-WA014 APR 05/2002

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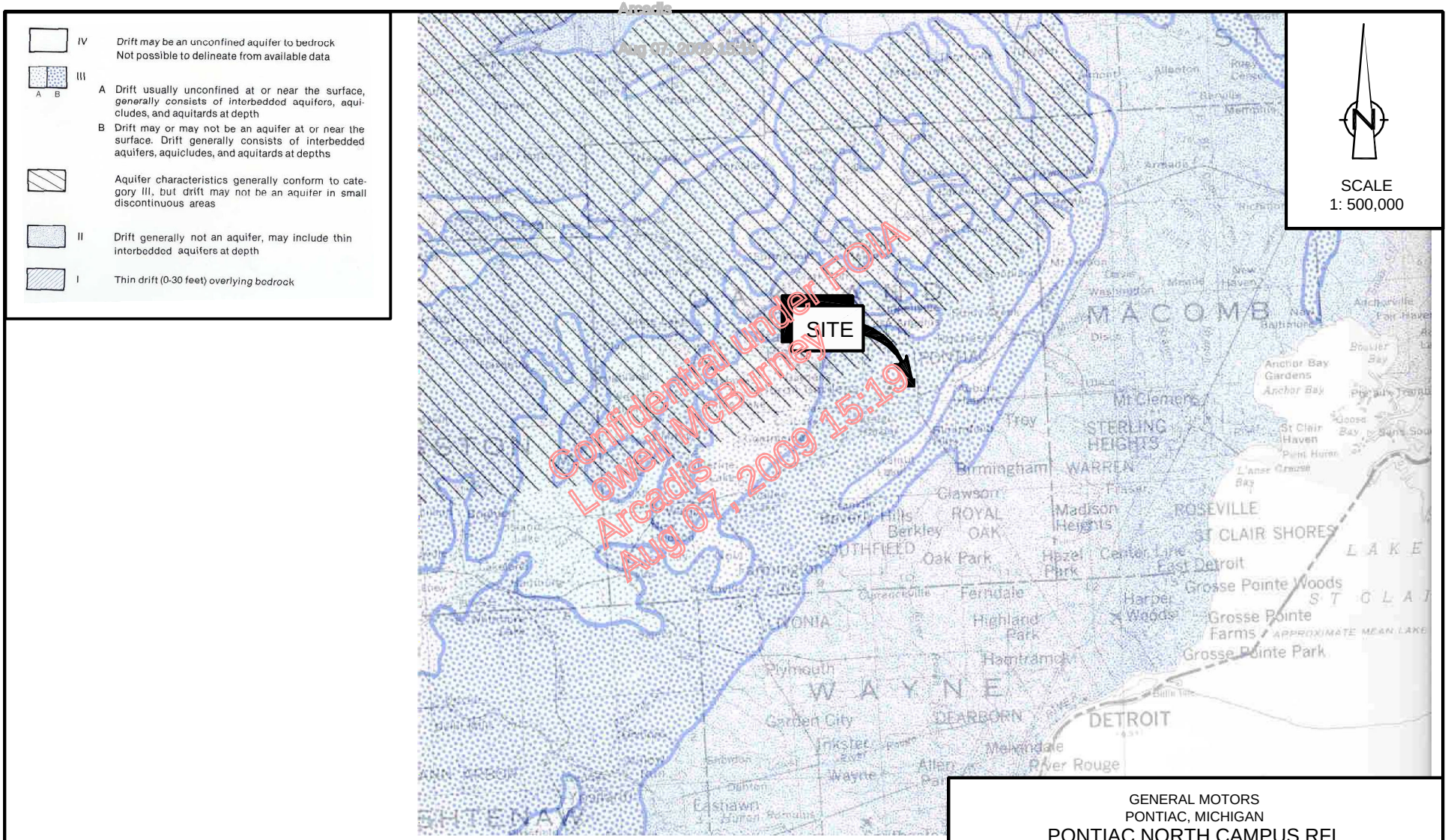

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SOURCE: HYDROGEOLOGIC ATLAS OF MICHIGAN, 1981
WESTERN MICHIGAN UNIVERSITY,
DEPARTMENT OF GEOLOGY

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

AQUIFER CHARACTERIZATION OF THE GLACIAL DRIFT

ENCORE

FIGURE
3-4

17487-17(001)GN-WA015 APR 05/2002

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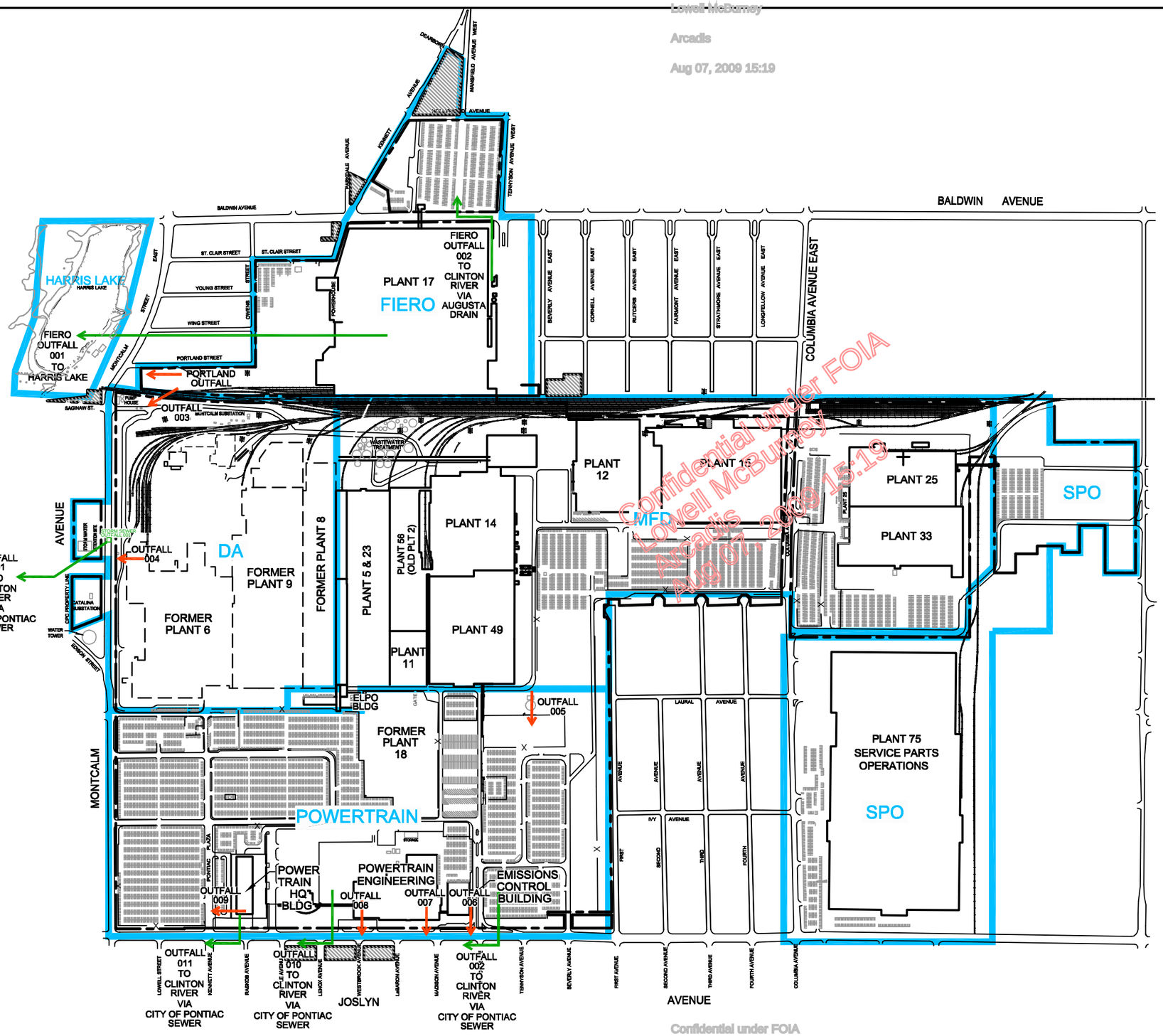

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GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

STORM & SANITARY SEWER OUTFALLS

ENCORE

FIGURE 3-5

17487-17(001)GN-WA011 APR 08/2002

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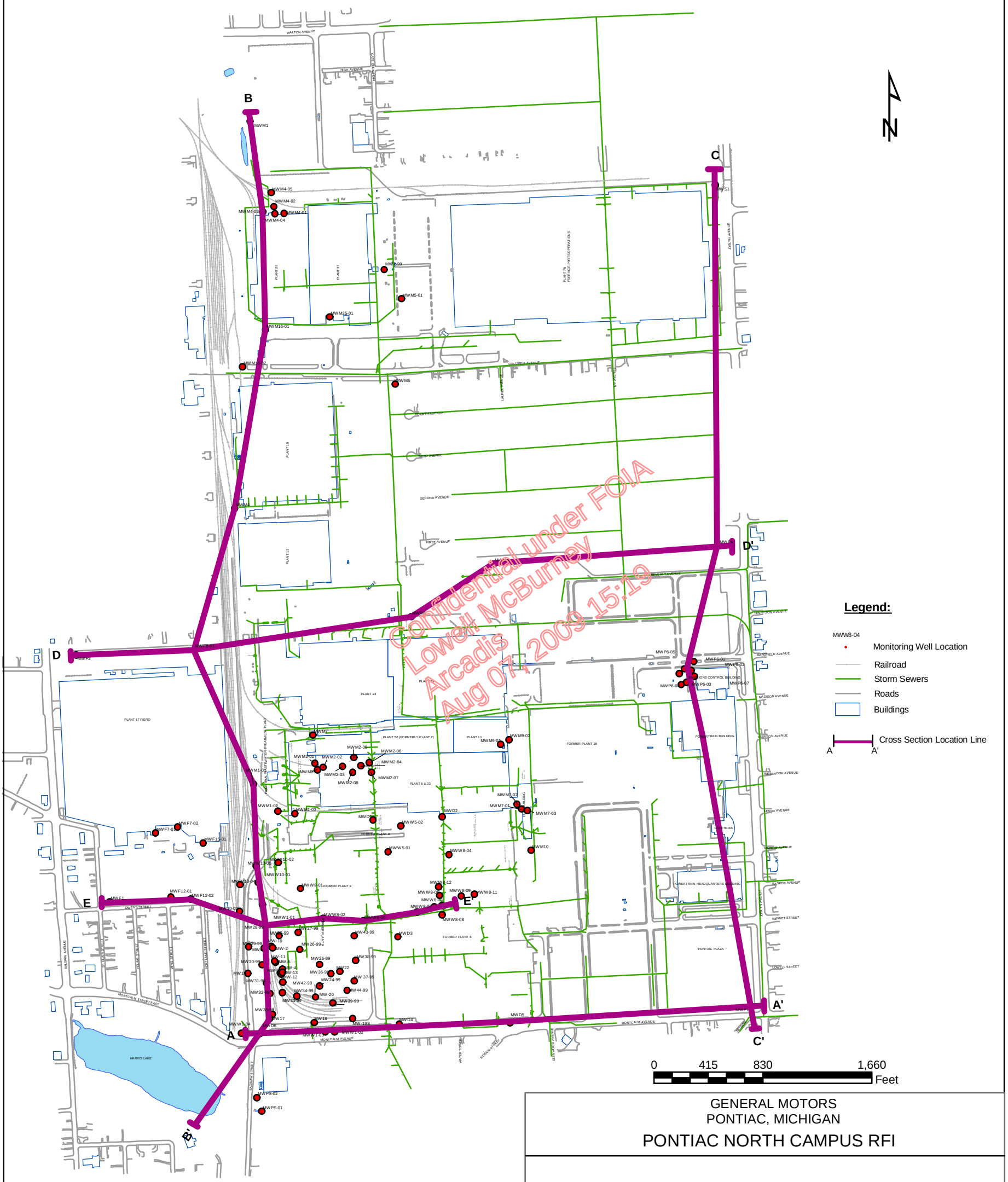

GENERAL MOTORS
PONTIAC, MICHIGAN

PONTIAC NORTH CAMPUS RFI

GEOLOGIC CROSS-SECTION LOCATION MAP

q:\pontiac\PontiacCrossSection.mxd

ENCORE

FIGURE
3-6

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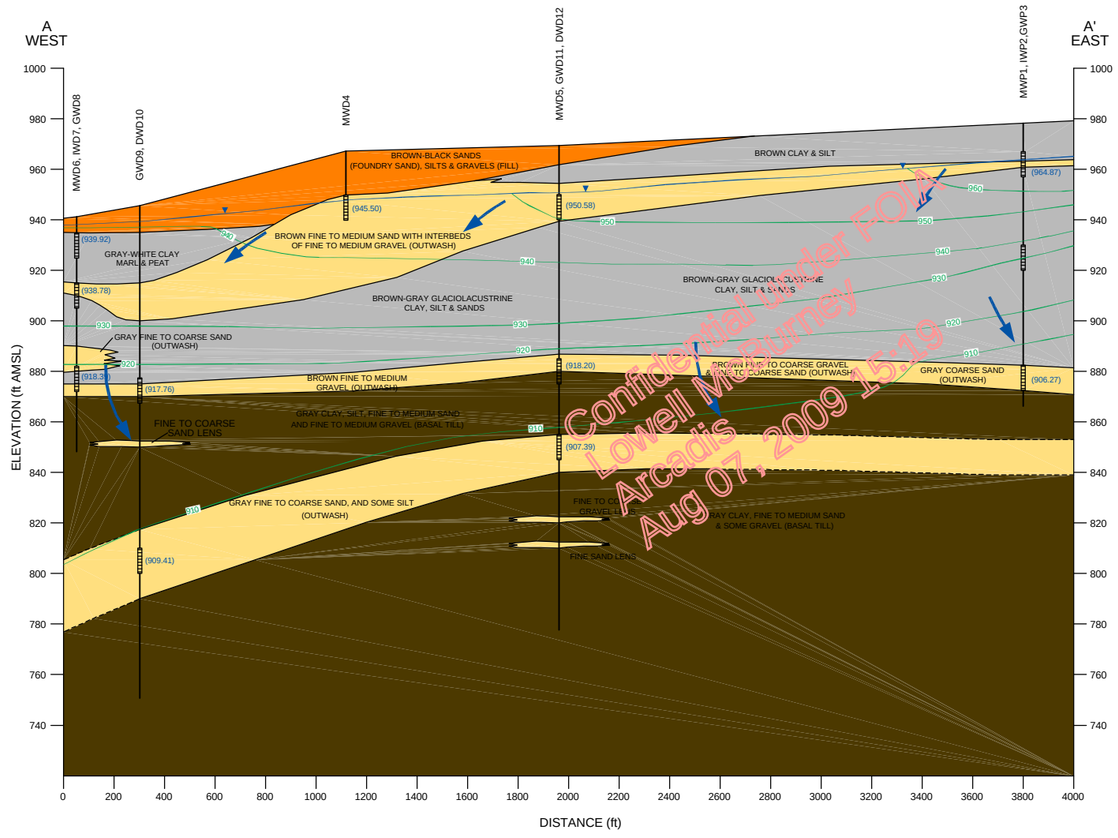
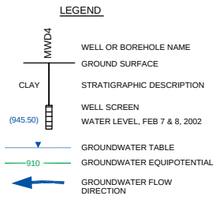


LEGEND



NOTE: FOR MULTIPLE WELLS AT A SINGLE WELL CLUSTER, CLUSTER IS REPRESENTED AS A SINGLE VERTICAL LINE WITH MULTIPLE SCREEN INTERVALS.

HORIZONTAL SCALE
0 100 300ft
0 10 30ft
VERTICAL SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

HYDROGEOLOGIC CROSS-SECTION A-A'

ENCORE

FIGURE
3-7

17487-17(001)GN-WA001 APR 10/2002

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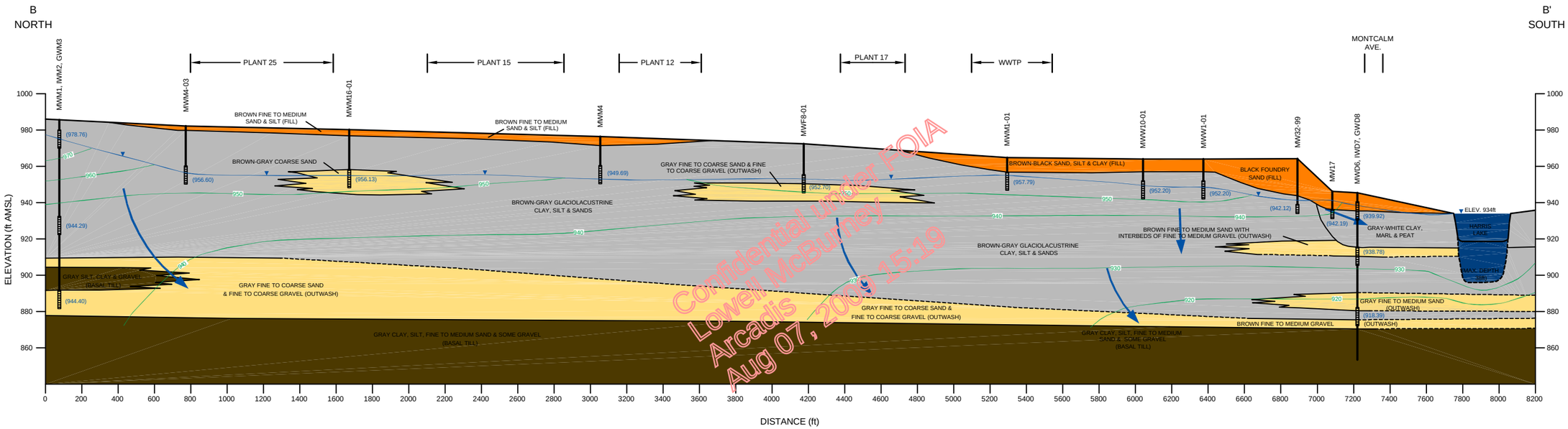

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Arcadis
Aug 07, 2009 15:19

LEGEND

- MWD4 — WELL OR BOREHOLE NAME
- GROUND SURFACE
- CLAY — STRATIGRAPHIC DESCRIPTION
- WELL SCREEN
- (945.50) — WATER LEVEL, FEB 7 & 8, 2002
- GROUNDWATER TABLE
- 910 — GROUNDWATER EQUIPOTENTIAL
- GROUNDWATER FLOW DIRECTION

NOTE: FOR MULTIPLE WELLS AT A SINGLE WELL CLUSTER, CLUSTER IS REPRESENTED AS A SINGLE VERTICAL LINE WITH MULTIPLE SCREEN INTERVALS.

HORIZONTAL SCALE
0 100 300ft
0 10 30ft
VERTICAL SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

HYDROGEOLOGIC CROSS-SECTION B-B'

ENCORE

FIGURE
3-8

17487-17(001)GN-WA006 APR 10/2002

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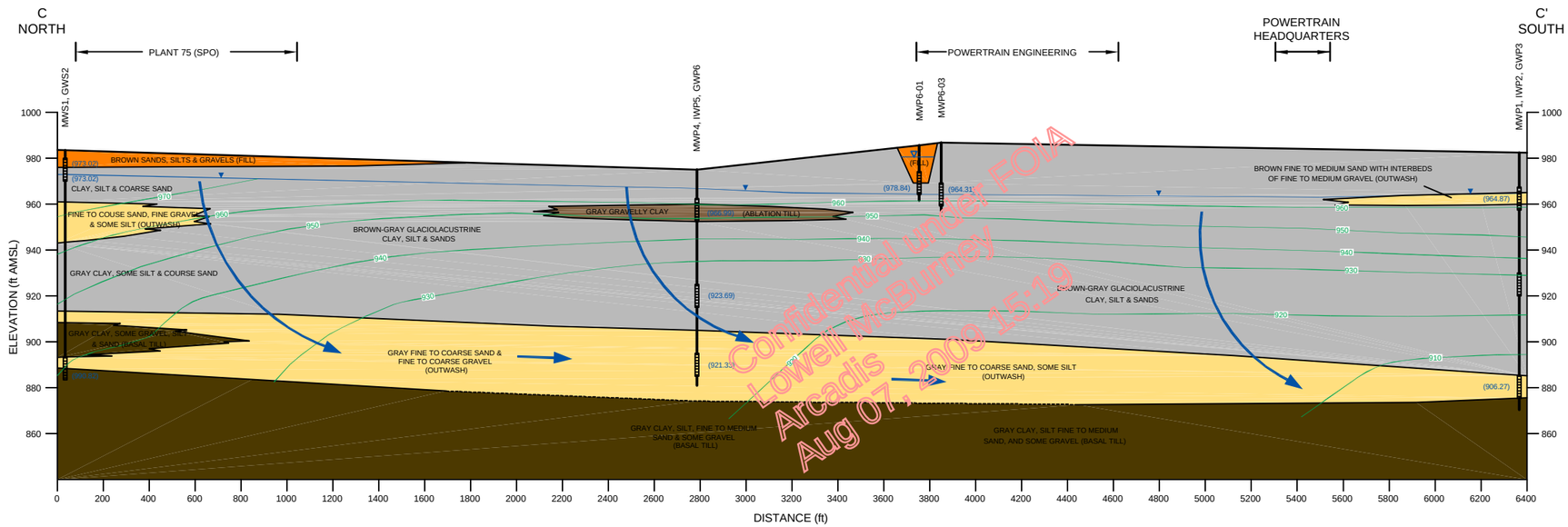
Aug 07, 2009 15:19



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GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

HYDROGEOLOGIC CROSS-SECTION C-C'

ENCORE

FIGURE
3-9

17487-17(001)GN-WA005 APR 10/2002

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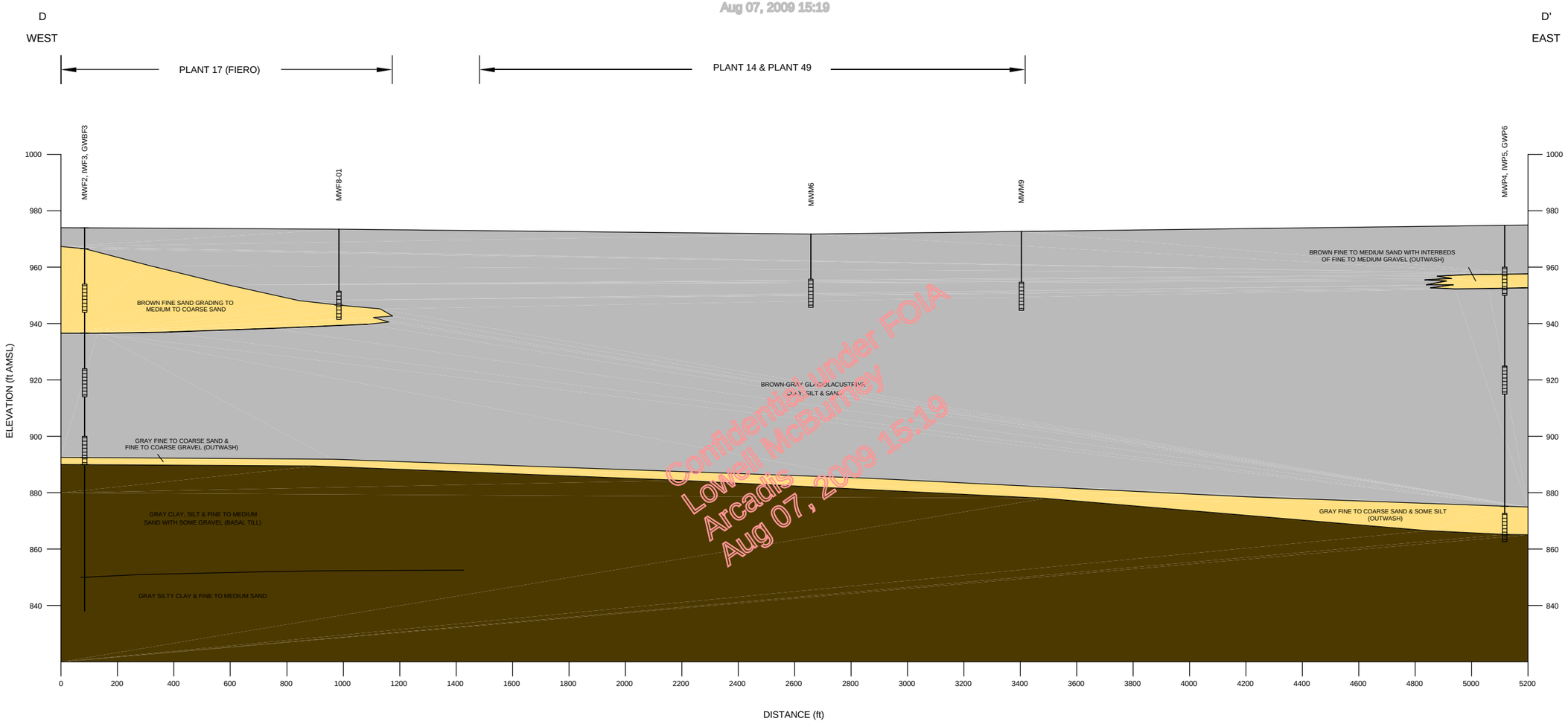

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LEGEND

MWD4 — WELL OR BOREHOLE NAME
GROUND SURFACE
CLAY — STRATIGRAPHIC DESCRIPTION
WELL SCREEN

NOTE: FOR MULTIPLE WELLS AT A SINGLE WELL CLUSTER, CLUSTER IS REPRESENTED AS A SINGLE VERTICAL LINE WITH MULTIPLE SCREEN INTERVALS.

HORIZONTAL SCALE
0 100 200ft
VERTICAL SCALE
0 10 20ft

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

GEOLOGIC CROSS-SECTION D-D'

ENCORE

FIGURE
3-10

17487-17(001)GN-WA003 APR 10/2002

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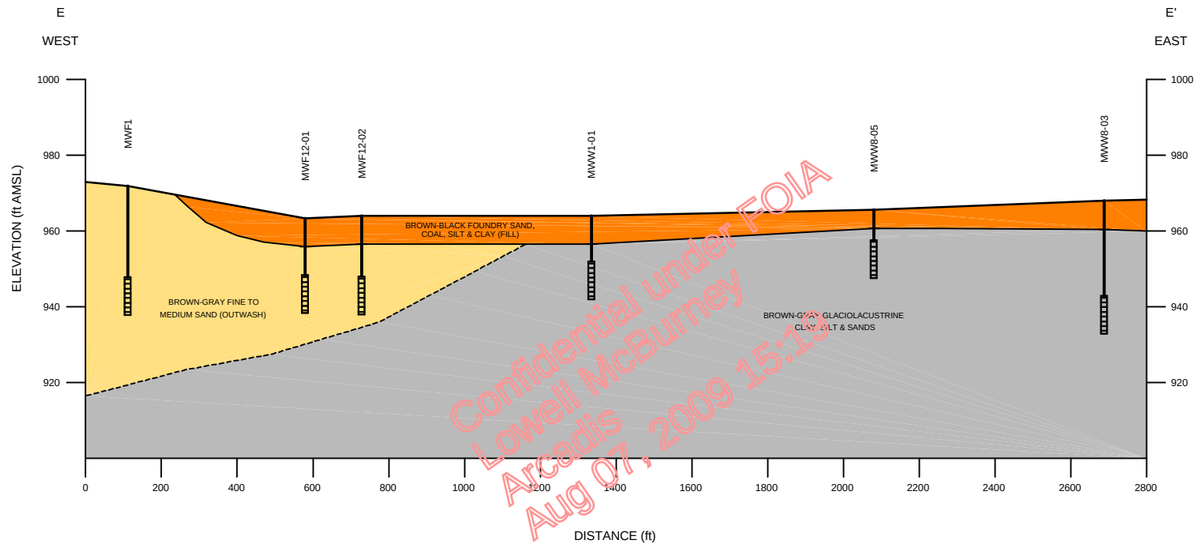
Aug 07, 2009 15:19



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Arcadis
Aug 07, 2009 15:19

LEGEND

MWD4 — WELL OR BOREHOLE NAME

GROUND SURFACE

CLAY — STRATIGRAPHIC DESCRIPTION

WELL SCREEN

NOTE: FOR MULTIPLE WELLS AT A SINGLE WELL CLUSTER, CLUSTER IS REPRESENTED AS A SINGLE VERTICAL LINE WITH MULTIPLE SCREEN INTERVALS.

HORIZONTAL SCALE
0 100 200ft

VERTICAL SCALE
0 10 20ft

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

GEOLOGIC CROSS-SECTION E-E'

ENCORE

FIGURE
3-11

17487-17(001)GN-WA007 APR 10/2002

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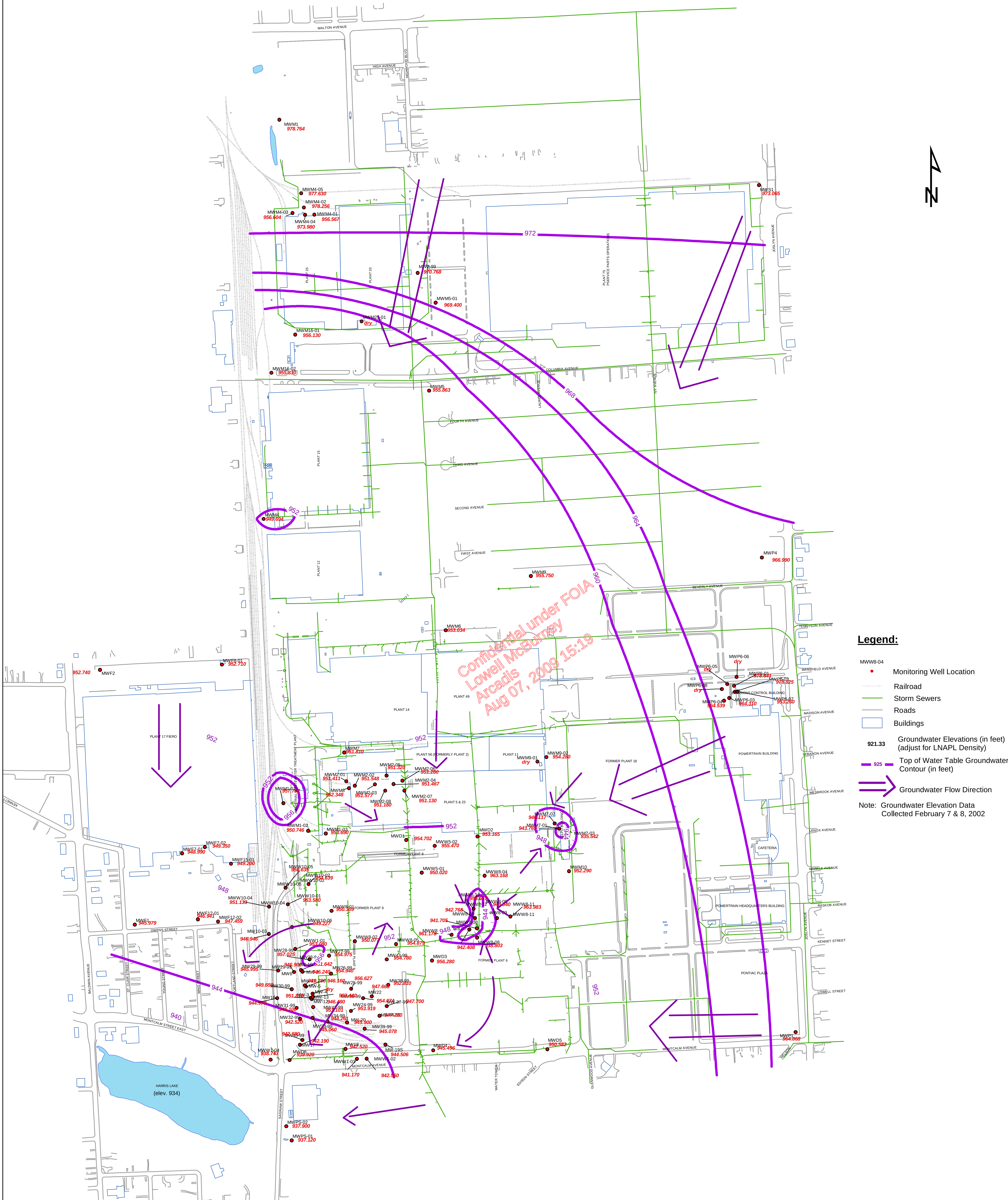

0 410 820 1,640
Feet

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

WATER TABLE GROUNDWATER CONTOURS

ENCORE

FIGURE
3-12

q:\pontiac\PontiacTop.mxd

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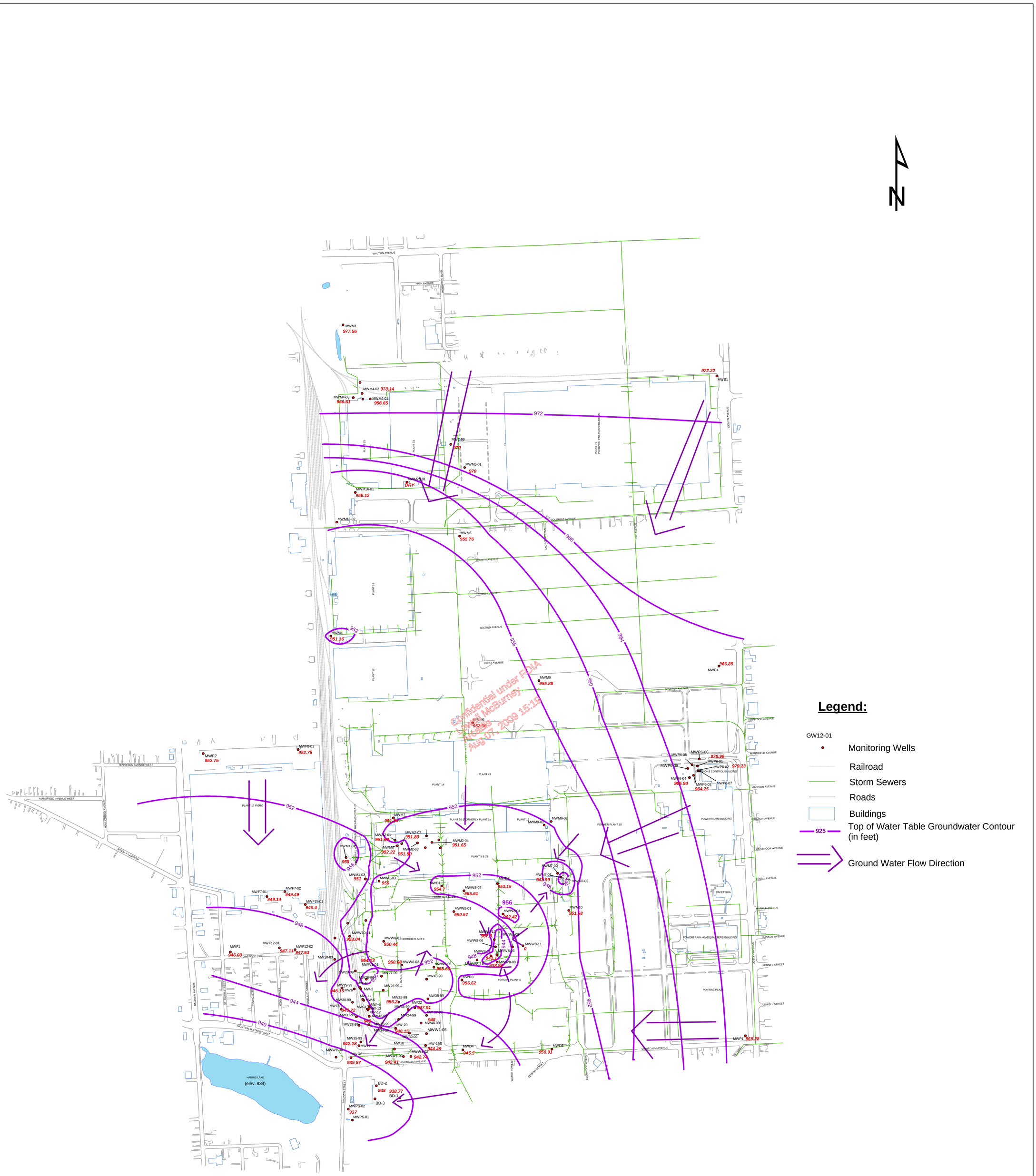
Lowell McBurney
Arcadis
Aug 07, 2009 15:19



Legend:

- GW12-01 — Monitoring Wells
- Railroad
- Storm Sewers
- Roads
- Buildings
- 925 — Top of Water Table Groundwater Contour (in feet)
- Ground Water Flow Direction

0 625 1,250 2,500 Feet

g:\pontiac\mxd\PontiacGWElevationJan2002.mxd
g:\pontiac\PrintFiles\Jan_GWData.pdf

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

WATER TABLE GROUNDWATER CONTOURS JANUARY 2002

ENCORE

FIGURE
3-12B

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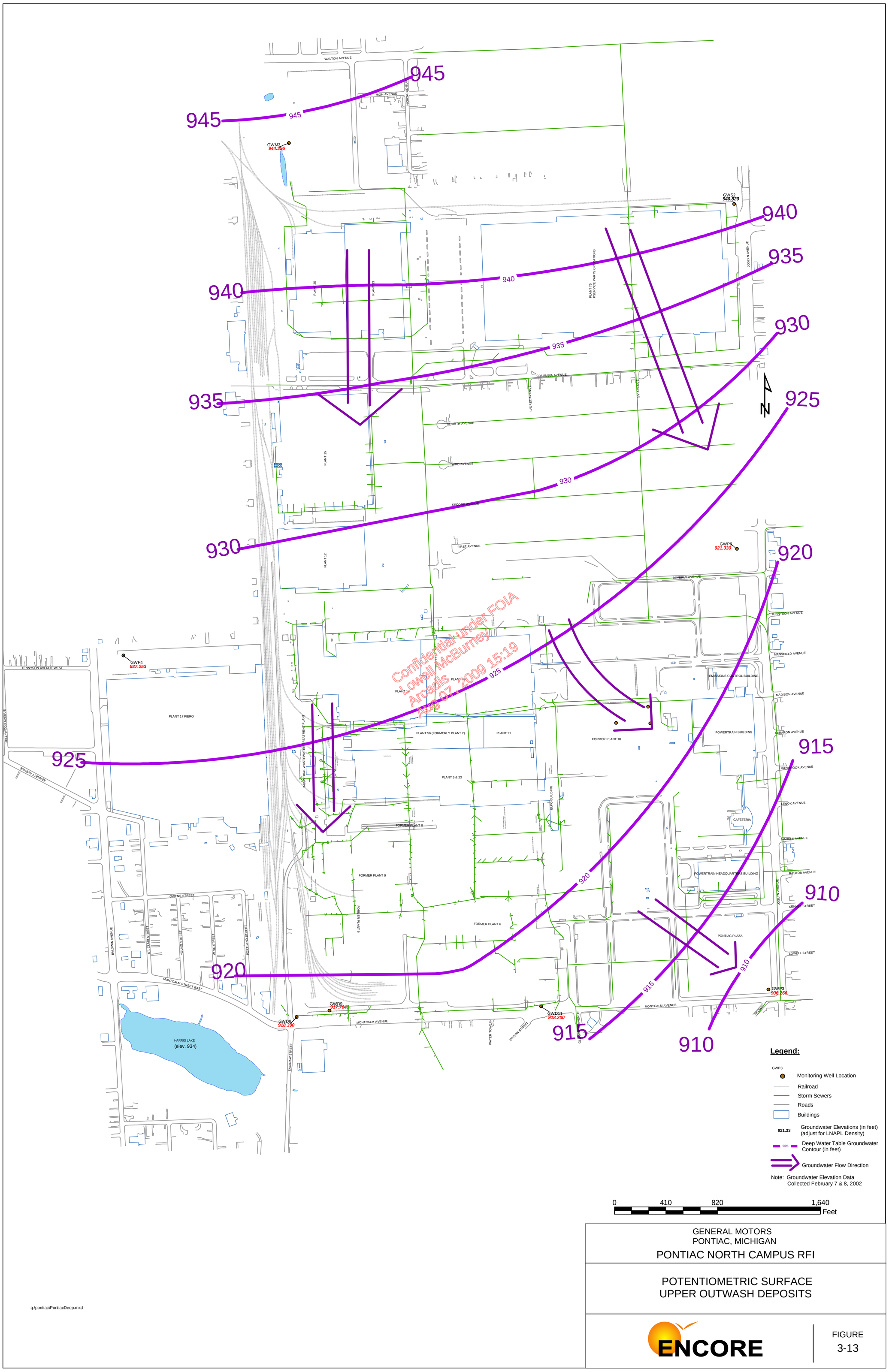
Lowell McBurney
Arcadis
Aug 07, 2009 15:19



Legend:

- GWP3 — Monitoring Well Location
- Railroad
- Storm Sewers
- Roads
- Buildings
- 921.33 — Groundwater Elevations (in feet) (adjust for LNAPL Density)
- 925 — Deep Water Table Groundwater Contour (in feet)
- Groundwater Flow Direction

Note: Groundwater Elevation Data Collected February 7 & 8, 2002

0 410 820 1,640 Feet

q:\pontiac\PontiacDeep.mxd

GENERAL MOTORS
PONTIAC, MICHIGAN

PONTIAC NORTH CAMPUS RFI

POTENTIOMETRIC SURFACE
UPPER OUTWASH DEPOSITS

ENCORE

FIGURE
3-13

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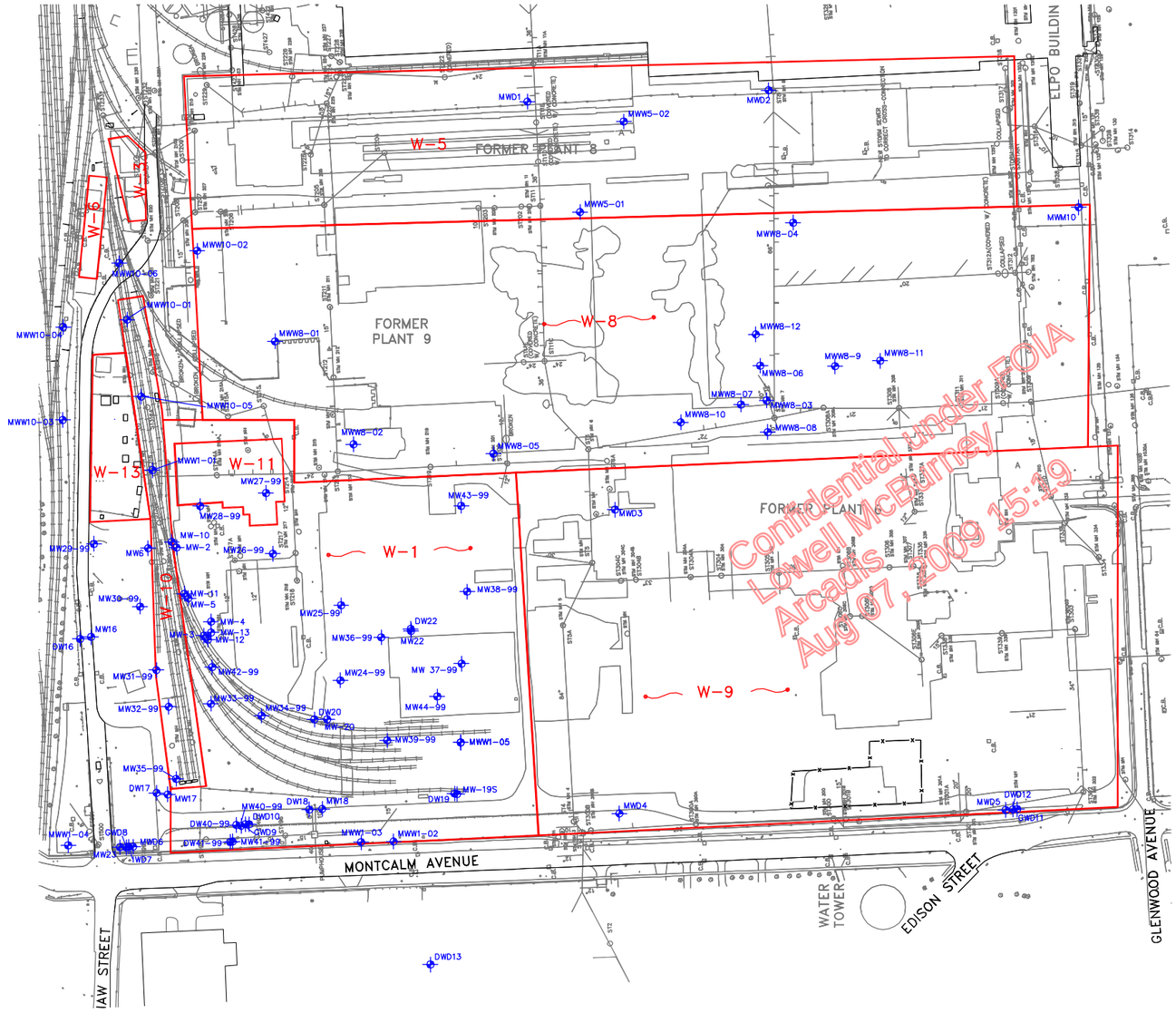
Lowell McBurney

Arcadis

Aug 07, 2009 15:19



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LEGEND:

- MWW16-02 — MONITORING WELL SAMPLE LOCATION
- FENCED AREA
- APPROXIMATE AOI AREA

W-1 = WEST YARD
W-3 = FORMER PLANT 8 FLAMMABLE LIQUID STORAGE TANK FARM
W-5 = FORMER PLANT 8 BASEMENT AST AREA
W-6 = FORMER PLANT 8 FLAMMABLE MATERIALS STORAGE AREA
W-8 = FORMER PLANT 9 BASEMENT AST
W-9 = FORMER CENTRAL FOUNDRY
W-10 = RAILROAD MARSHALLING AREA
W-11 = SALVAGE YARD SUMP DRAIN
W-13 = MONTCALM SUBSTATION

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

0 150' 300'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

DA SAMPLE LOCATIONS AND GROUND COVER

ENCORE

FIGURE 4-2

X: 64411X00, X01, X04.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL2B
9/09/02 SYR-54-GMS DJP SDL
64411210/64411C45.DWG

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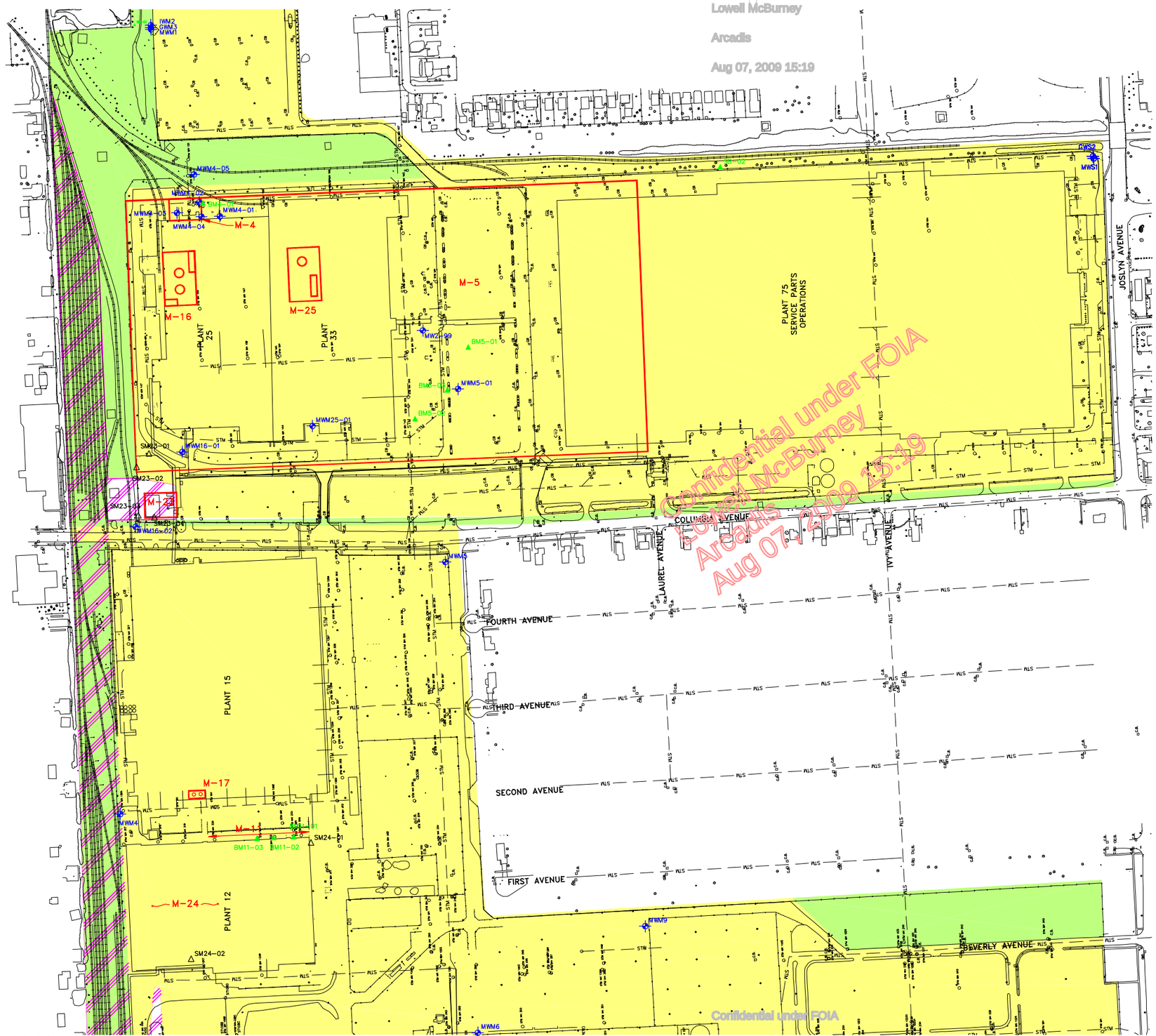
Aug 07, 2009 15:19



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Aug 07, 2009 15:19

LEGEND:

- MWM16-02 — MONITORING WELL SAMPLE LOCATION
- BM5-02 — SOIL BORING SAMPLE LOCATION
- SM23-03 — SURFACE SOIL SAMPLE LOCATION
- SDHS-21 — SEDIMENT SAMPLE LOCATION
- SWHS-07 — SURFACE WATER SAMPLE LOCATION
- APPROXIMATE AOI AREA
  - M-4 = PLANT 25 FORMER GASOLINE UST AND CURRENT GASOLINE AST
  - M-5 = FORMER A2 FILL AREA
  - M-11 = PLANT 12 FORMER GASOLINE STORAGE AREA
  - M-16 = PLANT 25 BASEMENT SUMP AREA
  - M-17 = FORMER GASOLINE AST
  - M-23 = ELECTRICAL SUBSTATION
  - M-24 = PCB SPILL AREA
  - M-25 = PLANT 33 BASEMENT SUMP AREA
- GRASS/SOIL/WEEDS
- CONCRETE/ASPHALT
- GRAVEL

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

0 200' 400'
GRAPHIC SCALE

X: 64411X0D, X01.DWG, X04.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/24/02 SYR-54-GMS NES DJP
64411210/64411C46.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

MFD (NORTHERN SECTION) AND SPO SAMPLING LOCATIONS AND GROUND COVER

ENCORE

FIGURE 4-3

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PLANT 14

PLANT 56 (FORMERLY PLANT 2)

PLANT 11

PLANT 5 & 23

FORMER PLANT 8

INDUSTRIAL WASTEWATER TREATMENT PLANT

ELPO BUILDING

TANK FARM

M-1 = POWERHOUSE BASEMENT SUMPS
M-2 = FORMER PLATING OPERATION AREA
M-7 = ELPO BUILDING/FLAMMABLE LIQUID STORAGE BUILDING
M-9 = PLANT 11 OIL CONTAINMENT AREA
M-13 = FORMER FUEL AST
M-19 = ELECTRICAL SUBSTATION
M-21 = RAILROAD TRACKS

LEGEND:

MWM16-02 MONITORING WELL SAMPLE LOCATION

BM5-02 SOIL BORING SAMPLE LOCATION

SM23-03 SURFACE SOIL SAMPLE LOCATION

APPROXIMATE AOI AREA

GRASS/SOIL/WEEDS

CONCRETE/ASPHALT

GRAVEL

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.

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0 100' 200'
GRAPHIC SCALE

X: 64411X00, X01.DWG, X04.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS NES DJP
64411210/64411C49.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

MFD (SOUTHERN SECTION) SAMPLE LOCATIONS AND GROUND COVER

ENCORE

FIGURE 4-4

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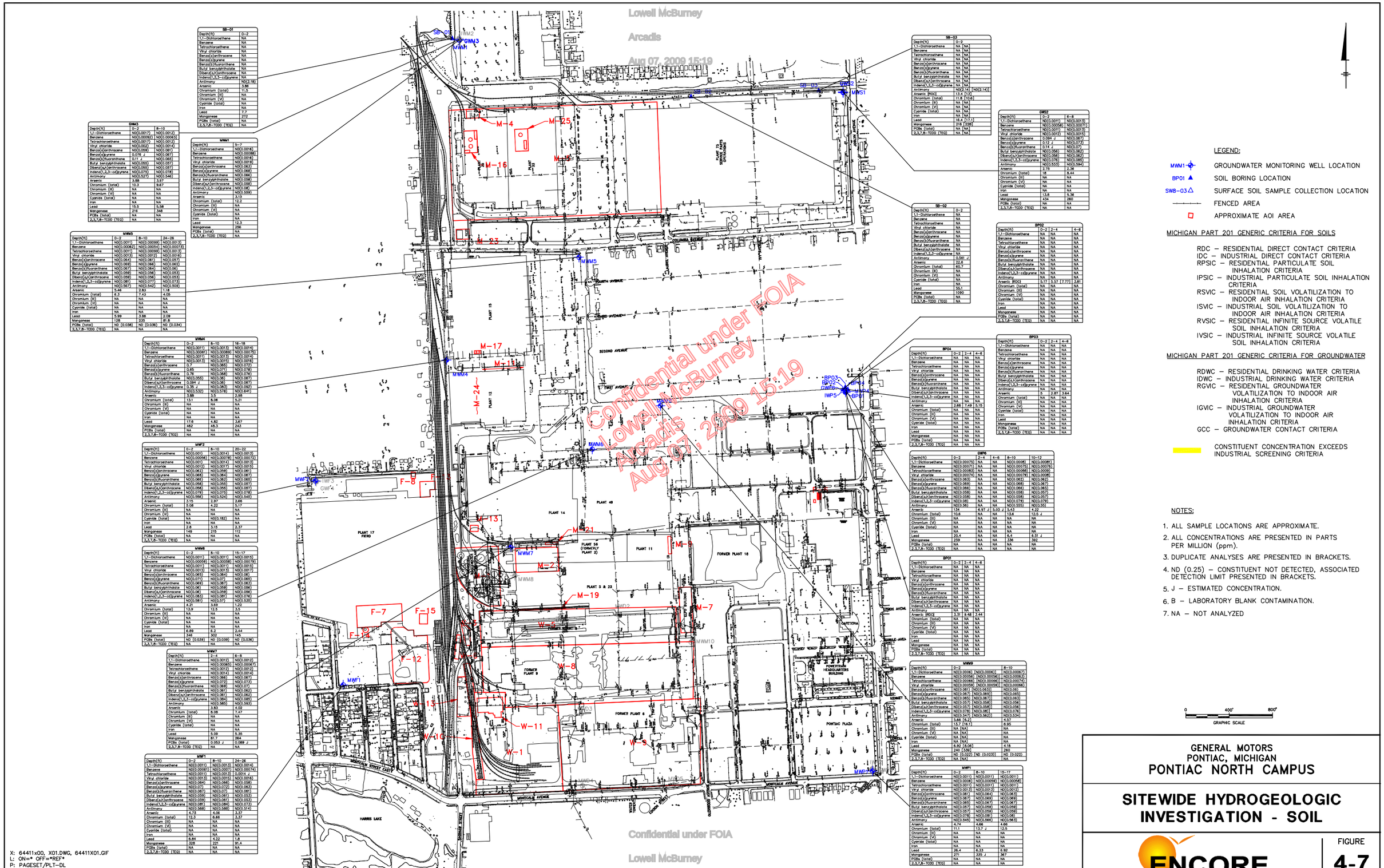
Aug 07, 2009 15:19



SB-01

Depth(ft)	0–2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	ND(2.18)
Arsenic	3.86
Chromium (total)	11.5
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	7.7
Manganese	272
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

GWM3

Depth(ft)	0–2	8–10
1,1-Dichloroethene	ND(0.0017)	ND(0.001:2)
Benzene	ND(0.00092)	ND(0.00063)
Tetrachloroethene	ND(0.0017)	ND(0.001:2)
Vinyl chloride	ND(0.002)	ND(0.0014)
Benzo(a)anthracene	ND(0.059)	ND(0.061)
Benzo(a)pyrene	0.078 J	ND(0.087)
Benzo(b)fluoranthene	0.11 J	ND(0.083)
Butyl benzylphthalate	ND(0.055)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.055)	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.075)	ND(0.078)
Antimony	ND(0.527)	ND(0.546)
Arsenic	3.98	3.97
Chromium (total)	10.3	9.67
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	15.5	5.58
Manganese	216	348
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM1

Depth(ft)	5–7
1,1-Dichloroethene	ND(0.0016)
Benzene	ND(0.00088)
Tetrachloroethene	ND(0.0016)
Vinyl chloride	ND(0.0019)
Benzo(a)anthracene	ND(0.083)
Benzo(a)pyrene	ND(0.068)
Benzo(b)fluoranthene	ND(0.066)
Butyl benzylphthalate	ND(0.058)
Dibenz(a,h)anthracene	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.08)
Antimony	ND(0.559)
Arsenic	3.13
Chromium (total)	12.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	12.3
Manganese	256
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

MWM5

Depth(ft)	0–2	8–10	24–26
1,1-Dichloroethene	ND(0.0011)	ND(0.00099)	ND(0.0013)
Benzene	ND(0.00062)	ND(0.00056)	ND(0.00073)
Tetrachloroethene	ND(0.0011)	ND(0.00099)	ND(0.0013)
Vinyl chloride	ND(0.0013)	ND(0.0012)	ND(0.0016)
Benzo(a)anthracene	ND(0.064)	ND(0.061)	ND(0.057)
Benzo(a)pyrene	ND(0.069)	ND(0.066)	ND(0.062)
Benzo(b)fluoranthene	ND(0.067)	ND(0.064)	ND(0.06)
Butyl benzylphthalate	ND(0.059)	ND(0.056)	ND(0.053)
Dibenz(a,h)anthracene	ND(0.059)	ND(0.056)	ND(0.053)
Indeno(1,2,3-cd)pyrene	ND(0.081)	ND(0.077)	ND(0.073)
Antimony	ND(0.567)	ND(0.542)	ND(0.509)
Arsenic	5.46	2.83	1.18
Chromium (total)	6.3	7.43	4.05
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	5.99	3.88	2.09
Manganese	128	235	81.8
PCBs (total)	ND (0.038)	ND (0.036)	ND (0.034)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM4

Depth(ft)	0–2	8–10	16–18
1,1-Dichloroethene	ND(0.0011)	ND(0.0013)	ND(0.0014)
Benzene	ND(0.00061)	ND(0.00069)	ND(0.00075)
Tetrachloroethene	ND(0.0011)	ND(0.0013)	ND(0.0014)
Vinyl chloride	ND(0.0013)	ND(0.0015)	ND(0.0016)
Benzo(a)anthracene	0.7	ND(0.065)	ND(0.072)
Benzo(a)pyrene	0.85	ND(0.071)	ND(0.078)
Benzo(b)fluoranthene	0.78	ND(0.068)	ND(0.074)
Butyl benzylphthalate	ND(0.055)	ND(0.06)	ND(0.067)
Dibenz(a,h)anthracene	0.094 J	ND(0.06)	ND(0.067)
Indeno(1,2,3-cd)pyrene	0.76 J	ND(0.083)	ND(0.092)
Antimony	ND(0.532)	ND(0.578)	ND(0.641)
Arsenic	3.98	3.5	2.98
Chromium (total)	13.1	8.06	5.21
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	17.6	4.82	3.67
Manganese	462	48.3	243
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWF2

Depth(ft)	0–2	8–10	20–22
1,1-Dichloroethene	ND(0.001)	ND(0.0014)	ND(0.0013)
Benzene	ND(0.00058)	ND(0.00078)	ND(0.00072)
Tetrachloroethene	ND(0.001)	ND(0.0014)	ND(0.0013)
Vinyl chloride	ND(0.0012)	Not Detected	ND(0.0015)
Benzo(a)anthracene	ND(0.062)	ND(0.059)	ND(0.061)
Benzo(a)pyrene	ND(0.068)	ND(0.064)	ND(0.067)
Benzo(b)fluoranthene	ND(0.066)	ND(0.062)	ND(0.065)
Butyl benzylphthalate	ND(0.056)	ND(0.055)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.053)	ND(0.055)
Indeno(1,2,3-cd)pyrene	ND(0.079)	ND(0.075)	ND(0.078)
Antimony	ND(0.558)	ND(0.524)	ND(0.545)
Arsenic	3.15	2.97	2.66
Chromium (total)	5.08	4.22	5.17
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	ND(0.182)	NA
Iron	NA	NA	NA
Lead	2.8	3.15	2.37
Manganese	148	215	112
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM6

Depth(ft)	0–2	8–10	15–17
1,1-Dichloroethene	ND(0.001)	ND(0.0011)	ND(0.0015)
Benzene	ND(0.00059)	ND(0.00058)	ND(0.00079)
Tetrachloroethene	ND(0.001)	ND(0.0011)	ND(0.0015)
Vinyl chloride	ND(0.0012)	ND(0.0013)	ND(0.0017)
Benzo(a)anthracene	ND(0.065)	ND(0.064)	ND(0.09)
Benzo(a)pyrene	ND(0.071)	ND(0.07)	ND(0.095)
Benzo(b)fluoranthene	ND(0.069)	ND(0.067)	ND(0.093)
Butyl benzylphthalate	ND(0.06)	ND(0.059)	ND(0.083)
Dibenz(a,h)anthracene	ND(0.06)	ND(0.059)	ND(0.096)
Indeno(1,2,3-cd)pyrene	ND(0.083)	ND(0.08)	ND(0.11)
Antimony	ND(0.581)	ND(0.57)	ND(0.535)
Arsenic	4.21	3.69	1.22
Chromium (total)	13.9	12.5	3.5
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	6.89	6.2	2.44
Manganese	348	302	145
PCBs (total)	ND (0.039)	ND (0.039)	ND (0.036)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM7

Depth(ft)	2–4	6–8
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00065)	ND(0.00067)
Tetrachloroethene	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	ND(0.066)	ND(0.067)
Benzo(a)pyrene	ND(0.073)	ND(0.073)
Benzo(b)fluoranthene	ND(0.069)	ND(0.07)
Butyl benzylphthalate	ND(0.061)	ND(0.062)
Dibenz(a,h)anthracene	ND(0.061)	ND(0.062)
Indeno(1,2,3-cd)pyrene	ND(0.084)	ND(0.085)
Antimony	ND(0.585)	ND(0.593)
Arsenic	3.83	4.02
Chromium (total)	8.08	7.47
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	5.09	5.35
Manganese	81.7	264
PCBs (total)	0.053 J	0.089 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWF1

Depth(ft)	0–2	8–10	24–26
1,1-Dichloroethene	ND(0.0011)	ND(0.0013)	ND(0.0014)
Benzene	ND(0.00061)	ND(0.0007)	ND(0.0016)
Tetrachloroethene	ND(0.0011)	ND(0.0013)	0.0014 J
Vinyl chloride	ND(0.0013)	ND(0.0015)	ND(0.0016)
Benzo(a)anthracene	ND(0.064)	ND(0.066)	ND(0.068)
Benzo(a)pyrene	ND(0.07)	ND(0.072)	ND(0.083)
Benzo(b)fluoranthene	ND(0.067)	ND(0.07)	ND(0.081)
Butyl benzylphthalate	ND(0.059)	ND(0.061)	ND(0.053)
Dibenz(a,h)anthracene	ND(0.059)	ND(0.061)	ND(0.053)
Indeno(1,2,3-cd)pyrene	ND(0.081)	ND(0.084)	ND(0.072)
Antimony	ND(0.568)	ND(0.588)	ND(0.514)
Arsenic	4.73	4.06	3.37
Chromium (total)	12.3	6.66	3.37
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	6.84	4.22	1.8
Manganese	338	221	91.4
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SB-03

Depth(ft)	0–2	
1,1-Dichloroethene	NA	NA
Benzene	NA	NA
Tetrachloroethene	NA	NA
Vinyl chloride	NA	NA
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic [RDC]	NA	[NA]
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	16.4	[11.1]
Manganese	218	[228]
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

SB-02

Depth(ft)	0–2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	0.561 J
Arsenic	22.6
Chromium (total)	60.7
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	55.1
Manganese	1090
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

GWS2

Depth(ft)	0–2	6–8
1,1-Dichloroethene	ND(0.0011)	ND(0.0013)
Benzene	ND(0.00058)	ND(0.00071)
Tetrachloroethene	ND(0.0011)	ND(0.0013)
Vinyl chloride	ND(0.0012)	ND(0.0015)
Benzo(a)anthracene	0.094 J	ND(0.067)
Benzo(a)pyrene	0.12 J	ND(0.073)
Benzo(b)fluoranthene	0.14 J	ND(0.07)
Butyl benzylphthalate	ND(0.056)	ND(0.062)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.062)
Indeno(1,2,3-cd)pyrene	ND(0.076)	ND(0.085)
Antimony	ND(0.533)	ND(0.594)
Arsenic	2.75	2.36
Chromium (total)	18	8.44
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	13.8	5.36
Manganese	434	280
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BP02

Depth(ft)	0–2	2–4	4–6
1,1-Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic [RDC]	5.17	5.57 [7.77]	3.81
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BP04

Depth(ft)	0–2	2–4	4–6
1,1-Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	2.66	7.49	5.15
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BP03

Depth(ft)	0–2	2–4	4–6
1,1-Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	5	2.87	3.64
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BP06

Depth(ft)	0–2	2–4	4–6	8–10	10–12
1,1-Dichloroethene	ND(0.00075)	NA	NA	ND(0.0008)	ND(0.00081)
Benzene	ND(0.00071)	NA	NA	ND(0.00075)	ND(0.00076)
Tetrachloroethene	ND(0.00083)	NA	NA	ND(0.00088)	ND(0.0009)
Vinyl chloride	ND(0.00074)	NA	NA	ND(0.00079)	ND(0.0008)
Benzo(a)anthracene	ND(0.063)	NA	NA	ND(0.062)	ND(0.062)
Benzo(a)pyrene	ND(0.069)	NA	NA	ND(0.068)	ND(0.067)
Benzo(b)fluoranthene	ND(0.066)	NA	NA	ND(0.065)	ND(0.065)
Butyl benzylphthalate	ND(0.058)	NA	NA	ND(0.058)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.058)	NA	NA	ND(0.058)	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.08)	NA	NA	ND(0.079)	ND(0.079)
Antimony	ND(0.56)	NA	NA	ND(0.555)	ND(0.55)
Arsenic	1.34	6.97 J	5.03 J	5.53	4.22
Chromium (total)	10.6	NA	NA	13.6	12.5 J
Chromium (III)	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA
Lead	20.4	NA	NA	6.4	6.51 J
Manganese	239	NA	NA	134	393
PCBs (total)	NA	NA	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA	NA	NA

BP01

Depth(ft)	0–2	2–4	4–6
1,1-Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic [RDC]	3.31	3.48	3.44
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM9

Depth(ft)	0–2	8–10
1,1-Dichloroethene	ND(0.0008)	[ND(0.00061)] ND(0.00067)
Benzene	ND(0.00058)	[ND(0.00058)] ND(0.00063)
Tetrachloroethene	ND(0.0008)	[ND(0.0008)] ND(0.00074)
Vinyl chloride	ND(0.00059)	[ND(0.00059)] ND(0.00066)
Benzo(a)anthracene	ND(0.061)	[ND(0.063)] ND(0.06)
Benzo(a)pyrene	ND(0.067)	[ND(0.069)] ND(0.065)
Benzo(b)fluoranthene	ND(0.065)	[ND(0.067)] ND(0.063)
Butyl benzylphthalate	ND(0.057)	[ND(0.058)] ND(0.056)
Dibenz(a,h)anthracene	ND(0.057)	[ND(0.058)] ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.078)	[ND(0.08)] ND(0.076)
Antimony	ND(0.547)	[ND(0.562)] ND(0.534)
Arsenic	3.66 [6.2]	4.57
Chromium (total)	13.7 [16.1]	6.95
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	6.92 [8.06]	4.16
Manganese	240 [339]	260
PCBs (total)	ND (0.022)	[ND (0.023)] ND (0.022)
2,3,7,8-TCDD (TEQ)	NA	[NA] NA

MWP1

Depth(ft)	0–2	8–10	15–17
1,1-Dichloroethene	ND(0.0011)	ND(0.0011)	ND(0.0011)
Benzene	ND(0.0008)	ND(0.00059)	ND(0.00058)
Tetrachloroethene	ND(0.0011)	ND(0.0011)	ND(0.0011)
Vinyl chloride	ND(0.0013)	ND(0.0013)	ND(0.0012)
Benzo(a)anthracene	ND(0.087)	ND(0.084)	ND(0.083)
Benzo(a)pyrene	ND(0.097)	ND(0.089)	ND(0.089)
Benzo(b)fluoranthene	ND(0.095)	ND(0.087)	ND(0.087)
Butyl benzylphthalate	ND(0.057)	ND(0.059)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.059)	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.078)	ND(0.08)	ND(0.08)
Antimony	ND(0.545)	ND(0.566)	ND(0.563)
Arsenic	4.74	4.66	4.66
Chromium (total)	11.1	13.7 J	12.5
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	26.4	6.23	6.92
Manganese	271	335 J	367
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

LEGEND:

- MWM1 — GROUNDWATER MONITORING WELL LOCATION
- BP01 — SOIL BORING LOCATION
- SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- FENCED AREA
- APPROXIMATE AOI AREA

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

- RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
- IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
- RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
- IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
- RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
- IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

- RDWC – RESIDENTIAL DRINKING WATER CRITERIA
- IDWC – INDUSTRIAL DRINKING WATER CRITERIA
- RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

0 400' 800'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

SITEWIDE HYDROGEOLOGIC INVESTIGATION - SOIL

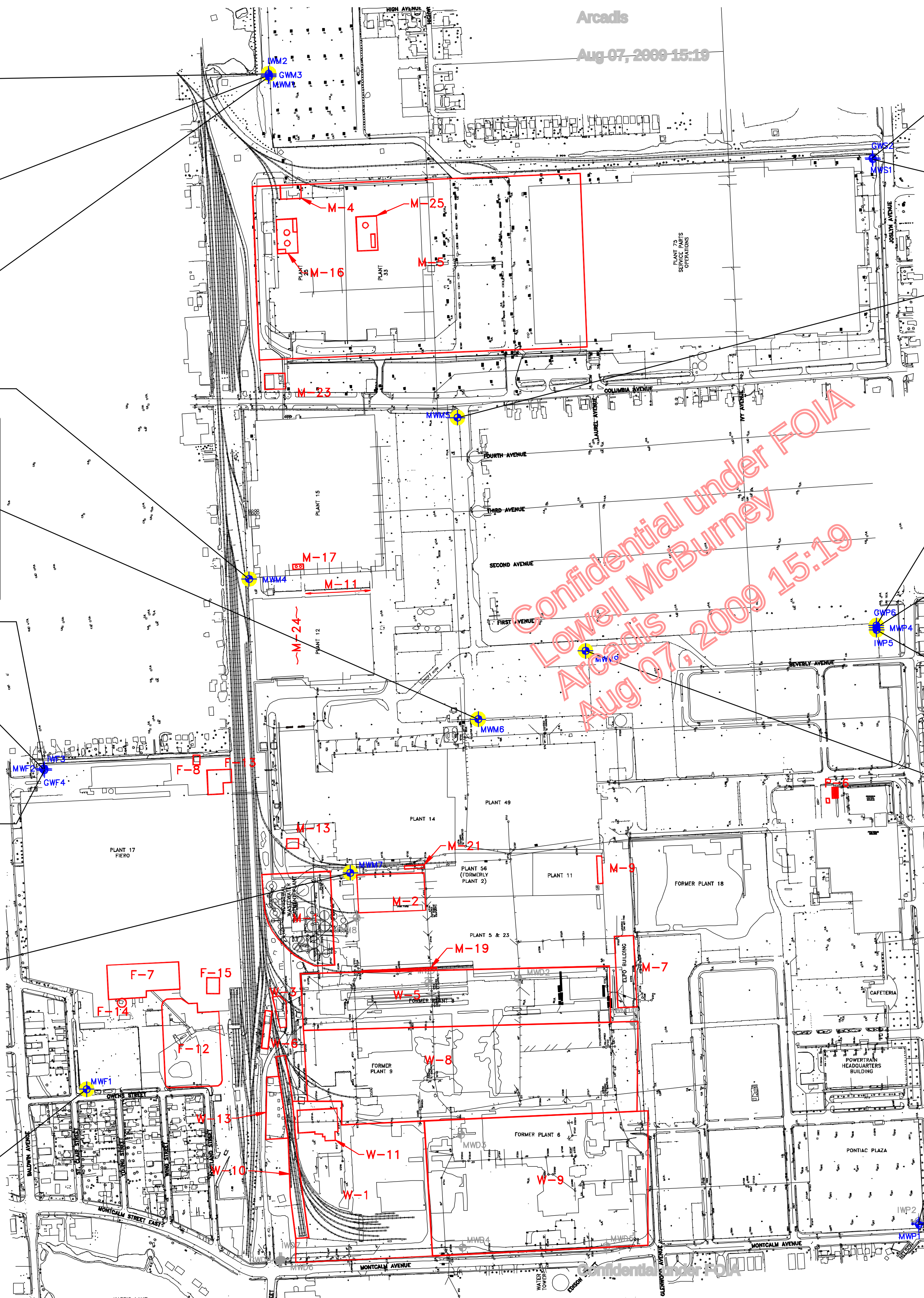
ENCORE

FIGURE 4-7

X: 64411x00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-NES GMS DJP
64411210/64411C01.DWG

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19



GWM3

Date Collected	9/13/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001) [ND(0.001)]	ND(0.00075)
1,1,2-Trichloroethane	ND(0.001) [ND(0.001)]	ND(0.0015)
1,1-Dichloroethene	ND(0.001) [ND(0.001)]	ND(0.0012)
1,2-Dichloroethane	ND(0.001) [ND(0.001)]	ND(0.001)
Acetone	ND(0.01) [0.043 J]	0.25 J
Benzene	0.00024 J [0.00028 J]	ND(0.0008)
Ethylbenzene	ND(0.001) [ND(0.001)]	ND(0.0006)
Tetrachloroethene	ND(0.001) [ND(0.001)]	ND(0.0012)
Toluene	0.00086 J [0.00094 J]	ND(0.0009)
Vinyl chloride	ND(0.001) [ND(0.001)]	ND(0.00075)
bis(2-Ethylhexyl)phthalate	0.0053 [ND(0.005)]	ND(0.014)
Antimony	ND(0.025) [ND(0.025)]	ND(0.0022)
Arsenic	ND(0.01) [ND(0.01)]	ND(0.0039)
Barium	0.236 [0.249]	0.221
Chromium (total)	ND(0.01) [ND(0.01)]	ND(0.0014)
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Lead	ND(0.003) [ND(0.003)]	ND(0.0025)
Manganese	0.226 [0.237]	0.198
Nickel	ND(0.02) [ND(0.02)]	ND(0.0022)
Thallium	ND(0.000018) [ND(0.01)]	ND(0.000018)
Vanadium	ND(0.01) [ND(0.01)]	ND(0.00082)
PCBs (total)	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

IWM2

Date Collected	9/13/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.014)	ND(0.0075)
1,1,2-Trichloroethane	ND(0.014)	ND(0.015)
1,1-Dichloroethene	ND(0.014)	ND(0.012)
1,2-Dichloroethane	ND(0.014)	ND(0.01)
Acetone {RDWC, IDWC}	0.65	2.6 J
Benzene	ND(0.014)	ND(0.008)
Ethylbenzene	ND(0.014)	ND(0.006)
Tetrachloroethene	ND(0.014)	ND(0.012)
Toluene	ND(0.014)	ND(0.009)
Vinyl chloride	ND(0.014)	ND(0.0075)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.05)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	0.0117	0.0274
Barium	0.18	0.304
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.163	0.0909
Nickel	ND(0.02)	0.006 J
Thallium	ND(0.01)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM1

Date Collected	9/13/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	0.0039 J	0.0051 J
Barium	0.415	0.185
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.288	0.459
Nickel	ND(0.02)	0.0042 J
Thallium	ND(0.01)	0.000031 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM4

Date Collected	8/22/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.00019 J	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.0675	0.118
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.005 J	0.0016 J
Nickel	ND(0.02)	ND(0.0022)
Thallium {RDWC, IDWC}	0.0075 J	0.000031 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM6

Date Collected	8/29/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	0.00019 J
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.121	0.131
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.298	0.271
Nickel	0.0091 J	0.0085 J
Thallium {RDWC, IDWC}	0.009 J	0.00083 J
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND (0.00019)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

IWF3

Date Collected	9/10/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.0025)	ND(0.011)
1,1,2-Trichloroethane	ND(0.005)	ND(0.021)
1,1-Dichloroethene	ND(0.004)	ND(0.017)
1,2-Dichloroethane	ND(0.0035)	ND(0.015)
Acetone {RDWC}	0.78 J	ND(0.036)
Benzene	ND(0.0027)	ND(0.011)
Ethylbenzene	0.0065 J	ND(0.0086)
Tetrachloroethene	ND(0.0038)	ND(0.016)
Toluene	0.019	ND(0.013)
Vinyl chloride	ND(0.0025)	ND(0.011)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0061 J	0.0076 J
Barium	0.218	0.182
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.0486	0.0349
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	ND (0.00011)
2,3,7,8-TCDD (TEQ)	NA	NA

MWF2

Date Collected	9/10/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	0.00018 J	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.00081 J	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	0.0026 J	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.0719	0.0697
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.135	0.0889
Nickel	0.0031 J	0.003 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

GWF4

Date Collected	9/10/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00025)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0005)	ND(0.0003)
1,1-Dichloroethene	ND(0.0004)	ND(0.00024)
1,2-Dichloroethane	ND(0.00035)	ND(0.00021)
Acetone	0.041 J	ND(0.00051)
Benzene	ND(0.00027)	ND(0.00016)
Ethylbenzene	ND(0.0002)	ND(0.00012)
Tetrachloroethene	ND(0.00038)	ND(0.00023)
Toluene	0.001 J	ND(0.00018)
Vinyl chloride	ND(0.00025)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0171	0.0188
Barium	0.324	0.264
Chromium (total)	ND(0.0014)	0.0015 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.172	0.0973
Nickel	ND(0.0022)	0.0024 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	ND (0.00011)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM7

Date Collected	8/22/2001	1/8/2002
1,1,1-Trichloroethane	0.003	0.0037
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	0.015	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.073	0.073
Chromium (total)	ND(0.01)	0.0023 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.121	0.0055 J
Nickel	ND(0.02)	ND(0.0022)
Thallium {RDWC, IDWC}	0.0075 J	ND(0.000018)
Vanadium	0.0014 J	0.0015 J
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWF1

Date Collected	8/23/2001	1/7/2002
1,1,1-Trichloroethane	0.00053 J [0.00052 J]	0.007
1,1,2-Trichloroethane	ND(0.001) [ND(0.001)]	ND(0.0003)
1,1-Dichloroethene	ND(0.001) [ND(0.001)]	0.00097 J
1,2-Dichloroethane	ND(0.001) [ND(0.001)]	ND(0.00021)
Acetone	0.017 J [0.017 J]	ND(0.00051)
Benzene	ND(0.001) [ND(0.001)]	ND(0.00016)
Ethylbenzene	ND(0.001) [ND(0.001)]	ND(0.00012)
Tetrachloroethene	ND(0.001) [ND(0.001)]	0.00055 J
Toluene	ND(0.001) [ND(0.001)]	ND(0.00018)
Vinyl chloride	ND(0.001) [ND(0.001)]	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005) [ND(0.005)]	ND(0.0027)
Antimony	ND(0.025) [ND(0.025)]	ND(0.0022)
Arsenic	ND(0.01) [ND(0.01)]	ND(0.0039)
Barium	0.151 [0.148]	0.144
Chromium (total)	ND(0.01) [ND(0.01)]	ND(0.0014)
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Lead	ND(0.003) [ND(0.003)]	ND(0.0025)
Manganese	0.272 [0.266]	0.218
Nickel	0.003 J [0.0022 J]	0.0024 J
Thallium {RDWC, IDWC}	0.0066 J [0.0079 J]	0.000066 J
Vanadium	ND(0.01) [ND(0.01)]	ND(0.00082)
PCBs (total)	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

GWS2

Date Collected	9/19/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.002)
1,1-Dichloroethene	ND(0.001)	ND(0.0016)
1,2-Dichloroethane	ND(0.001)	ND(0.0014)
Acetone	0.052	ND(0.0034)
Benzene	ND(0.001)	ND(0.0011)
Ethylbenzene	ND(0.001)	ND(0.0008)
Tetrachloroethene	ND(0.001)	ND(0.0015)
Toluene	0.00043 J	ND(0.0012)
Vinyl chloride	ND(0.001)	ND(0.001)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	0.0128	0.0133
Barium	0.133	0.14
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0348	0.0311
Nickel	0.0056 J	0.0024 J
Thallium	ND(0.000018)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWS1

Date Collected	9/14/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	0.078	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.00035 J	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.0907	0.0533
Chromium (total)	ND(0.01)	0.0018 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0665	0.0033 J
Nickel	ND(0.02)	ND(0.0022)
Thallium	ND(0.01)	0.000051 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM5

Date Collected	8/24/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	0.028 J
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	0.0078 J	0.0042 J
Barium	0.747	0.929
Chromium (total)	0.0022 J	0.0027 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.617	0.567
Nickel	0.0029 J	ND(0.0022)
Thallium {RDWC, IDWC}	0.0111	ND(0.000018)
Vanadium {RDWC}	0.0054 J	0.0065 J
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

GWP6

Date Collected	9/18/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.083)	ND(0.019)
1,1,2-Trichloroethane	ND(0.083)	ND(0.038)
1,1-Dichloroethene	ND(0.083)	ND(0.03)
1,2-Dichloroethane	ND(0.083)	ND(0.026)
Acetone {RDWC, IDWC}	5.8	7.1 J
Benzene	ND(0.083)	ND(0.02)
Ethylbenzene	ND(0.083)	ND(0.015)
Tetrachloroethene	ND(0.083)	ND(0.029)
Toluene	ND(0.083)	ND(0.022)
Vinyl chloride	ND(0.083)	ND(0.019)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.0646	0.0881
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0744	0.0679 J
Nickel	ND(0.02)	ND(0.0022)
Thallium	ND(0.01)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWP4

Date Collected	9/18/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	0.015 J
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	0.0046 J
Barium	0.212	0.19
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0515	0.101 J
Nickel	0.0031 J	ND(0.0022)
Thallium	0.000041 J	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

IWP5

Date Collected	9/20/2001	1/10/2002
1,1,1-Trichloroethane	ND(0.015)	ND(0.038)
1,1,2-Trichloroethane	ND(0.03)	ND(0.075)
1,1-Dichloroethene	ND(0.024)	ND(0.06)
1,2-Dichloroethane	ND(0.021)	ND(0.052)
Acetone {RDWC, IDWC}	6.6 J	13
Benzene	ND(0.016)	ND(0.04)
Ethylbenzene	ND(0.012)	ND(0.03)
Tetrachloroethene	ND(0.023)	ND(0.058)
Toluene	ND(0.018)	ND(0.045)
Vinyl chloride	ND(0.015)	ND(0.038)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.068)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.0818	0.231
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.116	0.219 J
Nickel	0.0023 J	0.0232
Thallium {RDWC, IDWC}	0.0061 J	0.00068 J
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWM9

Date Collected	8/23/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.00041 J	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.295	0.267
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.358	0.137
Nickel	0.0108 J	0.0072 J
Thallium {RDWC, IDWC}	0.015	0.00008 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

GWP3

Date Collected	9/12/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.0015)	ND(0.00075)
1,1,2-Trichloroethane	ND(0.003)	ND(0.0015)
1,1-Dichloroethene	ND(0.0024)	ND(0.0012)
1,2-Dichloroethane	ND(0.0021)	ND(0.001)
Acetone {RDWC}	0.76 J	0.25 J
Benzene	0.0016 J	ND(0.0008)
Ethylbenzene	ND(0.0012)	ND(0.0006)
Tetrachloroethene	ND(0.0023)	ND(0.0012)
Toluene	ND(0.0018)	ND(0.0009)
Vinyl chloride	ND(0.0015)	ND(0.00075)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0069 J	0.0089 J
Barium	0.111	0.114
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.0458	0.0477 J
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

MWP1

Date Collected	9/12/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	0.022 J
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	0.0046 J
Barium	0.317	0.294
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.288	0.191 J
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

LEGEND:

MWM1 — GROUNDWATER MONITORING WELL LOCATION
BP01 — SOIL BORING LOCATION
SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
FENCED AREA
APPROXIMATE AOI AREA

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

0 400' 800'
GRAPHIC SCALE

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS DJP
64411210/64411C02.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

SITEWIDE HYDROGEOLOGIC INVESTIGATION - GROUNDWATER

ENCORE

FIGURE 4-8

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

SBTT3

Depth(ft)	5–9
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate {RDC, IDC}	1100
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	2.76
Arsenic	7.12
Chromium (total)	161
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	3.6
Iron	69400
Lead	180
Manganese {IPSIC}	1990
PCBs (total) {RDC, IDC}	92.8 J
2,3,7,8–TCDD (TEQ)	NA

MWW1–01

Depth(ft)	4–6	8–10	10–12
1,1–Dichloroethene	ND(0.25)	ND(0.24)	ND(0.25)
Benzene	ND(0.25)	ND(0.24)	ND(0.25)
Tetrachloroethene	ND(0.25)	ND(0.24)	ND(0.25)
Vinyl chloride	ND(0.5)	ND(0.49)	ND(0.49)
Benzo(a)anthracene	ND(19)	ND(9.7)	ND(9.7)
Benzo(a)pyrene	ND(19)	ND(9.7)	ND(9.7)
Benzo(b)fluoranthene	ND(19)	ND(9.7)	ND(9.7)
Butyl benzylphthalate	ND(19)	ND(9.7)	ND(9.7)
Dibenz(a,h)anthracene	ND(19)	ND(9.7)	ND(9.7)
Indeno(1,2,3–cd)pyrene	ND(19)	ND(9.7)	ND(9.7)
Antimony	ND(2.32)	ND(2.36)	ND(2.35)
Arsenic	3.19	3.9	2.73
Chromium (total)	6.53	9.94	8.8
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	ND(0.581)	ND(0.589)	ND(0.588)
Iron	NA	NA	NA
Lead	6.49	31.5	6.95
Manganese	256	244	382
PCBs (total)	4.25 J	0.79 J	2.68 J
2,3,7,8–TCDD (TEQ)	2.77E–05	2.28E–05	2.81E–05

KMV–06

Depth(ft)	0–2
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.63 J
2,3,7,8–TCDD (TEQ)	NA

BW1–06

Depth(ft)	0–2	2–4	4–6
1,1–Dichloroethene	ND(0.0013)	ND(0.0012)	ND(0.00051)
Benzene	ND(0.00072)	ND(0.00066)	ND(0.00051)
Tetrachloroethene	ND(0.0012)	ND(0.0012)	ND(0.00051)
Vinyl chloride	ND(0.0016)	ND(0.0014)	ND(0.001)
Benzo(a)anthracene	ND(0.058)	ND(0.058)	ND(0.35)
Benzo(a)pyrene	ND(0.063)	ND(0.063)	ND(0.35)
Benzo(b)fluoranthene	ND(0.061)	ND(0.061)	ND(0.35)
Butyl benzylphthalate	3.4	0.72	0.67
Dibenz(a,h)anthracene	ND(0.054)	ND(0.054)	ND(0.35)
Indeno(1,2,3–cd)pyrene	ND(0.074)	ND(0.073)	ND(0.35)
Antimony	0.481 J	ND(0.257)	ND(0.537)
Arsenic	3.91	3.45	2.5
Chromium (total)	12	6.52	4.4
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	ND(0.179)	ND(0.178)	ND(0.537)
Iron	NA	NA	NA
Lead	16.3	5.52	4.5
Manganese	216	212	148
PCBs (total)	1.22 J	0.67 J	0.202 J
2,3,7,8–TCDD (TEQ)	9.34E–06 J	3.75E–06 J	1.51E–06 J

BW1–02

Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0046)	ND(0.22)
Benzene	0.003 J	0.054 J
Tetrachloroethene	ND(0.0046)	ND(0.22)
Vinyl chloride	ND(0.0093)	ND(0.45)
Benzo(a)anthracene	ND(8.6)	ND(3.9)
Benzo(a)pyrene	ND(8.6)	ND(3.9)
Benzo(b)fluoranthene	ND(8.6)	ND(3.9)
Butyl benzylphthalate	ND(8.6)	ND(3.9)
Dibenz(a,h)anthracene	ND(8.6)	ND(3.9)
Indeno(1,2,3–cd)pyrene	ND(8.6)	ND(3.9)
Antimony	ND(20.8)	0.836 J
Arsenic {RDC}	8.98	5.99
Chromium (total)	180	37.8
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	2.81	0.955
Iron	NA	NA
Lead	109	55.1
Manganese {RPSIC, IPSIC}	6330	471
PCBs (total)	1 J	ND(0.117)
2,3,7,8–TCDD (TEQ)	8.13E–05 J	1.07E–05 J

SBSB2

Depth(ft)	4–6
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(1.16)
Arsenic	5.39
Chromium (total)	78.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	14800
Lead	30.1
Manganese	335
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

BW1–03

Depth(ft)	0–2	4–6
1,1–Dichloroethene	ND(0.0054)	ND(0.23)
Benzene	ND(0.0054)	0.076 J
Tetrachloroethene	ND(0.0054)	ND(0.23)
Vinyl chloride	ND(0.011)	[illegible]
Benzo(a)anthracene	ND(1.4)	[illegible]
Benzo(a)pyrene	ND(1.4)	ND(7.5)
Benzo(b)fluoranthene	0.36 J	2.1 J
Butyl benzylphthalate	ND(1.4)	ND(7.5)
Dibenz(a,h)anthracene	ND(1.4)	ND(7.5)
Indeno(1,2,3–cd)pyrene	ND(1.4)	[illegible]
Antimony	1.88 J	[illegible]
Arsenic {RDC}	5.69	35.4
Chromium (total) {RPSIC, IPSIC}	104	639
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.232 J	1.59
Iron	NA	NA
Lead	126	141
Manganese {RPSIC, IPSIC}	1320	4250
PCBs (total)	0.215 J	0.201 J
2,3,7,8–TCDD (TEQ) {RDC}	1.97E–05 J	1.23E–04 J

[illegible]

Depth(ft)	15–15
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	[illegible]
Antimony	[illegible]
Arsenic	0.872
Chromium (total)	9.82
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.49
Iron	6090
Lead	6.95
Manganese	107
PCBs (total)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA

BW1–07

Depth(ft)	0–2	8–10	11–13
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	377	55.1	17.1
Chromium (VI)	ND(0.411)	ND(0.383)	ND(0.380)
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese {RPSIC, IPSIC}	4620	1020	307
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SBDW21

Depth(ft)	18–20
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(0.586)
Arsenic	5.02
Chromium (total)	8.01
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	8670
Lead	4.77
Manganese	192
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

SSTT03

Depth(ft)	0–0
1,1–Dichloroethene	ND [ND]
Benzene	ND [ND]
Tetrachloroethene	ND [ND]
Vinyl chloride	ND [ND]
Benzo(a)anthracene	0.058 J [0.035 J]
Benzo(a)pyrene	0.069 J [0.031 J]
Benzo(b)fluoranthene	0.12 J [0.049 J]
Butyl benzylphthalate	ND [ND]
Dibenz(a,h)anthracene	ND [ND]
Indeno(1,2,3–cd)pyrene	0.04 J [0.021 J]
Antimony	ND(0.281) [ND(0.573)]
Arsenic	3.71 [3.65]
Chromium (total)	4.48 J [11.7 J]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	ND [0.39]
Iron	10500 [7800]
Lead	3.32 J [5.81 J]
Manganese	543 J [270 J]
PCBs (total)	ND(0.57) [ND(0.57)]
2,3,7,8–TCDD (TEQ)	NA [NA]

SBSB5

Depth(ft)	4–6
1,1–Dichloroethene	ND
Benzene	0.72 J
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	1740
Arsenic {RDC}	35.7
Chromium (total)	1020
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	4.1
Iron {RDC}	376000
Lead {RDC}	573
Manganese {RPSIC, IPSIC}	3510
PCBs (total)	ND(7.6)
2,3,7,8–TCDD (TEQ)	NA

KMV–07

Depth(ft)	10
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND(0.03)
2,3,7,8–TCDD (TEQ)	NA

KMV–05

Depth(ft)	17–18
1,1–Dichloroethene	ND
Benzene	0.058
Tetrachloroethene	0.12
Vinyl chloride	ND
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	4.02 J
2,3,7,8–TCDD (TEQ)	NA

SSTT02

Depth(ft)	0–0
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	15
Benzo(a)pyrene {RDC}	8.6 J
Benzo(b)fluoranthene	11
Butyl benzylphthalate	2.3 J
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	3.7 J
Antimony	4.18 J
Arsenic	7.27 J
Chromium (total) {IPSIC}	251
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.36
Iron	10700
Lead	117
Manganese {IPSIC}	2040
PCBs (total)	1.39 J
2,3,7,8–TCDD (TEQ)	NA

SSTT05

Depth(ft)	0–0
1,1–Dichloroethene	ND [ND]
Benzene	ND [ND]
Tetrachloroethene	ND [ND]
Vinyl chloride	ND [ND]
Benzo(a)anthracene	ND [0.12 J]
Benzo(a)pyrene	ND [0.073 J]
Benzo(b)fluoranthene	ND [0.13 J]
Butyl benzylphthalate	ND [0.12 J]
Dibenz(a,h)anthracene	ND [ND]
Indeno(1,2,3–cd)pyrene	ND [0.026 J]
Antimony	16.6 J [2.94 J]
Arsenic {RDC, IDC}	67.1 J [3.35 J]
Chromium (total) {RPSIC, IPSIC}	940 J [163 J]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	0.37 [0.52]
Iron	70000 J [52300 J]
Lead	18.8 J [51.5 J]
Manganese {RPSIC, IPSIC}	4600 J [1530 J]
PCBs (total)	2.93 J [ND(0.54)]
2,3,7,8–TCDD (TEQ)	NA [NA]

SBWD1

Depth(ft)	4–6	10–12	14–16	20–22	24–26	30–32	34–36
1,1–Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.0025 J	0.0023 J	0.003 J	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	NA	NA	0.12 J	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	0.12 J	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	0.21	NA	NA	NA	NA
Butyl benzylphthalate	NA	NA	ND	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	0.018 J	NA	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	0.043 J	NA	NA	NA	NA
Antimony	NA	NA	0.44 J	NA	NA	NA	NA
Arsenic	NA	NA	1.89	NA	NA	NA	NA
Chromium (total)	NA	NA	20.3 J	NA	NA	NA	NA
Chromium (III)	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	NA	NA	ND	NA	NA	NA	NA
Iron	NA	NA	6280	NA	NA	NA	NA
Lead	NA	NA	8.19	NA	NA	NA	NA
Manganese	NA	NA	936	NA	NA	NA	NA
PCBs (total)	NA	NA	NA	NA	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	ND(0.51)	NA	NA	NA	NA	NA

BW1–04

Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.32)	ND(0.0052)	ND(0.0053)
Benzene	0.39	ND(0.0052)	ND(0.0053)
Tetrachloroethene	ND(0.32)	ND(0.0052)	ND(0.0053)
Vinyl chloride	ND(0.63)	ND(0.01)	ND(0.011)
Benzo(a)anthracene	0.47 J	ND(0.37)	0.12 J
Benzo(a)pyrene	0.3 J	ND(0.37)	0.13 J
Benzo(b)fluoranthene	0.44 J	0.082 J	0.15 J
Butyl benzylphthalate	ND(1.5)	ND(0.37)	ND(0.38)
Dibenz(a,h)anthracene	ND(1.5)	ND(0.37)	ND(0.38)
Indeno(1,2,3–cd)pyrene	ND(1.5)	ND(0.37)	ND(0.38)
Antimony	2.46 J	1.54 J	ND(0.562)
Arsenic	6.48	7.54	1.09
Chromium (total)	117	114	7.12
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	0.637	ND(0.564)	ND(0.573)
Iron	NA	NA	NA
Lead	266	17.1	6.46
Manganese {IPSIC}	2090	659	160
PCBs (total)	1.06 J	ND(0.111)	ND(0.114)
2,3,7,8–TCDD (TEQ)	8.20E–06	4.45E–07	2.57E–07 J

BW1–08

Depth(ft)	0–2	8–10	11–13
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	97.5	25.0	123
Chromium (VI)	ND(0.393)	ND(0.384)	ND(0.393)
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese {IPSIC,RPSIC}	1100	1300	7040
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BW1–10

Depth(ft)	0–2	2–4	4–6	8–10	12–14
1,1–Dichloroethene	ND(0.0015)	ND(0.0013)	ND(0.0052)	ND(0.033)	ND(0.078)
Benzene	ND(0.00079)	ND(0.00068)	0.002J	0.039 J	ND(0.078)
Tetrachloroethene	ND(0.0015)	ND(0.0013)	ND(0.0011)	ND(0.029)	ND(0.069)
Vinyl chloride	ND(0.0017)	ND(0.0015)	ND(0.0013)	ND(0.021)	ND(0.050)
Benzo(a)anthracene	ND(0.058)	ND(0.059)	ND(0.059)	ND(5.9)	ND(3.1)
Benzo(a)pyrene	ND(0.063)	ND(0.064)	ND(0.064)	ND(6.4)	ND(3.4)
Benzo(b)fluoranthene	ND(0.061)	ND(0.062)	ND(0.062)	ND(6.2)	ND(3.2)
Butyl benzylphthalate	0.57	0.21 J	0.14 J	170	57
Dibenz(a,h)anthracene	ND(0.053)	ND(0.055)	ND(0.055)	ND(5.4)	ND(2.8)
Indeno(1,2,3–cd)pyrene	ND(0.073)	ND(0.075)	ND(0.075)	ND(7.5)	ND(3.9)
Antimony	ND(0.256)	ND(0.262)	ND(0.263)	1.17 J	1.07
Arsenic {RDC}	3.24	4.64	3.87	5.71	8.65
Chromium (total)	5.23	5.72	5.79	52.8	107
Chromium (III)	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA
Cyanide (total)	ND(0.178)	0.256 J	ND(0.182)	0.913	1.97
Iron	NA	NA	NA	NA	NA
Lead	3.67	3.52	5.06	46.3	104
Manganese	145	177	235	498	721
PCBs (total) {RDC, IDC}	0.266 J	0.083 J	0.125 J	62.69 J	25.01 J
2,3,7,8–TCDD (TEQ)	3.12E–06 J	3.87E–07 J	9.53E–07 J	1.35E–04 J	5.71E–04 J

BW1–01

Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0047)	ND(0.31)
Benzene	ND(0.0047)	0.39
Tetrachloroethene	ND(0.0047)	ND(0.31)
Vinyl chloride	ND(0.0094)	ND(0.62)
Benzo(a)anthracene	ND(0.35)	6.2 J
Benzo(a)pyrene	ND(0.35)	ND(8.9)
Benzo(b)fluoranthene	ND(0.35)	ND(8.9)
Butyl benzylphthalate	ND(0.35)	36
Dibenz(a,h)anthracene	ND(0.35)	ND(8.9)
Indeno(1,2,3–cd)pyrene	ND(0.35)	2.2 J
Antimony	ND(2.15)	35
Arsenic {RDC}	4	19.1
Chromium (total) {RPSIC, IPSIC}	9.71 J	1520
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.536)	1.53
Iron	NA	NA
Lead {RDC, IDC}	7.22	3950
Manganese	273	1070
PCBs (total) {RDC,IDC}	ND(1.05)	46 J
2,3,7,8–TCDD (TEQ) {RDC, IDC}	6.133E–07 J	1.89E–03 J

SBTT5

Depth(ft)	3–5
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	0.19
Benzo(a)pyrene	0.14 J
Benzo(b)fluoranthene	0.24
Butyl benzylphthalate	0.13 J
Dibenz(a,h)anthracene	0.023 J
Indeno(1,2,3–cd)pyrene	0.053 J
Antimony	2.33
Arsenic	4.05
Chromium (total)	143
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.93
Iron	68800
Lead	202
Manganese {IPSIC}	1790
PCBs (total)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA

BW1–09

Depth(ft)	0–2	8–10	19–21
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic {RDC}	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	94.9	15.8	50.8
Chromium (VI)	ND(0.409)	ND(0.384)	ND(0.402)
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese {RPSIC, IPSIC}	3670	340	1540
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SBDW20

Depth(ft)	40–42
1,1–Dichloroethene	ND [ND]
Benzene	ND [ND]
Tetrachloroethene	ND [ND]
Vinyl chloride	0.004 J [0.015]
Benzo(a)anthracene	ND [ND]
Benzo(a)pyrene	ND [ND]
Benzo(b)fluoranthene	ND [ND]
Butyl benzylphthalate	0.38 [ND]
Dibenz(a,h)anthracene	ND [ND]
Indeno(1,2,3–cd)pyrene	ND [ND]
Antimony	ND(0.295) [ND(0.298)]
Arsenic	1.58 [1.71]
Chromium (total)	3.26 [2.96]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	ND [ND]
Iron	2950 [2820]
Lead	2.27 [1.83]
Manganese	93.5 [95.1]
PCBs (total)	ND(0.57) [ND(0.60)]
2,3,7,8–TCDD (TEQ)	NA [NA]

SBMW16

Depth(ft)	5–7
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	0.0024 J
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(0.228)
Arsenic	0.73
Chromium (total)	4.01
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	3020
Lead	2.25
Manganese	78.4
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

SBDW16

Depth(ft)	16–18
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(0.275)
Arsenic	2.79
Chromium (total)	3.81
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	5540
Lead	1.68
Manganese	179
PCBs (total)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA

SBSB4

Depth(ft)	6–8
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	0.054 J
Benzo(a)pyrene	0.041 J
Benzo(b)fluoranthene	0.071 J
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	0.027 J
Antimony	0.341
Arsenic	1.35
Chromium (total)	10.3
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	14200
Lead	0.711
Manganese	563
PCBs (total)	ND(1.08)
2,3,7,8–TCDD (TEQ)	NA

TPW1–01

Depth(ft)	0–0
1,1–Dichloroethene	ND(0.03)
Benzene	0.045 J
Tetrachloroethene	4
Vinyl chloride	ND(0.019)
Benzo(a)anthracene	ND(0.069)
Benzo(a)pyrene	ND(0.075)
Benzo(b)fluoranthene	ND(0.073)
Butyl benzylphthalate	0.17 J
Dibenz(a,h)anthracene	ND(0.064)
Indeno(1,2,3–cd)pyrene	ND(0.088)
Antimony	1.42 J
Arsenic	5.47
Chromium (total)	39.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.362 J
Iron	NA
Lead	135 J
Manganese	818 J
PCBs (total)	0.080 J
2,3,7,8–TCDD (TEQ)	NA

TPW1–02

Depth(ft)	0–0
1,1–Dichloroethene	ND(0.025)
Benzene	ND(0.025)
Tetrachloroethene	3.8
Vinyl chloride	ND(0.016)
Benzo(a)anthracene	ND(0.067)
Benzo(a)pyrene	ND(0.073)
Benzo(b)fluoranthene	ND(0.07)
Butyl benzylphthalate	ND(0.062)
Dibenz(a,h)anthracene	ND(0.062)
Indeno(1,2,3–cd)pyrene	ND(0.085)
Antimony	ND(0.595)
Arsenic	2.95
Chromium (total)	37.4
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	1.75
Iron	NA
Lead	8.67
Manganese {IPSIC}	2080
PCBs (total)	ND(0.04)
2,3,7,8–TCDD (TEQ)	NA

TPW1–03

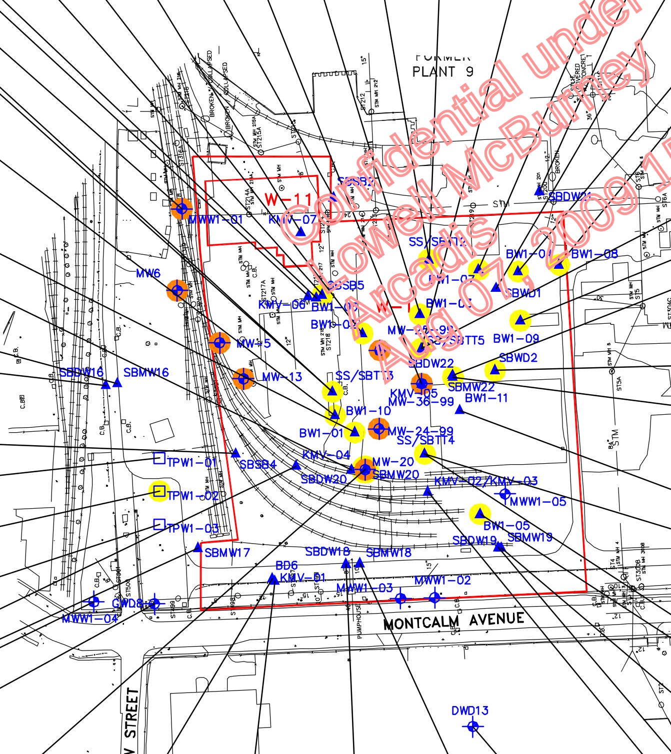
Depth(ft)	0–0
1,1–Dichloroethene	ND(0.019)
Benzene	ND(0.019)
Tetrachloroethene	5.6
Vinyl chloride	ND(0.012)
Benzo(a)anthracene	ND(0.066)
Benzo(a)pyrene	ND(0.072)
Benzo(b)fluoranthene	ND(0.069)
Butyl benzylphthalate	ND(0.061)
Dibenz(a,h)anthracene	ND(0.061)
Indeno(1,2,3–cd)pyrene	ND(0.084)
Antimony	ND(0.585)
Arsenic	5.75
Chromium (total)	19.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	1.65
Iron	NA
Lead	12.5
Manganese	511
PCBs (total)	ND(0.039)
2,3,7,8–TCDD (TEQ)	NA

KMV–04

Depth(ft)	22–23
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	3.73 J
2,3,7,8–TCDD (TEQ)	NA

SBMW17

Depth(ft)	6–8	10–12
1,1–Dichloroethene	ND	ND
Benzene	ND	ND
Tetrachloroethene	0.0025 J	ND
Vinyl chloride	ND	ND
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(b)fluoranthene	ND	ND
Butyl benzylphthalate	ND	ND
Dibenz(a,h)anthracene	ND	ND
Indeno(1,2,3–cd)pyrene	ND	ND
Antimony	0.664	ND(0.54)
Arsenic	2.43	0.603
Chromium (total)	30.5	1.69
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.62	ND
Iron	16300	2060
Lead	6.17	ND
Manganese	248	425
PCBs (total)	ND(0.6)	ND(0.9)
2,3,7,8–TCDD (TEQ)	NA	NA



MWW1–04

Depth(ft)	2–4	4–6
1,1–Dichloroethene	ND(0.0058)	ND(0.0051)
Benzene	ND(0.0058)	ND(0.0051)
Tetrachloroethene	ND(0.0058)	ND(0.0051)
Vinyl chloride	ND(0.012)	ND(0.010)
Benzo(a)anthracene	4.9	4.2
Benzo(a)pyrene {RDC}	4.0	3.3
Benzo(b)fluoranthene	5.6	4.2
Butyl benzylphthalate	0.75 J	0.67 J
Dibenz(a,h)anthracene	0.67 J	0.43 J
Indeno(1,2,3–cd)pyrene	2.2	1.5
Antimony	1.19 J	0.732 J
Arsenic	4.78	4.6
Chromium (total)	31.6	16.9
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	1.3	1.32 J
Iron	NA	NA
Lead	71.9	71.7
Manganese	257	198
PCBs (total) {RDC}	5.89 J	5.44 J
2,3,7,8–TCDD (TEQ)	6.88E–05 J	4.16E–05

GWD8

Depth(ft)	0–2	4–6
1,1–Dichloroethene	ND(0.00069)	ND(0.00085)
Benzene	ND(0.00065)	0.00085 J
Tetrachloroethene	ND(0.00076)	ND(0.00094)
Vinyl chloride	ND(0.00068)	ND(0.00084)
Benzo(a)anthracene	ND(0.058)	ND(0.063)
Benzo(a)pyrene	ND(0.063)	ND(0.068)
Benzo(b)fluoranthene	ND(0.061)	ND(0.066)
Butyl benzylphthalate	ND(0.053)	0.094 J
Dibenz(a,h)anthracene	ND(0.053)	ND(0.058)
Indeno(1,2,3–cd)pyrene	ND(0.073)	ND(0.08)
Antimony	ND(0.513)	ND(0.559)
Arsenic	4.34	2.54
Chromium (total)	15.8	50.4
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	19.9	6.17
Manganese	305	1350
PCBs (total)	ND(0.04)	ND(0.04)
2,3,7,8–TCDD (TEQ)	NA	NA

BD6

Depth(ft)	0–2	8–10	76–78	98–100	134–136
1,1–Dichloroethene	ND(0.0012)	ND(0.0015)	ND(0.0015)	ND(0.0011)	ND(0.0043)
Benzene	ND(0.00066)	ND(0.00081)	ND(0.00081)	ND(0.00061)	ND(0.0043)
Tetrachloroethene	ND(0.0012)	ND(0.0015)	ND(0.0015)	ND(0.0011)	ND(0.0043)
Vinyl chloride	ND(0.0014)	ND(0.0017)	ND(0.0018)	ND(0.0013)	ND(0.0086)
Benzo(a)anthracene	ND(0.06)	0.58	ND(0.065)	ND(0.062)	ND(0.37)
Benzo(a)pyrene	ND(0.066)	0.49	ND(0.071)	ND(0.067)	ND(0.37)
Benzo(b)fluoranthene	ND(0.064)	0.77	ND(0.069)	ND(0.065)	ND(0.37)
Butyl benzylphthalate	ND(0.056)	ND(0.057)	ND(0.06)	ND(0.057)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.056)	0.089 J	ND(0.06)	ND(0.057)	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(0.077)	0.29 J	ND(0.083)	ND(0.078)	ND(0.37)
Antimony	ND(0.537)	ND(0.545)	ND(0.579)	ND(0.549)	ND(2.23)
Arsenic	2.86	1.79	4.76	1.5	3.44
Chromium (total)	8.78	7.07	9.13	3.04	6.63
Chromium (III)	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA
Lead	9.24	6.17	4.52	1.92	3.13
Manganese	162	111	210	114	230
PCBs (total)	ND(0.036)	ND(0.037)	ND(0.039)	ND(0.037)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA	NA

SBMW20

Depth(ft)	23–25
1,1–Dichloroethene	ND [ND]
Benzene	ND [ND]
Tetrachloroethene	ND [ND]
Vinyl chloride	ND [ND]
Benzo(a)anthracene	5.6 J [6.3]
Benzo(a)pyrene	ND [ND]
Benzo(b)fluoranthene	4.2 J [8.3]
Butyl benzylphthalate	8.2 J [ND]
Dibenz(a,h)anthracene	ND [ND]
Indeno(1,2,3–cd)pyrene	ND [ND]
Antimony	1.01 [0.971]
Arsenic	2.89 [2.28]
Chromium (total)	17.2 [14.2]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	1.9 [3.5]
Iron	10600 [8430]
Lead	112 [89.8]
Manganese	252 [170]
PCBs (total) {RDC, IDC}	47.5 J [52.75 J]
2,3,7,8–TCDD (TEQ)	NA [NA]

KMV–01

Depth(ft)	15–16
1,1–Dichloroethene	ND
Benzene	0.057
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND(0.03)
2,3,7,8–TCDD (TEQ)	NA

SBDW18

Depth(ft)	34–36
1,1–Dichloroethene	ND [ND]
Benzene	ND [ND]
Tetrachloroethene	ND [ND]
Vinyl chloride	ND [ND]
Benzo(a)anthracene	ND [ND]
Benzo(a)pyrene	ND [ND]
Benzo(b)fluoranthene	ND [ND]
Butyl benzylphthalate	ND [ND]
Dibenz(a,h)anthracene	ND [ND]
Indeno(1,2,3–cd)pyrene	ND [ND]
Antimony	ND(0.294) [ND(0.278)]
Arsenic	2.15 [3.16]
Chromium (total)	3.81 [4.83]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	1.9 [ND]
Iron	3620 [3020]
Lead	1.8 [1.84]
Manganese	124 [110]
PCBs (total)	ND(0.57) [ND(0.54)]
2,3,7,8–TCDD (TEQ)	NA [NA]

SBMW18

Depth(ft)	16–18	34–36
1,1–Dichloroethene	ND	NA
Benzene	ND	NA
Tetrachloroethene	ND	NA
Vinyl chloride	ND	NA
Benzo(a)anthracene	0.042 J	ND
Benzo(a)pyrene	0.025 J	ND
Benzo(b)fluoranthene	0.043 J	ND
Butyl benzylphthalate	ND	ND
Dibenz(a,h)anthracene	ND	ND
Indeno(1,2,3–cd)pyrene	ND	ND
Antimony	0.467	ND(0.294)
Arsenic	1.61	NA
Chromium (total)	21.4	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	[illegible]	NA
Iron	9980	NA
Lead	113	NA
Manganese	227	NA
PCBs (total)	ND(0.6)	ND(0.6)
2,3,7,8–TCDD (TEQ)	NA	NA

DWD13

Depth(ft)	0–2	4–6
1,1–Dichloroethene	ND(0.0012)	ND(0.0011)
Benzene	ND(0.00063)	ND(0.00061)
Tetrachloroethene	ND(0.0012)	ND(0.0011)
Vinyl chloride	ND(0.0014)	ND(0.0013)
Benzo(a)anthracene	ND(0.062)	0.062 J
Benzo(a)pyrene	ND(0.067)	ND(0.067)
Benzo(b)fluoranthene	0.074 J	0.078 J
Butyl benzylphthalate	ND(0.057)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.057)
Indeno(1,2,3–cd)pyrene	ND(0.078)	ND(0.078)
Antimony	0.324 J	0.524 J
Arsenic	4.29	5.29
Chromium (total)	13.4 J	19.8
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	20 J	56.2
Manganese	381 J	301
PCBs (total)	ND(0.037)	ND(0.037)
2,3,7,8–TCDD (TEQ)	NA	NA

KMV–02/KMV–03

Depth(ft)	4–6	26–27
1,1–Dichloroethene	ND	ND
Benzene	ND	ND
Tetrachloroethene	ND	ND
Vinyl chloride	ND	ND
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	NA	NA
Manganese	NA	NA
PCBs (total) {RDC}	4.03 J	1.83 J
2,3,7,8–TCDD (TEQ)	NA	NA

SBDW19

Depth(ft)	36–38
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(0.378)
Arsenic {RDC}	8.3
Chromium (total)	3.55
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	10800
Lead	2.26
Manganese	340
PCBs (total)	ND(0.75)
2,3,7,8–TCDD (TEQ)	NA

SBMW19

Depth(ft)	25–27
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	0.0029 J
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	1.41
Arsenic	1.18
Chromium (total)	4.38
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	4050
Lead	70.2
Manganese	32.4
PCBs (total)	ND(0.6)
2,3,7,8–TCDD (TEQ)	NA

BW1–05

Depth(ft)	0–2	8–10	25–27
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	272	13.5	144
Chromium (VI)	ND(0.386)	ND(0.446)	ND(0.399)
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese {IPSIC}	1900	334	877
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	1.04E–05	NA	NA

SBDW22

Depth(ft)	32–34
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	0.042 J
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	0.028 J
Butyl benzylphthalate	0.39
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND(0.394)
Arsenic	3.36
Chromium (total)	7.99
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	7500
Lead	8.52
Manganese	216
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

SBWD2

Depth(ft)	4–6	10–12	14–16	20–22	24–26	30–32	34–36
1,1–Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	0.0075 J	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	NA	NA	NA	NA	0.063 J	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	0.093 J	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	0.12 J	NA	NA
Butyl benzylphthalate	NA	NA	NA	NA	ND	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	ND	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA	NA	0.046 J	NA	NA
Antimony	NA	NA	NA	NA	ND(0.598)	NA	NA
Arsenic	NA	NA	NA	NA	1.78	NA	NA
Chromium (total)	NA	NA	NA	NA	13.8	NA	NA
Chromium (III)	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA	ND	NA	NA
Iron	NA	NA	NA	NA	7430	NA	NA
Lead {RDC, IDC}	NA	NA	NA	NA	1300	NA	NA
Manganese	NA	NA	NA	NA	223	NA	NA
PCBs (total)	NA	NA	NA	NA	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA	NA	NA	NA

SBMW22

Depth(ft)	16–18
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	7.7 J
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	150
Arsenic	20
Chromium (total)	207
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	3.1
Iron	120000
Lead {RDC, IDC}	1350
Manganese {RPSIC, IPSIC}	3900
PCBs (total) {RDC}	8.2 J
2,3,7,8–TCDD (TEQ)	NA

BW1–11

Depth(ft)	0–2	8–10	18–20
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	1.21E–05 J	9.40E–06 J	3.42E–07 J

SSTT04

Depth(ft)	0–0
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	32
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	22.5
Arsenic {RDC}	44.3
Chromium (total) {RPSIC, IPSIC}	1660
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	64800
Lead	16.4
Manganese {RPSIC, IPSIC}	4490
PCBs (total)	1.33 J
2,3,7,8–TCDD (TEQ)	NA

SBTT4

Depth(ft)	3–10
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	3 J
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	5.44
Arsenic {RDC}	9.46
Chromium (total) {RPSIC, IPSIC}	340
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.38
Iron	14200
Lead	48.3
Manganese {IPSIC}	1690
PCBs (total)	2.1 J
2,3,7,8–TCDD (TEQ)	NA

LEGEND:

- MWW1–02 — GROUNDWATER MONITORING WELL LOCATION
- BM1–08 — SOIL BORING LOCATION
- SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- TPW1–01 — TEST PIT SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- W–1 = WEST YARD
- W–11 = SALVAGE YARD SUMP DRAIN

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

HISTORIC DATA FROM PARSONS REPORT

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED.

0 200' 400'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs W-1 AND -11 - SOIL

ENCORE

FIGURE
4-12

X: 64411X00, X01.DWG 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT–DL
4/25/02 SYR–54–GMS DJP
64411210/64411C03.DWG

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MWW1-01

Date Collected	8/28/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	0.00022 J	ND(0.00016)
Ethylbenzene	0.00024 J	0.00044 J
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.00036 J	0.00034 J
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.025)	ND(0.011)
Antimony {RDWC, IDWC}	0.0069 J	ND(0.0022)
Arsenic	0.0186	0.0048 J
Barium	0.144	0.0563
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.010)	ND(0.0017)
Lead	ND(0.003)	ND(0.0025)
Manganese	0.831	0.735
Nickel	0.0084 J	0.0068 J
Thallium {RDWC, IDWC}	0.0054 J	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	3.53E-09	2.02E-09

MWW10-04

Date Collected	2/11/2002
1,1,1-Trichloroethane	0.00062 J
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.0031 J
Benzene	0.00019 J
Ethylbenzene	0.00015 J
Tetrachloroethene	ND(0.00023)
Toluene	0.00071 J
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.005 J
Barium	0.104
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.483 J
Nickel	0.0031 J
Thallium	0.000028 J
Vanadium	ND(0.00082)
PCBs (total) {RDWC, IDWC}	0.0009 J
2,3,7,8-TCDD (TEQ)	1.74E-09

MW-28-99

Date Collected	6/22/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	0.0062 J	ND(0.00051)
Benzene	0.0019	0.0028
Ethylbenzene	0.00072 J	0.00058 J
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.0006 J	0.00078 J
Vinyl chloride	0.00026 J	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0062 J	0.0043 J
Barium {RDWC, IDWC}	3.55	4.07
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.0033)	0.0020 J
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.19	0.129
Nickel	0.0159 J	0.0066 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	0.001 J	ND(0.00082)
PCBs (total)	0.0005 J	ND(0.00019)
2,3,7,8-TCDD (TEQ) {GCC}	6.39E-09	1.77E-08

MWW10-01

Date Collected	9/6/2001
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	0.00058 J
Ethylbenzene	0.001
Tetrachloroethene	ND(0.00023)
Toluene	0.0019
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.011)
Antimony	ND(0.0022)
Arsenic {RDWC, IDWC}	0.0591
Barium	0.109
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.157
Nickel	0.0242
Thallium {RDWC, IDWC}	0.0055 J
Vanadium	0.0024 J
PCBs (total)	0.0004 J
2,3,7,8-TCDD (TEQ)	NA

MWW10-06

Date Collected	2/12/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	ND(0.00016)
Ethylbenzene	0.00017 J
Tetrachloroethene	ND(0.00023)
Toluene	0.00059 J
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	ND(0.0039)
Barium	0.051
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.343
Nickel	0.0034 J
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	4.88E-09

MWW10-0[illegible]

Lowell McBurney

Date Collected	[illegible]
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	ND(0.00018)
Vinyl chloride	ND([illegible])
bis(2-Ethylhexyl)phthalate {[illegible] IDWC}	0.15[illegible]
Antimony	ND(0.0022)
Arsenic	ND(0.0039)
Barium	0.0105
Chromium (total)	0.0065 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0109
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	0.0017 J
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	ND(1.32E-09)

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MWW8-01

Date Collected	9/11/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	0.00018 J	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	0.00031 J	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.0882	0.105
Chromium (total)	ND(0.0014)	0.005 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese {RDWC}	0.676	0.981
Nickel	0.0066 J	0.0048 J
Thallium	ND(0.005)	0.000021 J
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWD1

Date Collected	8/27/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.139	0.3
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0353	0.112
Nickel	ND(0.02)	ND(0.0022)
Thallium {RDWC, IDWC}	0.005 J	0.000048 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW5-02

Date Collected	9/12/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	0.00022 J	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0051 J	ND(0.0039)
Barium	0.0784	0.0855
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.305	0.535
Nickel	0.0027 J	0.0036 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWD2

Date Collected	8/29/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00075)	0.00038 J [ND(0.0015)]
1,1,2-Trichloroethane	ND(0.0015)	ND(0.0003) [ND(0.003)]
1,1-Dichloroethene	ND(0.0012)	ND(0.00024) [ND(0.0024)]
1,2-Dichloroethane	ND(0.001)	ND(0.00021) [ND(0.0021)]
Acetone	ND(0.0026)	ND(0.00051) [ND(0.0051)]
Benzene	ND(0.0008)	0.00018 J [ND(0.0016)]
Ethylbenzene	ND(0.0006)	ND(0.00012) [ND(0.0012)]
Tetrachloroethene	ND(0.0012)	ND(0.00023) [ND(0.0023)]
Toluene	ND(0.0009)	0.00031 J [ND(0.0018)]
Vinyl chloride	ND(0.00075)	ND(0.00015) [ND(0.0015)]
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027) [ND(0.0027)]
Antimony {RDWC, IDWC}	0.0098 J	0.0078 J [0.0088 J]
Arsenic	0.0078 J	0.0073 J [0.0092 J]
Barium	0.0306	0.032 [0.034]
Chromium (total)	0.0172	0.0096 J [0.0096 J]
Chromium (III)	NA	NA [NA]
Chromium (VI)	NA	NA [NA]
Cyanide (total)	NA	NA [NA]
Lead	ND(0.0025)	ND(0.0025) [ND(0.0025)]
Manganese	0.0076 J	0.0023 J [ND(0.0009)]
Nickel	0.0163 J	0.0108 J [0.0114 J]
Thallium {RDWC, IDWC}	0.009 J	0.000026 J [0.000039 J]
Vanadium {RDWC, IDWC}	0.0732	0.0459 [0.0449]
PCBs (total)	ND(0.00019)	ND(0.00019) [ND(0.00019)]
2,3,7,8-TCDD (TEQ)	NA	NA [NA]

MWW5-01

Date Collected	9/14/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.002)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.002)	ND(0.0003)
1,1-Dichloroethene	0.00078 J	ND(0.00024)
1,2-Dichloroethane	ND(0.002)	ND(0.00021)
Acetone	ND(0.02)	ND(0.00051)
Benzene	ND(0.002)	0.00035 J
Ethylbenzene	ND(0.002)	ND(0.00012)
Tetrachloroethene	ND(0.002)	ND(0.00023)
Toluene	0.00058 J	0.00026 J
Vinyl chloride	ND(0.002)	0.00027 J
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0068)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	0.0473
Barium	0.178	0.161
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.375	0.815
Nickel	0.0143 J	0.0113 J
Thallium {RDWC, IDWC}	0.0053 J	ND(0.000018)
Vanadium	0.001 J	ND(0.00082)
PCBs (total) {RDWC, IDWC}	ND(0.00019)	0.0017 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWW10-03

Date Collected	2/11/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	0.00031 J
Ethylbenzene	0.00021 J
Tetrachloroethene	ND(0.00023)
Toluene	0.0011
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	ND(0.0039)
Barium	0.0444
Chromium (total)	0.0053 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0384 J
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	1.75E-09

MW-10

Date Collected	6/21/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015) [ND(0.00015)]	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003) [ND(0.0003)]	ND(0.0003)
1,1-Dichloroethene	ND(0.00024) [ND(0.00024)]	ND(0.00024)
1,2-Dichloroethane	ND(0.00021) [ND(0.00021)]	ND(0.00021)
Acetone	ND(0.00051) [ND(0.00051)]	ND(0.00051)
Benzene	0.00034 J [0.00038 J]	0.00019 J
Ethylbenzene	ND(0.00012) [ND(0.00012)]	ND(0.00012)
Tetrachloroethene	ND(0.00023) [ND(0.00023)]	ND(0.00023)
Toluene	ND(0.00018) [ND(0.00018)]	ND(0.00018)
Vinyl chloride	ND(0.00015) [ND(0.00015)]	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027) [ND(0.0027)]	ND(0.0027)
Antimony	ND(0.0022) [ND(0.0022)]	ND(0.0022)
Arsenic	0.019 [0.0187]	0.0192
Barium	0.0844 [0.0854]	0.0629
Chromium (total)	ND(0.0014) [ND(0.0014)]	ND(0.0014)
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	ND(0.0033) [ND(0.0033)]	0.0061 J
Lead	ND(0.0025) [ND(0.0025)]	ND(0.0025)
Manganese	0.435 [0.417]	0.464
Nickel	0.0052 J [0.005 J]	0.0035 J
Thallium {RDWC, IDWC}	0.0053 J [ND(0.005)]	0.000043 J
Vanadium	ND(0.00082) [ND(0.00082)]	ND(0.00082)
PCBs (total)	ND(0.00019) [ND(0.00019)]	ND(0.00019)
2,3,7,8-TCDD (TEQ)	2.526E-09 [2.576E-09]	3.80E-09

MW-29-99

Date Collected	6/22/2001	1/10/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	0.00068 J	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	0.00018 J	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.0724	0.0759
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.0033)	0.0023
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.34	0.315 J
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	0.0004 J
2,3,7,8-TCDD (TEQ) {RDWC, IDWC, GCC}	ND(1.24E-09)	5.89E-05

MW-30-99

Date Collected	6/25/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	0.0041 J	ND(0.00051)
Benzene	0.00026 J	0.00021 J
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	0.00024 J
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.011)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0233	0.0245
Barium	0.196	0.225
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.0033)	ND(0.0017)
Lead	ND(0.0025)	ND(0.0025)
Manganese {RDWC}	0.952	0.946
Nickel	ND(0.0022)	ND(0.0022)
Thallium {RDWC, IDWC}	0.0091 J	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	ND(2.899E-09)	7.03E-09 J

MW-42-99

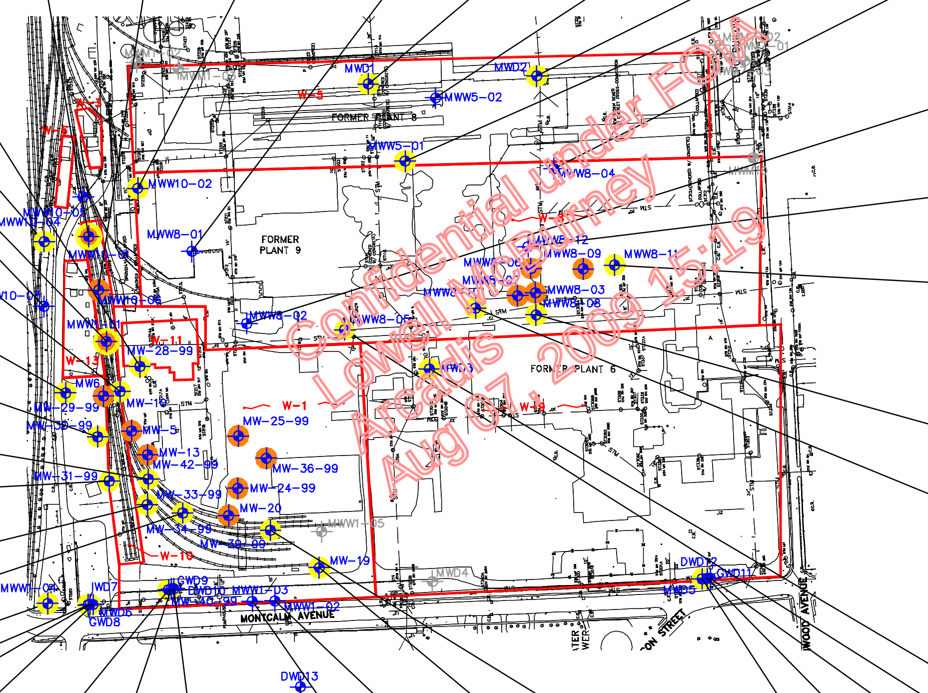
Date Collected	6/21/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.0005)	ND(0.0005)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.0008)	ND(0.0008)
1,2-Dichloroethane	ND(0.0007)	ND(0.0007)
Acetone	0.0086 J	ND(0.0017)
Benzene {RDWC, IDWC}	0.082	0.091
Ethylbenzene	0.0063	0.0045
Tetrachloroethene	ND(0.00077)	ND(0.00077)
Toluene	0.015	0.011
Vinyl chloride {RDWC, IDWC}	0.0031 J	0.0025 J
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0041 J	ND(0.0039)
Barium	0.127	0.211
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.0088 J	0.0111
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.108	0.182
Nickel	0.0058 J	0.005 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	3.09E-09	3.13E-09 J

MW-31-99

Date Collected	6/25/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	0.00045 J	ND(0.00021)
Acetone	0.016	ND(0.00051)
Benzene	0.00016 J	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	0.00043 J	0.0007 J
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride {RDWC, IDWC}	0.018	0.0043
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.011)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.004 J	0.0053 J
Barium	0.54	0.387
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.006 J	0.0069 J
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.184	0.105
Nickel	0.0024 J	0.003 J
Thallium {RDWC, IDWC}	0.0064 J	ND(0.000018)
Vanadium	0.0021 J	0.0021 J
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	ND(2.12E-09)	ND(2.942E-09)

MW-33-99

Date Collected	6/25/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	0.0038 J	ND(0.00051)
Benzene {RDWC, IDWC}	0.0062	0.01
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	0.00028 J
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.118	0.142
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.0033)	0.0068 J
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.381	0.457
Nickel	0.0036 J	0.0043 J
Thallium {RDWC, IDWC}	0.0066 J	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	0.0005	ND(0.00019)
2,3,7,8-TCDD (TEQ)	ND(2.901E-09)	ND(1.17E-09)



MW-34-99

Date Collected	8/30/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015) [ND(0.00015)]
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003) [ND(0.0003)]
1,1-Dichloroethene	ND(0.001)	ND(0.00024) [ND(0.00024)]
1,2-Dichloroethane	ND(0.001)	ND(0.00021) [ND(0.00021)]
Acetone	0.0013 J	ND(0.00051) [ND(0.00051)]
Benzene {RDWC, IDWC}	0.0073	0.0093 [0.01]
Ethylbenzene	0.015	0.018 [0.02]
Tetrachloroethene	ND(0.001)	ND(0.00023) [ND(0.00023)]
Toluene	0.0041	0.0055 [0.0057]
Vinyl chloride {RDWC, IDWC}	0.0056	0.0078 [0.0088]
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027) [ND(0.0027)]
Antimony {RDWC, IDWC}	0.0073 J	ND(0.0022) [ND(0.0022)]
Arsenic	ND(0.01)	0.0052 J [0.0067 J]
Barium	0.73	0.719 [0.724]
Chromium (total)	ND(0.01)	ND(0.0014) [ND(0.0014)]
Chromium (III)	NA	NA [NA]
Chromium (VI)	NA	NA [NA]
Cyanide (total)	0.0063 J	0.0063 J [0.0061 J]
Lead	ND(0.003)	ND(0.0025) [ND(0.0025)]
Manganese	0.61	0.582 [0.565]
Nickel	ND(0.02)	ND(0.0022) [ND(0.0022)]
Thallium	ND(0.01)	ND(0.000018) [ND(0.000018)]
Vanadium	ND(0.01)	ND(0.00082) [ND(0.00082)]
PCBs (total)	ND(0.0007)	ND(0.00019) [ND(0.00019)]
2,3,7,8-TCDD (TEQ) {GCC}	1.63E-09	1.38E-08 [2.93E-08]

GWD8

Date Collected	9/14/2001	1/10/2002
1,1,1-Trichloroethane	ND(0.04)	ND(0.00047)
1,1,2-Trichloroethane	ND(0.04)	ND(0.00094)
1,1-Dichloroethene	ND(0.04)	ND(0.00075)
1,2-Dichloroethane	ND(0.04)	ND(0.00066)
Acetone {RDWC, IDWC}	3.1	0.14 J
Benzene	ND(0.04)	0.0045
Ethylbenzene	ND(0.04)	ND(0.00037)
Tetrachloroethene	ND(0.04)	ND(0.00072)
Toluene	ND(0.04)	ND(0.00056)
Vinyl chloride	ND(0.04)	ND(0.00047)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	0.0044 J
Barium	0.252	0.358
Chromium (total)	ND(0.01)	0.0023 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0703	0.0641 J
Nickel	ND(0.02)	0.0064 J
Thallium	ND(0.01)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWD6

Date Collected	9/11/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.00025 J	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0053 J	ND(0.0039)
Barium	0.52	0.157
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.383	0.125
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

GWD9

Date Collected	1/22/2002
1,1,1-Trichloroethane	ND(0.001)
1,1,2-Trichloroethane	ND(0.002)
1,1-Dichloroethene	ND(0.0016)
1,2-Dichloroethane	ND(0.0014)
Acetone	0.31 J
Benzene	ND(0.0011)
Ethylbenzene	ND(0.0008)
Tetrachloroethene	ND(0.0015)
Toluene	ND(0.0012)
Vinyl chloride	ND(0.001)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0071 J
Barium	0.373
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	ND(0.0009)
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00016)
2,3,7,8-TCDD (TEQ)	NA

DWD13

Date Collected	2/1/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	ND(0.00018)
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	0.0023 J
Arsenic	ND(0.0039)
Barium	0.138
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0413
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA

MWW1-02

Date Collected	1/17/2002
1,1,1-Trichloroethane	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)
1,1-Dichloroethene	ND(0.001)
1,2-Dichloroethane	ND(0.001)
Acetone	ND(0.01)
Benzene	ND(0.001)
Ethylbenzene	ND(0.001)
Tetrachloroethene	ND(0.001)
Toluene	ND(0.001)
Vinyl chloride	ND(0.001)
bis(2-Ethylhexyl)phthalate	ND(0.005)
Antimony	ND(0.025)
Arsenic	0.012
Barium	0.163
Chromium (total)	ND(0.01)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.0027
Lead	ND(0.003)
Manganese	0.558 J
Nickel	ND(0.02)
Thallium	ND(0.001)
Vanadium	ND(0.01)
PCBs (total)	ND(0.0007)
2,3,7,8-TCDD (TEQ)	ND(1.477E-09)

MW-39-99

Date Collected	8/28/2001	1/10/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	0.0033	0.0032
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.00027 J	0.00029 J
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	0.0027 J	ND(0.0068)
Antimony	0.0058 J	ND(0.0022)
Arsenic	ND(0.01)	0.0042 J
Barium	0.0959	0.0606
Chromium (total)	ND(0.01)	0.0018 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.0089	0.0078
Lead	ND(0.003)	ND(0.0025)
Manganese	0.0472	0.0791 J
Nickel	0.0029 J	0.0092 J
Thallium	ND(0.01)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total) {RDWC, IDWC, GCC}	0.004 J	0.005 J
2,3,7,8-TCDD (TEQ)	8.88E-09	NA

DWD12

Date Collected	1/18/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.00066 J
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	ND(0.00018)
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0259
Barium	0.202
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	ND(0.0009)
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA

MWD3

Date Collected	8/27/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.004)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.004)	ND(0.0003)
1,1-Dichloroethene	ND(0.004)	ND(0.00024)
1,2-Dichloroethane	ND(0.004)	ND(0.00021)
Acetone	0.16	0.014 J
Benzene	ND(0.004)	ND(0.00016)
Ethylbenzene	ND(0.004)	ND(0.00012)
Tetrachloroethene	ND(0.004)	0.00089 J
Toluene	ND(0.004)	ND(0.00018)
Vinyl chloride	ND(0.004)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony {RDWC, IDWC}	0.0046 J	0.008 J
Arsenic	ND(0.01)	0.0041 J
Barium	0.0741	0.0505
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.144	0.0204
Nickel	0.0023 J	0.0027 J
Thallium {RDWC, IDWC}	0.0074 J	ND(0.000018)
Vanadium	ND(0.01)	0.0023 J
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW1-04

Date Collected	2/19/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.033 J
Benzene	0.00019 J
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	0.00039 J
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0065 J
Barium	0.0951
Chromium (total)	0.0022 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	ND(0.0009)
Nickel	0.0071 J
Thallium	ND(0.000018)
Vanadium {RDWC}	0.0245
PCBs (total) {RDWC, IDWC}	0.0008 J
2,3,7,8-TCDD (TEQ)	2.00E-09

IWD7

Date Collected	9/11/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.0021)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0043)
1,1-Dichloroethene	ND(0.00024)	ND(0.0034)
1,2-Dichloroethane	ND(0.00021)	ND(0.003)
Acetone	ND(0.00051)	ND(0.0073)
Benzene	ND(0.00016)	ND(0.0023)
Ethylbenzene	ND(0.00012)	ND(0.0017)
Tetrachloroethene	ND(0.00023)	ND(0.0033)
Toluene	ND(0.00018)	ND(0.0026)
Vinyl chloride	ND(0.00015)	ND(0.0021)
bis(2-Ethylhexyl)phthalate {RDWC, IDWC}	ND(0.0027)	0.0088
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0062 J	ND(0.0039)
Barium	0.404	0.04
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.159	0.0028 J
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	0.0025 J
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MW-40-99

Date Collected	1/10/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	ND(0.00018)
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	ND(0.0039)
Barium	0.152
Chromium (total)	0.0085 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.0028 J
Lead	ND(0.0025)
Manganese	0.28 J
Nickel	0.0032 J
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total) {RDWC, IDWC}	0.0006 J
2,3,7,8-TCDD (TEQ)	NA

DWD10

Date Collected	1/22/2002
1,1,1-Trichloroethane	ND(0.0015)
1,1,2-Trichloroethane	ND(0.003)
1,1-Dichloroethene	ND(0.0024)
1,2-Dichloroethane	ND(0.0021)
Acetone	ND(0.0051)
Benzene	ND(0.0016)
Ethylbenzene	ND(0.0012)
Tetrachloroethene	ND(0.0023)
Toluene	ND(0.0018)
Vinyl chloride	ND(0.0015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	ND(0.0039)
Barium	0.115
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0345 J
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00016)
2,3,7,8-TCDD (TEQ)	NA

MWW1-03

Date Collected	1/17/2002
1,1,1-Trichloroethane	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)
1,1-Dichloroethene	ND(0.001)
1,2-Dichloroethane	ND(0.001)
Acetone	ND(0.01)
Benzene	ND(0.001)
Ethylbenzene	ND(0.001)
Tetrachloroethene	ND(0.001)
Toluene	ND(0.001)
Vinyl chloride	ND(0.001)
bis(2-Ethylhexyl)phthalate	ND(0.02)
Antimony	ND(0.025)
Arsenic	0.0043 J
Barium	0.191
Chromium (total)	ND(0.01)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	[illegible]
Lead	ND(0.003)
Manganese	0.433 J
Nickel	0.0036 J
Thallium	ND(0.001)
Vanadium	ND(0.01)
PCBs (total)	[illegible]
2,3,7,8-TCDD (TEQ)	ND(1.420E-09)

MW-19

Date Collected	8/28/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	0.00033 J
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0068)
Antimony {RDWC, IDWC}	0.0079 J	ND(0.0022)
Arsenic	0.0223	0.0269
Barium	0.102	0.116
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	0.0038 J	0.0024 J
Lead	ND(0.003)	ND(0.0025)
Manganese	0.278	0.463
Nickel	0.0085 J	0.0135 J
Thallium	ND(0.01)	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	1.83E-09	4.71E-09

MWD5

Date Collected	8/27/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	0.00025 J
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	0.035	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.147	0.054
Chromium (total)	ND(0.01)	0.0104
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.242	0.0198
Nickel	0.0022 J	ND(0.0022)
Thallium {RDWC, IDWC}	0.0053 J	0.000038 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

GWD11

Date Collected	1/29/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.0016 J
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	ND(0.00018)
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	0.0027 J
Arsenic	0.0052 J
Barium	0.0989
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0618
Nickel	ND(0.0022)
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA

MWW8-05

Date Collected	9/12/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	0.00023 J	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.0002 J	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0341	0.028
Barium	0.0652	0.0595
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese {RDWC, IDWC}	3.24	2.99
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-04

Date Collected	9/17/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	0.0018 J	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	0.00022 J	0.00016 J
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.00075 J	0.00028 J
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0191	0.0155
Barium	0.08	0.0413
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.587	0.253
Nickel	0.0035 J	ND(0.0022)
Thallium	ND(0.005)	ND(0.000018)
Vanadium	0.0011 J	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-02

Date Collected	9/11/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	0.00015 J	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0068)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0068 J	0.013
Barium	0.0814	0.101
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.142	0.153
Nickel	0.0029 J	0.003 J
Thallium	ND(0.005)	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.00019)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-12

Date Collected	2/13/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.029
Benzene	0.00026 J
Ethylbenzene	0.00032 J
Tetrachloroethene	ND(0.00023)
Toluene	0.00086 J
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.027)
Antimony	0.0025 J
Arsenic	0.0048 J
Barium	0.16
Chromium (total)	0.0476
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.0021 J
Nickel	0.0081 J
Thallium	ND(0.000018)
Vanadium	0.0038 J
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	1.95E-09

MWW8-11

Date Collected	2/11/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	ND(0.00051)
Benzene	0.0005 J
Ethylbenzene	0.00042 J
Tetrachloroethene	ND(0.00023)
Toluene	0.0018
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0212
Barium	0.026
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese {RDWC, IDWC}	2.92 J
Nickel	0.0061 J
Thallium	ND(0.000018)
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	2.10E-09

MWW8-10

Date Collected	2/12/2002
1,1,1-Trichloroethane	ND(0.00015) [ND(0.00015)]
1,1,2-Trichloroethane	ND(0.0003) [ND(0.0003)]
1,1-Dichloroethene	ND(0.00024) [ND(0.00024)]
1,2-Dichloroethane	ND(0.00021) [ND(0.00021)]
Acetone	ND(0.00051) [0.003 J]
Benzene	0.0006 J [0.00065 J]
Ethylbenzene	0.00034 J [0.00043 J]
Tetrachloroethene	ND(0.00023) [ND(0.00023)]
Toluene	0.0019 [0.0021]
Vinyl chloride	ND(0.00015) [ND(0.00015)]
bis(2-Ethylhexyl)phthalate	ND(0.027) [ND(0.027)]
Antimony	ND(0.0022) [ND(0.0022)]
Arsenic	ND(0.0039) [ND(0.0039)]
Barium	0.307 [0.295]
Chromium (total)	ND(0.0014) [ND(0.0014)]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	NA [NA]
Lead	ND(0.0025) [ND(0.0025)]
Manganese	0.327 [0.313]
Nickel	0.0159 J [0.0152 J]
Thallium	ND(0.000018) [ND(0.000018)]
Vanadium	0.00087 J [ND(0.00082)]
PCBs (total) {RDWC, IDWC}	0.0015 [ND(0.00019)]
2,3,7,8-TCDD (TEQ)	ND(2.36E-09) [ND(1.90E-09)]

MWW8-08

Date Collected	2/15/2002
1,1,1-Trichloroethane	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)
Acetone	0.024 J
Benzene	ND(0.00016)
Ethylbenzene	0.00025 J
Tetrachloroethene	ND(0.00023)
Toluene	0.001
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0061 J
Barium	0.241
Chromium (total)	ND(0.0014)
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	0.435 J
Nickel	0.0063 J
Thallium	0.000031 J
Vanadium	ND(0.00082)
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ) {GCC}	1.97E-08

LEGEND:

- MWD5 — GROUNDWATER MONITORING WELL LOCATION
- BP6 — SOIL BORING LOCATION
- SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- FENCED AREA
- APPROXIMATE AOI AREA

W-1 = WEST YARD
W-3 = FORMER PLANT 8 FLAMMABLE LIQUID STORAGE TANK FARM
W-5 = FORMER PLANT 8 BASEMENT AST AREA
W-6 = FORMER PLANT 8 FLAMMABLE MATERIALS STORAGE AREA
W-8 = FORMER PLANT 9 BASEMENT AST
W-9 = FORMER CENTRAL FOUNDRY
W-10 = RAILROAD MARSHALLING AREA
W-11 = SALVAGE YARD SUMP DRAIN
W-13 = MONTCALM SUBSTATION

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

- RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
- IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
- RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
- IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
- RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
- IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

- RDWC – RESIDENTIAL DRINKING WATER CRITERIA
- IDWC – INDUSTRIAL DRINKING WATER CRITERIA
- RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- GCC – GROUNDWATER CONTACT CRITERIA

(yellow) CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. MWW8-05 – LNAPL WAS HISTORICALLY DETECTED IN THIS MONITORING WELL ONLY ON OCTOBER 1st AND 8th 2001.
4. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
5. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
6. J – ESTIMATED CONCENTRATION.
7. B – LABORATORY BLANK CONTAMINATION.
8. NA – NOT ANALYZED.

0 200' 400'
GRAPHIC SCALE

REVISED 7/31/02

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs W-1, -5, -8, -9, -10 AND -11 - GROUNDWATER

ENCORE

FIGURE 4-13

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
8/1/02 SYR-54-GMS GMS LJP
64411210/64411C06.DWG

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

BW3-03

Depth(ft)	0-2	6-8
1,1-Dichloroethene	ND(0.084)	ND(0.0013)
Benzene	0.95 J	ND(0.00073)
Tetrachloroethene	ND(0.074)	ND(0.0013)
Vinyl chloride	ND(0.054)	ND(0.0016)
Benzo(a)anthracene	ND(0.23)	ND(0.059)
Benzo(a)pyrene	ND(0.25)	ND(0.065)
Benzo(b)fluoranthene	ND(0.24)	ND(0.063)
Butyl benzylphthalate	ND(0.21)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.21)	ND(0.055)
Indeno(1,2,3-cd)pyrene	ND(0.29)	ND(0.076)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	243	3.85
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BW3-05

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00067)	ND(0.00063)
Tetrachloroethene	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	ND(0.062)	ND(0.064)
Benzo(a)pyrene	ND(0.068)	ND(0.07)
Benzo(b)fluoranthene	ND(0.066)	ND(0.067)
Butyl benzylphthalate	ND(0.058)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.079)	ND(0.081)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	59.8	4.53
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BW3-04

Depth(ft)	0-2	4-6
1,1-Dichloroethene	ND(0.0013)	ND(0.057)
Benzene	ND(0.0007)	ND(0.057)
Tetrachloroethene	ND(0.0013)	ND(0.05)
Vinyl chloride	ND(0.0015)	ND(0.037)
Benzo(a)anthracene	ND(0.062)	ND(1.3)
Benzo(a)pyrene	ND(0.068)	ND(1.4)
Benzo(b)fluoranthene	ND(0.065)	ND(1.3)
Butyl benzylphthalate	ND(0.058)	ND(1.2)
Dibenz(a,h)anthracene	ND(0.058)	ND(1.2)
Indeno(1,2,3-cd)pyrene	ND(0.079)	ND(1.6)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	73.6	3.08
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BW8-01

Depth(ft)	2-4	8-10	10-12
1,1-Dichloroethene	ND(0.0014)	ND(0.0014)	ND(0.0014)
Benzene	ND(0.00076)	ND(0.00076)	ND(0.00073)
Tetrachloroethene	ND(0.0014)	ND(0.0014)	ND(0.0014)
Vinyl chloride	ND(0.0016)	ND(0.0016)	ND(0.0016)
Benzo(a)anthracene	ND(0.062)	ND(0.059)	ND(0.065)
Benzo(a)pyrene	ND(0.067)	ND(0.064)	ND(0.071)
Benzo(b)fluoranthene	ND(0.065)	ND(0.062)	ND(0.069)
Butyl benzylphthalate	ND(0.057)	ND(0.054)	ND(0.061)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.054)	ND(0.061)
Indeno(1,2,3-cd)pyrene	ND(0.079)	ND(0.075)	ND(0.083)
Antimony	ND(0.55)	ND(0.522)	ND(0.583)
Arsenic	3.83	2.91	4.23
Chromium (total)	5.45	7.7	8.43
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	3.85	7.63	4.75
Manganese	127	114	273
PCBs (total)	ND(0.037)	ND(0.035)	ND(0.039)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWD1

Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	ND(0.0051)	ND(0.0056) [ND(0.0051)]	ND(0.0045)
Benzene	ND(0.0051)	ND(0.0056) [ND(0.0051)]	ND(0.0045)
Tetrachloroethene	ND(0.0051)	ND(0.0056) [ND(0.0051)]	ND(0.0045)
Vinyl chloride	ND(0.01)	ND(0.011) [[illegible]]	[illegible]
Benzo(a)anthracene	ND(0.38)	ND(0.41) [ND(0.39)]	ND(0.38)
Benzo(a)pyrene	ND(0.38)	ND(0.41) [ND(0.39)]	ND(0.38)
Benzo(b)fluoranthene	ND(0.38)	ND(0.41) [ND(0.39)]	ND(0.38)
Butyl benzylphthalate	ND(0.38)	ND(0.41) [ND(0.39)]	ND(0.38)
Dibenz(a,h)anthracene	ND(0.38)	ND(0.41) [ND(0.39)]	ND(0.38)
Indeno(1,2,3-cd)pyrene	ND(0.38)	ND(0.41) [[illegible]]	[illegible]
Antimony	ND(2.28)	ND(2.49) [ND(2.34)]	ND(2.31)
Arsenic	4.38	1.77 [4.84]	4.39
Chromium (total)	9.55	4.48 [11.1]	15.2
Chromium (III)	NA	NA [NA]	NA
Chromium (VI)	NA	NA [NA]	NA
Cyanide (total)	NA	NA [NA]	NA
Iron	NA	NA [NA]	NA
Lead	5.5	2.76 [8.35]	7.45
Manganese	242	136 [914]	407
PCBs (total)	ND(0.114)	ND(0.114) [ND(0.117)]	ND(0.123)
2,3,7,8-TCDD (TEQ)	NA	NA [NA]	NA

MWW5-01

Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	ND(0.0052)	0.029 J	ND(0.32)
Benzene	ND(0.0052)	ND(0.23)	ND(0.32)
Tetrachloroethene	0.0021 J	0.029 J	ND(0.32)
Vinyl chloride	ND(0.01)	ND(0.46)	ND(0.64)
Benzo(a)anthracene	0.34 J	ND(0.64)	0.24 J
Benzo(a)pyrene	ND(0.38)	0.91 J	ND(0.39)
Benzo(b)fluoranthene	ND(0.38)	1.3 J	ND(0.39)
Butyl benzylphthalate	ND(0.38)	ND(0.6)	ND(0.39)
Dibenz(a,h)anthracene	ND(0.38)	ND(0.6)	ND(0.39)
Indeno(1,2,3-cd)pyrene	ND(0.38)	ND(0.82)	ND(0.39)
Antimony	ND(0.571)	ND(0.574)	ND(0.575)
Arsenic	3.05	3.57	2.78
Chromium (total)	13.9 J	14.2	9.74
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	8.35 J	9.96	16.3
Manganese	236 J	188	880
PCBs (total)	ND(0.114)	0.248 J	ND(0.117)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWW5-02

Depth(ft)	0-2	8-10	10-12
1,1-Dichloroethene	ND(0.0046)	ND(0.0044)	ND(0.0045)
Benzene	ND(0.0046)	ND(0.0044)	ND(0.0045)
Tetrachloroethene	ND(0.0046)	ND(0.0044)	ND(0.0045)
Vinyl chloride	ND(0.0093)	ND(0.0089)	ND(0.009)
Benzo(a)anthracene	ND(0.37)	ND(0.37)	ND(0.37)
Benzo(a)pyrene	ND(0.37)	ND(0.37)	ND(0.37)
Benzo(b)fluoranthene	ND(0.37)	ND(0.37)	ND(0.37)
Butyl benzylphthalate	ND(0.37)	ND(0.37)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.37)	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.37)	ND(0.37)	ND(0.37)
Antimony	ND(2.26)	ND(0.55)	ND(0.546)
Arsenic	5.9	4.58	3.82
Chromium (total)	11	9.73	11.8
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	10.4	5.62	4.96
Manganese	296	298	256
PCBs (total)	ND(0.111)	ND(0.111)	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BW5-03

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.001)
Benzene	ND(0.00055)
Tetrachloroethene	ND(0.001)
Vinyl chloride	ND(0.0012)
Benzo(a)anthracene	ND(0.062)
Benzo(a)pyrene	ND(0.067)
Benzo(b)fluoranthene	ND(0.065)
Butyl benzylphthalate	ND(0.057)
Dibenz(a,h)anthracene	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.078)
Antimony	ND(0.548)
Arsenic	5.26
Chromium (total)	10.6
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	6.74
Manganese	278
PCBs (total)	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA

BW5-02

Depth(ft)	0-2	8-10	22-24
1,1-Dichloroethene	ND(0.0014)	ND(0.0014)	ND(0.0012)
Benzene	ND(0.00073)	ND(0.00077)	0.0011 J
Tetrachloroethene	ND(0.0014)	ND(0.0014)	ND(0.0012)
Vinyl chloride	ND(0.0016)	ND(0.0016)	ND(0.0015)
Benzo(a)anthracene	2	2.1	ND(0.061)
Benzo(a)pyrene	1.5	1.4 J	ND(0.067)
Benzo(b)fluoranthene	2.9	2.3	ND(0.065)
Butyl benzylphthalate	0.14 J	ND(0.3)	ND(0.057)
Dibenz(a,h)anthracene	0.17 J	ND(0.3)	ND(0.057)
Indeno(1,2,3-cd)pyrene	0.56	0.67 J	ND(0.078)
Antimony	0.694 J	0.789 J	ND(0.547)
Arsenic	4.93	5.74	6.16
Chromium (total)	18.6	13.8	9.82
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	36	76.9	5.97
Manganese	236	251	266
PCBs (total) {RDC, IDC}	21.69 J	24.79 J	0.057 J
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BW3-02

Depth(ft)	0-2	6-8
1,1-Dichloroethene	ND(0.018) [ND(0.018)]	ND(0.0014)
Benzene	0.28 [0.29]	ND(0.00076)
Tetrachloroethene	ND(0.016) [ND(0.016)]	ND(0.0014)
Vinyl chloride	ND(0.011) [ND(0.012)]	ND(0.0016)
Benzo(a)anthracene	ND(0.059) [ND(0.059)]	ND(0.06)
Benzo(a)pyrene	ND(0.064) [ND(0.065)]	ND(0.065)
Benzo(b)fluoranthene	ND(0.062) [ND(0.062)]	ND(0.063)
Butyl benzylphthalate	ND(0.055) [ND(0.055)]	ND(0.056)
Dibenz(a,h)anthracene	ND(0.055) [ND(0.055)]	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.075) [ND(0.075)]	ND(0.076)
Antimony	NA [NA]	NA
Arsenic	NA [NA]	NA
Chromium (total)	NA [NA]	NA
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	47.4 [49.7]	2.94
Manganese	NA [NA]	NA
PCBs (total)	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

BW6-04

Depth(ft)	0-2	4-6
1,1-Dichloroethene	ND(0.0014)	ND(0.001)
Benzene	ND(0.00074)	ND(0.00055)
Tetrachloroethene	ND(0.0014)	ND(0.001)
Vinyl chloride	ND(0.0016)	ND(0.0012)
Benzo(a)anthracene	ND(0.057)	ND(0.06)
Benzo(a)pyrene	ND(0.062)	ND(0.065)
Benzo(b)fluoranthene	0.073 J	ND(0.063)
Butyl benzylphthalate	0.078 J	ND(0.055)
Dibenz(a,h)anthracene	ND(0.053)	ND(0.055)
Indeno(1,2,3-cd)pyrene	ND(0.072)	ND(0.076)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	12.5	4.2
Manganese	NA	NA
PCBs (total)	0.049 J	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA

BW6-03

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00066)	ND(0.00066)
Tetrachloroethene	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	ND(0.059)	ND(0.062)
Benzo(a)pyrene	ND(0.064)	ND(0.067)
Benzo(b)fluoranthene	ND(0.062)	ND(0.065)
Butyl benzylphthalate	ND(0.055)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.055)	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.075)	ND(0.079)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	2.59	2.62
Manganese	NA	NA
PCBs (total)	ND(0.036)	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA

BW6-05

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.21)	ND(0.018)
Benzene	0.021 J	0.042 J
Tetrachloroethene	0.058 J	ND(0.016)
Vinyl chloride	ND(0.41)	ND(0.012)
Benzo(a)anthracene	ND(3.5)	ND(1.2)
Benzo(a)pyrene	ND(3.5)	ND(1.3)
Benzo(b)fluoranthene	ND(3.5)	ND(1.3)
Butyl benzylphthalate	1.6 J	ND(1.1)
Dibenz(a,h)anthracene	ND(3.5)	ND(1.1)
Indeno(1,2,3-cd)pyrene	ND(3.5)	ND(1.5)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron		NA
Lead	0.213	8.59
Manganese	NA	NA
PCBs (total) {RDC}	1.5 J	8.05 J
2,3,7,8-TCDD (TEQ)	NA	NA

BW6-06

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0012)
Benzene	ND(0.00063)
Tetrachloroethene	ND(0.0012)
Vinyl chloride	ND(0.0014)
Benzo(a)anthracene	ND(0.63)
Benzo(a)pyrene	ND(0.69)
Benzo(b)fluoranthene	ND(0.67)
Butyl benzylphthalate	ND(0.59)
Dibenz(a,h)anthracene	ND(0.59)
Indeno(1,2,3-cd)pyrene	ND(0.8)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	19.2
Manganese	NA
PCBs (total)	0.185 J
2,3,7,8-TCDD (TEQ)	NA

BW6-02

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0013)
Benzene	ND(0.00068)
Tetrachloroethene	ND(0.0013)
Vinyl chloride	ND(0.0018)
Benzo(a)anthracene	ND(0.064)
Benzo(a)pyrene	ND(0.07)
Benzo(b)fluoranthene	ND(0.068)
Butyl benzylphthalate	ND(0.059)
Dibenz(a,h)anthracene	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.081)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	4.31
Manganese	NA
PCBs (total)	0.070 J
2,3,7,8-TCDD (TEQ)	NA

BW6-07

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0011)	ND(0.0012)
Benzene	ND(0.00062)	0.00074 J
Tetrachloroethene	0.0012 J	0.0052
Vinyl chloride	ND(0.0013)	ND(0.0014)
Benzo(a)anthracene	ND(1.2)	ND(1.2)
Benzo(a)pyrene	ND(1.3)	ND(1.3)
Benzo(b)fluoranthene	ND(1.3)	ND(1.3)
Butyl benzylphthalate	ND(1.1)	ND(1.1)
Dibenz(a,h)anthracene	ND(1.1)	ND(1.1)
Indeno(1,2,3-cd)pyrene	ND(1.5)	ND(1.6)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	13.8	5.71
Manganese	NA	NA
PCBs (total)	0.99 J	0.83 J
2,3,7,8-TCDD (TEQ)	NA	NA

BW6-01

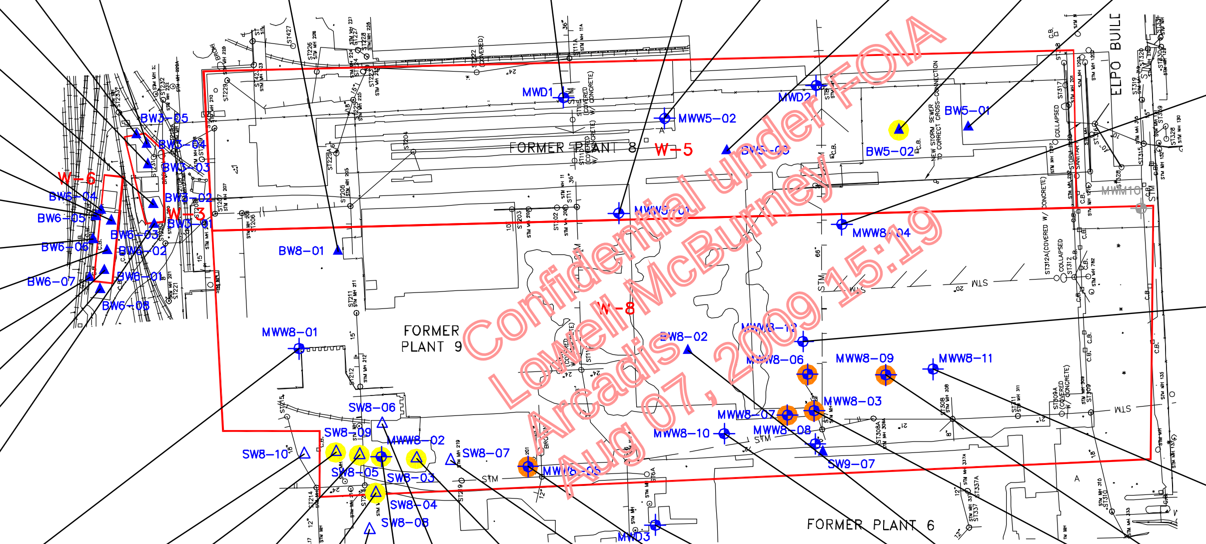
Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0011)	ND(0.0011)
Benzene	ND(0.00059)	ND(0.00057)
Tetrachloroethene	ND(0.0011)	ND(0.0011)
Vinyl chloride	ND(0.0013)	ND(0.0012)
Benzo(a)anthracene	ND(0.063)	ND(0.064)
Benzo(a)pyrene	ND(0.068)	ND(0.07)
Benzo(b)fluoranthene	ND(0.066)	ND(0.067)
Butyl benzylphthalate	ND(0.058)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.08)	ND(0.081)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	5.35	4.69
Manganese	NA	NA
PCBs (total)	ND(0.038)	ND(0.039)
2,3,7,8-TCDD (TEQ)	NA	NA

BW6-08

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012) [ND(0.0011)]	ND(0.0013)
Benzene	ND(0.00065) [ND(0.00062)]	ND(0.0007)
Tetrachloroethene	ND(0.0012) [ND(0.0011)]	ND(0.0013)
Vinyl chloride	ND(0.0014) [ND(0.0013)]	ND(0.0015)
Benzo(a)anthracene	ND(0.062) [ND(0.063)]	ND(0.066)
Benzo(a)pyrene	ND(0.068) [ND(0.068)]	ND(0.073)
Benzo(b)fluoranthene	ND(0.066) [ND(0.066)]	ND(0.07)
Butyl benzylphthalate	ND(0.058) [ND(0.058)]	ND(0.062)
Dibenz(a,h)anthracene	ND(0.058) [ND(0.058)]	ND(0.062)
Indeno(1,2,3-cd)pyrene	ND(0.079) [ND(0.08)]	ND(0.085)
Antimony	NA [NA]	NA
Arsenic	NA [NA]	NA
Chromium (total)	NA [NA]	NA
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	2.87 [3]	1.65
Manganese	NA [NA]	NA
PCBs (total)	ND(0.037) [ND(0.038)]	ND(0.040)
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

BW3-01

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.017)	ND(0.0013)
Benzene	ND(0.017)	ND(0.00072)
Tetrachloroethene	ND(0.015)	ND(0.0013)
Vinyl chloride	ND(0.011)	ND(0.0016)
Benzo(a)anthracene	ND(0.06)	ND(0.059)
Benzo(a)pyrene	ND(0.065)	ND(0.064)
Benzo(b)fluoranthene	ND(0.063)	ND(0.062)
Butyl benzylphthalate	ND(0.056)	ND(0.054)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.054)
Indeno(1,2,3-cd)pyrene	ND(0.076)	ND(0.075)
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	40.1	2.69
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA



BW5-01

Depth(ft)	0-2	2-4	8-10	14-16
1,1-Dichloroethene	ND(0.0011)	ND(0.0013)	ND(0.0011)	ND(0.0012)
Benzene	ND(0.00062)	ND(0.00069)	ND(0.0006)	ND(0.00064)
Tetrachloroethene	ND(0.0011)	ND(0.0013)	ND(0.0011)	ND(0.0012)
Vinyl chloride	ND(0.0013)	ND(0.0015)	ND(0.0013)	ND(0.0014)
Benzo(a)anthracene	NA	ND(0.065)	ND(0.061)	ND(0.064)
Benzo(a)pyrene	NA	ND(0.071)	ND(0.066)	ND(0.069)
Benzo(b)fluoranthene	NA	ND(0.069)	ND(0.064)	ND(0.067)
Butyl benzylphthalate	NA	ND(0.06)	ND(0.056)	ND(0.059)
Dibenz(a,h)anthracene	NA	ND(0.06)	ND(0.056)	ND(0.059)
Indeno(1,2,3-cd)pyrene	NA	ND(0.083)	ND(0.078)	ND(0.081)
Antimony	ND(0.275)	ND(0.579)	ND(0.543)	ND(0.567)
Arsenic {RDC}	2.82	6.02	4.51	9.43
Chromium (total)	7.11	12.8	11.1	10.8
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead	4.38	51	5.14	7.41
Manganese	199 J	845	232	189
PCBs (total)	0.062 J	0.04 J	ND(0.037)	ND(0.039)
2,3,7,8-TCDD (TEQ)	NA	NA	NA	NA

MWW8-04

Depth(ft)	2-4	8-10	10-12
1,1-Dichloroethene	ND(0.0056)	ND(0.0013)	ND(0.015)
Benzene	ND(0.0056)	ND(0.00069)	ND(0.015)
Tetrachloroethene	ND(0.0056)	ND(0.0013)	ND(0.013)
Vinyl chloride	ND(0.011)	ND(0.0015)	ND(0.0096)
Benzo(a)anthracene	ND(0.39)	ND(0.063)	ND(0.063)
Benzo(a)pyrene	ND(0.39)	ND(0.069)	ND(0.069)
Benzo(b)fluoranthene	ND(0.39)	ND(0.066)	ND(0.066)
Butyl benzylphthalate	ND(0.39)	ND(0.058)	ND(0.058)
Dibenz(a,h)anthracene	ND(0.39)	ND(0.058)	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.39)	ND(0.08)	ND(0.08)
Antimony	ND(2.39)	ND(0.561)	ND(0.56)
Arsenic {RDC}	4.3	4.35	4.14
Chromium (total)	12.1	9.27	12.5
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	7.31	10.2	5.92
Manganese	558	242	307
PCBs (total)	ND(0.117)	ND(0.038)	ND(0.038)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWW8-12

Depth(ft)	1-3	8-10
1,1-Dichloroethene	ND(0.0012)	ND(0.016) [ND(0.018)]
Benzene	ND(0.00065)	ND(0.016) [ND(0.018)]
Tetrachloroethene	ND(0.0012)	ND(0.014) [ND(0.016)]
Vinyl chloride	ND(0.0014)	ND(0.011) [ND(0.012)]
Benzo(a)anthracene	ND(0.062)	0.1 J [0.095 J]
Benzo(a)pyrene	ND(0.068)	ND(0.071) [ND(0.071)]
Benzo(b)fluoranthene	ND(0.065)	0.077 J [ND(0.068)]
Butyl benzylphthalate	ND(0.058)	ND(0.06) [ND(0.06)]
Dibenz(a,h)anthracene	ND(0.058)	ND(0.06) [ND(0.06)]
Indeno(1,2,3-cd)pyrene	ND(0.079)	ND(0.082) [ND(0.083)]
Antimony	ND(0.277)	ND(0.289) [ND(0.289)]
Arsenic	5.12	5.08 [4.8]
Chromium (total)	10.5	15.2 J [9.72]
Chromium (III)	NA	NA [NA]
Chromium (VI)	NA	NA [NA]
Cyanide (total)	NA	NA [NA]
Iron	NA	NA [NA]
Lead	6.94	8.47 J [15.1]
Manganese	229	183 J [261]
PCBs (total)	ND(0.037)	0.082 J [0.066 J]
2,3,7,8-TCDD (TEQ)	NA	NA [NA]

MWW8-11

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00065)	ND(0.00064)
Tetrachloroethene	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	0.67	0.3 J
Benzo(a)pyrene	0.47	ND(0.068)
Benzo(b)fluoranthene	0.7	ND(0.066)
Butyl benzylphthalate	ND(0.06)	ND(0.058)
Dibenz(a,h)anthracene	ND(0.06)	ND(0.058)
Indeno(1,2,3-cd)pyrene	0.19 J	ND(0.08)
Antimony	ND(0.29)	ND(0.279)
Arsenic	4.68	4.79
Chromium (total)	8.1	9.95
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	4.39	5.99
Manganese	353	179
PCBs (total)	ND(0.039)	ND(0.038)
2,3,7,8-TCDD (TEQ)	NA	NA

SW8-10

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	131 J
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SW8-05

Depth(ft)	0-2
1,1-Dichloroethene	NA [NA]
Benzene	NA [NA]
Tetrachloroethene	NA [NA]
Vinyl chloride	NA [NA]
Benzo(a)anthracene	NA [NA]
Benzo(a)pyrene	NA [NA]
Benzo(b)fluoranthene	NA [NA]
Butyl benzylphthalate	NA [NA]
Dibenz(a,h)anthracene	NA [NA]
Indeno(1,2,3-cd)pyrene	NA [NA]
Antimony	NA [NA]
Arsenic	NA [NA]
Chromium (total)	NA [NA]
Chromium (III)	432.28 J [200.96 J]
Chromium (VI)	0.711 J [2.04 J]
Cyanide (total)	NA [NA]
Iron	NA [NA]
Lead	NA [NA]
Manganese {IPSIC}	1750 [952]
PCBs (total)	NA [NA]
2,3,7,8-TCDD (TEQ)	NA [NA]

SW8-08

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	1170
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SW8-06

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	31.4 J
Chromium (VI)	0.6 J
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	321
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SW8-03

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	1260
Chromium (VI)	R
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese {IPSIC}	1710
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SW8-07

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	866
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

MWD3

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0008)	ND(0.0007)
Benzene	ND(0.00075)	ND(0.00065)
Tetrachloroethene	ND(0.00088)	0.0011 J
Vinyl chloride	ND(0.00079)	ND(0.00068)
Benzo(a)anthracene	ND(0.058)	ND(0.06)
Benzo(a)pyrene	ND(0.064)	ND(0.066)
Benzo(b)fluoranthene	ND(0.062)	ND(0.063)
Butyl benzylphthalate	ND(0.054)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.054)	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.074)	ND(0.076)
Antimony	ND(0.521)	ND(0.535)
Arsenic	3.27	3.47
Chromium (total)	8.2	19.4
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	9.61	7.33
Manganese	258	250
PCBs (total)	0.21 J	0.063 J
2,3,7,8-TCDD (TEQ)	NA	NA

BW8-02

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0015)	ND(0.0012)
Benzene	ND(0.00083)	0.0041 J
Tetrachloroethene	ND(0.0015)	ND(0.0012)
Vinyl chloride	ND(0.0018)	ND(0.0014)
Benzo(a)anthracene	0.073 J	0.24 J
Benzo(a)pyrene	0.071 J	0.19 J
Benzo(b)fluoranthene	0.095 J	0.29 J
Butyl benzylphthalate	ND(0.056)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.077)	0.1 J
Antimony	ND(0.536)	0.583 J
Arsenic	4.6	3.63
Chromium (total)	12.1	15.7
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	15.4	24
Manganese	315	353
PCBs (total)	0.058 J	0.31 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-09

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0015)	ND(0.001)
Benzene	ND(0.00082)	ND(0.00057)
Tetrachloroethene	ND(0.0015)	ND(0.001)
Vinyl chloride	ND(0.0018)	ND(0.0012)
Benzo(a)anthracene	0.18 J	ND(0.061)
Benzo(a)pyrene	0.092 J	ND(0.066)
Benzo(b)fluoranthene	0.14 J	ND(0.064)
Butyl benzylphthalate	ND(0.063)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.063)	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.086)	ND(0.077)
Antimony	ND(0.302)	ND(0.271)
Arsenic	6.74	3.06
Chromium (total)	14.8	10.4
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.209)	ND(0.188)
Iron	NA	NA
Lead	8.5	5.76
Manganese	409	235
PCBs (total)	0.060 J	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-01

Depth(ft)	0-2	8-10	10-12
1,1-Dichloroethene	ND(0.0016)	ND(0.0012)	ND(0.0018)
Benzene	ND(0.00086)	ND(0.00067)	ND(0.00098)
Tetrachloroethene	ND(0.0016)	ND(0.0012)	ND(0.0018)
Vinyl chloride	ND(0.0019)	ND(0.0014)	ND(0.0021)
Benzo(a)anthracene	ND(0.068)	ND(0.064)	ND(0.06)
Benzo(a)pyrene	ND(0.074)	ND(0.07)	ND(0.065)
Benzo(b)fluoranthene	ND(0.071)	ND(0.068)	ND(0.063)
Butyl benzylphthalate	ND(0.063)	ND(0.06)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.063)	ND(0.06)	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.086)	ND(0.082)	ND(0.076)
Antimony	0.972 J	ND(0.574)	ND(0.534)
Arsenic	4.99	2.54	2.17
Chromium (total)	14.6	4.17	4.88
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	13.9	3.24	3.01
Manganese	351	221	149
PCBs (total)	ND(0.041)	ND(0.039)	ND(0.036)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SW8-09

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese {IPSIC}	2040
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SW8-04

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	263.8
Chromium (VI)	R
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese {IPSIC}	2770
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

MWW8-02

Depth(ft)	0-2	6-8	8-10	12-14
1,1-Dichloroethene	ND(0.017)	ND(0.0012)	ND(0.0011)	ND(0.0011)
Benzene	0.045 J	ND(0.00065)	ND(0.00058)	ND(0.0006)
Tetrachloroethene	ND(0.015)	ND(0.0012)	ND(0.0011)	ND(0.0011)
Vinyl chloride	ND(0.011)	ND(0.0014)	ND(0.0013)	ND(0.0013)
Benzo(a)anthracene	ND(3.3)	0.45 J	0.095 J	0.9 J
Benzo(a)pyrene	ND(3.6)	ND(0.37)	ND(0.069)	0.76 J
Benzo(b)fluoranthene	ND(3.4)	0.49 J	0.089 J	0.99 J
Butyl benzylphthalate	ND(3)	ND(0.31)	ND(0.058)	ND(0.3)
Dibenz(a,h)anthracene	ND(3)	ND(0.31)	ND(0.058)	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(4.1)	ND(0.43)	ND(0.08)	0.46 J
Antimony	7.46 J	ND(0.598)	ND(0.562)	ND(0.574)
Arsenic {RDC}	36.2	7.49	2.5	5.05
Chromium (total) {RPSIC, IPSIC}	857	156	156	17.6
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead {RDC}	587	14.7	10.4	31
Manganese {IPSIC}	2780	236	230	337
PCBs (total)	ND(0.039)	0.32 J	0.118 J	0.266 J
2,3,7,8-TCDD (TEQ)	NA	NA	NA	NA

MWW8-05

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00064)	ND(0.00072)
Tetrachloroethene	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0014)	ND(0.0016)
Benzo(a)anthracene	0.11 J	ND(0.060)
Benzo(a)pyrene	0.13 J	ND(0.065)
Benzo(b)fluoranthene	0.22 J	ND(0.063)
Butyl benzylphthalate	0.77	ND(0.056)
Dibenz(a,h)anthracene	ND(0.00057)	ND(0.056)
Indeno(1,2,3-cd)pyrene	0.12 J	ND(0.076)
Antimony	1.41 J	ND(0.534)
Arsenic {RDC}	26.9	6.02
Chromium (total)	112	8.44
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	94.6	5.76
Manganese	1290	251
PCBs (total)	0.064 J	0.052 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-10

Depth(ft)	2-4	12-14
1,1-Dichloroethene	ND(0.0012)	ND(0.0013)
Benzene	R	ND(0.00068)
Tetrachloroethene	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	0.21 J	ND(0.062)
Benzo(a)pyrene	ND(0.069)	ND(0.068)
Benzo(b)fluoranthene	ND(0.066)	ND(0.065)
Butyl benzylphthalate	ND(0.058)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.08)	ND(0.079)
Antimony	0.604 J	0.334 J
Arsenic	3.58	3.53
Chromium (total)	19.8	7.83
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	31.6	4.79
Manganese	417	358
PCBs (total)	0.085 J	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA

MWW8-03

Depth(ft)	2-4	8-10	24-26
1,1-Dichloroethene	ND(0.0012)	ND(0.02)	ND(0.001)
Benzene	0.00084 J	ND(0.02)	ND(0.00056)
Tetrachloroethene	ND(0.0012)	ND(0.018)	ND(0.001)
Vinyl chloride	ND(0.0014)	ND(0.013)	ND(0.0012)
Benzo(a)anthracene	ND(2.9)	ND(3.2)	ND(0.062)
Benzo(a)pyrene	ND(3.1)	ND(3.5)	ND(0.068)
Benzo(b)fluoranthene	ND(3)	ND(3.4)	ND(0.066)
Butyl benzylphthalate	ND(2.7)	ND(3)	ND(0.058)
Dibenz(a,h)anthracene	ND(2.7)	ND(3)	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(3.7)	ND(4.1)	ND(0.08)
Antimony	ND(0.513)	ND(0.572)	ND(0.557)
Arsenic	3.89	2.84	6.07
Chromium (total)	7.19	5.2	10.1
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	8.36	2.03	5.97
Manganese	174	174	258
PCBs (total)	0.055 J	0.086 J	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

LEGEND:

MWM10 — GROUNDWATER MONITORING WELL LOCATION
BW5-01 — SOIL BORING LOCATION
SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
APPROXIMATE AOI AREA
W-3 = FORMER PLANT 8 FLAMMABLE LIQUID STORAGE TANK FARM
W-5 = FORMER PLANT 8 BASEMENT AST AREA
W-6 = FORMER PLANT 8 FLAMMABLE MATERIALS STORAGE AREA
W-8 = FORMER PLANT 9 BASEMENT AST

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED
8. R – DATA REJECTED FROM DATA VALIDATION

0 200' 400'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs W-3, -5, -6 AND -8 - SOIL

ENCORE

FIGURE 4-14

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS DJP
64411210/64411C05.DWG

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

SB7T1	
Depth(ft)	10–15
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	0.48
Benzo(a)pyrene	0.69
Benzo(b)fluoranthene	1.2
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	0.25
Indeno(1,2,3–cd)pyrene	0.51
Antimony	NA
Arsenic	0.797
Chromium (total)	12.4 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.48
Iron	6680
Lead	16.4 J
Manganese	864
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

SST1O1	
Depth(ft)	0–0
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	0.18 J
Benzo(a)pyrene	0.094 J
Benzo(b)fluoranthene	0.14 J
Butyl benzylphthalate	0.24 J
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	0.057 J
Antimony	NA
Arsenic [RDC]	7.77 J
Chromium (total)	81.9
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.59
Iron	69000
Lead	151
Manganese [IPSIC]	2080
PCBs (total)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA

MWD3		
Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0008)	ND(0.0007)
Benzene	ND(0.00075)	ND(0.00065)
Tetrachloroethene	ND(0.00088)	0.0011 J
Vinyl chloride	ND(0.00079)	ND(0.00068)
Benzo(a)anthracene	ND(0.056)	ND(0.06)
Benzo(a)pyrene	ND(0.064)	ND(0.066)
Benzo(b)fluoranthene	ND(0.062)	ND(0.063)
Butyl benzylphthalate	ND(0.054)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.054)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.074)	ND(0.076)
Antimony	ND(0.521)	ND(0.535)
Arsenic	3.27	3.47
Chromium (total)	8.2	18.4
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	9.61	7.33
Manganese	258	250
PCBs (total)	0.214 J	0.064 J
2,3,7,8–TCDD (TEQ)	NA	NA

SW9–07	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0017)
Benzene	ND(0.00094)
Tetrachloroethene	ND(0.0017)
Vinyl chloride	ND(0.002)
Benzo(a)anthracene	5.5
Benzo(a)pyrene [RDC]	5.9
Benzo(b)fluoranthene	8.2
Butyl benzylphthalate	6
Dibenz(a,h)anthracene	1.2 J
Indeno(1,2,3–cd)pyrene	3.9
Antimony	0.687 J
Arsenic	5.77
Chromium, (total)	24.5
Chromium, (III)	NA
Chromium, (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	108
Manganese	371
PCBs (total)	1.96 J
2,3,7,8–TCDD (TEQ)	NA

SW9–02	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0013)
Benzene	ND(0.0007)
Tetrachloroethene	ND(0.0013)
Vinyl chloride	ND(0.0015)
Benzo(a)anthracene	0.69
Benzo(a)pyrene	0.62
Benzo(b)fluoranthene	0.89
Butyl benzylphthalate	ND(0.053)
Dibenz(a,h)anthracene	0.16 J
Indeno(1,2,3–cd)pyrene	0.39
Antimony	6.26 J
Arsenic [RDC]	19.2
Chromium, (total) [RPSIC, IPSIC]	523
Chromium, (III)	NA
Chromium, (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead [RDC]	429
Manganese [IPSIC]	2650
PCBs (total) [RDC]	10.5 J
2,3,7,8–TCDD (TEQ)	NA

SW9–13	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	307 J
PCBs (total)	NA
2,3,7,8–TCDD (TEQ)	NA

SW9–08	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.001)
Benzene	ND(0.00053)
Tetrachloroethene	ND(0.001)
Vinyl chloride	ND(0.0012)
Benzo(a)anthracene	ND(0.062)
Benzo(a)pyrene	ND(0.067)
Benzo(b)fluoranthene	0.088 J
Butyl benzylphthalate	ND(0.057)
Dibenz(a,h)anthracene	ND(0.057)
Indeno(1,2,3–cd)pyrene	ND(0.079)
Antimony	ND(0.55)
Arsenic	4.42
Chromium (total)	10.1
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	6.12
Manganese	264
PCBs (total)	0.081 J
2,3,7,8–TCDD (TEQ)	NA

SW9–09	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0011)
Benzene	ND(0.00061)
Tetrachloroethene	ND(0.0011)
Vinyl chloride	ND(0.0013)
Benzo(a)anthracene	ND(1.2)
Benzo(a)pyrene	ND(1.3)
Benzo(b)fluoranthene	ND(1.2)
Butyl benzylphthalate	28
Dibenz(a,h)anthracene	ND(1.1)
Indeno(1,2,3–cd)pyrene	ND(1.5)
Antimony	ND(0.521)
Arsenic	6.96
Chromium, (total)	68.9
Chromium, (III)	NA
Chromium, (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	67.7
Manganese	1140
PCBs (total) [RDC, IDC]	29.3
2,3,7,8–TCDD (TEQ)	NA

SW9–11	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic [RDC]	8.13 J
Chromium (total)	108
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese [IPSIC]	1530 J
PCBs (total)	NA
2,3,7,8–TCDD (TEQ)	NA

SW9–10	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0012)
Benzene	ND(0.00064)
Tetrachloroethene	ND(0.0012)
Vinyl chloride	ND(0.0014)
Benzo(a)anthracene	0.41
Benzo(a)pyrene	0.52
Benzo(b)fluoranthene	0.91
Butyl benzylphthalate	0.12 J
Dibenz(a,h)anthracene	0.13 J
Indeno(1,2,3–cd)pyrene	0.36
Antimony	ND(0.54)
Arsenic [RDC]	8.43
Chromium (total)	195
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	139
Manganese [IPSIC]	1570
PCBs (total)	3.64 J
2,3,7,8–TCDD (TEQ)	NA

MWD4			
Depth(ft)	0–2	8–10	16–18
1,1–Dichloroethene	ND(0.0073)	ND(0.0053)	ND(0.0053)
Benzene	ND(0.0073)	ND(0.0053)	ND(0.0053)
Tetrachloroethene	ND(0.0073)	ND(0.0053)	ND(0.0053)
Vinyl chloride	ND(0.0157)	ND(0.011)	ND(0.011)
Benzo(a)anthracene	0.077 J	ND(0.36)	ND(0.41)
Benzo(a)pyrene	ND(0.34)	ND(0.36)	ND(0.41)
Benzo(b)fluoranthene	0.092 J	ND(0.36)	ND(0.41)
Butyl benzylphthalate	0.18 J	ND(0.36)	ND(0.41)
Dibenz(a,h)anthracene	ND(0.34)	ND(0.36)	ND(0.41)
Indeno(1,2,3–cd)pyrene	ND(0.34)	ND(0.36)	ND(0.41)
Antimony	4.86 J	3.74	ND(2.45)
Arsenic	6.93	1.77	6.02
Chromium (total)	184	14.8	12.3
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead [RDC]	302	421	9.83
Manganese [IPSIC]	3020	790	310
PCBs (total)	0.118 J	ND(0.108)	ND(0.123)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SW9–12		
Depth(ft)	0–2	
1,1–Dichloroethene	NA	NA
Benzene	NA	NA
Tetrachloroethene	NA	NA
Vinyl chloride	NA	NA
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	228.56 J [159.14]	
Chromium (VI)	0.439 J [0.836]	
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	NA	NA
Manganese [IPSIC]	1600 J [1400 J]	
PCBs (total)	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA

SW9–01	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.028)
Benzene	ND(0.028)
Tetrachloroethene	ND(0.023)
Vinyl chloride	ND(0.017)
Benzo(a)anthracene	0.4
Benzo(a)pyrene	0.36
Benzo(b)fluoranthene	0.59
Butyl benzylphthalate	0.14 J
Dibenz(a,h)anthracene	0.064 J
Indeno(1,2,3–cd)pyrene	0.22 J
Antimony	1.80 J
Arsenic [RDC]	10.1
Chromium, (total) [IPSIC]	249
Chromium, (III)	NA
Chromium, (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	175
Manganese	1360
PCBs (total)	0.70 J
2,3,7,8–TCDD (TEQ)	NA

SW9–02		
Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0011)	ND(0.001)
Benzene	ND(0.00059)	ND(0.00054)
Tetrachloroethene	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.0013)	ND(0.0012)
Benzo(a)anthracene	0.47	ND(0.058)
Benzo(a)pyrene	0.27 J	ND(0.064)
Benzo(b)fluoranthene	0.42	ND(0.061)
Butyl benzylphthalate	ND(0.056)	ND(0.054)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.054)
Indeno(1,2,3–cd)pyrene	0.14 J	ND(0.076)
Antimony	1.74 J	ND(0.519)
Arsenic [RDC]	8.14	4.15
Chromium, (total)	82	5.55
Chromium, (III)	NA	NA
Chromium, (VI)	NA	NA
Cyanide (total)	ND(0.187)	ND(0.18)
Iron	NA	NA
Lead	322	5.23
Manganese [IPSIC]	1840	265
PCBs (total) [RDC, IDC]	47.4 J	ND(0.036)
2,3,7,8–TCDD (TEQ)	NA	NA

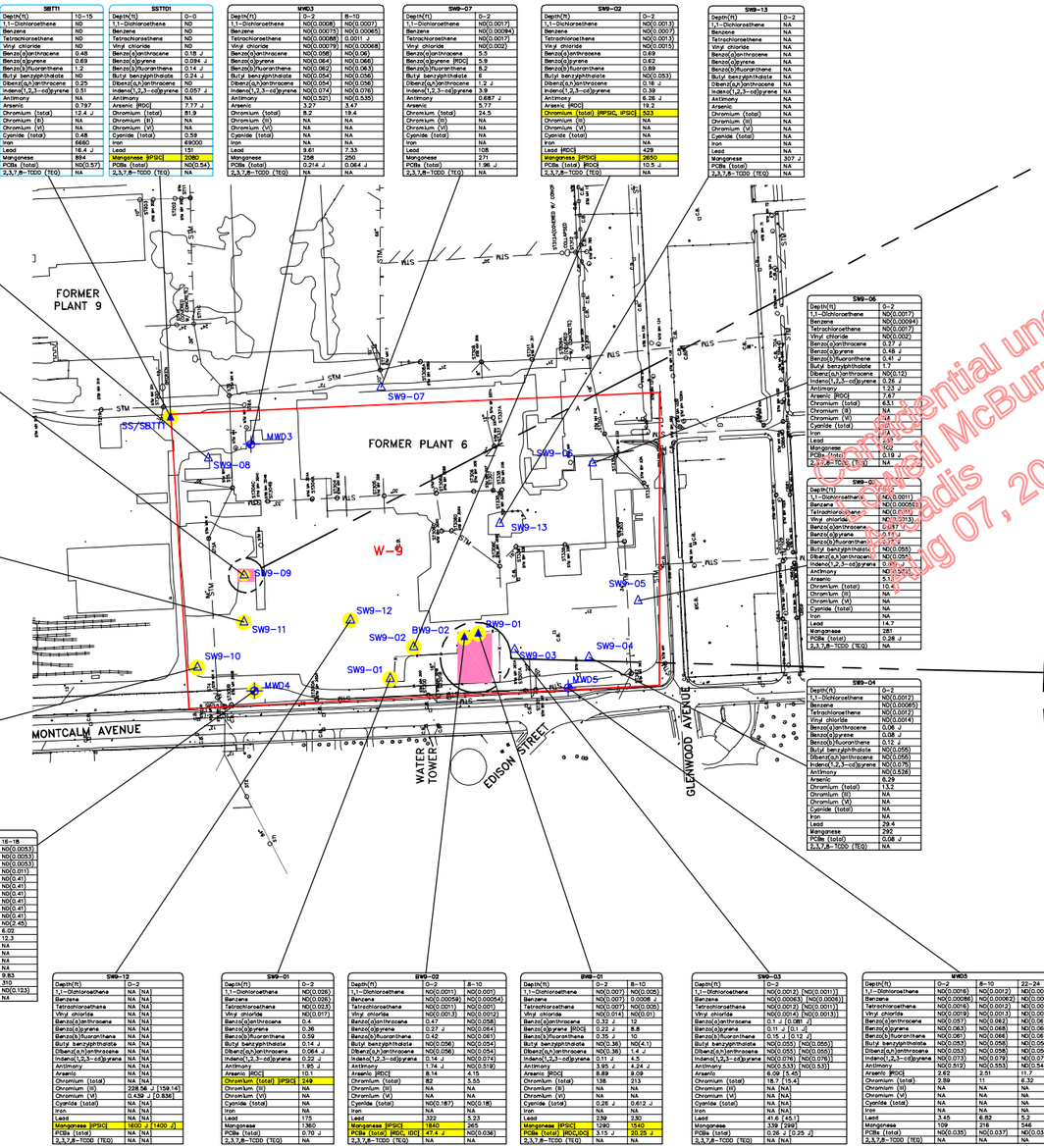
SW9–01		
Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.007)	ND(0.005)
Benzene	ND(0.007)	0.0008 J
Tetrachloroethene	ND(0.007)	ND(0.005)
Vinyl chloride	ND(0.014)	ND(0.01)
Benzo(a)anthracene	0.32 J	10
Benzo(a)pyrene [RDC]	0.22 J	8.8
Benzo(b)fluoranthene	0.35 J	10
Butyl benzylphthalate	ND(0.36)	ND(4.1)
Dibenz(a,h)anthracene	ND(0.36)	1.4 J
Indeno(1,2,3–cd)pyrene	0.11 J	4.5
Antimony	3.95 J	4.24 J
Arsenic [RDC]	8.89	9.09
Chromium, (total)	138	313
Chromium, (III)	NA	NA
Chromium, (VI)	NA	NA
Cyanide (total)	0.26 J	0.612 J
Iron	NA	NA
Lead	2.39	2.30
Manganese [IPSIC]	1290	1540
PCBs (total) [RDC,IDC]	3.15 J	20.25 J
2,3,7,8–TCDD (TEQ)	NA	NA

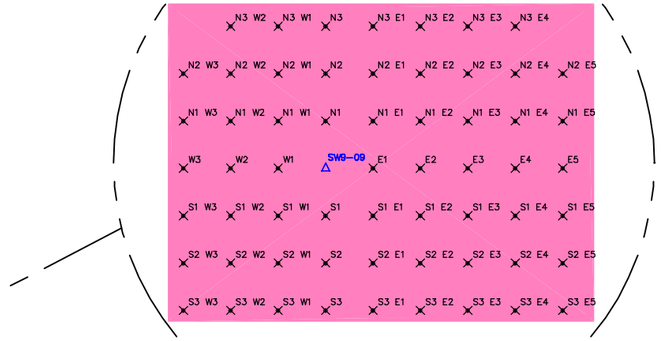
SW9–03		
Depth(ft)	0–2	
1,1–Dichloroethene	ND(0.0012)	ND(0.0011)
Benzene	ND(0.0008)	ND(0.0008)
Tetrachloroethene	ND(0.0012)	ND(0.0011)
Vinyl chloride	ND(0.0014)	ND(0.0013)
Benzo(a)anthracene	0.1 J	[0.81 J]
Benzo(a)pyrene	0.11 J	[0.1 J]
Benzo(b)fluoranthene	0.15 J	[0.12 J]
Butyl benzylphthalate	ND(0.055)	[ND(0.055)]
Dibenz(a,h)anthracene	ND(0.055)	[ND(0.055)]
Indeno(1,2,3–cd)pyrene	ND(0.076)	[ND(0.076)]
Antimony	ND(0.533)	[ND(0.533)]
Arsenic	8.09	[5.45]
Chromium, (total)	18.7	[15.4]
Chromium, (III)	NA	[NA]
Chromium, (VI)	NA	[NA]
Cyanide (total)	NA	[NA]
Iron	NA	[NA]
Lead	41.6	[45.1]
Manganese	339	[299]
PCBs (total)	0.38 J	[0.25 J]
2,3,7,8–TCDD (TEQ)	NA	[NA]

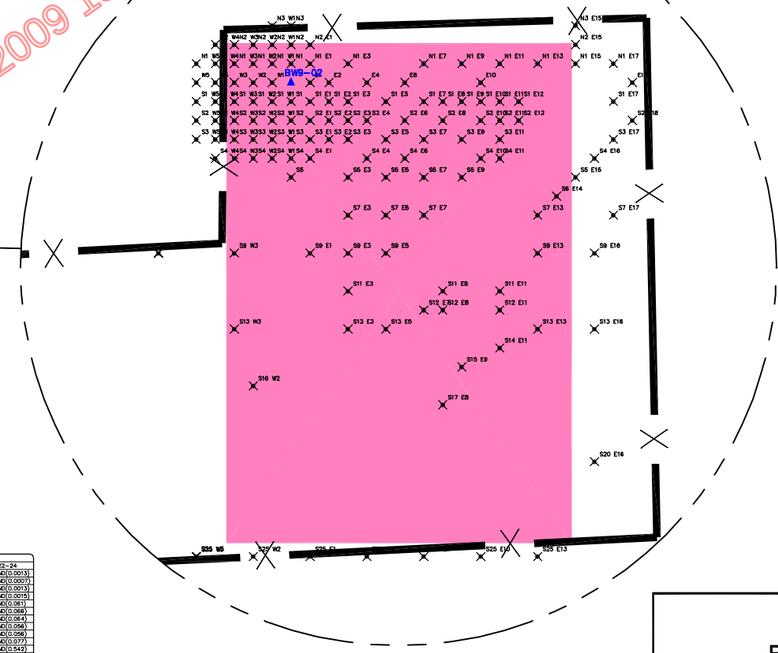
SW9–06	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0017)
Benzene	ND(0.00094)
Tetrachloroethene	ND(0.0017)
Vinyl chloride	ND(0.002)
Benzo(a)anthracene	0.27 J
Benzo(a)pyrene	0.48 J
Benzo(b)fluoranthene	0.41 J
Butyl benzylphthalate	1.7
Dibenz(a,h)anthracene	ND(0.12)
Indeno(1,2,3–cd)pyrene	0.26 J
Antimony	1.23 J
Arsenic [RDC]	7.67
Chromium (total)	63.1
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	1
Iron	0.48 J
Lead	2.05
Manganese	102
PCBs (total)	0.19 J
2,3,7,8–TCDD (TEQ)	NA

SW9–04	
Depth(ft)	0–2
1,1–Dichloroethene	ND(0.0012)
Benzene	ND(0.00065)
Tetrachloroethene	ND(0.0012)
Vinyl chloride	ND(0.0014)
Benzo(a)anthracene	0.06 J
Benzo(a)pyrene	0.08 J
Benzo(b)fluoranthene	0.12 J
Butyl benzylphthalate	ND(0.055)
Dibenz(a,h)anthracene	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.075)
Antimony	ND(0.528)
Arsenic	6.29
Chromium (total)	13.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	29.4
Manganese	292
PCBs (total)	0.08 J
2,3,7,8–TCDD (TEQ)	NA

MWD5			
Depth(ft)	0–2	8–10	22–24
1,1–Dichloroethene	ND(0.0016)	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00085)	ND(0.00092)	ND(0.0007)
Tetrachloroethene	ND(0.0016)	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0019)	ND(0.0013)	ND(0.0015)
Benzo(a)anthracene	ND(0.057)	ND(0.062)	ND(0.061)
Benzo(a)pyrene	ND(0.063)	ND(0.068)	ND(0.066)
Benzo(b)fluoranthene	ND(0.061)	ND(0.066)	ND(0.064)
Butyl benzylphthalate	ND(0.053)	ND(0.058)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.053)	ND(0.058)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.073)	ND(0.079)	ND(0.077)
Antimony	ND(0.512)	ND(0.553)	ND(0.542)
Arsenic [RDC]	2.62	2.51	11.7
Chromium, (total)	2.89	11	6.32
Chromium, (III)	NA	NA	NA
Chromium, (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	3.45	6.82	5.2
Manganese	109	216	546
PCBs (total)	ND(0.035)	ND(0.037)	ND(0.037)
2,3,7,8–TCDD (TEQ)	NA	NA	NA







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LEGEND:

- MWD3 — GROUNDWATER MONITORING WELL LOCATION
- BW9–01 — SOIL BORING LOCATION
- SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- FENCED AREA
- APPROXIMATE AOI AREA
- W–9 = FORMER CENTRAL FOUNDRY

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

- CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA
- HISTORIC DATA FROM PARSONS REPORT
- PCB DELINEATION AREA
- × PCB DELINEATION POINT

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

REVISED 7/31/02

0 200' 400'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOI W-9 - SOIL

ENCORE

FIGURE
4-15

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT–DL
8/1/02 SYR–54–GMS GMS LJP
64411210/64411C04.DWG

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Arcadis

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MWW10-04		
Depth(ft)	0–2	4–6
1,1–Dichloroethene	ND(0.0012)	ND(0.0016)
Benzene	ND(0.00062)	ND(0.00088)
Tetrachloroethene	ND(0.0012)	ND(0.0016)
Vinyl chloride	ND(0.0013)	ND(0.0019)
Benzo(a)anthracene	0.22 J	ND(0.065)
Benzo(a)pyrene	0.21 J	ND(0.071)
Benzo(b)fluoranthene	0.31 J	ND(0.069)
Butyl benzylphthalate	0.086 J	ND(0.06)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.06)
Indeno(1,2,3–cd)pyrene	0.14 J	ND(0.083)
Antimony	0.452 J	ND(0.29)
Arsenic	7.27	2.68
Chromium (total)	11	3.35
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	60.8	2.81
Manganese	423	251
PCBs (total)	ND(0.038)	ND(0.039)
2,3,7,8–TCDD (TEQ)	NA	NA

BW10-06			
Depth(ft)	0–2	6–8	8–10
1,1–Dichloroethene	ND(0.015)	ND(0.0011)	ND(0.018)
Benzene	ND(0.015)	0.0006	ND(0.018)
Tetrachloroethene	ND(0.014)	ND(0.0011)	ND(0.016)
Vinyl chloride	ND(0.01)	ND(0.0013)	ND(0.012)
Benzo(a)anthracene	ND(1.6)	ND(0.065)	ND(1.6)
Benzo(a)pyrene	ND(1.7)	ND(0.071)	ND(1.7)
Benzo(b)fluoranthene	ND(1.7)	ND(0.069)	ND(1.7)
Butyl benzylphthalate	ND(1.5)	ND(0.06)	ND(1.5)
Dibenz(a,h)anthracene	ND(1.5)	ND(0.06)	ND(1.5)
Indeno(1,2,3–cd)pyrene	ND(2)	ND(0.083)	ND(2)
Antimony	ND(0.563)	ND(0.579)	ND(0.571)
Arsenic {RDC}	8.82	5.29	23.8 J
Chromium (total)	50	16	5.07 J
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	30.6	10.8	3.6 J
Manganese	988	278	148 J
PCBs (total)	0.57 J	0.70 J	2.85 J
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWW10-05			
Depth(ft)	0–2	2–4	4–6
1,1–Dichloroethene	ND(0.001)	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00057)	ND(0.00066)	ND(0.00068)
Tetrachloroethene	ND(0.001)	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0012)	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	ND(0.3)	ND(0.063)	ND(0.065)
Benzo(a)pyrene	ND(0.33)	ND(0.069)	ND(0.071)
Benzo(b)fluoranthene	ND(0.32)	ND(0.066)	ND(0.069)
Butyl benzylphthalate	ND(0.28)	ND(0.058)	ND(0.06)
Dibenz(a,h)anthracene	ND(0.28)	ND(0.058)	ND(0.06)
Indeno(1,2,3–cd)pyrene	ND(0.38)	ND(0.080)	ND(0.083)
Antimony	1.53 J	ND(0.28)	0.337 J
Arsenic {RDC}	9.81	4	5.31
Chromium (total)	172	18.9	23
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	136	93.2	30.7
Manganese	805	368	507
PCBs (total)	0.086 J	0.11 J	ND(0.039)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWW10-01				
Depth(ft)	0–2	4–6	8–10	10–12
1,1–Dichloroethene	ND(0.0049)	ND(0.0058)	ND(0.0055)	ND(0.0056)
Benzene	ND(0.0049)	ND(0.0058)	ND(0.0055)	[illegible]
Tetrachloroethene	ND(0.0049)	ND(0.0058)	ND(0.0055)	ND(0.0056)
Vinyl chloride	ND(0.0099)	ND(0.012)	ND(0.0011)	ND(0.0011)
Benzo(a)anthracene	ND(7.4)	ND(2.0)	ND(2.0)	ND(0.41)
Benzo(a)pyrene	ND(7.4)	ND(2.0)	ND(2.0)	ND(0.41)
Benzo(b)fluoranthene	ND(7.4)	ND(2.0)	ND(2.0)	ND(0.41)
Butyl benzylphthalate	ND(7.4)	ND(2.0)	ND(2.0)	[illegible]
Dibenz(a,h)anthracene	ND(7.4)	ND(2.0)	ND(2.0)	ND(0.41)
Indeno(1,2,3–cd)pyrene	ND(7.4)	ND(2.0)	ND(2.0)	ND(0.41)
Antimony	11.2	2.46	0.939 J	ND(2.48)
Arsenic {RDC}	10.8	6.34	4.64	2.99
Chromium (total)	184	29	20.3	15.4
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead {RDC, IDC}	110	4020	278	75.9
Manganese {IPSIC}	1660	497	250	123
PCBs (total)	ND(0.111)	0.21 J	ND(0.041)	ND(0.041)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

MWW10-02		
Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0013)	ND(0.0012)
Benzene	ND(0.0007)	ND(0.00063)
Tetrachloroethene	ND(0.0013)	ND(0.0012)
Vinyl chloride	ND(0.0015)	ND(0.0014)
Benzo(a)anthracene	ND(0.057)	ND(0.06)
Benzo(a)pyrene	ND(0.062)	ND(0.066)
Benzo(b)fluoranthene	ND(0.06)	ND(0.064)
Butyl benzylphthalate	ND(0.053)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.053)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.072)	ND(0.077)
Antimony	ND(0.253)	ND(0.268)
Arsenic	2.84	3.11
Chromium (total)	4.59	4.84
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	ND(0.176)	ND(0.186)
Iron	NA	NA
Lead	2.94	3.5
Manganese	157	172
PCBs (total)	ND(0.035)	ND(0.036)
2,3,7,8–TCDD (TEQ)	NA	NA

BW10-05				
Depth(ft)	0–2	2–4	8–10	10–12
1,1–Dichloroethene	ND(0.0012)	ND(0.019)	ND(0.00094)	ND(0.0011)
Benzene	0.00068 J	ND(0.019)	ND(0.00051)	ND(0.00058)
Tetrachloroethene	ND(0.0012)	ND(0.017)	ND(0.00094)	ND(0.0011)
Vinyl chloride	ND(0.0014)	ND(0.012)	ND(0.0011)	ND(0.0012)
Benzo(a)anthracene	ND(1.5)	ND(1.7)	ND(0.062)	ND(0.063)
Benzo(a)pyrene	ND(1.6)	ND(1.9)	ND(0.068)	ND(0.069)
Benzo(b)fluoranthene	ND(1.5)	ND(1.8)	ND(0.066)	ND(0.067)
Butyl benzylphthalate	ND(1.4)	ND(1.6)	ND(0.058)	ND(0.059)
Dibenz(a,h)anthracene	ND(1.4)	ND(1.6)	ND(0.058)	ND(0.059)
Indeno(1,2,3–cd)pyrene	ND(1.9)	ND(2.2)	ND(0.079)	ND(0.081)
Antimony	ND(5.21)	ND(0.617)	ND(0.556)	ND(0.564)
Arsenic {RDC}	27.4	5.34 J	4.1 J	4.86
Chromium (total) {RPSIC, IPSIC}	564	21.7 J	9.07 J	13.1
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead	23.7	137 J	5.94 J	7.2
Manganese {IPSIC}	2450	245 J	399 J	402
PCBs (total)	0.40 J	1.3 J	2.5	0.39
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

SW13-04	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.059)
Benzo(a)pyrene	ND(0.065)
Benzo(b)fluoranthene	ND(0.062)
Butyl benzylphthalate	ND(0.055)
Dibenz(a,h)anthracene	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.075)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND(0.036)
2,3,7,8–TCDD (TEQ)	NA

BW10-07		
Depth(ft)	0–2	3–5
1,1–Dichloroethene	NA	NA
Benzene	NA	NA
Tetrachloroethene	NA	NA
Vinyl chloride	NA	NA
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	11.3	11.4
Chromium (VI)	ND(0.391)	ND(0.422)
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	NA	NA
Manganese	164	169
PCBs (total)	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA

SW13-03	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.6)
Benzo(a)pyrene	ND(0.66)
Benzo(b)fluoranthene	ND(0.63)
Butyl benzylphthalate	ND(0.56)
Dibenz(a,h)anthracene	ND(0.56)
Indeno(1,2,3–cd)pyrene	ND(0.76)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.62 J
2,3,7,8–TCDD (TEQ)	NA

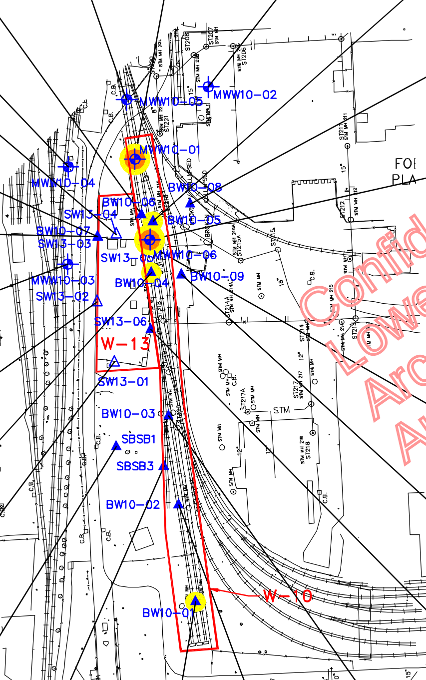
MWW10-03		
Depth(ft)	0–2	2–4
1,1–Dichloroethene	ND(0.0014)	ND(0.0012)
Benzene	ND(0.00073)	ND(0.00067)
Tetrachloroethene	ND(0.0014)	ND(0.0012)
Vinyl chloride	ND(0.0016)	ND(0.0014)
Benzo(a)anthracene	0.38	ND(0.067)
Benzo(a)pyrene	0.62	ND(0.073)
Benzo(b)fluoranthene	1.2	ND(0.071)
Butyl benzylphthalate	0.15 J	ND(0.062)
Dibenz(a,h)anthracene	0.15 J	ND(0.062)
Indeno(1,2,3–cd)pyrene	0.47	ND(0.085)
Antimony	0.876 J	ND(0.298)
Arsenic {RDC}	20.1	10.9
Chromium (total)	11.4	8.09 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	71	4.99
Manganese	324	392 J
PCBs (total)	0.047 J	ND(0.04)
2,3,7,8–TCDD (TEQ)	NA	NA

SW13-02	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.24)
Benzo(a)pyrene	ND(0.26)
Benzo(b)fluoranthene	ND(0.25)
Butyl benzylphthalate	ND(0.22)
Dibenz(a,h)anthracene	ND(0.22)
Indeno(1,2,3–cd)pyrene	ND(0.31)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.10 J
2,3,7,8–TCDD (TEQ)	NA

BW10-04		
Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.016)	ND(0.0011)
Benzene	ND(0.016)	ND(0.0006)
Tetrachloroethene	ND(0.014)	ND(0.0011)
Vinyl chloride	ND(0.01)	ND(0.0013)
Benzo(a)anthracene	ND(1.5)	ND(0.064)
Benzo(a)pyrene	ND(1.7)	ND(0.07)
Benzo(b)fluoranthene	ND(1.6)	ND(0.068)
Butyl benzylphthalate	ND(1.4)	ND(0.06)
Dibenz(a,h)anthracene	ND(1.4)	ND(0.06)
Indeno(1,2,3–cd)pyrene	ND(1.9)	ND(0.082)
Antimony	ND(5.41)	ND(0.574)
Arsenic {RDC}	8.04	4.26
Chromium (total) {RPSIC, IPSIC}	596	12.4
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	232	632
Manganese {RPSIC, IPSIC}	10000	182
PCBs (total)	ND(3.7)	0.15 J
2,3,7,8–TCDD (TEQ)	NA	NA

BW10-08			
Depth(ft)	0–2	8–10	11–13
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	12.4	14	15.2
Chromium (VI)	ND(0.389)	ND(0.403)	ND(0.402)
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	327	477	338
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWW10-06			
Depth(ft)	0–2	2–4	8–10
1,1–Dichloroethene	ND(0.015)	ND(0.015)	ND(0.015)
Benzene	ND(0.015)	ND(0.015)	ND(0.015)
Tetrachloroethene	ND(0.014)	ND(0.013)	ND(0.013)
Vinyl chloride	ND(0.01)	ND(0.0098)	ND(0.0097)
Benzo(a)anthracene	0.8 J	ND(0.063)	0.12 J
Benzo(a)pyrene	1.2 J	ND(0.069)	0.14 J
Benzo(b)fluoranthene	2.4 J	ND(0.066)	0.26 J
Butyl benzylphthalate	ND(0.057)	ND(0.058)	ND(0.059)
Dibenz(a,h)anthracene	0.085 J	ND(0.058)	ND(0.059)
Indeno(1,2,3–cd)pyrene	0.46 J	ND(0.08)	ND(0.08)
Antimony	1.05 J	ND(0.28)	ND(0.28)
Arsenic	6.1	5.6	4.94
Chromium (total)	199	18.3	15.4
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	42.8	8.01	8.23
Manganese {IPSIC}	2260	456	426
PCBs (total)	0.58 J	0.39 J	0.92
2,3,7,8–TCDD (TEQ)	NA	NA	NA



SW13-05	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.15)
Benzo(a)pyrene	ND(0.16)
Benzo(b)fluoranthene	ND(0.16)
Butyl benzylphthalate	ND(0.14)
Dibenz(a,h)anthracene	ND(0.14)
Indeno(1,2,3–cd)pyrene	ND(0.19)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.063 J
2,3,7,8–TCDD (TEQ)	NA

BW10-09	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3–cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	60.2
Chromium (VI)	ND(0.418)
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	1290
PCBs (total)	NA
2,3,7,8–TCDD (TEQ)	NA

SW13-01	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.06)
Benzo(a)pyrene	ND(0.066)
Benzo(b)fluoranthene	ND(0.064)
Butyl benzylphthalate	0.27 J
Dibenz(a,h)anthracene	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.077)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.042 J
2,3,7,8–TCDD (TEQ)	NA

SBSB1	
Depth(ft)	16–18
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND
Arsenic	0.862
Chromium (total)	3.85
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	3360
Lead	2.1
Manganese	87.6
PCBs (total)	ND(0.57)
2,3,7,8–TCDD (TEQ)	NA

SBSB3	
Depth(ft)	16–18
1,1–Dichloroethene	ND
Benzene	ND
Tetrachloroethene	ND
Vinyl chloride	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Butyl benzylphthalate	ND
Dibenz(a,h)anthracene	ND
Indeno(1,2,3–cd)pyrene	ND
Antimony	ND
Arsenic	0.878
Chromium (total)	3.8
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND
Iron	4400
Lead	2.22
Manganese	117
PCBs (total)	ND(0.54)
2,3,7,8–TCDD (TEQ)	NA

BW10-01			
Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.0055)	ND(0.0055)	ND(0.0054)
Benzene	ND(0.0055)	ND(0.0055)	ND(0.0054)
Tetrachloroethene	ND(0.0055)	ND(0.0055)	ND(0.0054)
Vinyl chloride	ND(0.011)	ND(0.011)	ND(0.011)
Benzo(a)anthracene	ND(3.6)	ND(0.36)	ND(0.37)
Benzo(a)pyrene	ND(3.6)	ND(0.36)	ND(0.37)
Benzo(b)fluoranthene	ND(3.6)	ND(0.36)	ND(0.37)
Butyl benzylphthalate	ND(3.6)	ND(0.36)	ND(0.37)
Dibenz(a,h)anthracene	ND(3.6)	ND(0.36)	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(3.6)	ND(0.36)	ND(0.37)
Antimony	0.738 J	0.864 J	1.09 J
Arsenic {RDC}	2.82	3.75	8.05
Chromium (total)	32.9	44.1	94.4
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	18.3	22.2	28.9
Manganese {IPSIC}	1770	402	864
PCBs (total)	1.1	0.14	ND(0.037)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BW10-02			
Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.005)	ND(0.25)	ND(0.24) [ND(0.27)]
Benzene	ND(0.005)	ND(0.25)	ND(0.24) [ND(0.27)]
Tetrachloroethene	ND(0.005)	ND(0.25)	ND(0.24) [ND(0.27)]
Vinyl chloride	ND(0.010)	ND(0.25)	ND(0.05) [ND(0.53)]
Benzo(a)anthracene	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Benzo(a)pyrene	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Benzo(b)fluoranthene	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Butyl benzylphthalate	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Dibenz(a,h)anthracene	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Indeno(1,2,3–cd)pyrene	ND(1.4)	ND(7.1)	ND(9.1) [ND(9.2)]
Antimony	1.04 J	ND(2.15)	ND(2.2) [ND(2.23)]
Arsenic	4.17	1.91	1.66 [1.75]
Chromium (total)	124	22	18 [16.4]
Chromium (III)	NA	NA	[illegible]
Chromium (VI)	NA	NA	NA [NA]
Cyanide (total)	NA	NA	NA [NA]
Iron	NA	NA	NA [NA]
Lead	27.8	8.72	26.5 [41.8]
Manganese	1330	534	[illegible]
PCBs (total) {RDC}	0.071	[illegible]	[illegible]
2,3,7,8–TCDD (TEQ)	NA	NA	NA [NA]

BW10-03			
Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.0046)	ND(0.0044)	ND(0.0048)
Benzene	ND(0.0046)	ND(0.0044)	ND(0.0048)
Tetrachloroethene	ND(0.0046)	ND(0.0044)	ND(0.0048)
Vinyl chloride	ND(0.0093)	ND(0.0089)	ND(0.0097)
Benzo(a)anthracene	ND(7.5)	ND(0.38)	ND(0.38)
Benzo(a)pyrene	ND(7.5)	ND(0.38)	ND(0.38)
Benzo(b)fluoranthene	ND(7.5)	ND(0.38)	ND(0.38)
Butyl benzylphthalate	ND(7.5)	ND(0.38)	ND(0.38)
Dibenz(a,h)anthracene	ND(7.5)	ND(0.38)	ND(0.38)
Indeno(1,2,3–cd)pyrene	ND(7.5)	ND(0.38)	ND(0.38)
Antimony	1.57 J	ND(2.3)	ND(2.33)
Arsenic	4.47	4.11	3.87
Chromium (total)	37.1	9.37	14.1
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	50.2	8.59	26.3
Manganese	659	300	308
PCBs (total)	3.53 J	ND(0.114)	0.61
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SW13-06	
Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.24)
Benzo(a)pyrene	ND(0.26)
Benzo(b)fluoranthene	ND(0.25)
Butyl benzylphthalate	0.47 J
Dibenz(a,h)anthracene	ND(0.22)
Indeno(1,2,3–cd)pyrene	ND(0.31)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.378 J
2,3,7,8–TCDD (TEQ)	NA

LEGEND:

MWW1–02 — GROUNDWATER MONITORING WELL LOCATION

BM1–08 — SOIL BORING LOCATION

SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION

LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)

APPROXIMATE AOI AREA

W–10 = RAILROAD MARSHALL'S AREA
W–13 = MONTCALM SUBSTATION

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

HISTORIC DATA FROM PARSONS REPORT

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

0 200' 400'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs W-10 AND -13 SOIL

ENCORE

FIGURE 4-16

X: 64411X00, X01.DWG 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS DJP
64411210/64411C24.DWG

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Arcadis
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Arcadis

Aug 07, 2009 15:19

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Lowell McBurney
Arcadis
Aug 07, 2009 15:19

BM1-05

Depth(ft)	0-2	4-6
1,1-Dichloroethene	ND(0.0056)	ND(0.005)
Benzene	ND(0.0056)	ND(0.005)
Tetrachloroethene	ND(0.0056)	ND(0.005)
Vinyl chloride	ND(0.011)	ND(0.01)
Benzo(a)anthracene	ND(1.4)	0.78
Benzo(a)pyrene	ND(1.4)	0.62
Benzo(b)fluoranthene	ND(1.4)	0.73
Butyl benzylphthalate	1 J	ND(0.37)
Dibenz(a,h)anthracene	ND(1.4)	0.083 J
Indeno(1,2,3-cd)pyrene	ND(1.4)	0.27 J
Antimony	2.11 J	ND(2.22)
Arsenic	5.02	3.17
Chromium (total)	NA	NA
Chromium (III)	206.94	4.17
Chromium (VI)	5.06	ND(0.555)
Cyanide (total)	1.97	ND(0.555)
Iron	NA	NA
Lead	115	8.1
Manganese	265	164
PCBs (total)	2.2 J	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA

BM1-03

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00067)	ND(0.00065)
Tetrachloroethene	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	ND(0.061)	ND(0.061)
Benzo(a)pyrene	ND(0.067)	ND(0.066)
Benzo(b)fluoranthene	ND(0.065)	ND(0.064)
Butyl benzylphthalate	ND(0.057)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.078)	ND(0.077)
Antimony	ND(0.545)	ND(0.541)
Arsenic	2.93	4.44
Chromium (total)	NA	NA
Chromium (III)	8.47 J	5.89
Chromium (VI)	0.00044 J	0.00004 J
Cyanide (total)	ND(0.189)	ND(0.188)
Iron	NA	NA
Lead	8.27 J	4.86
Manganese	647 J	222
PCBs (total)	ND(0.037)	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA	NA

BM1-10

Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00066)	ND(0.00072)
Tetrachloroethene	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	0.32 J	ND(0.06)
Benzo(a)pyrene	0.33 J	ND(0.065)
Benzo(b)fluoranthene	0.48	ND(0.063)
Butyl benzylphthalate	ND(0.053)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.053)	ND(0.055)
Indeno(1,2,3-cd)pyrene	0.16 J	ND(0.076)
Antimony	ND(0.507)	ND(0.53)
Arsenic	3.19	3
Chromium (total)	NA	NA
Chromium (III)	4.89 J	3.62
Chromium (VI)	0.0003 J	0.00017 J
Cyanide (total)	ND(0.176)	ND(0.184)
Iron	NA	NA
Lead	4.68	3.41
Manganese	137	111
PCBs (total)	0.068 J	ND(0.036)
2,3,7,8-TCDD (TEQ)	NA	NA

SM1-08

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0011) [ND(0.0011)]
Benzene	ND(0.00059) [ND(0.0006)]
Tetrachloroethene	ND(0.0011) [ND(0.0011)]
Vinyl chloride	ND(0.0013) [ND(0.0013)]
Benzo(a)anthracene	0.21 J [1.3 J]
Benzo(a)pyrene	0.27 J [1.2 J]
Benzo(b)fluoranthene	0.47 J [2.3]
Butyl benzylphthalate	5.8 [14]
Dibenz(a,h)anthracene	ND(0.11) [ND(0.23)]
Indeno(1,2,3-cd)pyrene	0.22 J [0.89 J]
Antimony	4.66 [4.64]
Arsenic {RDC}	9.62 [13.8]
Chromium (total)	NA [NA]
Chromium (III)	98.07 [74.02]
Chromium (VI)	2.93 [4.28]
Cyanide (total)	1.1 [0.239 J]
Iron	NA [NA]
Lead {RDC}	740 [575]
Manganese	455 [449]
PCBs (total)	0.99 J [0.60]
2,3,7,8-TCDD (TEQ)	NA [NA]

BM13-01

Depth(ft)	0-2	8-10
1,1-Dichloroethene	NA [NA]	NA
Benzene	ND(0.00059) [ND(0.00067)]	ND(0.00077)
Tetrachloroethene	NA [NA]	NA
Vinyl chloride	NA [NA]	NA
Benzo(a)anthracene	0.1 J [0.095 J]	ND(0.062)
Benzo(a)pyrene	0.11 J [0.099 J]	ND(0.068)
Benzo(b)fluoranthene	0.14 J [0.12 J]	ND(0.066)
Butyl benzylphthalate	ND(0.055) [ND(0.054)]	ND(0.058)
Dibenz(a,h)anthracene	ND(0.055) [ND(0.054)]	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.075) [ND(0.075)]	ND(0.079)
Antimony	NA [NA]	NA
Arsenic	NA [NA]	NA
Chromium (total)	NA [NA]	NA
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	6.96 [7.33]	4.01
Manganese	NA [NA]	NA
PCBs (total)	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

BM13-02

Depth(ft)	0-2	8-10
1,1-Dichloroethene	NA [NA]	NA
Benzene	ND(0.00059) [ND(0.00059)]	ND(0.00072)
Tetrachloroethene	NA [NA]	NA
Vinyl chloride	NA [NA]	NA
Benzo(a)anthracene	0.11 J [0.06 J]	ND(0.06)
Benzo(a)pyrene	0.098 J [ND(0.063)]	ND(0.066)
Benzo(b)fluoranthene	0.12 J [0.08 J]	ND(0.063)
Butyl benzylphthalate	ND(0.053) [ND(0.054)]	ND(0.056)
Dibenz(a,h)anthracene	ND(0.053) [ND(0.054)]	ND(0.056)
Indeno(1,2,3-cd)pyrene	ND(0.073) [ND(0.074)]	ND(0.076)
Antimony	NA [NA]	NA
Arsenic	NA [NA]	NA
Chromium (total)	NA [NA]	NA
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	8.06 [9.33]	3.02
Manganese	NA [NA]	NA
PCBs (total)	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

BM1-01

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0052)	ND(0.0051)
Benzene	ND(0.0052)	ND(0.0051)
Tetrachloroethene	ND(0.0052)	ND(0.0051)
Vinyl chloride	ND(0.01)	ND(0.01)
Benzo(a)anthracene	1.2 J	ND(0.38)
Benzo(a)pyrene	1.1 J	ND(0.38)
Benzo(b)fluoranthene	1.5 J	ND(0.38)
Butyl benzylphthalate	0.87 J	ND(0.38)
Dibenz(a,h)anthracene	ND(1.8)	ND(0.38)
Indeno(1,2,3-cd)pyrene	0.66 J	ND(0.38)
Antimony	1.78 J	ND(2.3)
Arsenic {RDC}	15.6	3.79
Chromium (total)	NA	NA
Chromium (III)	43.75 J	5.71 J
Chromium (VI)	0.554 J	0.554 J
Cyanide (total)	2.06	ND(0.576)
Iron	NA	NA
Lead {RDC}	406	9.77
Manganese	1290	221
PCBs (total)	0.354 J	ND(0.114)
2,3,7,8-TCDD (TEQ)	NA	NA

BM1-04

Depth(ft)	0-2	4-6
1,1-Dichloroethene	ND(0.0012)	ND(0.0015)
Benzene	ND(0.00064)	ND(0.00081)
Tetrachloroethene	ND(0.0012)	ND(0.0015)
Vinyl chloride	ND(0.0014)	ND(0.0017)
Benzo(a)anthracene	ND(0.06)	ND(0.064)
Benzo(a)pyrene	ND(0.066)	ND(0.069)
Benzo(b)fluoranthene	ND(0.064)	ND(0.067)
Butyl benzylphthalate	0.11 J	ND(0.059)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.077)	ND(0.081)
Antimony	0.581 J	ND(0.567)
Arsenic	3.36	1.18
Chromium (total)	NA	NA
Chromium (III)	21.4 J	10 J
Chromium (VI)	0.0007 J	0.00012 J
Cyanide (total)	0.448 J	ND(0.197)
Iron	NA	NA
Lead	50.3	36.8
Manganese	387	182
PCBs (total)	0.173 J	ND(0.039)
2,3,7,8-TCDD (TEQ)	NA	NA

BM1-06

Depth(ft)	0-2	4-6
1,1-Dichloroethene	ND(0.0082)	ND(0.0053)
Benzene	ND(0.0082)	ND(0.0053)
Tetrachloroethene	ND(0.0082)	ND(0.0053)
Vinyl chloride	ND(0.016)	ND(0.011)
Benzo(a)anthracene	0.12 J	ND(0.38)
Benzo(a)pyrene	0.11 J	ND(0.38)
Benzo(b)fluoranthene	0.14 J	ND(0.38)
Butyl benzylphthalate	3.9	ND(0.38)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.38)
Indeno(1,2,3-cd)pyrene	ND(0.37)	ND(0.38)
Antimony	1.3 J	ND(2.3)
Arsenic {RDC}	14.7	6.2
Chromium (total)	NA	NA
Chromium (III)	87.4	3.95
Chromium (VI)	ND(0.554)	ND(0.576)
Cyanide (total)	1.6	ND(0.576)
Iron	NA	NA
Lead	55.9	3.04
Manganese	218	165
PCBs (total)	0.28 J	ND(0.114)
2,3,7,8-TCDD (TEQ)	NA	NA

BM1-07

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00064)	ND(0.00066)
Tetrachloroethene	0.0062	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	ND(0.59)	ND(0.65)
Benzo(a)pyrene	ND(0.64)	ND(0.71)
Benzo(b)fluoranthene	ND(0.62)	ND(0.69)
Butyl benzylphthalate	ND(0.54)	ND(0.61)
Dibenz(a,h)anthracene	ND(0.54)	ND(0.61)
Indeno(1,2,3-cd)pyrene	ND(0.75)	ND(0.83)
Antimony	ND(0.523)	ND(0.582)
Arsenic	4.28	4.92
Chromium (total)	NA	NA
Chromium (III)	5.49 J	5.1 J
Chromium (VI)	0.00083 J	0.00012 J
Cyanide (total)	ND(0.181)	ND(0.202)
Iron	NA	NA
Lead	10.3	4.68
Manganese	217	219
PCBs (total) {RDC,IDC}	31.6 J	38.8 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWM1-01

Depth(ft)	0-2	4-5
1,1-Dichloroethene	ND(0.0062)	ND(0.0052)
Benzene	ND(0.0062)	ND(0.0052)
Tetrachloroethene	ND(0.0062)	ND(0.0052)
Vinyl chloride	ND(0.012)	ND(0.01)
Benzo(a)anthracene	ND(0.37)	ND(0.37)
Benzo(a)pyrene	ND(0.37)	ND(0.37)
Benzo(b)fluoranthene	ND(0.37)	ND(0.37)
Butyl benzylphthalate	0.067 J	ND(0.37)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.37)	ND(0.37)
Antimony	0.622 J	ND(2.27)
Arsenic {RDC}	14.4	13.9
Chromium (total)	NA	NA
Chromium (III)	12.92	3.83
Chromium (VI)	ND(0.554)	ND(0.567)
Cyanide (total)	ND(0.554)	ND(0.567)
Iron	NA	NA
Lead	56.5	3.28
Manganese	250	181
PCBs (total)	0.115 J	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA

SM1-07

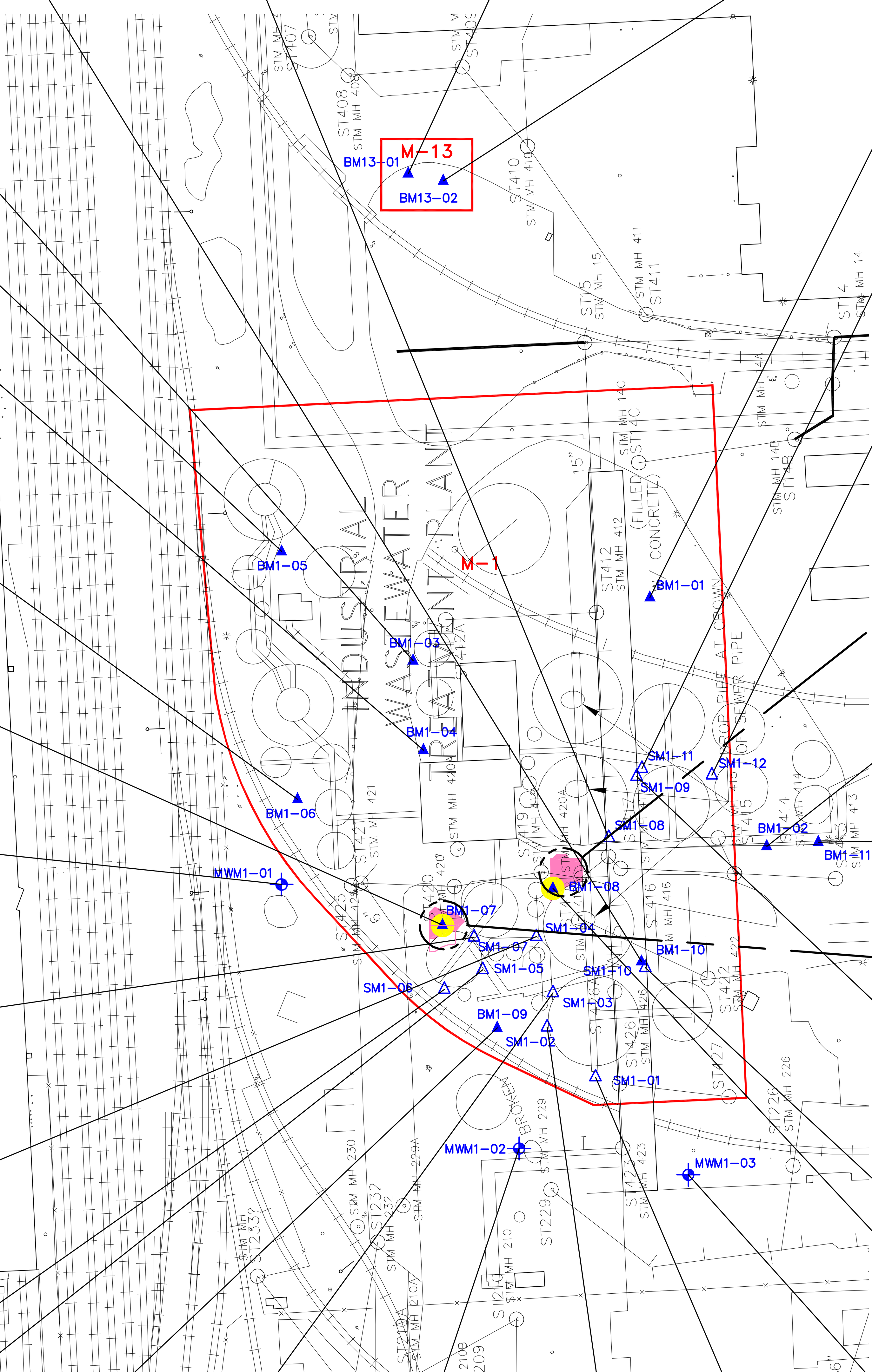
Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0012)
Benzene	ND(0.00067)
Tetrachloroethene	0.0072
Vinyl chloride	ND(0.0015)
Benzo(a)anthracene	ND(0.62)
Benzo(a)pyrene	ND(0.68)
Benzo(b)fluoranthene	ND(0.65)
Butyl benzylphthalate	0.97 J
Dibenz(a,h)anthracene	ND(0.57)
Indeno(1,2,3-cd)pyrene	ND(0.79)
Antimony	2.5
Arsenic {RDC}	8.82
Chromium (total)	NA
Chromium (III)	57.3
Chromium (VI)	3.5
Cyanide (total)	0.283 J
Iron	NA
Lead	245
Manganese	422
PCBs (total) {RDC}	14.7 J
2,3,7,8-TCDD (TEQ)	NA

SM1-04

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0012)
Benzene	ND(0.00063)
Tetrachloroethene	ND(0.0012)
Vinyl chloride	ND(0.0014)
Benzo(a)anthracene	ND(0.31)
Benzo(a)pyrene	ND(0.34)
Benzo(b)fluoranthene	ND(0.33)
Butyl benzylphthalate	1.7 J
Dibenz(a,h)anthracene	ND(0.29)
Indeno(1,2,3-cd)pyrene	ND(0.4)
Antimony	4.11
Arsenic {RDC}	12.7
Chromium (total)	NA
Chromium (III)	61.7
Chromium (VI)	10.6
Cyanide (total)	0.853
Iron	NA
Lead {RDC}	560
Manganese	665
PCBs (total)	0.21 J
2,3,7,8-TCDD (TEQ)	NA

SM1-06

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0011)
Benzene	ND(0.0006)
Tetrachloroethene	ND(0.0011)
Vinyl chloride	ND(0.0013)
Benzo(a)anthracene	ND(0.062)
Benzo(a)pyrene	ND(0.067)
Benzo(b)fluoranthene	ND(0.065)
Butyl benzylphthalate	0.063 J
Dibenz(a,h)anthracene	ND(0.057)
Indeno(1,2,3-cd)pyrene	ND(0.078)
Antimony	ND(0.549)
Arsenic	3.47
Chromium (total)	NA
Chromium (III)	8.49
Chromium (VI)	ND(0.392)
Cyanide (total)	ND(0.191)
Iron	NA
Lead	9.39
Manganese	307
PCBs (total)	ND(0.037)
2,3,7,8-TCDD (TEQ)	NA



SM1-11

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0058)
Benzene	ND(0.0058)
Tetrachloroethene	ND(0.0058)
Vinyl chloride	ND(0.012)
Benzo(a)anthracene	ND(0.04)
Benzo(a)pyrene	ND(0.04)
Benzo(b)fluoranthene	ND(0.04)
Butyl benzylphthalate	ND(0.04)
Dibenz(a,h)anthracene	ND(0.04)
Indeno(1,2,3-cd)pyrene	ND(0.04)
Antimony	0.735 J
Arsenic {RDC}	13.6
Chromium (total)	NA
Chromium (III)	5.67
Chromium (VI)	1.23
Cyanide (total)	ND(0.601)
Iron	NA
Lead	12.9
Manganese	191
PCBs (total)	0.159 J
2,3,7,8-TCDD (TEQ)	NA

SM1-12

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0054)
Benzene	ND(0.0054)
Tetrachloroethene	ND(0.0054)
Vinyl chloride	ND(0.011)
Benzo(a)anthracene	ND(0.38)
Benzo(a)pyrene	ND(0.38)
Benzo(b)fluoranthene	ND(0.38)
Butyl benzylphthalate	0.21 J
Dibenz(a,h)anthracene	ND(0.38)
Indeno(1,2,3-cd)pyrene	ND(0.38)
Antimony	0.705 J
Arsenic {RDC}	13.8
Chromium (total)	NA
Chromium (III)	56.5
Chromium (VI)	2.7
Cyanide (total)	1.7
Iron	NA
Lead	58.8
Manganese	227
PCBs (total)	0.615 J
2,3,7,8-TCDD (TEQ)	NA

BM1-02

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0054)
Benzene	ND(0.0054)
Tetrachloroethene	ND(0.0054)
Vinyl chloride	ND(0.011)
Benzo(a)anthracene	ND(0.38)
Benzo(a)pyrene	ND(0.38)
Benzo(b)fluoranthene	ND(0.38)
Butyl benzylphthalate	ND(0.38)
Dibenz(a,h)anthracene	ND(0.38)
Indeno(1,2,3-cd)pyrene	ND(0.38)
Antimony	ND(2.28)
Arsenic	3.85
Chromium (total)	NA
Chromium (III)	46 J
Chromium (VI)	0.00007 J
Cyanide (total)	25.9
Iron	NA
Lead	11.9
Manganese	161
PCBs (total)	0.132 J
2,3,7,8-TCDD (TEQ)	NA

BM1-11

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0011)	ND(0.0012)
Benzene	ND(0.00061)	ND(0.00063)
Tetrachloroethene	ND(0.0011)	ND(0.0012)
Vinyl chloride	ND(0.0013)	ND(0.0014)
Benzo(a)anthracene	0.084 J	0.15 J
Benzo(a)pyrene	0.075 J	0.14 J
Benzo(b)fluoranthene	0.091 J	0.15 J
Butyl benzylphthalate	ND(0.053)	ND(0.058)
Dibenz(a,h)anthracene	ND(0.053)	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.073)	0.081 J
Antimony	ND(0.51)	ND(0.561)
Arsenic	3.37	3.86
Chromium (total)	NA	NA
Chromium (III)	7.85	9.26
Chromium (VI)	ND(0.364)	ND(0.401)
Cyanide (total)	0.553	3.46
Iron	NA	NA
Lead	7.2	7.73
Manganese	212	267
PCBs (total)	0.062 J	0.071 J
2,3,7,8-TCDD (TEQ)	NA	NA

SM1-09

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0013)
Benzene	ND(0.0007)
Tetrachloroethene	ND(0.0013)
Vinyl chloride	ND(0.0015)
Benzo(a)anthracene	ND(0.069)
Benzo(a)pyrene	ND(0.075)
Benzo(b)fluoranthene	ND(0.073)
Butyl benzylphthalate	0.067 J
Dibenz(a,h)anthracene	ND(0.064)
Indeno(1,2,3-cd)pyrene	ND(0.088)
Antimony	ND(0.613)
Arsenic {RDC}	38.3
Chromium (total)	NA
Chromium (III)	9.44
Chromium (VI)	0.858
Cyanide (total)	ND(0.213)
Iron	NA
Lead	27
Manganese	323
PCBs (total)	ND(0.042)
2,3,7,8-TCDD (TEQ)	NA

SM1-10

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0011)
Benzene	ND(0.0006)
Tetrachloroethene	ND(0.0011)
Vinyl chloride	ND(0.0013)
Benzo(a)anthracene	ND(0.24)
Benzo(a)pyrene	ND(0.26)
Benzo(b)fluoranthene	ND(0.25)
Butyl benzylphthalate	0.64 J
Dibenz(a,h)anthracene	ND(0.22)
Indeno(1,2,3-cd)pyrene	ND(0.31)
Antimony	0.655 J
Arsenic {RDC}	18.7
Chromium (total)	NA
Chromium (III)	36.76
Chromium (VI)	1.54
Cyanide (total)	ND(0.185)
Iron	NA
Lead	49.4
Manganese	267
PCBs (total)	0.22 J
2,3,7,8-TCDD (TEQ)	NA

SM1-05

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0011)
Benzene	ND(0.00062)
Tetrachloroethene	ND(0.0011)
Vinyl chloride	ND(0.0013)
Benzo(a)anthracene	ND(0.63)
Benzo(a)pyrene	ND(0.69)
Benzo(b)fluoranthene	ND(0.66)
Butyl benzylphthalate	2.3 J
Dibenz(a,h)anthracene	ND(0.58)
Indeno(1,2,3-cd)pyrene	ND(0.8)
Antimony	2.07 J
Arsenic	2.66
Chromium (total)	NA
Chromium (III)	12.1
Chromium (VI)	11.4
Cyanide (total)	0.6
Iron	NA
Lead	205
Manganese	901
PCBs (total)	2.84 J
2,3,7,8-TCDD (TEQ)	NA

BM1-09

Depth(ft)	0-2	3-5
1,1-Dichloroethene	ND(0.0046)	ND(0.0053)
Benzene	ND(0.0046)	ND(0.0053)
Tetrachloroethene	ND(0.0046)	ND(0.0053)
Vinyl chloride	ND(0.0092)	ND(0.011)
Benzo(a)anthracene	ND(0.35)	ND(0.37)
Benzo(a)pyrene	ND(0.35)	ND(0.37)
Benzo(b)fluoranthene	ND(0.35)	ND(0.37)
Butyl benzylphthalate	ND(0.35)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.35)	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.35)	ND(0.37)
Antimony	0.308 J	ND(2.26)
Arsenic	4.29	4.73
Chromium (total)	NA	NA
Chromium (III)	5.96	4.23
Chromium (VI)	ND(0.537)	ND(0.565)
Cyanide (total)	ND(0.537)	ND(0.565)
Iron	NA	NA
Lead	10.9	4.09
Manganese	229 J	292 J
PCBs (total)	0.117 J	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA

SM1-03

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0013)
Benzene	ND(0.00069)
Tetrachloroethene	ND(0.0013)
Vinyl chloride	ND(0.0015)
Benzo(a)anthracene	0.34 J
Benzo(a)pyrene	0.33 J
Benzo(b)fluoranthene	0.5
Butyl benzylphthalate	1.4
Dibenz(a,h)anthracene	0.066 J
Indeno(1,2,3-cd)pyrene	0.23 J
Antimony	3.19
Arsenic	5.91
Chromium (total)	NA
Chromium (III)	33.32
Chromium (VI)	1.78
Cyanide (total)	0.329 J
Iron	NA
Lead {RDC}	460
Manganese	377
PCBs (total)	0.32 J
2,3,7,8-TCDD (TEQ)	NA

MWM1-02

Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	ND(0.0012)	ND(0.0012)	ND(0.0014)
Benzene	ND(0.00064)	ND(0.00067)	ND(0.00073)
Tetrachloroethene	ND(0.0012)	ND(0.0012)	ND(0.0014)
Vinyl chloride	ND(0.0014)	ND(0.0014)	ND(0.0016)
Benzo(a)anthracene	0.18 J	ND(0.066)	ND(0.059)
Benzo(a)pyrene	0.17 J	ND(0.072)	ND(0.065)
Benzo(b)fluoranthene	0.19 J	ND(0.069)	ND(0.062)
Butyl benzylphthalate	0.11 J	ND(0.061)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.061)	ND(0.055)
Indeno(1,2,3-cd)pyrene	0.12 J	ND(0.084)	ND(0.075)
Antimony	ND(0.552)	ND(0.587)	ND(0.528)
Arsenic {RDC}	12	3.96	2.61
Chromium (total)	NA	NA	NA
Chromium (III)	5.05	7.49	3.69
Chromium (VI)	ND(7.88)	ND(0.419)	ND(0.377)
Cyanide (total)	ND(0.191)	ND(0.204)	2.01
Iron	NA	NA	NA
Lead	18.9	5.25	2.3
Manganese	107	400	77
PCBs (total)	0.33 J	ND(0.040)	ND(0.036)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SM1-02

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0011)
Benzene	ND(0.00061)
Tetrachloroethene	ND(0.0011)
Vinyl chloride	ND(0.0013)
Benzo(a)anthracene	0.085 J
Benzo(a)pyrene	0.072 J
Benzo(b)fluoranthene	0.1 J
Butyl benzylphthalate	0.69
Dibenz(a,h)anthracene	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.08)
Antimony	1.11 J
Arsenic {RDC}	26.8
Chromium (total)	NA
Chromium (III)	13.42
Chromium (VI)	0.985
Cyanide (total)	0.309 J
Iron	NA
Lead	153
Manganese	406
PCBs (total)	0.19 J
2,3,7,8-TCDD (TEQ)	NA

SM1-01

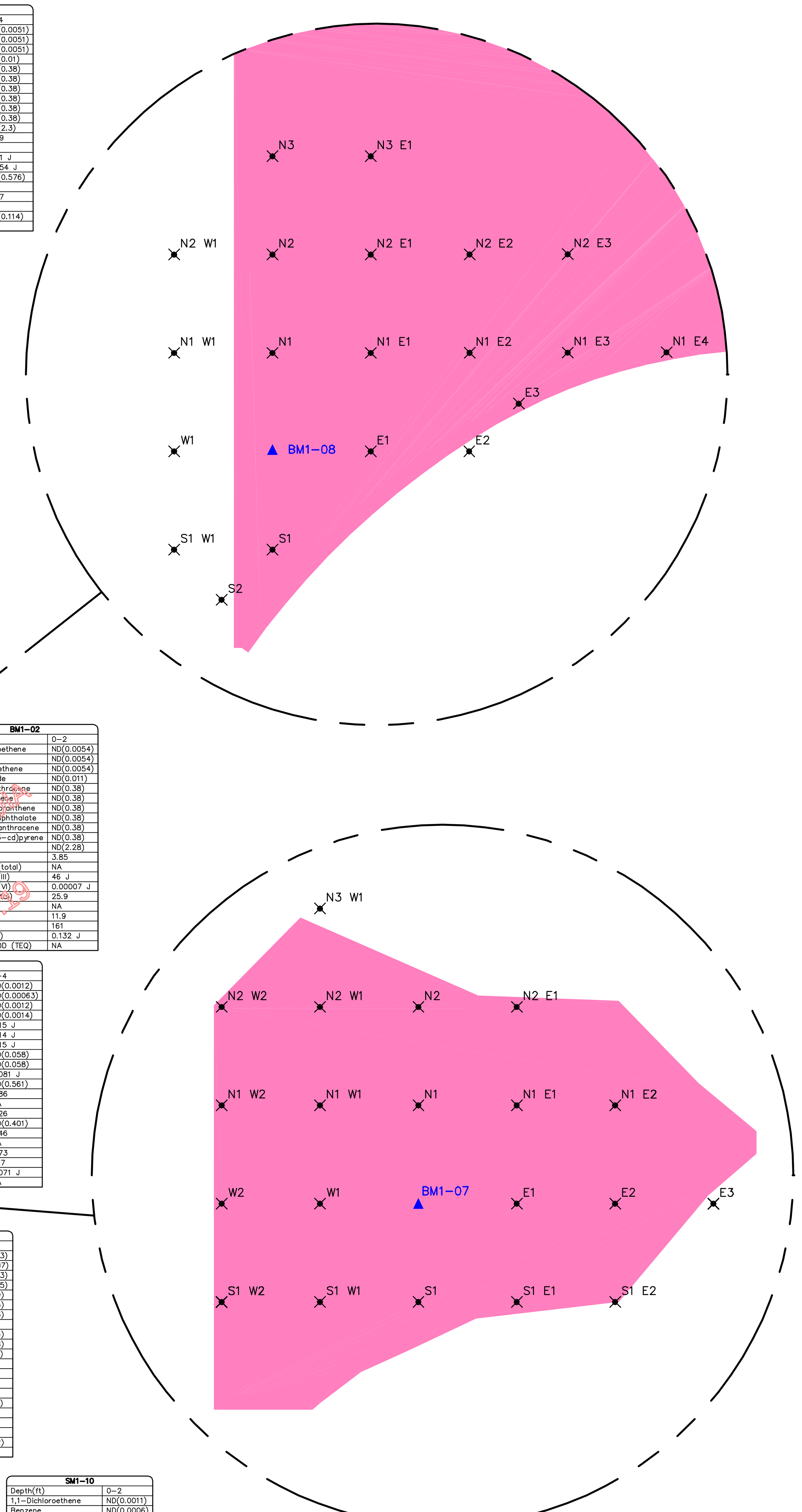
Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0012)
Benzene	ND(0.00063)
Tetrachloroethene	ND(0.0012)
Vinyl chloride	ND(0.0014)
Benzo(a)anthracene	0.78
Benzo(a)pyrene	0.74
Benzo(b)fluoranthene	1
Butyl benzylphthalate	4.7
Dibenz(a,h)anthracene	0.13 J
Indeno(1,2,3-cd)pyrene	0.44 J
Antimony	ND(0.535)
Arsenic	5.34
Chromium (total)	NA
Chromium (III)	9.72
Chromium (VI)	ND(0.382)
Cyanide (total)	ND(0.186)
Iron	NA
Lead	22.7
Manganese	201
PCBs (total)	0.048 J
2,3,7,8-TCDD (TEQ)	NA

MWM1-03

Depth(ft)	0-2	8-10	14-16
1,1-Dichloroethene	ND(0.0051)	ND(0.0055)	ND(0.0061)
Benzene	ND(0.0051)	ND(0.0055)	ND(0.0061)
Tetrachloroethene	ND(0.0051)	ND(0.0055)	ND(0.0061)
Vinyl chloride	ND(0.01)	ND(0.011)	ND(0.012)
Benzo(a)anthracene	0.089 J	ND(0.41)	ND(0.37)
Benzo(a)pyrene	0.079 J	ND(0.41)	ND(0.37)
Benzo(b)fluoranthene	0.095 J	ND(0.41)	ND(0.37)
Butyl benzylphthalate	0.16 J	ND(0.41)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.41)	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.37)	ND(0.41)	ND(0.37)
Antimony	0.89 J	0.638 J	ND(2.27)
Arsenic {RDC}	21.6	3.72	8.09
Chromium (total)	NA	NA	NA
Chromium (III)	12.9	10.2	8.04
Chromium (VI)	ND(0.567)	ND(0.623)	ND(0.568)
Cyanide (total)	0.437 J	ND(0.623)	0.193 J
Iron	NA	NA	NA
Lead	29.2 J	6.52	4.51
Manganese	963 J	406	178
PCBs (total)	0.107 J	ND(0.123)	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BM1-08

Depth(ft)	0-2	2-4
1,1-Dichloroethene	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00066)	ND(0.00071)
Tetrachloroethene	0.0043 J	0.0045 J
Vinyl chloride	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	ND(0.59)	ND(0.6)
Benzo(a)pyrene	ND(0.65)	ND(0.65)
Benzo(b)fluoranthene	ND(0.63)	ND(0.63)
Butyl benzylphthalate	ND(0.55)	ND(0.56)
Dibenz(a,h)anthracene	ND(0.55)	ND(0.56)
Indeno(1,2,3-cd)pyrene	ND(0.75)	ND(0.76)
Antimony	0.965 J	ND(0.534)
Arsenic	1.89	2.54
Chromium (total)	NA	NA
Chromium (III)	17.8 J	4.64 J
Chromium (VI)	0.0086 J	0.0023 J
Cyanide (total)	ND(0.183)	ND(0.185)
Iron	NA	NA
Lead	82	4.26
Manganese	670	186
PCBs (total) {RDC, IDC}	43.65 J	46.65 J
2,3,7,8-TCDD (TEQ)	NA	NA



LEGEND:

- MWM1-01 — GROUNDWATER MONITORING WELL LOCATION
- BM1-04 — SOIL BORING LOCATION
- SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M-1 = WASTEWATER TREATMENT PLANT
- M-13 = FORMER FUEL AST

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

- CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA
- PCB DELINEATION AREA
- PCB DELINEATION POINT

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

REVISED 7/31/02

0 80' 160'
GRAPHIC SCALE

X: 64411X00, X01.DWG 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
8/1/02 SYR-54-GMS GMS LJP
64411210/64411C07.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-1 AND -13 - SOIL

ENCORE

FIGURE
4-17

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

MWM2-03		
Date Collected	8/30/2001	1/8/2002
1,1,1-Trichloroethane	0.05	0.052 [0.05]
1,1,2-Trichloroethane	ND(0.002)	ND(0.0006) [ND(0.0005)]
1,1-Dichloroethene	0.003	0.0038 [0.001]
1,2-Dichloroethane	ND(0.00042)	ND(0.0004) [ND(0.00035)]
Acetone	0.0054	ND(0.001) [ND(0.00085)]
Benzene	ND(0.00032)	ND(0.00032) [ND(0.00027)]
Ethylbenzene	ND(0.002)	ND(0.00024) ND(0.00021)
Tetrachloroethene	ND(0.00046)	ND(0.00046) ND(0.00038)
Toluene	ND(0.002)	ND(0.00036) [ND(0.00031)]
Vinyl chloride	ND(0.00031)	ND(0.00031) [ND(0.00025)]
bis(2-Ethylhexyl)phthalate	ND(0.00027)	ND(0.00027) ND(0.00027)
Antimony	ND(0.00222)	ND(0.00222) ND(0.00222)
Arsenic	ND(0.01)	ND(0.0039) [ND(0.0039)]
Barium	0.209	0.181 [0.178]
Chromium (total)	NA	ND(0.0014) [ND(0.0014)]
Chromium (III)	ND(0.0014)	NA [NA]
Chromium (VI)	ND(0.0069)	NA [NA]
Cyanide (total)	0.0048	0.0055 [ND(0.0017)]
Lead	ND(0.0025)	ND(0.0025) [ND(0.0025)]
Manganese	0.439	0.31 [0.299]
Nickel	0.0158	0.0153 [0.0141]
Thallium [RDWC, IDWC]	0.0056	0.0008 [0.000065]
Vanadium	0.0019	0.0057 [0.0048]
PCBs (total)	ND(0.0007)	ND(0.000186) [ND(0.000186)]
2,3,7,8-TCDD (TEQ)	NA	NA [NA]

MWM2-01		
Date Collected	8/30/2001	1/8/2002
1,1,1-Trichloroethane	0.029	0.031
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	0.00082	0.001
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.0978	0.0786
Chromium (total)	NA	ND(0.0014)
Chromium (III)	ND(0.0014)	NA
Chromium (VI)	ND(0.0069)	NA
Cyanide (total)	0.0136	0.0307
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.0488	0.0337
Nickel	0.004	0.007
Thallium	ND(0.005)	0.000048
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.000186)	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM2-02		
Date Collected	8/30/2001	1/8/2002
1,1,1-Trichloroethane	0.0019 [NA]	0.004
1,1,2-Trichloroethane	ND(0.0003) [NA]	ND(0.0003)
1,1-Dichloroethene	ND(0.0004) [NA]	ND(0.00024)
1,2-Dichloroethane	ND(0.00035) [NA]	ND(0.00021)
Acetone	0.12 [NA]	ND(0.00051)
Benzene	ND(0.00027) [NA]	ND(0.00016)
Ethylbenzene	ND(0.0002) [NA]	ND(0.00012)
Tetrachloroethene	ND(0.00038) [NA]	ND(0.00023)
Toluene	ND(0.0003) [NA]	ND(0.00018)
Vinyl chloride	ND(0.00025) [NA]	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027) [NA]	ND(0.0027)
Antimony	ND(0.0022) [NA]	ND(0.0022)
Arsenic	ND(0.0039) [NA]	ND(0.0039)
Barium	0.145 [NA]	0.104
Chromium (total)	NA [NA]	ND(0.0014)
Chromium (III)	ND(0.0014) [NA]	NA
Chromium (VI)	ND(0.0069) [ND(0.0069)]	NA
Cyanide (total)	ND(0.0017) [ND(0.0017)]	ND(0.0017)
Lead	ND(0.0025) [NA]	ND(0.0025)
Manganese	0.527 [NA]	0.358
Nickel	0.0027 [NA]	0.004
Thallium	ND(0.005) [NA]	ND(0.000018)
Vanadium	ND(0.00082) [NA]	ND(0.00082)
PCBs (total)	ND(0.000186) [NA]	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA [NA]	NA

MWM1-01		
Date Collected	9/10/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	0.00041	0.00038
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	0.006	0.0042
Arsenic	0.0042	ND(0.0039)
Barium	0.0173	0.0141
Chromium (total)	NA	0.0364
Chromium (III)	0.0421	NA
Chromium (VI)	ND(0.0069)	NA
Cyanide (total)	0.0081	0.0055
Lead	ND(0.0025)	ND(0.0025)
Manganese	ND(0.0009)	0.00094
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	0.000028
Vanadium	0.0017	0.001
PCBs (total)	ND(0.000186)	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM8		
Date Collected	9/10/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.003)	ND(0.01)
1,1,2-Trichloroethane	ND(0.0086)	ND(0.02)
1,1-Dichloroethene	ND(0.0048)	ND(0.016)
1,2-Dichloroethane	ND(0.0042)	ND(0.014)
Acetone [RDWC, IDWC]	1.4	3.4
Benzene	ND(0.0032)	ND(0.011)
Ethylbenzene	ND(0.0024)	ND(0.008)
Tetrachloroethene	ND(0.0046)	ND(0.015)
Toluene	ND(0.0036)	ND(0.012)
Vinyl chloride	ND(0.003)	ND(0.01)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	0.0034	0.0039
Arsenic	0.0127	0.0307
Barium	0.0472	0.0205
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.0363	0.0176
Nickel	0.011	0.009
Thallium	ND(0.005)	ND(0.000018)
Vanadium [RDWC]	0.051	0.0058
PCBs (total)	ND(0.000186)	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM1-02		
Date Collected	9/10/2001	1/8/2002
1,1,1-Trichloroethane	0.00053	0.001
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	0.00044	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	0.0048	ND(0.0039)
Barium	0.0837	0.0687
Chromium (total)	NA	ND(0.0014)
Chromium (III)	ND(0.0014)	NA
Chromium (VI)	ND(0.0069)	NA
Cyanide (total)	ND(0.0017)	ND(0.0017)
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.15	0.12
Nickel	ND(0.0022)	ND(0.0022)
Thallium	ND(0.005)	0.000054
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND(0.000186)	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM2-05	
Date Collected	1/31/2002
1,1,1-Trichloroethane	0.075
1,1,2-Trichloroethane	ND(0.0006)
1,1-Dichloroethene	0.0046
1,2-Dichloroethane	ND(0.00042)
Acetone	0.0044
Benzene	ND(0.00032)
Ethylbenzene	ND(0.00024)
Tetrachloroethene	ND(0.00046)
Toluene	ND(0.00036)
Vinyl chloride	ND(0.00031)
bis(2-Ethylhexyl)phthalate	NA
Antimony	NA
Arsenic	NA
Barium	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	NA
Manganese	NA
Nickel	NA
Thallium	NA
Vanadium	NA
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

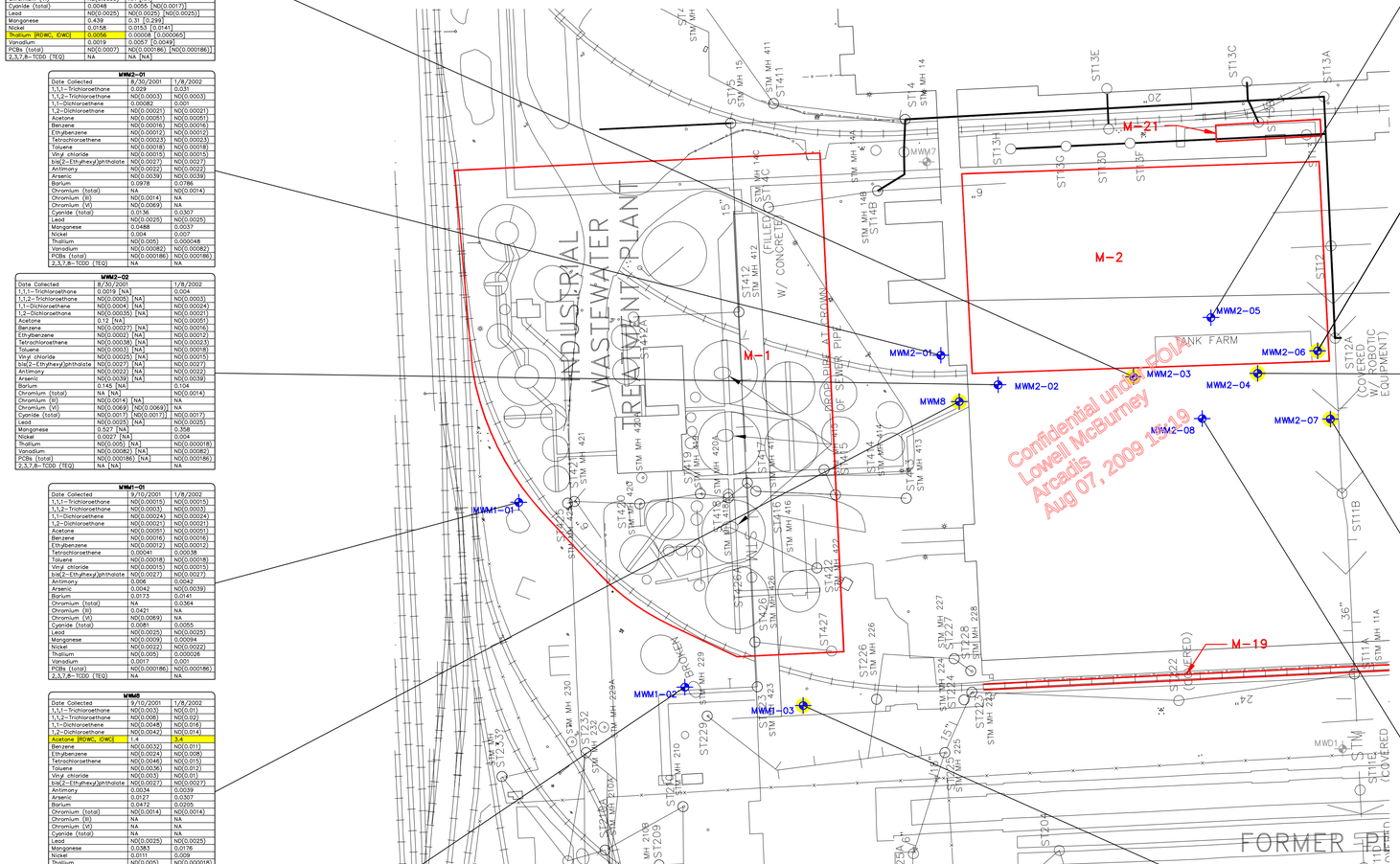
MWM2-06	
Date Collected	1/31/2002
1,1,1-Trichloroethane	ND(0.0006)
1,1,2-Trichloroethane	ND(0.0012)
1,1-Dichloroethene [RDWC, IDWC]	0.01
1,2-Dichloroethane	0.0013
Acetone	ND(0.002)
Benzene	ND(0.00064)
Ethylbenzene	ND(0.00048)
Tetrachloroethene	ND(0.00092)
Toluene	ND(0.00072)
Vinyl chloride	0.001
bis(2-Ethylhexyl)phthalate	NA
Antimony	NA
Arsenic	NA
Barium	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	NA
Manganese	NA
Nickel	NA
Thallium	NA
Vanadium	NA
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

MWM2-04		
Date Collected	8/30/2001	1/8/2002
1,1,1-Trichloroethane [RDWC, IDWC]	0.48	0.42
1,1,2-Trichloroethane [RDWC, IDWC]	0.012	0.01
1,1-Dichloroethene [RDWC, IDWC]	0.08	0.075
1,2-Dichloroethane [RDWC, IDWC]	ND(0.0052)	0.01
Acetone	0.23	0.45
Benzene	ND(0.004)	ND(0.0053)
Ethylbenzene	ND(0.025)	ND(0.004)
Tetrachloroethene	ND(0.025)	ND(0.0077)
Toluene	ND(0.0045)	ND(0.006)
Vinyl chloride	ND(0.0038)	ND(0.005)
bis(2-Ethylhexyl)phthalate	ND(0.025)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.0756	0.103
Chromium (total)	NA	ND(0.0014)
Chromium (III)	0.00345 J	NA
Chromium (VI)	0.0079	NA
Cyanide (total)	ND(0.0017)	ND(0.0017)
Lead	ND(0.0025)	ND(0.0025)
Manganese [RDWC]	1.17	1.17
Nickel [RDWC, IDWC]	0.0691	0.168
Thallium [RDWC, IDWC]	0.0055	ND(0.000018)
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	0.0004385 J
2,3,7,8-TCDD (TEQ)	NA	NA

MWM2-07	
Date Collected	1/31/2002
1,1,1-Trichloroethane	ND(0.00075)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	0.001
1,2-Dichloroethane	0.00062
Acetone	ND(0.00051)
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	0.0008
Toluene	ND(0.00018)
Vinyl chloride [RDWC, IDWC]	0.0033
bis(2-Ethylhexyl)phthalate	NA
Antimony	NA
Arsenic	NA
Barium	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	NA
Manganese	NA
Nickel	NA
Thallium	NA
Vanadium	NA
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

MWM2-08		
Date Collected	1/31/2002	
1,1,1-Trichloroethane	ND(0.00075)	
1,1,2-Trichloroethane	ND(0.0003)	
1,1-Dichloroethene	0.038	
1,2-Dichloroethane	ND(0.0017)	
1,1-Dichloroethene	0.0035	
1,2-Dichloroethane	ND(0.0012)	
Acetone	ND(0.0028)	
Benzene	ND(0.00089)	
Ethylbenzene	ND(0.00067)	
Tetrachloroethene	ND(0.0013)	
Toluene	ND(0.001)	
Vinyl chloride	ND(0.00083)	
bis(2-Ethylhexyl)phthalate	NA	
Antimony	NA	
Arsenic	NA	
Barium	NA	
Chromium (total)	NA	
Chromium (III)	NA	
Chromium (VI)	NA	
Cyanide (total)	NA	
Lead	NA	
Manganese	NA	
Nickel	NA	
Thallium	NA	
Vanadium	NA	
PCBs (total)	NA	
2,3,7,8-TCDD (TEQ)	NA	

MWM1-03		
Date Collected	9/13/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	0.00055
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethane	ND(0.001)	ND(0.00021)
Acetone	ND(0.01)	ND(0.00051)
Benzene	ND(0.001)	ND(0.00016)
Ethylbenzene	ND(0.001)	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	ND(0.001)	ND(0.00018)
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	0.0064
Barium	0.172	0.171
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total) [RDWC, IDWC]	0.897	0.828
Lead	ND(0.003)	ND(0.0025)
Manganese	0.546	0.294
Nickel	0.003	0.0024
Thallium	ND(0.01)	0.000037
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND(0.0007)	ND(0.000186)
2,3,7,8-TCDD (TEQ)	NA	NA



LEGEND:

- MWM2-08 ⊕ GROUNDWATER MONITORING WELL LOCATION
- BM11-03 ▲ SOIL BORING LOCATION
- SW8-03 △ SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M-1 = WASTEWATER TREATMENT PLANT
- M-2 = FORMER PLATING OPERATION AREA
- M-19 = RAILROAD TRACKS
- M-21 = ELECTRICAL SUBSTATION

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

- RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
- IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
- RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
- IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
- RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
- IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

- RDWC – RESIDENTIAL DRINKING WATER CRITERIA
- IDWC – INDUSTRIAL DRINKING WATER CRITERIA
- RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

0 80' 160'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS RFI

AOIs M-1 AND -2 - GROUNDWATER

ENCORE

FIGURE 4-18

X: 64411X00, X01.DWG 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-CMS DJP
64411210/64411C11.DWG

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

BM2-15

Depth(ft)	0–2	8–10	20–22
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese {IPSIC}	1940 J	381 J	422 J
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM2-17

Depth(ft)	0–2	8–10	13–15
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	404 J	332 J	88.9 J
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SM21-04

Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.064)
Benzo(a)pyrene	ND(0.069)
Benzo(b)fluoranthene	ND(0.067)
Butyl benzylphthalate	ND(0.059)
Dibenz(a,h)anthracene	ND(0.059)
Indeno(1,2,3–cd)pyrene	ND(0.081)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	1.54 J
2,3,7,8–TCDD (TEQ)	NA

SM21-03

Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.059)
Benzo(a)pyrene	ND(0.064)
Benzo(b)fluoranthene	ND(0.062)
Butyl benzylphthalate	ND(0.055)
Dibenz(a,h)anthracene	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.075)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.035)
2,3,7,8–TCDD (TEQ)	NA

BM2-18

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	1230 J	289 J	55.8 J
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

SM21-02

Depth(ft)	0–2
1,1–Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.059)
Benzo(a)pyrene	ND(0.065)
Benzo(b)fluoranthene	ND(0.063)
Butyl benzylphthalate	ND(0.055)
Dibenz(a,h)anthracene	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.076)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.036)
2,3,7,8–TCDD (TEQ)	NA

SM21-01

Depth(ft)	0–2
1,1–Dichloroethene	NA [NA]
Benzene	NA [NA]
Tetrachloroethene	NA [NA]
Vinyl chloride	NA [NA]
Benzo(a)anthracene	0.11 J [0.11 J]
Benzo(a)pyrene	0.12 J [0.12 J]
Benzo(b)fluoranthene	0.27 J [0.36 J]
Butyl benzylphthalate	1.2 [1.5]
Dibenz(a,h)anthracene	ND(0.058) [ND(0.058)]
Indeno(1,2,3–cd)pyrene	0.12 J [0.12 J]
Antimony	NA [NA]
Arsenic	NA [NA]
Chromium (total)	NA [NA]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	NA [NA]
Iron	NA [NA]
Lead	NA [NA]
Manganese	NA [NA]
PCBs (total)	0.663 J [0.902 J]
2,3,7,8–TCDD (TEQ)	NA [NA]

BM2-16

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	NA	NA	NA
Benzene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	702 J	305 J	57 J
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM2-04

Depth(ft)	0–2	4–6
1,1–Dichloroethene	ND(0.0055)	ND(0.0059)
Benzene	ND(0.0055)	ND(0.0059)
Tetrachloroethene	ND(0.0055)	0.0029 J
Vinyl chloride	ND(0.011)	ND(0.012)
Benzo(a)anthracene	ND(0.37)	ND(0.42)
Benzo(a)pyrene	ND(0.37)	ND(0.42)
Benzo(b)fluoranthene	ND(0.37)	ND(0.42)
Butyl benzylphthalate	ND(0.37)	ND(0.42)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.42)
Indeno(1,2,3–cd)pyrene	ND(0.37)	ND(0.42)
Antimony	0.794 J	ND(2.53)
Arsenic	4.27	7.06
Chromium (total)	NA	NA
Chromium (III)	64.8	12.5
Chromium (VI)	ND(0.554)	ND(0.631)
Cyanide (total) {RDC}	1.26	36.6
Iron	NA	NA
Lead	45.2	8.46
Manganese {IPSIC}	1640	280
PCBs (total)	ND (0.111)	ND (0.126)
2,3,7,8–TCDD (TEQ)	NA	NA

BM2-03

Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.0043)	ND(0.0042)	ND(0.26)
Benzene	ND(0.0043)	ND(0.0042)	ND(0.26)
Tetrachloroethene	ND(0.0043)	ND(0.0042)	ND(0.26)
Vinyl chloride	ND(0.0086)	ND(0.0084)	ND(0.51)
Benzo(a)anthracene	ND(0.37)	ND(0.37)	ND(0.35)
Benzo(a)pyrene	ND(0.37)	ND(0.37)	ND(0.35)
Benzo(b)fluoranthene	ND(0.37)	ND(0.37)	ND(0.35)
Butyl benzylphthalate	ND(0.37)	ND(0.37)	ND(0.35)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.37)	ND(0.35)
Indeno(1,2,3–cd)pyrene	ND(0.37)	ND(0.37)	ND(0.35)
Antimony	ND(2.24)	ND(2.23)	ND(2.13)
Arsenic	5.82	3.58	1.84
Chromium (total)	NA	NA	NA
Chromium (III)	10.8	7.9	4.54
Chromium (VI)	ND(0.56)	ND(0.559)	ND(0.532)
Cyanide (total)	ND(0.56)	ND(0.559)	ND(0.532)
Iron	NA	NA	NA
Lead	7.07	5.45	3.34
Manganese	396	294	148
PCBs (total)	ND (0.111)	ND (0.111)	ND (0.105)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM2-02

Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.0043)	ND(0.0048) [ND(0.0043)]	ND(0.0038)
Benzene	ND(0.0043)	ND(0.0048) [ND(0.0043)]	ND(0.0038)
Tetrachloroethene	ND(0.0043)	ND(0.0048) [ND(0.0043)]	ND(0.0038)
Vinyl chloride	ND(0.0087)	ND(0.0095) [ND(0.0086)]	ND(0.0077)
Benzo(a)anthracene	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Benzo(a)pyrene	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Benzo(b)fluoranthene	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Butyl benzylphthalate	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Dibenz(a,h)anthracene	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(0.38)	ND(0.37) [ND(0.37)]	ND(0.37)
Antimony	ND(2.32)	ND(2.27) [ND(2.26)]	ND(2.22)
Arsenic	3.47	3.64 [5.18]	4.07
Chromium (total)	NA	NA [NA]	NA
Chromium (III)	12.2	9.91 [11.1]	12.1
Chromium (VI)	ND(0.58)	ND(0.567) [ND(0.566)]	ND(0.555)
Cyanide (total)	5.34	0.916 [5.24]	1.95
Iron	NA	NA [NA]	NA
Lead	10.3	5.69 [6.06]	6.47
Manganese	321	326 [308]	359
PCBs (total)	ND (0.114)	ND (0.114) [ND (0.111)]	ND (0.111)
2,3,7,8–TCDD (TEQ)	NA	NA [NA]	NA

BM2-01

Depth(ft)	0–2	5–7
1,1–Dichloroethene	ND(0.0043)	ND(0.0053)
Benzene	ND(0.0043)	ND(0.0053)
Tetrachloroethene	ND(0.0043)	ND(0.0053)
Vinyl chloride	ND(0.0087)	ND(0.011)
Benzo(a)anthracene	ND(0.38)	ND(0.35)
Benzo(a)pyrene	ND(0.38)	ND(0.35)
Benzo(b)fluoranthene	ND(0.38)	ND(0.35)
Butyl benzylphthalate	ND(0.38)	ND(0.35)
Dibenz(a,h)anthracene	ND(0.38)	ND(0.35)
Indeno(1,2,3–cd)pyrene	ND(0.38)	ND(0.35)
Antimony	ND(2.29)	ND(2.11)
Arsenic	4.38	2.62
Chromium (total)	NA	NA
Chromium (III)	25.4	3.71
Chromium (VI)	ND(0.572)	ND(0.527)
Cyanide (total)	0.413 J	ND(0.527)
Iron	NA	NA
Lead	17	2.65
Manganese	505	200
PCBs (total)	ND (0.114)	ND (0.105)
2,3,7,8–TCDD (TEQ)	NA	NA

BM2-06

Depth(ft)	0–2	6–8	8–10
1,1–Dichloroethene	ND(0.0012)	ND(0.0013)	ND(0.0011) [ND(0.001)]
Benzene	ND(0.00066)	ND(0.00068)	ND(0.00057) [ND(0.00055)]
Tetrachloroethene	0.0019 J	0.0018 J	ND(0.0011) [ND(0.001)]
Vinyl chloride	ND(0.0014)	ND(0.0015)	ND(0.0012) [ND(0.0012)]
Benzo(a)anthracene	ND(0.06)	ND(0.061)	ND(0.063) [ND(0.063)]
Benzo(a)pyrene	ND(0.065)	ND(0.067)	ND(0.069) [ND(0.068)]
Benzo(b)fluoranthene	ND(0.063)	ND(0.065)	ND(0.066) [ND(0.066)]
Butyl benzylphthalate	ND(0.055)	ND(0.057)	ND(0.058) [ND(0.058)]
Dibenz(a,h)anthracene	ND(0.055)	ND(0.057)	ND(0.058) [ND(0.058)]
Indeno(1,2,3–cd)pyrene	ND(0.076)	ND(0.078)	ND(0.08) [ND(0.08)]
Antimony	ND(0.533)	ND(0.547)	ND(0.56) [ND(0.559)]
Arsenic	2.66	4.23	3.99 [3.99]
Chromium (total)	NA	NA	NA [NA]
Chromium (III)	4.35	7.26	12.8 [12.59 J]
Chromium (VI)	ND(0.38)	ND(0.391)	ND(0.4) [0.404 J]
Cyanide (total)	ND(0.185)	ND(0.19)	ND(0.194) [ND(0.194)]
Iron	NA	NA	NA [NA]
Lead	3.62	13.3	6.57 [6.57]
Manganese	175	210	326 [326]
PCBs (total)	ND (0.036)	ND (0.037)	ND (0.038) [ND (0.038)]
2,3,7,8–TCDD (TEQ)	NA	NA	NA [NA]

BM2-08

Depth(ft)	0–2	8–10	14–16
1,1–Dichloroethene	ND(0.0013)	ND(0.00095)	ND(0.0012)
Benzene	ND(0.0007)	ND(0.00051)	ND(0.00066)
Tetrachloroethene	ND(0.0013)	ND(0.00095)	0.0019 J
Vinyl chloride	ND(0.0015)	ND(0.0011)	ND(0.0014)
Benzo(a)anthracene	ND(0.058)	ND(0.062)	ND(0.058)
Benzo(a)pyrene	ND(0.064)	ND(0.068)	ND(0.063)
Benzo(b)fluoranthene	ND(0.062)	ND(0.066)	ND(0.061)
Butyl benzylphthalate	ND(0.054)	ND(0.058)	ND(0.054)
Dibenz(a,h)anthracene	ND(0.054)	ND(0.058)	ND(0.054)
Indeno(1,2,3–cd)pyrene	ND(0.074)	ND(0.079)	ND(0.074)
Antimony	ND(0.521)	ND(0.554)	ND(0.516)
Arsenic	2.53	1.09	2.43
Chromium (total)	NA	NA	NA
Chromium (III)	3.84	3.54	3.32
Chromium (VI)	ND(0.372)	ND(0.396)	ND(0.369)
Cyanide (total)	0.192 J	0.566	ND(0.179)
Iron	NA	NA	NA
Lead	2.97	1.57	2.7
Manganese	155	85.8	56
PCBs (total)	ND (0.035)	ND (0.037)	ND (0.035)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM2-01

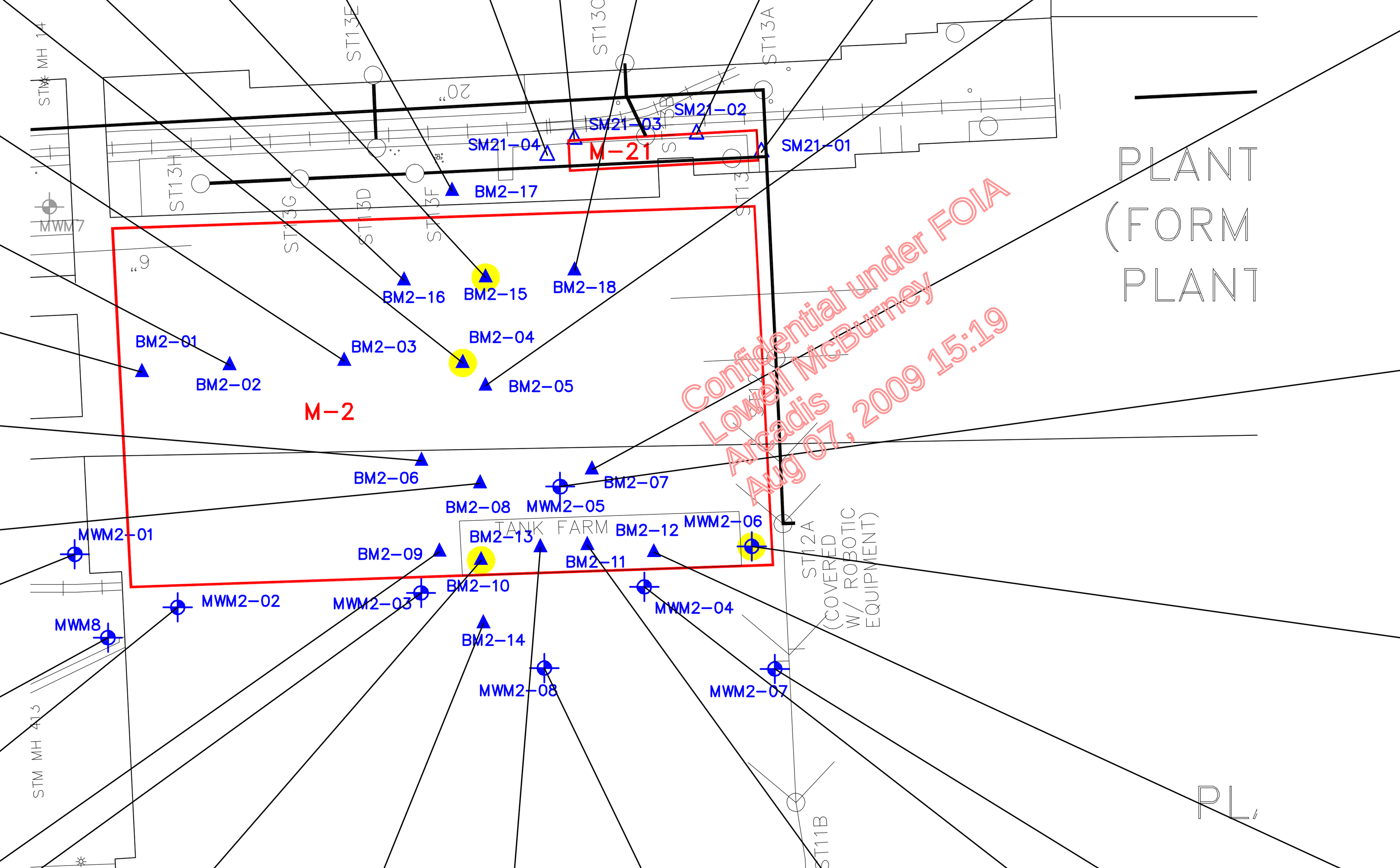
Depth(ft)	0–2	8–10	10–12
1,1–Dichloroethene	ND(0.0013)	ND(0.0015)	ND(0.0017)
Benzene	ND(0.00072)	ND(0.00083)	ND(0.0009)
Tetrachloroethene	ND(0.0013)	ND(0.0015)	ND(0.0017)
Vinyl chloride	ND(0.0015)	ND(0.0018)	ND(0.0019)
Benzo(a)anthracene	ND(0.06)	ND(0.061)	ND(0.071)
Benzo(a)pyrene	ND(0.066)	ND(0.066)	ND(0.077)
Benzo(b)fluoranthene	ND(0.063)	ND(0.064)	ND(0.075)
Butyl benzylphthalate	ND(0.056)	ND(0.056)	ND(0.066)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.056)	ND(0.066)
Indeno(1,2,3–cd)pyrene	ND(0.077)	ND(0.077)	ND(0.09)
Antimony	ND(0.536)	ND(0.541)	ND(0.63)
Arsenic	2.99	2.96	2.12
Chromium (total)	NA	NA	NA
Chromium (III)	4.7 J	4.57 J	3.89 J
Chromium (VI)	0.0722 J	0.0707 J	0.32 J
Cyanide (total)	2.54	ND(0.188)	ND(0.219)
Iron	NA	NA	NA
Lead	3.1	3.48	2.86
Manganese	196	169	116
PCBs (total)	ND (0.036)	ND (0.037)	ND (0.043)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM8

Depth(ft)	2–4	4–6
1,1–Dichloroethene	ND(0.001)	ND(0.0012)
Benzene	ND(0.00054)	ND(0.00062)
Tetrachloroethene	ND(0.001)	ND(0.0012)
Vinyl chloride	ND(0.0012)	ND(0.0013)
Benzo(a)anthracene	ND(0.061)	ND(0.06)
Benzo(a)pyrene	ND(0.066)	ND(0.065)
Benzo(b)fluoranthene	ND(0.064)	ND(0.063)
Butyl benzylphthalate	ND(0.056)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.077)	ND(0.076)
Antimony	ND(0.542)	ND(0.534)
Arsenic	3.02	4.99
Chromium (total)	9.05	8.91
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	4.86	4.94
Manganese	241	270
PCBs (total)	ND (0.037)	ND (0.037)
2,3,7,8–TCDD (TEQ)	NA	NA

MWM2-02

Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.0046)	ND(0.004)	ND(0.0052)
Benzene	ND(0.0046)	ND(0.004)	ND(0.0052)
Tetrachloroethene	ND(0.0046)	ND(0.004)	ND(0.0052)
Vinyl chloride	ND(0.0093)	ND(0.0081)	ND(0.01)
Benzo(a)anthracene	ND(0.39)	ND(0.37)	ND(0.34)
Benzo(a)pyrene	ND(0.39)	ND(0.37)	ND(0.34)
Benzo(b)fluoranthene	ND(0.39)	ND(0.37)	ND(0.34)
Butyl benzylphthalate	ND(0.39)	ND(0.37)	ND(0.34)
Dibenz(a,h)anthracene	ND(0.39)	ND(0.37)	ND(0.34)
Indeno(1,2,3–cd)pyrene	ND(0.39)	ND(0.37)	ND(0.34)
Antimony	ND(2.38)	ND(2.25)	ND(2.09)
Arsenic	6.22	4.65	4.33
Chromium (total)	NA	NA	NA
Chromium (III)	13.9	10.6	10.8
Chromium (VI)	ND(0.596)	ND(0.562)	ND(0.523)
Cyanide (total)	ND(0.596)	ND(0.562)	ND(0.523)
Iron	NA	NA	NA
Lead	8.73	6.02	12.2
Manganese	281	353	583
PCBs (total)	ND (0.117)	ND (0.111)	ND (0.102)
2,3,7,8–TCDD (TEQ)	NA	NA	NA



BM2-05

Depth(ft)	0–2	6–8
1,1–Dichloroethene	ND(0.0045)	ND(0.015)
Benzene	ND(0.0045)	ND(0.015)
Tetrachloroethene	ND(0.0045)	ND(0.013)
Vinyl chloride	ND(0.0089)	ND(0.0097)
Benzo(a)anthracene	ND(0.37)	ND(0.062)
Benzo(a)pyrene	ND(0.37)	ND(0.068)
Benzo(b)fluoranthene	ND(0.37)	ND(0.065)
Butyl benzylphthalate	ND(0.37)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.37)	ND(0.057)
Indeno(1,2,3–cd)pyrene	ND(0.37)	ND(0.079)
Antimony	ND(2.26)	ND(0.552)
Arsenic	4.31	4.43
Chromium (total)	NA	NA
Chromium (III)	11.72	10.86 J
Chromium (VI)	ND(0.566)	0.436 J
Cyanide (total)	1.01	0.277 J
Iron	NA	NA
Lead	13.8	7.46 J
Manganese	310	287 J
PCBs (total)	ND (0.111)	ND (0.038)
2,3,7,8–TCDD (TEQ)	NA	NA

BM2-07

Depth(ft)	0–2	4–6	8–10	16–18
1,1–Dichloroethene	ND(0.0013)	ND(0.0012)	ND(0.001) [ND(0.0011)]	0.002 J
Benzene	ND(0.00069)	0.0011 J	ND(0.00055) [ND(0.00058)]	ND(0.00068)
Tetrachloroethene	ND(0.0013)	ND(0.0012)	ND(0.001) [ND(0.0011)]	ND(0.0013)
Vinyl chloride	ND(0.0015)	ND(0.0014)	ND(0.0012) [ND(0.0013)]	ND(0.0015)
Benzo(a)anthracene	ND(0.06)	ND(0.059)	ND(0.063) [ND(0.063)]	ND(0.06)
Benzo(a)pyrene	ND(0.066)	ND(0.064)	ND(0.068) [ND(0.069)]	ND(0.066)
Benzo(b)fluoranthene	ND(0.064)	ND(0.062)	ND(0.066) [ND(0.067)]	ND(0.064)
Butyl benzylphthalate	ND(0.056)	ND(0.054)	ND(0.058) [ND(0.059)]	ND(0.056)
Dibenz(a,h)anthracene	ND(0.056)	ND(0.054)	ND(0.058) [ND(0.059)]	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.077)	ND(0.075)	ND(0.08) [ND(0.08)]	ND(0.077)
Antimony	ND(0.538)	ND(0.522)	ND(0.557) [ND(0.563)]	ND(0.538)
Arsenic	3.31	4.39	3.43 [3.96]	0.645
Chromium (total)	NA	NA	NA [NA]	NA
Chromium (III)	4.18	5.09 J	11.9 [13]	2.96
Chromium (VI)	ND(0.385)	0.402 J	ND(0.398) [ND(0.402)]	ND(0.384)
Cyanide (total) {RDC}	22	51.8	0.828 [0.245 J]	ND(0.187)
Iron	NA	NA	NA [NA]	NA
Lead	3.21	21.9	6.2 [6.38]	1.97
Manganese	162	246	301 [340]	66.5
PCBs (total)	ND (0.037)	ND (0.036)	ND (0.037) [ND (0.038)]	ND (0.036)
2,3,7,8–TCDD (TEQ)	NA	NA	NA [NA]	NA

MWM2-05

Depth(ft)	0–2	8–10	14–16
1,1–Dichloroethene	ND(0.0014)	0.0027 J	0.0031 J
Benzene	ND(0.00075)	ND(0.00055)	ND(0.00078)
Tetrachloroethene	ND(0.0014)	ND(0.001)	0.002 J
Vinyl chloride	ND(0.0016)	ND(0.0012)	ND(0.0017)
Benzo(a)anthracene	ND(0.059)	ND(0.062)	ND(0.06)
Benzo(a)pyrene	ND(0.064)	ND(0.067)	ND(0.066)
Benzo(b)fluoranthene	ND(0.062)	ND(0.065)	ND(0.063)
Butyl benzylphthalate	ND(0.055)	ND(0.057)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.055)	ND(0.057)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.075)	ND(0.079)	ND(0.077)
Antimony	ND(0.263)	ND(0.275)	ND(0.268)
Arsenic	3.07	4.01	1.18
Chromium (total)	NA	NA	NA
Chromium (III)	5.13	12.2	3.58
Chromium (VI)	ND(0.376)	ND(0.393)	ND(0.383)
Cyanide (total) {RDC}	20.4	0.843	ND(0.186)
Iron	NA	NA	NA
Lead	4.51	5.86	2.25
Manganese	177 J	317 J	87.4 J
PCBs (total)	ND (0.035)	ND (0.037)	ND (0.036)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM2-06

Depth(ft)	0–2	6–8	8–10	13–15	15–17
1,1–Dichloroethene	ND(0.0012)	ND(0.012)	ND(0.0013)	0.002 J	0.0014 J
Benzene	ND(0.00066)	0.025 J	ND(0.00069)	0.0011 J	ND(0.00075)
Tetrachloroethene	ND(0.0012)	ND(0.011)	ND(0.0013)	0.052	0.0081
Vinyl chloride	ND(0.0014)	ND(0.0081)	ND(0.0015)	ND(0.0013)	ND(0.0016)
Benzo(a)anthracene	ND(0.06)	ND(1.3)	ND(0.067)	ND(0.65)	ND(0.059)
Benzo(a)pyrene	ND(0.065)	ND(1.4)	ND(0.073)	ND(0.71)	ND(0.064)
Benzo(b)fluoranthene	ND(0.063)	ND(1.3)	ND(0.07)	ND(0.69)	ND(0.062)
Butyl benzylphthalate	ND(0.055)	1.5 J	ND(0.062)	ND(0.61)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.055)	ND(1.2)	ND(0.062)	ND(0.61)	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.076)	ND(1.6)	ND(0.085)	ND(0.83)	ND(0.075)
Antimony	ND(0.265)	3.17 J	0.352 J	ND(0.291)	ND(0.263)
Arsenic {RDC}	3.92	19.4	9.51	3.59	1.11
Chromium (total)	NA	NA	NA	NA	NA
Chromium (III)	4.52	670	23.78	8.54	4.55
Chromium (VI)	ND(0.379)	ND(0.402)	ND(0.424)	ND(0.415)	ND(0.375)
Cyanide (total)	ND(0.184)	3.96	ND(0.206)	ND(0.202)	ND(0.182)
Iron	NA	NA	NA	NA	NA
Lead	3.27	29.7	9.36	6.77	2.04
Manganese {IPSIC}	171	2220	152	310	53
PCBs (total)	NA	NA	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA	NA

BM2-12

Depth(ft)	0–2	6–8	8–10	12–14	16–18
1,1–Dichloroethene	ND(0.0012)	ND(0.0011)	ND(0.017)	ND(0.23)	ND(0.0055)
Benzene	ND(0.00062)	0.0021 J	ND(0.017)	ND(0.23)	ND(0.0055)
Tetrachloroethene	ND(0.0012)	0.066	0.13 J	1.9	0.01
Vinyl chloride	ND(0.0013)	ND(0.0013)	ND(0.011)	ND(0.45)	ND(0.011)
Benzo(a)anthracene	ND(0.06)	ND(1.3)	ND(0.33)	ND(7.8)	ND(0.35)
Benzo(a)pyrene	ND(0.065)	ND(1.4)	ND(0.36)	ND(7.8)	ND(0.35)
Benzo(b)fluoranthene	ND(0.063)	ND(1.4)	ND(0.35)	ND(7.8)	ND(0.35)
Butyl benzylphthalate	ND(0.056)	ND(1.2)	ND(0.31)	ND(7.8)	ND(0.35)
Dibenz(a,h)anthracene	ND(0.056)	ND(1.2)	ND(0.31)	ND(7.8)	ND(0.35)
Indeno(1,2,3–cd)pyrene	ND(0.076)	ND(1.7)	ND(0.42)	ND(7.8)	ND(0.35)
Antimony	ND(0.535)	ND(0.583)	ND(0.587)	ND(2.35)	ND(2.1)
Arsenic {RDC}	3.77	4.53	7.88	5.23	1.93
Chromium (total)	NA	NA	NA	NA	NA
Chromium (III)	3.77	21.5	21.3	11.69 J	3.11
Chromium (VI)	ND(0.382)	ND(0.417)	ND(0.419)	0.612	ND(0.526)
Cyanide (total)	ND(0.185)	10.8	0.414 J	1.49	ND(0.526)
Iron	NA	NA	NA	NA	NA
Lead	3.51	26.8	24.2	9.25 J	2.57
Manganese	168	232	234	129 J	69
PCBs (total)	ND (0.037)	1.14 J	0.289 J	3.98 J	ND (0.105)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA	NA

LEGEND:

MWM2-05 — GROUNDWATER MONITORING WELL LOCATION

BM2-12 — SOIL BORING LOCATION

SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION

LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)

APPROXIMATE AOI AREA

M–2 = FORMER PLATING OPERATION AREA
M–21 = ELECTRICAL SUBSTATION

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

- RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
- IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
- RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
- IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
- RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
- IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

- RDWC – RESIDENTIAL DRINKING WATER CRITERIA
- IDWC – INDUSTRIAL DRINKING WATER CRITERIA
- RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
- GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

BM2-10

Depth(ft)	0–2	4–6	8–10	14–16
1,1–Dichloroethene {RSVIC,RVSIC,ISVIC}	ND(0.019)	1.8	0.99	ND(0.014)
Benzene	ND(0.019)	ND(0.12)	ND(0.014)	ND(0.014)
Tetrachloroethene	0.097 J	1.7 J	0.096 J	0.15 J
Vinyl chloride	ND(0.012)	ND(0.078)	ND(0.0089)	ND(0.0093)
Benzo(a)anthracene	ND(0.6)	ND(0.31)	ND(0.063)	ND(0.063)
Benzo(a)pyrene	ND(0.66)	ND(0.34)	ND(0.068)	ND(0.069)
Benzo(b)fluoranthene	ND(0.64)	ND(0.33)	ND(0.066)	ND(0.067)
Butyl benzylphthalate	ND(0.56)	ND(0.29)	ND(0.058)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.56)	ND(0.29)	ND(0.058)	ND(0.059)
Indeno(1,2,3–cd)pyrene	ND(0.77)	ND(0.4)	ND(0.08)	ND(0.081)
Antimony	ND(0.538)	ND(0.559)	ND(0.557)	ND(0.566)
Arsenic	2.85	1.58	4.08	5.01
Chromium (total)	NA	NA	NA	NA
Chromium (III)	7.64	7.09	12.3	12.5
Chromium (VI)	7.76	1.11	ND(0.398)	ND(0.404)
Cyanide (total) {RDC}	12.1	32	1.34	0.681
Iron	NA	NA	NA	NA
Lead	30.5	18	6.57	7.4
Manganese	1440	483	340	330
PCBs (total)	1.70 J	0.685 J	0.053 J	0.064 J
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

BM2-13

Depth(ft)	0–2	10–12	14–16
1,1–Dichloroethene	ND(0.016)	ND(0.015)	0.014
Benzene	ND(0.016)	ND(0.015)	ND(0.00059)
Tetrachloroethene	0.21 J	0.11 J	0.029
Vinyl chloride	ND(0.01)	ND(0.0096)	ND(0.0013)
Benzo(a)anthracene	ND(1.2)	ND(0.63)	ND(0.59)
Benzo(a)pyrene	ND(1.3)	ND(0.69)	ND(0.65)
Benzo(b)fluoranthene	ND(1.2)	ND(0.66)	ND(0.63)
Butyl benzylphthalate	ND(1.1)	ND(0.58)	ND(0.55)
Dibenz(a,h)anthracene	ND(1.1)	ND(0.58)	ND(0.55)
Indeno(1,2,3–cd)pyrene	ND(1.5)	ND(0.8)	ND(0.76)
Antimony	ND(0.514)	ND(0.561)	ND(0.53)
Arsenic	2.29	4.28	3.23
Chromium (total)	NA	NA	NA
Chromium (III)	3.86	10.4	7.50
Chromium (VI)	1.11	ND(0.401)	ND(0.378)
Cyanide (total) {RDC}	26.5	2.55	6.11
Iron	NA	NA	NA
Lead	3.62	5.96	4.62
Manganese	182	479	166
PCBs (total)	0.422 J	0.458 J	0.114 J
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM2-11

Depth(ft)	0–2	4–6	8–10	14–16
1,1–Dichloroethene	ND(0.0012)	ND(0.016)	0.0012 J	ND(0.00089)
Benzene	ND(0.00065)	ND(0.016)	ND(0.00055)	ND(0.00048)
Tetrachloroethene	0.0013 J	1.3	0.011	ND(0.00089)
Vinyl chloride	ND(0.0014)	ND(0.01)	ND(0.0012)	ND(0.001)
Benzo(a)anthracene	ND(0.29)	ND(3.1)	ND(0.063)	ND(0.37)
Benzo(a)pyrene	ND(0.31)	ND(3.4)	ND(0.069)	ND(0.37)
Benzo(b)fluoranthene	ND(0.3)	ND(3.3)	ND(0.067)	ND(0.37)
Butyl benzylphthalate	ND(0.27)	ND(2.9)	ND(0.059)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.27)	ND(2.9)	ND(0.059)	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(0.37)	ND(4)	ND(0.08)	ND(0.37)
Antimony	ND(0.512)	ND(0.554)	ND(0.563)	ND(2.2)
Arsenic	3.22	2.09	3.22	2.74
Chromium (total)	NA	NA	NA	NA
Chromium (III)	4.685	1.91	9.747	9.86
Chromium (VI)	0.675	2.5	0.853	0.557
Cyanide (total) {RDC}	8.7	37.4	7.51	0.402 J
Iron	NA	NA	NA	NA
Lead	3.39	4.46	4.85	5.52
Manganese	168	206	255	310
PCBs (total)	0.11 J	2.45 J	2.28 J	ND(0.037)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

MWM2-07

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	ND(0.0014)	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00074)	ND(0.00065)	ND(0.00072)
Tetrachloroethene	0.0087	ND(0.0012)	0.019
Vinyl chloride	ND(0.0016)	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	ND(0.063)	ND(0.065)	ND(0.06)
Benzo(a)pyrene	ND(0.069)	ND(0.071)	ND(0.065)
Benzo(b)fluoranthene	ND(0.067)	ND(0.069)	ND(0.063)
Butyl benzylphthalate	ND(0.059)	ND(0.061)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.059)	ND(0.061)	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.081)	ND(0.083)	ND(0.076)
Antimony	ND(0.282)	ND(0.291)	ND(0.266)
Arsenic	4.24	6.72	0.826
Chromium (total)	NA	NA	NA
Chromium (III)	5.46	17.2	4.66
Chromium (VI)	ND(0.403)	ND(0.416)	ND(0.38)
Cyanide (total)	ND(0.196)	ND(0.202)	ND(0.185)
Iron	NA	NA	NA
Lead	4.04	8.82	2.25
Manganese	192	229	55.3
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM2-09

Depth(ft)	0–2	6–8	8–10	14–16
1,1–Dichloroethene	ND(0.0048)	0.0017 J	ND(0.0042)	ND(0.0057)
Benzene	ND(0.0048)	ND(0.0047)	ND(0.0042)	ND(0.0057)
Tetrachloroethene	ND(0.0048)	0.18 J	0.0087	0.0088
Vinyl chloride	ND(0.0095)	ND(0.0094)	ND(0.0083)	ND(0.011)
Benzo(a)anthracene	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Benzo(a)pyrene	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Benzo(b)fluoranthene	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Butyl benzylphthalate	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Dibenz(a,h)anthracene	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Indeno(1,2,3–cd)pyrene	ND(1.7)	ND(7.3)	ND(0.38)	ND(0.34)
Antimony	ND(2.09)	ND(2.22)	ND(2.28)	ND(2.07)
Arsenic	3.83	3.39	3.94	1.88
Chromium (total)	NA	NA	NA	NA
Chromium (III)	3.96	3.66	11.22	2.72
Chromium (VI)	ND(0.523)	ND(0.554)	ND(0.57)	ND(0.518)
Cyanide (total)	ND(0.523)	3.67	ND(0.57)	ND(0.518)
Iron	NA	NA	NA	NA
Lead	3.31	3.12	6.94	1.96
Manganese	165	136	325	82.5
PCBs (total)	0.144 J	3.75 J	ND (0.114)	ND (0.102)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

MWM2-03

Depth(ft)	0–2	8–10	10–12	14–16
1,1–Dichloroethene	ND(0.0048) [ND(0.0049)]	ND(0.0046)	0.0069	ND(0.0011)
Benzene	ND(0.0048) [ND(0.0049)]	ND(0.0046)	ND(0.0048)	ND(0.0006)
Tetrachloroethene	ND(0.0048) [ND(0.0049)]	ND(0.0046)	0.01	0.0047
Vinyl chloride	ND(0.0095) [ND(0.0098)]	ND(0.0091)	ND(0.0096)	ND(0.0013)
Benzo(a)anthracene	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.062)
Benzo(a)pyrene	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.068)
Benzo(b)fluoranthene	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.066)
Butyl benzylphthalate	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.058)
Dibenz(a,h)anthracene	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.058)
Indeno(1,2,3–cd)pyrene	ND(0.39) [ND(0.39)]	ND(0.37)	ND(0.56)	ND(0.079)
Antimony	ND(2.39) [ND(2.38)]	ND(2.26)	ND(2.35)	ND(0.555)
Arsenic {RDC}	5.36 [4.91]	4.07	8.1	3.42
Chromium (total)	NA [NA]	NA	NA	NA
Chromium (III)	15.2 [13.3 J]	11.2	14.8 J	9.53
Chromium (VI)	0.607 [0.521 J]	ND(0.564)	ND(0.588)	ND(0.396)
Cyanide (total)	ND(0.596) [ND(0.595)]	ND(0.564)	ND(0.588)	ND(0.192)
Iron	NA [NA]	NA	NA	NA
Lead	9.32 [9.76]	6.1	8.22 J	5.77 J
Manganese	223 [547]	275	618 J	324 J
PCBs (total)	ND (0.117) [ND (0.117)]	ND (0.111)	ND (0.114)	ND (0.037)
2,3,7,8–TCDD (TEQ)	NA [NA]	NA	NA	NA

BM2-14

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	ND(0.0011)	ND(0.0011)	ND(0.0011)
Benzene	ND(0.00062)	ND(0.0006)	ND(0.0006)
Tetrachloroethene	0.0014 J	0.0036 J	ND(0.0011)
Vinyl chloride	ND(0.0013)	ND(0.0013)	ND(0.0013)
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3–cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM2-08

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	ND(0.0014)	0.0023 J [ND(0.0012)]	ND(0.0015)
Benzene	ND(0.00077)	ND(0.00063) [ND(0.00063)]	ND(0.0008)
Tetrachloroethene	ND(0.0014)	0.0023 J [ND(0.0012)]	0.0056 J
Vinyl chloride	ND(0.0017)	ND(0.0014) [ND(0.0013)]	ND(0.0017)
Benzo(a)anthracene	ND(0.065)	ND(0.066) [ND(0.065)]	ND(0.061)
Benzo(a)pyrene	ND(0.071)	ND(0.072) [ND(0.071)]	ND(0.067)
Benzo(b)fluoranthene	ND(0.069)	ND(0.069) [ND(0.069)]	ND(0.065)
Butyl benzylphthalate	ND(0.061)	ND(0.061) [ND(0.061)]	ND(0.057)
Dibenz(a,h)anthracene	ND(0.061)	ND(0.061) [ND(0.061)]	ND(0.057)
Indeno(1,2,3–cd)pyrene	ND(0.083)	ND(0.083) [ND(0.083)]	ND(0.078)
Antimony	ND(0.291)	ND(0.292) [ND(0.291)]	ND(0.273)
Arsenic {RDC}	9.46	8.23 [8.36 J]	5.71
Chromium (total)	NA	NA	NA
Chromium (III)	15.89	16.99 [17.89 J]	23.80
Chromium (VI)	ND(0.416)	ND(0.417) [ND(0.416)]	ND(0.39)
Cyanide (total)	ND(0.202)	ND(0.203) [ND(0.202)]	ND(0.189)
Iron	NA	NA [NA]	NA
Lead	11.2	10.1 [10 J]	10.5
Manganese	518 J	539 J [774 J]	279 J
PCBs (total)	ND (0.039)	ND (0.039) [ND (0.039)]	ND (0.036)
2,3,7,8–TCDD (TEQ)	NA	NA [NA]	NA

MWM2-04

Depth(ft)	0–2	8–10
1,1–Dichloroethene	0.0014 J [0.0014 J]	ND(0.22)
Benzene	ND(0.0045) [ND(0.0047)]	ND(0.22)
Tetrachloroethene	ND(0.0045) [0.0014 J]	0.075 J
Vinyl chloride	ND(0.009) [ND(0.0094)]	ND(0.44)
Benzo(a)anthracene	ND(0.38) [ND(0.38)]	ND(0.38)
Benzo(a)pyrene	ND(0.38) [ND(0.38)]	ND(0.38)
Benzo(b)fluoranthene	ND(0.38) [ND(0.38)]	ND(0.38)
Butyl benzylphthalate	ND(0.38) [ND(0.38)]	ND(0.38)
Dibenz(a,h)anthracene	ND(0.38) [ND(0.38)]	ND(0.38)
Indeno(1,2,3–cd)pyrene	ND(0.38) [ND(0.38)]	ND(0.38)
Antimony	ND(2.3) [ND(2.32)]	ND(2.31)
Arsenic	4.09 [4.35]	6.87
Chromium (total)	NA [NA]	NA
Chromium (III)	12.41 [13.71]	16.01
Chromium (VI)	ND(0.574) [ND(0.581)]	ND(0.578)
Cyanide (total)	ND(0.574) [ND(0.581)]	ND(0.578)
Iron	NA [NA]	NA
Lead	7.86 [13.2]	19.5
Manganese	348 [352]	622
PCBs (total)	ND (0.114) [ND (0.114)]	ND (0.126)
2,3,7,8–TCDD (TEQ)	NA [NA]	NA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED

0 80' 160'
GRAPHIC SCALE

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/24/02 SYR-54-GMS DJP
64411210/64411C09.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-2 AND -21 - SOIL

ENCORE

FIGURE 4-19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

BH1-99	
Depth(ft)	2-4
1,1-Dichloroethene	ND(0.058) J
Benzene	ND(0.058) J
Tetrachloroethene	ND(0.058) J
Vinyl chloride	ND(0.058) J
Benzo(a)anthracene	0.3 J
Benzo(a)pyrene	0.3 J
Benzo(b)fluoranthene	0.3
Butyl benzylphthalate	0.1 J
Dibenz(a,h)anthracene	0.04 J
Indeno(1,2,3-cd)pyrene	0.2 J
Antimony	0.92
Arsenic	5.7
Chromium (total)	46.2
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	1.6
Iron	24300
Lead	48.9
Manganese	617 J
PCBs (total)	0.3
2,3,7,8-TCDD (TEQ)	NA

MWM4-03			
Depth(ft)	0-2	8-10	23-25
1,1-Dichloroethene	ND(0.0011)	ND(0.0012)	ND(0.0013)
Benzene	ND(0.00061)	ND(0.00066)	ND(0.0007)
Tetrachloroethene	ND(0.0011)	ND(0.0012)	ND(0.0013)
Vinyl chloride	ND(0.0013)	ND(0.0014)	ND(0.0015)
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	5.56	8.23	1.85
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM4-05			
Depth(ft)	0-2	8-10	10-12
1,1-Dichloroethene	ND(0.0011)	ND(0.0012)	ND(0.0012)
Benzene	ND(0.00061)	ND(0.00066)	ND(0.00063)
Tetrachloroethene	ND(0.0011)	ND(0.0012)	ND(0.0012)
Vinyl chloride	ND(0.0013)	ND(0.0014)	ND(0.0014)
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	4.1	8.09	7.63
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

MWM4-02		
Depth(ft)	0-2	5-7
1,1-Dichloroethene	ND(0.0027)	ND(0.0018)
Benzene	ND(0.0014)	ND(0.00097)
Tetrachloroethene	ND(0.0027)	ND(0.0018)
Vinyl chloride	ND(0.0031)	ND(0.0021)
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	6.48	2.15
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BM4-01		
Depth(ft)	6-8	12-14
1,1-Dichloroethene	NA	ND(0.017)
Benzene	NA	ND(0.017)
Tetrachloroethene	NA	ND(0.015)
Vinyl chloride	NA	ND(0.011)
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Butyl benzylphthalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Chromium (total)	NA	NA
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	2.86	3.86
Manganese	NA	NA
PCBs (total)	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA

BH4-99	
Depth(ft)	4-6
1,1-Dichloroethene	ND(0.060)
Benzene	ND(0.060)
Tetrachloroethene	ND(0.060)
Vinyl chloride	ND(0.060)
Benzo(a)anthracene	ND(0.3)
Benzo(a)pyrene	ND(0.3)
Benzo(b)fluoranthene	ND(0.3)
Butyl benzylphthalate	ND(0.3)
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(0.3)
Antimony	0.1
Arsenic	2.5
Chromium (total)	17.1
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND(0.2)
Iron	12800
Lead	10.1
Manganese	77.3 J
PCBs (total)	0.05 J
2,3,7,8-TCDD (TEQ)	NA

MWM4-01			
Depth(ft)	0-2	8-10	20-22
1,1-Dichloroethene	ND(0.005)	ND(0.0052) [ND(0.0052)]	ND(0.0042)
Benzene	ND(0.005)	ND(0.0052) [ND(0.0052)]	ND(0.0042)
Tetrachloroethene	ND(0.005)	ND(0.0052) [ND(0.0052)]	ND(0.0042)
Vinyl chloride	ND(0.01)	ND(0.01) [ND(0.01)]	ND(0.0084)
Benzo(a)anthracene	NA	NA [NA]	NA
Benzo(a)pyrene	NA	NA [NA]	NA
Benzo(b)fluoranthene	NA	NA [NA]	NA
Butyl benzylphthalate	NA	NA [NA]	NA
Dibenz(a,h)anthracene	NA	NA [NA]	NA
Indeno(1,2,3-cd)pyrene	NA	NA [NA]	NA
Antimony	NA	NA [NA]	NA
Arsenic	NA	NA [NA]	NA
Chromium (total)	NA	NA [NA]	NA
Chromium (III)	NA	NA [NA]	NA
Chromium (VI)	NA	NA [NA]	NA
Cyanide (total)	NA	NA [NA]	NA
Iron	NA	NA [NA]	NA
Lead	5.25	9.21 [8.6]	4.94
Manganese	NA	NA [NA]	NA
PCBs (total)	NA	NA [NA]	NA
2,3,7,8-TCDD (TEQ)	NA	NA [NA]	NA

BH2-99	
Depth(ft)	3-5
1,1-Dichloroethene	ND(0.053)
Benzene	ND(0.053)
Tetrachloroethene	ND(0.053)
Vinyl chloride	ND(0.053)
Benzo(a)anthracene	ND(0.3)
Benzo(a)pyrene	ND(0.3)
Benzo(b)fluoranthene	ND(0.3)
Butyl benzylphthalate	ND(0.3)
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(0.3)
Antimony	0.05
Arsenic	1.7
Chromium (total)	6.56
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND(0.2)
Iron	5010
Lead	2.94
Manganese	102 J
PCBs (total)	0.05 J
2,3,7,8-TCDD (TEQ)	NA

BH3-99	
Depth(ft)	10-12
1,1-Dichloroethene	ND(0.069) J [ND(0.063) J]
Benzene	ND(0.069) J [ND(0.063) J]
Tetrachloroethene	ND(0.069) J [ND(0.063) J]
Vinyl chloride	ND(0.069) J [ND(0.063) J]
Benzo(a)anthracene	ND(0.3) [ND(0.3)]
Benzo(a)pyrene	ND(0.3) [ND(0.3)]
Benzo(b)fluoranthene	ND(0.3) [ND(0.3)]
Butyl benzylphthalate	ND(0.3) [ND(0.3)]
Dibenz(a,h)anthracene	ND(0.3) [ND(0.3)]
Indeno(1,2,3-cd)pyrene	ND(0.3) [ND(0.3)]
Antimony	0.17 [0.36]
Arsenic	1.1 [2.8]
Chromium (total)	20 [73.4]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	ND(0.5) [0.1 J]
Iron	19100 [17600]
Lead	14.7 [37.6]
Manganese	251 J [543 J]
PCBs (total)	0.3 [0.3]
2,3,7,8-TCDD (TEQ)	NA [NA]

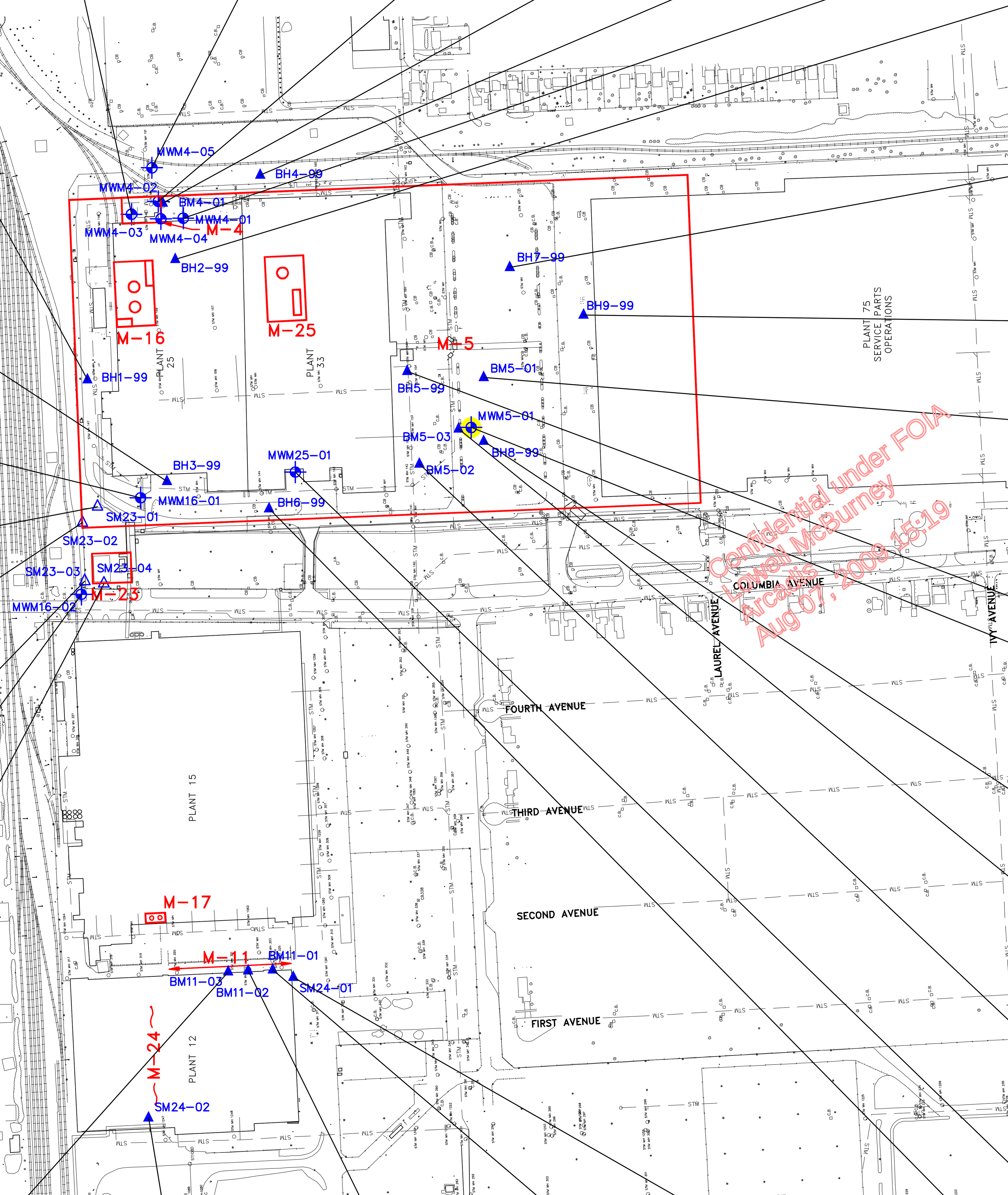
MWM16-01			
Depth(ft)	0-2	8-10	14-16
1,1-Dichloroethene	ND(0.0045)	ND(0.005)	ND(0.0063)
Benzene	ND(0.0045)	ND(0.005)	ND(0.0063)
Tetrachloroethene	ND(0.0045)	ND(0.005)	ND(0.0063)
Vinyl chloride	ND(0.0089)	ND(0.01)	ND(0.013)
Benzo(a)anthracene	ND(0.36)	ND(0.37)	ND(0.37)
Benzo(a)pyrene	ND(0.36)	ND(0.37)	ND(0.37)
Benzo(b)fluoranthene	ND(0.36)	ND(0.37)	ND(0.37)
Butyl benzylphthalate	ND(0.36)	ND(0.37)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.36)	ND(0.37)	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.36)	ND(0.37)	ND(0.37)
Antimony	0.668 J	0.562 J	0.581 J
Arsenic	4.4	4.47	3.18
Chromium (total)	14.9	11.6	8.91
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	21.6	7.92	4.59
Manganese	410	308	231
PCBs (total)	0.114 J	ND(0.111)	ND(0.111)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SM23-01	
Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.066)
Benzo(a)pyrene	ND(0.072)
Benzo(b)fluoranthene	ND(0.07)
Butyl benzylphthalate	ND(0.061)
Dibenz(a,h)anthracene	ND(0.061)
Indeno(1,2,3-cd)pyrene	ND(0.084)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.040)
2,3,7,8-TCDD (TEQ)	NA

SM23-02	
Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.065)
Benzo(a)pyrene	ND(0.07)
Benzo(b)fluoranthene	ND(0.068)
Butyl benzylphthalate	ND(0.06)
Dibenz(a,h)anthracene	ND(0.06)
Indeno(1,2,3-cd)pyrene	ND(0.082)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.039)
2,3,7,8-TCDD (TEQ)	NA

SM23-03	
Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.37)
Benzo(a)pyrene	ND(0.37)
Benzo(b)fluoranthene	0.095 J
Butyl benzylphthalate	0.089 J
Dibenz(a,h)anthracene	ND(0.37)
Indeno(1,2,3-cd)pyrene	ND(0.37)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	0.122 J
2,3,7,8-TCDD (TEQ)	NA

MWM16-02			
Depth(ft)	0-2	6-8	18-20
1,1-Dichloroethene	ND(0.0017)	ND(0.0013)	ND(0.0016)
Benzene	ND(0.00091)	ND(0.00071)	ND(0.00087)
Tetrachloroethene	ND(0.0017)	ND(0.0013)	ND(0.0016)
Vinyl chloride	ND(0.002)	ND(0.0015)	ND(0.0019)
Benzo(a)anthracene	0.06 J	ND(0.07)	ND(0.06)
Benzo(a)pyrene	0.13 J	ND(0.076)	ND(0.065)
Benzo(b)fluoranthene	0.26 J	ND(0.073)	ND(0.063)
Butyl benzylphthalate	0.15 J	ND(0.065)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.054)	ND(0.065)	ND(0.055)
Indeno(1,2,3-cd)pyrene	0.21 J	ND(0.089)	ND(0.076)
Antimony	ND(0.261)	ND(0.31)	ND(0.265)
Arsenic {RDC}	8.99	7.63	2.81
Chromium (total)	12.7	17.6	4.28
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	74.9	16.6	3.24
Manganese	1130 J	731 J	167 J
PCBs (total)	0.48 J	0.106 J	ND (0.036)
2,3,7,8-TCDD (TEQ)	NA	NA	NA



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BH7-99	
Depth(ft)	2-4
1,1-Dichloroethene	ND(0.055) J
Benzene	ND(0.055) J
Tetrachloroethene	ND(0.055) J
Vinyl chloride	ND(0.055) J
Benzo(a)anthracene	ND(0.3)
Benzo(a)pyrene	ND(0.3)
Benzo(b)fluoranthene	ND(0.3)
Butyl benzylphthalate	ND(0.3)
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(0.3)
Antimony	0.14
Arsenic	5.0
Chromium (total)	11.5
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.5
Iron	14500
Lead	6.74
Manganese	412 J
PCBs (total)	ND(0.1)
2,3,7,8-TCDD (TEQ)	NA

BH9-99	
Depth(ft)	4-6
1,1-Dichloroethene	ND(0.062) J
Benzene	ND(0.062) J
Tetrachloroethene	ND(0.062) J
Vinyl chloride	ND(0.062) J
Benzo(a)anthracene	ND(0.3)
Benzo(a)pyrene	ND(0.3)
Benzo(b)fluoranthene	ND(0.3)
Butyl benzylphthalate	0.2 J
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(0.3)
Antimony	0.24
Arsenic	6.0
Chromium (total)	41.1
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.2 J
Iron	22400
Lead	20
Manganese	353 J
PCBs (total)	0.7
2,3,7,8-TCDD (TEQ)	NA

BM5-01		
Depth(ft)	0-2	8-10
1,1-Dichloroethene	ND(0.0011) [NA]	ND(0.0011)
Benzene	ND(0.00062) [NA]	ND(0.0006)
Tetrachloroethene	ND(0.0011) [NA]	ND(0.0011)
Vinyl chloride	ND(0.0013) [NA]	ND(0.0013)
Benzo(a)anthracene	NA [NA]	NA
Benzo(a)pyrene	NA [NA]	NA
Benzo(b)fluoranthene	NA [NA]	NA
Butyl benzylphthalate	NA [NA]	NA
Dibenz(a,h)anthracene	NA [NA]	NA
Indeno(1,2,3-cd)pyrene	NA [NA]	NA
Antimony	ND(0.275) [NA]	ND(0.292)
Arsenic	2.82 [NA]	2.65
Chromium (total)	7.11 [NA]	28.5
Chromium (III)	NA [NA]	NA
Chromium (VI)	NA [NA]	NA
Cyanide (total)	NA [NA]	NA
Iron	NA [NA]	NA
Lead	4.38 [NA]	10.2
Manganese	199 J [NA]	225 J
PCBs (total)	0.062 J [NA]	0.21
2,3,7,8-TCDD (TEQ)	1.27E-06 [8.26E-07]	7.85E-07

BH5-99	
Depth(ft)	4-6
1,1-Dichloroethene	ND(0.055)
Benzene	ND(0.055)
Tetrachloroethene	ND(0.055)
Vinyl chloride	ND(0.055)
Benzo(a)anthracene	3.6
Benzo(a)pyrene {RDC}	2.8
Benzo(b)fluoranthene	3.0
Butyl benzylphthalate	0.4
Dibenz(a,h)anthracene	0.4
Indeno(1,2,3-cd)pyrene	1.2
Antimony	0.53
Arsenic	3.3
Chromium (total)	52.9
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	0.5
Iron	26600
Lead	27.4
Manganese	682
PCBs (total)	0.8
2,3,7,8-TCDD (TEQ)	NA

MWM5-01				
Depth(ft)	0-2	2-4	4-6	6-8
1,1-Dichloroethene	ND(0.0012)	ND(0.001)	ND(0.0011)	ND(0.0012)
Benzene	ND(0.00064)	0.00089 J	ND(0.0006)	0.0021 J
Tetrachloroethene	ND(0.0012)	ND(0.001)	ND(0.0011)	ND(0.0012)
Vinyl chloride	ND(0.0014)	ND(0.0012)	ND(0.0013)	ND(0.0014)
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
Antimony	0.291 J	14.1	0.723 J	0.545 J
Arsenic {RDC}	2.32	9.26	8.24	4.7
Chromium (total)	5.48	202	84.1	41.9
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead {RDC, IDC}	4.05	1560	78.6	19
Manganese	182 J	905 J	682 J	517 J
PCBs (total)	ND (0.037)	1.96 J	2.04 J	0.74 J
2,3,7,8-TCDD (TEQ) {RDC}	1.30E-06	1.06E-04	4.16E-05	3.78E-05

BH8-99	
Depth(ft)	4-6
1,1-Dichloroethene	ND(0.060) J
Benzene	ND(0.060) J
Tetrachloroethene	ND(0.060) J
Vinyl chloride	ND(0.060) J
Benzo(a)anthracene	0.2 J
Benzo(a)pyrene	0.1 J
Benzo(b)fluoranthene	0.2 J
Butyl benzylphthalate	0.4
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	0.09 J
Antimony	1.79
Arsenic	6.8
Chromium (total)	152
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	2.8
Iron	51700
Lead	73.1
Manganese	768 J
PCBs (total)	3.9
2,3,7,8-TCDD (TEQ)	NA

BM5-03				
Depth(ft)	0-2	2-4	4-6	8-10
1,1-Dichloroethene	NA	NA	NA	NA
Benzene	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
Antimony	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA
Chromium (total)	NA	NA	NA	NA
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead	62.3	26	12.7	91.7
Manganese	NA	NA	NA	NA
PCBs (total)	NA	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA	NA

BM5-02				
Depth(ft)	0-2	4-6	8-10	22-24
1,1-Dichloroethene	ND(0.0012) [NA]	ND(0.0011)	ND(0.0011)	ND(0.0013)
Benzene	ND(0.00064) [NA]	ND(0.00058)	ND(0.00057)	ND(0.00071)
Tetrachloroethene	ND(0.0012) [NA]	ND(0.0011)	ND(0.0011)	ND(0.0013)
Vinyl chloride	ND(0.0014) [NA]	ND(0.0013)	ND(0.0012)	ND(0.0015)
Benzo(a)anthracene	NA [NA]	NA	NA	NA
Benzo(a)pyrene	NA [NA]	NA	NA	NA
Benzo(b)fluoranthene	NA [NA]	NA	NA	NA
Butyl benzylphthalate	NA [NA]	NA	NA	NA
Dibenz(a,h)anthracene	NA [NA]	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA [NA]	NA	NA	NA
Antimony	ND(0.278) [NA]	0.731 J	ND(0.281)	NA
Arsenic {RDC}	2.99 [NA]	8.09	2.75	NA
Chromium (total)	10.8 [NA]	118	15	NA
Chromium (III)	NA [NA]	NA	NA	NA
Chromium (VI)	NA [NA]	NA	NA	NA
Cyanide (total)	NA [NA]	NA	NA	NA
Iron	NA [NA]	NA	NA	NA
Lead	6.2 [NA]	42.3	6.09	NA
Manganese	197 J [NA]	919 J	207 J	NA
PCBs (total)	0.066 [NA]	0.69 J	ND (0.038)	ND (0.035)
2,3,7,8-TCDD (TEQ) {RDC}	01.7E-06 [1.59E-06]	8.00E-05	ND(3.84E-07)	2.28E-07

SM23-04	
Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.063)
Benzo(a)pyrene	ND(0.069)
Benzo(b)fluoranthene	ND(0.066)
Butyl benzylphthalate	ND(0.058)
Dibenz(a,h)anthracene	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.08)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.038)
2,3,7,8-TCDD (TEQ)	NA

BM11-03			
Depth(ft)	0-2	8-10	18-20
1,1-Dichloroethene	NA	NA	NA
Benzene	ND(0.0035)	ND(0.0038)	ND(0.0052)
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SM24-02	
Depth(ft)	0-2
1,1-Dichloroethene	NA [NA]
Benzene	NA [NA]
Tetrachloroethene	NA [NA]
Vinyl chloride	NA [NA]
Benzo(a)anthracene	ND(0.06) [ND(0.064)]
Benzo(a)pyrene	ND(0.066) [ND(0.07)]
Benzo(b)fluoranthene	ND(0.064) [ND(0.068)]
Butyl benzylphthalate	ND(0.056) [ND(0.06)]
Dibenz(a,h)anthracene	ND(0.056) [ND(0.06)]
Indeno(1,2,3-cd)pyrene	ND(0.077) [ND(0.082)]
Antimony	NA [NA]
Arsenic	NA [NA]
Chromium (total)	NA [NA]
Chromium (III)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	NA [NA]
Iron	NA [NA]
Lead	NA [NA]
Manganese	NA [NA]
PCBs (total)	ND (0.037) [ND (0.039)]
2,3,7,8-TCDD (TEQ)	NA [NA]

BM11-02			
Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	NA	NA	NA
Benzene	ND(0.004)	ND(0.004)	ND(0.0038)
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

BM11-01			
Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	NA	NA	NA
Benzene	ND(0.004)	0.0054	ND(0.0038)
Tetrachloroethene	NA	NA	NA
Vinyl chloride	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Butyl benzylphthalate	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Chromium (total)	NA	NA	NA
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Manganese	NA	NA	NA
PCBs (total)	NA	NA	NA
2,3,7,8-TCDD (TEQ)	NA	NA	NA

SM24-01	
Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	ND(0.063)
Benzo(a)pyrene	ND(0.069)
Benzo(b)fluoranthene	ND(0.067)
Butyl benzylphthalate	ND(0.059)
Dibenz(a,h)anthracene	ND(0.059)
Indeno(1,2,3-cd)pyrene	ND(0.081)
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	NA
PCBs (total)	ND (0.038)
2,3,7,8-TCDD (TEQ)	NA

BH6-99	
Depth(ft)	4-6
1,1-Dichloroethene	ND(0.058)
Benzene	ND(0.058)
Tetrachloroethene	ND(0.058)
Vinyl chloride	ND(0.058)
Benzo(a)anthracene	ND(0.3)
Benzo(a)pyrene	ND(0.3)
Benzo(b)fluoranthene	ND(0.3)
Butyl benzylphthalate	ND(0.3)
Dibenz(a,h)anthracene	ND(0.3)
Indeno(1,2,3-cd)pyrene	ND(0.3)
Antimony	0.12
Arsenic {RDC}	9.4
Chromium (total)	15.7
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	ND(0.2)
Iron	16900
Lead	14.1
Manganese	404 J
PCBs (total)	ND(0.1)
2,3,7,8-TCDD (TEQ)	NA

MWM25-01			
Depth(ft)	0-2	8-10	12-14
1,1-Dichloroethene	ND(0.0012)	ND(0.0011)	ND(0.0012)
Benzene	ND(0.00062)	ND(0.00062)	ND(0.00063)
Tetrachloroethene	ND(0.0012)	ND(0.0011)	ND(0.0012)
Vinyl chloride	ND(0.0013)	ND(0.0013)	ND(0.0014)
Benzo(a)anthracene	ND(0.059)	ND(0.065)	ND(0.063)
Benzo(a)pyrene	ND(0.065)	ND(0.071)	ND(0.069)
Benzo(b)fluoranthene	ND(0.063)	ND(0.068)	ND(0.066)
Butyl benzylphthalate	3.2	ND(0.06)	ND(0.058)
Dibenz(a,h)anthracene	ND(0.055)	ND(0.06)	ND(0.058)
Indeno(1,2,3-cd)pyrene	ND(0.076)	ND(0.082)	ND(0.08)
Antimony	ND(0.529)	ND(0.577)	ND(0.56)
Arsenic {RDC}	3.38	8.65	3.87
Chromium (total)	8.79	25.1	11.1
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	8.13	13	7.33
Manganese	246	731	144
PCBs (total)	0.14 J	0.20 J	ND (0.037)
2,3,7,8-TCDD (TEQ)	NA	NA	NA

LEGEND:

MWM-5-01 GROUNDWATER MONITORING WELL LOCATION
BM5-03 SOIL BORING LOCATION
SW8-03 SURFACE SOIL SAMPLE COLLECTION LOCATION
LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
APPROXIMATE AOI AREA

M-4 = PLANT 25 FORMER GASOLINE UST AND CURRENT GASOLINE AST
M-5 = FORMER A2 FILL AREA
M-11 = PLANT 12 FORMER GASOLINE STORAGE AREA
M-16 = PLANT 25 BASEMENT SUMP AREA
M-17 = FORMER GASOLINE AST
M-23 = ELECTRICAL SUBSTATION
M-24 = PCB SPILL AREA
M-25 = PLANT 33 BASEMENT SUMP AREA

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC - RESIDENTIAL DIRECT CONTACT CRITERIA
IDC - INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC - RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC - INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC - RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC - INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC - RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC - INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC - RESIDENTIAL DRINKING WATER CRITERIA
IDWC - INDUSTRIAL DRINKING WATER CRITERIA
RGVIC - RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC - INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC - GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA
HISTORIC DATA FROM CRA INVESTIGATION

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) - CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J - ESTIMATED CONCENTRATION.
6. B - LABORATORY BLANK CONTAMINATION.
7. NA - NOT ANALYZED.

0 300' 600'
GRAPHIC SCALE

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/29/02 SYR-54-GMS DJP
64411210/64411C13.DWG

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-4, -5, -11, -16, -23, -24 AND -25 - SOIL

ENCORE

FIGURE 4-20

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Arcadis
Aug 07, 2009 15:19

MWM4–05

Date Collected	1/18/2002
1,1,1–Trichloroethane	ND(0.00015)
1,1,2–Trichloroethane	ND(0.0003)
1,1–Dichloroethene	ND(0.00024)
1,2–Dichloroethane	ND(0.00021)
Acetone	0.0021 J
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	ND(0.00023)
Toluene	0.0033 J
Vinyl chloride	ND(0.00015)
bis(2–Ethylhexyl)phthalate	NA
Antimony	NA
Arsenic	NA
Barium	NA
Chromium (total)	NA
Chromium (II)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	NA
Nickel	NA
Thallium	NA
Vanadium	NA
PCBs (total)	NA
2,3,7,8–TCDD (TEQ)	NA

MWM4–02

Date Collected	8/20/2001	1/10/2002
1,1,1–Trichloroethane	ND(0.0015)	ND(0.00015)
1,1,2–Trichloroethane	ND(0.003)	ND(0.0003)
1,1–Dichloroethene	ND(0.0024)	ND(0.00024)
1,2–Dichloroethane	ND(0.0021)	ND(0.00021)
Acetone	ND(0.0051)	ND(0.00051)
Benzene [RDWC, IDWC]	0.11	0.0033 J
Ethylbenzene	0.16	0.00049 J
Tetrachloroethene	ND(0.0023)	ND(0.00023)
Toluene	0.03	ND(0.00018)
Vinyl chloride	ND(0.0015)	ND(0.00015)
bis(2–Ethylhexyl)phthalate	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Barium	NA	NA
Chromium (total)	NA	NA
Chromium (II)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	NA	NA
Nickel	NA	NA
Thallium	NA	NA
Vanadium	NA	NA
PCBs (total)	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA

MWM4–03

Date Collected	8/20/2001	1/10/2002
1,1,1–Trichloroethane	ND(0.00038)	ND(0.00015)
1,1,2–Trichloroethane	ND(0.00075)	ND(0.0003)
1,1–Dichloroethene	ND(0.0006)	ND(0.00024)
1,2–Dichloroethane	ND(0.000052)	ND(0.00021)
Acetone	0.17 J	0.0044 J
Benzene	ND(0.0004)	ND(0.00016)
Ethylbenzene	ND(0.00003)	ND(0.00012)
Tetrachloroethene	ND(0.00058)	ND(0.00023)
Toluene	ND(0.00045)	ND(0.00018)
Vinyl chloride	ND(0.00038)	ND(0.00015)
bis(2–Ethylhexyl)phthalate	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Barium	NA	NA
Chromium (total)	NA	NA
Chromium (II)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	NA	NA
Nickel	NA	NA
Thallium	NA	NA
Vanadium	NA	NA
PCBs (total)	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA

MWM4–04

Date Collected	1/10/2002
1,1,1–Trichloroethane	ND(0.005)
1,1,2–Trichloroethane	ND(0.01)
1,1–Dichloroethene	ND(0.008)
1,2–Dichloroethane	ND(0.007)
Acetone	ND(0.017)
Benzene [RDWC, IDWC]	0.55
Ethylbenzene [RDWC, IDWC]	0.85
Tetrachloroethene	ND(0.0077)
Toluene	0.034
Vinyl chloride	ND(0.005)
bis(2–Ethylhexyl)phthalate	NA
Antimony	NA
Arsenic	NA
Barium	NA
Chromium (total)	NA
Chromium (II)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	NA
Nickel	NA
Thallium	NA
Vanadium	NA
PCBs (total)	NA
2,3,7,8–TCDD (TEQ)	NA

MWM4–01

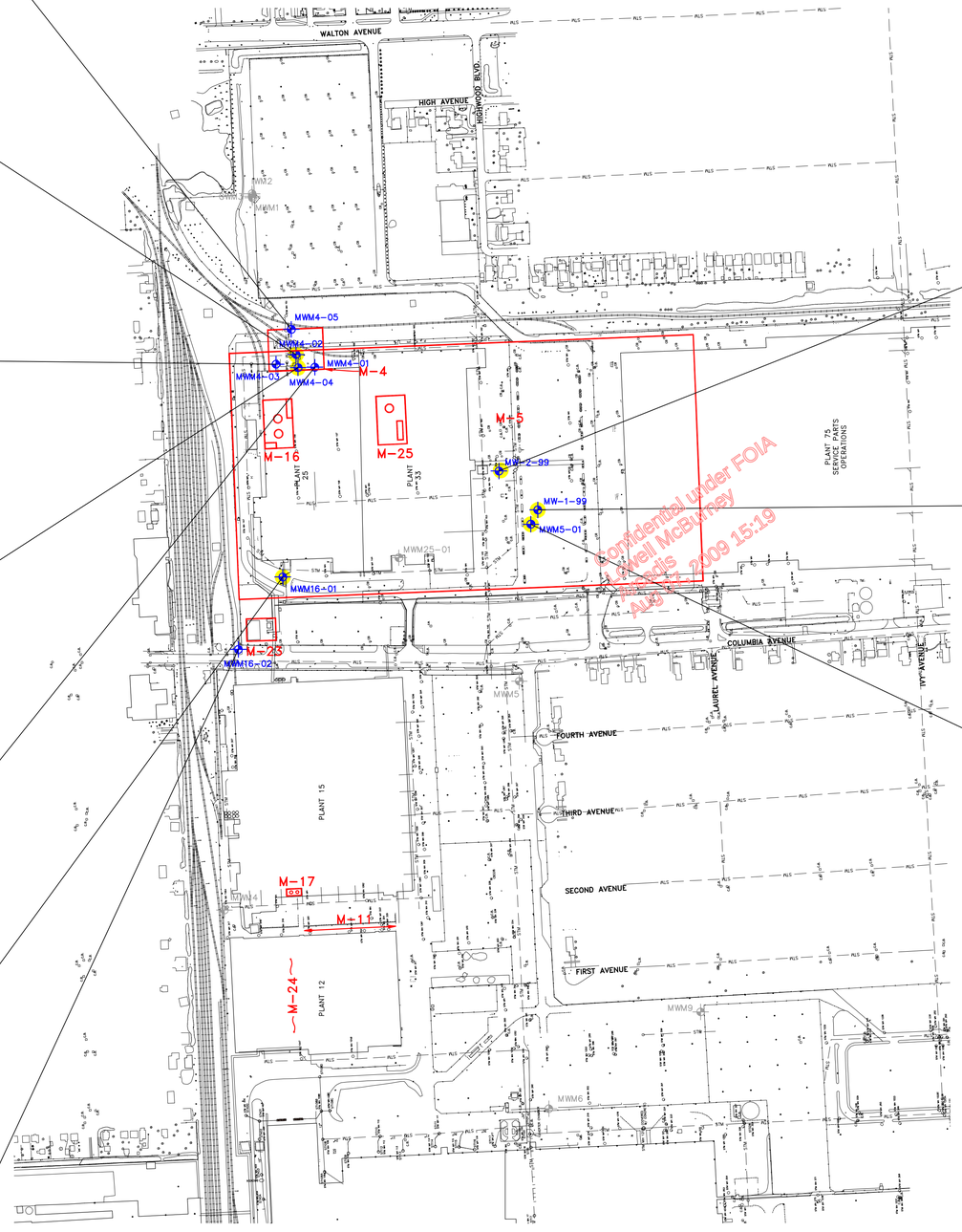
Date Collected	8/20/2001	1/10/2002
1,1,1–Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2–Trichloroethane	ND(0.0003)	ND(0.0003)
1,1–Dichloroethene	ND(0.00024)	ND(0.00024)
1,2–Dichloroethane	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2–Ethylhexyl)phthalate	NA	NA
Antimony	NA	NA
Arsenic	NA	NA
Barium	NA	NA
Chromium (total)	NA	NA
Chromium (II)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	NA	NA
Nickel	NA	NA
Thallium	NA	NA
Vanadium	NA	NA
PCBs (total)	NA	NA
2,3,7,8–TCDD (TEQ)	NA	NA

MWM16–01

Date Collected	9/13/2001	1/10/2002
1,1,1–Trichloroethane	ND(0.001)	ND(0.00015) [ND(0.00015)]
1,1,2–Trichloroethane	ND(0.001)	ND(0.0003) [ND(0.0003)]
1,1–Dichloroethene	ND(0.001)	ND(0.00024) [ND(0.00024)]
1,2–Dichloroethane	ND(0.001)	ND(0.00021) [ND(0.00021)]
Acetone	ND(0.01)	0.0053 J [0.0086 J]
Benzene	ND(0.001)	ND(0.00016) [ND(0.00016)]
Ethylbenzene	ND(0.001)	ND(0.00012) [ND(0.00012)]
Tetrachloroethene	ND(0.001)	ND(0.00023) [ND(0.00023)]
Toluene	ND(0.001)	ND(0.00018) [ND(0.00018)]
Vinyl chloride [RDWC, IDWC]	0.003	0.017 [0.017]
bis(2–Ethylhexyl)phthalate	0.0055	0.0027 J [ND(0.00271)]
Antimony	ND(0.025)	ND(0.0022) [ND(0.0022)]
Arsenic	ND(0.01)	0.0385 J [0.0081 J]
Barium	0.161	0.213 [0.211]
Chromium (total)	ND(0.01)	ND(0.0014) [ND(0.0014)]
Chromium (II)	NA	NA [NA]
Chromium (VI)	NA	NA [NA]
Cyanide (total)	NA	NA [NA]
Lead	ND(0.003)	ND(0.0025) [ND(0.0025)]
Manganese [RDWC]	1.05	0.823 J [0.793 J]
Nickel	ND(0.02)	0.0026 J [0.0036 J]
Thallium	ND(0.01)	ND(0.000018) [ND(0.000018)]
Vanadium	ND(0.01)	ND(0.00082) [ND(0.00082)]
PCBs (total)	ND (0.00007)	ND (0.00019) [ND (0.00019)]
2,3,7,8–TCDD (TEQ)	NA	NA [NA]

MWM16–02

Date Collected	1/31/2002
1,1,1–Trichloroethane	0.0033 [0.0027]
1,1,2–Trichloroethane	ND(0.0003) [ND(0.0003)]
1,1–Dichloroethene	ND(0.00024) [ND(0.00024)]
1,2–Dichloroethane	ND(0.00021) [ND(0.00021)]
Acetone	ND(0.00051) [ND(0.00052)]
Benzene	ND(0.00016) [ND(0.00016)]
Ethylbenzene	ND(0.00012) [ND(0.00012)]
Tetrachloroethene	ND(0.00023) [ND(0.00023)]
Toluene	ND(0.00018) [0.00029 J]
Vinyl chloride	ND(0.00015) [ND(0.00015)]
bis(2–Ethylhexyl)phthalate	0.0034 J [ND(0.00271)]
Antimony	ND(0.0022) [ND(0.0022)]
Arsenic	ND(0.0039) [ND(0.0039)]
Barium	0.0454 [0.0462]
Chromium (total)	ND(0.0014) [ND(0.0014)]
Chromium (II)	NA [NA]
Chromium (VI)	NA [NA]
Cyanide (total)	NA [NA]
Lead	ND(0.0025) [ND(0.0025)]
Manganese	0.0964 [0.0968]
Nickel	ND(0.0022) [ND(0.0022)]
Thallium	ND(0.000018) [ND(0.000018)]
Vanadium	ND(0.00082) [ND(0.00082)]
PCBs (total)	ND (0.00019) [ND (0.00019)]
2,3,7,8–TCDD (TEQ)	NA [NA]



MW–2–99

Date Collected	1/17/2001	1/10/2002
1,1,1–Trichloroethane	NA	NA
1,1,2–Trichloroethane	NA	NA
1,1–Dichloroethene	NA	NA
1,2–Dichloroethane	NA	NA
Acetone	NA	NA
Benzene	NA	NA
Ethylbenzene	NA	NA
Tetrachloroethene	NA	NA
Toluene	NA	NA
Vinyl chloride	NA	NA
bis(2–Ethylhexyl)phthalate	NA	NA
Antimony	ND(0.0022)	0.0043 J
Arsenic	0.0249	0.0267
Barium	1.28	1.37
Chromium (total)	0.0018 J	0.0021 J
Chromium (II)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese [RDWC]	0.953	1.11 J
Nickel	ND(0.0022)	ND(0.0022)
Thallium [RDWC, IDWC]	0.005 J	ND(0.000018)
Vanadium [RDWC]	0.01	0.008 J
PCBs (total) [RDWC, IDWC]	ND (0.00019)	0.0008 J
2,3,7,8–TCDD (TEQ)	ND (2.92E–09)	ND(2.59E–09)

MW–1–99

Date Collected	1/4/2000	
1,1,1–Trichloroethane	ND(0.0005)	[ND(0.0005)]
1,1,2–Trichloroethane	ND(0.0005)	[ND(0.0005)]
1,1–Dichloroethene	ND(0.0005)	[ND(0.0005)]
1,2–Dichloroethane	ND(0.0005)	[ND(0.0005)]
Acetone	ND(0.020)	[ND(0.020)]
Benzene	ND(0.0005)	[ND(0.0005)]
Ethylbenzene	ND(0.0005)	[ND(0.0005)]
Tetrachloroethene	ND(0.0005)	[ND(0.0005)]
Toluene	ND(0.0005)	[ND(0.0006)]
Vinyl chloride	ND(0.0005)	[ND(0.0005)]
bis(2–Ethylhexyl)phthalate [RDWC, IDWC, GCC]	0.51 [0.61]	
Antimony	0.0017 [0.00108]	
Arsenic	ND(0.002)	[ND(0.002)]
Barium [RDWC, IDWC]	3.44 [3.69]	
Chromium (total)	ND(0.004)	[ND(0.004]
Chromium (II)	NA	[NA]
Chromium (VI)	NA	[NA]
Cyanide (total)	0.03	[0.03]
Lead	0.00023	[0.00031]
Manganese	0.429	[0.682]
Nickel	ND(0.004)	[ND(0.004)]
Thallium	ND(0.002)	[ND(0.002)]
Vanadium	ND(0.004)	[ND(0.004)]
PCBs (total)	ND(0.0002)	[ND(0.0002)]
2,3,7,8–TCDD (TEQ)	NA	[NA]

MWM5–01

Date Collected	8/17/2001	1/10/2002
1,1,1–Trichloroethane	NA	NA
1,1,2–Trichloroethane	NA	NA
1,1–Dichloroethene	NA	NA
1,2–Dichloroethane	NA	NA
Acetone	NA	NA
Benzene	NA	NA
Ethylbenzene	NA	NA
Tetrachloroethene	NA	NA
Toluene	NA	NA
Vinyl chloride	NA	NA
bis(2–Ethylhexyl)phthalate	NA	NA
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium [RDWC, IDWC]	2.03	4.72
Chromium (total)	ND(0.0014)	0.0022 J
Chromium (II)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese [RDWC, IDWC]	3.57	1.68 J
Nickel	0.016 J	0.0106 J
Thallium	0.0059 J	ND(0.000018)
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total) [RDWC, IDWC]	ND (0.00019)	0.0017 J
2,3,7,8–TCDD (TEQ)	ND (4.57E–09)	ND(4.12E–09)

LEGEND:

- MWM5–01 — GROUNDWATER MONITORING WELL LOCATION
- BM11–03 — SOIL BORING LOCATION
- SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M–4 = PLANT 25 FORMER GASOLINE UST AND CURRENT GASOLINE AST
- M–5 = FORMER A2 FILL AREA
- M–11 = PLANT 12 FORMER GASOLINE STORAGE AREA
- M–16 = PLANT 25 BASEMENT SUMP AREA
- M–17 = FORMER GASOLINE AST
- M–23 = ELECTRICAL SUBSTATION
- M–24 = PCB SPILL AREA
- M–25 = PLANT 33 BASEMENT SUMP AREA

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IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

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IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

HISTORIC DATA FROM CRA INVESTIGATION

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONCENTRATION.
7. NA – NOT ANALYZED.

0 300' 600'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-4, -5 AND -16 - GROUNDWATER

ENCORE

FIGURE 4-21

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT–DL
4/25/02 SYR–54–GMS DJP
64411210/64411C14.DWG

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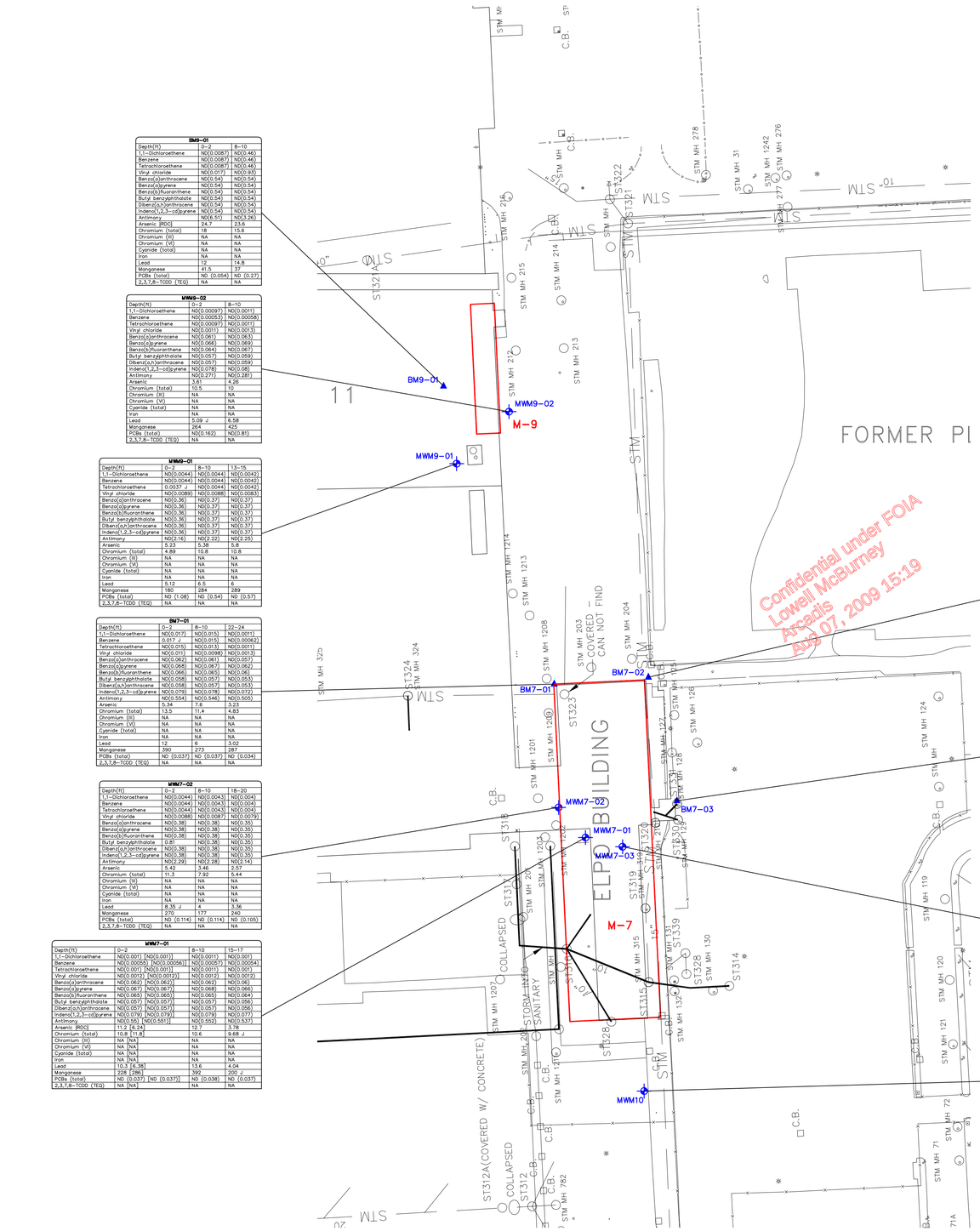
Arcadis
Aug 07, 2009 15:19



BM9-01

Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0087)	ND(0.46)
Benzene	ND(0.0087)	ND(0.46)
Tetrachloroethene	ND(0.0087)	ND(0.46)
Vinyl chloride	ND(0.017)	ND(0.93)
Benzo(a)anthracene	ND(0.54)	ND(0.54)
Benzo(a)pyrene	ND(0.54)	ND(0.54)
Benzo(b)fluoranthene	ND(0.54)	ND(0.54)
Butyl benzylphthalate	ND(0.54)	ND(0.54)
Dibenz(a,h)anthracene	ND(0.54)	ND(0.54)
Indeno(1,2,3–cd)pyrene	ND(0.54)	ND(0.54)
Antimony	ND(6.57)	ND(3.26)
Arsenic (RDC)	24.7	23.6
Chromium (total)	18	15.6
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	12	14.8
Manganese	41.5	37
PCBs (total)	ND (0.054)	ND (0.27)
2,3,7,8–TCDD (TEQ)	NA	NA

MWM9-02

Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.00097)	ND(0.0011)
Benzene	ND(0.00053)	ND(0.00058)
Tetrachloroethene	ND(0.00097)	ND(0.0011)
Vinyl chloride	ND(0.0011)	ND(0.0013)
Benzo(a)anthracene	ND(0.061)	ND(0.063)
Benzo(a)pyrene	ND(0.066)	ND(0.069)
Benzo(b)fluoranthene	ND(0.064)	ND(0.067)
Butyl benzylphthalate	ND(0.057)	ND(0.059)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.059)
Indeno(1,2,3–cd)pyrene	ND(0.078)	ND(0.08)
Antimony	ND(0.271)	ND(0.281)
Arsenic	3.61	4.26
Chromium (total)	10.5	10
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	5.09 J	6.58
Manganese	264	425
PCBs (total)	ND(0.162)	ND(0.81)
2,3,7,8–TCDD (TEQ)	NA	NA

MWM9-01

Depth(ft)	0–2	8–10	13–15
1,1–Dichloroethene	ND(0.0044)	ND(0.0044)	ND(0.0042)
Benzene	ND(0.0044)	ND(0.0044)	ND(0.0042)
Tetrachloroethene	0.0037 J	ND(0.0044)	ND(0.0042)
Vinyl chloride	ND(0.0089)	ND(0.0088)	ND(0.0083)
Benzo(a)anthracene	ND(0.36)	ND(0.37)	ND(0.37)
Benzo(a)pyrene	ND(0.36)	ND(0.37)	ND(0.37)
Benzo(b)fluoranthene	ND(0.36)	ND(0.37)	ND(0.37)
Butyl benzylphthalate	ND(0.36)	ND(0.37)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.36)	ND(0.37)	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(0.36)	ND(0.37)	ND(0.37)
Antimony	ND(2.16)	ND(2.22)	ND(2.25)
Arsenic	5.23	5.38	5.8
Chromium (total)	4.89	10.8	10.8
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	5.12	6.5	6
Manganese	180	284	289
PCBs (total)	ND (1.08)	ND (0.54)	ND (0.57)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

BM7-01

Depth(ft)	0–2	8–10	22–24
1,1–Dichloroethene	ND(0.017)	ND(0.015)	ND(0.0011)
Benzene	0.017 J	ND(0.015)	ND(0.00062)
Tetrachloroethene	ND(0.015)	ND(0.013)	ND(0.0011)
Vinyl chloride	ND(0.011)	ND(0.0098)	ND(0.0013)
Benzo(a)anthracene	ND(0.062)	ND(0.061)	ND(0.057)
Benzo(a)pyrene	ND(0.068)	ND(0.067)	ND(0.062)
Benzo(b)fluoranthene	ND(0.066)	ND(0.065)	ND(0.06)
Butyl benzylphthalate	ND(0.058)	ND(0.057)	ND(0.053)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.057)	ND(0.053)
Indeno(1,2,3–cd)pyrene	ND(0.079)	ND(0.078)	ND(0.072)
Antimony	ND(0.554)	ND(0.546)	ND(0.505)
Arsenic	5.34	7.6	3.23
Chromium (total)	13.5	11.4	4.83
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	12	6	3.02
Manganese	390	273	287
PCBs (total)	ND (0.037)	ND (0.037)	ND (0.034)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM7-02

Depth(ft)	0–2	8–10	18–20
1,1–Dichloroethene	ND(0.0044)	ND(0.0043)	ND(0.004)
Benzene	ND(0.0044)	ND(0.0043)	ND(0.004)
Tetrachloroethene	ND(0.0044)	ND(0.0043)	ND(0.004)
Vinyl chloride	ND(0.0088)	ND(0.0087)	ND(0.0079)
Benzo(a)anthracene	ND(0.36)	ND(0.36)	ND(0.35)
Benzo(a)pyrene	ND(0.36)	ND(0.36)	ND(0.35)
Benzo(b)fluoranthene	ND(0.36)	ND(0.36)	ND(0.35)
Butyl benzylphthalate	0.81	ND(0.36)	ND(0.35)
Dibenz(a,h)anthracene	ND(0.36)	ND(0.36)	ND(0.35)
Indeno(1,2,3–cd)pyrene	ND(0.36)	ND(0.36)	ND(0.35)
Antimony	ND(2.29)	ND(2.28)	ND(2.14)
Arsenic	5.42	3.46	2.57
Chromium (total)	11.3	7.92	5.44
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	8.35 J	4	3.36
Manganese	270	177	240
PCBs (total)	ND (0.114)	ND (0.114)	ND (0.105)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM7-01

Depth(ft)	0–2	8–10	15–17
1,1–Dichloroethene	ND(0.001)	ND(0.0011)	ND(0.001)
Benzene	ND(0.00055)	ND(0.00056)	ND(0.00054)
Tetrachloroethene	ND(0.001)	ND(0.0011)	ND(0.001)
Vinyl chloride	ND(0.0012)	ND(0.0012)	ND(0.0012)
Benzo(a)anthracene	ND(0.062)	ND(0.062)	ND(0.06)
Benzo(a)pyrene	ND(0.067)	ND(0.067)	ND(0.066)
Benzo(b)fluoranthene	ND(0.065)	ND(0.065)	ND(0.064)
Butyl benzylphthalate	ND(0.057)	ND(0.057)	ND(0.056)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.057)	ND(0.056)
Indeno(1,2,3–cd)pyrene	ND(0.079)	ND(0.079)	ND(0.077)
Antimony	ND(0.55)	ND(0.551)	ND(0.552)	ND(0.537)
Arsenic (RDC)	11.2 [6.24]	12.7	3.78
Chromium (total)	10.8 [11.8]	10.6	9.68 J
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	10.3 [6.38]	13.6	4.04
Manganese	228 [286]	392	200 J
PCBs (total)	ND (0.037)	ND (0.037)	ND (0.038)	ND (0.037)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

BM7-02

Depth(ft)	0–2	8–10
1,1–Dichloroethene	ND(0.0045)	ND(0.0043)
Benzene	ND(0.0045)	ND(0.0043)
Tetrachloroethene	ND(0.0045)	ND(0.0043)
Vinyl chloride	ND(0.009)	ND(0.0086)
Benzo(a)anthracene	ND(0.38)	ND(0.37)
Benzo(a)pyrene	ND(0.38)	ND(0.37)
Benzo(b)fluoranthene	ND(0.38)	ND(0.37)
Butyl benzylphthalate	ND(0.38)	ND(0.37)
Dibenz(a,h)anthracene	ND(0.38)	ND(0.37)
Indeno(1,2,3–cd)pyrene	ND(0.38)	ND(0.37)
Antimony	0.584 J	ND(2.23)
Arsenic	4.83	4.71
Chromium (total)	13.7	9.88
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Iron	NA	NA
Lead	40.6	5.62
Manganese	242	273
PCBs (total)	ND (0.114)	ND (0.111)
2,3,7,8–TCDD (TEQ)	NA	NA

BM7-03

Depth(ft)	0–2	8–10	20–22
1,1–Dichloroethene	ND(0.001)	ND(0.0011)	ND(0.00095)
Benzene	ND(0.00054)	ND(0.00058)	ND(0.00052)
Tetrachloroethene	ND(0.001)	ND(0.0011)	ND(0.00095)
Vinyl chloride	ND(0.0012)	ND(0.0012)	ND(0.0011)
Benzo(a)anthracene	ND(0.061)	ND(0.063)	ND(0.06)
Benzo(a)pyrene	ND(0.067)	ND(0.069)	ND(0.065)
Benzo(b)fluoranthene	ND(0.064)	ND(0.066)	ND(0.063)
Butyl benzylphthalate	ND(0.057)	ND(0.058)	ND(0.055)
Dibenz(a,h)anthracene	ND(0.057)	ND(0.058)	ND(0.055)
Indeno(1,2,3–cd)pyrene	ND(0.078)	ND(0.08)	ND(0.076)
Antimony	ND(0.545)	ND(0.56)	ND(0.533)
Arsenic	4.09	5.45	4.81
Chromium (total)	8.06	12	9.24
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	5.14	8.51	5.55
Manganese	178	321	274
PCBs (total)	ND (0.037)	ND (0.038)	ND (0.036)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

MWM7-03

Depth(ft)	0–2	8–10	10–12	15–17
1,1–Dichloroethene	ND(1.8)	ND(0.0042)	ND(0.0043)	ND(0.0042)
Benzene	ND(1.8)	0.0033 J	ND(0.0043)	ND(0.0042)
Tetrachloroethene [RSVIC]	50	0.0035 J	ND(0.0043)	0.0034 J
Vinyl chloride	ND(3.5)	ND(0.0084)	ND(0.0085)	ND(0.0084)
Benzo(a)anthracene	0.34 J	ND(0.37)	ND(0.37)	ND(0.37)
Benzo(a)pyrene	0.51	ND(0.37)	ND(0.37)	ND(0.37)
Benzo(b)fluoranthene	0.75	ND(0.37)	ND(0.37)	ND(0.37)
Butyl benzylphthalate	ND(0.35)	ND(0.37)	ND(0.37)	ND(0.37)
Dibenz(a,h)anthracene	0.13 J	ND(0.37)	ND(0.37)	ND(0.37)
Indeno(1,2,3–cd)pyrene	0.34 J	ND(0.37)	ND(0.37)	ND(0.37)
Antimony	0.664 J	ND(2.22)	ND(2.25)	ND(2.23)
Arsenic	2.93	4.84	6.05	5.69
Chromium (total)	30	11.3	9.41	9.6
Chromium (III)	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA
Cyanide (total)	NA	NA	NA	NA
Iron	NA	NA	NA	NA
Lead	356	6.2 J	6.24	11.2
Manganese	1030	276	296	264
PCBs (total)	ND (0.105)	ND (0.111)	ND (0.111)	ND (0.111)
2,3,7,8–TCDD (TEQ)	NA	NA	NA	NA

MWM10

Depth(ft)	0–2	8–10	12–14
1,1–Dichloroethene	ND(0.00099)	ND(0.001)	ND(0.0011)
Benzene	ND(0.00054)	ND(0.00055)	ND(0.00057)
Tetrachloroethene	ND(0.00099)	ND(0.001)	ND(0.0011)
Vinyl chloride	ND(0.0012)	ND(0.0012)	ND(0.0012)
Benzo(a)anthracene	ND(0.062)	ND(0.061)	ND(0.061)
Benzo(a)pyrene	ND(0.068)	ND(0.066)	ND(0.067)
Benzo(b)fluoranthene	ND(0.066)	ND(0.064)	ND(0.065)
Butyl benzylphthalate	ND(0.058)	ND(0.056)	ND(0.057)
Dibenz(a,h)anthracene	ND(0.058)	ND(0.056)	ND(0.057)
Indeno(1,2,3–cd)pyrene	ND(0.079)	ND(0.077)	ND(0.078)
Antimony	ND(0.555)	ND(0.54)	ND(0.545)
Arsenic (RDC)	13	4.08	5.01
Chromium (total)	10.9	8.09	9.37
Chromium (III)	NA	NA	NA
Chromium (VI)	NA	NA	NA
Cyanide (total)	NA	NA	NA
Iron	NA	NA	NA
Lead	8	5.8	6.82
Manganese	278	358	278
PCBs (total)	ND (0.037)	ND (0.037)	ND (0.037)
2,3,7,8–TCDD (TEQ)	NA	NA	NA

LEGEND:

- MWM9–02 — GROUNDWATER MONITORING WELL LOCATION
- BM7–02 — SOIL BORING LOCATION
- SW8–03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M–7 = ELPO BUILDING/FLAMMABLE LIQUID STORAGE BUILDING
- M–9 = PLANT 11 OIL CONTAINMENT AREA

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED.

0 80' 160'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-7 AND -9 - SOIL

ENCORE

FIGURE 4-22

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS DJP
64411210/64411C10.DWG

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

Confidential under FOIA
Lowell McBurney
Arcadis
Aug 07, 2009 15:19

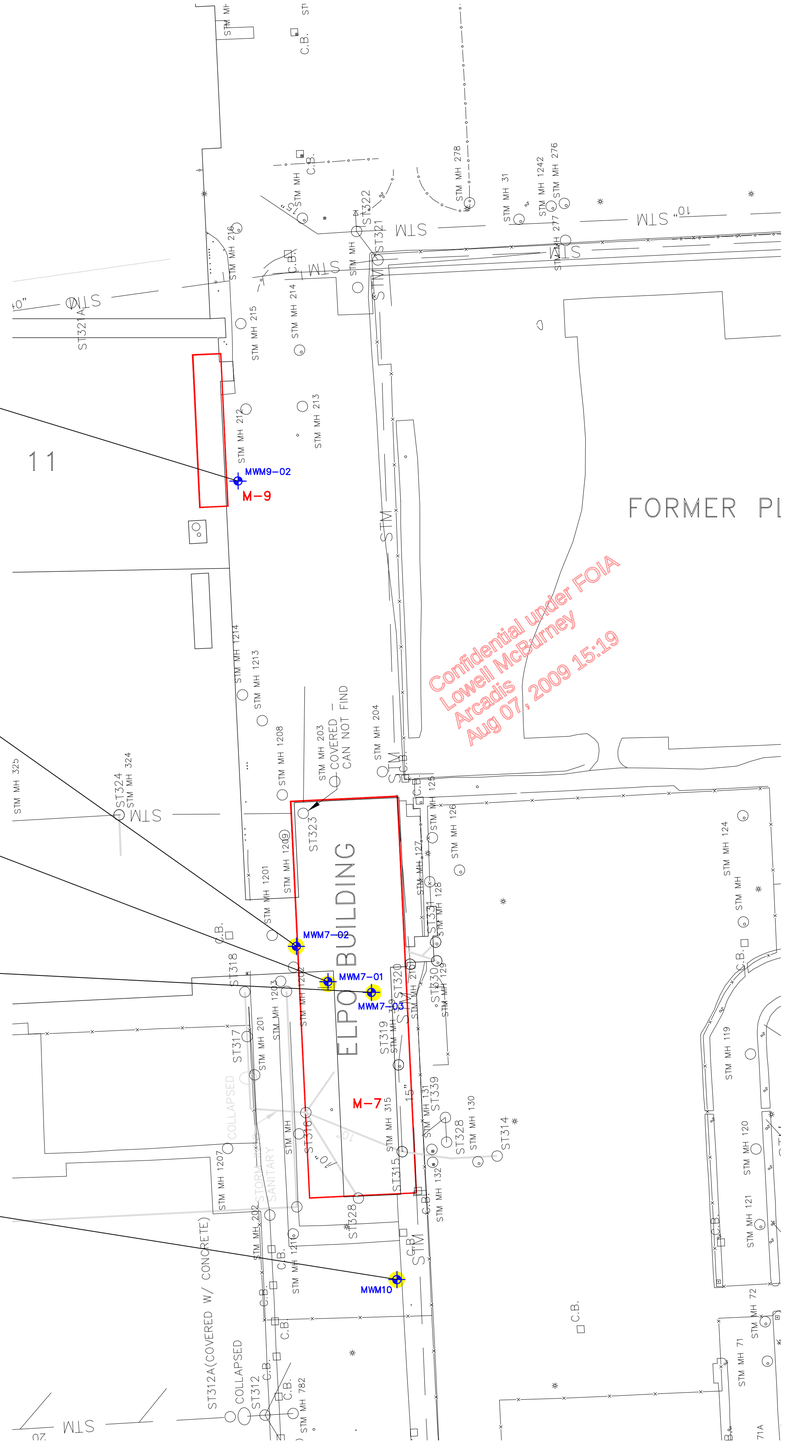
MWM9-02	
Date Collected	2/1/2002
1,1,1-Trichloroethane	ND(0.000157)
1,1,2-Trichloroethane	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)
1,2-Dichloroethene	ND(0.00021)
Acetone	0.02 J
Benzene	ND(0.00016)
Ethylbenzene	ND(0.00012)
Tetrachloroethene	R
Toluene	ND(0.00018)
Vinyl chloride	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)
Antimony	ND(0.0022)
Arsenic	0.0057
Barium	0.548
Chromium (total)	0.003 J
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Lead	ND(0.0025)
Manganese	ND(0.0009)
Nickel	0.0041
Thallium	0.00051 J
Vanadium	0.0037 J
PCBs (total)	ND(0.00019)
2,3,7,8-TCDD (TEQ)	NA

MWM7-02		
Date Collected	9/17/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.00015)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.0003)	ND(0.0003)
1,1-Dichloroethene	ND(0.00024)	ND(0.00024)
1,2-Dichloroethene	ND(0.00021)	ND(0.00021)
Acetone	ND(0.00051)	ND(0.00051)
Benzene	ND(0.00016)	ND(0.00016)
Ethylbenzene	ND(0.00012)	ND(0.00012)
Tetrachloroethene	ND(0.00023)	ND(0.00023)
Toluene	ND(0.00018)	ND(0.00018)
Vinyl chloride	ND(0.00015)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.0027)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.244	0.292
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.312	0.0862
Nickel	0.0231	0.0344
Thallium (RDWC, IDWC)	0.0053 J	0.00013 J
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND (0.00019)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM7-01		
Date Collected	9/18/2001	1/8/2002
1,1,1-Trichloroethane	ND(0.001)	ND(0.00015)
1,1,2-Trichloroethane	ND(0.001)	ND(0.0003)
1,1-Dichloroethene	ND(0.001)	ND(0.00024)
1,2-Dichloroethene	ND(0.001)	ND(0.00021)
Acetone	0.0035 J	ND(0.00051)
Benzene	0.00041 J	0.00024 J
Ethylbenzene	0.00023 J	ND(0.00012)
Tetrachloroethene	ND(0.001)	ND(0.00023)
Toluene	0.0018	0.00035 J
Vinyl chloride	ND(0.001)	ND(0.00015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	ND(0.01)	ND(0.0039)
Barium	0.355	0.235
Chromium (total)	ND(0.01)	0.0014 J
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese (RDWC)	1.72	0.924
Nickel	0.069	0.0704
Thallium (RDWC, IDWC)	0.0141 J	0.00036 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM7-03		
Date Collected	9/17/2001	1/9/2002
1,1,1-Trichloroethane	ND(0.12)	ND(0.0015)
1,1,2-Trichloroethane	ND(0.25)	ND(0.003)
1,1-Dichloroethene	ND(0.2)	ND(0.0024)
1,2-Dichloroethene	ND(0.17)	ND(0.0021)
Acetone (RDWC, IDWC)	42	ND(0.0051)
Benzene	ND(0.13)	ND(0.0016)
Ethylbenzene	ND(0.1)	ND(0.0012)
Tetrachloroethene	ND(0.19)	0.0038 J
Toluene	ND(0.15)	ND(0.0018)
Vinyl chloride	ND(0.12)	ND(0.0015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.0022)	ND(0.0022)
Arsenic	ND(0.0039)	ND(0.0039)
Barium	0.215	0.263
Chromium (total)	ND(0.0014)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.0025)	ND(0.0025)
Manganese	0.353	0.464 J
Nickel	0.0125 J	0.031
Thallium (RDWC, IDWC)	0.0063 J	0.000089 J
Vanadium	ND(0.00082)	ND(0.00082)
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA

MWM10		
Date Collected	8/23/2001	1/7/2002
1,1,1-Trichloroethane	ND(0.017)	ND(0.0015)
1,1,2-Trichloroethane	ND(0.017)	ND(0.003)
1,1-Dichloroethene	ND(0.017)	ND(0.0024)
1,2-Dichloroethene	ND(0.017)	ND(0.0021)
Acetone (RDWC)	0.83 J	0.71 J
Benzene	ND(0.017)	ND(0.0016)
Ethylbenzene	ND(0.017)	ND(0.0012)
Tetrachloroethene	ND(0.017)	ND(0.0023)
Toluene	ND(0.017)	ND(0.0018)
Vinyl chloride	ND(0.017)	ND(0.0015)
bis(2-Ethylhexyl)phthalate	ND(0.005)	ND(0.0027)
Antimony	ND(0.025)	ND(0.0022)
Arsenic	0.0042 J	0.0081 J
Barium	0.147	0.17
Chromium (total)	ND(0.01)	ND(0.0014)
Chromium (III)	NA	NA
Chromium (VI)	NA	NA
Cyanide (total)	NA	NA
Lead	ND(0.003)	ND(0.0025)
Manganese	0.509	0.454
Nickel	0.004 J	ND(0.0022)
Thallium (RDWC, IDWC)	0.0143	0.000021 J
Vanadium	ND(0.01)	ND(0.00082)
PCBs (total)	ND (0.0007)	ND (0.00019)
2,3,7,8-TCDD (TEQ)	NA	NA



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LEGEND:

- MWM10 — GROUNDWATER MONITORING WELL LOCATION
- BM11-03 — SOIL BORING LOCATION
- SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M-7 = ELPO BUILDING/FLAMMABLE LIQUID STORAGE BUILDING
- M-9 = PLANT 11 OIL CONTAINMENT AREA

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
ISVIC – INDUSTRIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
IVSIC – INDUSTRIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA

MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED
8. R – DATA REJECTED FROM DATA VALIDATION

0 80' 160'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOIs M-7 AND -9 - GROUNDWATER

ENCORE

FIGURE
4-23

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS DJP
64411210/64411C12.DWG

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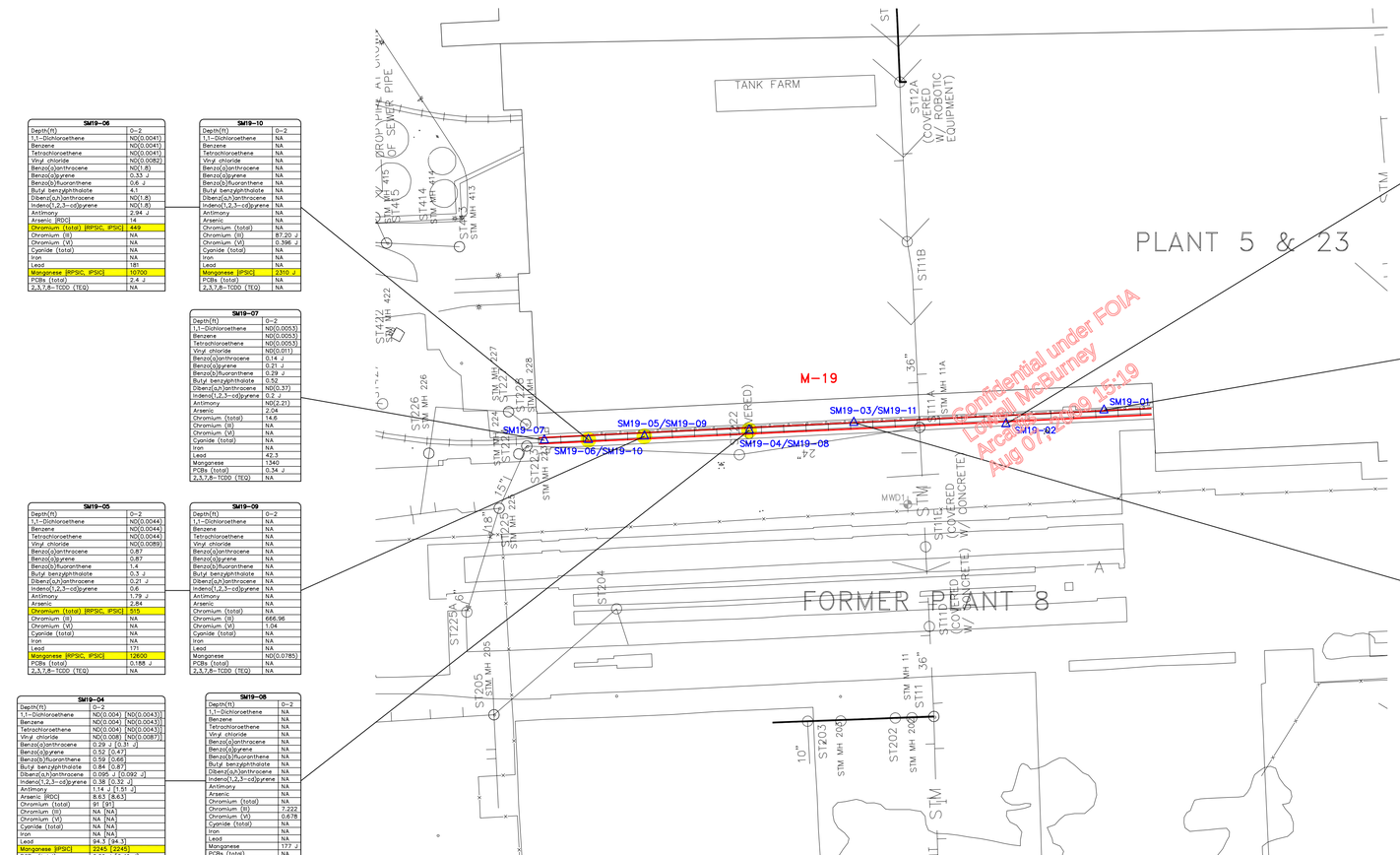

SM19-06

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0041)
Benzene	ND(0.0041)
Tetrachloroethene	ND(0.0041)
Vinyl chloride	ND(0.0082)
Benzo(a)anthracene	ND(1.8)
Benzo(a)pyrene	0.33 J
Benzo(b)fluoranthene	0.6 J
Butyl benzylphthalate	4.1
Dibenz(a,h)anthracene	ND(1.8)
Indeno(1,2,3-cd)pyrene	ND(1.8)
Antimony	2.94 J
Arsenic [RDC]	14
Chromium (total) [RPSIC, IPSIC]	449
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	181
Manganese [RPSIC, IPSIC]	10700
PCBs (total)	2.4 J
2,3,7,8-TCDD (TEQ)	NA

SM19-10

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	87.20 J
Chromium (VI)	0.396 J
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese [IPSC]	2310 J
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SM19-07

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0053)
Benzene	ND(0.0053)
Tetrachloroethene	ND(0.0053)
Vinyl chloride	ND(0.011)
Benzo(a)anthracene	0.14 J
Benzo(a)pyrene	0.21 J
Benzo(b)fluoranthene	0.29 J
Butyl benzylphthalate	0.52
Dibenz(a,h)anthracene	ND(0.37)
Indeno(1,2,3-cd)pyrene	0.2 J
Antimony	ND(2.21)
Arsenic	2.04
Chromium (total)	14.6
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	42.3
Manganese	1340
PCBs (total)	0.34 J
2,3,7,8-TCDD (TEQ)	NA

SM19-05

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0044)
Benzene	ND(0.0044)
Tetrachloroethene	ND(0.0044)
Vinyl chloride	ND(0.0089)
Benzo(a)anthracene	0.87
Benzo(a)pyrene	0.87
Benzo(b)fluoranthene	1.4
Butyl benzylphthalate	0.3 J
Dibenz(a,h)anthracene	0.21 J
Indeno(1,2,3-cd)pyrene	0.6
Antimony	1.79 J
Arsenic	2.84
Chromium (total) [RPSIC, IPSIC]	515
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	171
Manganese [RPSIC, IPSIC]	12600
PCBs (total)	0.188 J
2,3,7,8-TCDD (TEQ)	NA

SM19-09

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	666.96
Chromium (VI)	1.04
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	ND(0.0785)
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SM19-04

Depth(ft)	0-2	
1,1-Dichloroethene	ND(0.004)	ND(0.0043)
Benzene	ND(0.004)	ND(0.0043)
Tetrachloroethene	ND(0.004)	ND(0.0043)
Vinyl chloride	ND(0.008)	ND(0.0087)
Benzo(a)anthracene	0.29 J	[0.31 J]
Benzo(a)pyrene	0.52	[0.47]
Benzo(b)fluoranthene	0.59	[0.66]
Butyl benzylphthalate	0.84	[0.87]
Dibenz(a,h)anthracene	0.095 J	[0.092 J]
Indeno(1,2,3-cd)pyrene	0.38	[0.32 J]
Antimony	1.14 J	[1.51 J]
Arsenic [RDC]	8.63	[8.63]
Chromium (total)	91	[91]
Chromium (III)	NA	[NA]
Chromium (VI)	NA	[NA]
Cyanide (total)	NA	[NA]
Iron	NA	[NA]
Lead	94.3	[94.3]
Manganese [IPSIC]	2245	[2245]
PCBs (total)	0.29 J	[0.49 J]
2,3,7,8-TCDD (TEQ)	NA	[NA]

SM19-08

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	7.222
Chromium (VI)	0.678
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	177 J
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

SM19-02

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0053)
Benzene	ND(0.0053)
Tetrachloroethene	ND(0.0053)
Vinyl chloride	ND(0.011)
Benzo(a)anthracene	0.6 J
Benzo(a)pyrene	0.59 J
Benzo(b)fluoranthene	0.83 J
Butyl benzylphthalate	2.9
Dibenz(a,h)anthracene	ND(1.4)
Indeno(1,2,3-cd)pyrene	0.44 J
Antimony	5.24
Arsenic [RDC]	55.6
Chromium (total)	44.4
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	227
Manganese	353
PCBs (total)	0.93 J
2,3,7,8-TCDD (TEQ)	NA

SM19-01

Depth(ft)	0-2	
1,1-Dichloroethene	ND(0.0057)	[ND(0.0053)]
Benzene	ND(0.0057)	[ND(0.0053)]
Tetrachloroethene	ND(0.0057)	[ND(0.0053)]
Vinyl chloride	ND(0.011)	[ND(0.011)]
Benzo(a)anthracene	0.48 J	[0.92 J]
Benzo(a)pyrene	0.7 J	[1.2 J]
Benzo(b)fluoranthene	0.99 J	[1.7 J]
Butyl benzylphthalate	5.45	[7.5]
Dibenz(a,h)anthracene	ND(1.8)	[0.33 J]
Indeno(1,2,3-cd)pyrene	0.6 J	[0.93 J]
Antimony	9.67	[10.7]
Arsenic [RDC]	54.5	[48.4]
Chromium (total)	116	[123]
Chromium (III)	NA	[NA]
Chromium (VI)	NA	[NA]
Cyanide (total)	NA	[NA]
Iron	NA	[NA]
Lead [RDC]	571	[640]
Manganese	402	[466]
PCBs (total)	0.78 J	[1.1 J]
2,3,7,8-TCDD (TEQ)	NA	[NA]

SM19-03

Depth(ft)	0-2
1,1-Dichloroethene	ND(0.0052)
Benzene	ND(0.0052)
Tetrachloroethene	ND(0.0052)
Vinyl chloride	ND(0.01)
Benzo(a)anthracene	0.36 J
Benzo(a)pyrene	0.58 J
Benzo(b)fluoranthene	0.89 J
Butyl benzylphthalate	3.8
Dibenz(a,h)anthracene	ND(1.5)
Indeno(1,2,3-cd)pyrene	0.5 J
Antimony	3.66 J
Arsenic [RDC]	52.1
Chromium (total)	68
Chromium (III)	NA
Chromium (VI)	NA
Cyanide (total)	NA
Iron	NA
Lead	216
Manganese	779
PCBs (total)	1.76 J
2,3,7,8-TCDD (TEQ)	NA

SM19-11

Depth(ft)	0-2
1,1-Dichloroethene	NA
Benzene	NA
Tetrachloroethene	NA
Vinyl chloride	NA
Benzo(a)anthracene	NA
Benzo(a)pyrene	NA
Benzo(b)fluoranthene	NA
Butyl benzylphthalate	NA
Dibenz(a,h)anthracene	NA
Indeno(1,2,3-cd)pyrene	NA
Antimony	NA
Arsenic	NA
Chromium (total)	NA
Chromium (III)	28.94
Chromium (VI)	1.96
Cyanide (total)	NA
Iron	NA
Lead	NA
Manganese	343 J
PCBs (total)	NA
2,3,7,8-TCDD (TEQ)	NA

LEGEND:

- MWD1 — GROUNDWATER MONITORING WELL LOCATION
- SM19-01 — SOIL BORING LOCATION
- SW8-03 — SURFACE SOIL SAMPLE COLLECTION LOCATION
- LOCATION WHERE NAPL HAS BEEN IDENTIFIED DURING RECENT RFI ACTIVITIES AT A MEASURABLE THICKNESS (>0.01 FEET)
- APPROXIMATE AOI AREA
- M-19 = RAILROAD TRACKS

MICHIGAN PART 201 GENERIC CRITERIA FOR SOILS

RDC – RESIDENTIAL DIRECT CONTACT CRITERIA
IDC – INDUSTRIAL DIRECT CONTACT CRITERIA
RPSIC – RESIDENTIAL PARTICULATE SOIL INHALATION CRITERIA
IPSIC – INDUSTRIAL PARTICULATE SOIL INHALATION CRITERIA
RSVIC – RESIDENTIAL SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
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RVSIC – RESIDENTIAL INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA
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MICHIGAN PART 201 GENERIC CRITERIA FOR GROUNDWATER

RDWC – RESIDENTIAL DRINKING WATER CRITERIA
IDWC – INDUSTRIAL DRINKING WATER CRITERIA
RGVIC – RESIDENTIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
IGVIC – INDUSTRIAL GROUNDWATER VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA
GCC – GROUNDWATER CONTACT CRITERIA

CONSTITUENT CONCENTRATION EXCEEDS INDUSTRIAL SCREENING CRITERIA

NOTES:

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
2. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm).
3. DUPLICATE ANALYSES ARE PRESENTED IN BRACKETS.
4. ND (0.25) – CONSTITUENT NOT DETECTED, ASSOCIATED DETECTION LIMIT PRESENTED IN BRACKETS.
5. J – ESTIMATED CONCENTRATION.
6. B – LABORATORY BLANK CONTAMINATION.
7. NA – NOT ANALYZED.

0 80' 160'
GRAPHIC SCALE

GENERAL MOTORS
PONTIAC, MICHIGAN
PONTIAC NORTH CAMPUS

AOI M-19 - SOIL

ENCORE

FIGURE
4-24

X: 64411X00, X01.DWG, 64411X01.GIF
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
4/25/02 SYR-54-GMS NES DJP
64411210/64411C08.DWG

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